AFRICAN JOURNAL OF ACCOUNTING, FINANCE & MARKETING
UNIVERSITY OF PORT HARCOURT BUSINESS SCHOOL,
UNIVERSITY OF PORT HARCOURT.
VOL. 10 NO. 1. 2026

# COST OF CAPITAL AND PROFITABILITY OF LISTED COMMERCIAL BANKS IN NIGERAIN EXCHANGE GROUP(NGX)

**IGONIDERIGHA, ROSELINE Ph.D**
**Department of Accounting, Management Sciences,**
**Niger Delta University, Bayelsa State**

**Article history:**

Received:January 2026;
Received in revised form:
28 January 2026;
Accepted: February 5, 2026;

**Keywords:**

*Cost of equity, Cost of debt, Profitability*

## Abstract

***The study investigated the effect of cost of capital (cost of debt and cost of equity) and profitability (return on capital employed) of listed commercial banks in Nigeria. The study sampled seventeen (17) listed commercial banks on the floor of the Nigerian Exchange Group. Data of cost of capital measures (cost of debt and cost equity) and profitability (return on capital employed) were obtained from the annual reports and accounts of the listed commercial banks from 2017-2022. The study employed ex-post facto design. Data obtained were analyzed via descriptive statistics (mean, median, standard deviation, minimum, and maximum values, skewness, and kurtosis, Pearson correlation matrix); post-estimation statistics (variance inflation factor, heteroscedasticity, Ramsey RESET, Cameron and Trivedi's decomposition of IM-test) and inferential statistics (random-effects LR panel data regression). The random-effects LR panel data regression revealed that there is significant relationship between cost of debt and cost of equity and return on capital employed of the listed commercial banks firms in Nigeria. The study recommended that management of commercial banks need to ensure an adequate use or level of equity in financing their operations. More so, there is the need for management of commercial banks to strengthen debt-mix in the formation of their capital structure. The study contributes to knowledge by using Peckings Order theory in explaining the relationship between costs of capital and profitability of listed commercial banks in Nigeria and filled the gap in the accounting literature on how costs of capital influence the level of profitability of commercial banks in Nigeria.***

## Introduction

The listed companies of the Nigeria Stock Exchange (NSE) (formerly the Nigerian Exchange Group, or NGX) have a significant impact on the development of Nigeria's economy. Economic multipliers, information transfer, job creation, innovation stimulation, and the formation of national economic clusters are all advantages of listed companies (Ajibolade & Sankay, 2013). Considering the importance of commercial banks in an economy, it is critical to assess how the cost of capital affects the business's profitability, which is a key determinant of their survival and growth. Finance is essential to all industries and the individuals who work in them in order to accomplish the three primary goals of every organization: business expansion, growth, and survival.

The investor will pay an opportunity cost of the income he would have earned if he had spent the same amount of money in the next best alternative rather than forgoing it. Finance is not free. The cost of capital is the name given to this expense. The cost of capital affects the business's profitability, which in turn affects both profitability and cost of capital. This puts the business in a position where it must effectively control its cost of capital in order to secure a favorable financial status. A corporation must cover the expenses related to the capital it obtained from the financier in order to fund the acquisition of assets. The weighted average of the cost of using debt and equity is known as the cost of capital (COC). This has the effect of raising the value of a corporation that aims to maximize the welfare of its shareholders.

For capital budgeting, COC is used as a guide to determine the required project rate of return. Given this, COC determines whether an investment plan submitted by a company is accepted or denied. The Cost of Capital and Firm Performance uses the Weighted Average Cost of Capital (WACC), which shows the total cost of capital for the company by calculating the cost of employing each source of capital, debt and equity. Thus, between the two limits of total equity financing and debt financing, a certain debt-equity mix (optimal capital structure) must be created. It is crucial for the company to calculate a financial leverage decision in a way that minimizes risk and maximizes investor return. Just as a company's value is strongly correlated with its performance, financial professionals study the relationship between leverage and performance.

