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IMPACT OF CAPITAL STRUCTURE ON STOCK RETURNS OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT
This paper examined the impact of capital structure on stock returns of deposit money banks in Nigeria from 2010Q1 to 2021Q4. The study utilized secondary data sourced from their audited financial statement and the Central Bank of Nigeria (CBN) Statistical Bulletin. Firm size was used as index of stock returns, measured using natural logarithm of total asset and the impact of liquidity, leverage and profitability (measured using return on asset) examined on it. The econometric methods employed in analysing the data were unit root, cointegration and autoregressive distributed lag (ARDL) method. The study confirmed long run relationship between capital structure proxies and stock returns, indicating that they are bound by long term equilibrium relationship. The autoregressive distributed lag (ARDL) result reveals a negative and insignificant relationship between leverage and stock returns. The study found that, liquidity had negative and insignificant effect on stock returns. In addition, the result reveals that profitability had negative and insignificant effect on stock returns. The study concludes that, the capital structure of deposit money banks (DMBs) does not affect their stock returns. The study recommends that, banks should consider using more debt in financing their daily operations in order to reduce cost of operation and leverage on the tax advantage.
KEYWORDS: *Stock Returns, Leverage, Liquidity, Profitability, Firm Size.*

1. INTRODUCTION

The achievement of economic growth and development has been the pursuit of organized societies or country all over the globe and the financial market through the capital market segment plays a cardinal role in the process of output growth and development. These it does through the intermediation role as it mobilizes long term funds from the surplus units of the economy for future investment. In the context of the Nigeria State, the stock market has been a veritable medium for fund acquisition by the private sector and a financing source for government social overhead capital, thus becoming an accelerator in achieving potential growth or full employment output.

Market capitalization, which is an index of business valuation, as a proportion of Nigeria's gross domestic product at current price has increased steadily from 18.06 percent in 2015 to 18.58 percent in 2017, signaling high market valuation of entities and their activities and increasing stock returns (CBN, 2017). As reported by CBN (2019) Statistical bulletin, the All Share Index which informs on the trend of stock prices of quoted firms on the Nigeria Stock Exchange (NSE) and return to investors moved from 65,652.38 index points in February of 2008 to 26,735.95 index points in December 2019 reflecting possible fluctuations in the stock market.

Fluctuations in terms of increases or decreases in stock prices have consequences on the Nigerian economy, as they work their way through the money market. An upward movement in stock prices engineer investment, causing demand for credits to increase, with the end impact being rising interest rates. This poses a potential danger to the Nigerian economy as it is likely to fuel inflationary tendencies in the country, thus becoming a challenge in monetary policy formulation and a clog in the macroeconomic objective of price stability (Vincent & Bamiro, 2013).

In corporate finance, capital structure has occupied the space of discuss in recent times. This is because the financial performance of an entity depends on the decision of those at the helms of affairs on the composition of their capital

structure. This has made it a critical component of the decision of an entity's management board. As stated by Alexendru, Genu & Romanescu (2008), the concept of capital structure deals precisely with the funding of a firm's investment or activities using either a blend of equity and debt. Ebaid (2011) reveals that financial leverage of firms in Sri Lanka has positive influence on their growth. This finding corroborates the works of Goldstein, Nengjiu & Hayne (2009) and Mand, Sharma & Mathur (2012). With returns on stock having significant influence on the outlook of the Nigerian economy, there is need to ascertain the factors that affect changes in the stock return. The trade-off theory posit that firms use the blend of equity and debt to finance their daily operation and the choice of either could have potential effect on net profit of the firm, the market valuation of the firm and the performance of the Nigerian economy. Thus, this study examined the impact of capital structure on the stock return of deposit money banks in Nigeria.

1.1 Aim and Objectives

The aim of this research was to examine the impact of capital structure and on stock returns. However, its specific objectives are to:

