

Effect of financial ratios on shareholders wealth in Nigerian manufacturing firms.

By

Harrison Nwaduiche Ohaju

Supervisor

Theresa Mulcahy

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Abstract

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The study appraised the effect of financial ratios on shareholders wealth in Nigerian manufacturing firms. The objectives formulated to guide the study were: investigate the effect of current ratio on total equity of Nigerian manufacturing firms; examine the effect of debt equity ratio on total equity of Nigerian manufacturing firms; ascertain how return on assets affects total equity of Nigerian manufacturing firms and determine the extent to which assets turnover affects total equity of Nigerian manufacturing firms. Quantitative design was adopted to achieve the objectives of the study while the scope covered ten (10) quoted consumer goods companies in Nigeria being Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Flour Mill Plc, Dangote Sugar Plc, Fidson Nigeria Plc, Guinness Nigeria Plc, International Breweries Plc, Nigeria Breweries Plc, Nestle Nigeria Plc and Northern Nigeria Flour Mill Plc. Random effect panel regression model was used as the analytical technique. It was discovered that current ratio and debt equity ratio does not have significant effect on total equity of Nigerian manufacturing firms while return on assets and assets turnover have significant effect on total equity of Nigerian manufacturing firms. The study therefore recommended that the companies under study should either delay any capital purchases that would require any cash payments or sell any capital assets that are not generating a return to the business and using the cash to reduce current debt. They should improve on their debt to equity ratio by increasing sales or reducing costs in order to increase profitability. The companies under study should increase revenues without increasing assets cost through improved customer service delivery or by exploring new market segments and also computerize inventory and order systems in order to improve sales further due to the fact that the higher the asset turnover ratio, the more efficient a company is at generating revenue from its assets.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Determining the wealth of investors has been the topic of conversation all around the globe. It has become basic and important since organizations are progressively dedicated to creating investors value (Salehi, Valipour and Yousefi, 2011). This assertion led Temple (2019) citing Sharfman, (2013) to state categorically that shareholders' wealth maximization ought to be the key standard underlying business entities' governance. This is because shareholders' wealth maximization rotates around the thought that the target of a firm's management ought to be to boost the current worth of potential projected returns of the company's shareholders (Macey, 2008). The returns may come in the form of capital gains from either the sale of equity or regular distributions of dividends.

With the expanding global competition, organizations are concentrating their endeavors on creating shareholders' value so as to survive the intense competition. Considering this, it is getting significant for organizations to quantify the worth they make for their shareholders. It is based on this premise that Philips (2006) states that the drive to advance shareholders' value is the thing that persuade different firms to activities. This therefore implies that the shareholders wealth maximization guideline is the main impetus behind corporate finance. Regular monitoring of the value generated year on year helps businesses to assess past choices and implement decisions that will boost the value of the shareholder (Viswandham and Poornima, 2005). Such choices that improve shareholders wealth revolve around financial ratios analysis which are utilized all around by organizations of all sizes to give numerical data on the productivity, wellbeing and heading of the business. This is on the grounds that financial ratio analysis is significant for the organization so as to evaluate its financial situation, liquidity, competitiveness, risk, solvency, productivity and operational effectiveness and the appropriate use of funds, which also demonstrates the pattern or comparison of financial results that may be useful to the shareholders of the company in deciding on investments (Asrizal, Linzzy & Shinta, 2018).

Nwoha (2006) considers ratio analysis to be as a strategy for deciphering financial statement. This is because of the way that financial statement are the most complete, objective and

dependable data base, in light of which one can form an opinion on the property and financial position of an organization (Thalassinos and Liapis, 2014). Suryanto and Thalassinos (2017) likewise express that the accounting financial statements are an open wellspring of data, and its arrangement, content and presentation forms are bound together by fundamental parameters, it gets conceivable to create standard techniques to peruse and analyse it. These assertions go to a great extent to emphasis the imperative of adopting financial ratio analysis as a tool for interpreting financial statement of firms.

1.2 Statement of the Problem

Jensen (2001) states that due to the fact that the core essence of the existence of organizations is to maximize profit earnings in the short run or wealth in the long-term, any corporate decision made by organizations' management is aimed at improving shareholders' wealth in the long run. This statement shows at a glance that managerial decisions of diverse organizations in the corporate world are mostly directed at ensuring an improvement in shareholders' wealth. This is because according to Diepiriye (2018), shareholder wealth is a fundamental feature of top management requiring the creation of tactics and strategies, as well as the effective distribution of capital for its achievement. Shodiya, Sanyaolu, Ojenike and Ogunmefun (2019) supported this notion by stating that maximization of shareholder wealth is supposed to have an effect on shareholder investment, as greater wealth maximization is believed to encourage investors to contribute more capital to a company.

Oberholzer (2012) notes that since the key essence of existence of any business is to build the wealth of its shareholders, there are many other value-based measurements that aid in the development of shareholder capital, such as economic added value (EVA), market value added (MVA) and shareholder added value (SVA). Stewart (1999) says that MVA is the difference between the market share price and its book value and it indicates the growth or decline in market values. MVA's connection with EVA is that MVA is the current worth of potential EVA values (Baum Saver & Strickland, 2004:82). SVA is the enterprise value minus the debt market asking price (Rappaport, 1986).

Oberholzer (2012) is of the view that the issues that often arise with value-based measurements, such as the above-mentioned is that they are not readily available and complex to measure and

also do not calculate growth and dividend components straight away. On the other hand, the financial ratio analysis is easy to measure and also readily available in sources such as accounting records, financial reports from companies and industry reports. This necessitates the essence of this study on effect of financial ratios on shareholders wealth in Nigerian manufacturing firms.

1.3 Objectives of the Study

The broad objective of the study is to examine the effect of financial ratios on shareholders wealth in Nigerian manufacturing firms. The specific objectives of the study will include:

1. Investigate the effect of current ratio on total equity of Nigerian manufacturing firms.
2. Examine the effect of debt equity ratio on total equity of Nigerian manufacturing firms.
3. Ascertain how return on assets affects total equity of Nigerian manufacturing firms.
4. Determine the extent to which assets turnover affects total equity of Nigerian manufacturing firms.

1.4 Research Questions

The following questions will guide the study:

1. What is the effect of current ratio on total equity of Nigerian manufacturing firms?
2. What is the effect of debt equity ratio on total equity of Nigerian manufacturing firms?
3. How does return on assets affect total equity of Nigerian manufacturing firms?
4. To what extent does assets turnover affect total equity of Nigerian manufacturing firms?

1.5 Statement of Hypotheses

The following null hypotheses will guide the study:

1. Current ratio does not have significant effect on total equity of Nigerian manufacturing firms.
2. Debt equity ratio does not significantly affect total equity of Nigerian manufacturing firms.
3. Return on assets does not have significant effect on total equity of Nigerian manufacturing firms.
4. Assets turnover does not significantly affect total equity of Nigerian manufacturing firms.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This section is set to carry out a review on related literature pertaining to the effect of financial ratios on shareholders wealth in Nigerian manufacturing firms. It commenced with a conceptualization of financial ratio analysis as well as diverse ratios that were generated as the independent variables of the study being current ratio, debt equity ratio, return on assets and assets turnover.

These reviewed variables led to the construction of the under-listed research questions:

1. What is the effect of current ratio on total equity of Nigerian manufacturing firms?
2. What is the effect of debt equity ratio on total equity of Nigerian manufacturing firms?
3. How does return on assets affect total equity of Nigerian manufacturing firms?
4. To what extent does assets turnover affect total equity of Nigerian manufacturing firms?

The study was anchored on value maximization theory based on the premise that the study is centred on wealth maximization which is the core concept of this study.

2.1 Conceptual Review

2.1.1 Financial Ratio Analysis

Enekwe (2015) is of the view that financial ratios are statistical equations drawn from the given data on an organization's financial statement. The author states that financial ratios are utilized to delineate the financial health of an organization however a portion of these ratios uncover an organization's strength compared to other companies. These come in percentage or decimal arrangement, which permits a firm to contrast an organization's ratios with its rivals. It has consequently been demonstrated that financial ratios are basic in financial analysis as it distinguishes a firm's relative strength and weaknesses and recommends activities the firm may adopt to exploit its strength and correct its weaknesses later on (Enekwe, 2015). To buttress this declaration, Pandey (1995) states that financial statement examination is not just significant for the company's management, it is additionally significant for the firm's investors and creditors.

This is on the grounds that internally, financial managers utilize the data provided by financial analysis to help make financial and investment decisions to maximize the firm's value.

Externally, investors and creditors utilize financial statement examination to assess the attractiveness of the firm as an investment by looking at its capacity to meet its present and anticipated future financial commitments. This is because of the way that financial statement reflects worldwide economic events related with the business action of the venture, that are changed into numbers and included (handled) in the accounting books comprising the financial statement database (Richard and Okoye, 2013). Mastering and understanding the information included in the financial statement gives a thorough picture of the enterprise (property, funds and results). Hatem (2013) supported the essence of financial statement in an organization by expressing that financial statements are valuable for making decision in regard to expansion and financing. They additionally consider along with marketing decisions, providing information showing which parts of organization's tasks give the best return on investment. The author similarly states that organization's financial statement provides financial information that investors, creditors and analysts use to assess an organization's financial performance and are significant tools for higher level managers to convey past achievements and future goals.

From the ongoing, it has been shown that financial ratios play enormous role in promoting shareholders' wealth. Harahap (2013) concurred with this statement by affirming that financial ratios helps all stakeholders including the management, investors, financial analysts, and so forth to assess and take reasonable financial decisions by comparing past and current performance and consequently anticipate future performance and growth of the organization.

