

## LEVERAGE AND FINANCIAL PERFORMANCE: EVIDENCE FROM NIGERIAN FOOD PRODUCTION FIRMS

John-Akamelu Racheal, C.<sup>1</sup> Iyidiobi Felicia Chelichi<sup>2</sup> and Ezejiofor A. Raymond<sup>3</sup>

<sup>1</sup>Department of Entrepreneur studies, Faculty of Management Sciences, Nnamdi Azikiwe University, P. M.B. 5025, Awka, NIGERIA

<sup>2</sup>Department of Accountancy, Faculty of Management Sciences, Enugu State University of Science and Technology, Enugu state, NIGERIA

<sup>3</sup>Department of Accountancy, Faculty of Management Sciences, Nnamdi Azikiwe University, P. M.B. 5025. Awka, NIGERIA

### ABSTRACT

This study ascertained the effect of financial leverage on financial performance of food production firms in Nigeria. Specifically, the study ascertained the effect of financial leverage on earnings per share of food production firms in Nigeria; the effect of financial leverage on Return on Equity in food production firms in Nigeria and the effect of financial leverage on Return on Assets of food production firms in Nigeria. Ex post facto research design was adopted and data for the study were obtained from 2009 to 2014 annual reports and accounts of food production firms Nigeria. Paired sample t-test analysis was applied for the test of the three hypotheses formulated with the aid of Statistical Package for Social Sciences (SPSS) version 2.0. Findings showed that financial leverage has no significant effect on Earning Per Shares of food production firms in Nigeria and also that financial leverage) has effect on Return on Equity of manufacturing companies in Nigeria. However another finding showed that financial leverage has effect on Return on Assets of companies in Nigeria. The researcher recommends, among other things that the amount of debt finance in the financial mix of the firm should be at the optimal level in order to ensure the firms' assets are utilization appropriately.

**Key words:** Financial Leverage, Financial Performance and Food Production Firms.

### INTRODUCTION

The proportionate mix of equity and debt in financing a firm's investment proposals has been the subject of intensive theoretical modeling and empirical examination over the years having its tenet in the implication of such a mix on corporate performance (Akinmulegun, 2012). Financial leverage takes the form of a loan or other borrowing (debt), the proceeds of which are (re)invested with the intent to earn a greater rate of return than the cost of interest. If the firm's marginal rate of return on asset (ROA) is higher than the rate of interest payable on the loan, then its overall return on equity (ROE) will be higher than if it did not borrow (Laurent, 2005). Financial leverage is the change in capital structure that is caused by an increase or decrease in the ratio of debt to equity. When a firm includes debt as a proportion of funds employed to finance its project, financial leverage is brought into being (Akinmulegun, 2012).

Damouri, Khanagha and Kaffash, (2013) states that leverage ratios contribute in measuring the risk of using equity costs. In addition to this, there are various measures known for the capital structure among which the most important are book value based measures, market value based measures and semi- market value based measures (adjusted market value).

Financial leverage affects profit after tax or earnings per share. The combined effect of two leverages can be quite significant for the earnings available to ordinary shareholders (Pandey, 2010).

Previous studies demonstrate that leverage shocks (debt/ equity ratio) have substantial effect on corporate performance especially when the net assets per share (NAPS) are used as an indicator of corporate performance in Nigeria over the period. The study by Muhammad, (2013) shows negative relation between performance and leverage. Rajin (2012) on his study find 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. Alcock, Baum, Colley and Steiner, (2013) found that overall funds 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. There is a mixed result from the previous studies on the financial leverage and firm's performance; this forms the basis for this study.

### **Objective of the Study**

The main objective of the study is to investigate the effect of leverage on financial performance of food production firms in Nigeria. Specifically, the study intends to achieve the followings;

1. To determine the effect of financial leverage on earnings per share of food production firms in Nigeria.
2. To ascertain the effect of financial leverage on Return on Equity of food production firms in Nigeria.
3. To evaluate the effect of financial leverage on Return on Assets of food production firms in Nigeria.