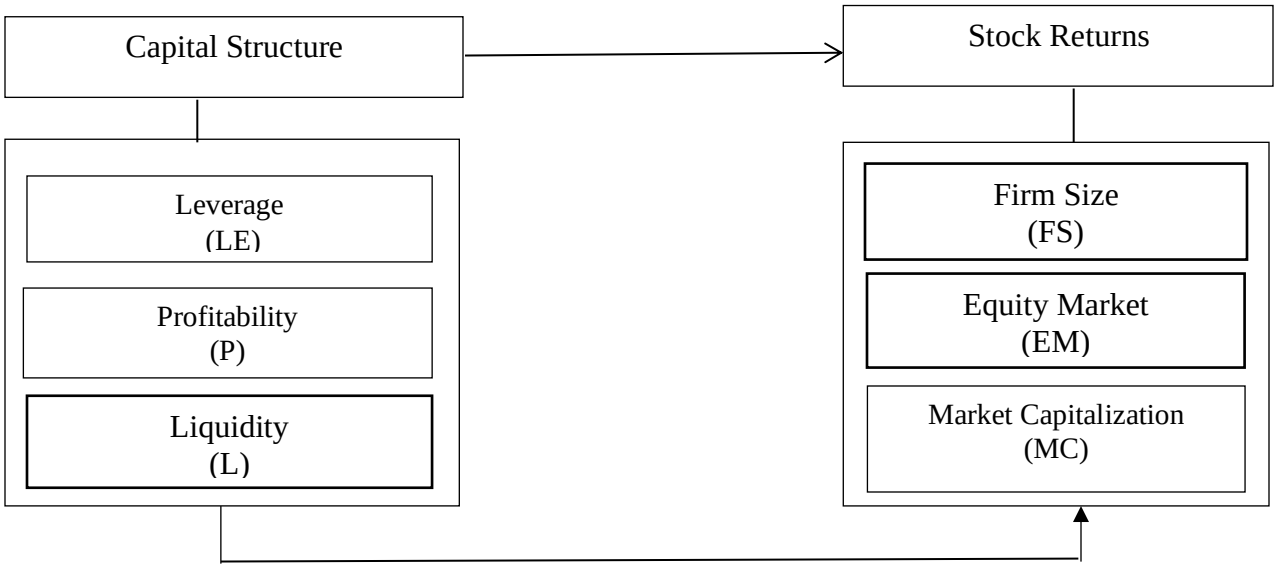
i. Evaluate the impact of leverage on stock returns of deposit money banks in Nigeria.
ii. Investigate the impact of profitability on stock returns of deposit money banks in Nigeria.
iii. Unravel the impact of liquidity on stock returns of deposit money banks in Nigeria.

Research Questions

Based on the specific objectives, the following questions were crucial in carrying out this research:

i. What is the impact of leverage on stock returns of deposit money banks in Nigeria?
ii. Is there any impact of profitability on stock returns of deposit money banks in Nigeria?
iii. What is the level of impact liquidity has on stock returns of deposit money banks in Nigeria?

Conceptual Framework



Source: Research Desk, 2023; as adopted from Nengjiu & Hayne, 2009; Mand, Sharma & Mathur, 2012.

Fig 1.1: Conceptual Framework of the Research

2. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Efficient Market Theory

The efficient market theory credited to Samuelson (1965) and Fama (1965) argues that the prices of stocks reflect the fundamentals of the companies. The theory suggest that the prices of stocks cannot be predicted using historical information as prices of stocks adjust quickly to new information. Going by this, a market is said to be efficient if changes in prices of assets cannot be predicted using algorithms. According to Easkins and Mishkin (2012), this means that extraordinary windfall gains cannot be made in such market.

2.1.2 Modigliani and Miller Theorem

This theorem made by Modigliani and Miller (1958) has been considered as one of the leading theorems in the capital structure argument. They explained that, where the economic system is that of private enterprise, transaction cost does not exist, investors' expectations are the same and taxes are not imposed, the mix of debt and equity is not to be considered when ascertaining the value of a firm. This conclusion was arrived when they considered two firms and applied the arbitrage process when determining their value. They maintained that, the operations of the company are what determines their value (Wokabi and Aloy, 2016).

2.1.3 The Trade-off Theory

The theory states that, alternative leverage options are weighed by a firm's decision makers by analyzing their costs and benefits. The leverage option chosen, the theory states, should be one that ensures equality between marginal benefits and marginal costs. The first version of this theory was as a result of the controversy generated by the M & M theorem. Different from the M & M theorem, the theory factored in taxes and considered it to be part of benefit due to its tax-shield ability. Since the firm's objective function is linear, and there is no offsetting cost of debt, this implied 10% debt financing. There are several aspects of Myers' definition of the trade-off merit discussion (Myers, 2010). The Static trade-off theory argues that an optimal blend of debt and equity exist that ensures the value of the company maximized (Ghazouani, 2013). This theory ignores the role time plays in altering this mix. On the other hand, the Dynamic trade-off theory considers time and acknowledge how adjustment costs and expectation ensures that there is no single non-changing proportion of debt to equity.

2.2 Conceptual Review

2.2.1 Capital Structure

The concept of capital structure explains the relationship between shareholders' funds and borrowed funds that adds up to a company's financial mix. According to Taofik and Omosola (2013), capital structure could be defined as a financial strategy that utilize additional borrowed funds (fixed-cost debt instrument) in order to maximize the return-on-investment (ROI). It could also be defined as the utilization of a third party's funds to finance a company that might lead to an improvement in operating profit and taxes (Barakat, 2014).