Mesak and Sukartha (2019) citing Kasmir (2016) are of the view that financial ratio compares the numbers in the financial statement by separating one number by another. Comparisons can be made between one segment and the parts in one financial report or among segments in the financial statements, at that point the practically identical numbers can be in the numbers in a period or a few periods. In light of the clarification above, financial ratios are a contrast of the quantity of parts contained in financial statements, both in one period and a few periods and afterward utilized as material for investigation.

This prompted Muhammad, Samina and Athar (2019) to assert that ratios integrate the financial statements through calculations so as to examine the impact of various items on one another. As

in activity ratios account on proportions account heads of pay articulation just as balance sheet are consolidated together to quantify the productivity of the business by changing over its assets into cash. To further buttress this analysis, Foster (1978) states that in financial ratios the connection between the elements of balance sheet and profit and loss account is built up to recognize the quality and shortcomings of the firm while Brigham and Houston (2009) were of the view that ratio analysis is utilized by firms so as to decide the investment roots and to check the working productivity of the business. It is additionally useful in depicting the organization's performance with the goal that the investors would have the option to know about the return of their present investment in the future. Thus, ratio analysis is a broadly utilized expository instrument to decide the organization's verifiable performance and its future financial condition.

2.1.2 Current Ratio

The current ratio is a liquidity ratio that gauges an organization's capacity to pay short-term and long-term obligations (Enekwe 2015). To measure this capacity, current ratios consider the current total assets of a company (both liquid and illiquid) comparative with that organization's current total liabilities. In this way, Wibowo and Pujiati (2011) express that current ratio is a genuine corporate liquidity measure, since the measurement takes into account the relative relationship between current assets and current liabilities for each organization. Kuswadi (2005) upheld this assertion by expressing that current ratio can provide good data to potential investors as this will affect investor interest in spending, with the result that current assets have increased. The higher the current ratio suggests the greater increase in income.

The formula for calculating a company's current ratio is: **Current Ratio** = *Current Assets* / *Current Liabilities*. Akhor, and Jafaru (2015) state that the current ratio is called current because, unlike some other liquidity ratios, it incorporates all current assets and all current liabilities. The current ratio is mainly used to give an idea of a company's ability to pay back its liabilities (debt and account payable) with its assets (cash and marketable securities, inventory and account receivables) (Breiman and Stone 2011). This made Krishnankutty and Chakraborty (2011) to affirm that current ratio is the most commonly used ratio in the analysis of financial statement as this current ratio gives the investigator a general picture of the working capital adequacy of a company and of the company's capacity to meet its day to day payment commitments. Anthony, Hawkins and Merchant (2010) equally supported this assertion by

stating that present current ratio is not only a measure of the liquidity of the company, but also a measure of the safety buffer that management retains to accommodate for the unavoidable unevenness in the flow of funds through the current assets and liability accounts.

2.1.3 Debt Equity Ratio

One of the ratios used to track the capital structure of a company is the debt to equity ratio which demonstrate the ability of the company's own capital to meet its financial obligations. It demonstrates the ability of the company's own capital to meet its debt obligations and the higher the percentages of the ratios, the larger the amount of funds to be covered by own capital (Viswanadham & Poornima, 2005). Sawir (2014) agreed to this assertion by stating that the larger this ratio means the capability of the company to pay interest is increasing and the potential to secure a loan is also higher. It is therefore used by companies to assess the company's equity from the company's debt which implies it is the replacement between the total equity and the company's total income.

Thalassinos and Liapis (2014) note that debt to equity ratio is used to determine a company's financial ability and soundness and is usually measured using data from the previous fiscal year. This is due to the fact that this financial method provides an idea of how much capital is borrowed (debt) can be settled when winding up using shareholder contributions as stated by Shodiya, Sanyaolu, Ojenike and Ogunmefun (2019). The author equally noted that a low debt to equity ratio is advantageous from an investment perspective, as it is less volatile in periods of higher interest rates. Suryanto and Thalassinos (2017) supported this assertion by stating that a low debt-to-equity ratio indicates a lower amount of financing by debt via lenders, versus funding through equity via shareholders while higher percentage of ratio suggests that the company receives more of its capital through borrowings, which might endanger the company if the debt rates became too high. Therefore, debt to equity ratio attracts additional capital for further investment and expansion of the business.

2.1.4 Return on assets

Return on Assets (ROA) is one of the indicators for profitability. This ratio is most commonly illustrated in the review of financial statements, as it may reflect business performance in generating wealth (Rosikah, Dwi, Dzulfikri, Muh&Miswar, 2018). This is because it is able to

measure the company ability to generate profits in the past to be projected in the future. This is supported by - Oberholzer (2012) who assert that the returns on asset ratio indicates the relation between the company's income and asset base. The higher the proportion, the better. Which is because a higher ratio would mean that, compared to its asset base, the organization will produce comparatively higher profits, i.e. more capital efficiency.

Samira, Noor and Masudul, (2018) are of the view that returns on assets (ROA) is a measure of how profitable a company is in relation to its total assets. Therefore, it gives managers and investors, or analysts an idea as to how efficient a company's management is at using its to generate earnings. Richard and Okoye (2013) supported this view by stating that return on assets gives investors an idea of how quickly the company turns the capital it invests into net revenue implying that the higher the returns on assets number, the better, because the company is earning more money on less investment. On the other hand, Oberholzer (2012) notes that returns on assets is a profitability ratio that provides how much profit a company is able to generate from its assets. In other words, returns on assets evaluates how effectively a corporation manages to produce income from its economic resources or assets on its balance sheet.

2.1.5 Asset Turnover

The asset turnover ratio is an efficiency ratio that gauges an organization's capacity to produce sales from its assets by contrasting net sales with average total assets (Raveesh and Chakraborty, 2011). In other words, this ratio shows how effectively an organization can utilize its assets to generate sales. Hantono (2018) agreed with this assertion by noting that the total asset turnover ratio calculates net sales as a percentage of sales to show how many sales are generated from each dollar of company assets. Along these lines, this ratio can illustrate how effective a business is in making profit from its assets. If a business can make minimum sales with assets, this would result in a higher turnover ratio of assets (Harahap, 2013).

On the other hand, Muhammad and Imran (2015) are of the view that the asset turnover ratio measures the value of a company's sales or incomes relative to the value of its assets. Therefore, it can be used as an indicator of the efficiency with which a company is using its assets to generate revenue and the higher the rate of asset turnover, the more effectively a firm earns revenue from its assets. In comparison, if a company has a low asset turnover ratio, it means that it does not use its assets effectively to produce sales.

2.2 Theoretical framework

The study adopted value maximization theory. The theory was postulated by Jensen in 2001. It states that the primary goal of a firm's existence is to maximize short-term profits and to maximize long-term shareholder value (Jensen, 2001). Therefore, the theory explains why all the organizational operations, even when they appear charitable, are profit-maximization. The theory further states that the long-term maximization of capital does not only mean maximizing the wealth of shareholders, but also maximizing other financial beneficiaries such as debt and warrant holders.

Value maximization theory was adopted for this study based on the premise that it focuses on wealth maximization which is the core concept of this study. The financial governance has gone a long way by changing its emphasis from conventional to modern approach. The new strategy focuses on wealth maximization rather than profit. This offers a longer-term appraisal horizon, making room for companies to achieve sustainable efficiency. (Hatem, 2013).

A myopic person or corporation is mostly preoccupied with short-term benefits. A short-term timeline can meet the aim of generating profit but may not aid in wealth creation. It is because wealth formation needs a longer-term horizon, so financial management which are measurable with the aid of financial ratios emphasizes on wealth maximization rather than profit maximization.

2.3 Empirical Review

Hatem (2013) investigated the effect on the debt equity ratio of ownership structures: a static and dynamic analytical context from 1997 to 2007. The study adopted regression analysis while the test results showed a non-linear relationship between the managerial ownership and capital structure.

Asrizal, Linzzy and Shinta (2018) researched on the effect of debt-to-equity ratio and total asset turnover on equity returns in automotive and equipment companies in Indonesia. Purposive sampling was adopted for the study while the multiple linear regression was adopted as the analytical technique of the study. The results of the study showed that partially and simultaneously debt equity ratio had a significant effect on return on equity and so did total asset turnover have a significant effect on return on equity.

Raveesh and Chakraborty (2011) investigated the determinants of current ratios: a study with reference to companies listed in Bombay Stock Exchange. The study adopted multiple regression analysis for the study and found out that current ratio indicates a decreasing trend over the last decade. The company's receivable days, payable days, inventory days and size are the key determinants of the current ratio.

Mehrnaz (2013) carried out a study on exploring the link between the financial ratios and the worth of the created shareholders value from 2005 to 2011. The study adopted pooled least squares model while the analysis indicate that even though there is a substantive correlation between financial ratios and the value created by the shareholders, the corporate life cycle of various stages may affect the relationship between the financial ratios and the value created by the shareholder.

Enekwe (2015) studied the relationship between financial ratio analysis and corporate profitability of selected quoted oil and gas companies in Nigeria. Ex post facto was adopted as the methodology based on the premise that the study involved historic data comprising of total assets turnover ratio (TATR), debt equity ratio (DER), debtor's turnover ratio (DTR), interest coverage (IC), creditors' turnover ratio (CTR) and Return on assets spanning from 2008 to 2015. Descriptive statistics was adopted as a preliminary test while Pearson correlation and regressions were adopted as the analytical techniques. It was found out that total asset turnover ratio (TATR), debtor turnover ratio (DTR) and interest coverage (IC) had a positive and statistically significant relationship to corporate profitability while debt equity ratio (DER) and creditor turnover ratio (CTR) had a negative and statistically insignificant relationship to corporate profitability in the oil and gas industry in Nigeria. The study also showed that the debtor turnover ratio (DTR) had a positive and statistically meaningful relationship with the total asset turnover ratio (TATR) and IC had an influence on corporate profitability while DTR, DER and CTR had no effect on corporate profitability in Nigeria's quoted oil and gas companies.

