

# The Effect of Financial Leverage on Shareholders Returns of Quoted Companies in Nigeria

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## ABSTRACT

This study investigated the effect of financial leverage on returns to shareholders returns on quoted companies in Nigeria. In conducting this relationship study, a samples were used for the first and second analysis, the first analysis was tested using multiple regression while the second analysis was done using a non-probability method. The same set of dependent variables were used as measure of leverage, multiple regression analysis, and non-parametric techniques were employed for analysis 1 and 2 respectively, while the test statistic was used to test the significance of each regression model, the chi-square was utilized in testing the significance of the effect of leverage on returns to shareholders. Whereas the 'f test statistic was used in determining the overall significance of each regression, findings were presented, It was concluded that financial leverage has significant effect on shareholders returns, it is further discovered that, the need to maximize profit and increase ownership control of the firm led to an increase in the use of leverage as a means of investing finances by firms. It was therefore recommended that leverage be employed by business organizations.

**KEYWORDS:** *financial leverage, shareholders returns, parametric techniques*

## 1. INTRODUCTION

In Corporate organizations, financing decisions is always a matter of importance whenever an investment decision is to be made knowing that profit making a primary reason for the establishment of firms. Given the capital budget of a firm therefore, the way the capital projects would be financed needs be decided upon by managers of the firm What means of financing to be employed is always a problem that confronts organizational managers. Whether a 100 percent equity financing would be used or a combination of equity and debt, and what percentage of the mix would be ideal to enhance or maximize shareholders, wealth or return is another issue. It is believed that financial leverage can in some ways: It can dramatically change the payoffs to shareholders: The effect of financial leverage depends on the Company's Earnings before interest and Tax (EBIT) When EBIT is relatively high, leverage is beneficial (Helfert, 2022). The fact is that different Corporate organizations are into different kinds of business and the environment of their business differs hence, they are exposed to different kinds of situation both

business and financial risks Irrespective of the nature of business and risk faced, the fact remains that if the Company must continue to survive, decisions must be taken on how to meet the various financial demands of the business and the risks involved must be burn. It is also important to know that a Company can decide not to use debt in its financing and in such a case does not have financial leverage but, for a firm that makes use of debt, it can magnify both profits and losses and therefore returns to shareholders. More debt means increased financial leverage. Financial leverage can increase potential rewards or the potential for financial distress and failure. Conceptually, the firm has a certain amount of risk inherent in its operations, which is its business risk, described as the uncertainty inherent in projection of failure in Earnings Before Interest and Tax (EBIT). By using debt, the firm concentrates its business risk on the common stockholders: (Brigham 1989:645). The impact of financial leverage can be described in terms of its effects on earnings per share (EPS) and Return on Equity (ROE). Brigham (2019) also noted that the

**How to cite this paper:** Dr. Odogu Laime Isaac "The Effect of Financial Leverage on Shareholders Returns of Quoted Companies in Nigeria"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-8 | Issue-3, June 2024, pp.816-826,



IJTSRD65010

URL: [www.ijtsrd.com/papers/ijtsrd65010.pdf](http://www.ijtsrd.com/papers/ijtsrd65010.pdf)

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ability of a firm to pay dividend is directly related to its expected Earnings per share, the greater the expected Earnings per share, the greater the expected dividend.

The role of financial leverage in magnifying the returns of the shareholders is based on the assumptions that the fixed charges funds (such as loan from financial institutions and other sources) can be obtained at a cost lower than the firm's rate of return on net assets. Thus, when the difference between the earnings generated by assets financed with fixed charges and costs of these funds are distributed to the shareholders, the Earnings Per Share or Return on Equity increases. However, Earnings Per Share or Return on Equity will fall if the Company obtains the fixed charges funds at a cost higher than the rate of return on the firm's assets. (Pandy, 2020) The importance of finance to a corporate organization and inability of owners to provide all the required funds for effective running and existence of the firm makes this study relevant. The frequent complaints expressed by the Nigerian Shareholders Association (N. S. A.) concerning the ineptitude of the boards of companies in improving the economic interests (returns on investments and risk reduction) of investing shareholders indicates shareholders dissatisfaction thereby necessitating the desire to investigate it. They established the umbrella body, Nigerian Shareholders Association to protect shareholders interest on their investments, as a result of complaints. This has become a matter of concern to finance experts. That is the gruelling displeasure of shareholders towards the manner in which their investment interests are considered by the board and management of business organisations. The objective of company's financial policies is to maximize shareholder's wealth (i.e. increase returns and reduce risks) which will ensure the satisfaction of the latter. Secondly, arguments have been presented which seem to suggest that appropriate application of financial leverage policies can be used according to Van-Home (2021) to increase returns of shareholders and reduce associated risks. However, opponents of this argument notably proponents of the Net Operating Income (N. O. I) approach to security valuations and Modigliani and Miller in Pandey (2020) have a contrary view. These constitute the problem which the researcher intends to understudy and possibly proffer solutions. It is the intention of the researcher to determine the effects of financial leverage on shareholders returns and the associated risks with a view to providing investors with the required satisfaction.