Capital structure in the real sense of it, is measure using debt ratios. The debt ratios compares the total debt with the total assets owned by the company. When examining capital structure, it is said that a low ratio suggests that a company depends less on debt while a high percentage indicates that it relies more on debt finance (Abhor, 2005).

2.2.2 Stock Returns

Generally, stock return can be used to predict output and investment given the idea that they are forward-looking variable which demonstrates future discount rates and cash flow expectations. According to Mugambi and Okech (2016), stock return could be defined as the gain or loss of the value of a share during a designated period of time, usually quoted as a percentage. It consists of a capital gain as well as any income received by the investor from the stock. In addition, Wang (2012) argued that stock return could as well serve as an index to investors or government in making their investment decisions. In doing the above, investors of different financial capacity are able to invest in stock as long as they are able to get a return that is higher than their cost of capital. It is important to mention here that stock returns are usually measured using the stock market indexing. The actual performance of a stock is demonstrated by the fluctuations in the stock price (Taofik and Omosola, 2013).

2.3 Empirical Review

Al Salamat and Mustafa (2016) investigated the impact of capital structure on stock return, using unbalanced data of all industrial listed firms on the Amman Stock Exchange, Jordan. The study employed stock return as dependent variable and capital structure as independent variable, controlling for the effect of growth, firm's size, earnings per share, liquidity and profitability (measured using return on asset). The method employed in analysing the data was the random effect method. The random effect result revealed significant negative relationship between capital structure and stock return. Also, return on assets and stock liquidity had significant positive impact on stock return.

Chandra, Junaedi, Wijaya, Suharti, Mimelientesa and Ng (2019) work was in two parts. First, they looked at the factors influencing profitability, capital structure and stock returns of 64 companies listed in Kompas 100, Indonesia. The second objective was examining the relationship between capital structure, profitability and stock returns. The data used were sourced from balance sheet and income statements of the firms covering the period from 2010 to 2016. The multiple regression result revealed that only profitability affected stock returns. Regarding capital structure, the report firm growth as a significant determinant. Firm size, volatility, uniqueness and growth opportunity were identified as determinants of profitability.

Adesina, Nwidobie and Adesina (2015) used data of ten (10) Nigerian deposit money banks listed on the Nigeria stock exchange extending from 2005 to 2012 to examine the financial performance effect of capital structure. Firm performance was measured using profit before tax and capital structure by bank equity finance and debt finance. They identified equity financing as significantly increasing performance of deposit money banks, while debt finance had insignificant positive influence on performance of DMBs.

Uremadu and Onyekachi (2018), using the ordinary least square (OLS) method, investigated if capital structure affects corporate performance in Nigeria. The study focused on firms in the consumer goods sector of the Nigerian economy, sampling four (4) corporate firms listed on the Nigerian stock exchange. The period focused was between 2002 and 2016. On estimating the multiple regression model using the ordinary least square method, they noted that, capital structure had negative and insignificant effect on corporate performance. In the long run, they showed that both debt ratio to total asset and total debt ratio to equity had negative and insignificant impact on return on asset (the measure of corporate performance).

Ayuba, Bambale, Ibrahim and Sulaiman (2019) investigated the determinants of value of insurance companies in Nigeria using financial performance, capital structure and firm size. A total of 27 quoted insurance companies on the Nigerian stock exchange were sample, with data spanning six years from 2012 to 2017. Financial performance was measured using the metrics of return on asset, return on equity and return on capital employed, and short-term debt/total assets, long-term debt/total assets and total debt/total assets were used in measuring capital structure. The firm size was proxy using logarithm of total assets and Tobin's Q used to measure firms' value. The random effect estimator was used in estimating the model and result indicated that short term debt, firm size, return on assets had positive and significant effect on firm's value, while return on equity and long-term debt had negative and significant effect on firm's value. It was also noted that return on capital employed and firm age were not significant determinants of firm's value.

Ayange, Emmanuel, Rosemary, Ndudi and Samuel (2021) used panel dataset of 15 quoted firms on the Nigeria stock exchange to empirically assess if capital structure influences their performance. The study adopted Tobin's Q, return on equity and return on asset as measure of firm's performance and long-term debt to total asset, short term debt to total asset, total debt to total asset and debt equity ratio as proxies of capital structure. Firm size was used as control variable because of its effect on firm's profitability. The panel dataset was estimated using the least square dummy variable (LSDV) method. The fixed effect result revealed that total debt to total asset, long-term debt to total asset and short-term debt to total asset enhance performance of the manufacturing firms (measured using return on equity). Using Tobin's Q as measure, the variables identified as improving performance were short term debt to total asset, long term debt to total asset and debt equity ratio.