Muhammad and Imran (2015) investigated the effect of selected financial ratios on profitability: an empirical analysis of listed firms of cement sector in Saudi Arabia from 2008 to 2012. The research adopted Pearson correlation and multiple regression techniques to analyze the variables under study being Debt to Equity Ratio (DER), Inventory Turnover Ratio (ITR), Debtors' Turnover Ratio (DTR), Creditors' Velocity (CRSV), Total Assets Turnover Ratio (TATR) and

Net profit Margin (NPM). The study revealed that there is a significant relationship between the three selected ratios and Net Profit Margin (NPM) of cement companies in Saudi Arabia.

Nurlaela, Mursito, Kustiyah, Istiqomah and Hartono (2019) studied asset turnover, capital structure and financial performance of consumption industry in Indonesia Stock Exchange from 2016 to 2018. The study adopted multiple linear regression analysis while it was discovered that the variable debt to equity ratio (DER) of capital structure, current ratio (CR), and asset turnover (TATO) have a direct impact on financial performance (return on assets).

Akhor and Jafaru (2015) researched on performance evaluation through ratio analysis from 2009 to 2013. Descriptive statistic, Pearson correlation matrix and simple ordinary least square regression technique were adopted in the study as the analytical techniques. It was revealed that liquidity ratio has a negative and significant impact on firm performance while leverage ratio and market ratio have unfavorable and favorable impacts on firm efficiency respectively and profitability ratio have substantial positive influence on organizational performance evaluation.

Thomas and Anayochukwu (2019) investigated the relationship between financial analysis and firms' value in food and drinks service industry in Nigeria from 2013 to 2017. Total assets turnover ratio and creditor's turnover formed the independent variables while earnings per share was used as the dependent variable. Simple regression was adopted while using SPSS version 20 as the software for analysis. It was found out that total assets turnover ratio has insignificant relationship on earnings per share of food and drink service industry in Nigeria and a significant positive relationship exist between debtor's turnover ratio and earnings per share of food and drink service industry in Nigeria.

Halimahton and Rozita (2013) carried out a study on the effect of the profitability metrics on a chemical company's financial performance. Current ratio (CR) and quick ratio (QR) portray liquidity ratios, debt ratio (DR) and debt equity ratio (DTER), while operating profit margin (OPM) and net profit margin (NPM) represent profit ratios. for the research multiple regression analysis has been adopted. It has been revealed that CR, QR, DR and NPM have a positive relationship while DTER and OPM have a negative relationship to the financial performance of the company.

Mohammad, Najib and Mosab (2019) examined the impact of liquidity on firms' performance using an empirical investigation from Indian Pharmaceutical Companies from 2008 to 2017. The

study adopted regression analysis while the findings revealed that current liquidity ratio and quick ratio have positive and significant impact on the profitability of pharmaceutical companies measured by return on assets while control variables leverage, firms' size, and age have negative impact on the profitability of pharmaceutical companies.

Umer and Muhammad (2018) investigated the impact of financial leverage on firm performance textile composite companies of Pakistan from 2011 to 2015. Descriptive statistics, correlation analysis and regression were adopted for the study. The study showed that financial leverage has negative and significant effect on firm ROE and financial leverage has positive and significant effect on firm ROA. It was also revealed that the high interest rate and higher debt amounts minimizes the asset value and also have a negative effect on firm efficiency. The sum of the debt, on the other hand, has a positive effect on firm ROA.

Süleyman and Arif (2012) studied the effect of financial ratios on the firm value in Turkey from 2002 to 2009. Panel regression model was adopted for the study while the findings revealed that financial ratios influence the firm value. There is a significant and positive relationship between the receivable's turnover and the firm value; the inventory turnover ratio and the return on equity have a significant and negative relationship. No significant link between the other ratios has been detected.

2.4 Gap in Literature

The autocorrelation and heteroskedasticity tests were not adopted as preliminary tests by researchers whose work were reviewed in this report. The presence of autocorrelation and heteroskedasticity in a regression model affects a regression model's F-statistics, R-squared and standard error. This invariably impacts both the outcome of the regression model and the findings. To buttress this assertion Onwumere, (2009) states that autocorrelation and heteroskedasticity tends to produce p-values that are smaller than they should be. This effect occurs because heteroskedasticity changes the variance of coefficient estimates however this variation is not observed by the OLS method. OLS measures then the t-values and F-values using an incorrect sum of variance. This problem can lead to the assumption that a model term is statistically significant if it is not really relevant.

The study on effect of financial ratios on the wealth of shareholders in Nigerian manufacturing companies will adopt these preliminary tests to ensure that they do not interfere with the regression model, thereby improving the findings.

None of the authors whose works were reviewed in this study focused on the consumer goods sub sector of Nigerian manufacturing firms. For instance, Asrizal, Linzzy and Shinta (2018) researched on the effect of the debt to equity ratio and total asset turnover on the return on equity in Indonesian automotive companies and components.

Enekwe (2015) studied the relationship between financial ratio analysis and corporate profitability of selected quoted oil and gas companies in Nigeria.

Muhammad and Imran (2015) investigated the effect of selected financial ratios on profitability of listed firms of cement sector in Saudi Arabia. This study on effect of financial ratios on shareholders wealth in Nigerian manufacturing firms is set to focus on the consumer goods sub sector of manufacturing sector which is a different field of study not reviewed by the authors in this study.

Nigerian manufacturing firms were adopted for this study based on the immense contribution of this sector to the economic growth of Nigeria. For instance, Afolabi and Laseinde (2019) are of the view that manufacturing is widely recognized and explained as the stimulant for economic growth and development globally, industrial development under manufacturing sector is widely conceived as a critical tool for accelerating economic growth and development. In the words of Olorunfemi, Obamuyi, Adekunjo and Ogunleye (2013), the manufacturing sector provides avenue to manufacture goods and services, promote good jobs, and also earn the economic agents' good rewards.

The following research questions were stated for the study:

1. What is the effect of current ratio on total equity of Nigerian manufacturing firms?
2. What is the effect of debt equity ratio on total equity of Nigerian manufacturing firms?
3. How does return on assets affect total equity of Nigerian manufacturing firms?
4. To what extent does assets turnover affect total equity of Nigerian manufacturing firms?

3.0 Shareholders' Wealth

Shareholder wealth maximization is a principle of corporate governance that motivate an organization's governing body to attempt every single significant decision, for example, pay strategy, new investments, profit strategy, strategic direction and corporate technique in light of

just the premiums of investors (Sharfman, 2013). There is solid help for the possibility that shareholder wealth maximization ought to be the essential standard that underlie the administration of profit organizations.

On the other hand, Duane (2008) is of the view that the shareholder wealth maximization standard expresses that the prompt working objective and a definitive reason for a public organization is and ought to be to maximize return on equity capital. The shareholder wealth maximization specification of what is frequently named the corporate goal makes operating objective and extreme reason the equivalent: Managers and investors should concentrate barely on shareholder wealth maximization. Duane (2008) further expresses that the subject of whether the corporate target can be an exacting accentuation on shareholder wealth maximization or must perceive noteworthy contrasts between the operating goal for managers and investors and the definitive social purpose of the public corporation lies at the intersection of three literatures.

In economics and finance literature, shareholder wealth maximization is a standard presumption. This shareholder wealth maximization working objective is relied upon to yield the most socially proficient designation of capital. Business ethics, corporate social responsibility, and stakeholder theory literature underscores critical contrasts between a working objective of shareholder wealth maximization and ultimate social purpose of the public enterprise. Corporation law addresses duties, responsibilities, and rights of both financial and nonfinancial stakeholders (Duane, 2008).

CHAPTER THREE

METHODOLOGY

3.1 Objectives of the Study

The objectives of the study include the following:

1. Investigate the effect of current ratio on total equity of Nigerian manufacturing firms.
2. Examine the effect of debt equity ratio on total equity of Nigerian manufacturing firms.
3. Ascertain how return on assets affects total equity of Nigerian manufacturing firms.
4. Determine the extent to which assets turnover affects total equity of Nigerian manufacturing firms.

3.2 Research Design

For this analysis the researcher adopted quantitative research design. Bryman and Bell (2003) noted that quantitative analysis deals with quantifying and evaluating variables in order to obtain results, and that numerical data are used and analyzed using different statistical techniques to address questions such as who, how much, where, where, how many and how. Quantitative model was chosen over qualitative analysis, because the latter is concerned with facets of nature which cannot be quantified, with an emphasis on understanding and describing the complexities of social relations (André, Daniel and Fernando, 2017). Maxwell (2013) Advocates that qualitative research operates with the universe of meanings, motivations, goals, opinions, principles and attitudes that lead to a deeper space of relationships, procedures and phenomena that cannot be reduced to the operational definition of variables.

Quantitative analysis was also chosen as it adopts standardized procedures and formal methods of data collection. Objective and systematic collection of the evidence. Finally, numerical data analysis is carried out by means of statistical procedures, often using software such as SPSS, Stata, or E-view. In this study E-view was chosen as the analytical software. (André, Daniel and Fernando, 2017). The quantitative design was chosen because several other writers had in the past adopted the same method. For example, Georgeta and Elena (2015) who researched an overview of determinants of corporate financial performance: evidence from the listed

companies on the Bucharest stock exchange adopted both quantitative design and Süleyman and Arif (2012) who researched on the effect of financial ratios on the firm value: evidence from Turkey.

3.3 Sources of Data

The research is taking advantage of secondary data. It is adopted for this research as it helps to better understand the problem under research. The data will be obtained from the listed companies' financial statements that are under review. This can be accessed via a visit to the listed companies' individual websites under review. The data set is used as it elicits the information required to achieve the study's goals as well as to address the problem generated in the study. The analysis covered from 2009 – 2018.