### **Aim and Objective of The Study**

The main purpose of this study is to determine the effects of financial leverage on shareholders returns

of quoted companies in Nigeria. The specific objectives are:

To what extent is debt financing employed by Corporate Organizations

To highlight the effect of financial leverage on the Shareholder's return

For the purpose of this study the following hypothesis would be tested:

H<sub>01</sub>: There is no significant relationship between debt financing employed by Corporate Organizations and returns to shareholder in quoted companies in Nigeria.

H<sub>02</sub>: There is no significant relationship between financial leverage on the Shareholder's return in returns to shareholders in quoted companies in Nigeria.

## **2. LITERATURE REVIEW**

This part deals with review of related literature bothering on: **Conceptual Framework, Theoretical Framework and Empirical Review**.

### **2.1. Conceptual Framework**

#### **FINANCIAL LEVERAGE AND SHAREHOLDERS RISK**

We have seen that financial leverage magnifies the shareholder's earnings and also that the variability of earnings before Interest and Tax (EBIT) causes Earnings per share (EPS) to fluctuate within wider ranges with debt in the capital structure. The more debt is used: Earnings per share rises and falls faster than Earnings before Interest and Tax does. Hence, financial leverage does not only magnify Earnings per share but also increases its variability (Helfert, 2022).

Two types of risk are involved:

#### **OPERATING RISK AND FINANCIAL RISK**

##### **OPERATING RISK**

This is defined as the variability of Earnings before Interest and Tax. The environment both internal and external in which a firm operates determines the variability of Earnings Before Interest and Tax (EBIT). A firm can better face such risk if it can predict it with a fair degree of accuracy. The variability of Earnings Before Interest and Tax has two components: Variability of Sales: The variability of sales revenue is in fact a major determinant of operating risk. A Company sale may fluctuate for three reasons. The change in general economic conditions may affect the level of business activities. Business cycle is an economic phenomenon, which affects sales of all companies. Certain events affect sales of companies belonging to a particular industry for example, the general economic condition may be good but a particular industry may be hit by

recession. Other factors may include the availability of raw materials, technological changes, actions of competitors, industrial relations, shift in consumer preferences etc. Factors which are internal to the company also affect sales level such as changes in management, product market decisions of the company and its investment policy, or strike in the company have a great influence on the company's sales (Helfert, 2022).

**Variability in Expenses:** The variability of Earnings Before Interest and Tax is further affected by the composition of fixed and variable expenses. The higher the degree of operating leverage the faster will be the increase in Earnings Before Interest and Tax when sales mess bad times when sales are falling Earnings Before Interest and Tax declines at a faster rate than fall in sales Operating expenses may also vary on account of changes in input prices and may also contribute to the variability of Earnings before interest and tax (Helfert, 2022)

### **FINANCIAL RISK:**

The variability of Earnings per share caused by the use of financial leverage is called financial use The variability of Earnings per share and Return on Equity increases with more financial leverage for a given degree of variability of Earnings Before Interest and Tax. Financial Risk is an avoidable risk if the firm decides not to use any debt in its capital structure, because a firm adds financial risk when debt is used

### **INTEREST TAX SHIELD**

This is another way of explaining the effect of debt, to see the impact of interest charge on the firm's liability, Interest charges are tax deductible and therefore provides tax shield which increases the earnings of the shareholders.

### **OPTIMAL CAPITAL STRUCTURE**

There had been argument among financial experts as to if "Optimal" capital structure exist. There are those who believe that an optimal capital structure exist for each firm, they are known as Traditional Approach proponents and those who believe that Optimal Capital Structure does not exist known as M-M (Modigliani and Miller in Pandey, 2020) Approach. The traditional approach believes that there is an Optimal Capital structure and they based their argument on the following assumptions:

**Financing through Bonds and Stocks:** The traditional approach to capital structure model assumes that the sources of financing available to the firm are Bonds and Stocks.

**A 100 Percent Dividend Payout:** They assumed that the firm pays all its profit as dividend therefore, the

idea of reserve is eliminated as source of financing a firm.

**No Income Tax:** They ignored income tax and assumed that absence of taxes does not distract the general relationship of the capital structure.

