

1 **EFFECT OF FINANCIALLEVERAGE ON CORPORATE**
2 **PERFORMANCE OF CEMENT MANUFACTURING FIRMS IN**
3 **NIGERIA.**
4
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6

7 **ABSTRACT**

8 The study evaluated the effect of leverage financing on performance of quoted cement
9 manufacturing firms in Nigeria for the period 2006-2017. There are four (4)cement
10 manufacturing firms in Nigeria studied out of eight (8) manufacturing cement firms and
11 Purposive sampling technique were used in selecting the four (4) cement manufacturing firms in
12 Nigeria out of the eight (8) cement manufacturing firms quoted in the Nigerian Stock Exchange
13 (NSE).The main objective of the study is to investigate the effect of financial leverage on
14 corporate performance of cement firms in Nigeria.(The analytical tool adopted was ordinary least
15 square (OLS) simple and multiple regressions. Findings of the study showed that Debt Ratio and
16 Debt to Equity Ratio has negative insignificant effect on Return on Asset of quoted cement
17 manufacturing firms in Nigeria. On the other hand Interest coverage ratio has positive and
18 insignificant effect on return on assets of quoted cement firms in Nigeria. This implies that
19 increase in Debt Ratio and Debt to Equity Ratio decreases ROA, while increase in ICR increases
20 ROA of cement manufacturing firms in Nigeria. The study therefore recommended that the
21 corporate managers in Nigeria should be encouraged to use more long term debt in their
22 financing than relying more on short term credits, since increase in ICR increases ROA of
23 cement manufacturing firms in Nigeria.
24

25 **Keywords:** Leverage; Debt Ratio; Debt Equity Ratio; Return on Asset; Interest
26 **Coverage Ratio.**
27
28
29

30 **1. INTRODUCTION**

31 Financial decision making is very relevant for the profitability of any firm. These include long-
32 term financing and short-term financial decisions. The long-term decisions are mode of capital
33 sourcing and dividend decisions while the short term financing decisions involve liquidity
34 decisions. Thus, the financial manager is responsible for determining the optimal mix of debt and
35 equity that will ensure maximization of shareholders' wealth (Maina and Kondongo, 2013).
36 Firm's performance and profitability is very important in any economy, among them are; first the

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Comment [GE3]: add (ROA)

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37 profits to the firm means income to the shareholders and hence spillover impact and multiplier
38 impact for individual, households and the economy in general. Secondly the corporate taxes that
39 the government will earn will enable the implementation of infrastructure projects and social
40 welfare programs. Thirdly when firms are profitable it means they can attract more investors and
41 hence raising large capital for bigger and high returns projects. Leverage is refers to the use of
42 debt in financing a firm. Leverage ratios measure the extent to which debt has been used to
43 finance the activities of a firm. Lenders are interested in this category of ratios because a firm
44 that has been making much use of borrowed funds in financing its activities would have
45 outstanding debts to settle from its financial resources (Mike Anyanwaokro , 2008:422).

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infrastructural

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46 Hence, the optimal capital structure decision seems to be relevant to finance managers and board
47 of directors; because, such decision on capital structure might lead to increase profitability and
48 shareholders' wealth maximization. Thus, most finance managers believe that the use of
49 financial leverage is like a 'double-edged sword' because it can either magnify the firm's
50 potential gains or losses. This was corroborated by the works of Alajekwu (2014) on effect of
51 financial leverage on corporate performance of manufacturing firms in Nigeria. It is a recognized
52 theoretical fact that the primary motive of a firm in using financial leverage is to boost the
53 shareholders' return under favorable economic conditions. This is based on the assumption that
54 fixed-commitment financing can be obtained at a cost lower than the firm's rate of return on net
55 assets (UbesieM.C, Maduka F.I. and Udaya L. K., 2016).

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56 Financial leverage is a measure of how much firm uses debt and equity to finance its assets. As
57 debt increases, financial leverage increases. Consequently, the firms with the higher
58 leverage should be the most encouraged to improve their performance. However, on
59 the other side, a higher leverage means higher agency costs because of the diverging
60 interests between debt holders and shareholders (equity holders); this principled threat
61 suggests that leverage can be significantly affect the value of firms in a negative or in a
62 positive way, since it magnifies returns and risk. However, cement firms would achieve
63 good financial performance if their financial factors are strictly governed by either the companies
64 or the government and it is only when the financial factors are well taken care of that the
65 financial leverage will have positive effect on financial performance of cement firms in Nigeria
66 can be completely realized. In the advanced countries such as United States and France among
67 others, the "ease of doing business" captured by many other variables including the interest

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stop sign.

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68 (lending) rate has remained impressive. The interest rate in those countries has remained within
69 single-digit limit. With the interest rate remaining low, firms including cement firms can easily
70 secure low-cost loans which will help them for better performance.

71

72 Nigerians have lamented the hardship being posed to them by the skyrocketed increase in price

73 of cement. In many parts of the world, pressure on the price of cement has been attributed to

74 various source of energy for different stages of production and transportation of cement to end

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75 users. Energy sources such as petrol, diesel, electricity and coal have direct impact on the market

76 price of cement; any change in price of any of these may affect the price of cement. Recent study

77 of Cement industry shows that cost of energy accounts for 50 per cent cost of production. The

78 following have been highlighted as the causes of high price of cement in Nigeria: Huge supply

79 gap of cement where demand is higher than supply is a factor that may force up the price of

80 cement, too many middle men in the supply and distribution of cement, unstable power supply

81 which leads to over dependence on expensive alternative fuel which carries about 50 per cent of

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82 total cost of production, hoarding of cement by marketers to sustain importation, huge cost of

83 transportation of cement from factory to end-users vis-à-vis poor distribution network of some

84 cement companies, sheer monopoly of production and importation of cement by a few players,

85 rise in prices of other raw materials may lead to high cost of cement, unfavorable government

86 policy on production and importation, high capital involved in setting up more cement factories

87 may lead to the supply gap of cement and lastly high tax burden also impact on price of cement.