According to the pecking order idea, businesses initially rely on funds they generate internally, then turn to debt if more money is needed, and finally issue stock to cover any remaining funds. Conversely, Jensen and Meckling (1976) found that a company's performance may suffer if it uses a higher amount of debt. It forecasts that the benefits businesses receive from borrowing (such as tax savings) outweigh the costs associated with manager-shareholder debt disputes. As a result, COC must be acknowledged as a significant factor influencing business profitability. However, in comparison to its international equivalents, the valuation of the Nigerian capital market—a means of generating long-term resources to finance long-term ventures—is underdeveloped (Luckey). As a result, the primary duty of effectively raising capital or mobilizing funds from the economy's surplus units and successfully directing them to the deficit sector to meet its long-term capital needs has not been duly fulfilled. The majority of commercial banks may be

constrained by their fear of the expenses involved with long-term financing through different channels, such as the capital market, where businesses can obtain cash for capital. Numerous studies have been conducted on the relationship between business profitability and cost of capital; nevertheless, there is still a lack of information regarding the cost of capital of listed commercial banks in relation to the Nigerian Exchange Group. It is expected that the current study would add to the body of knowledge regarding the connection between listed commercial banks in the Nigerian Exchange Group's firm profitability and their cost of capital.

**Problem Statement**

For a long time, finance managers have been quite concerned about how a firm is financed. Underestimating a company's cost of capital can have disastrous consequences. A commercial bank may choose a capital structure mix that would not improve operations or might even cause it to fail if it's ideal capital structure is not known. Sanusi (2009) asserts that banks' lack of corporate governance, illiquidity, inadequate credit risk management, and capital requirements make them technically insolvent. AfricBank, BankPHB, Spring Bank, Intercontinental Bank, Oceanic Bank, and Diamond Bank are just a few examples of Nigerian banks that have recently failed. Finance is one of the main issues with company expansion, according to Magara (2012).

Compared to its international counterparts, Nigeria's capital market is underdeveloped as a source of long-term cash to finance long-term schemes. Therefore, the primary task of effectively obtaining capital or mobilizing money from the economy's surplus units and successfully directing them to the deficit sector in order to meet its long-term capital needs has not been adequately completed. For example, Nigeria's capital market is illiquid; there are few quoted companies with low market capitalization and transaction volume, which raises the cost of capital (Ibrahim et al., 2021).

There is still a knowledge gap despite the growing body of research on the relationship between company profitability and cost of capital. The limited studies carried out in Nigeria have produced contradictory findings. For example, Ibrahim and Ibrahim's (2015) study on the impact of capital costs on SMEs' business performance revealed that these costs have no bearing on financial performance. Cost of capital had a negative impact on earnings per share, cost of debt had a favorable impact on share price, and cost of equity had a large and positive impact on net profit before tax, according to a 2019 study by Akintoye et al on the relationship between cost of capital and business performance.

According to Lucky and Akani's (2018) study on cost of capital and dividend policy, the cost of short-term and medium-term borrowing has a positive impact on the dividend payout ratio, whereas the cost of long-term borrowing has a negative impact. Their findings are still equivocal even in the foreign scene, where the majority of the job is completed. Pavel (2018) examined how cash flows and the weighted average cost of capital affected enterprise value in the oil and gas industry. The findings indicated that the traditional cost of capital is not a suitable discount factor for assessing business value. Additionally, the majority of research on the relationship between cost of capital and firm performance concentrated on a number of other profitability metrics (such as return on equity, return on asset, earnings per share, and book value per). This study aims to close

this gap by employing return on capital employed (ROCE) as a profitability metric. Therefore, from 2017 to 2022, this study examines the relationship between listed commercial banks' cost of capital and company profitability in the Nigeria Exchange Group (NGX).

**Hypotheses**

**$H_o$1:** Cost of equity has no significant effect on return of capital employed of listed commercial banks in Nigeria.

**$H_o$2:** Cost of debt has no significant effect on return on capital employed of listed commercial banks in Nigeria.

**Literature Review**

**Cost of Capital**

The sequence of costs resulting from the capital structure that is, the proportion of debt to equity is known as the cost of capital. Although both concepts have the same goal, optimal capital structure and optimal cost of capital are interchangeable. The entire amount of funding a business must pay to raise money from both debt and equity sources is referred to as its cost of capital. It stands for the lowest rate of return on investment that a business must get in order to meet the demands of lenders and investors. Gitman (2003) defines the cost of capital as the rate of return a business needs get on its investments in order for its market worth to be constant.

