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Impact of Capital Structure on Financial Performance of Selected Quoted Food and Beverages Manufacturing Industries in Nigeria

ABSTRACT

The major financing decision is the capital structure employed by corporate entity. It affects the determination of the returns accrued to providers of capital as the primary objective of a corporate entity is anchored on the maximization of the wealth of its shareholders. In order to determine the blend of capitals that maximizes firm's performance, this study investigates the impact of capital structure on firm's performance with attention to the food and beverages manufacturing industries in Nigeria. We adopted an ex-post factor research design which involves the use of cross sectional time series data extracted from the audited annual accounts of ten food and beverages industries quoted in the Nigeria stock exchange covering the period of six years (2012 – 2017). To measure the strength of association between the variables, Pearson moment correlation analysis was used and the result revealed that size of firm and equity are positively correlated with financial performance. However, from the panel regression results that Debt finance significantly impacted the performance of the industries (ROCE, ROA, and EPS) negatively. While the impact Firms size have on the selected food and beverages industries was relatively low, Equity finance contributed hugely and positively to the performance of the firm.

This study therefore concludes that investment financed by equity increases the value of firm more than when it is financed through debt.

Based on the findings, the study, therefore recommends that firms should strive to seek for debts with lower cost to avoid further cut on firm's performance and threats on shareholder's wealth. Furthermore, finance managers should measure performance based on increase in share prices rather than accounting profits which could be subjected to manipulation.

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Keywords: Debt finance, Equity finance, Firms size, Profitability

1. INTRODUCTION

The major financing decision is the capital mix employed by corporate entity. It affects the determination of the returns accrued to providers of capital as the primary objective of a corporate entity is anchored on the maximization of the wealth of its shareholders

The overall objective of any firm in a contemporary business environment is for the owners' wealth to be maximized. In other words, the business must obtain and effectively appropriate the available funds efficiently for the smooth operation of the business. The effective raising and management of funds is central to the firm's finance function. Financing decision is one of the three core decision areas in financial management which involves the identification of the appropriate sources of funds that would be used to finance projects.

According to Pandey [1] the decision regarding capital structure should be viewed from the point of its effect on the firm's value. He noted that under favorable economic conditions, the earning per share of a firm should increase with financial leverage.

30 However, the increase in leverage is expected to increase also shareholders' financial risk
31 but it is uncertain if this will result to increased value of the firm or not. Over the decades,
32 the associations between the firm's value and decisions on capital structure have been
33 investigated extensively.

34 A firm contemplating to raise funds through the issue of debt must ensure that the
35 earnings to be generated with such funds must at least be at equilibrium to the cost of
36 debt. If the earnings that are generated fall below the cost of such funds, it will reduce the
37 earnings due to shareholders because holders of debt instruments have prior claims to
38 income before the equity holders. To realize the desired results, quoted firms in Nigeria
39 and even in other countries need to plan for an optimum capital structure. This is because
40 it is the optimum capital structure that maximizes the value of the firm. However, despite
41 the efforts made by financial managers to maximize owners' expected value in terms of
42 their financing decisions, the problem of choosing between equity and debt confronts
43 many firms, especially in funding their long term worthwhile investment opportunities.

44 Therefore, for future strategic financial decisions and in an attempt to diagnose the
45 extent to which financial performance of quoted food and beverages manufacturing firms in
46 Nigeria are affected by the choice of capital structure, the study gave rise to the following
47 questions: Is there any significant impact of debt on performance of quoted food and
48 beverages manufacturing firms in Nigeria? To what extent does equity have impact on
49 performance of quoted food and beverages manufacturing firms in Nigeria? Is there any
50 significant relationship between long term debt to total assets and performance of quoted
51 food and beverages manufacturing firms in Nigeria? Is there any significant relationship
52 between firm's size and performance of quoted food and beverages manufacturing firms in
53 Nigeria?

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55 **1.1 Objectives of the Study**

56 The broad objective of this study is to examine the impact of capital structure on the
57 performance of selected quoted food and beverages manufacturing firms in Nigeria.

58

59 **1.2 Statement of Hypotheses**

60 To achieve the above mentioned objectives, the following six hypotheses were
61 formulated for the study and stated in their null-form below:

62 Ho₁ Debt finance has no significant impact on performance of quoted food
63 beverages manufacturing firms in Nigeria.

64 Ho₂ Equity finance has no significant impact on performance of quoted food
65 and beverages manufacturing firms in Nigeria.

66 Ho₃ Long-term debt to total assets ratio has no significant impact on
67 performance of quoted food and beverages manufacturing firms in
68 Nigeria.

69 H0₄ Firm's size has no positive and significant effect on performance of quoted
70 food and beverages manufacturing firms in Nigeria.

71

72 **2. LITERATURE REVIEW**

73 **2.1 Concept of Capital Structure**

74 Adeoye and Olojede [2] define capital structure as the integration of various sources of
75 funds within or outside the firms' terrain in financing its worthwhile investments or projects with
76 positive net present value. It implies how a firm finances its overall operations and sustains
77 its growth by using different sources of funds.

78 Capital structure is the means by which an organization is financed. It is also a
79 company's proportion of short and long term debt and is considered when analyzing
80 capital structure. It is the mix of debt and equity maintained by a firm.