88 (PanAfrican Capital Research, 2011). However, with the experience of high cost of production,

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89 high interest rate charge and mix others, financial managers of cement firms might take

90 advantage of available credit and tax shield to enhance their firm's assets (performance) and this

91 might decreases the financial performance of cement firms in Nigeria when compare with

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92 foreign companies or firms performance. It is acknowledge that indicators of the financial

93 leverage are; Debt which is used to measure a company's ability to handle its obligations, Debt to

94 Equity measures the proportion of debt and equity in financing a company's assets. Also Interest

95 Coverage determines a firm's ability to pay interest on outstanding debt. While performance

96 indicator is Return on Assets which measure show efficient management is using its assets to

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97 generate earnings. The problem of the study is to investigate the impact of financial leverage on

98 Returns on Assets of cement manufacturing firms in Nigeria.

99

100 **1.3 Objectives of the Study**

101 The broad objective of this study is to investigate the impact of financial leverage on corporate
102 performance of cement manufacturing firms in Nigeria. The specific objectives of the study are:-

- 103 i. To evaluate the effect of Debt Ratio (DR) on Return on Assets (ROA) of the cement
104 manufacturing firms in Nigeria.
- 105 ii. To ascertain the effect of Debt-Equity Ratio (DER) on Return on Assets (ROA) of the
106 cement manufacturing firms in Nigeria.
- 107 iii. To investigate the effect of Interest Coverage Ratio (ICR) on Return on Assets (ROA)
108 of the cement manufacturing firms in Nigeria.

109 **1.4 Research Questions**

- 111 i. What effect does Debt-Ratio (DR) has on Return on Assets (ROA) of the cement
112 manufacturing firms in Nigeria?
- 113 ii. What effect does Debt-Equity Ratio (DER) has on Return on Assets (ROA) of the cement
114 manufacturing firms in Nigeria?
- 115 iii. How does Interest Coverage Ratio (ICR) affect Return on Assets (ROA) of the cement
116 manufacturing firms in Nigeria?

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117
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119 **1.5 Statement of Hypotheses**

120 The following hypotheses in null form guided the study:

- 121 1. Debt ratio (DR) has no positive effect on Return on Assets (ROA) of the cement
122 manufacturing firms in Nigeria.
- 123 2. Debt-Equity Ratio (DER) has no positive effect on Return on Assets (ROA) of the cement
124 manufacturing firms in Nigeria.
- 125 3. Interest Coverage Ratio (ICR) has no positive effect on Return on Assets (ROA) of the
126 cement manufacturing firms in Nigeria.

127
128 The study of this kind will prove to be beneficial to the various stakeholders of the Nigerian
129 corporate world and to the academia in the following manner. The result of the study will be of
130 benefit to corporate decision makers of Nigeria on the benefits/costs of their financing decision
131 on their firms as a result of a better understanding of the benefits/costs of financial leverage,
132 when proved or otherwise, that there is a relationship between financial leverage and

133 performance of quoted companies in Nigerian in the Nigerian jurisdiction. Securities holders in
134 Nigeria – whether equity, debt or hybrid; this study will be of benefit, as it will enlighten them
135 better on their value added, in the performance of their firms of choice. They could begin to
136 relate performance of quoted companies in Nigerian with the financing structures of their target
137 companies. Further still, this study has the ability to enlighten the various stakeholders of their
138 stakes and share of the pie, in the event of failure. The various policy makers of the Nigerian
139 corporate jurisdiction could benefit immensely from this study, since both the characteristics of
140 the financial structure of Nigeria’s quoted firms, and the impact of it on their performance/value
141 will be empirically determined. It will enhance their policy decisions geared towards improving
142 the productivity and profitability of the private sector. As earlier noted, this study is geared
143 towards adding to the body of literature on the study of corporate financing in the Nigerian
144 jurisdiction, and therefore bound to instigate further empirical search on the subject matter; even
145 as it will give some empirical impetus to existing notions about the financing patterns and their
146 impacts on Nigerian quoted firms. The study focused on the impact of financial leverage on
147 Corporate performance of four (4) cement manufacturing firms in Nigeria quoted in Nigerian
148 Stock Exchange namely; Lafarge cement (WAPCO) plc, Dangote cement plc, Ashaka cement plc,
149 Cement Company of Northern Nigeria plc .Data were drawn from their website, Nigerian Stock
150 Exchange, Fact Book and their annual report using twelve (12) years from 2006 to 2018. The
151 variables for financial leverage are Debt Ratio (DR), Debt Equity Ratio (DER) and Interest
152 Coverage Ratio (ICR), while Return on Asset (ROA) is a proxy for corporate performance.
153 Aside the introduction section, the rest of the paper is divided into four sections. Section two
154 presents a review of related literature, section three contains the methodology for the study, and
155 section four has the analyses of data while section five concludes.

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156

157 2. REVIEW OF RELATED LITERATURE

158

159 This section provides the theoretical framework of the study, the impact of Financial Leverage
160 on firm,profitability, the Conceptual Framework, empirical review and the summary of the
161 literature review.

162

163 2.1 Conceptual Framework

164 Fraenkel and Wallen (2000) articulated that greatest study information through the problem
165 statement in perspective of a theoretical context or conceptual. An explanation of this context
166 adds to a research information in at least two means as it identifies research study variables, and
167 association among the study variables. This study tries to examine the impact of financial
168 leverage on profitability of cement companies listed at the Nigeria stock exchange. The
169 conceptual framework of this study spells out the relationship between the profitability which
170 will be measure by firm size, growth and productivity. Profitability = Return on
171 Equity(ROE)=Net profit /Total Equity while the independent variables of the study will be
172 financial leverage which will be measure as the ratio of total debt to total assets.

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173 The term 'Leverage' may be defined as the percent of change in one variable by the percent of
174 change in some other variable or variables. In the field, finance management, the term leverage is
175 used to describe the firm's ability to use fixed cost assets or funds; the former is popularly
176 known as 'Operating Leverage' and the latter is known as 'Financial Leverage'. In the worlds of
177 James Horne, 'Leverage may be defined as the employment of an asset or funds for which the
178 firm pays a fixed cost or fixed return. Thus, according to him, a leveraged firm employs assets or
179 sources of funds which have a fixed cost or return. The former may be termed as 'fixed operating
180 cost', while the latter may be termed as 'fixed financial cost'. The leverage is also described by
181 some as 'trading on equity'.

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182
183 The interest coverage ratio is used to determine a firm's ability to pay interest on outstanding
184 debt. The greater the multiple, the less risk to the lender and typically, if the company has a
185 multiple higher than one, it is considered to have enough capital to pay off its interest expenses.
186 It is expected that a company should cover interest and fixed charges by at least a factor of two,
187 or even more ideally, 3:1., if not, its ability to meet interest payments may be questionable.
188

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings Befort Interest and Taxes (EBIT)}}{\text{Interest Expenses (IE)}}$$

189
190
191 Debt Equity Ratio is the measure of a company's financial leverage calculated by dividing its
192 total debts by stockholders' equity. It indicates what proportion of debt to equity the company is
193 using to finance its assets. The extent to which a firm uses debt funding or financial leverage has
194 implications for the firm. By raising funds through debt, shareholders are able to maintain
195 control without having to increase investment. Enekwe (2014) submits that debt to equity ratio is

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196 a financial ratio indicating the relative proportion of equity and debt used to finance a company's
197 assets which is an indicator of the financial leverage. It is equal to total debt divided by
198 shareholders' equity.

$$199 \text{ Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

200
201

202 Debt Ratio on the other hand is a financial leverage ratio used in corporate finance to measure a
203 company's ability to handle its obligations. It compares company's total debt to its total assets,
204 which is used to gain a general idea as to the amount of leverage being used by a company. It
205 gives users a quick measure of the amount of debt that a firm has on its financial position
206 compared to its assets. Debt includes all short term and long term obligations. The ratio is used
207 to evaluate a firm's financial structure and how **it's financing operators**. Typically, the more debt
208 compared to assets a company has amongst its peers, which is signaled by high debt ratio, the
209 more leveraged it is and the riskier it is considered to be.

