

Determinants Of Capital Structure Of Listed Deposit Money Banks In Nigeria

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Abstract: This study aimed at identifying the factors influencing the capital structure of the listed deposit money banks in Nigeria from 2008 to 2016. Data on the dependent variable, capital structure, as well as on the independent variables, banks' profitability, size, growth, tangibility, liquidity and risk were sourced from the annual reports and statement of accounts of the listed banks. Using Panel data fixed effects regression technique, the results revealed that profitability, size, growth, tangibility and liquidity were significant factors influencing the capital structure of the listed banks. Risk had a negative but statistically insignificant influence on capital structure. Based on the findings, the study recommended that the Management of deposit money banks in Nigeria and policy makers should always consider these identified determinants in their capital structure decisions. This would enable the banks to perform their financial intermediation roles effectively, and the soundness and stability of the banking system will be ensured.

Keywords: Determinants, Capital Structure, Deposit money banks, Panel Data Regression

I. INTRODUCTION

The banking industry, which is one of the most regulated industries in the world, has attracted a great deal of attention in the economics and finance literature considering that banks play a pivotal role in the economy (Workneh, 2014). This pivotal role is clearly evident in their financial intermediation role, mobilization of financial resources from surplus economic units and channeling them to the deficit spending economic units.

The depositors' desire is to have access to their deposits as and when they are required. To achieve this desire, banks must at all times be in a sound state of health. Similarly, the government of any country desires that its banks are in a sound state of health because when banks are in a poor state of health, the economy is likely to be adversely affected. As the apex regulatory authority, the Central Bank of Nigeria (CBN) must ensure that the interest of the owners of banks aligns with those of depositors and other creditors and this is where

capital structure is of utmost importance. With optimal capital structure, banks are strengthened in the performance of their important role of financial intermediation. This is because banks with less than optimal capital structure will be constrained in their ability to perform their financial intermediation role. This could result in mass withdrawals of funds by depositors from such banks, on account of the depositors believing that their deposits with the banks are at risk.

STATEMENT OF THE PROBLEM

A significant number of researchers in the finance literature have argued that capital structure is important for firms and banks alike, since capital structure was first brought to light as a subject of debate in the seminal work by Modigliani and Miller (1958). Many decades later capital structure still remains an unresolved issue in the corporate finance literature. It is noteworthy that accurate identification

of the factors influencing banks' capital structure will ensure that the banking system in Nigeria functions well and is in a good state of health so as to continue playing its invaluable role. However, researches on this subject have so far failed to reach a consensus on the factors affecting capital structure (Gropp and Herder, 2008; Iwarere and Akinyemi, 2010; Nyamora, 2012; Aremu, et al 2013; Anarfo, 2015; Saba, et al 2016; Tin and Diaz, 2017). Also, apart from Iwarere and Akinyemi, (2010) and Aremu, et al (2013), studies on capital structure in relation to Nigeria banks are virtually non-existent to the best of the researcher's knowledge. While Iwarere and Akinyemi (2010) employed primary data from a survey of bank managers for their analysis, Aremu, et al (2013) used the data of only five of the total number of banks in Nigeria for their analysis. The present study differs from the aforementioned studies in that it uses the data for all the listed banks in Nigeria, provided they meet the criteria of not having resulted from a merger over the scope of the study. In addition, this study by using the most recent data for all the listed banks updates the study of Aremu, et al. (2013). Furthermore, it employs a methodology different from that used by both Iwarere and Akinyemi (2010) and Aremu et al. (2013), and hence contributes significantly to the finance literature.

OBJECTIVE OF THE STUDY

This study is aimed at identifying the key factors that influence the capital structure of listed deposit money banks in Nigeria.

RESEARCH QUESTIONS

This study shall attempt to answer the following research questions:

Is there any significant relationship between changes in each of the explanatory variables, namely, banks' profitability, size, growth, risk, tangibility, liquidity and the dependent variable namely, banks' total debt to total assets, which is used as a proxy for capital structure?