3.4 Population of the Study

The population of study comprised of all quoted consumer goods firms which are sub sector of the manufacturing firm. There are total of 26 listed consumer goods firms in the Nigerian stock market (<https://nigerianinfopedia.com.ng/listed-companies-in-the-nigerian-stock-exchange/>).

3.5 Sample Size Determination

The sample size is to consist of ten (10) identified consumer goods companies selected from the study population. The collection of samples will be performed with the aid of judgmental sampling. Rocco and Lloyd (2012) are of the opinion that a sample of a decision is a type of non-probability sample chosen on the basis of knowledge of a topic with knowledge of the process being examined. The samples to be selected will then be analyzed by the researcher to decide that the samples selected will be the most suitable for the study.

The samples will include:

1. Cadbury Nigeria Plc
2. Champion Breweries Plc
3. Dangote Flour Mill Plc
4. Dangote Sugar Plc
5. Fidson Nigeria Plc
6. Guinness Nigeria Plc
7. International Breweries Plc

8. Nigeria Breweries Plc
9. Nestle Nigeria Plc
10. Northern Nigeria Flour Mill Plc.

3.6 Model Specification

The study's analysis is based on the Brooks classic regression model, Brooks (2014).

The model is shown below;

$$TE = F (CR, DER, ROA, AT) \dots\dots\dots (1)$$

Where:

- TE = Total Equity
- CR = Current Ratio
- DER = Debt Equity Ratio
- ROA = Return on Assets
- AT = Assets Turnover

In a regression form, it will become:

$$TE_{It} = \beta_0 + \beta_1 CR_{It} + \beta_2 DER_{It} + \beta_3 ROA_{It} + \beta_4 ROA_{It} + \mu \dots\dots\dots (2)$$

- β_0 = Constant Term
- β_1 = Coefficient of Current Ratio
- β_2 = Coefficient of Debt Equity Ratio
- β_3 = Coefficient of Return on Assets
- β_4 = Coefficient of Assets Turnover
- μ = Error Term

3.7 Description of Variables

Total Equity:

Equity is the possession of assets which may be connected to loans or other liabilities attached. equity is calculated by taking out liabilities from the worth of an assets.

Current Ratio:

The current ratio is a liquidity ratio that calculates whether a company has adequate capital to meet its short term obligations. This contrasts the existing assets of a corporation with its current liabilities and is expressed as follows;

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Debt Equity Ratio:

The debt equity ratio is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets.

$$\text{Debt Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Equity Funds}}$$

Assets Turnover:

Asset turnover (ATO) or assets turns is a financial ratio that calculates the efficiency of a company's use of its assets to producing sales revenue or the company's sales income. Companies with low profit margins tend to have high turnover of assets whereas those with high profit margins have low turnover of assets.

$$\text{Turnover} = \frac{\text{Sales}}{\text{Average Assets}}$$

3.8 Analytical Procedure

The study will adopt unit root test and descriptive statistics as preliminary tests. Unit root test will be used to measure the stationarity properties of the variables, descriptive statistics will be used to ascertain the individual characteristics of the variables.

Hausman test will be used to determine whether fixed effect random panel regression is a better model than random effect random effect panel regression model.

Research Philosophy

This study focuses on pragmatism philosophy, as it focuses on practical facts or ideologies and also adopts quantitative method of research. This study on the effect of financial ratios on shareholders' wealth in Nigerian manufacturing firms is expected to gather realistic data from the selected firms' financial statements under analysis which will be analyzed using various analytical techniques. This is to ensure that the evidence set out in the study's hypotheses are proved.

Research Ethics

The citations used in this study were correctly cited and referenced, whereas the researchers whose publications were adopted in this research were well acknowledged appropriately. This research employed both foreign and local journals and publications.

Limitations of the Study

Gathering the data from the financial statement of the companies under study was not an easy task as ten (10) companies were sampled while five variables with various components were gathered from the financial statement of the companies. These component variables were also calculated to get the ratios needed for analysis of the study.

The covid-19 pandemic equally posed as a challenge to the successful completion of this study as it affected the researcher's ability in sourcing for the necessary information and data for the study.

Summary/Conclusion

The aim of this research is to examine the effect of financial ratios on shareholders wealth in Nigerian manufacturing firms. This objective was further projected in the methodology where the design of the study being quantitative design was stated as well as the basis for its selection while the requisite data to elicit the objective of the study were gathered from the financial statements of the selected companies under study. On the other hand, some analytical techniques were adopted to identify the behaviour of both the dependent and independent variables in the study as well as show how these variables affect each other in order to achieve the set goal of this study.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

Presentation of data refers to the organization of data into tables, graphs or charts, so that logical and statistical conclusions can be derived from the collected measurements.

The table showing the data used for analysis of the study is in appendix I.

The table showed the pooled data of the various companies under study. They comprised of current ratio, debt equity ratio, return on assets, asset turnover and total equity. The raw data extracted from the financial statements of the selected companies which were used to formulate this data are also shown in appendix II.

The data for this study were pooled to enhance the statistical power. It also has the ability to compare outcomes and validate models across sites or settings, and opportunities to develop new measures.

4.2 Data Analysis

Data analysis is a process of inspecting, cleansing, transforming and modeling *data* with the goal of discovering useful information, informing conclusion and supporting decision-making (Xia & Gong, 2015). This study was therefore evaluated using analytical and logical reasoning to examine each component of the *data* provided to arrive at a conclusive result.

4.2.1 Normality Test

The normality test of this research was ascertained with the components of descriptive statistics such as skewness, kurtosis and Jarque-Bera Statistics and its probability value.

Table 4.2.1: Descriptive Statistics for Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Flour Mill Plc, Dangote Sugar Plc, Fidson Nigeria Plc, Guinness Nigeria Plc, International Breweries Plc, Nigeria Breweries Plc, Nestle Nigeria Plc and Northern Nigeria Flour Mill Plc.

	CR	DER	ROA	AT	TE
Skewness	-1.876102	1.977216	-1.734738	4.398203	8.155248
Kurtosis	33.75667	8.594359	24.14357	24.17073	75.69510
Jarque-Bera	4000.216	195.5599	1912.865	2189.902	23127.54
Probability	0.000000	0.000000	0.000000	0.000000	0.000000

Observations	100	100	100	100	100

Source: Author’s Computation from Eviews 9.0, 2020

Table 4.2.1 described the variables under study using the components of descriptive statistics such as Skewness, Kurtosis and Jarque-Bera Statistics. The table showed that current ratio and return on assets with values -1.876102 and -1.734738 respectively are negatively skewed relative to normal while debt equity ratio, assets turnover and total equity with values 1.977216, 4.398203 and 8.155248 respectively are positively skewed relative to normal. It was also shown from the table that all the variables being current ratio, debt equity ratio, return on assets, assets turnover and total equity with values 33.75667, 8.594359, 24.14357, 24.17073 and 75.69510 respectively are leptokurtic as their values are greater than three (3).

The table also showed that all the variables are normally distributed as the probability values of their Jarque-Bera statistics are less than 0.05.

4.2.2 Unit Root Test

This test tries to examine the property of the variables. It is used to check for the presence of a unit root i.e. whether the variables are stationary.

Economic variables are generally non – stationary and they are a random process. Linear combination of non – stationary series in general is a non – stationary series and closely associated with economic theory.

Because economic theory guarantees stagnation of combination of economic variables, in this study Dickey Fuller’s generalize Test for investigation of stationary variables is used. In order to assess the time series properties of the data, unit root test was conducted. As Engle and Granger (1987) argued, if individual time series data are non – stationary, their linear combinations could be stationary if the variables were integrated of the same order. The assumption is stated as follows: if the absolute value of the Augmented Dickey Fuller (ADF) test is greater than the critical value either at 1%, 5% or 10% level of significance at order zero, one or two, it shows that the variable under considerations is stationary otherwise it is not.

The results of the Augmented Dickey Fuller (ADF) test shows that all variables are stationary at level or integrated of order one at 5% level of significance. The ADF is carried out using E-views software package and the results from the test are tabulated below:

Table 4.2.2: Pooled Unit Root Test for Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Flour Mill Plc, Dangote Sugar Plc, Fidson Nigeria Plc, Guinness Nigeria Plc, International Breweries Plc, Nigeria Breweries Plc, Nestle Nigeria Plc and Northern Nigeria Flour Mill Plc

Variables	LLC		ADF – FISHER		PP – FISHER	
	Test Stat.	Order of integration	Test Stat.	Order of integration	Test Stat.	Order of integration
CR	-11.20 (0.0000 <0.05)	I(I)	83.15 (0.0000 < 0.05)	I(I)	158.56 (0.0000 < 0.05)	I(I)
DER	-5.43 (0.0000 < 0.05)	I(I)	51.04 (0.0002< 0.05)	I(1)	95.83 (0.0000 < 0.05)	I(I)
ROA	-5.39 (0.0000 < 0.05)	I(0)	47.70 (0.0005 < 0.05)	I(0)	66.63 (0.0000 < 0.05)	I (0)
AT	-8.05 (0.0000 < 0.05)	I(I)	70.28 (0.0000 <0.05)	I(I)	125.43 (0.0000 <0.05)	I(I)

TE	-7.08	I(I)	60.11	I(I)	97.59	I(I)
	(0.0000		(0.0000 <		(0.0000 <	
	< 0.05)		0.05)		0.05)	

Source: Author's Compilation from Eviews 9, 2020

LLC = Levin, Lin and Chu Test

IPS = Im, Pesaran and Shin W – Stat

ADF FISHER = Augmented Dickey Fuller Fisher Chi – Square Test

PP FISHER = Philip Peron Fisher Chi – Square Test

Table 4.2.2 showed that current ratio, debt equity ratio, assets turnover and total equity are integrated of order one or are stationary at first difference while return on assets is integrated of order one or is stationary at first difference.