Ariyibi, Yunusa and Williams (2020) examined the impact of bank specific factors on the performance of deposit money banks in Nigeria from 2014 to 2018. Ten banks were selected for the study and performance of the banks was

measured using return on asset. The bank specific factors were asset quality, loan to deposit ratio, board size and capital adequacy. The relationship between the bank specific factors and return on asset was examined in a panel framework using the random effect model, following the outcome of the Hausman test. The random effect result revealed that the performance level of the banks in Nigeria depend positively and significantly on capital adequacy and negatively on asset quality.

Assfaw (2018) investigated the determinants of performance of private banks in Ethiopia from 2011 to 2017. Six (6) private commercial banks were selected for the study and data was obtained from the audited annual financial reports of the banks. Three models were estimated using return on equity, return on asset and net interest margin as dependent variables. The method employed in estimating the models was multiple linear regression method, correlation coefficient and descriptive statistics. The regression results revealed that capital adequacy, size of banks and management efficiency have positive and significant effect on performance of private banks in Ethiopia when measured using return on asset, return on equity and net interest margin. Liquidity management negatively affect financial performance of the banks when return on equity was used as index of performance.

Al-Homaidi, Almaqtari, Yahya and Khaled (2020) investigated the internal and external factors affecting the profitability of banks in India. Data of 37 commercial banks listed on Bombay stock exchange and spanning from 2008 to 2017 was used. Static model method such as pooled, fixed and random effects were used and the dynamic method of generalized method of moments was also used. The internal factors considered in the study were bank size, capital adequacy, asset quality, liquidity, deposits, assets management, operating efficiency, net interest margin and non-interest income. As opposed, the external factors included gross domestic product and inflation rate. The result of the study revealed that bank size, liquidity ratio, assets quality, net interest margin and assets management ratio were internal factors affecting the profitability of banks in India. GDP and inflation rate were found to have a significant negative impact on return on equity.

3. METHODOLOGY

This section provides the methodology employed in the inquest of the influence of capital structure on stock returns. It also lay out the model specification adopted, the type and source of data; method utilized in analyzing the sourced data; and the econometric tests conducted in the course of the investigation.

The study being a quantitative investigation adopted the Ex-post facto research method. As opined by Onwumere (2009), the Ex-post facto research design deals with events that have previously or hitherto occurred. The preference of this research design stems from the lack of control the research exercises over the predictor variables and the independent primarily because such distributions have already occurred. The choice of this method is also due to the leverage it allows for retrospective study of the predictor variables and it causal effect on the explained variable.

3.1 Model Specification

The classical linear regression model (CLRM) for this study is affixed on the trade-off theory which showcases the essentiality of debt and equity in the financing of the day-to-day operations of a firm. Crafted from the empirical studies of Ayange, Emmanuel, Rosemary, Ndudi and Samuel (2021) with adjustment made, the functional model for this study is expressed thus;

$$FIRMZ = f(LEV, LIQ, ROA) \qquad (1)$$

Re-stated in econometric form, equation 1 becomes:

$$FIRMZ_t = \alpha_0 + \alpha_1 LEV_t + \alpha_2 lnLIQ_t + \alpha_3 ROA_t + \varepsilon_t \qquad (2)$$

In the autoregressive distributed lag (ARDL) framework, which the study employed in investigating the relationship between capital structure and stock returns, equation 2 is specified as:

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$$\Delta FIRMZ_t = \gamma_0 + \sum_{j=1}^{p} \varphi_1 \Delta FIRMZ_{t-j} + \sum_{j=0}^{q} \varphi_2 \Delta LEV_{t-j} + \sum_{j=0}^{q} \varphi_3 \Delta lnLIQ_{t-j} + \sum_{j=0}^{q} \varphi_4 \Delta ROA_{t-j} + \delta_1 FIRMZ_{t-1} + \delta_2 LEV_{t-1} + \delta_3 lnLIQ_{t-1} + \delta_4 ROA_{t-1} + \epsilon_t \quad (3)$$

Where;
$FIRMZ_t$ = firm size (measured using logarithm of total asset value of deposit money banks (DMBs) in time t;
LEV_t = leverage in time t, measured using ratio of equity to total asset. An increase in this ratio suggest less leverage is employed by DMBs and vice-versa.
ROA_t = profitability of DMBs, measured using return on asset.
φ_1 - φ_4 are short run estimates; δ_1 - δ_4 are long run parameters.
It is expected from theory that, $\alpha_1 < 0$; α_2 and $\alpha_3 > 0$.