Is there any significant relationship between changes in all the explanatory variables as a group namely, bank' profitability, size, growth, risk, tangibility, liquidity and the dependent variable namely, banks' total debt to total assets, which is used as a proxy for capital structure?

The rest of the study is organized as follows. Section 2 reviews the literature, while section 3 discusses the methodology. Section 4 presents and interprets the results, while section 5 summarises the findings and concludes the paper with policy recommendations.

II. LITERATURE REVIEW

CONCEPTUAL REVIEW

Capital structure has been variously defined. Anarfo (2015) defined capital structure as the firm's financing mix mainly debt and equity used to finance the firm's operations. Malinic, mihajlov and Ljubenovic (2013) corroborate this

position. Capital structure decisions affect a firm in two ways. Firstly, firms of the same risk class could possibly have higher cost of capital with higher leverage. Secondly, capital structure may affect the valuation of the firm, with more leveraged and hence riskier firms, being valued lower than less leveraged firms. Capital structure decisions could lead to optimal financing mix which could maximize the market price of the firm (Thian, 2012). Not only should a firm have capital structure, but the capital structure should be optimal for the firm. To that effect, Saba et al. (2016) argued that firms choose different capital structure according to their operations and nature of business. Thus, the ability of firms and banks to carry out their stakeholders' needs is closely related to their capital structure

THEORETICAL REVIEW

MODIGLIANI AND MILLER THEORY

Modigliani and Miller (1958) posited that capital structure is irrelevant, hence this theory is otherwise called irrelevancy preposition. According to them, owners of the firm are indifferent about its capital structure, as the firm's value does not depend on debt-to-equity ratio. Modigliani and Miller proved, under restrictive assumptions (no taxes and transactions costs) that cost of capital does not affect capital structure; particularly debt has no effect on firm value. However, another study by Modigliani and Miller (1963) on their original preposition, with the unrealistic assumptions that there are no taxes relaxed, presented a new proof that cost of capital affects capital structure, and hence, the firm's value. This indicates that borrowing gives tax advantage, because interest is deducted from the tax and it will result in tax shields, which will in turn reduce the cost of borrowing and hence maximize the firm performance (Miller, 1977).

AGENCY THEORY

Agency theory posits that capital structure is determined by agency costs, i.e. costs due to conflicts of interest. Jensen and Meckling (1976) initiated this theory by improving on an earlier study by Fama and Miller (1972). They identified two types of conflicts, conflicts between shareholders and managers and conflicts between debt holders and equity holders. The former arise because managers can invest less effort in managing firm resources and may be able to transfer the resources of the firm to their personal benefits, e.g. through the consumption of various perquisites. They overindulge in these pursuits relative to the level that would maximize the value of the firm. Moreover, as pointed out by Jensen (1986) since debt commits the firm to pay out cash, it reduces the amount of free cash available to managers to engage in the type of pursuits mentioned above. This mitigation of the conflicts between managers and equity holders constitutes the benefit of debt financing. This study is anchored on this Agency theory which, in summary, postulates that firms take on more debt to force managers to work in the interest of shareholders

TRADE OFF THEORY

The trade-off theory explains the exposure of the firm to bankruptcy and agency costs such as liquidation costs, distress costs etc. against tax benefits associated with debt use. According to the trade-off theory, the firm's debt-equity decision is seen as a trade-off between interest tax shields and the costs of financial distress and companies are expected to look for a target debt ratio when the present value of tax savings due to further borrowing is just equal to the increase in the present value of cost of distress (Jalilvand and Harris, 1984).

PECKING ORDER THEORY

This theory posits that owing to the information asymmetries between the firm and potential investors, firms have a particular preference order for capital used to finance their businesses (Myers and Majluf, 1984). For instance, the firm will prefer retained earnings to debt, short-term debt over long-term debt and debt over equity. Myers and Majluf (1984) argued that if firms issue no new securities, but only use retained earnings to support their investment opportunities, the information asymmetry can be resolved.