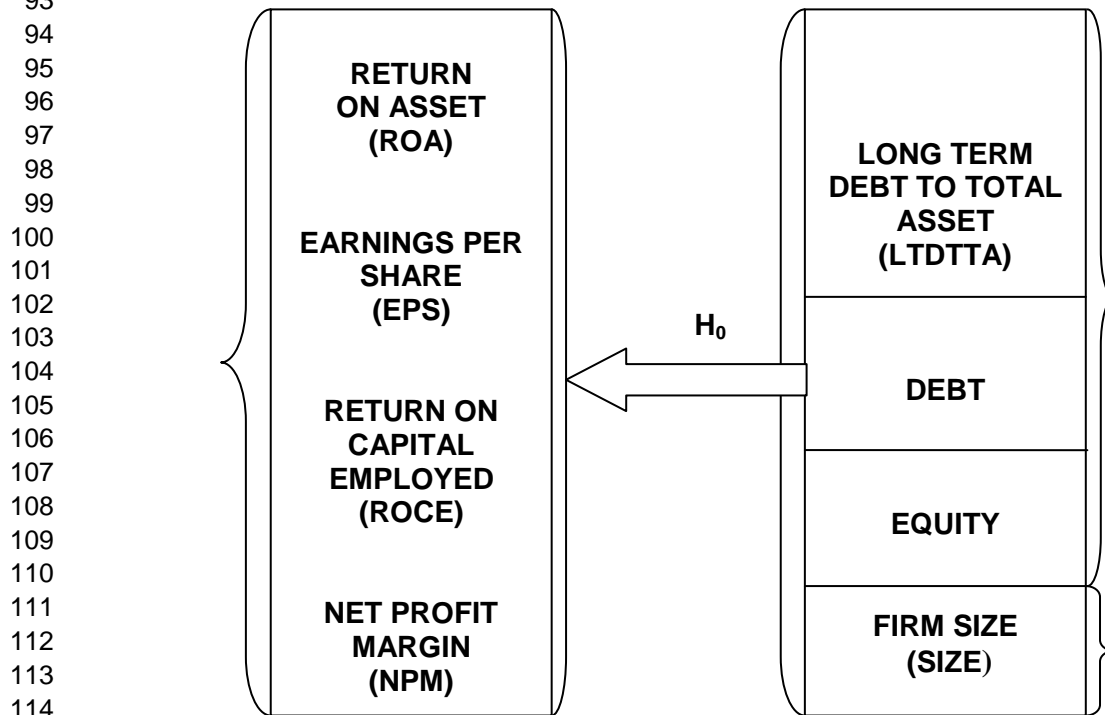
81 [3] opined that capital structure is the mixture of diverse securities utilized by a

82 company in financing its profitable ventures. What is common to the above definition is
83 that capital structure reflects each component of finance from equity to debt that a
84 company uses in financing its operations. The capital structure of a firm is defined as the
85 arrangement of its financial liability.

86 Chava and Roberts [4] referred to capital structure as the way a corporation
87 finances its assets through a combination of equity and debt.

88 [5] Sees capital structure as a blend of both equity and loan financing in an entity.
89 It's evident from all the above definitions that structure of capital is simply the composition
90 of an organization liability which could be either in form of debt finance or equity finance or
91 both

92 2.2 Conceptual Model



115 Author's Conceptualization (2020)

117 2.3 Theoretical Review

118 2.4 The traditional theory of capital structure

119 The traditional approach to capital structure advocates value of a firm is affected
120 by capital structure and that there is a right combination of equity and debt in the capital
121 structure, at which the market value of a firm is maximum. As per this approach, debt
122 should exist in the capital structure only up to a specific point, beyond which, any increase
123 in leverage would result in the reduction in value of the firm. As debt is introduced into the
124 firm, capital structure will be changing and at different leverage, market price may not be
125 the same. The validity of the traditional position has been questioned on the ground that
126 the market value of the firm depends upon its net operating income and risk attached to it.
127 The traditional view is criticized because it implies that the totality of risk incurred by all
128 security holders of a firm can be altered by changing the way in which this totality of risk is
129 distributed among the various classes of security.

131 2.5 Empirical Review

132 The previous works explored have revealed the position of several authors across the
133 globe in an attempt to examine the relationship between firm's capital structure and their

134 performance. Most of these works would be reviewed as they guide in looking into the
135 research problem.

136 Adeoye and Olojede [2] empirically looked into the effect of capital structure on
137 firms' financial performance using panel regression analysis and granger causality test in
138 achieving their stated objectives. They focused their attention on ten (10) listed deposit
139 money banks (DMBs) in Nigeria and the results of their study shows that capital structure
140 have a negative effect on the financial performance of deposit money banks in Nigeria
141 and recommended that while the finance manager is sensitive to the movement in the
142 stock market, management should take precautionary measures to mitigate credit risk
143 associated with lending and borrowing.

144 Akinyemi, Wisdom and Qudus [6] carried out their study on the impact of capital
145 structure on financial performance of quoted manufacturing firms in Nigeria. Panel
146 methodology was applied to analyze the data and the results of the panel ordinary least
147 square show that a positive statistically significant relationship exist between long term
148 debt ratio total debt ratio and return on equity (ROE) while a positive statistically
149 insignificant relationship between ROE (return on equity) and STD (Short term debt ratio).