According to Pandey (2009), it is the lowest acceptable rate of return that businesses should achieve on their own investments in order to generate cash flows from which investors can receive their returns. It is also the necessary rate of return on the money invested in the project, which is determined by how risky its cash flows are. Funds are required for a company's different capital budgeting ideas. These funds can be obtained from a variety of investors, including depositors, debt holders, preference shareholders, and equity shareholders. When they contribute money to the company, these investors anticipate a minimal return from the business. The investor's perception of risk and the firm's risk-return characteristics determine the minimal expected return. The cost of capital is the lowest rate of return that a business must generate to meet investor expectations.

**Cost of Equity**

Equity, which is essential to a business's long-term performance, is the sum of money made available to shareholders as a result of asset sales and debt repayment. The rate of return that a business must give equity investors is known as the cost of equity. It stands for the payment that the market requires in return for taking on the risk of owning an asset. The Capital Asset Pricing Model (CAPM), which takes into account an investment's riskiness in relation to the present market, determines the cost of equity.

$$COE = RFRR + B \times (MRR - RFRR)$$

Where: COE=Cost of Equity; RFRR=Risk -Free Rate of Return; B = Beta; MRR= Market Rate of Return. Cost of Equity can also be calculated using the Dividend Capitalization model

$$\text{Cost of Equity} = \frac{DPS}{CMV} + GRD$$

Where: DPS=Dividend per share, for next year; CMV=Current market value of stocks; GRD=Growth rate of dividend

**Cost of Debt**

Debt is necessary for the capital structure, even though it can be harmful to a company's success. The pre-tax interest rate

that a business pays on its debts, including credit cards, loans, and invoice financing, is referred to as the cost of debt. A company can save more on taxes and keep a larger portion of its profits when this debt is kept under control. The following calculation can be used to determine the cost of debt:

ATCD = (RFRR = CS) X (1- Tax Rate)

Where: ATCD =After – tax cost; RFRR = Risk – free rate of Return; CS = Credit spread

**Firm Profitability**

One of the most crucial goals for any business organization is to be profitable. Furthermore, maximizing shareholder wealth and value is one of the key goals of financial management, and profitability is a crucial factor in determining both organizational performance and shareholder value. According to Weston and Brigham (1981), "the net result of a large number of policies and decisions" determines profitability. Nonetheless, according to Hermenson, Edward, and Salmonson (1987), profitability is the correlation between income and a balance sheet metric that shows the proportional capacity to generate income from assets used. It shows how effectively an organization's administration makes money using the resources available to it. A company's ability to absorb negative shocks and contribute to system stability makes its profitability a major priority. It is a ratio of profits to expenditures. It represents profit deflated by unit size and shows how effectively an organization uses all of its resources to maximize profit.

**Return on Capital Employed**

Return on capital employed served as a proxy for company profitability in this study. A financial measure called return on capital employed (ROCE) can be used to evaluate the profitability and capital efficiency of a business. In other words, this ratio can be used to determine how well a business is making money off of its capital and using it. When evaluating a company for investment, financial managers, stakeholders, and potential investors employ a number of profitability ratios, including ROCE. ROCE takes debt and equity into account, in contrast to other fundamentals like return on equity (ROE), which solely examine profitability connected to a company's shareholders' equity.The following is the formula for ROCE:

$$ROCE = \frac{EBIT}{\text{Capital Employed}}$$

Where: EBIT= Earnings Before Interest and Tax; Capital Employed= Total assets- Current liability

**Pecking Order Theory (POT)**

This study is based on the Pecking Order Theory (POT). POT was introduced by Donaldson in 1961 and made popular by Stewart Myers and Nicholas Majluf in 1984. The pecking order theory or pecking order model explains how companies prioritize financing sources for an optimal capital structure, while balancing long-term debt and equity financing.The pecking order theory of capital structure states that companies must take into consideration the most available resources to finance their needs in the first place. According to this theory, the first source of financing should be the funds that are internally available (retained earnings). In situations where internal finances are insufficient or unavailable, debt financing should be taken into consideration, followed by equity. According to this idea, companies follow a hierarchy of funding sources, favoring internal financing when it is available and debt over equity when external financing is needed (equity would involve issuing shares, which would mean bringing external

ownership into the organization). As a result, a company's choice of debt kind may indicate that it needs outside funding (Wikipedia)

