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Evaluating the Financial Performance of Listed Food Product Enterprises in Nigeria: The Cost of Capital Factor

[1] **Gilbert Ogechukwu Nworie**
[2] **Chinwe Miracle Onyeka**
[3] **Chiamaka Lauretta Anaike**

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[1,2,3] Department of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

Abstract: The study evaluated cost of capital as a factor that determines the financial performance of listed food product enterprises in Nigeria. Specifically, return on asset was expressed as a linear function of cost of equity, cost of long-term debt and cost of total debt. This research implemented an Ex-post Facto research design on the entire population of eleven (11) listed food products firms in Nigeria. The sample size of the study made up of five firms was determined using purposive sampling. Secondary data were collected from the 10 year annual reports of the sampled firms from 2013 to 2022. Inferential statistical analysis was performed using the Least Square regression technique to test the study's hypotheses. The findings revealed the following: cost of equity has a significant positive effect on the return on assets of listed food products firms in Nigeria (β = 0.107943; p-value = 0.000); cost of long-term debt has a non-significant negative effect on the return on assets of listed food products firms in Nigeria (β = -0.023864; p-value = 0.6241); cost of total debt has a non-significant negative effect on the return on assets of listed food products firms in Nigeria (β = -0.157929; p-value = 0.6435). The study concluded that managing debt levels judiciously is essential to mitigate the risks associated with higher debt costs since excessive debt can strain a firm's cash flow and profitability, leading to financial instability and potential default risks. We recommend that managers should meticulously attract equity investment through enhanced investor relations, transparency in financial reporting, and efforts to improve the company's investor appeal and so enhance firm performance.

Key words: Cost of Capital, Financial Performance, Return on Asset, Cost of Equity, Cost of Debt.

Introduction

In Nigeria, the food products industry has been a major driver of economic growth. It has contributed to job creation, revenue generation, and overall development (Uremadu & Onyekachi, 2018). These companies' financial success depends on various factors, with the cost of capital being a key player. The cost of capital refers to the expenses a company incurs to secure funds for its operations and investments (Giwa, 2019). It includes the cost of equity, which is the return expected by shareholders, and the cost of debt, representing the interest paid on borrowed funds (Ogiriki & Olorunleke, 2023). Therefore, the cost of capital plays a pivotal role in determining the financial health and profitability of companies, especially in the essential food products sector, which is vital for any economy.

The cost of capital arises when a company combines equity and debt to finance its operations and investments (Emoh & Uzuanje, 2015). It signifies the anticipated return that investors and lenders require for providing funds to the company (Sam, 2019). Financial performance, on the other hand, encompasses various measures that indicates a company's profitability, efficiency, and overall success in utilizing its resources to generate returns (Makori, 2022). The link between the cost of capital and financial performance is crucial because when the cost of capital is high, the enterprise must generate higher returns from its investments to cover the financing costs (Omwanza, 2018). If the returns fall short of the cost of capital, it can negatively impact profitability and overall financial performance.

The cost of capital has a substantial impact on a company's financial performance in several ways. Firstly, it affects investment decisions as companies must generate returns exceeding the cost of financing (Ibrahim, Abdulkarim, Muktar & Peter, 2021). Higher costs of capital lead to more selective investments, focusing on projects with higher potential profitability. Secondly, the cost of capital influences a company's decisions regarding its capital structure. Higher costs may lead to a preference for debt financing, although excessive debt can increase financial risk and interest expenses, potentially affecting profitability (Sam, 2019). Striking the right balance between debt and equity is essential for optimizing the cost of capital and ensuring favorable financial performance (Momanyi, 2018).

Therefore, the cost of capital includes the cost of debt, such as interest payments. Higher costs of debt result in increased interest expenses, reducing net income and profitability. Additionally, higher interest payments can strain cash flow, limiting funds available for business operations and investments (Makori, 2022). Managing the cost of debt is crucial for maintaining financial health and optimizing overall financial performance. In summary, the cost of capital significantly influences financial performance by shaping investment decisions, capital structure choices, profitability, firm valuation, and the burden of debt servicing (Ibrahim, Abdulkarim, Muktar & Peter, 2021). Finding the right balance between the cost of capital and investment returns is vital for achieving optimal financial performance and maximizing shareholder value. This research examines the effect of the cost of capital on the financial performance of listed food products firms in Nigeria in light of these considerations.

Problem Statement

Various factors, including economic instability, limited access to funding, and inefficiencies in capital markets, have over the years contributed to an unfavorable cost of capital for most companies in Nigeria (Emoh & Uzuanje, 2015). Often, the cost of borrowing is high due to restricted credit availability or elevated interest rates, placing a heavier financial burden on businesses (Yusuf & Mbatuegwu, 2021). Similarly, the cost of equity is frequently elevated due to perceived market risks and uncertainties, making it more challenging for companies to raise funds through selling shares (Ogiriki & Olorunleke, 2023). Moreover, Nigeria's capital market lacks depth and liquidity, compounding the difficulties faced by food product companies in securing cost-effective capital. These factors collectively contribute to an imperfect cost of capital, which can hinder the financial performance of food product firms listed in Nigeria.