### **Hypotheses**

Based on the objectives of the study, the following hypotheses were developed:

1.  $H_0$ : Financial leverage has no effect on Earnings Per Shares of food production firms in Nigeria.
2.  $H_0$ : Financial leverage has no effect on Return on Equity of food production firms in Nigeria.
3.  $H_0$ : Financial leverage has no effect on Return on Assets of food production firms in Nigeria.

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Framework**

#### ***Financial Leverage***

Financial leverage is a measure of how much firms use equity and debt to finance its assets. A company can finance its investments by debt and equity (Enekwe, Agu & Eziedo, 2014). Ujah and Brusa (2013) suggest that financial leverage and cash flow impact the degrees to which firms manage their earnings. They continue that it depends on economic group or industry a firm belongs to their degree and extent of managed earnings varies.

Obradovich and Gill (2013) indicates 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. Nazir and Saita (2013) studies 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.

Company employed financial leverage to earn more on the fixed charges funds than their costs. As debt increases, financial leverage increases. The major reason behind using financial leverage by company is to maximize the shareholders' fund under favourable economic conditions. The role of financial leverage in magnifying the return of the shareholders' is based on the assumptions that the fixed- charges funds (such as loan and debentures) can be obtained at a cost lower than the firm's rate of return on net assets (Enekwe, Agu & Eziedo, 2014).

### **Operational Variables**

**1. Debt to Equity Ratio:** Nwude (2003) defines debt to equity ratio as a measure of the proportion of debt to shareholders funds in the total financing of a business. Items such as accumulated losses and deferred expenditures are eliminated from the shareholders' funds before using it as the denominator. The ratio indicates how much naira was raised as debt for N1 of equity. Enekwe (2012) continues that debt to equity ratio is a financial ratio indicating the relative proportion of equity and debt used to finance a company's assets which is an indicator of the financial leverage. It is equal to total debt divided by shareholders' equity. When used to calculate a company's financial leverage, the debt usually includes only the total debt. A high debt to equity ratio generally means that a company has been aggressive in financing its growth with debt. This can result volatile earnings as a result of the additional interest expenses as well as volatile cash flow as principal payments on debt come due. If this were to increase earning by a greater amount than the interest on debt, then the shareholders benefit as more earning are being spread among the same amount of stock. However, as stated increased interest and the need to repay the principal on borrowed fund can for outweigh the benefit, it is used to measure the net worth of the organization. Debt to equity ratio =  $\frac{\text{Total Liabilities}}{\text{Shareholder's Funds or Total equity}}$ . This is one of the most important metrics to measure and manage as you create strategic plans.

### **2. Return on Equity (ROE):**

Return on equity represents profitability of shareholders of the firm after meeting all expenses and taxes (Horne & Wachowicz 2005). ROE is net earnings per equity capital. Higher ROE means better managerial performance. But higher ROE can be due to financial leverage. Higher leveraged firms have higher ROE which increases risk too (Ross, Westerfield & Jaffe 2005). Usually ROE is higher for high growth companies.  $\text{ROE} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}}$ .

### **3. Return on Assets (ROA):**

Khalaf (2013) says that return on assets (ROA) is a dependent variable. It is the quotient of dividing profit after tax by total assets. Emekekwe (2008) sees return on assets (ROA) as a ratio which seeks to measure the amount of profit generated from the entire assets of the firm. It is express as  $\frac{\text{Profit before tax}}{\text{Total Assets}}$  Ekwe and Duru (2012) opines that return on assets (ROA) was used as dependent variables, because it is an indicator of managerial

efficacy. Lazaridis and Trynidis (2006), Delof (2003), Shin and Soenen(1998), Falope and Ajilore (2009), Singh and Pandey (2008) and Karaduman et al (2011) agrees that the formula for return on Assets (ROA) is expressed as Profit before tax over Total Assets.

#### **4. Earnings per Share:**

EPS is one of the measures of managerial efficiency as well as firm performance. The debate on whether EPS has any predictive power on stock prices is not very clear in financial literature. Some analysts believe that, EPS has predictive power on stock prices. This argument holds the view that, EPS has influence on stock prices. While the other argument is that, only positive information regarding EPS cause the demand for a stock which result to increase in stock prices. When viewed over long periods the share prices are directly related to EPS of the firm. Over short periods, especially for younger or small firms, the relationship between stock prices and EPS is quite unmatched (NSEC, 2006).