4.3 Hausman Test

The Hausman Test is developed to ascertain whether fixed or random effect panel regression model should be adopted in a regression analysis.

Table 4.3: Hausman Test

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.947777	4	0.7454

Source: Author's Computation from E-View 9.0, 2020

Table 4.3 was extracted from the table in appendix 5 to illustrate or indicate Hausman test.

Decision Rule:

The null hypothesis is that random effect is preferred over fixed effect model. Therefore, if the probability value is less than 0.05, fixed effect is adopted while when it is greater than 0.05 random effect model is adopted.

Decision:

Since the probability value being 0.7454 is less than 0.05, fixed effect panel regression model is adopted as the regression technique.

4.4 Test of Hypotheses

The hypotheses of this research were tested using random panel regression model based on the premise that the analysis was done using pooled data of the companies under study.

Test of Hypothesis one

Step 1: Restatement of the hypothesis.

Current ratio does not have significant effect on total equity of Nigerian manufacturing firms.

Step 2: Presentation of Test Result

Table 4.4.1: Test of Hypothesis One

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Current Ratio (CR)	1966411	3628118.	0.541992	0.5891
C	65694510	25793835	2.546907	0.0125

Source: Author's Computation from E-View 9.0, 2020

Table 4.4.1 is an offshoot of table in appendix 6.

Step 3: Decision Rule

Reject H_0 if the probability value is <0.05 .

Step 4: Decision

Table 4.4.1 shows the probability value of $0.5891 > 0.05$ while the coefficient is 1966411. We accept the null hypothesis (H_0) and conclude that current ratio does not have significant effect on total equity of Nigerian manufacturing firms.

Test of Hypothesis Two

Step 1: Restatement of the hypothesis.

Debt equity ratio does not significantly affect total equity of Nigerian manufacturing firms.

Step 2: Presentation of Test Result

Table 4.4.2: Test of Hypothesis Two

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Debt Equity Ratio (DER)	-15836557	19288844	-0.821022	0.4137
C	65694510	25793835	2.546907	0.0125

Source: Author's Computation from E-View 9.0, 2020

Table 4.4.2 emanated from the corresponding table in appendix 6 to guide the testing of hypothesis two.

Step 3: Decision Rule

Reject H_0 if the probability value is <0.05 .

Step 4: Decision

Table 4.4.2 shows that the probability value of $0.4137 > 0.05$ while the coefficient is -15836557 . We accept the null hypothesis (H_0) and conclude that debt equity ratio does not significantly affect total equity of Nigerian manufacturing firms.

Test of Hypothesis Three

Step 1: Restatement of the hypothesis.

Return on assets does not have significant effect on total equity of Nigerian manufacturing firms.

Step 2: Presentation of Test Result

Table 4.4.3: Test of Hypothesis Three

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Return on Assets (ROA)	28495473	69350417	0.410891	0.0021
C	65694510	25793835	2.546907	0.0125

Source: Author's Computation from E-View 9.0, 2020

Table 4.4.3 above is an abstraction of the corresponding table in appendix 6.

Step 3: Decision Rule

Reject H_0 if the probability value is <0.05 .

Step 4: Decision

Table 4.4.3 shows that the probability value of $0.0021 < 0.05$ while the coefficient is 28495473. We reject the null hypothesis (H_0) and conclude that return on assets has significant effect on total equity of Nigerian manufacturing firms.

Test of Hypothesis Four

Step 1: Restatement of the hypothesis.

Assets turnover does not significantly affect total equity of Nigerian manufacturing firms.

Step 2: Presentation of Test Result

Table 4.4.4: Test of Hypothesis Four

Variable	Coefficient	Std. Error	t-Statistics	Prob.
Assets Turnover (AT)	3228790.	10011533	0.322507	0.0478
C	65694510	25793835	2.546907	0.0125

Source: Author's Computation from E-View 9.0, 2020

Step 3: Decision Rule

Reject H_0 if the probability value is <0.05 .

Step 4: Decision

Table 4.4.4 shows that the probability value of $0.0478 < 0.05$ while the coefficient is 3228790. We reject the null hypothesis (H_0) and conclude that assets turnover has significant on total equity of Nigerian manufacturing firms.

CHAPTER FIVE

DISCUSSION OF RESULT

5.1 Discussion of Result

5.1.1 Current Ratio

Current ratio does not have significant effect on total equity of Nigerian manufacturing firms based on the premise that the probability value of 0.5891 (table 4.4.1) was greater than 0.05 while the coefficient of 1966411 (table 4.4.1) showed the effect is positive. This result implies that the companies under study are not really capable of paying their obligations as they come due based on the premise that they do not have larger proportion of short-term asset value relative to the value of its short-term liabilities.

This discovery is in agreement with the finding of Olugboyege, Adeniyi, Wasiu and Olalekan (2019) who studied the effect of liquidity and leverage on financial performance of Nigerian listed consumer goods firms. The authors found out that current ratio have significant effect on profitability of consumer goods companies in Nigeria. The findings of this study on the other hand disagreed with that of Raveesh and Chakraborty (2011) who investigated the determinants of current ratios: a study with reference to companies listed in Bombay Stock Exchange. They discovered that current ratio showed a negative trend in last decade.

5.1.2 Debt Equity Ratio

Debt equity ratio does not significantly affect total equity of Nigerian manufacturing firms due to the fact that the probability value being 0.4137 (table 4.4.2) was less than 0.05 while the coefficient is -15836557 (table 4.4.1). The fact that debt equity ratio does not significantly affect total equity implies that the companies under study do not finance much of its operations through debt rather wholly-owned funds. This finding is in coherence with the finding of Eriki and Osifo (2017). They studied the effect of debt - equity mix on financial performance of downstream oil and gas firms in Nigeria. The result of their test recorded an insignificant and negative effect between debt – equity mix and financial performance of oil and gas firms in Nigeria. The finding also agreed that of Enekwe (2015) who studied the relationship between financial ratio analysis and corporate profitability of selected quoted oil and gas companies in Nigeria. The author discovered that debt equity ratio (DER) and creditor's turnover ratio (CTR)

has negative and insignificant relationship with corporate profitability in the Nigeria oil and gas industry.

The result of the discovery on the other hand disagreed with the finding of Asrizal, Linzzy and Shinta (2018). They investigated the effect of debt to equity ratio and total asset turnover on return on equity in automotive companies and components in Indonesia. The authors revealed a significant effect of debt to equity ratio on return on equity of automotive companies in Indonesia. The work of Muhammad and Imran (2015) on the effect of selected financial ratios on profitability: an empirical analysis of listed firms of cement sector in Saudi Arabia from 2008 to 2012 also disagreed with the finding of this study where it discovered that there is a significant relationship between Debt to Equity Ratio (DER), Inventory Turnover Ratio (ITR), Debtors' Turnover Ratio (DTR) and Net Profit Margin (NPM) of cement companies in Saudi Arabia.

The controversy on debt equity ratio and total equity depicts that other researchers should further carryout in-depth study to ascertain why debt equity ratio will at times have significant effect on performance while at other times it will insignificantly affect performance.

5.1.3 Return on Assets

Return on assets has significant effect on total equity of Nigerian manufacturing firms as the probability value of 0.0021 (table 4.4.3) was less than 0.05 while the coefficient is 28495473 (table 4.4.3). The implication of this finding is that the companies under study are earning more money on less investment due to the fact that return on assets depicts the effectiveness and efficiency of a firm in generating net income from investment. Therefore, the coefficient being positive implies that the companies under study are actually generating more net income from various investments. The finding of Rosikah, Dwi, Dzulfikri, Muh and Miswar (2018) who studied the effects of return on asset, return on equity, earning per share on corporate value revealed that return on asset has positive and significant effect on firm value.

5.1.4 Assets Turnover

Assets turnover has significant effect on total equity of Nigerian manufacturing firms due to the fact that the probability value being 0.0478 (table 4.4.4) was less than 0.05 while the coefficient is 3228790 (table 4.4.4). This implies that asset turnover of the selected companies is high

indicating a high performance of the selected companies. This is because the companies utilizing their assets in their operational activities has been efficient, resulting in an increase in the level of performance.

This discovery was supported by the finding of Siti, Bambang, Eny and Istiqomah (2019). They studied asset turnover, capital structure and financial performance consumption industry company in Indonesia Stock Exchange. They found out that capital structure variable debt to equity ratio (DER), liquidity current ratio (CR), and asset turnover (TATO) have a significant effect on financial performance (return on assets). The finding was also in coherence with the finding of Enekwe (2015). The author studied the relationship between financial ratio analysis and corporate profitability of selected quoted oil and gas companies in Nigeria. It was discovered that total assets turnover ratio (TATR), debtor's turnover ratio (DTR) and interest coverage (IC) has positive and significant relationship with corporate profitability.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study concluded that current ratio and debt equity do not have significant effect on total equity of Nigerian manufacturing firms. This conclusion was drawn from the analysis of the study and it could be due to the fact that the selected companies under study had weak short-term financial strength for the duration under study or that the company's adequate shareholder equity to cover all outstanding debts. This conclusion is supported by Chakraborty (2011) who asserted that current ratio measures a company's capacity to meet its day to day payment commitments. Thalassinou and Liapis (2014) also supported this conclusion by noting that debt to equity ratio is used for the assessment of financial leverage and soundness of a firm and is typically calculated using previous fiscal year's data.

On the other hand, return on assets and assets turnover have significant effect on total equity of Nigerian manufacturing firms. This conclusion depicts that companies under study are generating adequate earnings from their economic resources or assets on their balance sheet. Invariably, though they may exhibit weak short – term financial strength but on the long-run, they are generating adequate net income. It is based on that premise that both return on assets and assets turnover have significant effect on total equity of these selected companies.