3.2 Data and Estimation Method
This study relied on secondary data sourced from the statistical bulletin of the Central Bank of Nigeria and annual financial statement of deposit money banks (DMBs) covering a time horizon of forty-eight (48) quarters from 2010Q1 to 2021Q4. The data was analyzed using the autoregressive distributed lag (ARDL) method. To ensure the achievement of the objectives of this study, certain secondary order tests and diagnostic tests were conducted such as: the unit root test, co-integration test, normal distribution test, serial correlation test, heteroscedasticity test, and stability test.

3.3 Unit Root Test
Annual variables or variables that flow through time usually possess the attributes of inherent shocks and lack of stability in them and for the avoidance of a spurious regression whereby a non-stationary variable is regressed on another or multivariate stationary variables, it is imperative to known for certain the stationarity of the variables. To achieve this, a unit root test was carried out and the study favoured the Augmented Dickey-Fuller (ADF) approach to stationarity test and determination of the order of integration of the variables that are captured in the model of the study.
The ADF model is sated as:

$$Q_t = m_0 + m_1 Q_{t-1} \sum_{i=1}^{p} b_i \Delta Q_{t-i} + w_t \quad (4)$$

Where: Q_t = model variables

m_1 and b_i = estimates of the variables

p = lag length

Δ = First difference notation

w_t = disturbance term

If b = 1, then Q is a non-stationary series.

The stationarity or non-stationarity of a series is validated by comparing the augmented Dickey-Fuller (ADF) statistical with the corresponding critical value. The null hypothesis of unit root is rejected when the ADF statistic falls below the critical value at 5% level of significance or when the P-value is below the 0.05 level of significance.

3.4 Cointegration Test

The co-integration test was carried out to verify whether the variables under examination move together over time or if there exists long-run relationship among the variables. A core prerequisite for the choice of a cointegration test approach is the determination of the order of integration of the variables. Following the confirmation that all the variables under investigation are integrated of order one I(1) and I(0), the study adopted the bound test as prescribed by Pesaran, et al., (2001).

4. RESULTS AND DISCUSSIONS

4.1 Descriptive Analyses

Table 1: Descriptive Statistics of Variables

	ASSET	LEV	LIQ	ROA
Mean	29,462,715	11.7736	258.0579	1.7442
Median	27,221,202	11.4285	236.4980	1.7730
Maximum	56,617,428	14.7628	822.2800	2.4304
Minimum	10,651,618	9.2246	59.5760	0.1217
Std. Dev	13480376	1.3683	156.9625	0.4131
Skewness	0.2805	0.3674	1.2076	-1.3385
Kurtosis	1.9372	2.3662	4.9332	6.9808
Jarque-Bera	2.8884	1.8836	19.1420	46.0279
Prob.	0.2359	0.3899	0.0000	0.0000
Observation	48	48	48	48

Source: Author's computation (2023)

Before embarking on the estimation of the specified model, the study carried out descriptive analysis of the employed variables. The summary statistics covered total assets of deposit money banks (ASSET), leverage (LEV), liquidity (LIQ) and profitability of deposit money banks (ROA). Table 1 which conveys the descriptive statistics for each variable reveals that over the 48 quarters asset of DMBs averaged N29,462,715 million, with a median of N27,221,202 million. From 2010Q1 to 2021Q4, assets of DMBs ranged from N10,651,618 million to N56,617,428 million. During the period, the average leverage was 11.7736 percent and the leverage during the survey period fluctuated between 9.2246% and 14.7628%. Every quarter, about N258.0579 billion liquidity was in the system, and these banks' liquidity ranged from N59.5760 billion to N822.2800 billion. The minimum and maximum profitability level was 0.1217 percent and 2.4304 percent. Over the course of the survey period, profitability of DMBs averaged 1.7442 percent.

The result of the descriptive statistics reveals assets of DMB, DMBs liquidity in the system and leverage of DMBs to be more dispersed, informed by the computed standard deviations of 13480376, 156.9625 and 1.3683 respectively. This suggests fluctuations in the asset, liquidity and leverage of deposit money banks over the study period. Table 1 reveals mild volatility in profitability of deposit money banks given the standard deviation value of 0.4131. The kurtosis statistics revealed that two employed variables have excessive kurtosis as their kurtosis values are greater than 3. Specifically, banking system liquidity and profitability are leptokurtic as their calculated kurtosis values significantly exceed 3. The study observed that assets and leverage of DMBs are platykurtic with a calculated kurtosis of 1.9372 and 2.3662, which are less than 3.

