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# corporate bonds and financial performance: empirical analysis of quoted manufacturing firms in nigeria

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**Abstract**

The study investigated effect of corporate bonds on financial performance of quoted manufacturing firms in Nigeria. Explanatory research design was used. The study obtained secondary data from 60 firms which were sampled out of 70 quoted firms the manufacturing sector of Nigerian exchange. Return on Assets (ROA) was used to proxy performance. Findings from the study showed that the effect of independent variable was statistically significant in expounding the variation in return on assets (Hausman's test = 89.464999, $p = 0.0000 < 0.05$). The study thus concluded by pointing out that corporate bonds have significant impact on the financial performance of quoted manufacturing firms in Nigeria. The study recommended that managements of Nigerian quoted manufacturing firms should give attention to issuance of corporate bonds as a way to increase their financial performance.

**Keywords:** Debt financing, financial performance, corporate bonds

## 1.	Introduction

Every economy is driven by the industrial sector especially the manufacturing industry. Manufacturing firms are notably an important engine of growth (Libanio, 2006; Mike, 2010).  This explains the reason why developing countries' focus on economic growth. Although, manufacturing firms in Nigeria have passed through several developmental stages, their activities have not yet translated to expected level of productivity (Anyanwu, 1998). Also, it is alarming to note that several manufacturing firms have close down or temporarily stopped production in recent times. Reason for this is basically is financing. Hence, availability of required fund will go a long way in ensuring the going concern of manufacturing firms in Nigeria. Chinoye (2008) noted that paucity of capital for carrying out of project or business ventures could restrict production. Currently, there are several efforts by businesses in Nigeria in dealing with the issue of lack of funds. Also, businesses are faced with difficulties on how to benefits from various available sources of financing. It is therefore pertinent to state that the best form of financing for manufacturing firms is long term funds and the most secured platform for raising the needed fund is Capital market. It is a known fact that raising long-term capital, particularly in emerging nations such as Nigeria has serious constraint which makes capital market indispensable.

Meanwhile, there have been lots of debate and arguments among policy makers and economists regarding the effectiveness of Nigerian capital market in driving the desired economic growth and

industrial development. Previous studies have noted that the Nigerian capital market had not performed well enough in helping manufacturing concerns to raise funds (Ariyo, 2005; Isreal, 2015). For instance, Israel (2015) noted that the failure of the capital market to source for resources efficiently and effectively for the manufacturing sector's development and expansion can be linked to arrays of challenges confronting it. Additionally, sourcing funds through loans require collateral and high finance cost. The finance cost is the associated interest payable on the loan with possible huge accumulation which may lead to liquidation in the event of default. Several studies have been done to enunciate on the nature and scope of the link between capital structure and firm financial performance (Salawu, 2007; Yinusa & Babalola, 2012; Sebastian & Rapuluchukwu, 2012; Ajibola, Wisdom & Qudus, 2018). There is a void that must be filled. Salawu (2007), for example, looked at the impact of capital structure on the financial performance of a few Nigerian publicly traded companies spanning 1990 and 2004 focused on short term debt. Also, in the study conducted by Yinusa and Babalola (2012) using years 2000 and 2009, looked at the impact of corporate governance on capital structure in ten (10) food and beverage companies, using the total debt to total assets ratio as a capital structure variable. Meanwhile, the focus of this work is to consider the effect of capital structure using corporate bonds which is one of its key components, on the financial performance of Nigeria's publicly traded manufacturing companies. The results of the study would be beneficial to promoters and core investors of firms both manufacturers and other sectors in mobilizing funds.

## 2.    Literature Review: Corporate Bonds and Performance

The question of how a manufacturer source for the required finance is vital for growth and sustainability of manufacturing firms. Categorizations of finance sources are in three distinct classifications, specifically, they are short, medium and long term (Olowe, 1998). The most appropriate form of finance needed by manufacturing firms should be determined by the precise purpose for which the fund is meant. Bonds are a veritable debt instrument used in raising long term borrowed funds by businesses. It is generally a promise to repay the amount borrowed along with interest on a specified date by the issuer. A bond can be described as a marketable loan security issued by a government or a corporation in order to mobilize capital (Ringui, 2012). According to Securities and Exchange Commission (SEC, 2011), "bond is an interest-bearing security which guarantees the holder the obligation of repayment of capital at future specific date and a fixed interest rate also known as coupon". Ogilo (2014) further described bond as a financial debt instrument whereby borrower bring out bond as an issuer, the issuer of a bond has a financial obligation to repay the lender the amount borrowed through the bond, in addition with interest within a defined agreed period. This makes the loaner an investor. Corporate bond is Short-term debt instruments are often known as commercial papers, and have a maturity date spanning for twelve months period after the date of issue, whereas long-term debt instruments have a maturity date spanning over twelve months period after the date of issue. Additionally, all bonds, with the exception of those issued by governments in their own currencies, are referred to as corporate bonds.

