# Debt Capital and Financial Performance of Commercial Banks in Nigeria

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## Abstract

This study examined the effect of debt capital and financial performance of commercial banks in Nigeria. The objective is to determine the extent to which debt capital affect financial performance of quoted commercial banks. Data were sourced from financial statement of the quoted commercial banks from 2000-2020. Return on equity was modeled as the function of debt equity ratio, debt ratio, equity ratio, total liability ratio and long term debt ratio. Multiple regressions with econometrics view statistical package were used as data analysis techniques. Co-integration, Granger Causality Test and Augmented Unit Root Test were used to determine the long and the short run relationship that exist among the variables. The study found that 83.8% of the variation in Return on Equity is attributable to the variations in the debt capital. The estimated model also found that total liability ratio have a negative coefficient of 2.86, long term debt ratio have a negative coefficient of 5.37, equity ratio have a negative coefficient of 2.66 which debt equity ratio have a negative coefficient of 0.06 which implies that a unit increase on the variables will lead to decrease on return on equity of the commercial banks. However, equity the positive coefficient of 1.67 as parameter for equity ratio implies that a unit increase will lead to 16.7% increase on return on equity of the commercial banks. From the findings, the study found that debt capital has significant effect on the financial performance of the quoted commercial banks. It recommends that management of quoted commercial banks should work very hardtop optimize the capital structure in order to increase the returns on equity and assets through ensuring that their capital structure is optimal and management of commercial banks should increase their commitments into capital structure in order to improve earnings from their business transaction.

Keywords: Debt Capital, Financial Performance, Commercial Banks

## **INTRODUCTION**

The finance management functions of determining the capital structure of the firm is very important to the short and the long run sustainable growth of corporate entities. The separation of ownership from management means that owners' investment must generate return which depends on corporate policies such as the financing policy, the dividend policy, the investment policy and the capital structure policy. How well a firm achieves its operational objective have a lot to do with these policies. Debt is an important component in capital structure along with equity and retained earnings. One of the main debates in corporate finance is the impact of debt on a firm's investment.

Various theories has been formulated to examine the relationship between capital structure and corporate performance, the pecking order theory is when firms favor internal to external funding, if external funding is used then debt funding is used rather than equity Myers (1984). Firms have funds raised internally as their first choice, the second choice would be through raising debts from external sources, and the last choice would be through external equity. Ranked one of the most significant forms of cost, asymmetric information theory included in the work of Modigliani and Miller (1958) contends that the management has more insider information than investors. Jensen and Meckling, 1976; Harris and Raviv, 1991) emphasized that a dispute may occur between equity holders and debt holders on the one hand and between equity holders and the management on the other which result to creates agency cost. The above illustration can better applied in the advance financial market and difficult to be applied in the developing financial market like Nigeria.

The ambiguity in the theories further deepens the controversies on the relationship between financing leverage and firms' value. The applicability of the theories can better work in the business environment where the degree of market imperfection is less compared to the high degree of market imperfection such as the financial market of the developing countries like Nigeria where the market is characterize with information asymmetric and risk that can affect the performance of the firms contrary to theories.

Determining the capital structure mix that will improve a firm's value is a contentious topic in financial literature. The literature shows that what might be suitable for one firm might not be suitable for firms in other industries or regions. Thus, studying the effect of the capital structure mix in a specific environment helps determine the mix that will improve firms' performance in that environment (Graham, 2001). In Nigeria, there are limited studies of citable significant which have dealt on the problem of financing leverage on profitability of quoted firms. Existing studies such as Ujah and Brusa (2012), Akani (2019) and Akinmulegun, (2012) failed to capture measures of financing leverage such as debt equity ratio and also failed to capture measures of corporate profitability such as return on investment, return on assets, and return on capital employed. This creates a knowledge gap on the relationship between financing leverage and profitability of quoted firms. Therefore, this study examined the relationship between measures of debt capital and profitability of quoted commercial banks in Nigeria.

## LITERATURE REVIEW

#### Debt Capital

The debt capital in a firm's capital structure refers to the long-term bonds the firm use in financing its investment decisions because the firm has years, if not decades, to come up with the principal, while paying interest only in the meantime. The cost of debt capital in the capital structure depends on the health of the firm's statement of financial position. Debt restructuring refers to a firm changing its debt structure by either increasing or decreasing leverage. In practice, borrowers might make more new loan contracts (increase leverage) or renew debt. Debt restructuring usually means the injection of high levels of debt to increase the leverage of the company and thereby reduces the likelihood that the firm will be a takeover candidate (Rock and Rock, 1990).

A firm decides to negotiate creditors for interest lowering or maturity extent (Sudarsanam and Lai, 2001; Kam, Citron, Akani & Lucky (2014) and Muradoglu, 2008; Yawson, 2008).

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Debt can be restructured to benefit the business by refinancing existing loans or obtaining new ones secured by real property, equipment, receivables or in select cases, future cash flows. This process effectively reduces the cost of the debt in the long term and increases cash flow for the business. The increased cash flow can be reinvested in the company in a variety of ways that influence growth for the future. If an influx of capital is needed, a new commercial or business loan can provide for growth. This is considered capital restructuring as new leveraged debt capital is added to the company balance sheet.

Leland and Toft (1991) stated that, the value of a firm is the value of its assets plus the value of tax benefits enjoyed as a result of debt minus the value of bankruptcy cost associated with debt. Modigliani (1980) points out that, the value of the firm is the sum of its debt and equity and this depends only on the income stream generated by its assets. The value of the firm's equity is the discounted value of its shareholders earnings called net income. That is, the net income divided by the equity capitalization rate or expected rate of return on equity. The net income is obtained by subtracting interest on debt from net operating income.