### **EMPIRICAL FRAMEWORK**

Hasanzadeh, Torabynia, Esgandari and Kordbacheh (2013) investigated on the Effects of Financial Leverage on Future Stock Value at Stock Exchange. The research statistical population was consisted of those Tehran stock exchange listed active cement industry companies analyzed from 2005 to 2008. Descriptive and inferential methods of analysis were applied with aid of SPSS statistical software. They concluded that leverage does not affect future stock value of the firm. The results indicate non-response of capital market against levered nature of the firm.

Ebiringa and Ezeji (2012) examine the effect of leverage financing on corporate performance using debt-equity, coverage ratios and earnings per share as proxies. The study made use of F-ratios, Durbin-Watson, Akaike and Schwarz Information Criteria as well as to log likelihood parameters in arriving at conclusions. Though the results across banks studied shows mixed outcome, leverage financing was established as critical strategy for maximization of shareholders returns.

Akhtar, Javed, Maryam and Sadia (2012) measure the relationship between financial leverage and the financial performance. The study employed a sample of 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange (KSE). From hypotheses tested, the study revealed that financial leverage has got a positive relationship with financial performance.

Akinmulegun (2012) examines the effect of financial leverage on selected indicators of corporate performance in Nigeria. Leverage therefore significantly affects corporate performance in Nigeria. Examine the impact of leverage on the earnings per share and net assets per share of corporate firms in Nigeria. The study observed that leverage shocks (debt/equity ratio) have significant effect on corporate performance especially when the net assets per share (NAPS) is used as an indicator of corporate performance in Nigeria over the period covered by the study.

Nissim and Penman (2003) presents a financial statement analysis that distinguishes leverage that arises in financing activities from leverage that arises in operations. They employ two leveraging equations, one for borrowing to finance operations and one for borrowing in the course of operations. An empirical analysis shows that the financial statement analysis explains cross-sectional differences in current and future rates of return as well as price-to-

book ratios, which are based on expected rates of return on equity. Their study therefore concludes that balance sheet line items for operating liabilities are priced differently than those dealing with financing liabilities.

Rehman (2013) studies 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.

Rajin (2012) investigates the influence of financial leverage on shareholders return and market capitalization, evidence of telecommunication sector companies in India. The study find 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.

Nasrollah, Mohammad and Seyed (2013) study the 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.

Akbarian (2013) examines the investigation effect of financial leverage and environment risk on performance firms of listed companies in Tehran stock exchange. The result shows that there is a negative relation between financial leverage and cash flow per share and between variables market risk and economic risk with free cash flow per share positive significant.

Jelinek (2007) examines 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, Baum, Colley and Steiner (2013) examine 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 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.

Gweyi, Minoos and Luyali (2013) assess the determinants of leverage of Savings and Credit Co-operative Societies in Kenya. The study sample included 40 Sacco registered by Sacco Society Regulatory Authority (SASRA) extended from the period 2010 to 2012. For the data analysis, regression model was employed; the explanatory variables comprised of firm size, growth rate, liquidity profitability and tangibility, whereas the explained variable was the leverage ratio. The results show that for Saccos; there were statistical significant relationships. The results from the study revealed that firm size has significant relationship

with leverage at 99% confidence level, whereas liquidity and tangibility have significant relationship with leverage at 95% confidence level.

Madan, (2007) on his paper examines the role of financing decision in the overall performance of the leading hotels in India showing that Leverage seems to be working only for a few companies, while they affect most of the firms negatively. The research further reveals that those firms which are moderately geared have been able to generate a good return on equity.