**Constant Earnings Before Interest and Tax:** Earnings Before Interest and Tax are assumed to remain constant so that an optimal capital structure can be readily determined Changes in earnings before income and tax would result in a different Optimal Capital Structure for each level of earnings before income and tax.

**Constant Business Risk:** Business risk held constant by assuming that all assets acquired are such that the line of business of the firm remains unchanged. When business risk is held constant it minimizes the effect of financial risk.

**Changes in Financial Leverage:** The traditional approach assumes that the firm should be able to decrease its financial leverage by selling stock and using the proceeds to retire bonds. Issuing bonds and using the proceeds to retire stock increases the firms' leverage. Therefore, the firms total book value remains fixed over the period considered. If the total financing is held constant it will be easy to isolate the effects of a changing capital structure on the firm's value (Wright, 2019).

**Cost function:** The value of the firm according to the traditional approach to capital structure is determined by adding the market value of the firm's debt to market value of its equity. If Earnings before interest and tax is held constant, the lower the cost of capital the higher the value of the firm. The optimal capital structure is therefore at the point or value where the overall cost of capital is minimized. On the other hand Modigliani and Miller in their approach argued that the cost of taxes, a firm's market value and the cost of capital remain invariant to capital structure changes. Therefore, there is no Optimal Capital Structure since the method by which the firm's finances itself has no effect on the overall cost of capital. He came up with the following hypotheses: The securities are traded in the perfect capital market situation, which means: Investors are free to buy or sell securities. They can borrow without restriction at the same terms as firms do. They behave rationally, and it can be implied that the transaction cost e. g. cost of buying and selling securities do not exist. Firms can be grouped into homogeneous risk classes, therefore, firms would be considered to belong to homogeneous risk class if their expected earnings have identical risk characteristics. The expected Net Operating Income (NOI) is a random variable with

constant mean probability distribution and a finite variance. There should be a 100 percent earning distribution to shareholders. Corporate income tax should not be recognized. In their hypothesis, they argued that a firm in the same risk class, total market value is independent of the debt/equity combination, therefore, capitalizing the expected Net Operating income by the rate of appropriate to that business class. The above proposition states that if identical firms expect the same degree of leverage, have different market value on the cost of capital, arbitrage will take place to enable investors to engage in personal leverage as against corporate leverage to restore equilibrium in the market (Wright, 2019).

### CAPITAL ASSET PRICING MODEL

This is used to evaluate the rate of return on a security (share) in a market context. It attempts to measure the relationship between the return of an individual security and a broad market index or economy. Underlying the model is the assumption that the rate of return is a function of the risk free rate of return with a product of the risk premium (as measured by the differences between risky market rates of return and risk free rate of return) and a measure of volatility of a security's return with that of the market. The capital asset pricing model is shown as:

$$R_k = R_f + (R_m - R_f) B$$

$R_k$  = Rate of return on security k

$R_f$  = Risk free rate of return

$R_m$  = Rate of return on risky market portfolio of securities

B = Beta (i.e. regression slope coefficient)

All the three valuation models reveals the importance of measuring the rate of return required for determination of the value of a security (e.g. share). The expectations on this rate of return is dependent on the security returns as well as the associated risks Weston and Brigham (2022). This is the position in the theory of rational expectations which when applied to capital market becomes known as the theory of efficient market current security prices by this theory are set such turn, the expected rate of return on a security equals the optimal forecast of that security returns given all available information which assist in measuring expected returns and risk Mishkin (1992)

### VALUATION MODEL OF UNQUOTED FIRMS.

Unquoted firms whose shares are not traded in the floor of the stock exchange use different basis of valuation which rely on accounting book values. The most common methods are:

**Net Asset for Worth) Basis:** This involves dividing the difference of net worth less intangible with the numbers of used shares. This is expressed as

$$\text{Value of share} = \frac{\text{Net Worth less intangible assets}}{\text{Number of issued shares}}$$

**Earnings Basis:** This methods divides the average profits over a number of years by an expected rate of return to give the firms total value which if divided by the number of issued shares produces the value per share.

$$\text{Value of a firm} = \frac{\text{Average Profit}}{\text{Expected Rate of Return}}$$

**Super Profit Basis:** This uses the economists' concept which includes in total cost, deductible from total revenue, the cost of forgone alternative measured by income sacrificed in preference to choose alternative. The outcome is known as super profit in accounting. The super profit basis then considers the computed super profit as goodwill for a specified number of years to arrive at a firms value. Price Earning (P/E) Ratio Method: This is the ratio of market price of a security to the earnings from it A high Price - Earning ratio usually indicated that investors have a longer capital recovery expectations regarding the firms prospects of being able to turn out in time the amount paid on its shares by investors judging from the quality of its earnings. It is commonly used for security price determination in take-over bids in which the industry price - earning ratio is used as substitute in the price -earning model together with the earnings of that company.