**Empirical Review**

Kurniasih et al. (2022) examined the effects of the components of the cost of capital (COC) and capital structure (CS) on firm value, using a sample of Pulp & Paper companies listed on the Indonesia Stock Exchange (IDX) over the 2013–2020 period. The study employed a moderating regression analysis to assess both the direct and moderated relationships among the variables. The empirical results indicate that the cost of debt (COD) does not significantly influence firm value, whereas the cost of equity (COE) exerts **a** negative effect on firm value. In contrast, the aggregate cost of capital (COC) shows a positive effect on firm value. When capital structure is introduced as a moderating variable reflecting the combined use of debt and equity. The findings reveal that both COD and COE negatively affect firm value, while COC and CS exhibit positive influences on firm value. These results suggest that the interaction between financing decisions and capital structure plays an important role in shaping firm value within the industry context studied.

Ibrahim et al. (2021) investigated the effect of Cost of Capital (COC) on the financial performance of listed non-financial firms in Nigeria between 2015 and 2019, employing a two-step system Generalised Method of Moments (GMM). The study reported a significant negative relationship between COC and firm performance. The authors explained that more profitable firms rely on retained earnings to finance investments, thereby avoiding the higher costs associated with external financing, in line with the pecking order theory. They further argued that increasing debt levels raises financial distress costs and diminishes the benefits of tax shields, ultimately reducing firm value. The study contributes to existing literature by highlighting the relevance of COC in shaping firm performance, particularly in emerging economies like Nigeria where cash-flow forecasts are difficult due to underdeveloped capital markets. The findings are also relevant to investors, as they offer insights into how COC considerations may influence investment decisions.

Bariweni and Bingilar (2019) evaluated the effect of capital structure on the shareholders' value of commercial banks in Nigeria. Data for the study was collected from the annual financial statement of ten (10) commercial banks for a period of nine (9) years spanning 2009 to 2017. The Panel least square regression method was utilized as the method of data analyses. From the results recorded, it was shown that there is a negative and non-significant relation between leverage ratio and the earnings per share of commercial banks in Nigeria. The findings also showed that there is a positive but non-significant relationship between leverage ratio and the dividend payout. From the findings, it concluded that gearing has a negative effect on the shareholders' value of commercial banks in Nigeria. This manifests in reduced profitability which by extens ion leads to reduction in earnings to shareholders. However, this may not lead to reduction in dividend payout to shareholders as new debt financing will likely mean that more of the earnings will be distributed as dividends as opposed to being retained in the business since debt has filled the financing gap. Drawing from the above, it was concluded that commercial banks in Nigeria do not operate optimal capital structures. It

is therefore, recommended that banks conduct an in depth study of their capital mixes in order to understand how best to optimize their capital structures for better performance in the future.

Omwanza (2018) examined the effect of cost of capital and financial performance of commercial banks listed at the Nairobi Securities Exchange (NSE). This was done using a sample of eleven commercial banks listed at the NSE during the five-year period, 2012-2016. Data for the selected commercial banks were generated and analysed using a linear regression technique. The outcome of the study reveals that commercial banks' cost of capital has significant effect on their financial performance (i.e. return on assets, ROA). The study recommends that commercial banks should utilise opportunities created by NSE to access long-term financing since debt financing carries costs that have effect on their financial performance. Murtala et al (2018) examined the impact of capital employed by construction firms in Nigeria. The data for the study was obtained from the annual report and accounts of the sampled firms. The study employed panel data analysis and pooled regression, fixed-effect and random-effect estimation techniques for the analysis and Stata 12.0 was used. The study concluded that capital structure has a negative impact on return on capital employed of the sampled construction companies in Nigeria. The study recommends that the managers of the construction companies should be careful while using debt as a source of finance; they should try to finance their activities with retained earnings and use debt as a last option.

Ibrahim et al (2015), examines the effect of SMEs cost of capital on their financial performance using a sample of five SMEs from the total population of eleven SMEs listed on the Alternative Securities Market (ASEM) of the Nigerian Stock Exchange Market during the five-year period, 2008 – 2012. Data for the selected SMEs were generated and analyzed using linear regression technique. The result shows that SMEs cost of capital have insignificant effect on their financial performance (return on asset, ROA). The outcome of these finding, indicates consistency with prior empirical studies and provide evidence in support of Modigliani and Miller, M&M study, 1958. It is recommended that SMEs should utilize the opportunity created by ASEM to access long term financing as the costs have no effect on their performance.

