

## Cost of Capital and Corporate Performance of Selected Quoted Nigerian Manufacturing Firms

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### Abstract

*The issue of how a company is financed has been of concern to finance managers for a long time. The optimal capital structure may be defined as where the weighted average cost of capital is at the lowest while maximizing the market value of the firm. The objective of our study is to determine how capital structure affects the corporate performance of selected quoted manufacturing companies in Nigeria over a period of seven (7) years (2008-2014) using twenty (20) quoted manufacturing firms. The work employed a fixed effect and random effect model to determine the effect of the cost of capital on corporate performance. The ex-post facto research design was used for this study. The secondary data were obtained from the financial statements and Facebook published by the Nigerian Stock Exchange (NSE). Descriptive statistics and linear regressions were used for the study. The results of the analysis showed that cost of equity had a significant and positive effect on net profit before tax, cost of debt has a positive relationship on the market price per share while the weighted average cost of capital had a negative effect on earnings per share in Nigeria quoted manufacturing firms.*

*Based on evidence from the findings, we recommend that companies management should ensure that financial decisions made by them are in consonance with the shareholders' wealth maximization objectives which extends to profit maximization objective of the firm. The study further recommends that financial managers should take factor like internal financing into consideration as recommended by pecking order theory in their decision of capital structure*

**Keywords:** *Capital structure, corporate performance, maximization of shareholders wealth; Maximization of profit, earnings per share.*

### 1.0 Introduction

Capital is an important factor to a firm for its survival and growth and it has a key role in the financial performance of the firm to achieve the long-term goals and objective of the firm.

How an organization is financed is of paramount importance to both the managers of the firms and the providers of funds. This is because if a wrong mix of finance is employed, the performance and survival of the business enterprise may be adversely affected (Osuji & Odita, 2012). Birru (2016) defined capital structure as a mix of debt and equity employed by a company to finance its business. The capital structure of any company is a vital factor that enhances the operations and process of the company. Dennis, Aftab, and Bernd (2000) defined the cost of capital as the required return on an investment that is the minimum return that an investment in a company or a project should yield. The cost of capital is the opportunity cost of using funds to invest in new projects. This is appropriate because the cost of capital is that rate of return the firm's total investment which earns the required rates of return of all the sources of financing. Where the internal rate of return is less than the cost of capital, shareholders wealth will decrease; where the internal rate of return is equal to the cost of capital, shareholders wealth will remain unchanged and where the internal rate of return is greater than the cost of capital, shareholders wealth will increase.

This study seeks to provide an answer to the question "Does cost of capital affect the corporate performance of Nigerian quoted manufacturing firms"? In Nigeria, determining the actual effect a firm's cost of capital on its market value has been a major challenge among researchers and this is what this study seeks to address.

The performance of the Nigerian manufacturing sector since independence has been unimpressive. According to the national Bureau of statistics (2015), the industrial sector had a more erratic output than the other sectors due to a power outage. The manufacturing sector in Nigeria is on the throes of death and will witness total collapse if the government continues to deny its enabling environment (Barberopoulos, 2011). Not knowing the optimal capital structure of a manufacturing firm might lead to selecting a capital structure mix that does not sooth the operation of the manufacturing firm and this may result in low performance of the manufacturing firm.

This study attempts to analyze the performance of selected quoted manufacturing firms in Nigeria. The following are the objectives of this paper:

1. Establish the effect of cost of equity on profit before tax of Nigerian quoted manufacturing firms; and
2. Determine the effect of cost of debt on the market price of Nigerian quoted manufacturing firms.

## 2.0 Literature Review

The magnitude of the cost of capital is not new in the field of finance literature and the review of prior literature reveals that there is a significant relationship between the cost of capital and corporate performance. The static Trade-off theory opined that an optimal capital structure is obtainable where the tax benefit of debt financing equates leverage associated costs which may include financial distress and bankruptcy while investment decision and firm assets are held constant. The Pecking Order Theory concludes that optimum capital is difficult to determine because firms make use of firstly equity capital then debt and lastly equity capital appears both at the start and end of the Pecking Order. The Agency cost theory lastly states that an optimal capital structure is attainable by reducing the cost resulting from the conflicts between the manager and the owners (Chechet & Olayiwola, 2014). Miao (2005) in his research noted that sound financing decisions of a firm would ideally lead to an optimum capital structure because the capital structure, in general, had an effect on the cost of capital, net profit, earnings per share, dividend payout ratio and the liquidity position of the firm. Brigham (1991) stated that for an investment to be worthwhile, the expected return on capital must be greater than the cost of capital. Cost of capital, therefore, in general, summarizes the different costs attached to the different sources of financing obtained by an organization (Micheal, 1992). Holmes and Kent (1991) defined the cost of debt as the rate of interest paid to debenture holders. In practice, the interest rate paid by the company can be modeled as the risk-free rate plus a risk component (risk premium) which itself incorporates a probable rate of default. For companies with similar risk or credit ratings, the interest rate is largely exogenous. Abor (2005) argues that short term debt to be less expensive leading to an increase in profit levels. Results of his study also showed that profitability increases with size and sales growth. Gonzalez, Guzman, Pombo, and Trujillo (2012) empirically examined ownership and control on the capital structure of Columbia firms, the study showed that family ownership is positively related with debt level, that is, family firms exert a high level of debt to reduce their potential loss of control of their firm. Chinaemerem and Anthony (2012) investigated the impact of capital structure on the financial performance of Nigerian firms using a sample of thirty (30) non-financial firms listed on the Nigerian Stock Exchange (NSE). The study used debt to equity ratio as financial leverage indicator and return on asset (ROA), return on equity (ROE) as performance indicators. The result showed that a firm's capital structure had a significantly negative impact on the firm's financial performance. The finding of this study indicate consistency with prior empirical studies and provide evidence in support of Agency cost theory. The present study extents the literature on the cost of capital and corporate performance of selected quoted Nigerian manufacturing firms.