6.2 Recommendations

The following recommendations are made for the study:

1. In order for the selected companies under study to improve their current ratio as it does not have significant effect on total equity, these companies should either delay any capital purchases that would require any cash payments or sell any capital assets that are not generating a return to the business and using the cash to reduce current debt.
2. The studied firms can improve on their debt to equity ratio by increasing sales or reducing costs in order to increase profitability. They should equally adopt better inventory management and restructuring of debt. The extra cash generated can then be used to pay off existing debt

3. The companies under study should increase revenues without increasing assets cost through improved customer service delivery or by exploring new market segments. This will go a long way in further improving the return on assets of the companies as it significantly impacted on total equity of the companies.
4. The companies under study should computerize inventory and order systems in order to improve sales further due to the fact that the higher the asset turnover ratio, the more efficient a company is at generating revenue from its assets.

This research has addressed financial ratios on shareholders wealth in Nigerian manufacturing firms using current ratio, debt equity ratio, return on assets and assets turnover as independent measures of financial ratios while total equity was adopted as the dependent measure of shareholders wealth. Quantitative design was adopted to aid in achieving the objectives of the study while unit root test and descriptive statistics were used as the preliminary tests and random effect panel regression model was adopted as analytical techniques to arrive at the findings that current ratio and debt equity ratio do not have significant effect on total equity of Nigerian manufacturing firms while return on assets and assets turnover have significant effect on total equity of Nigerian manufacturing firms.

6.3 Suggestions for Further Studies

The researcher suggested that other researchers in this field should focus on other variables of financial ratio not covered in this study such as efficiency ratios and profitability ratio. These authors should equally focus on aspects of financial performance variables not covered in this study.

6.4 Personal Learning Statement of the Researcher

The study carried out so far has enlightened the researcher on various concepts of financial ratios and most importantly the implications of their significant or insignificant effect on organizational financial performance.

Also, the researcher has acquired the requisite knowledge on the need of adopting quantitative techniques of data design for a research of this magnitude as well as how to use random effect panel regression model in the analysis of a research.

References

- Afolabi, A. & Laseinde, O. T. (2019). Manufacturing sector performance and economic growth in Nigeria, *International Conference on Engineering for Sustainable World Journal of Physics*, 12 (9): 45 – 47.
- Akhor, S. O. & Jafaru, S. (2015). Performance evaluation through ratio analysis, *Journal of Accounting and Financial Management*, 1 (8), 12 – 19.
- Adam, H. (2014). Corporate finance and accounting: Financial analysis, <https://www.investopedia.com/terms/h/heteroskedasticity.asp>
- Anthony, R.N., Hawkins D.F., Merchant K. A., (2010). Accounting text and cases, New Delhi: *Tata McGraw Hill Education Limited*,
- André, Q., Daniel, F. & Fernando, A. (2017). Strengths and limitations of qualitative and quantitative research methods, *European Journal of Education Studies*, 3 (9), 12 – 19.
- Asrizal, E. N., Linzzy, P. P. & Shinta, D. (2018). The effect of debt to equity ratio and total asset turnover on return on equity in automotive companies and components in Indonesia, *International Conference on Accounting, Management and Economics*, 12 (9), 33 – 44.
- Baum, C.L., Saver, L. & Strickland, T. (2004). EVA, MVA and compensation: further evidence, *American Business Review*, 22(2):82-87.
- Brigham, E. F., & Houston, J. F. (2009). Fundamental of Financial Management, *Cengage Learning*.
- Bryman, A. and Bell, E. (2003) Business Research Methods. Oxford University Press
- Diepiriye, S. D. (2018). Human resource accounting and shareholders wealth maximization: Empirical study of Nigeria quoted manufacturing firms. *International Journal of Business and Management Future*, 2(1): 38–47
- Duane, W. (2008). Shareholder wealth maximization, Lynette S. Autrey Professor of Management, *Jesse H. Jones Graduate School of Business, Rice University*
- Enekwe, C. I. (2015). The relationship between financial ratio analysis and corporate profitability: a study of selected quoted oil and gas companies in Nigeria, *European Journal of Accounting, Auditing and Finance Research*, 3 (2), 17 – 34.
- Eriki, P.O. & Osifo, O. (2017). Effect of debt - equity mix on financial performance of downstream oil and gas firms in Nigeria, *Journal of economics & finance*, 1 (1), 23 – 28.

- Georgeta, V. & Elena, A. N. (2015). An analysis of determinants of corporate financial performance: evidence from the bucharest stock exchange listed companies, *International Journal of Economics and Financial Issues*, 5(3), 732-739. 732.
- Mesak, D. & Sukartha, I. M. (2019). Financial ratio analysis in predicting financial conditions distress in Indonesia Stock Exchange, *Russian Journal of Agriculture and Socio-Economic Sciences*, 34 (19), 44 – 48.
- Nabil, M. A. (2014). The impact of financial analysis in maximizing the firm's value, A case study on the Jordanian Industrial Companies, *International Journal of Managerial Studies and Research (IJMSR)*, 2 (6), 1 – 9.
- Richard, E.O and Okoye, V (2013) impact of corporate social responsibility on the deposit money banks in Nigeria. *Global business and economics research journal*. 2(3), 71-82. 21.
- Hatem, B. S. (2013). Impact of ownership structure on debt equity ratio: a static and a dynamic analytical framework, *International Business Research*, 6 (6), 12 – 19.
- Hantono, H. (2018). The effect of current ratio, debt to equity ratio, toward return on assets (case study on consumer goods company), *Accountability*, 7 (2), 64-73.
- Halimahton, B. & Rozita, N. M. (2013). The impact of financial ratios on the financial performance of a chemical company: the case of Lyondellbasell Industries, *World Sustainable Development Outlook*.
- Jensen, M .C. (2001). Value maximization, stakeholder theory and the corporate objective function, *Journal of Applied Corporate Finance*, 7(3): 297 – 317.
- Krishnankutty, R. & Chakraborty, K. S. (2011). Determinants of current ratios: a study with reference to companies listed in Bombay stock exchange, *Munich Personal RePEc Archive*, 11 (19), 23 – 28.
- Macey, J. R. (2008). Corporate governance: promises kept, promises broken. *American Economic Review*, (87), 365
- Mehrnaz, S. (2013). Exploring the relationship between financial ratios and created shareholders value: A life cycle perspective, *European Online Journal of Natural and Social Sciences*, 2 (3), 195 – 206
- Mohammad, Y., Najib, H. S. F. & Mosab, I. T. (2019). The impact of liquidity on firms' performance: Empirical investigation from Indian Pharmaceutical Companies, *Academic Journal of Interdisciplinary Studies*, 8(3), 9 – 14.
- Muhammad, N. K. & Imran, K. (2015). The effect of selected financial ratios on profitability: an empirical analysis of listed firms of cement sector in Saudi Arabia, *Quarterly Journal of Econometrics Research*, 3 (9), 3 – 6.

Muhammad, I. K., Samina, R. & Athar, I. (2019). Re-classification of financial ratios, *The European Proceedings of Social & Behavioural Sciences*, 12 (22), 23 – 28.

Nurlaela, S., Mursito, B., Kustiyah, E., Istiqomah & Hartono, S. (2019). Asset turnover, capital structure and financial performance of consumption industry in Indonesia Stock Exchange, *International Journal of Economics and Financial Issues*, 9(3), 297-301.

Oberholzer, M. (2012). The relative importance of financial ratios in creating shareholders' wealth, *South African Journal of Economic and Management Sciences*, 15 (4), 16 (37), 10 – 19.

Olorunfemi, S., Obamuyi, T. M. Adekunjo, F. O. & Ogunleye, E. (2013) Manufacturing performance in Nigeria: Implication for sustainable development, *Asian Economic and Financial Review*, vol. 3, (9), pp. 1195.

Olugboyega, S. K., Adeniyi, A., Wasiu, A. S. & Olalekan, J. O. (2019). Effect of liquidity and leverage on financial performance of Nigerian listed consumer goods firms, *The Journal Contemporary Economy*, 4 (3), 11 – 16.

Pandey, I.M (2010). *Financial management*. 10th ed; New Delhi: Vikas Publishing House PVT Ltd.

Rocco J. P. & Lloyd, P. (2012). Judgment sampling: A Health Care Improvement Perspective, *Quality Management in Health Care*, 21 (3), 23 – 28.

Rappaport, A. (1986). *Creating shareholders value: The new standard for business performance*, New York: Free Press.

Rosikah, S., Dwi, K. P, Dzulfikri, A. M., Muh, I. A. & Miswar, R. (2018). Effects of return on asset, return on equity, earning per share on corporate value, *The International Journal of Engineering and Science*, 7(3) 6 – 14 .

Salehi, M., H. Valipour & Z. Yousefi (2011). A study of value creation criteria: An Iranian scenario. *African Journal of Business Management*, 5 (10), 66 – 77.

Samira, I. I., Noor, N. B. & Masudul, H. (2018). Impact of CSR on firm's financial performance: a study on some selected agribusiness industries of Bangladesh, *American Journal of Economics, Finance and Management*, 4 (3), 74-85

Siti, N., Bambang, M., Eny, K., Istiqomah, S. H. (2019). Asset turnover, capital structure and financial performance consumption industry company in Indonesia Stock Exchange, *International Journal of Economics and Financial Issues*, 9(3), 297-301.

Raveesh, K. & Chakraborty, K. S. (2011). Determinants of current ratios: a study with reference to companies listed in Bombay Stock Exchange, *Munich Personal RePEc Archive*, 8 (12), 11 – 16.