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$$210 \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

211

223 2.2 Concept of Financial Performance

224 A firm's performance represents how effective managers operate a company and thereby
225 enhance the value of the firm to their shareholders. The relationship between managers and
226 shareholders has raised the issue of a conflict of interest when managers use discretionary power
227 to act in their personal best interest (Gweyi and Karanja, 2014).

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228
229 Firm or corporate performance is measured in this context using the following proxy;

230
231 **This is an indicator of how profitable a company is relative to its total assets idea as to how**
232 **efficient management is at using its assets to generate earnings**. Return on Asset (ROA) is
233 calculated by dividing a company's annual earnings by its total assets.

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$$234 \text{ ROA} = \frac{\text{NetIncome}}{\text{TotalAsset}}$$

235

236 Emekekwe (2008) defines Return on Assets (ROA) as a ratio which seeks to measure the
237 amount of profit generated from the entire assets of the firm.

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$$238 \text{ It is expressed as} = \frac{\text{Profit Before Tax}}{\text{Total Asset}}$$

239 Enekwe, C. Agu, C. and Eziedo, K., 2014, in citing Khalaf (2013) opine that Return on Assets
240 (ROA) is a dependent variable. It is the quotient of dividing profit after tax by total assets. Ekwe
241 and Duru (2012) opined that return on assets (ROA) was used as dependent variables, because it
242 is an indicator of managerial efficacy. Lazaridis and Trynidis (2006), Delof (2003), Falope and
243 Ajilore (2009), Singh and Pandya (2008) and Karaduman et al (2011) agree that the formula for
244 Return on Assets (ROA) is expressed as Profit before Tax divided by Total Assets.

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245 Return on Assets = $\frac{\text{Profit Before Tax}}{\text{Total Asset}}$
246

247 2.2 Theoretical Framework

248 This section covers the theories that support the impact of Financial Leverage on Firms
249 profitability. These theories include: Modigliani-Miller theorem, Pecking Order Theory and
250 Trade-off Theory.

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251 The theory of Trade-off was propounded by Modigliani and Miller (MM) in 1958 as asserted in
252 Pratheepkanth (2011). The theory assumed that a business's value is distinct from its debt and
253 equity mix of financing but ignoring issues that play a positive role in determining the best
254 capital structure such as corporate taxes. Consequently, Modigliani and Miller (1963) cited in
255 Khalid (2012) reaffirmed that corporate taxes are significant characteristic of capital
256 structure. The theory suggested that, there is an optimal capital structure that maximizes the value
257 of a firm in balancing the costs and benefits of an additional unit of debt. These are characterized
258 by models of trade-off which allow the bankruptcy costs to exist. The bankruptcy costs of debt
259 are the increased costs of financing with debts instead of equity. The trade-off theory of capital
260 structure refers to the idea that a company chooses how much debt and equity finance to use by
261 balancing the costs and benefits. Trade-off theory assumes that there are benefits to leverage
262 within a capital structure up until the optimal capital structure is reached.
263 Akinmulegun (2012). With the assumption of Trade-off theory that there are benefits to leverage
264 within a capital structure up until the optimal capital structure is reached as a result the research
265 anchored her work on Trade-off theory.

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266
267 Secondly, the Pecking Order Theory. This theory postulate that the cost of financing increases
268 with asymmetric information and that financing comes from three sources namely, internal
269 funds, debt and new equity, also companies prioritize their sources of funding, first internal that

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270 is, equity financing, secondly debt and raising new equity as its last resort (Wikipedia, the free
271 encyclopedia). The theory in its view in asymmetric information that managers know more about
272 their companies prospect, risks and value more than the outside investors, Brealey, Myers and
273 Allen, (2008). Myers, (1984) anchored in line with the theory that, most firms prefer the Pecking
274 Order Theory for their investment. By virtue of the theory, the management prefers ready fund
275 for investment first in their activity and if the fund is not available they use debt and finally
276 benefit from external share. In the words of Gweyi and Karanja, (2014).
277 Also by virtue of pecking order theory firms are not able to benefit from the debt strategy due to
278 high bankruptcy cost in primary steps, it is a step considering the low income the firms that are
279 not able to benefit from tax shield due to interest cost increase, but are able to benefit from the
280 shield in the growth and maturity steps Myers, (2001). The result of Pecking Order of financing
281 is as follows: an internally generated fund first is followed by respectively low-risk debt
282 financing and share financing. In Myers and Majluf model (1984), outside investors rationally
283 discount the firm's stock price when managers issue equity instead of riskless debt. To avoid this
284 discount, managers avoid equity whenever possible. The Myers and Majluf model predicts that
285 managers will follow a pecking order, using up internal funds first, then using up risky debt, and
286 finally resorting to equity. In the absence of investment opportunities, firms retain profits and
287 build up financial slack to avoid having to raise external finance in the future Gweyi and
288 Karanja, (2014).

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291 2.3: Empirical Review

292 This section discusses the empirical studies in relation to the two main variables of this study
293 which are financial leverage and profitability of listed firms. It consists of both local and global
294 studies as follows:

295 Enekwe and Eziedo(2014)wrote on the effect of financial leverage on financial performance.

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296 Gweyi and Karanja, (2014) Their main objective of this study is to determine the effect of
297 financial leverage on financial performance of the Nigeria pharmaceutical companies over a
298 period of twelve (12) years (2001 – 2012) for the three (3) selected companies. Their work
299 employed three (3) financial leverage for the independent variables such as: debt ratio (DR);
300 debt-equity ratio (DER) and interest coverage ratio (ICR) in determining their effect on financial
301 performance for Return on Assets (ROA) as dependent variable. They used secondary data

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302 obtained from the financial statement. Descriptive statistics, Pearson correlation and regressions
303 were employed and used for this study. The results of the analysis showed that debt ratio (DR)
304 and debt-equity ratio (DER) have negative relationship with Return on Assets (ROA) while
305 interest coverage ratio (ICR) has a positive relationship with Return on Assets (ROA) in Nigeria
306 pharmaceutical industry.