## 3.0 Methodology

### 3.1 Data and Sample Size

The main objective of this study is to examine the impact of the cost of capital on corporate performance of selected quoted Nigerian manufacturing firms from 2008 to 2014. Twenty (20) manufacturing companies were selected for this study using a proportionate sample technique. Data were obtained from Factbook published by the Nigerian Stock Exchange (NSE) and financial statements of the affected companies. This gave total observation of 140 that is 7 years multiplied by 20 companies.

The data used for this study are valid and reliable as they were obtained from annual reports of selected companies which have been subjected to independent audit by an external auditor and prepared in accordance with the requirements of the companies and Allied Matters Act Cap C<sub>20</sub>, 2004.

### 3.2 Statistical Techniques

In this study, a panel data regression analysis is performed. Panel data is a combination of cross section and time series. There are many advantages of using panel data: continuous individual homogeneity, giving more useful data, more variability, more degree of freedom and more efficiency. While the time-series is plagued with multicollinearity, panel data has the ability to identify and measure effects that are simply not noticeable in pure-cross or pure time-series data. Panel data are usually gathered on micro units like individual firms and households (Twaresh, 2014). Panel least square (PLS) method was used to estimate (obtain the numerical variables of) the parameters of the panel regression models with a preference for random effects over fixed effects. The choice for random effect consideration was because it proved to be efficient. Moreover, the random effect was appropriate because unconditional inferences were made with respect to the heterogeneity of the effects of the independent variables in the model. Linearity and normality tests were also conducted to determine the appropriateness of the models of the study.

The panel data for this study is specified thus:

$$NPBT = f(ke)$$

$$MPPS = f(kd)$$

Specific functional relationship

$$NPBT = \alpha_0 + \alpha_1 ke + \mu_1$$

$$MPPS = \beta_0 + \beta_2 kd + \mu_2$$

Where

NPBT – Net profit before tax

MPPS – Market price per share

ke – Cost of equity

kd – Cost of debt

$\mu$  – Error term

### 3.3 Variable Description

#### Dependent Variables (Performance)

There are numerous studies that reviewed the effect of the cost of capital on corporate performance. In most cases, performance is reflected by variables like return on assets (ROA), return on equity (ROE). This variable reflected profitability as well as financial performance. In this study, two (2) accounting based measures of performance are used. They are profit before tax and market price per share. These are the dependent variables for this study.

#### Independent Variable

**Cost of equity:** Is one of the independent variables used in this study. It is measured by dividing the number of ordinary shares issued with the dividend declared to ordinary shareholders. The following hypothesis will be tested: the cost of equity capital does not have a significant effect on profit before tax of Nigeria quoted manufacturing firms. Cost of equity is expressed as:

$$ke = \frac{d_0(1+g)}{MP_e} + g$$

Where:

ke – the cost of equity

d<sub>0</sub> – dividend declared

g – growth rate in dividend

MP<sub>e</sub> – market price of equity (ex – div)

**Cost of debt:** This is the second independent variable. Cost of debt is considered to be an important factor of a firm's profitability. It is expressed as:

$$k_d = \frac{I(1-t)}{MP_D} \times 100$$

Where:

$k_d$  – the cost of debt

$I$  – Interest payment in Naira

$t$  – Tax rate in decimal

$MP_D$  – the Market price of the debenture

The following hypothesis will be tested: the cost of debt has no significant effect on the market price of Nigeria quoted manufacturing firms.

## 4.0 Result and Discussion

### 4.1 Descriptive Statistics

Descriptive statistics for dependent and independent variables of the study are tabulated below in table 1.