The skewness revealed that the distribution of assets, leverage and banking system liquidity are skewed to the right. It implies that there has been increase in the asset, leverage and banking system liquidity. Profitability has declined over the period given that the distribution is skewed to the left. Table 1 reveals that only assets and leverage of DMBs have normal distribution as the study failed to reject the null hypothesis that the series are normally distributed.

4.2 Unit Root Test

The result of the augmented Dickey-Fuller test of stationarity at level and first difference are presented in Table 2.

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Table 2: Unit Roots Result

Variable	Augmented Dickey-Fuller (ADF)			I(d)
	Level	1st Diff	5% Critical Value	
$lnASSET_t$	-0.9601	-7.2233***	-2.9251	I(1)
$lnLEV_t$	-2.3690	-7.5841***	-2.9251	I(1)
$lnLIQ_t$	-3.2524**	-	-2.9251	I(0)
ROA_t	-4.2287***	-	-2.9314	I(0)

Note: *, **, and *** denote significance at 10%, 5% and 1%, respectively
Source: Authors' compilation (2023)

The table above shows the outcome of the Augmented Dickey-Fuller test conducted to ascertain the order of integration of the variables captured in the model. The result documented in Table 2 revealed that banking system liquidity and profitability were stationary at level as its ADF test statistic was above the corresponding critical value at 5 per cent level of significance. Other variables such as assets and leverage of DMBs became stable only after differencing one. Conclusively, the variables in the adopted model for this investigate are of order one I(1) and zero I(0), as none is of order two I(2), thus fulfilling the condition for the use of the ARDL/Bound method of estimation to examine the short run dynamics of the variables and the long run relationship.

4.3 Co-integration Test

The need to confirm if there is cointegrating relationship between capital structure (proxy by leverage, liquidity and profitability) and stock returns (proxy by assets of DMBs) is due to evidence from the unit root test indicating that some of the employed variables are non-stationary but integrated of order one, I(1). Without evidence of cointegration among the series, then the regression result obtained in understanding the effect of capital structure on stock returns is no longer spurious. The cointegration test was based on the bound test. The results of the test are presented in Table 3.

Table 3: Bounds Test Co-Integration Result based on F-statistics

Significant Level	I(0) Bound	I(1) Bound	Value
10%	2.37	3.2	F-Stats = 16.88196***
5%	2.79	3.67	k = 3
2.5%	3.15	4.08	
1%	3.65	4.66	

Note: *K* denotes regressors in the model. (Null Hypothesis: Series are not cointegrated). *, ** and *** denote significance at 10%, 5% and 1% level, respectively.
Source: Author's computation (2023)

Table 3 gives the summary of the bound test of co-integration. As advanced by Pesaran, et al., (2001), the study failed to accept the null hypothesis of no long run association between considered variables in a situation whereby the calculated F-statistics is greater than the upper bound value and vice versa. As provided by Table 3, the calculated F-statistics of 16.88196 is greater than the upper bound value of 3.67 at 5 per cent level of significance, leading to the rejection of the null hypothesis of no long run relationship. Hence, the study resolved that stock returns, leverage, liquidity and profitability move together in the long run and that the short run and long run model can be estimated.

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Table 4: ARDL Long and Short Run Results

Dependent Variable: $FIRMZ_t$				
Panel I: Long Run Results				
Variable	***Coefficient***	***Std. Error***	***t − Stats***	***Prob.***
LEV_t	-0.2528*	0.1441	-1.7538	0.0882
$lnLIQ_t$	-0.5592	0.4368	-1.2802	0.2089
ROA_t	-1.6233	1.0308	-1.5747	0.1243
C	27.8411	4.9925	5.5765	0.0000
Panel II: Short Run Results				
Variable	***Coefficient***	***Std. Error***	***t − Stats***	***Prob.***
$D(lnASSET_{t-1})$	-0.1977*	0.1141	-1.7325	0.0920
$D(lnASSET_{t-2})$	-0.4852***	0.1123	-4.3180	0.0001
$D(LEV_t)$	-0.0553**	0.0058	-9.4062	0.0000
$D(LEV_{t-1})$	0.0135	0.0089	1.5233	0.1367
$D(LEV_{t-2})$	-0.0242***	0.0072	-3.3377	0.0020
$D(lnLIQ_t)$	-0.0165*	0.0081	-2.0257	0.0505
$D(ROA_t)$	-0.0480***	0.0120	-4.0028	0.0003
ECM_{t-1}	-0.0295***	0.0030	-9.6982	0.0000
R^2 = 0.7661		Adjusted R^2 = 0.7361		

Note: *, ** and *** denote significance at 10%, 5% and 1% level.
Source: Author's computation (2023)

Part I of Table 4 shows the outcome of the long-run regression. Evidence from the results disclosed a negative relationship between leverage and stock returns, liquidity and stock returns, and profitability and stock returns. With the exception of liquidity and profitability, the negative impact of leverage on stock returns is significant, but only at 10 percent significance level. A one percent increase in leverage is expected to reduce asset value by 0.2528 percent. Similarly, an increase in liquidity will cause asset value to drop by negative 0.5592 percent. Further examination showed that, one percent increase in profitability reduces the asset value of DMBs by approximately 1.6233 percent in the long run.