150 Amenawo [7] examined a relationship between Capital Structure and the
151 Performance of Quoted Companies in Nigeria. The result showed that Capital mix has a
152 significant relationship with the earnings per share of quoted firms in Nigeria. Debt equity
153 ratio has a significant positive impact on the return on assets of quoted companies in
154 Nigeria and debt asset ratio has a significant inverse relationship with the return on assets
155 of quoted companies in Nigeria. Also debt equity ratio has a significant inverse impact on
156 the return on equity of quoted companies in Nigeria and debt asset ratio has a significant
157 positive impact on return on equity of quoted companies in Nigeria and concluded that
158 Quoted companies in Nigeria should invest their profits when there are good investment
159 opportunities and pay cash dividend as soon as enough income is generated.

160 Mustafa and Osama [8] in their study of the impact of capital structure on the
161 Jordanian firms' performance in the Amman stock market employed the ordinary least
162 squares (OLS) technique in examining about 76 firms for the periods of 2001 to 2006. The
163 findings revealed the presence of negative statistical relationship between capital
164 structure and firm performance.

165 [9] Studied the effect of capital structure on the financial performance of about 100
166 consecutive firms of Pakistan in Karachi stock exchange from 2006 and 2009. The
167 exponential generalized regression was used in estimating relevant equation on the
168 relationship between capital structure and the financial performance of firms. They
169 found out that, the choice of capital structure is a critical factor in determining a firm's
170 financial performance.

171 Mykhialo [10] examined the relationship between capital structure and firm
172 performance. Using the sample of 165 Ukrainian firms over 2001-2010 and applying the
173 multiple regression techniques, found that the relationship existing between the leverage
174 and firm performance was actually negative.

175 Ahmed [11] investigated the impact of capital structure on about 17 non-financial
176 firms' performance listed in the Bahrain Bourse from 2009 to 2013. Using the OLS
177 multiple regression technique, key macroeconomic variables (inflation rate, gross
178 domestic product growth) on the financial performance variables (return on asset, return
179 on equity, earnings per share, and dividend yield). The results indicated that capital
180 structure had a positive and significant effect on the firms' performance (ROA).

181 Ogebe and Alewi [12] investigated capital structure effect on the performance of
182 firms in Nigeria from 2000 to 2006 employing major macroeconomic measures on the
183 performance of firms. The study employed capital structure traditional theory in order to
184 determine the significance of macroeconomic measures and leverage on the performance
185 of firms. The study was a comparative analysis of firms grouped into lowly and highly

186 geared firms using the static panel analysis. The findings from the study revealed that the
187 study conformed to the capital structure traditional theory showing a significant but
188 negative relationship between leverage and the performance of firms.

189 Ishaya and Abduljelee [13] investigated capital structure and the profitability of
190 listed companies in Nigeria using the agency cost theory. About 70 selected companies
191 were chosen from the Nigerian stock exchange from 2000 to 2009 using the random
192 effects, fixed effects and Hausman chi-square techniques. The result showed that debt
193 capital was negatively related to profitability, but equity showed a direct relationship with
194 profitability.

195 Muritala [14] examined capital structure optimum level through a firm can enhance
196 its financial performance. The Pesaran and Shine unit root analysis showed that the five
197 years annual data were non-stationary at five per cent significance level. Further findings
198 revealed that there exist a negative association between capital structure and firms'
199 operational performance while the panel data result revealed a positive relationship
200 between asset tangibility, size, asset turnover, age of firm and the performance of firm.
201 Finally, a significant but negative relationship was seen between asset tangibility and the
202 performance of the firm (ROA).

203 Li-Ju and Shun [15] used pecking order theory in exploring capital structure
204 important factors. The model of their was specified using the hierarchical regression on
205 debt decision determinants of about 305 quoted electronic firms in Taiwan stock
206 exchange in 2009. The findings showed that capital structure determinants were growth
207 rate and profitability.

208 [16] Investigated the association between capital structure and the
209 conglomerate's profitability of financial services and consumer goods quoted firms in
210 Nigeria stock exchange from 2000 to 2011. The association between capital structure and
211 performance proxies was analyzed using regression and correlation estimates. The
212 findings revealed that debt asset ratio and debt equity ratio and return on assets were
213 insignificant except for Nestle and 7uup, also between debt asset ratio and return on
214 equity. However, the association between all the firms' debt to equity and return on equity
215 was significant justifying the fact that, highly geared firm are more profitable.

216 [17] Studied capital structure effect on the performance of firms in Nigeria by
217 employing the correlation analysis to analyze the firms' annual sample from 2007 to 2011.
218 He found out that, the age of the firm, debt to equity, debt to capital, short term debt to total
219 debt were positively and significantly related to return on asset and return on equity,
220 whereas, the relationship between long term to capital and return on asset and return on
221 equity were

222

223 **2.4.2 Gap in Literature**

224 In Nigeria, most of the studies did not use other components of capital structure.
225 For example, Salawu [3] who studied the effect of capital structure on financial
226 performance of selected quoted companies in Nigeria between 1990 and 2004
227 concentrated on short term debt. His study did not extend to other forms of financing,
228 thus the finding could only be used in the context of short term debt financing. This means
229 even within the scope of debt financing; only the short term aspect of the debt was covered
230 in his study. In reality, a study on capital structure is supposed to cover both types of debt
231 financing.