In relation to the pecking order theory, transaction costs play an important role in a firm's capital structure decision. Transaction costs associated with obtaining new external financing are higher than the costs of obtaining internal financing. Internal funds do not bear any transaction costs.

SIGNALING THEORY

This theory can best be explained by the information asymmetry hypothesis. Myers and Majluf (1984) believed that the firm's managers have superior information about the intrinsic value of the company. If management has favourable information that is not yet reflected in market prices, the announcement of such information will cause a larger increase in stock than in bond prices. To avoid diluting the value of existing shareholders, managers that believe their shares to be undervalued will choose to issue debt rather than equity. Conversely, managers will time a new equity issue if the market price exceeds their own assessment of the stock value i.e. if the stocks are overvalued by the market. This well-known propensity of companies to time their stock offerings helps to explain the market's systematically negative response to announcements of such offerings (Myers & Majluf, 1984).

STATIC TRADE-OFF THEORY

This theory, which arises from the Trade-off Theory discussed earlier, posits that higher profitability decreases the expected costs of distress and lets firms increase their tax benefits by raising leverage; therefore, firms should prefer debt financing. According to this theory, firms can borrow up to the point where the tax benefit from an extra dollar in debt is exactly equal to the cost that comes from the increased probability of financial distress.

. In terms of profitability, the theory predicts that more profitable firms should mean more debt-serving capacity and

more taxable income to shield, Therefore, based on this theory, firms would prefer debt over equity until the point where the probability of financial distress starts to be important.

EMPIRICAL REVIEW

A number of empirical studies have been carried out aimed at investigating the variables that influence capital structure. However, these studies are concentrated on non-financial firms with very few on banks, otherwise referred to as financial firms.

Ashraf and Rasool (2013) investigated empirically the impact of profitability, size, tangibility, growth, tax, risk and non-debt tax shield on leverage of automobile sector firms in Pakistan between 2005-2010 using pecking order theory. Employing ordinary least squares regression, the results indicated that size, tangibility and growth were statistically significant. The remaining factors namely, profitability, tax, risk were found to be insignificant and hence do not play any role in the determination of leverage in non-financial firms in Pakistan

Penelope (2013) examined the determinants of firm leverage using a large survey sample of manufacturing firms to study financing behaviour in China. Using Ordinary Least Squares, the results showed that Pecking order theory well explained private firms financing where the amount of leverage is negatively related to profit, liquidity and age. However, leverage was positively related to firm size and average leverage ratio. Penelope (2013) concluded that the determinants of leverage for the state firm may be better understood with policy and political variable rather than with what we expect from market oriented, profit maximizing firms with hard budget constraints

Gomez, Castro and Orlega (2016) examined the determinants of leverage in mining companies in Latin American countries namely Mexico, Colombia, Chile, Brazil and Peru and the trend that the capital structure follows over time. Data was employed over the period of 2004 – 2014. The results showed that the leverage function has intercept that is statistically different for every firm. Tangibility, size and profitability are statistically significant and negatively related to debt.

Thian, (2012) investigated the factors that influence capital structure in financial services listed firms in China, using a sample of 36 Chinese public listed firms from 2005-2009. Multiple linear regression was employed for the study. The results showed that a negative relationship exists between profitability and debt level but the relationship was not significant for long term debt. Also, firm size was found to be positively associated with financial leverage. It was concluded that the variables that determine capital structure of financial firms are similar to those of the other industries, and in addition the largely state ownership does affect capital structure choices

Malinic, Mihajlov and Ljubenic (2013) investigated whether Serbian firms tend to have much lower debt ratio and rely more on short term than long term debt. The findings indicate that there is a significant negative impact of liquidity, tangibility, profitability and size on short term debt ratio and

long term debt ratio. Also, leverage level is significantly positively affected by income volatility and growth opportunity. It was concluded that firm specific factors affect firms' capital structure in other emerging and transitional countries.