The value of debt is the discounted value of interest on debt. Akani & Akani (2020), Jensen (1986) suggests that, when firms have more internally generated funds than positive net present value (NPV) projects, debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This over-investment problem can be lessened if managers are forced to pay out excess funds for servicing debt, therefore enhancing the firms' value.

#### Measures of Financial Leverage Total Debt Ratio

Total debt ratio measures the amount of a firm's total assets that is financed with external debt. This measure encompasses all short term liabilities and long-term liabilities. Nwude (2003) contend that this measures portion of the firm's assets that is financed by creditors. As the total debt ratio increase, so do a firm's fixed-interest charges, if the total debt ratio becomes too high, the cash flow the firm generates during economic recessions may not be sufficient to meet interest payments. In terms of its significance to a firm, theoretical literatures predict that debt is positively correlated with level of investment. For example, long and Malitz (1985) found a significant positive relationship between the rate of investment in fixed plant and equipment and level of borrowing. The total debt ratio is measured by dividing total debt with the total assets of the firm. This proxy variable remained most notable measure of leverage ratio of a firm as adopted in many empirical studies (Zeitun and Tian, 2007; Onaolapo and Kajola, 2010; Tze-Sam and Heng, 2011; Kasozi and Ngwenya, 2010; Baker and Wurgler, 2002; Ju et al., 2004; and Booth et al., 1999; Khan, 2012; Azhagaiah and Gavoury, 2011).

Total Debt ratio =  $\underline{Total Assets}$ Total Debt

1

# **Debt Equity Ratio**

Debt equity ratio is similar to the debt ratio and relates the amount of a firm's debt financing to the amount of equity financing. Actually, this measure of leverage ratio is not actually a new measure; it is simply the debt ratio in a different format. Debt equity ratio is the quantitative measures of the proportion of the total debt to residual owners' equity (Nwude, 2003). Thus, it is an indicator of company's financial structure and whether the company is more reliant on borrowing (debt) or shareholders capital (equity) to fund assets and activities. Many empirical studies in different jurisdictions have employed this measure of financial structure in their various studies (Zeitun and Tian, 2007; Majumdar and Chhibber, 1999; Azhagaiah and Gavoury, 2011) among others.

Debt equity ratio	=	Shareholders Funds	
		Total Debt	2

## Long Term Debt Ratio

Although this measure is incorporated in the last two measures highlighted above, some analysts generally use this measure because most interest costs are incurred on long-term borrowed funds, and because long-term borrowing places multi-year, fixed financial obligations on a firm. Agwor & Akani (2020), Titman and Wessels (1988) contend that significant results are good reason for employment of different measures of leverage ratio because some of the theories of financial structure have different implications for not combining them as aggregate "debt ratio". Long term debt ratio is measured by dividing long term debt with the total assets of the firm, and has been adopted in several empirical studies (Titman and Wessels, 1988; Zeitun and Tian, 2007; Tze-Sam and Heng, 2011; Long and Malitz, 1985; Booth et al., 1999).

Long term debt ratio =  $\frac{Total Assets}{Long Term Debt}$ 

3

## Short Term Debt Ratio

Short term debts are debt obligations that mature within one accounting year. This measure is very appropriate to be included in the measures of leverage ratio due to the important of short term funding to a firm. This may be one of the reasons that led to adoption of different measures of leverage ratio rather than narrow measure of financial structure by some scholars. Titman and Wessels (1988) contend that theories have different empirical implications in regard to different types of debt instruments. Thus, mismatching funds is a situation when long term investments are financed by short term debt rather than long term debt. Apparently, the occurrence of this is prone to default as payment of interest and repayment of principal may fall due when the proceeds (cash inflow) from the investment are not readily available. The inability of the firm to repay the principal will expose it to the embarrassments resulting from legal actions. This measure however, indicates the magnitude of current liabilities(obligations) to changes in the value of overall assets of a firm. Schinasi (2000) contends that leverage is the magnification of the rate of return whether positive or negative on a position or investment beyond the rate obtained by a direct investment of own funds in the market.

Theoretically, it is argued that short term measure is a good measure of leverage ratio in transition economy with less developed debt market where most firms' external debt finance are majorly commercial bank loans. Lucey and Zhang (2011) are of the view that market liberalization at the country level decreases the use of long-term debt, and debt maturity shifts to short term. Empirical investigation by Khan (2012) revealed that engineering sector firms in Pakistan are largely dependent on short debt but debts are attached with strong covenants which affect the performance of the firm. A good number of authors have employed this

measure in their empirical studies (Timan and Wessels, 1988; Zeitun and Tian, 2007; Long and Malitz, 1995; Khan, 2012) among others. This is measured thus;

Short term debt

<u>Total Assets</u> Short Term Debt

4

# Times Interest Earned Ratio

=

Times interest earned ratio is one of the measures of leverage ratio that employs income statement data to measure financial structure. This measure tells the financial analyst the extent to which the firm's current earnings are able to meet current interest payments. The earnings before interest and tax of the firms are used because the firm makes interest payments out of operating income.