**Table 1: Descriptive Statistics**

	kE	kD	MPPS	EPS	PBT
Mean	0.149455	0.343542	3.754228	0.694015	13.28905
Median	0.031720	0.345311	2.461507	0.394989	14.71611
Maximum	3.694580	0.352081	10.13090	4.025352	19.46849
Minimum	0.002290	0.329984	0.774727	3.473768	14.86202
Standard Deviation	0.483270	0.007797	2.531278	1.413606	5.429022
Observation	140	140	140	140	140

Descriptive statistics for dependent and independent variables of the study are tabulated above in Table 1. The mean value of the measure of the cost of equity (ke) and cost of debt (kd) stood at 0.14945 and 0.343542 respectively, while the maximum value for the cost of equity was 3.694580 and maximum values for the cost of debt 0.352081. It means that the minimum rate of return to equity holders of the company was 0.229% while the maximum return to equity holders was 369.45%. This is a good development for shareholders.

Debenture holders had a minimum return of 32.998 or 33% and a maximum return of 35.21%.

As for financial performance measure market price per share (MPPS). The minimum MPPS is 0.774727 with a maximum of 10.13090 and has a mean 3.754228 and a standard deviation of 0.007797. Earnings per share, on the other hand, has a minimum of (3.473768) and a maximum of 4.025352 with a mean of 0.694015 and standard deviation of 1.413606. Thus, cost of capital of selected quoted manufacturing firms in Nigeria experience the highest level of variation in respect of financial performance has an average profit of ₦13.2890 million and it ranges from a minimum of a loss of ₦14.86202 million to a maximum profit before tax of ₦19.46849 million with a standard deviation of ₦5.42902 million.

## Correlation

### Hypothesis One

Beta	Standard error	Adj R <sup>2</sup>	t-statistic	P-value
0.4876	0.16639	0.4390	2.9300	0.0030

Based on the result above, the null hypothesis is rejected while the alternate is accepted which means the that cost of equity capital has a positive and significant effect on net profit before tax of Nigerian quoted manufacturing firms.

Our result is consistent with Pecking Order Theory which stated that highly profitable companies tend to reduce their external funding which at the end signals to creditors that they have low bankruptcy risk (Alkhatib, 2012).

### Hypothesis Two

Beta	Standard error	Adj R <sup>2</sup>	t-statistic	P-value
12.1978	2.9978	0.6140	4.0700	0.0000

From the result, we reject the null hypothesis and accept alternate which means that the cost of debt has a positive and significant effect on market price. This finding is consistent with the result obtained by Javed, Rao, Akram, and Nazir (2015) that debt ratio positively related to the market to book value ratio.

## 5.0 Conclusion and Recommendations

Findings of this study show that the correlation between the cost of capital and corporate performance is strong and positive. The overall result shows that the variation in the cost of capital and financial performance is explained by the capital structure represented by equity and debenture. Therefore, we conclude that the cost of equity has a positive and significant effect on profit before tax of selected quoted manufacturing firms. Additionally, the cost of debt has a positive and significant effect on the market price per share.

To improve the corporate performance of manufacturing firms in Nigeria, the study recommends the following:

1. The management of Nigerian quoted manufacturing firms should work hard to optimize the capital structure of their firms in order to increase the value of the returns on equity, assets, and investment. Every manager should strive to attain an optimal capital structure. This is an agreement with Agboola and Salawu 2008 that management should strive to identify and maintain an optimal capital structure since it represents the point where the market values are optimized.
2. The management of Nigeria manufacturing firms should consider the use of more debt in their capital structure mix as this will reduce the overall cost of capital as a result of its tax advantage.
3. Investors and stakeholders of quoted manufacturing firms in Nigeria should also consider the level of leverage of any firm before committing their hard earned money as the financing mix of any company determines the quantum of returns to the shareholders.

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## Appendix

### List of Nigerian firms used in the study

S/N	NAME OF FIRM	SECTOR
1	Nestle Nigeria Plc	Food/beverages and tobacco
2	Cadbury Nigeria Plc	Food/beverages and tobacco
3	7-up Bottling Company Plc	Food/beverages and tobacco
4	Honeywell Flour Mills Plc	Food/beverages and tobacco
5	Nigeria Bottling Company Plc	Food/beverages and tobacco
6	Portland Paints & Product Plc	Chemical and Paints
7	Vitafoam Nigeria Plc	Industrial and domestic product
8	BOC Gases Plc	Chemicals
9	Studio Press Nigeria Plc	Printing and Publishing
10	GSK Nigeria Plc	Healthcare
11	May & Baker Nigeria Plc	Pharmaceutical
12	Livestock Feeds Plc	Livestock/Animal specialist
13	Nigeria Wire Industry Plc	Construction
14	Lafarge Wapco Plc	Building materials
15	Nigerian Breweries Plc	Breweries
16	Presco Plc	Crop production
17	PZ Nigeria Plc	Conglomerates
18	Unilever Nigeria Plc	Conglomerates
19	Guinness Nigeria Plc	Breweries
20	Berger Paints Plc	Chemical and Paints