307 Rondk (2015) investigated the impact of capital structure on firm performance: evidence from
308 companies listed in Iraq Stock Exchange for the period 2009-2013. Multiple regression data
309 analysis was used in his study to analysis the impact of the company's capital structure on its
310 financial performance by employing 40 companies (18 manufacturing, 7 services, 10 tourism, 5
311 agriculture) listed in Iraq stock market. The research used three measures for financial
312 performance namely, Return on equity (ROE), and Return on assets (ROA), as dependent
313 variables and leverage which is short term debt/total assets (DR) as an independent variable. The
314 results of the study demonstrate that short term debt ratio (DR) has a negative effect on return on
315 assets (ROA) and short term debt ratio (DR) has a positive and significant effect on return on
316 equity (ROE). Significant determinant of return on equity (ROE) is asset turnover because it has
317 a positive and significant effect in the model. The results are different from both return on assets
318 (ROA) and return on equity (ROE).

319 Robert and Mohamed (2015) investigated the relationship between financial leverage and the
320 financial performance of listed firm in Kenya. They use annual data for the period 2007 – 2011.
321 Using various panel procedures, the study finds that financial leverage significantly, and
322 negatively, affects ROA of listed firms in Kenya. Also, financial leverage has negative
323 insignificant effect on ROE. Secondly, because the performance of firms depends on other things
324 than just their financial leverage, they control for the effects of those other variables by including
325 them in their models. In this respect, the findings suggest that asset tangibility and ownership
326 concentration are important determinants of performance measured in terms of Tobin's Q. The
327 study concludes that; that financial leverage is an important negative predictor of financial
328 performance measured in terms of ROA and Tobin's Q; ownership concentration is a pertinent
329 negative predictor of financial performance measured in terms of Tobin's Q and asset tangibility
330 is a significant positive predictor of performance measured in terms of ROE and Tobin's Q.

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331 Waqas & Mobeen, (2014) investigated the Impact of liquid ratios, solvency ratios and
332 profitability. In their paper, they applied regression model and Correlation analysis. The
333 population has been taken from the chemical sector of Pakistan and from 36 companies we have
334 selected Ten listed chemical companies of Pakistan and they compiled last 9 years data of those
335 companies from (2001-2009). Solvency ratio (Debt Ratio, Debt-Equity Ratio and Interest Cover
336 Ratio) has negative and highly significant impact on the ROA and ROE. It means that debt to
337 equity ratio increases then performance decreases. It is also concluded that liquidity (Current
338 Ratio and Quick Ratio) has high positive effect over Return on Assets of sector (i.e. if liquidity
339 Rate is increased, ROA will also be increased with greater effect and vice versa). Suppliers
340 check the solvency position of the companies before delivering the goods. The investors are also
341 interested in solvency position how much the company is risky. Liquidity, solvency and
342 profitability are closely related because one increases the other decreases.

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343 Ubesie, Maduka and Udaya (2016) in their study evaluated the effect of capital structure on
344 financial performance of quoted cement companies in Nigeria for the period 2006-2015. The
345 main objective of their study was to investigate the effect of financial leverage on corporate
346 performance of some cement firms in Nigeria which were Dangote cement, Lafarge Cement,
347 Ashaka cement and Cement Company of Nigeria. The methodology adopted was the fixed effect
348 econometric panel regression model. Overall, the findings of the study showed that debt Ratio
349 has no significant effect on return on asset of quoted cement companies in Nigeria. Debt equity
350 Ratio has negative significant effect on return of assets of quoted cement companies in Nigeria.
351 Interest coverage ratio has positive and significant effect on return on assets of quoted cement
352 companies in Nigeria. The study therefore recommended that the regulators and operators of the
353 market for corporate finance, like the CBN, SEC, and NSE should collaborate to develop the
354 capital market in Nigeria to enable quoted companies in Nigeria access long term debt.

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355
356 Chinaemerem and Anthony (2012) investigated the effect of capital structure portfolio on
357 financial performance of Nigerian firms using 30 listed non-financial firms on the Nigerian stock
358 Exchange for a span of 7 years from 2004- 2010. Panel data for the chosen companies were
359 examined using ordinary least squares method of approximation. The findings indicate that
360 company's capital structure represented by debt ratio has negative significantly association with
361 the firm's financial performance surrogated by Return on Assets and Return on Equity.

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362

363 Gweyi and Karanja, (2014) investigated the effect of financial leverage on financial performance
364 of deposit taking Sacco in Kenya. The sample data was extracted from 40 Savings and Credit
365 Co-operative Societies (Saccos) registered by Sacco Society Regulatory Authority extended from
366 the period 2010 to 2012. The secondary data used for analysis was collected from the financial
367 statements of the various deposit taking Saccos. Two basic approaches descriptive and analytical
368 design were adopted. The results show perfect positive correlation between debt equity ratio
369 (DER) with return on equity (ROE) and profit after tax at 99% confidence interval and a weak
370 positive correlation between debt equity ratio with return on assets and income growth.

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371 Naveed, Malik, Muhammad and Naqvi (2014) investigated on the impact of working capital on
372 the corporate Performance in the cement, chemical and engineering sectors of Pakistan. They
373 obtained data from the annual reports issued by the companies during 2007-2011. To verify the
374 relationship between the measures of working capital and profitability regression models were
375 used. The results show that average collection period and operating cycle were positive whereas
376 average age of inventory was negatively related to the return on equity (ROE). Firm size was
377 positive whereas leverage is negatively related to the return on equity (ROE). Average payment
378 period is negative whereas cash conversion cycle is positively and significantly related with
379 return on equity. The results indicate that working capital management influences the firms'
380 profitability.

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381
382 Nawaz A., Atif S. and Aamir F.S., (2015) investigated on impact of financial leverage and
383 Profitability of cement sector operating in Pakistan. The researchers used 18 cement
384 manufacturers out of 21 are incorporated in the study and 6 years annual data from 2005 to 2010
385 regarding financial leverage and profitability of the said firms were taken into consideration. The
386 sample size for 18 firms for six (6) years consists of 108 observations. They used Ordinary Least
387 Square model on the data to establish a causal relationship between the variables. The
388 researchers found that financial leverage has a statistically significant inverse impact on
389 profitability at 99% confidence interval.

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391

392 Soumadi and Hayajneh (2012) investigated the relationship between capital structure and
393 corporate performance on Jordanian shareholdings firms. The study used multiple regression
394 models by least squares (OLS) to establish the link between capital structure and corporate
395 performance of firms over a period of 5 years. The results showed that capital structure was
396 associated negatively and statistically with the performance of the firms in the sample. Another
397 finding from the study was that there was no significant difference in the impact of financial
398 leverage between high financial leverage firms and low financial leverage firms in their
399 performance. The study also concluded that the relationship between capital structure and firm
400 performance was negative for both high growth firms and low growth firms.