Theoretical literatures contend that when the times interest earned ratio falls below 1.0, the continued viability of the firm is threatened because the failure to make interest payments when due can lead to bankruptcy. Akani & Lucky (2020), Olatundum and Ademola (2008) point out that when times interest earned declines; the firm is likely to face a high premium. The times interest earned ratio is measures by dividing the earnings before interest and tax with the interest charges. This has remained the used standard to ascertain the ability of the current earnings of the firm to offset its current obligations. Olatundum and Ademola (2008) employed this measure in their empirical study.

Time interest earned ratio 
$$=$$
 Interest Charges  
Earnings before Interest and Taxes 5

## Fixed-Charge Coverage Ratio

Fixed-charge coverage ratio measures the number of times a firm is able to cover total fixed charges, which include (in addition to interest payments) preferred dividend and payments required under long term lease contracts. Firms in some time are require to make sinking fund payments on bond issues, these are annual payments aimed at either retiring a portion of the bond obligation each year or providing for the ultimate redemption of bonds at maturity. Under most sinking fund provisions, the firm either may make these payments to the bondholders' representative (the trustee), who determines through a lottery process which of the outstanding bonds will be retired, or deliver to the trustee the required number of bonds purchased by the firm in the open market. Either way, the firm's outstanding indebtedness is reduced. In calculating the fixed-charge coverage ratio, an analyst must consider each of the firm's obligations on before-tax basis. However, because sinking fund payment and preferred stock dividends are not tax deductible and therefore must be paid out of after-tax earnings, a mathematical adjustment has been made. Nwude (2003) contend that this measure the extent to which earnings may fall without causing problem to firm as regards the payment of interests and other fixed charges. A high coverage ratio is preferred and suggests strength.

## Measurements of Financial Performance Return on Assets (ROA)

Capital employed must be used productively. Capital is mobile and if not used productively, will eventually move to where it can generate a competitive return. ROA provides a measure for assessing the overall efficiency with which the assets are used to produce net income from operations. It also is indicative of management's effectiveness in deploying capital, because it is certainly possible to be efficient and yet poorly positioned in terms of how capital is being

utilized. Return on assets, is calculated by dividing profit after tax (PAT) and interest by total assets. Which can be interpreted as a ratio of income to its total assets Return on assets is probably the single best overall measure of operating performance. It ties together the results of operations with the resources used to produce those results. It is also relatively easy to interpret

# **Return on Equity (ROE)**

Debt is an important component of the capital structure of a firm. Debt provides needed resources to take advantage of profit opportunities. When used productively, debt can leverage equity capital in a way that is very beneficial financially. But financial leverage is impartial and unforgiving. Debt works just as well to the detriment of a business when it is used unproductively, as it works to benefit a farm that is managed wisely. A firm needs to know whether and to what extent financial leverage is working either for or against their farm business. The rate of return on equity (ROE) provides useful information about the performance of debt in the capital structure. ROE is calculated by dividing net income by shareholder's equity. ROE should exceed ROA for firms that borrow money. If ROE doesn't exceed ROA, it means that borrowed capital isn't earning enough to pay its cost. Alternatively, ROE may be way higher than ROA and may indicate potential to benefit from additional investments in the firm.

ROE is also a very useful measure of the performance of the firm owners' invested or equity capital. Investors generally have other alternatives to investing in the farm operation and need a basis for evaluating their investment alternatives. ROE is not a risk-adjusted return measure. So ROE should be adjusted for differences in the perceived riskiness of alternative investments when making head-to-head comparisons. ROE is related to and heavily influenced by ROA. Increasing ROA by taking management action that will either increase operating profit margin and/or asset turnover should have a favorable impact on ROE.

# **Irrelevance and Relevance Theory**

These theories as propounded by Modigliani and Miller (1958 and 1963) state that under perfect capital market conditions, a firm's value depends on its operating profitability rather than its capital structure, that is, value irrelevant (Modigliani and Miller, 1963). But, in their tax-corrected paper, Modigliani and Miller (1963) showed that when corporate tax laws permit the deductibility of interest payments, the market value of a firm is an increasing

function of leverage. With corporate income tax rate  $t_c$ , and  $\rho$  on an after tax basis, the equilibrium market value of levered firm is given by:

VL= 
$$X$$
 (1-t<sub>c</sub>)/+t<sub>c</sub>D<sub>L</sub>

6

(4) Where, X equals expected earnings before interest and taxes,

 $\bar{X}$  (1-t<sub>c</sub>)/ $\rho$  = Vu, value of the firm if all-equity-financed, and t<sub>c</sub>DL is the present value of

the interest tax-shield, the tax advantage of debt. Given X, VL increases with the leverage, because interest is a tax-exempt expense. But while this theory successfully introduced the potential effects of corporate taxes into the capital structure theory, it only leads to an extreme corner effect as the firm's value is maximised when 100 percent debt finance is used (Mollik, 2008).

In reality, it is impracticable, probably because of the uncertainty of interest tax-savings, and the existence of personal taxes (Miller, 1977) and non-debt tax shields (DeAngelo and Masulis, 1980) putting limit to this limitless tax advantage to debt. Following this theory, it is apparent that a significant relationship exists between a firm's choice of capital structure and its market value.

## The Pecking Order Theory

In the theory of firm's capital structure and financing decisions, the pecking order was first suggested by Donaldson in 1961 and it was modified by Myers and Majluf (1984). It states that companies prioritize their sources of financing (from internal financing to equity) according to the principle of least effort, or of least resistance, preferring to raise equity as a financing means of last resort. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued. Pecking Order theory tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing means "of last resort". Hence: internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The pecking order theory is popularized by Myers (2001), when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance.