232 [18] Used Chi-square technique to analyze their data. Chi-square is considered
233 deficient in terms of reflecting time variant and specific characteristic issues. Studies on
234 capital structure and performance of firms are supposed to use parametric techniques that
235 measure both time variant and specific characteristic issues.

236 [7], in his study on capital structure and performance of quoted companies in
237 Nigeria between 2011 and 2014, emphasized on debt equity and debt asset ratio. His

238 study failed to take into consideration other proxies of capital structure such as total debt
 239 to total equity, short- term debt and long-term debt.

240 Additionally, [19] studied the impact of capital structure and liquidity on corporate
 241 returns of manufacturing firms between 2002 and 2006 and focused on short-term debt,
 242 long-term debt and total debt without including total debt to total equity financing. The
 243 study failed to use total debt to total equity as variable of debt financing.

244 Idode, Adeleke, Ogunlowore and Ashogbon [20] in their study of the influence of
 245 capital structure on profitability of banks in Nigeria for the period of 2008 to 2012 covered
 246 both debt financing and equity financing. However, they ignored short-term debt and
 247 long-term debt which constitute other important forms of financing for manufacturing
 248 companies in Nigeria.

249 3. METHODOLOGY

251 The study adopted ex-post facto design. The justification for adopting this design
 252 method is because it involves the collection and evaluation of data related to past events
 253 that are used to described causes, effects and trends that may explain present or future
 254 events.

255 3.1 Measurement of Variables

256 Table 1 presents the measurement of variables. There are two major variables
 257 involved in this study; they are dependent and independent variables. The dependent
 258 variable represents the company's performance while capital structure indices are the
 259 independent variables.

261 **Table 1 Summary of variables used in the study and their definition**

262 Variable Type	Variable Name	Proxy	Measurement
263 Dependent	264 Return on Asset	ROA	$\frac{\text{Net income}}{\text{Total Asset}}$
	265 Return on capital Employed	ROCE	$\frac{\text{Earnings before Interest \& tax}}{\text{Capital Employed}}$
	266 Earnings per Share	EPS	$\frac{\text{Net income-Preferred Dividends}}{\text{Weighted Av. Shares outstanding}}$
	267 Net profit Margin	NPM	$\frac{\text{Net Income}}{\text{Total Revenue}}$
272 Independent	273 Debt ratio	DR	$\frac{\text{Total Debt}}{\text{Total Asset}}$
	274 Equity ratio	EQR	$\frac{\text{Total Shareholders' equity}}{\text{Total Asset}}$
	275 Long Debt to Total Asset	LDTTA	$\frac{\text{Long term Debt}}{\text{Total Asset}}$
	276 Firm Size	FS	Nat.log of the total Assets

279 **Source: Author's computation 2020**

286 Justification for Using the Above Ratios

287 i. Return on Assets

288 ROA is an indicator of how profitable a company is relative to its total assets. ROA gives a
 289 manager or investor an idea as to how efficient a company's management is at using
 290 its assets to generate earnings

291 ii. Return on capital employed

292 ROCE shows how well a company utilizes its assets to produce profit and is commonly
293 used by investors to determine whether a company is suitable to invest in or not. It can be
294 used in assessing a company's profitability and capital efficiency. In other words, the ratio
295 can help to understand how well a company is generating profits from its capital

296 **iii. Net profit margin**

297 NPM helps investors assess if a company's management is generating enough profit from
298 its sales and whether operating costs and overhead costs are being contained. It the
299 percentage of revenue left after all expenses have been deducted from sales. The
300 measurement reveals the amount of profit that a business can extract from its total
301 sales.

302 **iv. Earnings per share**

303 EPS is an important financial measure, which indicates the profitability of a company. It is
304 considered to be a significant financial parameter as it helps to gauge a company's
305 financial health. Higher EPS reflects greater profitability from the company and its
306 overall ventures.

307 **v. The debt ratio**

308 DR measures the amount of leverage used by a company in terms of total debt to total
309 assets. The *debt ratio* shows a company's ability to pay off its liabilities with its assets. In
310 other words, this shows how many assets the company must sell in order to pay off all of
311 its liabilities.

312 **vi. The Equity Ratio**

313 ER is a good indicator of the level of leverage used by a company. The Equity
314 Ratio measures the proportion of the total assets that are financed by stockholders, as
315 opposed to creditors. The *equity ratio* is an investment leverage or solvency *ratio* that
316 measures the amount of assets that are financed by owners' investments by comparing
317 the total *equity* in the company to the total assets.

318

319 **vii. Long Term Debt to Total Asset Ratio**

320 LTDTA is the ratio that represents the financial position of the company and the
321 company's ability to meet all its financial requirements. It shows the percentage of a
322 company's assets that are financed with loans and other financial obligations that last over
323 a year.