As deduced from part II of Table 4, 76 percent fluctuation in the explained variable (asset) is accounted for jointly by leverage, liquidity and profitability, with the residual of 24 percent accounted for by variables not considered in the model but captured by the stochastic term. The result above disclosed that, lag 2 of asset exert a negative and significant impact on current asset value. Current and lag 2 of leverage impacted on asset value negatively, with their impact significant, causing decline in asset value by approximately 0.0553 and 0.0242 percent, respectively. Current level of liquidity exerted insignificant negative impact on current asset value, causing the value of asset to decline by 0.0165 percent whenever the banking system liquidity increases by 1 percent. On the other hand, profitability had significant negative contemporaneous effect on asset value, eroding the asset value of DMBs by 0.0480 percent when profitability soars by 1 percent. The coefficient of the lagged error correction term (ECT) of -0.0295 suggests that the convergence of the model to long run equilibrium occurs at a speed of 2 percent. This means that 2 percent of the disequilibrium that results from the fluctuation of the predictor variables in the short run will be dissipated before the next time period and the existing disequilibrium will be reduced in about 50 quarters or 12 years to achieve long run equilibrium. This attest to the slow equilibrating speed of the model as short run disequilibrium caused by variations in predictor variables will be dissipated in 12 years.

4.3 Diagnostic Test

The usage of a model for prediction is predicated on the model passing four basic diagnostic test which includes: normality test, serial correlation test, heteroscedasticity test and the stability test. The outcome of these test is presented in Table 5.

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Table 5: Model Diagnostic Result

Test	Null Hypothesis	Test Type	Test Stat.	Prob
Autocorrelation	Serially Independent	Breusch-Godfrey LM	5.8411	0.1196
Heteroscedasticity	Homoscedastic	Breusch-Pagan-Godfrey	3.2427	0.9539
Normality	Normally Distributed	Jarque-Bera	0.4992	0.7790
Linearity	No misspecification	Ramsey RESET	1.0380	0.3155
Stability	Stable Parameters	CUSUM		
Stability	Stable Parameters	CUSUM of Squares	-	-

Source: Authors' computation (2023)

In addition to the prior test conducted, the study also undertook diagnostic test on the error correction model (ECM) to ensure that the parameter estimates can be utilized for future prediction or forecast. The diagnostic tests conducted include the test of normality for which the Jarque-Bera statistics or test was used, serial correlation test employed to ascertain if correlation exist between the current and lagged estimates of the error term for which the Breusch-Godfrey LM test was favoured, the test for constant variance or homoskedasticity test for which the Breusch-Pagan-Godfrey test. From the table above, the error term is normally distributed as the probability value of the Jarque-Bera statistics exceeds the 5 percent level of significance. The Breusch-Godfrey LM test showed absence of serial correlation between current and lagged values of the error term, as the Breusch-Pagan-Godfrey test revealed the existence of constant variance, suggesting the presence of homoscedasticity.

The stability of the model was tested using the cumulative sum (CUSUM) and cumulative sum (CUSUM) of squares stability test. The plot of CUSUM and CUSM of squares displayed in figure 1 and 2 below shows that the statistics are within the 5 percent critical bounds implying that the estimated ARDL model is stable and devoid of any structural break.

The stability of the short run and long run coefficient of the model was ascertained using the cumulative sum (CUSUM) and CUSUM of Squares tests. The plot of both tests as presented in Figure 1 and 2 shows that the statistics are within the 5 percent critical bounds implying that the estimated ARDL model is stable and devoid of any structural break.