### 2.2. Theoretical Framework

The theories employed for this work are:

**Agency Theory:** Agency theory according to Madan (2019) is the theory that explains the relationship between principal (shareholders) and agents (managers). In this relationship, the principal delegates or hires an agent to perform work in the best interest of the principal. The delegation of decision-making authority can lead to a loss of efficiency and can subsequently increase costs. For example, if the owner (principal) delegates decision making authority to the manager (agent), it is possible that the manager would not work as hard as the owner would, given that the manager does not share directly in the results of the organization. This could lead to the agency problems because the theory involves cost of resolving conflict because of the principal, agents and aligning interests of the two groups. It usually leads to risk aversion which is caused by the relationship between risk and return (Dechow & Skinner, 2020). The agent in such a relationship will do everything possible to ensure that principal that employed him is happy, through falsification of reports in order to justify his position and activities delegated to him. This is known as window dressing. As a result of this window dressing of the financial

statement, ethical standard in financial reporting is often significantly desecrated ( Ahiazu, 2017). In fact, researchers like Beatty (2017); Bora and Saha (2010) challenged the ethical stance of both shareholders and managers in the use of such practices in any organization. This is because there are many reports of price manipulations, profit overstatement, and accounts falsification by some dubious stewards which renders financial statements ineffective. The business failure of the past decades however, have been closely associated with a number of parties, managing board of directors, auditors and some investors (Ezeani, 2012). The relevance of the agency theory to this work is that accountants at times corroborate with management either to increase or decrease the financial statement. The differences which are observed in financial reporting are legitimately prepared from choice of varied accounting policies of the same organization of the same period, has brought about challenges of credibility to accounting. This is because when the secret reserves are created, it actually means that agents are not providing good information to shareholders or asking managers about any suspicious account or dubious transactions.

**Value-based management theory:** This is the management theory that states that management should consider the interest of shareholders first in its business actions. Madan (2016) states that value-based management encompasses the processes used for creating, managing and measuring value. It is simply the theory that applies only when company invests capital at a return that exceeds the cost of that capital. This means the organization embraces value maximization as the ultimate financial objective for the company. They do so by employing four management processes of: **Strategy development:** First, company or business unit develops a strategy to maximize value. **Target setting:** Next is the translation of strategy into short and long-term performance targets. These are defined in terms of key value drivers. **Action plans and budgets:** This is another step to develop action plans and budgets to define the steps that will be taken over the next year to achieve the stated targets. **Performance management:** this is the institution of performance measures and incentives system in place to monitor performance against targets and to encourage employees in meeting their goals because the interest of shareholders is considered first, managers try to dress the financial statement in other to make it attractive and meet the needs of shareholders who are the major users.

## Empirical Review

The study of Eniola, Adewunmi, and Akinselure, (2017) was limited to debt finance by using descriptive, correlation and regression analysis and discovered that there is a statistically significant effect between long and short-term liability on Return on Assets (ROA) and Return on Equity (ROE). However, a study by Nwude, and Anyalechi, (2018) revealed from the regression estimations showed that debt structure has a negative and significant impact on the performance of Nigerian quoted firms within the period under review. Sadiq, Kachollom, Dasuki, and Yusuf, (2017) tested the leverage predictions of the trade-off and pecking order models using Swiss data. According to them, the race between the trade-off theory and the pecking order theory is undecided; in fact, on many issues there is no conflict. In their study, firms with more investment opportunities apply less leverage, which supports both the trade-off model and a complex version of the pecking order model. Confirming the pecking order model but contradicting the trade-off model, more profitable firms use less leverage. Leverage is also closely related to tangibility of assets and the volatility of a firm's earnings. They also find that Swiss firms tend to maintain target leverage ratios.

Kachollom, Dasuki and Yusuf (2017) conducted a study on the effect of capital structure on the performance of Deposit Money Banks in Nigeria. The objective was to examine the effect of capital structure on the financial performance of Deposit Money Banks in Nigeria. Secondary data was obtained from the financial statements of Deposit Money Banks listed in the Nigerian Stock Exchange. Four banks were selected as samples and data from their financial statements for a period of 10 years (2006 to 2015). The study has employed the use of Pearson correlation coefficient and general least squares (GLS) regression model to analyze the effect of capital structure on the performance of some selected banks. The performance variables used in the study were, ROA, ROE and ROCE. Findings from the study showed that capital structure has positive and significant effect on the financial performance of listed deposit money banks in Nigeria. The study of Anarfo, and Appiahene, (2017) sought to examine the effect of capital structure on the financial performance of firms in Nigerian manufacturing sector. The population of the study was all the listed manufacturing companies listed on the Nigerian Stock Exchange, a sample of 10 listed companies was selected. The research design adopted was ex-post facto using four models to analyze the impact of capital structure on firms' performance. The study used balanced panel data of 100 observations from

the 10 listed companies for the periods ranging from 2007 - 2016. Descriptive statistics and regression were used as tools of analysis. The study revealed that there are statistically significant and non-significant effects of capital structure on performance variables. Finally, the study recommended that manufacturing companies should adopt balanced capital structure strategy that would optimise company's performance and corporate value.