Charles et al (2014) empirically investigates the relationship between capital structure and the firm's profitability of banking industry in Kenya, by using panel data extracted from the financial statements of the companies listed on the Nairobi Stock Exchange from year 2004-2012.The rationale behind the industry specific analysis is the fact that exogenous variables appear to force institutions in the same industry in similar fashion, thus leading to the existence of an industry specific capital structure. It is found that a significant positive relationship exists between the short term debt and profitability and statistically significant negative relationship between long term debt and profitability. The results are partially consistent with the previous studies as the negative relationship between long term debt and the firm performance tends to sport the dominant pecking order theory. The association of short term debt and the financial performance in contrast attests the static trade-off theory. Total debt as a whole has no association with the firm's performance because of the inherited

different characteristics of short term debt and long term debt.

**METHODOLOGY**

This study adopted an ex post facto research design to investigate the relationship between cost of capital and financial performance of commercial banks. The population comprised all twenty-one banks listed in the Nigerian Exchange Group (NGX). A purposive sampling technique was used to select seventeen banks with complete and consistent financial data spanning from 207-2022, ensuring the reliability of secondary data analyzed. This design was appropriate as the study relied on historical data without manipulating any variable. Secondary data were collected from the audited financial statements the selected banks over the six- years period. The independent variable measured with cost of equity and cost of debt, while the dependent variable was return on capital employed. The data were analyzed using simple regression analysis. The functional form of the model is specified as:

ROCE = f (COD, COE)

$ROCE = B_1 COD + B_2 COE + E_{it}$

Specifically:

$ROCE = B_0 + B_1 COD + E_{it}$ .....eq 1

$ROCE = B_0 + B_2 COE + E_{it}$ .....eq2

Where: COD is cost of debt; COE is cost of equity; ROCE is return on capital employed; $\beta_0$ is constant; $\beta_1$ = coefficient of variable; $e_{it}$ = Error term (assumed to have zero mean and is independent across time period).

## 1. Results, Conclusion and Recommendations

### Descriptive Statistics

Summary of Descriptive Statistics

| stats | roce | cod | coe |
|---|---|---|---|
| mean | 6.628838 | 6.592248 | 6.691355 |
| p50 | 6.4807 | 6.3938 | 6.4611 |
| sd | .7932393 | 1.012877 | .8878886 |
| min | 5.2203 | 4.4996 | 5.0927 |
| max | 8.4892 | 8.6453 | 8.7617 |
| kurtosis | 2.977732 | 2.488237 | 2.957178 |
| skewness | .487481 | .1372803 | .6362139 |

**Source:** Researcher's Computation via STATA 13.0

Table 1. showed the mean (average) for each of the variables and the standard deviation values (degree of dispersion) for the sampled listed commercial bank in Nigeria from 2017-2022; the result shed light on the nature of the commercial banks in terms of their cost of capital measures (COD = cost of debt; and COE = cost of equity) and profitability measure (ROCE = return on capital employed). First, cost of equity (COE) showed the highest average with a value of 6.69 (in terms of cost of capital) and this was followed by cost of debt (COD) with a mean value of 6.59. COD showed the highest dispersion with a standard deviation of 1.01 while COE showed the least dispersion with a standard deviation of 0.887; the standard deviation showed that the sampled listed commercial banks' use of cost of capital are similar; an indication of relative change in the measures of cost of capital and profitability.

Furthermore, return on capital employed (ROCE) recoded average of 6.62. The high mean value for ROCE is a clear indication that there is a 6.62 percent increase due to the use of cost of capital (COD and COE) of the listed commercial banks. Remarkably, minimum and maximum values for ROCE is 5.2 and 8.48 respectively, suggesting among other things that sampled listed commercial banks had a ROCE of 5(smallest) and 9(largest); thus, ROCE ranged from 5-9 while minimum and maximum values of COD and COE were 4.49, 5.09, 8.64 and 8.76 respectively. Second, skewness value for the cost of capital measures (COD and COE) and ROCE were positive; an indication that cost of capital moved in similar direction with profitability of the sampled listed commercial banks. Third, the kurtosis value for ROCE, COD and COE were less than 3 (mesokurtic –standard normal distribution), implying that cost of capital would lead to an increased tremendous positive event (profitability) for the sampled listed commercial banks in Nigeria.