## The Static Trade-Off Theory

The trade-off theory refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Trade-off theory allows the bankruptcy cost to exist. It states that there is an advantage to financing with debt (namely, the tax benefit) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Empirically, this theory may explain differences in D/E ratios between industries, but it doesn't explain differences within the same industry.

The static trade-off theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (Baxter, 1967 and Altman, 1984). In view of this theory, issuing equity means moving away from the optimum and should therefore be considered bad news. According to Myers (1984), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to achieve it. However, he suggested that managers will be reluctant to issue equity if they feel it is undervalued in the market. The consequence is that investors perceive equity issues to only occur if equity is either fairly priced or overpriced. As a result investors tend to react negatively to an equity issue and management is reluctant to issue equity.

#### **Empirical Review**

Akhtar, et al (2012) examined the relationship between financial leverage and financial performance, evidence from fuel and energy sector of Pakistan. The result shows that there is a general perception that a relationship exists between the financial leverage and the performance of the companies' most of the financial performance indicators have positive relationship among leverage and the financial performance when compare with debt to equity ratio while the gearing ratio indicates negative relationships with the leverage indicators. The gearing ratio also takes into account the effect of capital with return numerator which not only accommodates the debt but also the outstanding shares of preferred stock. The result adds that gearing ratio may differ from that of debt to equity ratio while debt equity ratio takes into account the long term debt.

Rehman (2013) studied the relationship between financial leverage and financial performance in listed sugar companies of Pakistan. The results shows positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity. This negative relationship between debt equity ratio and earnings per share (EPS) support the fact that as debt increases, the interest payment will also rises, so EPS will decrease. Akinmulegun (2012) examined the effect of financial leverage on selected indicators of corporate performance in Nigeria. This shows that financial leverage significantly affects corporate performance in Nigeria.

Rajin (2012) investigated the influence of financial leverage on shareholders return and market capitalization, evidence of telecommunication sector companies in India. He found out that the nature of relationship and the state of influence of the financial leverage on shareholder's return and market capitalization individually indicates positive relationship between financial leverage and shareholder return but negative relationship between financial leverage and market capitalization.

Obradovich and Gill (2013) indicated that larger board size negatively impacts the value of American firms and CEO duality, audit committee, financial leverage, firm size, return on assets and insider holdings positively impact the value of American firms. Pandey (2010) says that the variance and covariance and therefore beta depend on three fundamental factors such as; the nature of business, the operating leverage and financial leverage. Nasrollah et al (2013) studied effect of financial leverage and investment diversification on income-increasing earning management. The results show that financial leverage coefficient is meaningful at level of 95% of confidence, consequently, it can be concluded that financial leverage has an influence on income-increasing earnings management.

Enuju and Soocheong (2005) examined the effect of financial leverage on profitability and risk of Restaurant firms. They find that financial leverage does not influence the restaurant firms' profitability. It is noteworthy that the sign of financial leverage is positive meaning that more leveraged firms had more profits on average even though it was not statistically significant.

Nazir and Saita (2013) studied financial leverage and agency cost, an empirical evidence of Pakistan. The study found out that general and admin expense into to sales ratio is negatively related to all four leverage ratio. Taani (2012) investigated impact of working capital management policy and financial leverage on financial performance. The study shows that firm's working capital management policy, financial leverage and firm size have significant relation to net income and also no significant impact on return on equity (ROE) and return on Assets (ROA).

Akbarian (2013) examined the investigation effect of financial leverage and environment risk on performance of firms of listed companies in Tehran stock exchange. The result shows that there is a negative relation between financial leverage and dividend per share and between market risk and economic risk with free cash flow per share positive significant. It also indicates that financial leverage, market risk and economic risk with return of equity have positive significant relationship.

Gleason, et al (2000) in their study of European countries, found a significant negative relationship between the financial leverage and return on assets and profit margin. Deesomsak (2004) in Malaysia also found a negative relationship between financial leverage and net profit margin. Huang and Song (2004) studied on Chinese companies found a negative relationship between long-term debt and return on assets, as well as between all the liability and return of assets, Berger and Bonaccorsi (2006) evidence that neither high level of financial leverage nor small capital of the company, are associate with higher efficiency of company's performance.

Rao et al. (2007) also confirm the negative relationship between leverage and performance result. Jelinek (2007) examined the effect of financial leverage and free cash flow and firm growth on earnings management. The results indicate that firm experiencing an increase in financial leverage during a five year period gradually compared to those which had high leverage degree in the same period has performed less earnings management.

Alcock, et al (2013) examined the role of financial leverage in the performance of private equity real Estate funds. The results indicates that funds overall are unable to deliver significant positive out performance on the basis of managerial skill that is unrelated to the exposure to the variation in the underlying market return. It also reveals that the impact of transaction costs, fees and other market frictions that are especially prevalent in the direct real estate investment industry, given the relatively low level of liquidity of the underlying assets. It further shows that excess fund return were approximately proportional to the excess market return, implying that these fund offers their investors effective exposure to the performance of the underlying property markets.

Akhtar, (2012) conducted a study aiming to discover the impact of leverage on corporate financial performance, answering whither the "companies with high rates of profitability are seeking to increase leverage, using a sample from the oil & energy companies sector, to measure the effect of leverage on the different performance measures, including: rate of return on assets index, return on equity, the number of times to cover benefits and debt, the ratio of dividends to equity, net operating profit, growth in sales, and earnings per share. The study concluded that the use financial leverage results in improved financial situation, in another words showing that there is a positive relationship between leverage & the performance of the companies.