Tin and Diaz (2017) investigated the determinants of banks' capital structure in Vietnam focusing on the leverage of 31 commercial banks from 2009- 2014. The analysis employed multiple linear panel regression model (OLS) and bank specific factors such as size, profitability, growth rate, taxation and business risk (measured using 3 financial market and economic variables (stock market condition, economic conditions and inflation) as variables influencing capital structure. The banks were divided into 3 groups based on market capitalization to find out the specific relationship and characteristics of each group with its bank leverage. The result shows that a Vietnamese bank size positively affects leverage which means that the larger the bank the more the debt it incurred. Stock market and economic conditions also have a negative effect on bank capital structure implying that in good market and economic conditions, banks lessen their debt load. Profitability further has significant negative impact on large bank leverage i.e. large Vietnamese banks prefer using internal source of financing, while growth rate shows a negative impact on small bank group assuming that small Vietnamese banks mostly use their profit for their investment rather borrowing from external sources.

In Nigeria, there is paucity of studies on the factors influencing the capital structure of banks. Aremu et al (2013) studied the determinants of capital structure in the Nigeria banking sector between 2006 and 2010, using a sample of 5 banks. Employing Pooled Ordinary Least Squares, the result showed that the main factors which influenced the leverage of the banking industry were bank size, dividend payout, profitability, tangible asset, growth, business risk and tax charge.

Further, Iwarere and Akinyemi (2010) employed survey using questionnaires administered to 25 bank managers in Southwest Nigeria in examining the factors considered by bank managers in choosing appropriate financing mix in the Nigeria Banking industry. It was found that credit rating, volatility of earnings; cash flow, financial distress, transaction costs, and financial flexibility are the important factors in choosing appropriate amount of debt for banks. Conversely, in making equity issues, the determinants are: how to fund a major expansion, growth opportunity, profitability, issuing costs, and tax economies associated with debt financing per share. On the basis of the findings, it was recommended that banks should adopt an appropriate mix of fund, reduce debt issue and invest in more liquid assets through reduction in tangible assets.

FACTORS AFFECTING CAPITAL STRUCTURE

Various factors affect firms' capital structures. These factors vary from one firm to another, and even between firms in similar industries or sectors. Some factors impacting on firms' capital structures are discussed below:

FIRM SIZE: This refers to how big the firm is in quantifiable terms. The bigger the firm the more external

funds its uses to finance its operations. This is because larger firms have lower variance of earnings and can take on more debt or increase leverage since their profits are high enough to service their debt. Consequently, larger firms are highly leveraged and leverage ratio increases with firm size (Nyamora, 2012; Thain, 2012). The positive relationship of firm size with capital structure is not only consistent with the Trade-off theory but also supported by a number of studies such as Amidu, (2007), Aremu et al (2013), Shibru (2012), and Nyamora (2012).

AGE: This refers to the period of existence of a firm. Older firms are expected to have higher capacity to maintain customer base and fidelity, explore new sectors and markets (diversification strategy) and initiate appropriate measures in the event of contingencies (Nyamora 2012). Hence age should be positively related to debt since older firms have higher quality (Hall, Hutchinson and Michaelas 2004). However, Esperanca, Gama and Gulamhussen (2003) argue a negative relationship between age and capital structure.

PROFITABILITY: This refers to a firm's ability to create wealth. Thus, banks seeking to achieve profitability will be those creating value for the economy through their financial intermediation activities. A firm's profitability may alternatively be referred to as a firm's performance which is one major reason for its existence. A firm's performance has been identified as one of the important factors influencing capital structure. Cui (2011), Fauziah (2015) and Anarfo (2015) in their empirical studies found a negative relationship between banks' profitability and capital structure. This is consistent with the pecking order theory that profitable firms prefer internal funding to external funding and they also tend to use low debt.

RISK: This refers to the variability of return attributable to factors that affect banks activities termed as the systematic risk. According to Nyamora (2012) a negative relationship exists between risk and long-term debt. This is consistent with the pecking order theory which shows that high risk firms normally use less debt.