Comment [GE90]: same as in GE10

Comment [GE91]: delete. Write of

Comment [GE92]: not same as OLS

402 Suhaila (2014) investigated the effect of liquidity and leverage on financial performance of
403 commercial state corporations in the tourism industry in Kenya. The study adopted descriptive
404 research design where data was retrieved from the Balance Sheets, Income Statements and Notes
405 of ten (10) Commercial State Corporations in the tourism industry in Kenya during the study
406 period 2008-2012. A regression model was used to assess the impact of liquidity and leverage on
407 financial performance measured with profitability. A positive relationship was found to exist
408 between tourism industry liquidity and profitability of Commercial State Corporations in the
409 tourism sector in Kenya.

Comment [GE93]: same as in GE10

411 Tale (2014) investigated on the relationship between capital structure and financial performance
412 of non-financial firms listed at the Nairobi securities exchange in Kenya. The study used a
413 descriptive survey. The population of the study consisted of all the 40 nonfinancial firms listed
414 and duly registered with capital market authority of Kenya. Secondary data used was obtained
415 mainly from the annual audited and published books of accounts, financial statements and the
416 NSE. Data analysis was done by use of regression analysis model. However, the results showed
417 that there was a negative relationship between financial performance and the size and growth of
418 the firm.

Comment [GE94]: same as in GE10

Comment [GE95]: delete

Comment [GE96]: delete. Write on

Comment [GE97]: start with upper case

Comment [GE98]: same as in GE97

Comment [GE99]: same as in GE97

Comment [GE100]: delete

Comment [GE101]: delete. Insert .

Comment [GE102]: delete

Comment [GE103]: delete. Write with

420 Al-Taani (2013) investigated the relationship between Capital Structure and Firm Performance:
421 Evidence from Jordan. The study showed that firm's working capital management policy,
422 represented by financial leverage and firm size have significant relationship to firms'
423 performance in respect to net income however found no significant impact on Return on equity

Comment [GE104]: same as I GE10

Comment [GE105]: same as in GE5

Comment [GE106]: delete. Insert apostrophe
clos

Comment [GE107]: use lower case

424 (ROE) and return on Assets (ROA). The firm size had the potential to influence the firm's
425 financial performance in form of the preference of capital structure mix.

Comment [GE108]: use lower case

426 Nwude,Itiri, Agbadua and Udeh(2016) investigated on the impact of debt structure on the
427 performance of Nigerian quoted firms. They conducted it using 12-year annualized panel data
428 spanning the period 2001-2012 for cross section of 43 firms from different sartorial
429 classifications. Their study employed three regression estimations (Pooled OLS, Fixed Effects
430 and Random Effects) as a result of unobserved heterogeneity in the dataset. The outcome from
431 their regression estimations showed that debt structure (Short term Debt Ratio, Long term Debt
432 Ratio, Total Debt Ratio, Firm's Size and Firm's Age) has negative and significant impact on the
433 performance (ROA) of Nigerian quoted firms within the period under review. The study
434 concludes that debt structure contribute negatively to performance of Nigerian quoted firms;
435 thereby agree with pecking order theory.

Comment [GE109]: same as in GE10

Comment [GE110]: one word

Comment [GE111]: delete. Write sectoral

Comment [GE112]: add s

436 3. METHODOLOGY

437 The study adopts *ex-post facto* research design (after the fact research) which use data that are
438 already in existence. The study was carried out in Nigeria, on cement manufacturing firms
439 quoted in Nigerian Stock Exchange (NSE). Data for the study were collected from the annual
440 reports and accounts of quoted cement manufacturing firms in Nigeria as documented on
441 Nigerian Stock Exchange (NSE) yearly Fact Book. The population of this research study
442 comprises of eight (8) cement manufacturing firms in Nigeria, as at 31st December 2018. The
443 emphasis on cement manufacturing firms quoted on the Nigerian Stock Exchange (NSE),is based
444 on the premise that they are under obligation by law to file their annual reports periodically.

Comment [GE113]: add s

445 Only cement manufacturing firms with data needed for the variables of this study were chosen
446 and as result, the researcher selected four (4) cement manufacturing firms quoted on the Nigerian
447 Stock Exchange, which constitute the sample of this study. Purposive sampling technique was
448 used to select: Lafarge Cement(WAPCO) plc, Dangote Cement plc, Ashaka Cement plc and
449 Cement Company of Northern Nigeria plc .Purposive sampling method involved the analyst to
450 judgmentally sample the population items and as to which items constitutes a representative
451 sample while relying particularly on data availability.

452

454 Model Specification

455 The Panel Least Square (PLS) Model

456 The general model equation was represented as stated below:

457 $Y = b_0 + b_1x_1 + b_2x_2 + \dots + u$ 1

Comment [GE114]: model should be written professionally and numbered appropriately

458 Where y = Return on Assets (firms performance proxy for Dependent Variable)

459 x = Debt Ratio, Debt Equity Ratio, and Interest Cover Ratio (leverage finance proxy for
460 Independent variables)

461 **b**=constant term

462 U = Stochastic disturbance

463
464 This could also be represented in a pooled data regression model thus:

465 $Y_{it} = b_0 + b_1x_{1it} + b_2x_{2it} + b_3x_{3it} + \dots + u_{it}$ 2

Comment [GE115]: same as in GE114

466 Where:

467 i = cross-sectional observations of the variables

468 t = time-series observations of the variables

469

470 **3.7 Description of Variables**

471 y = Return on Assets (ROA) → Dependent variable

472 x_1 = Debt Ratio (DR)

473 x_2 =Debt Equity Ratio (DER) } Independent variables

474 x_3 =Interest Coverage ratio(ICR) }

475 b_0 = intercept

476 b_1, b_2 and b_3 are the slopes

477 U = Stochastic disturbance

478

479 The researcher used Panel least squares in analyzing leverage finance and firm performance. A
480 set of econometric analyses for data, panel techniques was carried out. One of the important
481 advantages of using panel data estimation is that it highlights individual heterogeneity, if there
482 are some differentiating features across cross-sections. These particularities might not be
483 constant across time, in such a way that time series or cross-sectional approaches do not take this
484 heterogeneity into account, which leads to biased results.