Subai'i (2012) also studied the relationship between financial leverage & return on assets in the Kuwaiti economic sector, having a sample that consisted of fifty-four companies from the Kuwaiti public shareholding companies. The study results showed that there is positive relationship between financial leverage & return on investment for all of the economy sectors.

Al-Tally (2014) researched the effect of financial leverage on firms financial performance in Saudi Arabia's public listed companies. The study sample was 57 publicly trading firms listed in Saudi stock exchange for the years 2002-2010. Independent variable used in the study was financial leverage & zakat whereas financial performance was used as dependent variable. To discover the relationship among the variables several techniques were used including: maximum & mean factor analysis, standard deviation, ANOVA and SPSS Software. The overall results concluded that positive relationship between financial leverage and performance. The studies mentioned above provided empirical evidence supporting the theory of the financial leverage positive effect on the performance of the company; however other studies that have been conducted on different samples showed different results.

Jameel (2013) concluded that the financial leverage negatively affects the accounting performance measures and the market value of the firms and this impact extends for several subsequent years. The objective of the study was to examine the impact of financial leverage on the different performance measures, and to discover which one of them would be the more affected by financial leverage. Testing the hypothesis on a sample that was extracted from firms listed at Palestinian Security Exchange (consisting of twenty publicly listed corporations during the period 2004-2011), using the multi regression model, and return on assets (ROA) return on equity (ROE), return on sales (ROS), and sales growth as accounting performance measures, and Tobin's q to measure & represent the market value of the company.

Hashemi and Zadeh (2012) concluded from their study that companies that have high leverage will distribute less profits to shareholders when compared to companies with low leverage, as result of the reversed correlation between financial leverage & dividend policy. The above was concluded when they conducted a study aiming to test the effect of financial leverage on dividend policy, using multiple regressions on a sample of 74 public joint stock companies of the companies listed on Tehran Stock Market in the period between 2003-2010.

Tanni, (2012) tested the effect of working capital polices & financial leverage on the performance of "45" Jordanians firms listed in the ASE stock exchange. Aiming to find the relationship between debt, size, and profitability using the SPSS statistics to determine the nature of the relationships mentioned above, test of correlation, ANOVA, and multiple regression analysis were performed. The finding indicated that firm's working capital management policies, financial leverage, and size have a significant relationship to the net income, ROE, and ROA. Furthermore, the study concludes that that working capital polices and size has a positive effect on profitability/ performance, while financial leverage has a negative effect on profitability. Chen et al (2008) found the results of effectiveness indicating the negative changes in performance. They show that the larger companies have less positive changes in the interest of assets and changes in financial leverage have positive relationship to the interest of shares.

Jermias (2008) established that financial leverage and performance are considerably negative and the firm size has significant and negative relationship to performance. In this regard, intensity of competition and business strategy are so effective in performance that the factor is less negative for cost factors rather than distinctiveness of the product. The results are consistent with the idea that providing debt and debt obligations not only have tax benefits for companies but also are in accordance with the increased efficiency resulting from the restrictions for the debtors.

Min Tsung Cheng (2009) studied the relative impact of debt and financing on the current performance. His findings indicate that the amount of debt and financing has a significant negative impact on their current performance regardless of its cash flow. Therefore, these findings suggest that the association or loading up on debt or equity to raise capital coupled to the risk. Nevertheless, financing through combination of both methods have less risk. These findings suggest for companies to attempt to finance and increase capital using both methods (with the advantages of a method, another's problems are reduced); this is true for companies when there is a negative relationship between their performance and debts.

Krivogorsky et al (2009) have also the same idea. Indeed, they confirm the previous findings because companies with high debts are usually regarded as risky investments by investors and it may affect wealth transfer from debtors to shareholders. This confirms Ebaid (2009). He suggests that the capital structure will not have any significant effect on equity returns when total debt and leverage have negative effects on the company's return on assets. Study on 60 Chinese active companies in the field of real estate by Tao Wang et al (2010) confirmed that the results support the idea of financial leverage representation, especially the theory that concentrate on the disciplinary role of financial leverage for companies with less opportunities for growth. Based on their findings, there is a negative relationship in performance and financing for companies with little growth opportunities and high growth opportunities while this is positive for companies with medium growth opportunities. The results about return on shareholders' equity are similar to the conclusion of Saidi and Mahmoodi (2009), but this is not true for return on asset because they found significant results in terms of relationships with the capital structure (Ahmad et al, 2012).

## METHODLOGY

The study used ex-post factor research design. This is because, according to Onwumere, (2009), it involves events that have already taken place in the past. The records that was observed are from 2000-2020 a period of twenty one years. Nogales (2002) defined population as the total number of elements that conform to the characteristics needed for the purpose of the study. Thus, the population for this study includes the 24 licensed commercial banks in Nigeria as at December, 2013 (CBN, 2021). The population is further pruned to a sample of 13 banks as the study is focused on Banks that are listed on the floors of the Nigeria Stock Exchange, Lagos. The study used only secondary data that were extracted from the Annual Reports and statements of Account of the selected manufacturing companies.

The method of data analysis used in this study is the multiple linear regressions using ordinary least square method. This approach, which is a quantitative technique, includes statistical test of hypotheses formulated by using ordinary least square with Econometric View regression analysis at 5% level of significance. Moreover, in order to undertake a statistical evaluation of our model, so as to determine the reliability of the result obtained and the coefficient of correlation (r) of the regression, the coefficient of determination ( $r^2$ ), the student T-test and F-test where employed.