FIRM GROWTH: Theoretically, pecking order theory shows a positive relationship between growth and capital structure. Firms with high growth needs internal funding which is not sufficient and then they need external funds (Shibru 2012; Fauziah 2015). A growing firm places a greater demand on the internally generated funds. Thus, banks with relatively high growth rate will tend to first look at their accumulated reserves before other sources to finance their growth (Nyamora 2012).

TANGIBILITY: This refers to the firm having significant tangible assets. According to Agency Cost Theory, tangible assets and capital structure are positively related because firms which have more fixed asset can borrow against their fixed asset (Nyamora 2012). Shibru (2012) however confirmed a negative relationship between them.

LIQUIDITY: This is when a firm has assets that can easily be converted into cash at short notice. Liquidity is opined to relate with capital structure either positively or negatively. A positive relationship is consistent with trade off theory, as firms with more current assets which can easily be converted to cash tends to make use of more debt (external borrowing) because of their ability in paying off their liabilities when due.

Shibru (2012) however confirmed a negative relationship consistent with the pecking order theory which argues that companies with more liquidity will decrease external financing, relying on their internal funds.

MACRO-ECONOMIC FACTORS: are environmental factors such as GDP growth rate, interest rate, inflation rate etc. impacting either positively or negatively on the operations of the firms. These factors have been argued to be important determinants of capital structure. For instance, interest rate may affect their ability to acquire funds from one source of finance compared to another.

SUMMARY OF LITERATURE REVIEW AND RESEARCH GAP

It is evident from the literature reviewed above that studies on the determinants of capital structure have been focused on non-financial firms. However, the diversity of capital structure theories may be argued to be linked to peculiar characteristics of firms under study as these will drive the preference or otherwise of firms for their sources of financing especially with regards to debt and equity. The few studies on the determinants of capital structure on banks are done on a panel of developing countries which may cover individual peculiar country characteristics of the sample of firms under study. In Nigeria in particular, Iwarere and Akinyemi (2010) and Aremu et al (2013) are the only studies to the best of the researcher’s knowledge to have been conducted on banks in Nigeria. Iwarere and Akinyemi (2010) employed survey in their study and based their findings on the perceptions of bank managers instead of factual data. This approach does not allow for credible findings.

On the other hand, Aremu et al (2013), using pooled ordinary least squares in their analysis relied on data on only five banks selected without any justification and also for a short period of five years. Again this raises some doubts on their findings as the total observations of 25 used for data analysis in the study may be too small to make credible empirical predictions. Besides, pooled Ordinary least squares in econometrics which they used, is argued as weak for use in panel data studies as it does not control for un-observed differences across a group of objects overtime. Hence, it is popularly recommended in panel data studies that alternative panel data methods such as fixed effects be used for data analysis because fixed effects regression gives stronger econometric results on account that they control for unobserved object-specific differences across groups of objects over time.

The above flaws observed in the methodologies of Iwarere and Akinyemi (2010) and Aremu et al (2013) therefore underscores the need for a more credible study, the gap this study attempts to fill. In addition, his study makes a significant contribution to knowledge as it differs from the previous studies on capital structure of banks in Nigeria in terms of justifying the basis for selecting the sample of banks employed, its expanded scope and the method of panel data analysis.

III. METHODOLOGY

POPULATION, SAMPLE AND DATA

The population consists of the 24 deposit money banks which were in operation during the study period. However, the sample consists of all such banks listed on the floor of the Nigeria stock exchange which survived the 2004-5 bank consolidation exercise (were not the product of either a merger or an acquisition that took place during that exercise) and had complete data over the study period, 2008 to 2016, Based on these criteria, convenience sampling technique was used to select 10 banks for the study namely, First bank, Diamond bank, Fidelity bank, Union bank, Zenith bank, Wema bank, United Bank for Africa, Sterling bank, Guarantee Trust bank and Unity bank. Secondary data for the study period were sourced from the Annual reports and financial statements of the sampled deposit money bank

MODEL SPECIFICATION

The model adopted for this study is a modification of that of Aremu et al (2013) which is founded on the Agency theory of Jensen and Meckling (1976) and is as presented below:

$$\text{Leverage} = f(\text{SIZE}, \text{PROF}, \text{TANG}, \text{DIVPAY}, \text{RISK}, \text{GROW}, \text{TAX}) \dots \dots \dots (1)$$

Where, SIZE= Bank Size, PROF= Profitability, TANG= Tangibility, DIVPAY= Dividend Payout, RISK= Bank Risk, GROW= Growth, TAX= Bank Tax.