324

325 **3.2 Model Specification**

326 This study uses annual audited reports and accounts of the sampled food and
327 beverages manufacturing firms obtained from Nigerian stock exchange fact book covering
328 the period of 2012 to 2017. In the previous works, several models in the area of capital
329 structure and firms performance have been used by the authors. However, the model
330 specified by Chandrika and Rabindra [21] is hereby followed after with a slight modification.
331 The model is specified thus:

332
$$FP_{it} = f(CS_{it}) \dots \dots \dots (3.1)$$

333
$$FP_{it} = f(DR_{it}, EQR_{it}, LDTTA_{it}, FS_{it}) \dots \dots \dots (3.2)$$

334 Where:

335 FP = Financial Performance of food and beverages industries
336 (ROA, NPM, ROCE, EPS)

337 CS = Capital structure

338 DR = debt ratio

339 EQR = equity ratio

340 LDTTA = long debt to total assets

341 FS = Firm size

342 Equation 3.2 can be restated in econometric form as:

343

344 $ROA_{it}=\beta_0 +\beta_1DR_{it}+\beta_2EQR_{it}+\beta_3LDTTA_{it}+ \beta_4FS_{it}+\mu_{it}..... (3.3)$

345 $EPS_{it}=\beta_0 +\beta_1DR_{it}+\beta_2EQR_{it}+\beta_3LDTTA_{it}+ \beta_4FS_{it}+\mu_{it}..... (3.4)$

346 $ROCE_{it}=\beta_0 +\beta_1DR_{it}+\beta_2EQR_{it}+\beta_3LDTTA_{it}+ \beta_4FS_{it}+\mu_{it}..... (3.5)$

347 $NPM_{it}=\beta_0 +\beta_1DR_{it}+\beta_2EQR_{it}+\beta_3LDTTA_{it}+ \beta_4FS_{it}+\mu_{it}..... (3.6)$

348 **Where;**

349 *ROA is the return on assets*

350 *ROCE is the return on capital employed*

351 *EPS is the Earning per shares*

352 *NPM is Net profit margin*

353 *DR is the debt ratio*

354 *EQR is the equity ratio*

355 *LDTTA is the long debt to total assets*

356 *FS is the Firm size*

357 *β_0 is the Constant coefficient*

358 *β_1 - β_2 are the regression coefficients for measuring independent variables*

359 *i represents firm i at time t*

360 *μ is the disturbance term signifying other variables not captured in the study*

361

362 **3.3 A Priori Expectation**

363 The a priori expectations of the coefficients are indicated to be positive, which
 364 implies that capital structure is supposed to have a positive impact on performance of food
 365 and beverages manufacturing firms in Nigeria. It is stated as $\beta_0 <0; \beta_1- \beta_5 >0$

366

367 **4. DATA ANALYSIS, RESULTS AND DISCUSSION**

368 **Descriptive Analysis**

369 As seen in Table 2, the mean, median, minimum, maximum, standard deviation,
 370 skewness, kurtosis and the Jarque-Bera statistics are presented. It is evident that a long
 371 term debt to total assets has a minimum value of 0.03 and a maximum of 0.63 having a
 372 mean value of 0.19 and a median of 0.16. This indicates that the performance of the firms
 373 in terms of long term debt to total asset is on average of 0.19. The standard deviation of
 374 0.11 shows that this series is not dispersed from the mean value and as shown in the
 375 value of skewness, the series is positively skewed, hence asymmetric. In addition, as
 376 presented by the kurtosis and jarque-bera statistics, the series is not normally distributed.

377 It can also be seen from the table that equity has a minimum of -0.06 and a
 378 maximum of approximately 0.63 having a mean value of 0.35 and a median of 0.35. This
 379 implies that the performance of the sampled firms in terms of equity is on average of 0.35.
 380 The standard deviation of approximately 0.13 indicates that the value deviates from the
 381 mean value and as shown in the value of skewness. The series is positively skewed
 382 hence asymmetric.

383 It can equally be seen that debt has a minimum of 0.37 and a maximum of 1.06
 384 having a mean of 0.65 approximately and a median of 0.65. The standard deviation of
 385 0.13 shows a slight dispersion from the mean value and as shown in the value of the
 386 skewness, the series is positively skewed.

387 The results also depict that Size on the average have a mean of 1.29. The
 388 standard deviation of 1.13 has a slight dispersion from the mean value of the skewness,
 389 the series is positively skewed.

390 The results further depict that on the average the size of the firm in Nigeria
 391 accounted for 1% in the Return on Asset (ROA). The standard deviation of 1.13 has a
 392 slight dispersion from the mean value of the skewness; the series is positively skewed
 393 hence asymmetric.

394 The table indicates also that ROA has a minimum of approximately -0.40 and a
 395 maximum of 0.29 having a mean of 0.08 approximately and a median of 0.08. The

396 standard deviation of 0.10 shows that this series is not dispersed from the mean value
 397 and as shown in the value of skewness, the series is positively skewed, hence
 398 asymmetric. In addition, as presented by the kurtosis and jarque-bera statistics, the series
 399 is not normally distributed
 400

401 **Table 2**
 402 **Descriptive Analysis**

	ROA	ROCE	NPM	DR	EPS	EQR	LTDTTA	SIZE
Mean	0.078	0.225	0.059	0.650	1.785	0.353	0.190	1.29E+08
Median	0.082	0.211	0.081	0.654	0.900	0.353	0.164	90882260
Maximum	0.238	0.698	0.194	1.062	9.640	0.626	0.636	4.83E+08
Minimum	-0.398	-0.097	-0.390	0.373	-1.340	-0.062	0.034	3649762.
Std. Dev.	0.096	0.174	0.100	0.125	2.254	0.127	0.116	1.13E+08
Skewness	-2.023	0.495	-2.167	0.393	1.437	-0.403	1.639	1.296629
Kurtosis	11.38	2.813	9.371	3.834	4.695	3.759	6.750	3.794966
Jarque-Bera	216.5	2.5	148.4	3.2	27.8	3.072	62.05	18.39239
Probability	0.000	0.280	0.000	0.193	0.000	0.215	0.000	0.000
						21.20		
Sum	4.694	13.552	3.579	39.01	107.1	9	11.44	7.72E+09
Sum Sq. Dev.	0.548	1.794	0.595	0.927	299.85	0.955	0.800	7.58E+17
Observations	60	60	60	60	60	60	60	60