## Model Specification

ROE = F(DER, DR, ER, TLR, LTDR)Transforming the equations above, to a testable form, we have the following equation  $ROE = \beta_0 + \beta_1 DER + \beta_2 DR + \beta_3 ER + \beta_4 TLR + \beta_5 LTDR + \mu$ Where ROE= Return on capital employed Debt Equity Ratio DER = DR = Debt Ratio Equity Ratio ER = Total Liability Ratio TLR = LTDR = Long Term Debt Ratio  $\beta_0$ = Regression intercept  $\mu$  = Error term **Estimation Method** 

#### Unit Root

It is possible that many series that you would have thought were stationary based on OLS regression were infact generated by random walks (Cochrane, 2005) we shall therefore subject all the variables to unit root test using the augmented Dickey Fuller (ADF) test specified in Gujarati (2004) as follows.

$$\Delta y_t = \beta_1 + \beta_2 + \delta y_{t-1} + \alpha i \sum_{i=1}^m \Delta y_{t-1} + Et$$

Where:

 $\Delta y_t = \text{ change time t}$   $\Delta y_{t-1} = \text{ the lagged value of the dependent variables}$   $\Sigma_t = \text{ White noise error term}$ 

If in the above  $\delta = 0$ , then we conclude that there is a unit root. Otherwise there is no unit root, meaning that it is stationary. The choice of lag will be determined by Akaike information criteria.

## **Cointegration Test**

In order to avoid spurious estimates, we intend to establish long-run relationship between the variable included in the model and Engle-Granger Approach to cointegration will be adopted. This approach is based on conducting unit root test on residual obtained from the estimated regression equation. If the residual is found to be stationary at level, we conclude that the variables are cointegrated and as such long-run relation sip exists among them.

#### **Granger Causality Test**

The main objective of this study is to investigate the causality between financial leverage and profitability of quoted food and beverage firms. Granger (1996) proposed the concept of

7

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9

causality and exogeneity: a variable  $Y_t$  is said to cause  $X_t$ , if the predicted value of  $X_t$  is ameliorated when information related to  $Y_t$  is incorporated in the analysis.

#### Error Correction Model (ECM)

Co-integration is a prerequisite for the error correction mechanism. Since co-integration has been established, it is pertinent to proceed to the error correction model. The VECM is of this form:

$$\Delta y_{t} = \alpha \beta y_{t-1} + \sum_{i=1}^{j=1} \Gamma_{j} \Delta y_{t-1} + \pi + \zeta_{t} t = 1, \dots, T$$
10

Where  $Y_t$  is a vector of indigenous variables in the model.  $\alpha$  is the parameter which measures the speed of adjustment through which the variables adjust to the long run values and the  $\beta$  is the vectors which estimates the long run cointegrating relationship among the variables in the model.  $\pi$  is the draft parameter and is the matrix of the parameters associated with the exogenous variables and the stochastic error term.

**Prior Expectation of the Result** 

The a-priori expectation of the variables proposes that an increase in the explanatory variables lead to increase in the dependent variables (profitability). Therefore it can be mathematical stated as follows:-  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5>0$ .

Variable	Coefficient	Std Error.	T-statistics	Prob.
TLR	-2.863955	6.262371	-0.4	57328 0.0024
LTDR	-5.373764	3.410818	-1.5	75506 0.0000
ER	1.673838	2.537833	0.6	59554 0.5171
DR	-2.661039	10.46547	-0.2	54268 0.0019
DER	-0.061226	0.938279	-0.0	65253 0.9486
С	568.9057	171.8595	3.3	10295 0.0035
R2	0.838681			
ADJ. R2	0.6 76648			
<b>F-STATISTICS</b>	6.644043			
F-PROB	0.000047			
Durbin-Watson stat	1.991373			

ANALYSIS AND DISCUSSIONS OF FINDINGS Table 1: Debt Capital and Return on Equity

# Source: Extracts from E-view

The model shows a coefficient of determination  $(r^2)$  is 0.836 which shows that 83.8% of the variation in Return on Equity is attributable to the variations in the debt capital. Also, the F-value calculated of 6.644 also has a correlation corresponding value of 0.000047 which implies a good model utility. The test of significance conducted as shown in the tables above also states that ROE has a calculated value of 568.9057 and a corresponding significance value/probability value of 0.0035. The positive sign of t-value (3.310) shows the direction of the variables. This therefore also implies that when a debt capital is well used, this leads to a better, reliable and fairer financial result that is objective and represent the true state of affairs in the food and beverage companies proportionately.

Table 2: Unit Root Test Summary Results at Level							
VARIABLE	ADF	MACKINNON			PROB.	ORDER OF	
	STATISTICS	1%	5%	10%		INTR.	
ROE	-6.525659	-3.752946	-2.998064	-2.638752	0.0000	1(1)	
ROA	-6.633322	-3.752946	-2.998064	-2.638752	0.0000	1(1)	
TLR	-5.694478	-3.737853	-2.991878	-2.635542	0.0001	1(1)	
LTDR	-4.885579	-3.724070	-2.986225	-2.632604	0.0006	1(1)	
ER	-5.137565	-3.857386	-3.040391	-2.660551	0.0007	1(1)	
DR	-5.740597	-3.737853	-2.991878	-2.635542	0.0001	1(1)	
DER	-5.137565	-3.857386	-3.040391	-2.660551	0.0007	1(1)	