485

486 The methods of data analysis used for this study were the ordinary least square (OLS) simple
487 regression and multiple regression panel models. The R-squared and 5 percent probability
488 (significance) level were used to analyzed the result and test the hypotheses. The R-squared was
489 used to determine the magnitude of the variation that occurred in the dependent variable that can

490 be attributed to the variation in the independent variable. Thus it was used to determine the
 491 explanatory power of the dependent on the independent. Also, the probability value of the t-
 492 statistics was based on (0.05) significance level. At a probability value less than 0.05, the H₀ was
 493 rejected and H₁ accepted. Otherwise, H₀ is accepted and H₁ rejected. The Statistical Package
 494 used here for the analyses and the validation of the hypotheses is the E-views 7.2 version.
 495

Comment [GE116]: delete

Comment [GE117]: add variables

Comment [GE118]: delete. Write statistical software

496 4. DATA PRESENTATION AND ANALYSIS

497 4.1 Data presentation

498 In this section of the work, the collected data were analyzed and interpreted in line with the aim
 499 of the study which is to determine the impact of leverage finance variables on the financial
 500 performance of cement firms in Nigeria. The study used the data of four cement firms audited
 501 annual reports of 2006 to 2017.

Comment [GE119]: add from

502 **Table 4.1** presents values for leverage finance variables and return on assets of the four cement
 503 firms Nigeria.

YEARS	FRIMS	DR	DER	ICR	ROA
2006	LAFCEM PLC	47.6000	90.8397	9.6396	52.2248
2007	LAFCEM PLC	35.1608	54.2276	13.9300	70.4693
2008	LAFCEM PLC	34.5035	52.6800	53.2009	61.1535
2009	LAFCEM PLC	49.8520	99.4096	1.3696	21.2584
2010	LAFCEM PLC	59.2409	145.3439	2.2410	12.0593
2011	LAFCEM PLC	63.2540	172.1388	2.0741	10.6045
2012	LAFCEM PLC	54.9807	122.1270	5.5146	25.3822
2013	LAFCEM PLC	42.0508	72.5648	9.3146	40.8226
2014	LAFCEM PLC	19.4872	19.4872	22.2013	48.3146
2015	LAFCEM PLC	20.6338	20.6338	52.5758	39.2861
2016	LAFCEM PLC	36.7382	58.0734	3.7399	10.0701
2017	LAFCEM PLC	57.0299	132.7199	1.1467	2.0200
2006	DANG CEMENT PLC	71.2990	248.4205	21.3891	16.5007
2007	DANG CEMENT PLC	65.5326	190.1293	2.5994	8.8941
2008	DANG CEMENT PLC	69.3680	226.4556	26.6038	14.4652
2009	DANG CEMENT PLC	48.2230	93.1363	15.9003	39.5174
2010	DANG CEMENT PLC	47.3911	90.0818	34.8540	52.4523
2011	DANG CEMENT PLC	44.5125	78.0543	21.3611	51.2968
2012	DANG CEMENT PLC	33.9422	51.3900	12.1294	65.1978
2013	DANG CEMENT PLC	30.2927	43.5499	17.5632	80.3531
2014	DANG CEMENT PLC	33.7228	50.8814	9.3734	65.5711
2015	DANG CEMENT PLC	33.4375	50.2347	7.1328	58.6621
2016	DANG CEMENT PLC	28.3138	54.3332	5.7240	41.7635
2017	DANG CEMENT PLC	38.4662	62.5691	11.2393	55.1797
2006	ASHAKACEM PLC	36.9384	58.7364	185.9215	72.5674
2007	ASHAKACEM PLC	51.8129	107.3939	0.0000	21.8180

2008	ASHAKACEM PLC	48.9152	95.6780	0.0000	28.0183
2009	ASHAKACEM PLC	48.7040	94.9399	0.0000	10.6115
2010	ASHAKACEM PLC	42.5913	74.1895	1.9696	36.6410
2013	ASHAKACEM PLC	30.0511	42.9614	19.8046	14.0407
2014	ASHAKACEM PLC	28.3324	39.5330	22.1336	25.9110
2015	ASHAKACEM PLC	24.6687	32.7470	31.6752	18.4855
2016	ASHAKACEM PLC	26.7130	36.4498	122.0455	13.3593
2017	ASHAKACEM PLC	28.3358	40.2477	7.6912	10.6689
2006	CCNN PLC	80.8536	422.2922	5.6287	0.1610
2007	CCNN PLC	65.4749	189.6442	10.3773	2.8811
2008	CCNN PLC	54.7925	121.1895	4.0652	34.8828
2009	CCNN PLC	56.9826	132.4363	9.4364	41.4787
2010	CCNN PLC	55.6216	127.3597	7.9291	29.2439
2011	CCNN PLC	52.2420	109.3891	28.9377	34.8908
2012	CCNN PLC	53.4925	115.0191	6.6016	71.8506
2013	CCNN PLC	44.9837	81.7643	7.3444	41.9977
2014	CCNN PLC	40.1416	67.0610	7.9955	39.1006
2015	CCNN PLC	40.8361	69.0219	4.0849	22.1304
2016	CCNN PLC	42.6203	74.2778	19.8101	20.3881
2017	CCNN PLC	41.5295	71.0264	17.4944	41.0606

Source: Authors computation from annual report and account.

Comment [GE120]: data used not required in the body of the manuscript, Can be shown as appendix if so desired.

4.2 Test of Hypotheses

The panel least squares were used in the test of hypotheses of the four cements firms. One of the major benefits from using panel data as compared to cross-section data on individuals is that it enables us to control for individual heterogeneity. Not controlling for these unobserved individual specific effects leads to bias in the resulting estimates.

In arriving at a decision, the following steps were taken; (i) the hypotheses were restated in null forms, (ii) the decision criterion or criteria were stated, (iii) the presentation of the Eviews result, and (iv) the null hypothesis is rejected based on the decision criterion or criteria.

Comment [GE121]: Irrelevant and should be deleted

4.2.1 Test of Hypothesis One

Step One: Restatement of Hypothesis in Null and Alternate Form

H_0 :Debt ratio (DR) has no positive effect on Return on Assets (ROA) of the cement manufacturing firms in Nigeria.

H_1 :Debt ratio (DR) has positive effect on Return on Assets (ROA) of the cement manufacturing firms in Nigeria.

Comment [GE122]: state one form only.

523 **Step two: Decision Rule/criteria**

524 Accept H_0 if the t-statistics < 2 , probability of t-statistics > 0.05 ; otherwise, reject H_0 .

Comment [GE123]: Not necessary. Interpret the regression results.