**Pearson Correlation Matrix**

| | roce | cod | coe |
|---|---|---|---|
| roce | 1.0000 | | |
| cod | 0.9156 | 1.0000 | |
| coe | 0.9756 | 0.8603 | 1.0000 |

Source: Researcher's Computation via STATA 13.0

Table 2 showed the Karl Pearson correlation matrix for the independent and the dependent variables for the sampled listed commercial banks in Nigeria and it was shown that cost of capital measures (COD and COE) were positively correlated with profitability (ROCE); this implies that there is positive relationship between cost of capital (COD and COE) and profitability of the listed commercial banks in Nigeria.

**Variance Inflation Factor**

| Variable | VIF | 1/VIF |
|---|---|---|
| cod | 3.85 | 0.259898 |
| coe | 3.85 | 0.259898 |
| Mean VIF | 3.85 | |

**Source:** Researcher's Computation via STATA 13.0

This table showed the multicollinearity results for the panel data of the sampled commercial banks in Nigeria. The mean VIF is 3.85, which is not greater than the accepted mean VIF level of 10, indicating that there is nonexistence of multicollinearity problem in the empirical model of the measures of cost of capital (COD and COE) and profitability of commercial banks. Thus, the panel dataset is

exceptionally reliable for conducting statistical inferences.

**Heteroscedasticity Test**

| | | |
|---|---|---|
| chi2(1) | = | 8.80 |
| Prob > chi2 | = | 0.0030 |

Source: Researcher's Computation via STATA 13.0

This shows the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity for the panel data of the sampled listed commercial banks in Nigeria. Breusch-Pagan/Cook Weisberg chi2(1) is = 8.80, Prob. chi2 is = 0.0030 and is less than 0.05 per cent level of significance, indicating the non-existence of heteroskedasticity problem in the empirical model of the study. Thus, the result implies that the sample employed in the panel data do not contain unequal variance, hence there is evidence that the results will be valid.

**Ramsey REST Test**

| | | |
|---|---|---|
| F(3, 96) | = | 4.84 |
| Prob > F | = | 0.0035 |

**Source:** Researcher's Computation via STATA 13.0

The table shows the Ramsey regression specification-error test (RESET) for omitted variables and fitted values of the response variables (dependent variable – ROCE). The result revealed that F-value (3, 96) is 4.84 and Prob. F is = 0.0035, indicating that the alternate hypothesis was rejected while the null hypothesis was accepted, suggesting that the powers of fitted values have no relationship to explain the response variables (i.e. the model has no omitted variables), thus the cost of capital (COE and COD) and profitability (ROCE) models do not suffer from omitted variables problem/functional misspecification form.

**Cameron & Trivedi's Decomposition of IM-Test**

| Source | chi2 | df | p |
|---|---|---|---|
| Heteroskedasticity | 21.67 | 5 | 0.0006 |
| Skewness | 13.17 | 2 | 0.0014 |
| Kurtosis | 3.51 | 1 | 0.0612 |
| Total | 38.34 | 8 | 0.0000 |

Source: Researcher's Computation via STATA 13.0

The Cameron and Trivedi's decomposition of information matrix (IM) test was carried out to ensure that the empirical models of the cost of capital and profitability are not violating any of the axioms of panel data regression model in order to make good inferences about the dataset of the study. The heteroskedasticity result is (Chi2 = 21.67; p-value = 0.0006), skewness (Chi2 = 13.17; p-value = 0.0014); and kurtosis (Chi2= 3.51; p-value=0.0612) are statistically significant, indicating that the null hypothesis was rejected while the alternative hypothesis was accepted that the empirical model do not violate any of the axioms of panel data regression. Notably, the datasets satisfy all four (4) basic axioms of panel data regression (normality, multicollinearity, heteroscedasticity and information decomposition tests).