The ramifications of these issues have extensive implications for food product companies operating in Nigeria. A high cost of capital limits their capacity to undertake profitable investments, expand operations, and innovate within their industry (Makori, 2022). Restricted access to affordable financing options may impede their growth potential and result in missed opportunities for market expansion and product diversification. Furthermore, an unfavorable cost of capital diminishes profitability, as companies struggle to generate returns that exceed their financing costs (Ibrahim, Abdulkarim, Muktar & Peter, 2021). Consequently, this can have adverse effects on shareholder value, investor confidence, and the overall competitiveness of food product companies in the Nigerian market. Additionally, the consequences extend beyond individual companies to the broader economy, as a suboptimal cost of capital may hinder economic growth, job creation, and overall prosperity.

Enormous studies have been conducted to investigate the effect of cost of capital on the financial performance of firms. Some of the related studies include: Ogiriki and Olorunleke (2023); Orlu, Amini and Amadi (2022); Ibrahim, Abdulkarim, Muktar and Peter (2021); Orji and Agubata (2021); Giwa (2019); Sam (2019); Murtala, Ibrahim, Lawal and Abdullahi (2018); Mwenda (2018); Omwanza (2018);Momanyi (2018); Okoth (2017); Emoh and Uzuanje (2015); Puke (2015); Mulungye (2014); and Mohamad and Saad (2012). However, to the best of our knowledge, none of the studies included cost of long-term debt as one of the proxies of cost of capital. The present study is being carried out to address this gap in knowledge.

Objectives of the Study

The main objective of the study is to evaluate cost of capital as a factor that determines the financial performance of listed food product enterprises in Nigeria. Specifically, the study ascertains the effect of cost of equity, cost of long-term debt and cost of total debt on the return on asset of listed food product enterprises in Nigeria.

Literature review

Conceptual Issues

Cost of Capital

The cost of capital refers to the expenses a company incurs when utilizing debt and equity financing to support its operations and investments (Giwa, 2019). It is a fundamental financial concept that plays a crucial role in shaping a company's financial structure and overall financial well-being (Okelo, Namusonge & Iravo, 2014). Essentially, it signifies the price a company has to pay for external financing and represents the return rate expected by investors. Often described as the price of obtaining funds or capital, it is a vital consideration for businesses when making investment choices and assessing potential projects. In essence, the cost of capital embodies the cost a company bears when using external funds, whether through loans or selling ownership shares (Ogiriki & Olorunleke, 2023). This rate directly impacts the expected returns for investors, reflecting their willingness to take risks and their perception of the company's financial performance and operations (Okelo, Namusonge & Iravo, 2014). It serves as a critical benchmark for companies to evaluate the feasibility of investment opportunities since any prospective project ideally should generate returns exceeding the cost of capital to be deemed financially advantageous.

Debt and equity constitute the two primary sources of financing for companies, forming the foundation of the cost of capital (Emoh & Uzuanje, 2015). Debt financing involves borrowing funds from external sources, like banks or bondholders, in return for periodic interest payments and eventual repayment of the borrowed amount. On the other hand, equity financing involves raising capital by selling ownership stakes in the company to investors, who become shareholders and share in the company's profits and losses (Ibrahim & Badara, 2020).

Each component of the cost of capital, debt, and equity, carries its own distinct implications for a company's financial structure and risk profile (Ibrahim, Abdulkarim, Muktar & Peter, 2021). Debt, while offering a tax advantage due to interest payment deductibility, also introduces financial leverage that magnifies both gains and losses (Aggreh, Nworie & Abiahu, 2022; Mitra & Naik, 2021). In contrast, equity financing dilutes ownership but grants investors voting rights and a share of the company's profits, aligning their interests with those of the company's management (Ibrahim & Badara, 2020).

Cost of Equity

The cost of equity refers to the expenses incurred by a company when utilizing shareholders' investments to support its operations and investments. It is a critical financial measure that plays a significant role in determining a company's overall cost of capital and is commonly used as a representation of the opportunity cost for shareholders' investments (Giwa, 2019). This metric represents the return that shareholders expect for investing their money in a particular company. By calculating the cost of equity, businesses gain valuable insights into the required rate of return demanded by investors for taking on the inherent risks associated with investing in the company's stock.