403 **Source: Results from E-views 9**

404
 405 **Correlation Analysis**

406 This section looks at the correlation among capital structure indicators/proxies
 407 such as Debt, equity, long term debt to total asset and size of the firm. The correlation
 408 analysis was employed to test whether there is a significant relationship between the
 409 dependent variables, independent variables and control variables. The rule of thumb for
 410 correlation between two variables ranges between 0 and 0.3 which implies that a weak
 411 relationship exists between the variables.

412 Also, when the correlation ranges between 0.4 and 0.9, it can be said that a strong
 413 relationship between the variables exists.

414 In table 3, ROCE is strongly and positively correlated with ROA, positively and
 415 weakly correlated with EPS, NPM and EQR and negatively correlated with LTDTTA, DR
 416 and SIZE. EPS is strongly and positively correlated with size, positively and weakly
 417 correlated with EQR, LTDTTA, NPM and ROA but negatively correlated with DR. ROA is
 418 positively and weakly correlated with NPM, EQR, SIZE but negative correlation exist
 419 between ROA, LTDTTA and DR. NPM is highly and positively correlated with EQR,
 420 however weakly and positively correlated with LTDTTA, DR and SIZE. LTDTTA is
 421 positively and weakly correlated with DR, SIZE but negatively correlated with EQR. DR is
 422 negatively correlated with EQR and SIZE. EQR is positively and weakly correlated with
 423 SIZE.
 424

425 **Table 3 Correlation Matrix**

	ROCE	EPS	ROA	NPM	LTDTTA	DR	EQR	SIZE
ROCE	1.000							
EPS	0.1175	1.000						
ROA	0.6359	0.2260	1.000					

NPM	0.3775	0.3526	0.3986	1.000				
LTDTTA	-0.3112	0.2644	-0.2888	0.1159	1.000			
DR	-0.0828	-0.1521	-0.2855	0.0547	0.0835	1.000		
EQR	0.0728	0.2234	0.1817	0.6560	-0.0212	-0.2692	1.000	
SIZE	-0.1119	0.5478	0.1204	0.1747	0.0247	-0.0054	0.0729	1.000

426 **Source: Results from E-views 9**

427

428 **Test of Hypotheses**

429 **Panel Data Regression Analysis**

430 Data panel is a combination of data from cross section and time series.

431 Regressions using panel data referred to the panel data regression model.

432

433 **Capital structure and performance (ROA) of quoted food and beverages industries**

434 From table 4, the constant though not important in the study, was positive. The
435 results also show that size of the firm and equity ratio is positively insignificant to financial
436 performance of firms (ROA). Debt ratio and long term debt to total asset employed has a
437 negative impact on the performance of food and beverages industries as return on assets
438 declines by approximately by 18% and 23% respectively. This implies that the selected
439 food and beverages industries under investigation concentrated much on financing its
440 operations with debt than equity or retained earnings. However, the resultant effect of
441 financing with debt was not encouraging as there was considerable shortfall in the returns
442 of assets (ROA) of the firms. The co-efficient of determination, adjusted R-Squared value
443 of 0.11 indicates that about 11% in the variation of returns on asset (ROA) is explained by
444 debt finance ratio, size of the firm, long term debt to total asset and equity finance ratio.

445

446 **Table 4: Regression results**

447 **Dependent Variable - ROA**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.050	0.225	0.225	0.822
LOG(SIZE)	0.008	0.011	0.739	0.462
DR	-0.178	0.098	-1.814	0.075
LTDTTA	-0.228	0.102	-2.232	0.029
EQR	0.076	0.097	0.781	0.437
R-squared	0.172			
Adjusted R-squared	0.112			
F-Statistics	2.867			
Durbin-Watson stat	1.276			
Prob (F-statistics)	0.031			

448 **Source: Results from E-views 9**

449

450

451

452 **Capital structure and performance (ROCE) of quoted food and beverages industries**

453 From table 5, financial performance is measured as Return on capital employed
454 (ROCE) and the outcome of panel regression shows that all the explanatory variables
455 (DR, EQR and SIZE) are negatively insignificant to return on capital employed (ROCE).
456 The positive impact of Equity capital on ROCE was not significant. The Adjusted R-
457 squared could only account for approximately 5%. This shows that the explanatory

458 variables employed are not enough to impact greatly on ROCE of food and beverages
 459 firms in Nigeria. It also implies that there are other variables that could significantly
 460 influence ROCE better but were not captured

461 **Table 5: Regression results**
 462 **Dependent Variable - ROCE**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.634	0.422	1.501	0.139
DR	-0.060	0.184	-0.326	0.745
LTDTTA	-0.443	0.191	-2.314	0.024
EQR	0.095	0.182	0.523	0.602
LOG(SIZE)	-0.017	0.022	-0.784	0.435
R-squared	0.112			
Adjusted R-squared	0.048			
F-Statistics	1.749			
Durbin-Watson stat	0.606			
Prob (F-statistics)	0.152			