The result from the previous studies on this subject matter were uncertain; Obradovich and Gill (2013) show that larger board size is 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. Akinmulegun (2012) outcome exposed that the influence shock on earnings per share indirectly disturb the net assets per share of firms as the majority of the shocks on the net assets per share was received from earnings per share of the firms. Rehman (2013) 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. Rajin (2012) indicates positive relationship between financial leverage and shareholder return but negative relationship between financial leverage and market capitalization. Enuju and Soocheong (2005) found that financial leverage does not influence the restaurant firms' profitability. Akbarian (2013) indicates that financial leverage, market risk and economic risk with return of equity have positive significant relationship. Deesomsak (2004) in Malaysia also found a negative relationship between financial leverage and net profit margin. Rao et al. (2007) also confirm the negative relationship between leverage and performance result. Jelinek (2007); Alcock, et al (2013); Gweyi, Minoos and Luyali (2013) and Madan, (2007) on their study affirmed that financial leverage has significant on the performance of corporate firms. 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. There is a mixed result from the previous studies on the financial leverage and firm's performance; this forms the basis on the impact of leverage on financial performance of the Nigerian manufacturing firm.

## **METHODOLOGY**

Due to the nature of the study, Ex-post Facto research design was adopted. The study analyzed the audited accounts of quoted companies. This involves use of financial accounts of the companies under assessment to generate the financial ratios that will discriminated the most in leverage and financial performances of manufacturing companies in Nigeria.

This study makes use of six foods manufacturing companies in Nigeria. The study covered six years annual reports and accounts of these companies from 2009 to 2014. The name of these companies under foods production in Nigerian manufacturing companies are: Big treat Nigerian plc; Dangote Four Nigerian Plc; Dangote Sugar Nigerian Plc; Honeywell Flour mill Nigerian plc; Nestle Nigerian Plc, and Cadbury Nigerian Plc.

### **Method of Data Analysis**

To achieve the objectives of this study, the data required were those of the discriminating variables that include: Earnings & Profitability Ratios: (the independent variables) are Return

on Equity, Earning per shares and Return on Assets. The dependent variable is Dept-Equity Ratio. Hypotheses formulated for the study were tested with the Paired t-test with aid of Statistical Package for Social Sciences (SPSS) version 20.0 software package.

Using SPSS, 5% is considered a normal significance level. The accept reject criterion was based on the computed t-value. If t-value is equal or greater than “Sig” value there is significant effect, we reject Null and accept alternate hypothesis.

## DATA PRESENTATION AND ANALYSIS

### Data Presentation

**Table 1: The computation of Debt-Equity ratio of food product companies**

Debt-Equity Ratios	2014	2013	2012	2011	2010	2009
Dangote flour Nigerian Plc	2.632	2.361	1.539	1.487	1.121	1.018
Dangote sugar Nigerian Plc	0.876	0.646	0.795	0.658	0.471	0.290
Honeywell flour Nigerian Plc	2.076	1.988	1.693	0.993	0.744	1.941
Cadbury Nigerian Plc	0.987	0.799	0.828	0.836	1.188	0.993
Nestle Nigerian Plc	0.990	0.878	1.602	2.349	3.060	3.481
<b>Total</b>	<b>0.874</b>	<b>6.672</b>	<b>6.457</b>	<b>6.323</b>	<b>6.584</b>	<b>7.723</b>

Source: Companies annual accounts, 2009-2014

**Table 2. Earnings Per Share**

	2014	2013	2012	2011	2010	2009
Dangote Sugar Nigerian Plc	0.970	1.260	0.900	0.590	0.940	1.100
Dangote Four Nigerian Plc,	0.700	1.200	-53.600	12.470	0.750	1.070
Nestle Nigerian Plc,	4.520	3.140	26.670	20.810	19.080	14.810
Cadbury Nigerian Plc	0.750	1.920	2.570	0.370	1.000	1.480
Honeywell Flour mill Nigerian plc,	28.910	31.860	32.800	30.340	24.570	2.640

Source: Annual accounts and Reports (2009-2014)

**Table 3: Return on Asset**

Companies	2014	2013	2012	2011	2010	2009
Dangote sugar plc	0.125	0.133	0.130	0.102	0.262	0.302
Dangote Flour Mill Plc	0.149	0.049	0.017	0.004	0.115	0.190
Nestle Nigerian plc	0.112	0.087	0.238	0.212	0.209	0.207
Cadbury Nigerian Plc	0.052	0.140	0.108	0.109	0.041	-0.049
HolleyWellFlourmill Nigerian Plc	0.016	-0.110	-0.053	0.011	0.062	0.098

Source: Annual accounts and Reports (2009-2014)