Furthermore, an entity's performance is measured by its ability to generate more returns. Suleiman (2013) defined a company's performance as the outcome of its appraisal or strategy on how successfully it meets its goals and objectives. Van Horne (2005) "describes financial performance as a deductive measure of how well a company can use assets from business operations to generate revenue". Financial performance is a causal factor in an organization's income, earnings, and increase in value, as seen by the entity's worthiness increasing in value (Asimakopoulos, Samitas & Papadogonas, 2009).

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Performance is synonymous to profitability. Owolabi and Obida (2012) described profitability as a company's ability to profit from all of its operations and undertaking. For a firm to achieve this, it must be able to generate income in order to make a profit over and above costs incurred in earning revenue, both direct and indirect. Returns on assets (ROA) happens to be one of the key ratio used in appraisal of an entity's financial performance. ROA is a financial ratio that indicates the rate in percentage of profit a company earns in comparison to its total resources. It is generally Net income is calculated by dividing total assets by net income. Net income is obtained from the company's income statement, and is the profit after tax after deducting the expenses. ROA measurements comprise of the total assets arising from a company's liabilities to creditors, such as capital paid in by investors. The total value of assets is usually used against the use of net assets.

**Conceptual Framework**
The conceptual framework presented the relationship between the independent and dependent variables used in the study.

**Independent Variables**                                    **Dependent Variables**



**Figure 2.1 Conceptual framework**
**Source: Authors' Design, 2021**
**Theoretical Framework: Capital Structure Irrelevance and Trade-Off Theory**
        Modigliani and Miller in 1958 developed Capital-structure irrelevance theory. The theory conceded that when capital is flawless market the capital structure has no effect on a firm's value, implying that a firm's value is mostly determined by its investment decisions. Critics of the theory argue that reality of perfect capital markets is not possible. However, the trade-off capital structure posits that it is the responsibility of a company to determine level of debt finance vis-a-vis equity finance to be employed. Kraus and Litzenberger in 1973 also developed Trade-off theory through consideration of a balance between the bankruptcy's dead-weight costs and the debt's tax-saving benefits. The costs of the agency are also included as part of the balance. The theory hints that there is a level of optimal capital structure where the advantages of debt are offset by the cost of debt. Fama and French (2005) noted that the optimal capital structure is accomplished when the marginal gain of an extra unit of liability is exactly offset by the marginal cost of an additional unit of debt. Primarily, the theory highlights the fact that companies are frequently financed by both debt and equity. Furthermore, the theory posited that there is a benefit to financing with debt, with debt tax benefits and debt financing costs, and that the consequences of financial hardship encompass both bankruptcy and non-bankruptcy debt expenses. Hence, firms that seek to optimize its wealth would critically consider the associated trade-off when deciding how much debt and equity to utilize for financing.

**Empirical Review**
        Umar, Tanreer, Aslam and Sayid (2012) conducted a study on how Capital structure affects the financial performance of firms listed on Karachi Stock Exchange spanning between 2006 and 2009.  The