The above model of Aremu et al (2013) is modified to give the model for this study functionally specified below:

$$\text{TDTA} = f(\text{Profitability}, \text{Size}, \text{Growth}, \text{Risk}, \text{Tangibility}, \text{Liquidity}) \dots \dots \dots (2)$$

The econometric model of equation (2) is specified as:

$$\text{TDTA}_{it} = \alpha_0 + \alpha_1 \text{PROF}_{it} + \alpha_2 \text{BSIZE}_{it} + \alpha_3 \text{GR}_{it} + \alpha_4 \text{BR}_{it} + \alpha_5 \text{Tang}_{it} + \alpha_6 \text{LIQ}_{it} + \varepsilon_t \dots \dots \dots (3)$$

Where: TDTA = Total Debt to Total Assets, LIQ = Liquidity, ε=Error Term and other variables as already defined above

From equation (3) above, α_0 is the intercept indicating the value of the dependent variable, given that all the independent variables are held constant. The coefficients $\alpha_1 \dots \alpha_6$ corresponding to the respective independent variables of the model measure the marginal effects of each of the respective independent variables on bank capital structure. Further, the subscript i (=1, 2, 3, ..., 10) refer to individual selected Deposit Money Banks constituting the sample of observations for this study. The subscript t (=1, 2, 3, ..., 9) refers to the time period from 2008 to 2016.

The choice of the determinants employed in the above specified model, are largely from the reviewed studies on capital structure determinants and their potency in affecting capital structure. Further the a priori expectations of the above model, is as follows:

$$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_5, \alpha_6 > 0, \alpha_4 < 0$$

VARIABLES MEASUREMENTS

Capital Structure - Total debt to total assets.

Profitability – Return on assets i. e. Net Income to total assets.

Size – Natural logarithm of total assets

Growth – Total assets growth rate

Risk – Standard deviation of Return on assets

Tangibility – Ratio of fixed assets to total assets

Liquidity – Ratio of current assets to total deposits

IV. RESULTS AND INTERPRETATION

Descriptive statistics	TDTA	PROF	BSIZE	BR	GR	TANG	LIQ
Mean	3.741	7.368	28.891	16.771	13.016	2.598	15.803
Median	3.715	4.518	27.615	14.933	13.50	2.23	14.18
Maximum	5.17	18.80	67.76	21.283	18.00	5.75	30.57
Minimum	2.360	1.41	7.19	13.077	6.00	1.35	10.11
Std. Dev.	0.697	5.442	14.039	2.859	2.772	1.206	5.057
Skewness	0.0424	0.768	0.697	0.215	-0.692	1.521	1.360
Kurtosis	2.249	2.003	3.221	1.227	3.607	4.724	4.166
Jarque-Bera	1.189	4.471	4.151	12.488	3.047	25.463	18.257
Probability	0.552	0.107	0.126	0.00194	0.218	0.000003	0.000109
Observations	90	90	90	90	90	90	90

Source: Authors' computation using Eviews (2019)

Table 4.1: Descriptive Statistics of the Variables

The descriptive statistics for TDTA, PROF, SIZE, BR, GR, TANG, and LIQ, are shown in Table 1. TDTA has a mean of 3.741 which is large relative to the maximum value of 5.17. Profitability has a mean of 7.368 which is low, relative to the maximum value of 18.80. Size with a mean of 28.89 is low relative to its maximum of 67.76; the mean of liquidity of 15.80 is about half its maximum value of 30.57. Growth, with a mean of 13.02 relative to its maximum value of 18.0 suggests that deposit money banks experienced high growth and indicates possible positive prospects for them. However tangibility is relatively low on average at 2.6, while risk is relatively high on average at 16.77 given their maximum values of 5.75 and 21.28 respectively.. The standard deviations values of all the variables revealed relative dispersion of the variables from their mean values.