One of the primary methods for calculating the cost of equity is by considering the security market interest rate, which reflects prevailing interest rates and the overall market sentiment regarding risk and return. The cost of equity is heavily influenced by factors like market conditions, the company's financial performance, industry trends, and macroeconomic indicators (Ogiriki & Olorunleke, 2023). As investors evaluate investment opportunities, they assess the potential return and risk associated with investing in a particular company's equity, and the cost of equity serves as a crucial benchmark for making informed decisions.

The cost of equity plays a pivotal role in the capital budgeting process for businesses, helping them evaluate the feasibility of various investment projects. When a company undertakes new ventures or capital projects, it must generate returns that surpass the cost of equity to justify using shareholders' funds. Failing to meet this threshold could lead to reduced investor confidence and hindered access to capital in the future.

Cost of Debt

The cost of total debt encompasses all expenses related to different forms of debt, including both short-term and long-term borrowings. This financial metric plays a vital role in shaping a company's capital structure and overall financial well-being (Giwa, 2019). When businesses opt to borrow funds from external sources, such as financial institutions or other creditors, the interest they pay on the borrowed amount constitutes the cost of debt. This cost holds significant importance for companies as it directly affects their financial performance, profitability, and their capacity to finance various projects and operations (Okelo, Namusonge & Iravo, 2014).

To determine the cost of debt, companies typically begin by identifying the rate on a risk-free bond that matches the duration of the corporate debt they intend to acquire (Makori, 2022). The risk-free rate serves as a baseline, representing the theoretical interest rate under ideal, risk-free conditions. However, since all types of debt involve some degree of risk, companies must then add a default premium to account for the debt's associated risk (Mitra & Naik, 2021). This default premium reflects the extra interest creditors require to compensate for the possibility of the company failing to meet its debt obligations.

The cost of debt is a pivotal factor in a company's financial decision-making process. As companies strive to optimize their capital structure, they must weigh the trade-off between debt and equity financing (Kurfi, Yadudu & Sabo, 2021). While debt financing typically offers lower interest rates than the expected return demanded by equity investors, it also introduces financial leverage, which magnifies both profits and losses (Ogiriki & Olorunleke, 2023). Consequently, it is essential for companies to strike a

balance between debt and equity to achieve an optimal cost of capital while effectively managing financial risks.

Furthermore, the cost of debt significantly influences a company's overall cost of capital, which represents the average return rate expected by all the company's investors. Therefore, it plays a pivotal role in determining the feasibility of investment opportunities and projects. A company's ability to secure debt financing at favorable interest rates can enhance its financial flexibility and support growth initiatives (Mwenda, 2018). Conversely, high-cost debt may lead to increased financial burdens and reduced profitability.

Effectively managing the cost of debt is crucial for businesses aiming to maintain financial stability, attract investors, and access funding on favorable terms. By closely monitoring interest rates, credit ratings, and their overall financial health, companies can make informed decisions about debt financing and ensure that the cost of debt remains manageable and aligned with their financial objectives (Omwanza, 2018). In conclusion, the cost of debt encompasses the interest payments made by companies on borrowed funds from external sources. It is a critical financial metric impacting a company's capital structure, financial performance, and its ability to fund various projects (Makori, 2022). Calculated by combining the risk-free rate with a default premium, the cost of debt plays a pivotal role in optimizing a company's overall cost of capital and supporting its growth and financial stability. Efficiently managing the cost of debt is essential for businesses to make prudent financial decisions and maintain a competitive edge in their respective industries.

Financial Performance

Financial performance refers to the outcomes achieved by a company in fulfilling both its internal and external objectives (Nworie & Ofoje, 2022; Ibrahim, Abdulkarim, Muktar & Peter, 2021). In essence, it is the assessment of how effectively a firm is utilizing its assets to generate income, all expressed in financial terms (Otwani, Simiyu & Makokha, 2017). Financial performance serves as a means to objectively evaluate business activities. It is a critical gauge for profit-oriented firms and a standard measure of a company's capacity for continued growth, survival, and competitiveness.

Strong firm performance sets off a chain reaction where investors can expect long-term returns, leading to their willingness to invest more (Giwa, 2019). Stakeholders such as creditors can be assured of timely payments, ensuring the delivery of high-quality and punctual products and services. Several parameters, such as Return on Equity (ROE) and Return on Assets (ROA), are used to determine firm performance. ROE measures the net income after tax income divided by the total equity capital. On the other hand, ROA indicates the return on all of the company's assets and is often used as an overall index of financial performance.

A firm's performance can be assessed through its financial statements, including statements of financial position, comprehensive income, cash flow, and statement of cash flows (Kurfi, Yadudu & Sabo, 2021). In a broader sense, financial ratios are used to analyze a firm's performance, expressing relationships between variables reported in financial statements. These ratios are meaningful performance measures when compared with other relevant information (Ogiriki & Olorunleke, 2023), either from the same firm's past or from similar firms in the same industry. Financial performance is a crucial factor in determining the sustainability of any profit-oriented business and remains its most important objective.