result showed that there is positive relationships with long-term obligations to total assets have a negative relationship with current liabilities to total assets, as does the price earnings ratio. The study established that capital structure of firms critically affect the financial performance. The study conducted by Mwangi, Makau, and Kosimbei (2014) focused on 42 non-financial companies quoted on Kenya's Nairobi Securities Exchange spanning from 2006 to 2012. The study examined the association between capital structure and performance. Findings from the study showed that the impact of financial leverage was both positive and bad on ROE and ROA. This agreed with the findings of Vatavu (2015) investigated the relationship between capital structure and financial performance of 196 companies listed on the Romanian Stock Exchange over an eight-year period (2003-2010) and discovered that total debt (TD) ratio had a significant and negative impact on ROA. Also, the study conducted by Bokhari and Khan (2013) have a results that shows that Long-term debt (LTD) and short-term debt (STD) both have a negative impact on ROA and ROE with the objective to know the impact of capital structure on firm's performance. Debt measures have no significant effect on returns on equity (ROE) across all estimating methods, according to Omollo, Muturi, and Wanjare (2018), while short-term, long-term, and overall debt have negative and statistically significant effects on returns on assets. This was in contrast with the findings of Sultan and Mustafa (2015) while Tauseef, Lohano, and Khan (2013) discovered a nonlinear link between total debt ratio and return on equity, the study aimed to explore the effect of capital structure on profitability amidst quoted enterprises in Iraq.

## 3. Methodology

The research used an explanatory research design and relied on secondary data which were obtained from the audited financial reports of selected manufacturing firms quoted on the Nigerian Stock Exchange spanning over 10 years period i.e. from 2008 to 2017. The selected firms can be found under the sub-sector; consumer goods, conglomerates, health, industrial products, and oil and gas sectors. Manufacturing sector was considered because it is seen as engine of growth for economy (Mike, 2010). The study adopted criterion sampling technique to select 60 out of 70 manufacturing firms. The study used descriptive and inferential statistic for data analysis. The model specified for the study is presented below using simple linear regression analysis:

$$PERF = f(CB) \qquad\qquad [1]$$
$$ROA_{it}` = \beta_0 + \beta_1 CB_t + e_{it} \qquad\qquad [2]$$

Where; PERF = Performance measured by ROA, CB = Corporate Bonds, ROA = Return on asset, $e_{it}$ = Error term of regression model, $\beta_1$ = Co efficient of independent variable, $\beta_{0}$ = constant

## 4. Results

Table 1 for this investigation, the descriptive statistics result was achieved indicating that return on assets (ROA), and Corporate Bonds (CB) averages ₦10013599, and ₦24.36275 respectively with standard deviation of ROA (₦7932891) and CB (₦22.32597). The deviations from actual data are minimal.

**Table 1:** **Descriptive Statistics**

|  | LogROA | CB |
| --- | --- | --- |
| Mean | 10013599 | 24.36275 |
| Median | 8772081 | 20.49326 |
| Maximum | 25183483 | 67.44755 |
| Minimum | 249258 | 0.080100 |
| Std. Dev. | 7932891 | 22.32597 |

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**Source: Authors' Computation, 2021**

**Diagnostic Test**

The normality test carried out showed a normal distribution. The distribution's sum of square deviation is considerable, which connote broad dispersion while its smallness indicates that they are concentrated near the mean score. The variables' stationarity was also investigated. The Levin, Lin, and Chu t*, Im, Pesaran, and Shin W-stat., ADF - Fisher Chi-square, and PP - Fisher Chi-square, as well as the Levin, Lin, and Chu t*, were used to conduct the unit root test was selected because of its suitability to test for panel unit root .Test is applied on level I(0) as well as on first difference I(1). Results based on Levin, Lin & Chu t* are given in table 2 which showed that data is stationary at level.

**Table 2:      Unit Root Test and Test of Serial Correlation**

|  | Levin, Lin & Chu t* | Im, Pesaran and Shin W-stat | ADF - Fisher Chi-square | PP - Fisher Chi-square |
|---|---|---|---|---|
| LogROA | -3.04196*** | -0.41304 | 26.4448 | 26.8907 |
| D(logROA) | -8.65387* | -3.66227* | 56.0381* | 62.0582* |
| CB | -3.46991*** | 0.25365 | 16.1622 | 17.1520 |
| D(CB) | -84.6365* | -9.43280* | 59.5670* | 71.0716* |

| Test order | m-Statistic | rho | SE(rho) | Prob. |
|---|---|---|---|---|
| AR(0) | -4.592085 | -1.427707 | 0.310906 | 0.1080 |
| AR(1) | -1.031974 | -0.309532 | 0.299942 | 0.3021 |

$H_0$: Residual of the panel least square model is not serially correlated

**Source: Authors' Computation, 2021**

Table 2 presented the unit root test and test of serial correlation. The results under Levin, Lin, and Chu t* showed that the variables are in I (0) order. Returns on assets (ROA) and corporate bonds (CB), are stationary at levels; hence the panel least square model was used. The conducted serial correlation test to compare the stationarity of the study variables at level and first difference with their associated p-values that are higher than 5% at level and first difference using Arellano-Bond Serial Correlation Test, indicated that the model is not serially correlated.