Nwude & Anyalechi (2018) conducted a study on impact of capital structure on performance of commercial Banks in Nigeria. The study evaluated the influence of financing mix on the performance of commercial banks, and the causal link between debt-equity ratios. Data collated were analysed using correlation analysis, ordinary least squares regression analysis, fixed effect panel analysis, random effect panel analysis, granger causality analysis, as well as post estimation test such as restricted f-test of heterogeneity and Hausman test. The findings show that while debt finance exert negative and significant impact on return on asset, the debt-equity ratio has positive and significant influence on return on equity. Adeoye and Olojede (2019) conducted a study on the effect of capital structure on the financial performance of quoted deposit money banks in Nigeria. To achieve the objective of the study, they used a cross sectional time series secondary data covering the period of seven years (2012-2018) was extracted from the audited financial statement of ten (10) banks listed on the floor of stock exchange. The descriptive statistics, Pearson moment correlation and multiple linear regressions were used. The correlation results showed that capital structure is negatively correlated with financial performance (ROA and ROE). Result from panel regression revealed that debt to equity though significant, impacted negatively on return on assets and return on equity, asset tangibility significantly impacted return on asset but insignificantly impacted return on shareholder's equity and also Age have a significant impact on return on asset and insignificant effect on return on equity.

The aim of the study of Berger, and Banaccorsi, (2020) was to examine the relationship between capital structure and financial performance of firms listed in the Nigerian stock exchange between 2012 and 2017. Data were extracted from 40 companies out of 169 companies which are listed on the Nigerian Stock Exchange as at 2018. Consequently, ordinary pooled least square was adopted to analyze the objective of study. The principal findings that originate from this study is that capital structure has a negative impact on return on equity and return on

asset of the firm listed on the Nigerian stock exchange. In view of the above important findings that originated in this work, one of the recommendations was that all hands must be on deck by the Nigerian policy makers to embark on policy measure to reduce double digit interest rate in the financial sector in order to ensure self-liquidating debt capital in the listed firms in the Nigerian stock exchange. In another research by Serwadda (2019) on the effect of capital structure on banks' performance on Ugandan banks for a ten-year period, 2006–2015, panel regression models were used to determine the effects of capital structure on bank performance. Results portrayed that there was a positive relationship between capital structure variables and bank performance. It is between long term debts, total debt with net interest margin. There was also a positive relationship between total debt and return on assets. It was still the same between total debt and returns on equity. However, there was a negative relationship between short term debt and return on assets. Adekunle, and Sunday, (2020) examined the impact of capital structure choice on firm performance in Egypt, using a multiple regression analysis in estimating the relationship between leverage level and firms' performance, the study covered between 1997 and 2005. Three accounting based measures of financial performance (return on Equity, return on Assets and gross profit margin) were used. The result revealed that capital structure choice decision in general, has a weak-to-no impact on firms' performance.

Adaramola, Sulaiman, and Fapetu, (2022) noted that debt can have both a positive and negative effect on the value of the firm (even in the absence of corporate taxes and bankruptcy cost). He built a model in which over investment and under investment can be alleviated by debt financing. His model assumes that managers have no equity ownership in the firm and receive utility by managing a larger firm. The "power of manager" may motivate the self-interested managers to undertake negative present value project. In order to solve this problem, shareholders force firms to issue debt. The research objective of the study carried out by Adeoye, and Olojede, (2019) was to establish effects of capital structure on the performance in financial perspective of Kurdistan manufacturing firms. Theoretically it is assumed that the capital mix a firm uses to finance its operations does not matter and that its future operating income generated by its asset is what determines its value. Multiple linear regression which included return on equity as independent variable, capital structure, liquidity, size and growth as the independent variables. These variables were used to establish

whether capital structure decisions affect profitability of manufacturing firms in Kurdistan. The results obtained from the regression equations established a negative relation between total debt, size and financial performance which indicates using more of debt or assets are linked to a decrease in performance in financial perspective. The study further found out that financial performance increased with increase in liquidity and sales growth. From the findings outlined above, the study recommended that companies should consider borrowing less funds and use internal funds economically.