525 **Step Three: Presentation of Panel Regression Result**

526 **TABLE 4.2 PANEL REGRESSION RESULTS**

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/09/19 Time: 13:12
Sample: 2006 2017
Periods included: 12
Cross-sections included: 4
Total panel (balanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	111.2434	10.41327	10.68285	0.0000
DR	-1.735900	0.230445	-7.532806	0.0000

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.733811	Mean dependent var	34.11548
Adjusted R-squared	0.609035	S.D. dependent var	21.02417
S.E. of regression	13.14582	Akaike info criterion	8.251287
Sum squared residue	5530.006	Schwarz criterion	8.875021
Log likelihood	-182.0309	Hannan-Quinn criter.	8.486997
F-statistic	5.881025	Durbin-Watson stat	2.499603
Prob.(F-statistic)	0.000013		

527 **Source: Author's Eviews 7.2 Output, 2019**

528
529 **Step Four: Decision**

531 The table shows that the coefficient of -1.735900 is negative, the t-statistics of 7.532806 > 2 and the
532 probability value of $0.0000 < 0.05$ and significant at 5% critical value. Thus, the study accept the
533 null hypothesis which state that Debt ratio (DR) has on positive effect on Return on Assets
534 (ROA) of the cement manufacturing firms in Nigeria.

Comment [GE124]: Specify the table

Comment [GE125]: Specify the coefficient and the t-statistic

Comment [GE126]: Wrong format

Comment [GE127]: Add s

Comment [GE128]: Add s

Comment [GE129]: Delete. Write no

535
536 **4.2.2 Test of Hypothesis Two**

537 **Step One: Restatement of Hypothesis in Null and Alternate Form**

538 H_0 :Debt-Equity Ratio (DER) has no positive effect on Return on Assets (ROA) of the cement
539 manufacturing firms in Nigeria.

540 **H₁**:Debt-Equity Ratio (DER) has positive effect on Return on Assets (ROA) of the cement
 541 manufacturing firms in Nigeria.

Comment [GE130]: State only one for

542 **Step two: Decision Rule/criteria**

543 Accept H₀ if the t-statistics < 2, probability of t-statistics > 0.05; otherwise, reject H₀.

Comment [GE131]: Same as in GE123

544 **Step Three: Presentation of Panel Regression Result**

545 **TABLE 4.3. PANEL REGRESSION RESULTS**

Dependent Variable: ROA
 Method: Panel Least Squares
 Date: 05/09/19 Time: 13:19
 Sample: 2006 2017
 Periods included: 12
 Cross-sections included: 4
 Total panel (balanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	63.48914	4.196041	15.13073	0.0000
DER	-0.306560	0.039283	-7.803869	0.0000

Effects Specification

Cross-section fixed (dummy variables)
 Period fixed (dummy variables)

R-squared	0.745723	Mean dependent var	34.11548
Adjusted R-squared	0.626530	S.D. dependent var	21.02417
S.E. of regression	12.84833	Akaike info criterion	8.205506
Sum squared reside	5282.544	Schwarz criterion	8.829239
Log likelihood	-180.9321	Hannan-Quinn criter.	8.441216
F-statistic	6.256460	Durbin-Watson stat	2.544004
Prob. (F-statistic)	0.000007		

546 **Source: Author's Eviews 7.2 Output, 2019**

547 **Step Four: Decision**

548 The table shows that the coefficient of -0.306560 is negative, that-statistics of 7.803869 > 2 and
 549 the probability value of 0.0000 < 0.05 is significant at 5% critical value. Thus, the study accept
 550 the null hypothesis that Debt-Equity Ratio (DER) has on positive effect on Return on Assets
 551 (ROA) of the cement manufacturing firms in Nigeria.

Comment [GE132]: Specify the table

Comment [GE133]: Same as in GE125 and GE126

Comment [GE134]: Add s

Comment [GE135]: Delete. Write no

552 **4.2.3 Test of Hypothesis Three**

553 **Step One: Restatement of Hypothesis in Null and Alternate Form**

554 **H₀**:Interest Coverage Ratio (ICR) has no positive effect on Return on Assets (ROA) of the
 555 cement manufacturing firms in Nigeria.

556 **H₁:**Interest Coverage Ratio (ICR) has positive effect on Return on Assets (ROA) of the cement
 557 manufacturing firms in Nigeria.

558 **Step two: Decision Rule/criteria**

559 Accept H₀ if the t-statistics < 2, probability of t-statistics > 0.05; otherwise, reject H₀.

Comment [GE136]: Same as in GE122 and GE123

560 **Step Three: Presentation of Panel Regression Result**

561 **TABLE 4.4 PANEL REGRESSION RESULTS**

Dependent Variable: ROA
 Method: Panel EGLS (Two-way random effects)
 Date: 05/09/19 Time: 13:25
 Sample: 2006 2017
 Periods included: 12
 Cross-sections included: 4
 Total panel (balanced) observations: 48
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	32.14380	4.229883	7.599218	0.0000
ICR	0.082017	0.063814	1.285253	0.2051
Effects Specification				
			S.D.	Rho
Cross-section random			5.542084	0.0631
Period random			0.000000	0.0000
Idiosyncratic random			21.36033	0.9369
Weighted Statistics				
R-squared	0.434665	Mean dependent var		25.37316
Adjusted R-squared	0.313680	S.D. dependent var		20.45217
S.E. of regression	20.31180	Sum squared reside		18978.18
F-statistic	2.651874	Durbin-Watson stat		0.715691
Prob.(F-statistic)	0.205138			
Unweighted Statistics				
R-squared	0.017731	Mean dependent var		34.11548
Sum squared reside	20406.39	Durbin-Watson stat		0.665601

562 **Source: Author's Eviews 7.2 Output, 2019**

563
 564
 565

566 **Step Four: Decision**

567 The table shows that the coefficient of 0.082017 is positive, that-statistics of 1.285253 < 2 and the
 568 probability value of 0.2051 > 0.05 and not significant at 5% critical value. Thus, the study reject

Comment [GE137]: Specify the table

Comment [GE138]: Same as in GE125 and GE126

569 the null hypothesis that Interest Coverage Ratio (ICR) has on positive effect on Return on Assets
 570 (ROA) of the cement manufacturing firms in Nigeria.

571

572 **TABLE 4.5 MULTIPLE PANEL REGRESSION POOL ANALYSIS RESULT**

Dependent Variable: ROA
 Method: Least Squares
 Date: 05/09/19 Time: 13:35
 Sample: 2006/2017
 Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46.30125	15.14181	3.057840	0.0038
DR	-0.021821	0.496272	0.043970	0.9651
DER	-0.141156	0.095816	-1.473195	0.1478
ICR	0.015383	0.062803	0.244950	0.8076
R-squared	0.219629	Mean dependent var	34.11548	
Adjusted R-squared	0.166422	S.D. dependent var	21.02417	
S.E. of regression	19.19517	Akaike info criterion	8.826850	
Sum squared resid	16212.00	Schwarz criterion	8.982783	
Log likelihood	-207.8444	Hannan-Quinn criter.	8.885777	
F-statistic	4.127816	Durbin-Watson stat	0.905879	
Prob(F-statistic)	0.011556			

573 **Source: Author's Eviews 7.2 Output, 2019**

574 The results in Table 4.5 shows that Debt Ratio (DR) has a negative and statistically insignificant
 575 effect on the financial performance (ROA) of listed cement manufacturing firms in Nigeria as
 576 indicated by the coefficient of -0.021821 which is not significant at 5% level of significance (P-
 577 value 0.9651). That is, Debt Ratio has not significantly reduces the financial performance of
 578 listed cement manufacturing firms in Nigeria, a unit increase in Debt Ratio (DR) has led to
 579 decrease the ROA of listed cement manufacturing firms in Nigeria by 3%, if (DER and ICR) are
 580 held constant.