Apart from the growth variable, the distribution of all the variables around their mean values are positively skewed (long right tail) because their skewness values are greater than zero. The Kurtosis value of the variables, TDTA, PROF and BR are all below three (3) indicating that the distributions are flat (platykurtic) relative to the normal, while the kurtosis of the variables, SIZE, GR, TANG and LIQ are all greater than 3 indicating that the distributions are peaked (leptokurtic) relative to the normal.

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f. Prob.
Cross-section random		46.238029	6 0.0037

Source: Authors' Computation using Eviews (2019)

Table 4.2: Hausman Test Results

From table 4.2, the Chi-square statistic of the Hausman test is 46.238029 and it is statistically significant at the 1% level. Therefore, the null hypothesis is rejected, implying that the Random Effects regression model is not appropriate for data analysis in this context. Thus, the Fixed effects regression model is employed in analyzing data in this study.

Table 4.3 presents the data on the cross-section random effects test comparisons resulting from the Hausman test procedure.

Variable	Fixed	Random	Var(Diff.)	Prob.
PROF	-0.107127	-0.000137	0.004510	0.0223
BSIZE	-0.060574	-0.045321	0.031003	0.0217
GR	0.971072	0.013609	0.032109	0.0349
BR	-0.140360	-0.000331	0.005216	0.0420
TANG	-0.418591	-0.007614	0.021000	0.0287
LIQ	0.483891	0.009354	0.004017	0.0165

Source: Authors' Computation using Eviews (2019)

Table 4.3: Cross-Section Random Effects Test Comparisons

However, since the Hausman test results indicated the choice of fixed effects panel data regression over random effects regression, the results of fixed effects regression are presented in Table 4.4

Dependent Variable: TDTA					
Method: Panel Least Squares					
Sample: 2008 2016					
Periods included: 9					
Cross-sections included: 10					
Total panel (unbalanced) observations: 88					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
C	1.794750	0386416	4.644609	0.0000	
PROF	-0.107127	0.054297	-1.972977	0.0445	
BSIZE	-0.060574	0.022922	-2.642649	0.0102	
GR	0.971072	0.264039	3.677751	0.0006	
BR	-0.140360	0.283598	-0.612643	0.0619	
TANG	-0.418591	0.148892	-2.811380	0.0072	
LIQ	0.483891	0.096828	4.997427	0.0000	
Effects Specification					
Cross Section fixed (dummy variables)					
R-squared	0.932547	Mean dependent var		3.740600	
Adjusted R-squared	0.908583	S.D. dependent var		0.697267	
S.E. of regression	0.436233	Akaike info criterion		1.255340	
Sum squared resid	8.753781	Schwarz criterion		1.408302	
Log likelihood	27.38350	Hannan-Quinn criter.		1.313589	
F-statistic	46.39540	Durbin-Watson stat		1.860725	
Prob(F-statistic)	0.000000				

Source: Authors' computation using Eviews (2019)

Table 4.4: Panel Data Fixed Effects Regression Results

INTERPRETATION OF RESULTS

From table 4.4, R-Squared of 0.932547 indicates that the independent variables – Profitability (PROF), Bank size (BSIZE), Growth (GR), Bank risk (BR), Tangibility (TANG) and Liquidity (LIQ) explain approximately 93.25% of changes

in the dependent variable (TDTA). Thus, the estimated model fits the data well. A further diagnostic parameter of the model is the Durbin-Watson Statistic, which as observed from table 4.4 is approximately 1.86 indicative of no serial correlation in the model. Finally, the F-statistic of 46.39540, is statistically significant at the 1% level (P value =0.000000) indicating that the estimated model is adequate for prediction and policy formulation purposes. Therefore, the coefficients of the model can be interpreted to determine the factors that affect capital structure of the banks.