**METHODOLOGY**

This study adopts economic study design which would utilize primary and secondary data collected from questionnaire and information in their reported financial statement at the Nigeria Stock Exchange. Under the design, the data related to the variables are all collected from the financial statement of the same financial period. the first analysis was tested using a statistical tool - multiple regression while the second analysis was done using a non-probability method. The same set of dependent variables were used as measure of leverage, multiple regression analysis and non-parametric techniques were employed for analysis 1 and 2 respectively, while the test statistic was used to test the significance, the statistical and mathematical tools used For the purpose of testing the hypotheses, the use of regression technique is made obvious because it helps to clarify relationships between two or more variables.

The multiple regression model is given as follows:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3$$

Y-Dependent Variable

Where

X-Independent Variable A = Intercept

And

b= The slope of the regression line.

For the purpose of confirming the results from the secondary data, the primary data generated shall be analyzed by use of chi-square (x) test expressed as:

$$X^2 = \sum \frac{(f_0 - f_e)^2}{f_e}$$

Where  $x^2$  = chi-square

F0 = observed frequency

Fe = Expected frequency.

The chi-square is employed because it tests how well an observed set of data fits an expected set.

**DATA PRESENTATION**

In this section a display of the data set and summary as obtained through the secondary and primary

sources are provided. Table 1 below is the data set used for this part of the analysis (1) which is to be employed for analysis involving two further subjects A and B hypotheses (1) indicates the variables of the study namely, Earnings per Share as (Y) and Standard deviation of earnings before interest and Tax as (Y) as independent variables while debt-Equity Ratio as (x), Interest coverage ratio as (x2) and (x) dummy variables are the dependent variables,

The Table 1 would be used to perform two regression analyses. This table contains data derived from secondary sources.

SN	Y1	Y2	X1	X2	X3
1	29.84	43592.48	.12	7.95	1.00
2	4.45	21559	.00	1.67	.00
3	47.20	6746.57	.17	2.66	1.00
4	25.05	584.27	.00	1.99	1.00
5	1.23	-6105.00	-.01	1.94	1.00
6	-24.55	-5387.66	-1.55	1.63	1.00
7	41.10	120630.00	1.89	2.01	1.00
8	212.00	162934.10	5.27	2.35	1.00
9	3.23	107743.20	.07	1.97	1.00
10	316.00	23238.43	.20	15.32	1.00
11	50.77	48199.35	.15	1.82	1.00
12	28.77	378.77	.08	1.18	1.00
13	23.40	2069.80	.01	1.08	1.00
14	81.30	2086.67	.86	1.86	1.00
15	36.80	4242.34	.44	1.49	1.00
16	9.52	1664.10	.12	1.18	1.00
17	103.00	84609.07	2.83	4.39	1.00
18	8.39	27956.08	.85	3.00	1.00
19	187.40	34511.72	4.13	4.69	1.00
20	84.98	1507.13	3.29	1.76	1.00
21	27.60	390.89	2.46	1.36	1.00
22	23.54	97.27	.46	1.01	1.00
23	46.77	4225.74	1.08	10.59	1.00
24	-1.77	641.43	.05	1.57	1.00
25	25.01	115.24	.01	17.59	1.00

Source: Annual Reports

**Table 1-Data Set**

Also, following, the summary of the research data representing data collected from primary sources in a cross sectional survey using questionnaire administration and contains responses from the sample of respondents in the study. This table concerns positions held by management ranking executives on project financing using debt. This is needed to carry out non-parametric statistical analysis using the chi-square to determining the degree of association in the information supplied by the respondents and test its significance.

## DATA ANALYSIS AND RESULTS

Calculations using the data as presented in table 1 were performed with the stipulated data analysis techniques, which was facilitated by the aid of a computer statistical software package (SPSS version 10). The results from this empirical studies shown below in table 2 and 3 respectively for the first and second regression models (of analysis 1) for the non-parametric statistical analysis and (analysis 2).

### ANALYSIS OF RESULTS

The results of the data analysis shown in previous section of this stud is interpreted below in order to provide meaningful information.

#### ANALYSIS 1A

The estimated regression model obtained by fitting model I to a set of historical data on the variable o the study for analysis I produced:

$$Y-17.118 27.959X, + 12.969X+ 3.600X$$

Thus, the estimated regression model above indicates that on the average, the dependent variables, Earnings per Share (Y) within the duration of the study responds to changes in the independent variables, Debt-Equity Ratio (X), Interest coverage Ratio (X) and dummy variables (X) as follows:

$b_{10}$ : This shows that the shareholders income will be N17.118 when (X), and (X) and (X) are zero each.

The figures are given in naira value only.