Sawir, A. (2014). Financial Performance Analysis and Corporate Financial Planning (*PTGamediaPustakaUtama-Jakarta*, 12 (5) 20 – 24.

Shodiya, O. A., Sanyaolu, W. A., Ojenike, J. O. & Ogunmefun, G. T. (2019). Shareholder wealth maximization and investment decisions of Nigerian food and beverage companies, *ActaUniversitatisSapientiae: Economics and Business*, 7 (12), 47–63

Stewart, G.B. (1999). *The quest for value*, New York: Harper Business.

Süleyman, S. K. & Arif, S. (2012). The effect of financial ratios on the firm value: evidence from Turkey, *Journal of Applied Economic Sciences*, 11 (9), 3 – 7.

Suryanto, T. & Thalassinos, I.E. (2017). Cultural ethics and consequences in whistle-blowing among professional accountants: An empirical analysis. *Journal of Applied Economic Sciences*, 12(6), 1725-1731.

Süleyman, S. K. & Arif, S. (2012). The effect of financial ratios on the firm value: evidence from Turkey, *Journal of Applied Economic Science*, 12 (3), 22 – 25.

Temple, M. (2019). Investigation into the interaction effects between corporate governance and shareholders' wealth in Nigeria, *International Journal of Advanced Research and Review*, 4(2), 01-10.

Thalassinos, I.E. and Liapis, K. (2014). Segmental financial reporting and the internationalization of the banking sector. Chapter book in, *Risk Management: Strategies for Economic Development and Challenges in the Financial System*, (eds), D. Milos Sprcic, Nova Publishers, 221-255.

Thomas, M. A. & Anayochukwu, M. O. (2019). Relationship between financial analysis and firms' value in food and drinks service industry in Nigeria, *The IMT International Journal of the Arts and Sciences*, 3(1), 50 – 64.

Umer, I. & Muhammad, U. (2018). Impact of financial leverage on firm performance textile composite companies of Pakistan, *SEISENSE Journal of Management*, 1 (2), 7 - 14.

Viswanadham, N & L. Poornima (2005). Models for measuring and predicting shareholder value: A study of third party software service providers. *Sadhana*, 30 (5), 2 – 3.

Xia, B. S., & Gong, P. (2015). Review of business intelligence through data analysis. *Benchmarking*, 21(2), 300-311.

Appendix

Appendix I

Table showing the pooled data of Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Flour Mill Plc, Dangote Sugar Plc, Fidson Nigeria Plc, Guinness Nigeria Plc, International Breweries Plc, Nigeria Breweries Plc, Nestle Nigeria Plc and Northern Nigeria Flour Mill Plc.

	CR (CA/CL)	DER (TE/TL)	ROA (PAT/TA)	AT (REV/TA)	TE
CADBURY - 09	1.122606	1.958105	0.058956	0.645445	5230914
CADBURY - 10	1.075508	0.609094	0.023365	1.394513	50447167
CADBURY - 11	1.528727	1.138280	0.115898	0.950247	17376786
CADBURY - 12	1.693904	1.207144	0.110569	0.784492	21773887
CADBURY - 13	1.823303	1.251190	0.139515	0.828320	23994931
CADBURY - 14	0.878515	0.668016	0.052487	1.058934	11542026
CADBURY - 15	1.093837	0.761562	0.040585	0.979174	12285297
CADBURY - 16	1.076210	0.637782	-0.010440	1.055875	11056734
CADBURY - 17	1.136539	0.703990	0.010555	1.163822	11742791
CADBURY - 18	1.391032	0.853504	0.029900	1.306794	12676146
CHAMPION - 09	-0.103010	0.929379	-1.499910	0.996217	-3347472
CHAMPION - 10	-0.131400	0.964178	-0.441610	0.668845	-3477018
CHAMPION - 11	-0.107410	0.940165	-0.258190	0.253291	-2029809
CHAMPION - 12	0.080734	-0.335310	-0.196600	0.262582	-3430000
CHAMPION - 13	0.073989	-0.335250	-0.128920	0.244400	-4608386
CHAMPION - 14	0.430009	1.577246	-0.078660	0.344271	5870431
CHAMPION - 15	0.743516	2.220292	0.007468	0.339025	7121637
CHAMPION - 16	0.981017	3.349165	0.053245	0.387998	7670860
CHAMPION - 17	1.328268	4.164767	0.051300	-0.336080	8135460
CHAMPION - 18	0.891163	3.110171	-0.025160	-0.340680	7935532
DANGOTE FLOUR - 09	19.43662	0.819365	0.097534	0.761363	27214204
DANGOTE FLOUR - 10	5.385532	0.904084	0.062592	0.712025	30263488
DANGOTE FLOUR - 11	1.063107	0.598560	0.011227	0.549592	26352592
DANGOTE FLOUR - 12	1.431577	0.622700	-0.053020	0.504461	22714473
DANGOTE FLOUR - 13	0.694359	0.341444	-0.109550	0.454789	16311182
DANGOTE FLOUR - 14	0.608370	0.223291	-0.111480	0.753059	10091277
DANGOTE FLOUR - 15	0.629605	-9.21E-05	-0.303790	0.778821	-4271
DANGOTE FLOUR - 16	1.338356	0.602252	-0.158090	1.092236	28794277
DANGOTE FLOUR - 17	1.221727	0.439470	0.076975	0.669410	39488048
DANGOTE FLOUR - 18	1.156626	0.424049	0.026760	0.584823	36886446
DANGOTE SUGAR - 09	1.770584	0.942585	0.170326	1.064354	33745540

DANGOTE SUGAR - 10	2.368281	0.899374	0.181113	1.444449	19245651
DANGOTE SUGAR - 11	1.858817	1.161892	0.101677	1.472486	39133709
DANGOTE SUGAR - 12	1.976596	1.257919	0.129997	1.286769	46269159
DANGOTE SUGAR - 13	1.979648	1.616400	0.155404	1.176269	53817512
DANGOTE SUGAR - 14	1.868477	1.509902	0.122407	0.967271	58526202
DANGOTE SUGAR - 15	1.843438	1.509902	0.130128	10.28898	58526202
DANGOTE SUGAR - 16	2.038810	1.647899	0.133107	1.569392	66386057
DANGOTE SUGAR - 17	1.715860	1.024263	0.192909	1.010486	99207358
DANGOTE SUGAR - 18	2.194909	1.502309	0.144692	0.820895	107180126
FIDSON - 09	1.955765	2.441703	0.059745	0.698969	5095021
FIDSON - 10	1.122606	1.958105	0.058956	0.645445	5230914
FIDSON - 11	2.027863	1.763715	0.033113	0.753280	7119854
FIDSON - 12	1.657179	0.941636	0.019190	0.664964	5228436
FIDSON - 13	1.171659	0.749574	0.012659	0.755288	5245335
FIDSON - 14	0.787678	0.576113	0.040059	0.616211	5765281
FIDSON - 15	0.693861	0.611205	0.044653	0.492537	6323828
FIDSON - 16	0.595929	0.654505	0.019005	0.459294	6593266
FIDSON - 17	0.654787	0.775886	0.060802	0.805733	7622920
FIDSON - 18	0.719017	0.536686	-0.004760	0.792347	7153781
GUINNESS - 09	7.736757	0.737821	0.183314	1.206846	31524701
GUINNESS - 10	4.991013	0.716234	0.175216	1.395043	34199119
GUINNESS - 11	5.663831	1.000000	1.000000	6.897790	40283492
GUINNESS - 12	-27.38560	1.000000	1.000000	8.607900	40352504
GUINNESS - 13	0.628738	0.613679	0.097998	1.011589	46039111
GUINNESS - 14	0.922971	0.516369	0.072346	0.825236	45061717
GUINNESS - 15	0.726925	0.654099	0.063764	0.969318	48341376
GUINNESS - 16	0.713308	0.437006	-0.014720	0.744370	41660605
GUINNESS - 17	0.898103	0.416537	0.013173	0.862239	42943015
GUINNESS - 18	1.274533	1.333827	0.043833	0.932928	87588174
INT'L BR - 09	0.508864	0.239333	-0.056090	0.317530	1150597451
INT'L BR - 10	1.041440	0.251684	-0.109740	0.714070	2516680
INT'L BR - 11	0.300726	0.124622	-0.117950	0.693446	1583323
INT'L BR - 12	0.843377	0.686861	0.108804	0.754821	9380173
INT'L BR - 13	0.842860	0.686861	0.010103	0.754821	9380173
INT'L BR - 14	0.844139	0.860259	0.086395	0.758863	11269923
INT'L BR - 15	0.734788	0.675889	0.064514	0.684395	12168259
INT'L BR - 16	0.507096	0.718378	0.079229	0.694979	13997391
INT'L BR - 17	0.238584	0.200412	0.005631	0.143912	42375992
INT'L BR - 18	0.607692	0.127286	-0.022870	0.267072	35238533
NB PLC - 09	-0.889190	0.720126	0.260872	1.534817	46570094