Return on Assets (ROA) represents the return on a company's assets, reflecting the profit generated from its corporate assets (Omwanza, 2018). ROA indicates a firm's asset profitability after accounting for all expenses and taxes. In essence, ROA serves as a key indicator of how efficiently a firm can leverage its assets to generate earnings, providing valuable insights into its financial performance and management efficiency (Momanyi, 2018). ROA's significance as a proxy for financial performance lies in its ability to

offer a comprehensive view of how effectively a firm's management can generate profits from its available assets (Giwa, 2019). ROA measures net earnings per unit of a given asset, acting as a potent indicator of a firm's ability to convert assets into earnings (Ogiriki & Olorunleke, 2023). It provides valuable insights into a firm's financial stability and its capability to maximize returns from its asset base (Nworie & Mba, 2022).

ROA's prominence as a proxy for firm performance signifies how effectively companies are earning for each unit of currency invested in their assets, even after considering all expenses and taxes (Puke, 2015). ROA is a valuable tool for assessing a company's profitability, offering essential information to stakeholders and investors regarding a company's capacity to generate earnings from its asset base.

Theoretical Framework

This study is theoretically underpinned by the Pecking Order theory which was developed by Myers & Majluf (1984) and Myers (1984). The theory argues that equity is a less favored method for raising capital. According to this theory, when managers (who are assumed to have better knowledge about the true condition of the firm than investors) issue new equity, investors interpret it as a sign that managers believe the firm is overvalued and that they are taking advantage of this overvaluation. In essence, the theory suggests that firms do not have an optimal capital mix but instead follow a pecking order of financial choices. This order begins with internally generated funds, followed by debt issuance, and only when the firm reaches its limits for debt financing does it resort to new equity financing (Giwa, 2019). The cost of equity includes the cost associated with issuing new shares and the cost of retained earnings.

Furthermore, the Pecking Order theory posits that a firm's primary objective is to maximize shareholders' wealth (Ogiriki & Olorunleke, 2023). It establishes a hierarchy for selecting sources of finance, with every firm preferring internal financing over external financing (Ibrahim, Abdulkarim, Muktar & Peter, 2021). This theory suggests that the primary challenge in determining a firm's debt structure lies in the asymmetric information between managers and investors, where the cost of financing increases with greater information asymmetry. Financing for firms is drawn from three sources: internal funds (retained earnings), debt, and new equity (Giwa, 2019). Companies prioritize their sources of finance, starting with internal financing, then turning to debt, and, finally, considering equity issuance as a last resort (Aggreh, Nworie & Abiahu, 2022).

In this regard, internal financing takes precedence, followed by debt issuance when internal funds are exhausted. Equity issuance is considered only when it no longer makes sense to take on additional debt. This theory asserts that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, opting for debt over equity if external financing becomes necessary (Ogiriki & Olorunleke, 2023). Equity issuance, in this context, entails bringing external ownership into the economy through the issuance of shares.

Empirical Review

Ogiriki and Olorunleke (2023) examined the influence of the cost of capital on the financial performance of construction firms listed on the Nigerian Stock Exchange using a Multiple Linear Regression. The study found that the Cost of Debt had an insignificant negative impact on financial performance, while obtaining financial equity capital had a positive effect on the firms' performance.

Orlu, Amini, and Amadi (2022) investigated the Impact of Debt Capital on the Financial Performance of Commercial Banks in Nigeria using Multiple Regression, Co-integration, Granger Causality Test, and Augmented Unit Root Test. They discovered that the Total Liability Ratio, Long-Term Debt Ratio, and Equity Ratio had negative coefficients, and the Debt-Equity Ratio had a negative effect on Return on Equity.

Ibrahim, Abdulkarim, Muktar, and Peter (2021) explored the effect of cost of capital on the financial performance of listed non-financial firms in Nigeria using the Generalized Method of Moments. Their study revealed a significant and negative impact of the cost of capital on the financial performance of listed non-financial firms in Nigeria.

Orji and Agubata (2021) delved into the effect of debt and equity financing on the performance of firms in Nigeria, employing an OLS Regression Model. They found that Debt and Equity Financing had significant and positive effects on Return on Equity.

Giwa (2019) investigated the impact of the cost of capital on the financial performance of construction companies listed on the Nigerian Stock Exchange through Multiple Linear Regression. Their findings indicated that the Cost of Debt had an insignificant negative effect on the Return on Equity of construction companies. Conversely, the Cost of Equity exhibited a significant positive effect on Return on Equity.

Sam (2019) focused on the cost of capital and optimal financing of corporate growth of selected manufacturing firms listed on the Nigerian Stock Exchange using Multiple Regression. They observed that the Cost of Debt and Cost of Equity had a negative relationship with Return on Equity financing. In contrast, the Weighted Average Cost of Capital had a negative effect. Additionally, the Cost of Debt and Weighted Average Cost of Capital had a positive relationship with Debt Financing, while the Cost of Equity had a negative effect on the dependent variable.