#### Testing for Unit Root (Stationarity Test)

# Source: Extracts from E-view

The ADF unit root test indicates that all the variables except total liability ratio were stationary, at level and first difference. However, following Harris (1995) and Gujarrati (2003), both I(1) and I(0) variables could be carried forward to test for cointegration which forms the basis of the next section. The Johansen cointegration test was used to test for the existence or not of a long run relationship among the variables. The Johansen methodology was preferable for the study because it has the advantage amongst others of allowing for more than one cointegration vector. The result of the Johansen cointegration test is shown in the table below:

#### Table 3: Johansen Co-Integration Test Results: Maximum Eigen

Hypothesized		Maximum-	0.05		Decision
No. of CE(s)	Eigen value	Eigen	<b>Critical Value</b>	Prob.**	
None *	0.857480	134.6115	95.75366	0.0000	Reject H <sub>0</sub>
At most 1 *	0.725779	87.85291	69.81889	0.0010	reject H <sub>0</sub>
At most 2 *	0.679500	56.80122	47.85613	0.0058	reject H <sub>0</sub>
At most 3	0.588311	29.49225	29.79707	0.0542	Accept H <sub>0</sub>
At most 4	0.272476	8.192537	15.49471	0.4450	Accept H <sub>0</sub>
At most 5	0.022979	0.557939	3.841466	0.4551	Accept H <sub>0</sub>
		Trace Stat	tistics		
None *	0.857480	46.75863	40.07757	0.0077	Reject H <sub>0</sub>
At most 1	0.725779	31.05168	33.87687	0.1048	reject H <sub>0</sub>
At most 2	0.679500	27.30898	27.58434	0.0542	reject H <sub>0</sub>
At most 3 *	0.588311	21.29971	21.13162	0.0474	Accept H <sub>0</sub>
At most 4	0.272476	7.634598	14.26460	0.4171	Accept H <sub>0</sub>
At most 5	0.022979	0.557939	3.841466	0.4551	Accept H <sub>0</sub>

#### **Source: Extracts from E-view**

The trace statistics from model I indicate no cointegrating equation while the maximum Eigen from the model one indicates at list 3 cointegrating equation. The maximum Eigen in model 2 proved 2 cointegrating equation while the trace statistics prove 1 cointegrating equation. In conclusion, there is the presence of long run relationship between financial leverage indicators and profitability of the selected food and beverage manufacturing firms. However, the above result failed to indicate the direction of long run relationship that exists between the dependent and the independent variables, this enable us to test for normalized cointegrating equation in the table below.

Table 4:	Normalized C	Co-integrating	Equation		
ROE	TLR	LTDR	ER	DR	DER
1.000000	3.450163	11.35920	-0.349133	-25.16481	-3.058048
	(2.63086)	(2.38827)	(1.08244)	(6.94474)	(0.62769)

#### Source: Extracts from E-view

The model found that total liability ratio and long term debt ratio has positive impact while equity ratio, debt ratio and debt equity ratio has negative impact on return on equity. The existence of a least one cointegrating equation permits the estimation of the parsimonious (preferred) Error Correction mechanism (ECM) which forms the next section.

Table 5:Par	rsimonious Error Corre	ction Results		
VARIABLE	COEFFICIENT STI	DERR. T-S	TATISTICS PRO	)B.
С	36.65052	65.08917	0.563082	0.5830
D(ROE(-1))	-0.221317	0.580465	-0.381275	0.7092
D(ROE(-2))	-0.417148	0.371179	-1.123848	0.2814
D(ROE(-3))	-0.171188	0.363566	-0.470859	0.6455
D(TLR(-1))	7.231347	14.34097	0.504244	0.6225
D(TLR(-2))	-20.86438	15.91257	-1.311188	0.2125
D(TLR(-3))	-11.20444	12.55134	-0.892689	0.3883
DER	-0.875238	1.366586	-0.640456	0.5330
ECM(-1)	-0.653594	0.627691	-1.041268	0.3167
R2	0.592309			
ADJ. R2	0.341422			
<b>F-STATISTICS</b>	2.360861			
F-PROB.	0.041369			
Durbin-Watson	1.892795			

#### Source: Extracts from E-view

The Parsimonious ECM result highlighted the significance of the effect of debt capital on the profitability of the selected food and beverage firms. The result indicates that the relationship between debt capital and profitability has mixed result, while some of the variables have positive impact at lag I it will record a negative impact at lag II. For instance, total liability ratio has positive but insignificant effect on return on assets in lag I but have negative and insignificant effect on return on assets at lag II. However, the none of the variable is statistically significant in model I. The insignificant impact of the variables could be traced to internal and external factors that affect the operational efficiency of the selected firms. The mixed result enables us to test for causality between the dependent and the independent variables as contained in the table below.

Table 6:Pair Wise Causality Test			
TLR does not Granger Cause ROE	24	0.49362	0.6180
ROE does not Granger Cause TLR		0.35995	0.7024
LTDR does not Granger Cause ROE	24	0.81989	0.4555
ROE does not Granger Cause LTDR		0.50324	0.6124
ER does not Granger Cause ROE	24	1.28596	0.2994
ROE does not Granger Cause ER		1.38180	0.2752
DR does not Granger Cause ROE	24	0.36944	0.6960
IIARD – International Institute of Academic	Research and	l Development	Page <b>57</b>

ROE does not Granger Cause DR		1.84804	0.1848
DER does not Granger Cause ROE	24	0.37199	0.6943
ROE does not Granger Cause DER		2.02582	0.1594

In The results found no causality among the variables in model II; we therefore accept the null hypothesis.