**Table 4: Return on Equity**

Companies	2014	2013	2012	2011	2010	2009
Dangote sugar plc	0.296	0.322	0.353	0.279	0.413	0.230
Dangote Flour Mill Plc	0.453	0.302	-0.073	0.052	0.207	0.193
Nestle Nigerian plc	0.143	0.194	0.732	0.784	1.227	1.307
Cadbury Nigerian plc	0.127	0.309	0.288	0.305	0.151	-0.188
HolleyWell Flour Mill Nigerian Plc	0.066	-0.511	-0.188	0.052	0.207	0.193

Source: Annual accounts and Reports (2009-2014)

**Test of Hypotheses****Hypothesis one**

H<sub>0</sub>: Financial leverage has effect on Earnings Per Shares of food production firms in Nigeria.

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	DebtEquity	6.7500	5	.55794	.24952
	EPS	-11.1000	5	104.42432	46.69997

**Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	DebtEquity - EPS	17.85000	104.43669	46.70551	-111.82528	147.52528	.382	4	.722

From the above tables, the result shows paired mean difference of 17.850 and sig value of .000 with t-value of 34.809. The paired mean difference of 17.850 positive and the t-value of .382 is less than sig-value of .722 at 0.05 significant, this shows that there is Debt-Equity has no effect on Earning per Share of these companies. Therefore, we reject alternative hypothesis and accept null hypothesis which uphold that financial leverage has effect on Earnings Per shares of food production firms in Nigeria.

**Hypothesis Two**

H<sub>0</sub>: Financial leverage on Return on Equity of food production firms in Nigeria.

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	DebtEquity	6.7500	5	.55794	.24952
	ReturnonEquity	1.6132	5	.51935	.23226

**Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	DebtEquity – ReturnonEquity	5.13680	.66612	.29790	4.30971	5.96389	17.244	4	.000

From the above tables, the result shows paired mean difference of 5.137 and sig value of .000 with t-value of 17.244. The paired mean difference of 5.137 positive and the t-value of 17.244 is greater than sig-value of .000 at 0.05 significant, this shows that there is Debt-Equity Ratio has effect on Return on Equity of these companies in Nigeria.. Therefore, we reject null hypothesis and accept alternative hypothesis which uphold that financial leverage has effect on Return on Equity of food production firms in Nigeria.

**Hypothesis Three**

H<sub>0</sub>: Financial leverage has no effect on Return on Assets of food production firms in Nigeria.

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	DeptEquity	6.7518	5	.55869	.24985
	ReturnonAssets	.5594	5	.08239	.03685



		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	DeptEquity - ReturnonAssets	6.19240	.50557	.22610	5.56465	6.82015	27.388	4	.000

From the above tables, the result shows paired mean difference of 6.19 and sig value of .000 with t-value of 27.39. The paired mean difference of 6.19 positive and the t-value of 27.39 is greater than sig-value of .000 at 0.05 significant, this shows that there is Debt-Equity Ratio (DER) has effect on Return on Assets (ROA) of these companies. Therefore, we reject null hypothesis and accept alternative hypothesis which uphold that financial leverage has effect on Return on Assets of food production firms in Nigeria.

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

The study has contributed to the ongoing debate between financial leverage and financial performance in Nigerian food production firms. The findings from the analysis indicate that there is a strong correlation between financial leverage and financial performance (Return on Assets and Equity) of these companies while there is a negative result between Debt to Equity Ratio and Earning Per Shares. This shows that if leverage structured and managed well it has the capacity of enhancing the performance of firms.

This result is in line with the findings by Rajin (2012), which state of influence of the financial leverage on shareholder's return indicates positive relationship between financial leverage and shareholder return but negative relationship between financial leverage while Akinmulegun (2012) and Akbarian (2013) stated that financial leverage has a positive effect with corporate performance.

Based on this, the study deems it fit to make useful suggestions on a way forward.

1. The debt finance of a firm should be at the optimal level in order to ensure the firms' assets are utilized appropriately.
2. In taking financial decisions by the management should adhere to shareholders' wealth and the profit maximization of the firm.
3. The conflict between ownerships and management of corporate firms, should address based on the agency theory in which the interest of the owners supersede that of the managers.

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