Murtala, Ibrahim, Lawal, and Abdullahi (2018) examined the impact of capital structure on return on capital employed of construction firms in Nigeria, employing Pooled Regression, Fixed-Effect, and Random-Effect Estimation Techniques. They concluded that Capital Structure had a negative impact on Return on Capital Employed.

Mwenda (2018) investigated the effect of choosing debt as the financing option on the financial performance of listed companies using Regression Analysis. Their study found a significant positive relationship between Debt Financing and Financial Performance.

Omwanza (2018) studied the effects of the cost of capital on the financial performance of commercial banks listed at the NSE, utilizing the Linear Regression technique. The study revealed that the Cost of Capital had a significant effect on the Return on Assets.

Momanyi (2018) explored the effect of debt financing on the financial performance of commercial and service firms quoted at the NSE, employing Multiple Linear Regression Analysis. They found that Debt Financing had a negative but statistically insignificant effect on the Return on Asset of commercial and service firms.

Okoth (2017) delved into the effect of debt financing on financial performance of non-financial firms listed at the Nairobi Securities Exchange, utilizing Multiple Regression. Their study indicated that the Debt-to-Equity Ratio and Interest Coverage Ratio had a significant positive effect on Return on Equity.

Emoh and Uzuanje (2015) investigated the impact of rising cost of capital on the profitability of real estate developments in Benin City, Nigeria, using Simple Percentage Analysis. They found that an increasing cost of capital led to negative returns, indicating that higher capital costs reduced the profit levels of real estate development in the Benin City property market.

Puke (2015) studied the effects of debt on the profitability of small manufacturing firms in Kogi State of Nigeria through Regression Analysis. Their research revealed no significant relationship between debt usage and the value of small-scale manufacturing firms in Kogi State, Nigeria.

Mulungye (2014) examined the impact of the cost of capital on the investment decision of non-financial firms listed at the Nairobi Securities Exchange, employing Multivariate Regression Analysis and t-test. They found a significant likelihood of a firm elevating leverage to increase the company's value.

Mohamad and Saad (2012) investigated the effect of cost of capital on firm value and profitability of listed companies in the main market of Bursa Malaysia, utilizing Regression Analysis. They concluded that the cost of capital significantly and positively affected firm value and profitability.

Method

This research implemented an *Ex-post Facto* research design. *Ex-post facto* studies examine the association between two events that took place in the past. This research design was adopted for the conduct of the study in order to examine the effect of cost of capital on the financial performance of listed food products firms in Nigeria. Since this study beckons on events that already occurred in the past from 2013 to 2022, Ex-post facto research design is deemed suitable for the study. The population of the study is made up of all the 11 listed firms under the food products sector of the Nigerian Exchange Group as at 31st December 2022. The list of the firms as taken from Nigerian Exchange Group website is given below in table 3.1.

Table 3.1 Population of the Study

1.	Cadbury Nigeria Plc.
2.	Dangote Sugar Refinery Plc
3.	Flour Mills Nig. Plc.
4.	Honeywell Flour Mill Plc
5.	Mcnichols Plc
6.	Multi-Trex Integrated Foods Plc
7.	N Nig. Flour Mills Plc.
8.	Nascon Allied Industries Plc
9.	Nestle Nigeria Plc.
10.	Unilever Nigeria Plc.
11.	Union Dicon Salt Plc.

Source: NGX Daily Stock List, 2022

The sample size of the study was determined using purposive sampling. The basis for selection is availability of data. Thus, the following 5 firms made up the sample size of the study.

Table 3.2 Sample Size of the Study

1.	Cadbury Nigeria
2.	Dangote Sugar Refinery
3.	Flour Mills of Nigeria
4.	Guinness Nigeria
5.	Nestle Nigeria

Source: Researchers' Compilation, 2023

Data for this study were collected through the use of financial statements from the sampled firms, making it a secondary data research. To ensure comprehensiveness and consistency, we gathered data for food products firms that were operational between 2013 and 2022. The ten-year timeframe was deemed sufficient to provide ample data for analysis. The specific variables collected included dividend, interest expense, total liabilities, noncurrent liabilities, total assets, total equity, and earnings after tax. The sample consisted of five firms, each contributing ten years of data, resulting in a panel data set

comprising 50 firm-year observations. The data collection period encompassed a ten-year accounting period, spanning from 2013 to 2022.

The data collected for the study was inputted into specialized data analysis software called Eviews 12. The data was then edited, filtered, and processed for analysis. We used descriptive statistics such as mean and standard deviation to analyze the data. Additionally, inferential statistical analysis was performed using the Ordinary Least Square (OLS) regression technique to test the study's hypotheses. OLS regression is commonly used because it provides a simple and efficient way to model the relationship between a dependent variable and one or multiple independent variables by minimizing the sum of squared differences between the observed and predicted values.