The panel least square results revealed that the $R^2$ is 0.81 which indicated that about 81% of variation in the dependent variable is captured by the independent variable, while the remaining 19% is attributed to unexplained variation that was not captured in this model. Additionally, the F-statistic was significant (F = 168917, p = 0.000000). This indicated that corporate bonds (CB) are significant in explaining returns on assets (ROA). The coefficient of corporate bonds (0.5279) variable is positively related with ROA indicating that a unit increase in corporate bonds increases returns on assets by 52.8%. There is need for fixed and random effect models since it cannot be assumed that all the companies are the same. This is to determine the appropriate model selection. The fixed effect model result showed that the $R^2$ is 0.8318 indicating that about 83.17% of the variation in the dependent variable is captured by the independent variables, while the remaining 16.7% relates to variation not captured in this model. Also, the F-statistic was significant (25500.09, p = 0.000 < 0.05). The coefficient of corporate bonds (0.1464) revealed that the variable have positive relationship with returns on assets. The positive value showed that a unit increase in corporate bonds increases returns on assets by 14.6% (p = 0.000 < 0.05). The random effect model results revealed the $R^2$ to be 0.8956 implying that about 89.56% of the variation in the dependent variable is captured by the independent variables, while the remaining 16.7% is attributed to

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other variable (s) not included in this model. The F-statistic was significant (33374.01, p = 0.0000 < 0.05). Also, the findings showed that the independent variable have positive relationship with Corporate Bonds (0.30271). The positive values implied that a unit increase in Corporate Bonds increases returns on assets by 30.3% (p-values 0.000 < 0.05). Based on the results obtained, the appropriateness of the model was then checked for since it cannot be assumed that all the companies have the same characteristics.

**Table 3:**     **Appropriate Model Selection**

| Test Summary | | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|---|
| Cross-section random | | 89.4650 | 4 | 0.0000 |
| Variable | Fixed | Random | Var(Diff.) | Prob. |
| CB | 0.1946 | 0.03080 | 43060659 | 0.0000 |
| Wald Test: | | | | |
| Test Statistic | | Value | Df | Probability |
| F-statistic | | 78953.46 | (5, 595) | 0.0000 |
| Chi-square | | 394767.3 | 5 | 0.0000 |

**Source: Authors' Computation, 2021**

The study considered the random effect model ($H_0$) and fixed effect model ($H_1$). Table 3 presented the selection of appropriate model using Correlated Random Effects – Hausman's Test and Wald Test Statistics. The Chi-Sq. statistics for Hausman's test was 89.464999 (p = 0.0000 < 0.05), while the Wald test statistics that was conducted to check for robustness gave F-Statistics value to be 78953.46 (p = 0.0000 < 0.05) and Chi- Square value to be 394767.3 (p = 0.0000 < 0.05).  Hence, the null hypothesis that Random effect model is appropriate was rejected while the alternative hypothesis that fixed effect model is appropriate was accepted. Based on the foregoing, the null hypothesis that corporate bonds have no significant effect on financial performance was rejected, and the alternative hypothesis that corporate bonds have a significant effect on performance was accepted. This result refuted part of the findings of Tauseef, Lohano, and Khan (2013) which showed the return on assets and total debt ratios have a nonlinear connection. Although ROA rises as the total debt ratio rises, once the optimal debt level is reached, ROA begins to fall. The result also partially agreed with the postulations of the trade-off theory, Modiglian and Millers theoretical predictions.  .

## 5.     Conclusion and Recommendation

The study investigated the effect of corporate bonds on financial performance of quoted manufacturing firms on Nigerian Stock Exchange, Nigeria. The study concluded that corporate bonds have significant influence on the performance of Nigeria's publicly traded manufacturing firms. The study recommended that management of Nigerian quoted manufacturing firms should give attention to the debt component of their capital structure in order to boost financial performance. Further studies can be conducted to focus on companies in other sectors of the Nigerian exchange.

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