$B_{11}$ : This indicates that Y1 will increase by N27.959 if X, increases by NI and X, and X, remains constant.

$B_{12}$ : This explains that Y1 will increase by 12.969 if X, increases by N1 and X, and X, remains unchanged.

$B_{13}$ : This shows that Y1 will increase by N3.600 if X, increases by NI and X, and X2 remains constant.

The estimated model is consistent with the theoretical criteria about the sign and size of the coefficients as established by financial theory as signs of both coefficients by and  $b_{12}$  corresponded with the expectations. The result as measured by the multiple coefficient of determination ( $R^2$ ) also showed that about 65.8% of total variation in the dependent variable ( $Y_1$ ) is explained by variations in both independent variables  $X_1$ , X, and X. This is a highly impressive performance by the model as it gives a good fit to the data on the variables. Furthermore, another measure of goodness of fit of the regression line as measured b the adjusted multiple coefficient of determination ( $R_2$ ) indicated that approximately 60.9% of total variation in the dependent variable (Y) is explained by the independent variables  $X_1$ , X, and  $X_2$  jointly after taking account of the relevant degrees of freedom (adjusted  $R^2$ ).

#### ANALYSIS 1B

The regression model obtained by fitting model 2 to the historical data on the variables of the study for analysis I section 'B' was estimated as

$$Y_2-114.151+15886.374X,+ 197.450X_2+12003.120X,$$

The above estimated model shows that on the average the dependent variable (Y) standard deviation of Earnings before Interest and tax within the duration of the study, responds to movement in the explanatory variables Debt - Equity Ratio (X), Interest coverage Ratio ( $X_2$ ) and dummy variable ( $X_3$ ) as follows:  $b_{20}$ : This indicates that the risk of returns to shareholders ( $Y_1$ ) will be: N114.151 where the explanatory variables  $X_1$ ,  $X_2$ , and  $X_3$  are each zero.  $B_{21}$ : This explanations that (Y) will rise by N15886.374 if X, rises by NI and X and X, remains the same.  $B_{22}$ : This shows that Y, will rise by N197.450 if  $X_2$  increases by NI and X, and X,  $B_{23}$ : This shows that  $Y_2$  will increase by N12003.120 if X, increase by N1 and X, and  $X_2$  remains the same. The theoretical criteria on the sign and size of the coefficients as established by financial theory were satisfied as the signs of  $b_{21}$ ,  $b_{22}$ , and  $b_{23}$  corresponded with theoretical expectations. The measure of goodness of fit of the regression line as measured by the multiple coefficient of determination (R) shows that about 30.8% of total variation in the dependent variable Y: is explained jointly by  $X_1$ , X and  $X_3$ . This indicates a fair performance of the model. Another measure of goodness of fit of the regression model line as measured by the adjusted multiple coefficient of determination ( $R$ ) shows that about 20.9% of the total variations in the dependent variables Y is explained by the explanatory variables  $X_1$ , X and X, jointly after taking into consideration the relevant degrees of freedom. This indicates a fair performance of the model.

### DECISIONS OF THE HYPOTHESIS OF THE STUDY

The decisions reached on each one of the tests of hypothesis conducted in this study would be presented in this section.

#### Decision Rule (or criterion)

Reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ) of the computed value of the appropriate statistics exceeds the critical value. Otherwise accept the null hypothesis and reject the alternative hypothesis.

#### Hypothesis (1) and research question (1).

Concerning the relationship between returns to shareholders and each observed variable debt-equity leverage ratio, interest coverage ratio and leverage status:



Ho:  $b_{12i} = 0$ ;  $b_{12i} = 0$ ;  
 H<sub>1</sub>:  $b_{12i} > 0$ ;  $b_{12i} > 0$ ;  
 $\alpha = 0.05$  (using 2-tailed test i.e  $\alpha/2$ )  
 Test statistics = 'T' Test  
 Critical value =  $t(0.05/2; df-n-k-25-4-21) = 2.080$

The result indicated that the computed values of the 't' test statistics produced. 4.372 and 2.981 b<sub>1</sub> exceeded the critical value (ie 2.080).

We therefore, reject the null hypothesis and accept the alternative hypothesis that there is a significant relationship between returns to shareholders and each of the variables namely, debt/equity leverage ratio, Interest Coverage ratio and leverage and non-leverage financing methods.

**Hypothesis 2 and research question (2).**

Relating to the relationship between shareholder's risk of return and each observed variable on debt-equity leverage ratio, Interest coverage leverage ratio and leverage status

Ho:  $b_{21} = 0$ ;  $b_{221} = 0$   
 Hi:  $b_{21} > 0$ ;  $b_{221} > 0$   
 $\alpha = 0.05$  (using 2-tailed test)  
 Test statistics = 't' Test  
 Critical value  $t(0.05/2; df-n-k-25-4-21) = 2.08$

The computed values of 't' test statistic were 12.969 and 197.450 respectively. Both  $b_{21}$  and  $b_{221}$  fell above the critical value or rejoin (i.e 2.08).