To examine the effect of cost of capital on the financial performance of listed food products firms in Nigeria, the study adopted and modified the model developed by Omwanza (2018).

$ROA_{it} = \beta_o + \beta_1 COC_{it} + e_{it}$ ----------eqi

Where,

ROA_{it} = Return on assets of firm *i* at time *t*

COC_{it} = Cost of capital of firm *i* at time *t*

β_0 = Intercept (constant)

β_{1-5} = Coefficients of the Independent Variables

e = error term

The model above was modified in order to expand COC since COC was measured using three proxies in the present study. Therefore, the modified model used in the study is:

$ROA_{it} = \beta_o + \beta_1 COE_{it} + \beta_2 COLTD_{it} + \beta_3 COTD_{it} + e_{it}$ ----------eqii

Where,

ROA_{it} = Return on Assets of firm *i* at time *t*

COE_{it} = Cost of Equity of firm *i* at time *t*

$COLTD_{it}$ = Cost of Long-Term Debt of firm *i* at time *t*

$COTD_{it}$ = Cost of Total Debt of firm *i* at time *t*

The measurement of the variables are given in Table 3.1 below.

Table 3.2 Measurement of Variables

Variable	Formula	Source
1. Return on assets	$\frac{Earnings\ After\ Tax}{Total\ Assets}$	Giwa, 2019
2. Cost of Equity	Dividend/Equity	Ogiriki & Olorunleke, 2023
3. Cost of Total Debt	Interest Expense/ Total Liabilities	Giwa, 2019
4. Cost of Long-Term Debt	Interest Expense/ Noncurrent liabilities	Guerard & Buell, 2012

Results and Discussion

Descriptive Statistics

Descriptive statistics such as mean and standard deviation were deployed in order to analyze the data.

Table 4.1 Descriptive Statistical Analysis

	ROA	***COE***	***COTD***	***COLTD***
Mean	0.082053	0.215822	0.044731	0.235159
Median	0.062637	0.071457	0.038154	0.131189
Maximum	0.264935	1.845133	0.150419	1.206189
Minimum	-0.087265	0.000000	0.000000	0.000000
Std. Dev.	0.074658	0.376318	0.040853	0.286569
Skewness	0.571923	2.767345	0.865565	1.882903
Kurtosis	2.887477	10.55671	3.209086	6.178708
Jarque-Bera	2.752178	182.7848	6.334433	50.59475
Probability	0.252564	0.000000	0.042121	0.000000
Sum	4.102672	10.79110	2.236549	11.75797
Sum Sq. Dev.	0.273120	6.939161	0.081779	4.023959
Observations	50	50	50	50

Source: *Eviews 12 Statistical Software (2023)*

The result of the descriptive analysis carried out reveals that, on average, the Return on Assets (ROA) is 0.082, indicating an 8.2% return on total assets. Some firms experienced negative returns, with the minimum ROA being -0.087, indicating potential financial difficulties. However, some firms achieved higher returns, with the maximum ROA being 0.265, reflecting better financial performance. The standard deviation of 0.075 suggests moderate variability in ROA around the mean. The positive skewness of 0.572 implies a slightly right-skewed distribution, indicating that more firms have relatively higher returns. The kurtosis of 2.887 indicates moderate peakedness compared to a normal distribution. The probability of Jarque-Bera is 0.253, suggesting that the distribution of ROA is not significantly different from a normal distribution.

Regarding the cost of equity (COE), the average is 0.216, meaning investors typically expect a 21.6% return for holding the company's stock. Some firms faced no additional return requirements (COE of 0.000), possibly considered risk-free. However, others faced significantly higher expectations and perceived risks, with the maximum COE being 1.845. The standard deviation of 0.376 indicates a relatively wide spread around the mean. The highly positive skewness of 2.767 indicates a strongly right-skewed distribution, with more firms having relatively higher cost of equity. The kurtosis of 10.557 signifies high peakedness compared to a normal distribution. The probability of Jarque-Bera is 0.000, suggesting that the distribution of COE significantly deviates from a normal distribution.

For the cost of total debt (COTD), the mean is 0.045, indicating a 4.5% cost for borrowing on average. Some firms did not utilize debt financing (COTD of 0.000), while others faced higher borrowing costs, with the maximum COTD being 0.150. The standard deviation of 0.041 suggests moderate variability around the mean. The slightly positive skewness of 0.866 indicates a right-skewed distribution, with more firms having relatively higher borrowing costs. The kurtosis of 3.209 signifies moderate peakedness compared to a normal distribution. The probability of Jarque-Bera is 0.042, indicating that the distribution of COTD significantly deviates from a normal distribution.