463 **Source: Results from E-views 9**

464 **Capital structure and performance (EPS) of quoted food and beverages industries**
 465 Earnings per share (EPS) from table 6, is positively and significantly impacted by the
 466 combined input of long term debt and size of the firm, however debt and equity capital
 467 have no significant effect on the financial performance (EPS) of food and beverages
 468 manufacturing industries. The results also indicate that food and beverages manufacturing
 469 industries in Nigeria gives preference to long term debt as working capital in increasing
 470 their earnings per share without inclusion of short term debt to fund its operations. The
 471 Adjusted R-Squared of 0.27 reported that all the explanatory variables could only account
 472 for 27% telling us that there are still other variables that could engender increase in EPS
 473 of food and beverages industries in Nigeria.

474 **Table 6: Regression results**
 475 **Dependent Variable - EPS**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16.332	4.769	-3.424	0.001
DR	-2.153	2.079	-1.035	0.304
LTDTTA	4.553	2.166	2.101	0.040
EQR	2.337	2.063	1.133	0.262
LOG(SIZE)	0.976	0.250	3.892	0.000
R-squared	0.322			
Adjusted R-squared	0.273			
F-Statistics	6.554			
Durbin-Watson stat	0.537			
Prob (F-statistics)	0.000			

476 **Source: Results from E-views 9**

477
 478 **Capital structure and performance (NPM) of quoted food and beverages industries**

479 The output from table 7 shows that debt and equity have positive and significant
 480 impact on net profit margin (NPM) of food and beverages industries in Nigeria. Both
 481 capitals utilized contributed hugely to net profit margin of the firms by 19% and 56%
 482 respectively. On the contrary, firms' size and long term debt though have a positive
 483 influence but insignificant variable to measure the increase or decline in the net profit
 484 margin of food and beverages industries in Nigeria. For long term debt to be insignificant,
 485 it implies that the combination of both long and short term debt that actually accounted for
 486 19% increase was a point of focus for the finance manager and firms at large in an
 487 attempt to improve the net profit margin of the firms. Also, about 47% in variation of NPM
 488 is explained by all the explanatory variables.

489 **Table 7: Regression results**
 490 **Dependent Variable - NPM**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.416	0.181	-2.291	0.025
DR	0.192	0.079	2.436	0.018
ER	0.562	0.078	7.161	0.000
LOG(SIZE)	0.007	0.009	0.769	0.445
LTDTTA	0.089	0.082	1.087	0.281
R-squared	0.505			
Adjusted R-squared	0.469			
F-Statistics	14.06			
Durbin-Watson stat	0.913			
Prob (F-statistics)	0.000			

491 **Source: Results from E-views**

492
 493 **CONCLUSION**

494 The study examined the impact of capital structure on firm's performance with
 495 attention to the food and beverages industries in Nigeria. An ex-post factor research
 496 design which involves the use of cross sectional time series data extracted from the
 497 audited annual accounts of ten food and beverages industries quoted in the Nigeria stock
 498 exchange covering the period of six years (2012 – 2017) is adopted. Return on capital
 499 employed (ROCE), Return on Assets (ROA), Net Profit Margin (NPM) and Earnings per
 500 share (EPS) measured the performance of the selected firms while the proxies for capital
 501 structure includes Debt (DBT), Equity (EQ), Long term debt to total assets (LTDTA) and
 502 Firms size (FS). Debt finance significantly impacted the performance of the industries
 503 (ROCE, ROA, and EPS) negatively. While the impact Firms size have on the selected
 504 food and beverages industries was relatively low, Equity finance on the other hand
 505 contributed hugely and positively to the performance of the firm. This study therefore
 506 concludes that investment financed by equity increases the value of firm more than when
 507 it is financed through debt.

508
 509
 510
 511 **RECOMMENDATION**

512 Based on the findings, the study, therefore recommends that firms should strive to seek
 513 for debts with lower cost to avoid further cut on firm's performance and threats on
 514 shareholder's wealth. Furthermore, finance managers should measure performance
 515 based on increase in share prices rather than accounting profits which could be subjected
 516 to manipulation.