The constant (1.794750) is the value of capital structure (TDTA) when all independent variables in the model remain unchanged. The profitability coefficient of (-0.107127) which is statistically significant at the 5% level indicates that a unit increase in profitability results in a 0.107127 decrease in capital structure (TDTA). This highlights the significant contribution of profitability to capital structure of the banks. The result is consistent with the view that profitable banks usually have accumulated internal reserves, which helps them to rely less on external funds. Thus, the need for external debt finance may be less if investments are financed from accumulated reserves. This result is consistent with findings of Amidu (2007) and Shibru (2012), while contrary to arguments by Nyamora (2012) and Hina (2015)

With regards to Bank Size (BSIZE), the statistically significant coefficient of -0.060574 indicates that a unit increase in bank size will result in a 0.060574 unit decrease in capital structure. This finding regarding bank size suggests that the bigger the bank the lower the level of leverage, and so big banks do not rely much on debt. This argument is consistent with the study by Amidu (2007) and the pecking order theory, but contrary to arguments by Shibru (2012), Aremu et al (2013). Further, Bank Growth (GR) with a statistically significant coefficient of 0.971072 indicates that a one unit increase in Bank growth will result in a 0.971072 unit increase in capital structure. Growing banks place a greater demand on internally generated funds than external funds to finance their growth. The finding regarding bank growth is consistent with the finding by Nyamora (2012), but contrary to the finding by Shibru (2012).

The statistically insignificant coefficient of -0.140360 for Bank Risk revealed that it is not a significant determinant of capital structure. The negative sign of Bank risk however confirms that risky banks are expected to have lower capital structure which is consistent with pecking order theory and the study by Shibru (2012).

The statistically significant coefficient of Tangibility (-0.418591) means that a one unit increase in tangibility results in a 0.418591 unit decrease in capital structure. The finding as regards tangibility is consistent with the study by Shibru (2012). Finally, the highly statistical significant coefficient of Liquidity (LIQ) of 0.483891 indicates that a unit increase in liquidity results in a 0.483891 unit increase in capital structure. This reveals the significant importance of liquidity in the determination of capital structure of the banks. The finding as regards liquidity is however contrary to Hina (2015).

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY OF FINDINGS

The study aimed at determining the key factors that affect capital structure of listed deposit money banks in Nigeria. The findings show that profitability, size, growth, tangibility, liquidity are the significant factors affecting capital structure of listed deposit money banks in Nigeria. Several studies such as Anarfo (2015); Aremu et al (2013); Shibru, (2012); Tin and Daiz (2017) have also confirm the influence of the aforementioned variables on banks' capital structure

CONCLUSION

This study attempted to identify the factors influencing the capital structure of the listed deposit money banks in Nigeria. Using the Fixed Effects Panel Data Regression, the study revealed that profitability, size, growth, tangibility and liquidity are statistically significant in determining the capital structure of the banks. Risk was observed to have a negative but statistically insignificant effect on the banks' capital structure. It is based on these findings that the recommendations below were made.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- ✓ The Management of the deposit money banks should always consider the significant capital structure determinants (profitability, size, growth, liquidity, tangibility) in their capital structure decisions with a view to adopting optimum capital structure for operations
- ✓ The banks should strive to be highly profitable so that they can use their internally generated funds and rely less on external funding. This will ensure the stability and soundness of the banking system.

RECOMMENDATIONS FOR FURTHER STUDIES

The measurement of capital structure used in this study is total debt to total assets. Consequently, future researchers in this area could use alternative measurements of capital structure such as total deposits to total assets, total equity to total assets, total debt to total equity etc. to determine their determinants. In addition, explanatory variables other than the ones used in this study could be introduced into the model to investigate whether they also affect the capital structure of the banks. Finally, the scope of the study could be widened to cover more banks and longer time period.

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