We therefore, reject the null hypothesis and accept the alternative hypothesis that there is a statistically significant relationship between risk in returns to shareholders and each of the variables namely debt/equity leverage ratio, interest coverage leverage ratio and leverage and non-leverage financing methods.

**Analysis 2**

Calculation using the data as presented in the table was performed with the chi-square data analysis technique.

For the purpose of testing hypothesis I which states that there is no difference in the opinion of respondents on the relationship between leverage and shareholders returns question 13 responses which states what benefits or impact has the use of borrowed funds made on your company's general profitability and survival was used.

Respondent	Accountant	Admin Manager	Total
Yes	24	8	32
No	6	12	18
<b>Total</b>	<b>30</b>	<b>20</b>	<b>50</b>

**Table 2**

Source: Questionnaire respondents

Respondents	Accountant		Admin Manager		Total	% Total
	F <sub>0</sub>	F <sub>e</sub>	F <sub>0</sub>	F <sub>e</sub>		
Yes	24	19	8	12	32	64
No	6	10	12	7	18	36
<b>Total</b>	<b>30</b>	<b>29</b>	<b>20</b>	<b>19</b>	<b>50</b>	<b>100</b>

**Table 3**

Source: Questionnaire responses

$$X^2 = \frac{\sum (f_0 - f_e)^2}{f_e}$$

$$x^2 = \frac{(24-19)^2}{19} + \frac{(8-12)^2}{12} + \frac{(6-10)^2}{10} + \frac{(12-7)^2}{7}$$

$$X = 1.32 + 1.33 + 1.06 + 3.57 = 7.82$$

To determine the level of significance of the computed value of  $X^2$

$$df (R-1) (C-1) = (2-1) (2-1) = 1$$

at  $\alpha = 0.05$  and d.f=1 critical value of  $X^2 = 3.84$

since computed  $X^2 >$  critical value of  $X^2$

i.e  $7.82 > 3.84$ , we reject  $H_0$  and accept the alternative hypothesis  $H_1$ .

To test hypothesis 2 which states that there is no difference in the opinion of respondents on the relationship between leverage and risk of returns to shareholders question, 4 which states was used.

Respondent	Accountant	Admin Manager	Total
Yes	32	3	35
No	4	11	15
<b>Total</b>	<b>36</b>	<b>14</b>	<b>50</b>

**Table 4**

Source: Questionnaire respondents

Respondents	Accountant		Admin Manager		Total	% Total
	F <sub>0</sub>	F <sub>e</sub>	F <sub>0</sub>	F <sub>e</sub>		
Yes	32	25	3	9	35	70
No	4	10	11	4	15	30
<b>Total</b>	<b>36</b>	<b>35</b>	<b>14</b>	<b>13</b>	<b>50</b>	<b>100</b>

**Table 5**

Source: Questionnaire responses

$$x^2 = \frac{(32-25)^2}{25} + \frac{(3-9)^2}{9} + \frac{(4-10)^2}{10} + \frac{(11-4)^2}{4}$$

$$= 1.96 + 4 + 3.6 + 12.25 = 21.81$$

df = 1 and  $\alpha = 0.05$  level of significance critical  $X^2 = 3.84$

Since computed  $X^2 >$  critical  $X^2$

i.e  $21.81 > 3.84$

We reject the null hypothesis and accept the alternative hypothesis

### CONCLUSION AND RECOMMENDATIONS

The findings of this study make it obvious that firms generally cannot completely avoid using leverage for the survival and growth of their business. The firms or business are part of the important section of the economy and its survival and growth are exposed to a number of risk or uncertainties ranging from uncertainty of the economic conditions, such as internal and external economic and political situations, monetary and fiscal policies, social conditions etc. Secondly, industrial factors and also company factors could have an effect on the firm and consequently returns to shareholders, as they constitute risk in business. Thus, it can be concluded from this study that financial leverage has a positive effect on returns to shareholder and the risk in returns to shareholders

With the evidence shown in this study which goes to prove that financial leverage has a significant effect on the returns to shareholders, it becomes important for organizations in employing the use of leverage in their capital budget or project financing should carry out a proper analysis of the cash flow and the relevant factors of the environment that could increase the risk element involved. As a result, small and medium scale firms that need to expand should not shy away from employing leverage as we have established in this study that it has a positive relationship to returns to shareholders.

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