517

518 **Conflict of interest**

519 The authors have not declared any conflict of interest.

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574 **APPENDIX 1**

COMPANY	YEAR	EPS	NPM	ROCE	ROA	DR	LTDTTA	EQR	SIZE
CADBURY NIG PLC	2012	1.07	0.103	0.231	0.083	0.501	0.080	0.499	40,156,508
	2013	1.92	0.153	0.515	0.140	0.444	0.117	0.556	43,172,624
	2014	1.06	0.070	0.145	0.140	0.557	0.130	0.443	28,811,286
	2015	0.61	0.041	0.094	0.041	0.568	0.158	0.432	28,417,005
	2016	-0.16	-0.009	(0.036)	(0.010)	0.611	0.159	0.389	28,409,000
	2017	0.16	0.009	0.022	0.011	0.587	0.146	0.413	28,423,122
FLOUR MILL	2012	3.08	0.030	0.077	0.039	0.649	0.311	0.351	232,578,054
	2013	2.91	0.025	0.067	0.033	0.701	0.292	0.299	280,137,993
	2014	1.93	0.016	0.049	0.031	0.719	0.286	0.281	297,249,445
	2015	3.47	0.027	0.047	0.019	0.745	0.222	0.255	342,849,399
	2016	5.57	0.042	0.071	0.042	0.723	0.193	0.314	345,348,326
	2017	3.03	0.016	0.060	0.184	0.788	0.150	0.213	482,603,257
UNILEVER	2012	1.48	0.100	0.584	0.153	0.725	0.109	0.275	3,649,762
	2013	1.27	0.080	0.443	0.110	0.780	0.136	0.220	4,375,411
	2014	0.64	0.043	0.200	0.053	0.836	0.151	0.164	45,736,255
	2015	0.32	0.020	0.114	0.024	0.840	0.149	0.160	50,172,484
	2016	0.81	0.044	0.216	0.042	0.839	0.101	0.161	72,491,309
	2017	1.78	0.082	0.133	0.062	0.373	0.070	0.627	121,084,365
DANGOTE SUGAR	2012	0.90	0.101	0.326	0.129	0.672	0.174	0.557	83,051,450
	2013	0.90	0.105	0.306	(0.110)	0.725	0.184	0.565	83,159,878
	2014	0.97	0.122	0.265	0.125	0.825	0.119	0.554	92,801,302
	2015	0.96	0.110	0.261	0.112	1.062	0.050	0.565	102,624,834
	2016	1.20	0.084	0.269	0.134	0.694	0.094	0.371	172,169,458
	2017	3.31	0.194	0.539	0.117	0.710	0.035	0.475	195,080,449
GUINNESS NIG. PLC	2012	9.64	0.112	0.335	0.134	0.636	0.636	0.364	106,009,667
	2013	7.93	0.090	0.244	0.098	0.620	0.246	0.380	121,060,621
	2014	6.36	0.087	0.133	0.072	0.659	0.326	0.341	132,328,273
	2015	5.18	0.065	0.142	0.064	0.605	0.227	0.395	122,246,632
	2016	-1.34	-0.019	(0.034)	(0.015)	0.696	0.206	0.304	136,992,444
	2017	1.28	0.015	0.032	0.0132	0.706	0.270	0.294	146,038,216
INT'L BREWERIES	2012	-0.67	-0.170	0.164	(0.118)	0.889	0.179	0.111	14,288,312
	2013	0.71	0.144	0.246	0.109	0.593	0.252	0.407	23,036,762
	2014	0.64	0.113	0.221	0.161	0.538	0.267	0.462	24,370,540
	2015	0.59	0.094	0.139	0.093	0.597	0.446	0.403	30,171,590
	2016	0.81	0.114	0.207	0.079	0.582	0.109	0.418	33,482,106
	2017	0.31	0.031	0.153	0.023	0.691	0.112	0.309	44,962,735
DANGOTE FLOUR	2012	-0.55	-0.038	(0.097)	(0.029)	0.673	0.191	0.328	77,449,018
	2013	-0.15	-0.240	0.342	0.130	0.435	0.073	0.275	65,877,662
	2014	-0.12	-0.148	0.273	0.125	0.446	0.066	0.175	54,801,488
	2015	-0.25	-0.390	0.261	0.109	0.435	0.050	(0.062)	49,354,982
	2016	2.12	0.099	0.508	0.081	0.629	0.064	0.306	78,979,982
	2017	2.91	0.120	0.526	0.204	0.525	0.034	0.290	129,382,925
NIGERIAN	2012	5.03	0.150	0.333	0.150	0.632	0.289	0.368	253,633,629

BREWRIES									
	2013	5.70	0.160	0.408	0.170	0.555	0.159	0.445	252,759,633
	2014	5.62	0.159	0.261	0.122	0.498	0.181	0.492	349,229,163
	2015	4.82	0.129	0.252	0.107	0.516	0.123	0.452	356,218,676
	2016	3.58	0.126	0.178	0.077	0.548	0.155	0.484	367,146,468
	2017	4.14	0.090	0.146	0.086	0.534	0.125	0.434	382,228,093
NESTLE PLC	2012	0.62	0.190	0.393	0.238	0.616	0.333	0.384	88,963,218
	2013	0.55	0.167	0.347	0.206	0.625	0.318	0.375	108,207,480
	2014	0.28	0.155	0.398	0.210	0.661	0.240	0.339	106,062,067
	2015	0.29	0.150	0.493	0.200	0.682	0.180	0.319	119,215,053
	2016	0.10	0.043	0.444	0.047	0.818	0.104	0.182	169,585,932
	2017	0.42	0.138	0.698	0.230	0.694	0.152	0.306	146,804,128
HONEYWELL FLOUR	2012	0.33	0.070	0.140	0.056	0.645	0.190	0.355	47,930,278
	2013	0.34	0.062	0.137	0.049	0.665	0.169	0.355	55,437,478
	2014	0.42	0.060	0.118	0.053	0.677	0.238	0.323	63,830,439
	2015	0.14	0.022	0.040	0.016	0.701	0.232	0.299	67,943,444
	2016	-0.38	-0.059	(0.090)	(0.398)	0.785	0.581	0.215	76,046,576
	2017	0.54	0.080	0.063	0.038	0.537	0.305	0.463	113,151,715

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