Test of Research Hypotheses

**Random-Effects Maximum Likelihood Panel Data Regression for Cost of Capital (Cost of Equity – COE) and Profitability (ROCE) of the Listed Commercial Banks in Nigeria**

```
Random-effects ML regression                    Number of obs      =       102
Group variable: datacode                        Number of groups   =       102

Random effects u_i ~ Gaussian                   Obs per group: min =         1
                                                               avg =       1.0
                                                               max =         1

                                                LR chi2(1)         =    309.15
Log likelihood  =  33.970965                    Prob > chi2        =    0.0000
```

| roce | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| coe | .8715689 | .0194358 | 44.84 | 0.000 | .8334754 | .9096623 |
| _cons | .7968615 | .1311806 | 6.07 | 0.000 | .5397522 | 1.053971 |
| /sigma_u | 0 | (omitted) | | | | |
| /sigma_e | .173429 | .0121425 | | | .1511909 | .1989379 |
| rho | 0 | (omitted) | | | | |

Likelihood-ratio test of sigma_u=0: chibar2(01)= 0.00 Prob>=chibar2 = 1.000

**Source:** Researcher's Computation via STATA 13.0

Presented in the table is the random-effects maximum likelihood panel data regression results for cost of equity (COE) and return on capital employed (ROCE) of the sampled commercial banks in Nigeria. It was found that the likelihood ratio (LR) is 309.15; this indicates that COE predicts the dependent variable (ROCE). The LR Probability Chi2 showed among others that the result is significant at 5 per cent level which means that COE significantly affects ROCE. The regression coefficients of the COE is 0.8715, indicating that an increase in COE would lead to 87.2 per cent increase in ROCE.

**Random-Effects Maximum Likelihood Panel Data Regression for Cost of Capital (Cost of Debt– COD) and Profitability (ROCE) of the Listed Commercial Banks in Nigeria**

```
Random-effects ML regression                    Number of obs      =       102
Group variable: datacode                        Number of groups   =       102

Random effects u_i ~ Gaussian                   Obs per group: min =         1
                                                               avg =       1.0
                                                               max =         1

                                                LR chi2(1)         =    185.86
Log likelihood  =   -27.6751                    Prob > chi2        =    0.0000
```

| roce | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| cod | .7170536 | .0311803 | 23.00 | 0.000 | .6559413 | .7781658 |
| _cons | 1.901843 | .2079368 | 9.15 | 0.000 | 1.494294 | 2.309392 |

**Source:** Researcher's Computation via STATA 13.0

The z-score for COE is 44.84 and the Probability z is 0.0000 which is less than 0.05 levels of significance. Given that the probability z is less than 0.05 levels of significance, the null hypothesis was rejected while the alternative hypothesis was accepted; this indicates that there is significant relationship between cost of equity and return of capital employed of listed commercial banks in Nigeria.

Presented in the Table above is the random-effects maximum likelihood panel data regression results for cost of debt (COD) and return on capital employed (ROCE) of the sampled commercial banks in Nigeria. It was found that the likelihood ratio (LR) is 185.86; this indicates that COD predicts the dependent variable (ROCE). The LR Probability Chi2 showed among others that the result is significant at 5 per cent level which means that COD significantly affects ROCE. The regression coefficient of the COD is 0.7171, indicating that an increase in COD would lead to 71.7 per cent increase in ROCE.

The z-score for COD is 23.00 and the Probability z is 0.0000 which is less than 0.05 levels of significance. Given that the probability z is less than 0.05 levels of significance, the null hypothesis was rejected while the alternative hypothesis was accepted; this indicates that there is significant relationship between cost of debt and return of capital employed of listed commercial banks in Nigeria.

## Conclusion

In conclusion, this study demonstrates that there is significant relationship between costs of capital (cost of debt and equity) and profitability of the listed commercial banks in Nigeria. The findings agree with the results of Ibrahim et al (2021) who found that cost of capital results to increase in the level of profitability of companies. Consequent upon the above, the findings call for recommendations for commercials in Nigeria.

## Recommendations

i. There is the need for management of commercial banks to ensure an adequate use or level of equity in financing their operations
ii. The study showed that cost of debt significantly influences profitability of commercial banks in Nigeria; hence, the need for management to strengthen the debt-mix in the formation of their capital structure.

## References

Ajibolade, S., & Sankay, C. (2013). Working capital management and financing decision: Synergetic effect on corporate profitability. *International Journal of Management, Economics and Social Sciences, 2*(4), 233–251.

Akintoye, I. R., Adegbie, F., Askhia, O., & Akintola, A. (2019). Cost of capital and corporate performance of selected quoted Nigerian manufacturing firms. *International Journal of Management Sciences and Business Research, 8*(6), 1–6.