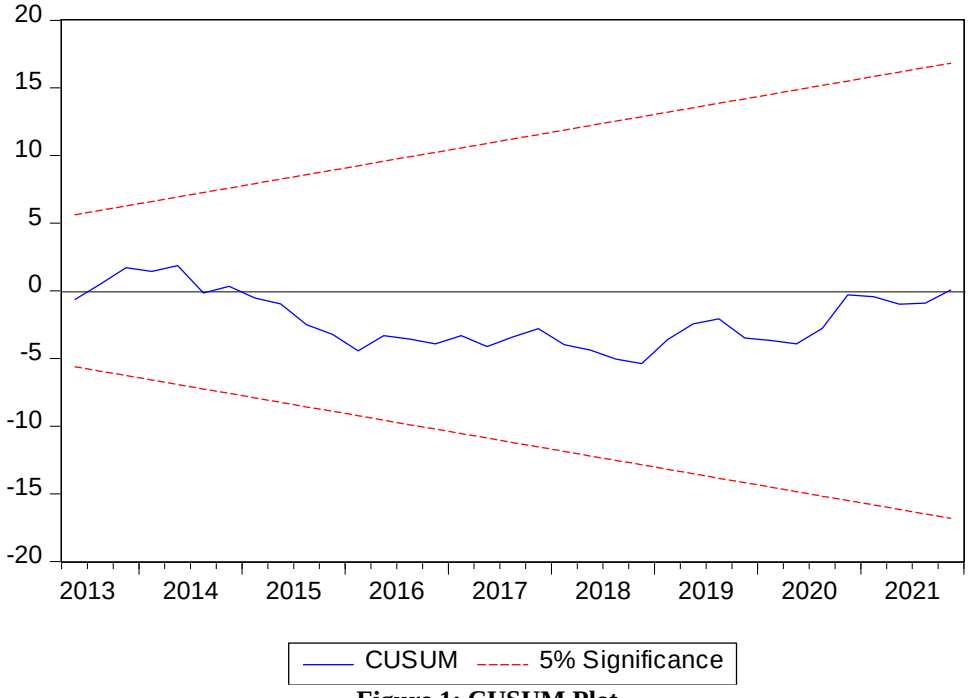

Figure 1: CUSUM Plot

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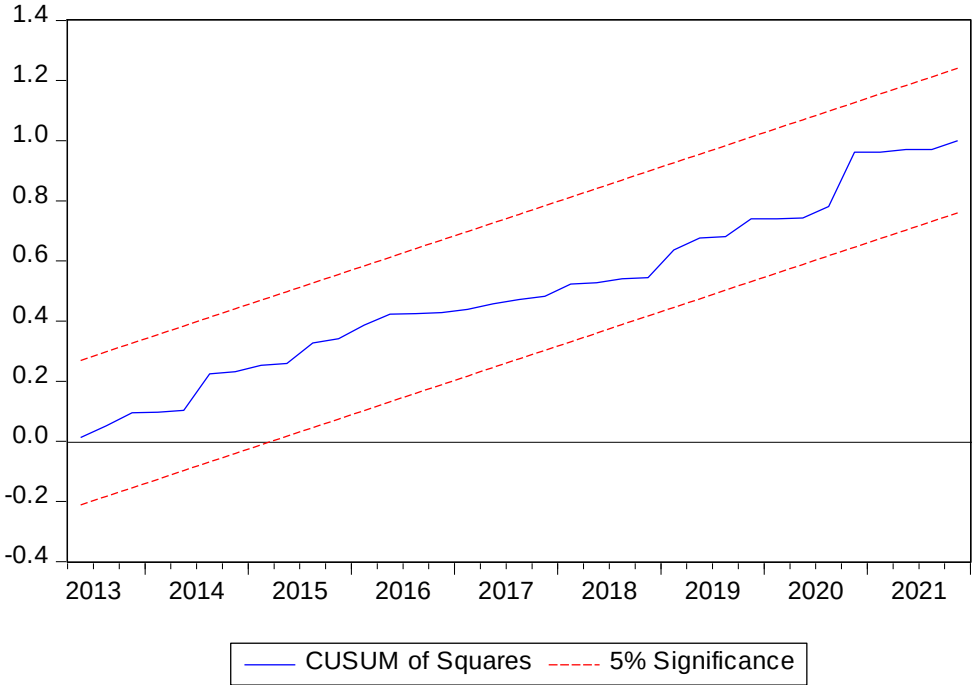

Figure 2: CUSUM of Squares Plot

5. CONCLUSION AND RECOMMENDATIONS

This research examined the effect of capital structure on stock returns of deposit money banks in Nigeria between 2010 and 2021, using quarterly data from 2010Q1 to 2021Q4. This study adopts static and dynamic model specification in the form of the autoregressive distributed lag (ARDL) method. The results clearly show that the capital structure of deposit money banks had insignificant impact on stock returns, as liquidity, leverage and profitability had insignificant impact on capital structure. The study recommends that, banks should consider using more debt in financing their daily operations in order to reduce cost of operation and leverage on the tax advantage.

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