## **Discussion of Findings**

the estimated found that total liability ratio have a negative coefficient of 2.86, long term debt ratio have a negative coefficient of 5.37, equity ratio have a negative coefficient of 2.66 which debt equity ratio have a negative coefficient of 0.06 which implies that a unit increase on the variables will lead to decrease on return on equity of the commercial banks. This finding is contrary to the expectation of the results and could be traced to the reasons listed above. However, equity the positive coefficient of 1.67 as parameter for equity ratio implies that a unit increase will lead to 16.7% increase on return on equity of the commercial banks.

The positive impact confirm the findings of Akhtar, et al (2012) whose result shows that there is a general perception that a relationship exists between the financial leverage and the performance of the companies' most of the financial performance indicators have positive relationship among leverage and the financial performance when compare with debt to equity ratio while the gearing ratio indicates negative relationships with the leverage indicators, Rehman (2013) whose results shows positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity but negative relationship between debt equity ratio and earnings per share (EPS) support the fact that as debt increases, the interest payment will also rises, so EPS will decrease and the findings of Akinmulegun (2012) that financial leverage significantly affects corporate performance in Nigeria. The negative effect of the variables is contrary to the expectation of the results and can be as a result of inability to formulate optimal capital structure. The result also found that debt equity ratio and debt ratio have negative and significant effect on return on equity of the quoted food and beverage firms. This finding is contrary to the expectation of the result. It contradicts the findings of Rajin (2012) that the nature of relationship and the state of influence of the financial leverage on shareholder's return and market capitalization individually indicates positive relationship between financial leverage and shareholder return but negative relationship between financial leverage and market capitalization, Ujah and Brusa (2013) that financial leverage and cash flow impact the degrees to which firms manage their earnings and the findings of Nasrollahet (2013) that financial leverage coefficient is meaningful at level of 95% of confidence, al consequently, it can be concluded that financial leverage has an influence on incomeincreasing earnings management. It validates existing empirical findings such asAkhtar, (2012) that the use financial leverage results in improved financial situation, in another words showing that there is a positive relationship between leverage & the performance of the companies, Subai'i (2012) that there is positive relationship between financial leverage & return on investment for all of the economy sectors,

Al-Tally (2014 that positive relationship between financial leverage and performance and the findings of Krivogorsky et al (2009) but contradict the findings of Enuju and Soocheong (2005) that financial leverage does not influence the restaurant firms' profitability, Nazir and Saita (2013) that general and admin expense into to sales ratio is negatively related to all four

leverage ratio, Akbarian (2013) that there is a negative relation between financial leverage and dividend per share and between market risk and economic risk with free cash flow per share positive significant, Rao et al. (2007) also confirm the negative relationship between leverage and performance result, Jelinek (2007) that firm experiencing an increase in financial leverage during a five year period gradually compared to those which had high leverage degree in the same period has performed less earnings management and the findings of Alcock, et al (2013) that funds overall are unable to deliver significant positive out performance on the basis of managerial skill that is unrelated to the exposure to the variation in the underlying market return.

The result implies that the more quoted commercial banks mix their equity and debt properly, the more return to be generated on equity, assets and investments. The study reveals that the performance indicators of the sampled quoted food and beverage firms can be explained by the influence of debt capital In addition, Nigerian quoted commercial banks performed remarkably well within the period of the study as shown by the data computed from the financial statement. Debt capital has significant effect on their profitability.

# Conclusion

This study investigates the effect of debt capital on the profitability of quoted commercial banks in Nigeria. The problem of the study therefore emanated from at least two reasons: First, the reform in the Nigerian financial market was aimed at simplifying the source of both equity and debt capital for better performance of the quoted firms. For instance the deregulation of interest rate and the financial market was aimed at reducing the cost of capital which is the prerequisite for corporate profitability, second, to validate existing studies on the relationship between debt capital and profitability of commercial banks. In view of the above, the study hypothesized a no significant relationship between measures of debt capital and two profitability indicators of the quoted commercial banks namely; return on equity. The findings of the research are based on the result of the tested hypotheses. The result of the study reveals that debt capital measures have a significant effect on the profitability of the quoted commercial banks.

In accordance with the research finding that debt explain the variables of quoted commercial banks profitability, the study concludes as follows. Firstly, both empirical and statistical evidence on the effect of debt capital on the two profitability indicators namely return on equity of the quoted commercial banks have significant effect on profitability. From the debt capital measures, debt equity ratio, debt ratio have negative impact on return on assets, while equity ratio, total liability ratio and long term debt have positive impact on return on capital employed while debt ratio, equity ratio and total liability ratio have negative impact on the dependent variable. Secondly, the study also concludes that debt capital measures of the quoted commercial banks fluctuate over the period covered in the study. This may be because of management attempt to formulate optimal capital structure of the firms.

## Recommendations

1. The management of quoted commercial banks should work very hardtop optimize the capital structure in order to increase the returns on equity and assets. They can do that through ensuring that their capital structure is optimal.

- 2 The Management of Nigerian quoted commercial banks should increase their commitments into capital structure in order to improve earnings from their business transaction.
- 3. There is need to caution against the apparent benefits of greater leverage simply as a device for controlling managerial opportunistic behavior. First, debt and equity represent different constituencies with their own competing, and often mutually exclusive, goals. Second, as the level of debt increases, the capital structure can change from one of internal control to one of external control.
- 4. Investors and stakeholders of the quoted food and beverage firms should also consider the leverage level of any firm before committing their hard earned money as the strength of a firm financing mix determine the quantum of their returns.

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