Alrjoub, A. M. S., & Ahmad, M. A. (2017). Inventory management, cost of capital and firm performance: Evidence from manufacturing firms in Jordan. *Investment Management and Financial Innovations, 14*(3), 4–14.

Augustina, K., Muhamad, R. H., & Endri, E. (2022). Cost of capital and firm value: Evidence from Indonesia. *Investment Management and Financial Innovations, 19*(4), 14–22.

Bariweni, B., & Bingilar, P. F. (2019). Capital structure and the shareholder value of commercial banks in Nigeria. *European Journal of Business and Management Research, 4*(5).

Charles, Y., Joseph, C., Sang, J., & Cheruiyot, P. K. (2014). The effects of capital structure on firms' profitability: Evidence from Kenya's banking sector. *Research Journal of Finance and Accounting, 5*(9), 2222–1697.

Gitman, L. J. (2003). *Principles of managerial finance* (10th ed.). Addison-Wesley.

Ibrahim, M., Abdulkarim, H., Muktar, J., Gurama, Z., & Peter, Z. (2021). The impact of cost of capital on financial performance: Evidence from listed non-financial firms in Nigeria. *Global Business Management Review, 13*(2), 18–34.

Ibrahim, M., & Hamid, K. T. (2019). Corporate social responsibility and financial performance of listed non-financial services companies in Nigeria. *American Journal of Business and Society, 4*(2), 56–71.

Ibrahim, M., & Ibrahim, A. (2015). The effect of SMEs' cost of capital on their financial performance in Nigeria. *Journal of Finance and Accounting, 3*(1), 8–11.

Ivascu, E. V., & Barbuta-Misu, N. (2017). Influences of the capital structure and the cost of capital on financial performance: Case study on ENGIE Group. In *Proceedings of the 18th Conference "Risk in Contemporary Economy"*. Galati, Romania.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Lucky, A. L., & Akani, H. W. (2018). Cost of capital and dividend policy: A panel data study of Nigerian commercial banks. *European Journal of Accounting, Finance and Investment, 4*(12), 80–98.

Lucky, L. A. (2017). Cost of capital and corporate earnings of Nigeria quoted firms: A multidimensional analysis. *Australian Finance & Banking Review, 1*(1), 41–65.

Magara, M. (2012). *Capital structure and its determinants at the Nairobi Securities Exchange* (Unpublished master's thesis). University of Nairobi.

Mohamad, N. E. A. B., & Saad, N. B. M. (2012). Cost of capital: The effect on firm value and profitability performance in Malaysia. *International Journal of*

*Academic Research in Accounting, Finance and Management Sciences, 2*(4), 353–361.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review, 48*(3), 261–297.

Modigliani, F., & Miller, M. H. (1963). Corporation income taxes and the cost of capital: A correction. *American Economic Review, 53*, 433–443.

Murtala, S., Ibrahim, M., Lawal, S., & Abdullahi, B. B. (2018). Capital structure and return on capital employed of construction companies in Nigeria. *African Journal of Accounting, Auditing and Finance, 6*(1), 1–20.

Nadya, G. I., Semuel, H., & Devie. (2019). Intellectual capital disclosure, information asymmetry, cost of capital and firm value: Empirical studies on Indonesian manufacturers. *Petra International Journal of Business Studies, 2*(1), 27–35.

Omwanza, C. O. (2018). *Effect of cost of capital on financial performance: A case study of listed commercial banks at the Nairobi Securities Exchange*.

Pandey, I. M. (2009). Capital structure and firm characteristics: Evidence from an emerging market. *Journal of Financial Economics*.

Pavel, Z. (2018). The impact of cash flows and the weighted average cost of capital on enterprise value in the oil and gas sector. *Journal of Reviews on Global Economics, 7*, 138–145.

Radman, A., Sarker, S. I., & Uddin, J. (2019). The impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh. *Applied Economics and Finance, 6*(2), 1–5.

Sanusi, L. S. (2010). *The Nigerian banking industry: What went wrong and the way forward*. Convocation lecture, Bayero University, Kano.

Shahzad, A., & Al-Swidi, A. K. (2013). Effect of macroeconomic variables on the FDI inflows: The moderating role of political stability: An evidence from Pakistan. *Asian Social Science,9(9),*27.