Regarding the cost of long-term debt (COLTD), the mean is 0.235, representing a 23.5% cost for long-term borrowing on average. Some firms did not rely on long-term debt (COLTD of 0.000), while others faced significantly higher borrowing costs, with the maximum COLTD being 1.206. The standard deviation of 0.287 indicates moderate variability around the mean. The moderately positive skewness of 1.883 suggests a right-skewed distribution, with more firms having relatively higher costs for long-term debt. The kurtosis of 6.179 signifies high peakedness compared to a normal distribution. The probability of Jarque-Bera is 0.000, indicating that the distribution of COLTD significantly deviates from a normal

distribution. These findings provide valuable insights into the financial performance and cost of capital for the listed food products firms in Nigeria.

Test of Hypotheses

Ordinary Least Square (OLS) regression technique was conducted in order to test the study's hypotheses. According to Burton (2021), OLS regression is commonly used because it provides a simple and efficient way to model the relationship between a dependent variable and one or multiple independent variables by minimizing the sum of squared differences between the observed and predicted values.

Table 4.2 Ordinary Least Square Regression Analysis

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
COE	0.107943	0.023965	4.504116	0.0000
COLTD	-0.023864	0.048368	-0.493385	0.6241
COTD	-0.157929	0.338942	-0.465946	0.6435
C	0.071433	0.014337	4.982292	0.0000
R-squared	0.330829	Mean dependent var		0.082053
Adjusted R-squared	0.287188	S.D. dependent var		0.074658
S.E. of regression	0.063033	Akaike info criterion		-2.613705
Sum squared resid	0.182764	Schwarz criterion		-2.460743
Log likelihood	69.34263	Hannan-Quinn criter.		-2.555457
F-statistic	7.580601	Durbin-Watson stat		1.129900
Prob(F-statistic)	0.000320			

Source: *Eviews 12 Statistical Software (2023)*

The result of the OLS regression indicate the effect of cost of capital variables on the financial performance, specifically the Return on Assets (ROA), of listed food products firms in Nigeria. The model's R-squared value of 0.330829 indicates that approximately 33.1% of the variation in ROA can be explained by the variation in the cost of capital variables (COE, COTD, and COLTD). The adjusted R-squared value of 0.287188 accounts for the model's degrees of freedom and suggests that the model is reasonably adequate in explaining the relationship between cost of capital and financial performance. The F-statistic of 7.580601 is significant, with a p-value of 0.000320 (less than 0.05), indicating that the overall model is statistically significant, meaning that at least one of the independent variables is significantly related to the dependent variable (ROA).

Also, the Durbin-Watson statistic of 1.129900 is close to 2, suggesting that there might be no significant autocorrelation in the model's errors, which is essential for the validity of the regression results. The constant term (C) has a coefficient of 0.071433 and a t-statistic of 4.982292. The t-statistic is highly significant with a p-value of 0.0000, indicating that the constant term is statistically significant. The constant represents the intercept of the regression model and reflects the impact on the dependent variable (ROA) when all independent variables (COE, COTD, and COLTD) are zero. In this case, the positive coefficient suggests that even when all cost of capital variables are zero, there is a positive effect on ROA, which could be attributed to other factors not included in the model.

Hypothesis I

H01: Cost of equity has no significant effect on the return on assets of listed food products firms in Nigeria.

The reported regression coefficient value of 0.107943 for the cost of equity (COE) indicates that COE has a positive effect on the return on assets (ROA) of listed food products firms in Nigeria. A one-unit increase in COE leads to a 0.107943 unit increase in ROA. The t-statistic value of 4.504116 is highly

significant with a p-value of 0.0000 (less than 0.05). This implies that the alternate hypothesis is accepted. In conclusion, Cost of equity has a significant positive effect on the return on assets of listed food products firms in Nigeria (β = 0.107943; *p*-value = 0.000).

Hypothesis II

H02: Cost of long-term debt has no significant effect on the return on assets of listed food products firms in Nigeria.

The reported regression coefficient value of -0.023864 for the cost of long-term debt (COLTD) indicates that COLTD has a negative effect on the return on assets (ROA) of listed food products firms in Nigeria. The t-statistic value of -0.493385 is not statistically significant with a p-value of 0.6241 (greater than 0.05). The negative coefficient implies that higher long-term debt costs are associated with a decrease in ROA. However, the null hypothesis was accepted since the p-value of 0.6241 is greater than 0.05. In conclusion, Cost of long-term debt has a non-significant negative effect on the return on assets of listed food products firms in Nigeria (β = -0.023864; *p*-value = 0.6241).

Hypothesis III

H03: Cost of total debt has no significant effect on the return on assets of listed food products firms in Nigeria.