Comment [GE140]: Wrong format

Comment [GE141]: Cross check

581 The table also shows that Debt Equity Ratio (DER) has a negative effects on the financial
 582 performance (ROA) of listed cement manufacturing firms in Nigeria, considering the coefficient
 583 of -0.141156 which is not significant at 5% level of significance (p-value 0.1478). That is, Debt
 584 Equity Ratio has not significantly affected the financial performance of listed cement
 585 manufacturing firms in Nigeria, a unit increase in Debt equity Ratio (DER) has led to decrease
 586 the ROA of listed cement manufacturing firms in Nigeria by 14%, if (DE and ICR) are held
 587 constant.

Comment [GE142]: Wrong interpretation

Comment [GE143]: Cross check

Comment [GE144]: Wrong format

588 Lastly, the results from the table shows that the interest coverage Ratio (ICR) has a positive
 589 effect on the financial performance (ROA) of listed cement manufacturing firms in Nigeria,

Comment [GE145]: Same as in GE142

Comment [GE146]: Always specify the table

590 from the coefficient of 0.015383 which is not significant at all levels of significance (from the p-
591 value of 0.8076). This suggests that the interest coverage Ratio has not significantly affected on
592 the financial performance (ROA) of listed cement manufacturing firms in Nigeria, a unit
593 increase in interest coverage Ratio (ICR) has led to increase the ROA of listed cement
594 manufacturing firms in Nigeria by 1%, if (DR and DER) are held constant, during the period of
595 the study.

Comment [GE147]: Same as in GE1245 and GE126

Comment [GE148]: Wrong interpretation

596
597 The Table 4.5 above shows that coefficient of determinations (R^2) of 0.219629 indicates that
598 about 22% percent of the total variations in corporate financial performance are explained by the
599 financial leverage while 78 percent of the total variation remains unexplained. This could be due
600 to random fluctuations or an additional factor that has not been considered.

Comment [GE149]: delete

601 In case of this study, the researchers found out that some researchers have found insignificant
602 relationship between financial leverage and performance and a significant relationship between
603 the two but varying extent. Such studies include: in Nairobi (Kaumbuthu, 2011) found a negative
604 association between equity to debt ratio (EDR) and Return on equity (ROE) in Jordan (Al-
605 Shamaileh & Khanfar, 2014), in Pakistan (Nawaz, Salmani & Shamsi, 2015) who found that
606 financial leverage has a statistically significant inverse impact on profitability at 99% confidence
607 interval; in Tehran, Iran on the relationship among financial leverage and profitability (Fengju,
608 Fard, Maher and Akhteghan, 2013). Other examples include (Banchuenvijit 2011) in Thailand and
609 (Srivastava, 2014) in India who established a positive relationship amid financial leverage and
610 profitability. The association between the two types of leverage is also demonstrated in several
611 studies in Africa such as: Enekwe, Agu and Eziedo (2014) in Nigeria, (Ubesie M.C, Maduka F.I.
612 and Udaya L. K., 2016) found that debt Ratio and Debt equity Ratio (DER) and have negative
613 significant effect on ROA, while Interest coverage ratio (ICR) has positive and significant effect
614 on (ROA) of quoted cement companies in Nigeria

Comment [GE150]: same as in GE10

Comment [GE151]: same as in GE10

Comment [GE152]: same as in GE10

Comment [GE153]: same as in GE10

615 5. CONCLUSION

616 The study evaluated the effect of leverage financing on performance of quoted cement
617 companies in Nigeria for the period 2006-2017. The research findings from this findings of the
618 study showed that Debt ratio (DR) has an insignificant negative effect on the Return on assets
619 (ROA) of cement manufacturing firms in Nigeria; Debt Equity Ratio (DER) has an insignificant
620 negative effect on the Return on assets (ROA) of cement manufacturing firms in Nigeria and that

Comment [GE154]: delete

621 Interest coverage ratio (ICR) has an insignificant positive effect on the Return on assets (ROA)
622 of cement manufacturing firms in Nigeria.

623 Overall the study has shown that quoted cement manufacturing firms in Nigeria are low levered
624 and employ more of short-term liabilities than long-term liabilities. As such in the case of higher
625 debt, financial performance will tend to decline. The reason behind this may be due to the high
626 interest bearing securities engaged in debt. In addition to this an increase in the level of debt also
627 increases the riskiness of firms. The study has also shown that leverage financing has a statistical
628 insignificant negative effect on the corporate performance of cement manufacturing firms in
629 Nigeria. The study on the other hand, concludes that financial leverage is not the major
630 determinant factors of financial performance (across all the measures of performance) of quoted
631 cement manufacturing firms in Nigeria. From these results, it could be concluded that the
632 irregular investment environment in Nigeria, may have contributed to the low leverage behavior
633 of quoted cement manufacturing firms in Nigeria. To address the above findings of the study, the
634 following actions are recommendations are made, which will enable the quoted cement firms to
635 improve corporate performance through effective use of financial leverage in their firms. It is
636 expected that Cement firms in Nigeria should endeavor to guard their Debt cost because it
637 impacts their firms' ROA negatively, if it is high, then the financial managers of cement firms
638 should depend on their internal sources of financing in order to increase their financial
639 performance. Also, the results on Debt Equity ratio has confirmed that Debt Equity ratio does
640 not impacts the financial performance of the firms, hence Financial managers of cement firms
641 should take advantage of available credit and tax shield advantage to enhance the firm's financial
642 performance (ROA). It is expected that the financial managers of cement firms should monitor
643 the interest charged on debt financing to avoid liquidation of the cement firms.

644 It is our belief that this study adds to knowledge by suggesting that Government should support
645 sectors by giving out policy that will guard against cost levied on debt.

646 Lastly, it has been brought out that financial leverage can enhance firms assets in Nigeria by
647 monitoring the interest charged on debt financing; this finding can play a role in reengineering
648 how firms manage their leverage properties locally and internationally.

649

650 **References**

Comment [GE155]: add ly

Comment [GE156]: delete

Comment [GE157]: same as in GE5

Comment [GE158]: same as in GE5

Comment [GE159]: cross check

Comment [GE160]: delete s

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Comment [GE161]: at variance with the guideline