The reported regression coefficient value of -0.157929 for the cost of total debt (COTD) indicates that COTD has a negative effect on the return on assets (ROA) of listed food products firms in Nigeria. The t-statistic value of -0.465946 is not statistically significant with a p-value of 0.6435 (greater than 0.05). The negative coefficient implies that higher debt costs are associated with a decrease in ROA. However, the null hypothesis was accepted since the p-value of 0.6435 is greater than 0.05. In conclusion, Cost of total debt has a non-significant negative effect on the return on assets of listed food products firms in Nigeria (β = -0.157929; *p*-value = 0.6435).

Discussion of Findings

The study found that there is a positive effect of the cost of equity on the return on assets, which implies that as the cost of equity capital increases, the return on assets of listed food products firms in Nigeria also increases. This finding suggests that when the equity investors require higher returns (higher cost of equity), the firm's assets generate better returns. This could be attributed to investors' willingness to invest in the firm's equity when they perceive the potential for higher returns. In addition, the positive relationship between the cost of equity and ROA might indicate that the firm is able to effectively deploy the funds raised from equity investors to generate profits (Mohamad & Saad, 2012). This result is in line with the results by Marshal, Ndubuisi and Bekweri (2023); Ogiriki and Olorunleke (2023); Giwa (2019); but disagreed with the position of Sam (2019) that cost of equity negatively affects firm performance.

Secondly, the study found that there is a negative but non-significant effect of the cost of long-term debt on the return on assets, which implies that an increase in the cost of long-term debt is associated with a decrease in the return on assets of the food products firms. This finding suggests that higher costs associated with long-term debt financing can hinder the firm's ability to generate returns on its assets. It's possible that higher interest payments on debt could cut into the firm's profitability, affecting its overall financial performance (Emoh & Uzuanje, 2015). This negative relationship could also indicate that firms with higher costs of long-term debt might be facing financial distress or might not be utilizing debt capital efficiently. This finding agrees with the results by Ogiriki and Olorunleke (2023) and Sam (2019).

Finally, it was found that there is a negative but non-significant effect of the cost of total debt on the return on assets, which suggests that as the overall cost of debt increases, the return on assets of the food products firms decreases. This finding reinforces the idea that higher costs associated with debt financing

negatively impact a firm's financial performance (Emoh & Uzuanje, 2015). The negative relationship between the cost of total debt and ROA could be due to increased interest expense, which reduces the firm's profitability. It could also indicate that firms with higher debt burdens are less efficient in utilizing their assets to generate returns. This finding agrees with the results by Ogiriki and Olorunleke (2023); I Sam (2019); brahim, Abdulkarim, Muktar and Peter (2021); Giwa (2019).

Conclusion

Underperforming firms struggle with an inefficient and suboptimal cost of capital that hinders their ability to achieve their financial performance goals. They often miscalculate their cost of capital, neglecting factors such as the cost of debt and equity, prevailing market conditions, and industry-specific considerations. Consequently, these companies face difficulties in obtaining affordable financing options, and their capital structure is imbalanced with excessive reliance on costly debt or insufficient equity. This leaves them burdened with high financing expenses, limiting their capacity to fund operations and investments effectively. The above informed the need for the present study which examined the effect of cost of capital on the financial performance of listed food products firms in Nigeria.

The study's findings highlight the complex interplay between cost of capital components and return on assets for listed food products firms in Nigeria. These insights emphasize the importance of a balanced and well-thought-out cost of finance that helps firm optimize their financial performance and navigate potential challenges. The positive relationship observed with the cost of equity suggests that equity financing can be instrumental in enhancing the overall returns of the food products firms. This indicates that when companies obtain funding from equity investors, they may experience improved profitability and, consequently, higher returns on their assets. Equity financing allows firms to access additional capital without the burden of interest payments, offering flexibility and potential growth opportunities.

On the other hand, the study revealed negative relationships with long-term debt and total debt costs. This implies that higher costs associated with long-term and total debt financing may pose challenges to the profitability of food products firms. When firms rely heavily on debt financing, particularly in the long term, they may face increased interest expenses and financial obligations, potentially impacting their ability to generate satisfactory returns on assets. Therefore, managing debt levels judiciously is essential to mitigate the risks associated with higher debt costs since excessive debt can strain a firm's cash flow and profitability, leading to financial instability and potential default risks. In line with the findings of the study, we make the following recommendations:

1. Managers should meticulously attract equity investment through enhanced investor relations, transparency in financial reporting, and efforts to improve the company's investor appeal and so enhance firm performance.
2. Industrial goods firms should optimize debt structure by diversifying sources of long-term debt, negotiating better terms, and improving creditworthiness for reduced borrowing costs.
3. Directors in listed industrial goods firms should maintain a balanced debt-to-equity ratio by refinancing high-cost debts, consolidating debts with favourable terms, and regularly reviewing the debt portfolio to ensure cost-effectiveness.

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