NB PLC - 10	-0.897600	0.721803	0.265165	1.624825	50172162
NB PLC - 11	0.608771	0.570974	0.178392	0.962201	78304741
NB PLC - 12	0.654885	0.583372	0.149991	0.996217	93447892
NB PLC - 13	0.451519	0.800277	0.170440	1.062723	112359185
NB PLC - 14	0.496974	0.966753	0.121599	0.761768	171882830
NB PLC - 15	0.408658	0.933648	0.106669	0.823941	172233465
NB PLC - 16	0.514702	0.821493	0.077241	0.853398	165805542
NB PLC - 17	5.583358	0.870832	0.086248	0.955769	178150934
NB PLC - 18	0.614625	0.750237	0.049904	0.900866	166644184
NESTLE - 09	0.992495	0.287239	0.207052	1.445814	10543935
NESTLE - 10	1.033411	0.326842	0.208827	1.370841	14865353
NESTLE - 11	0.895045	0.425728	0.212232	1.260304	23209984
NESTLE - 12	1.046724	0.624079	0.237596	1.311861	34185562
NESTLE - 13	1.256453	0.600402	0.205700	1.229897	40594801
NESTLE - 14	0.837611	0.512527	0.209647	1.351369	35939643
NESTLE - 15	0.815556	0.468021	0.199109	1.352778	38007074
NESTLE - 16	0.807514	0.222612	0.046731	1.072677	30878075
NESTLE - 17	0.907007	0.440302	0.229719	1.663110	44878177
NESTLE - 18	0.898139	0.447942	0.264935	1.640284	50220486
N NIG FLOUR MILL - 09	1.075508	0.609094	0.023365	1.394513	50447167
N NIG FLOUR MILL - 10	0.628738	0.613679	0.097998	1.011589	46039111
N NIG FLOUR MILL - 11	3.852389	1.159517	0.086488	1.386067	86577309
N NIG FLOUR MILL - 12	18.64815	1.335051	0.051573	1.063149	123482114
N NIG FLOUR MILL - 13	1.692495	0.795816	0.062136	3.229477	1605717
N NIG FLOUR MILL - 14	2.169652	1.188389	0.071494	3.487407	1773912
N NIG FLOUR MILL - 15	2.816204	1.568448	-0.082340	4.344196	1480063
N NIG FLOUR MILL - 16	2.880813	2.559080	-0.113370	0.562743	1250937
N NIG FLOUR MILL - 17	0.769030	0.400139	-0.004160	0.306756	1239578
N NIG FLOUR MILL - 18	1.101182	0.247558	-0.010310	0.483597	1174262

Source: Financial Statement of the selected companies from 2009 to 2018.

N/B:

CR: Current Ratio

DER: Debt Equity Ratio

ROA: Return on Assets

AT: Asset Turnover

TE: Total Equity

CA: Current Assets

CL: Current Liability

PAT: Profit after Tax

REV: Revenue

TA: Total Assets

Appendix II: Raw Data from the Companies under study

Cadbury Nigeria Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	0.645445	2864344	2551513	1.122606	1.958105	465893	5100523	0.058956	7902330	5230914	2671416
2010	1.394513	59415804	55244418	1.075508	0.609094	2469513	147388331	0.023365	105691585	50447167	82823346
2011	0.950247	18624210	12182826	1.528727	1.138280	3783211	31018546	0.115898	32642612	17376786	15265826
2012	0.784492	25271693	14919196	1.693904	1.207144	4401907	31231751	0.110569	39811415	21773887	18037528
2013	0.828320	26231468	14386781	1.823303	1.251190	6023219	35760753	0.139515	43172624	23994931	19177693
2014	1.058934	12336296	14042218	0.878515	0.668016	1512687	30518586	0.052487	28820107	11542026	17278081
2015	0.979174	12744984	11651634	1.093837	0.761562	1153295	27825194	0.040585	28417005	12285297	16131708
2016	1.055875	13808074	12830278	1.076210	0.637782	-296402	29979410	-0.010439	28392951	11056734	17336217
2017	1.163822	14240363	12529586	1.136539	0.703990	299998	33079446	0.010555	28423121	11742791	16680331
2018	1.306794	14029119	10085404	1.391032	0.853504	823085	35973479	0.029900	27528040	12676146	14851894

Source: Financial Statement of Cadbury Nigeria Plc

Champion Breweries Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	0.996217	568666	-6868344	-0.103014	0.929379	-3804272	2526742	-1.499909	2536336	-3347472	-3601837
2010	0.668845	725357	-5520257	-0.131399	0.964178	-1237196	1873796	-0.441613	2801539	-3477018	-3606201
2011	0.253291	736584	-6857754	-0.107409	0.940165	-1825759	1791109	-0.258191	7071361	-2029809	-2158993
2012	0.262582	820759	10166205	0.080734	-0.335315	-1336690	1785345	-0.196595	6799200	-3430000	10229200
2013	0.244400	1012414	13683275	0.073989	-0.335250	-1178025	2233259	-0.128919	9137716	-4608386	13746102
2014	0.344271	1538973	3578929	0.430009	1.577246	-754523	3302383	-0.078659	9592381	5870431	3721950
2015	0.339025	2285566	3073998	0.743516	2.220292	77140	3501845	0.007468	10329160	7121637	3207523
2016	0.387998	2166255	2208173	0.981017	3.349165	530389	3864943	0.053245	9961240	7670860	2290380
2017	-0.336083	2161853	1627573	1.328268	4.164767	517562	-3390692	0.051300	10088861	8135460	1953401
2018	-0.340675	2054569	2305491	0.891163	3.110171	-263807	-3572665	-0.025156	10487010	7935532	2551478

Source: Financial Statement of Champion Breweries Plc

Dangote Flour Mill Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	0.761363	28200475	1450894	19.43662	0.819365	5359861	41839919	0.097534	54953984	27214204	33213776
2010	0.712025	32529277	6040123	5.385532	0.904084	3753248	42695383	0.062592	59963357	30263488	33474203
2011	0.549592	41652612	39180069	1.063107	0.598560	790152	38679844	0.011227	70379238	26352592	44026646
2012	0.504461	31889255	22275610	1.431577	0.622700	-3138119	29859976	-0.053016	59191842	22714473	36477369
2013	0.454789	24768875	35671584	0.694359	0.341444	-7217001	29960419	-0.109552	65877662	16311182	47771137
2014	0.753059	23530523	38677973	0.608370	0.223291	-6109507	41268771	-0.111484	54801488	10091277	45193357
2015	0.778821	27615605	43861797	0.629605	-9.21E-05	-14078794	36094021	-0.303786	46344429	-4271	46348700
2016	1.092236	54102367	40424498	1.338356	0.602252	-12110356	83671078	-0.158088	76605288	28794277	47811011
2017	0.669410	10423376 6	85316750	1.221727	0.439470	9956120	86582732	0.076975	129341940	39488048	89853892
2018	0.584823	95176353	82287918	1.156626	0.424049	3314897	72443654	0.026760	123872803	36886446	86986357

Source: Financial Statement of Dangote Flour Mill Plc

Dangote Sugar Plc

	AT	CA	CL	CR	DER	PAT	CA	CL	CR	DER	PAT
2009	1.064354	59749322	33745540	1.770584	0.942585	13185599	59749322	33745540	1.770584	0.942585	13185599
2010	1.444449	45579106	19245651	2.368281	0.899374	11282240	45579106	19245651	2.368281	0.899374	11282240
2011	1.472486	55630825	29928082	1.858817	1.161892	7403597	55630825	29928082	1.858817	1.161892	7403597
2012	1.286769	64280589	32520850	1.976596	1.257919	10796416	64280589	32520850	1.976596	1.257919	10796416
2013	1.176269	57280617	28934754	1.979648	1.616400	13537612	57280617	28934754	1.979648	1.616400	13537612
2014	0.967271	64522412	34532088	1.868477	1.509902	11908690	64522412	34532088	1.868477	1.509902	11908690
2015	10.28898	63657765	34532088	1.843438	1.509902	12659855	63657765	34532088	1.843438	1.509902	12659855
2016	1.569392	72412320	35516958	2.038810	1.647899	14198693	72412320	35516958	2.038810	1.647899	14198693
2017	1.010486	157249110	91644487	1.715860	1.024263	37822609	157249110	91644487	1.715860	1.024263	37822609
2018	0.820895	144937739	66033588	2.194909	1.502309	25830941	144937739	66033588	2.194909	1.502309	25830941

Source: Financial Statement of Dangote Sugar Plc

Fidson Nigeria Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	0.698969	3744047	1914364	1.955765	2.441703	429073	5019778	0.059745	7181688	5095021	2086667
2010	0.645445	2864344	2551513	1.122606	1.958105	465893	5100523	0.058956	7902330	5230914	2671416
2011	0.753280	3938112	1942001	2.027863	1.763715	312257	7103448	0.033113	9430021	7119854	4036850
2012	0.664964	4770498	2878686	1.657179	0.941636	206889	7168939	0.019190	10780936	5228436	5552500
2013	0.755288	4769698	4070893	1.171659	0.749574	154980	9247056	0.012659	12243088	5245335	6997753

2014	0.616211	4654412	5909026	0.787678	0.576113	631825	9719185	0.040059	15772494	5765281	10007213
2015	0.492537	4611780	6646547	0.693861	0.611205	744378	8210760	0.044653	16670325	6323828	10346497
2016	0.459294	3958702	6642906	0.595929	0.654505	316762	7655029	0.019005	16666935	6593266	10073669
2017	0.805733	4641618	7088742	0.654787	0.775886	1060789	14057394	0.060802	17446718	7622920	9824798
2018	0.792347	7575483	10535885	0.719017	0.536686	-97447	16229903	-0.004757	20483325	7153781	13329544

Source: Financial Statement of Fidson Nigeria Plc

Guinness Nigeria Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	1.206846	35764651	4622693	7.736757	0.737821	13541189	89148207	0.183314	73868737	31524701	42726779
2010	1.395043	38327725	7679348	4.991013	0.716234	13736359	109366975	0.175216	78396876	34199119	47748499
2011	6.897790	44369719	7833871	5.663831	1.000000	17927934	123663125	1.000000	17927934	40283492	40283492
2012	8.607900	37622976	-1373825	-27.38557	1.000000	14671195	126288184	1.000000	14671195	40352504	40352504
2013	1.011589	32238619	51275097	0.628738	0.613679	11863726	122463538	0.097998	121060621	46039111	75021510
2014	0.825236	40840041	44248479	0.922971	0.516369	9573480	109202120	0.072346	132328273	45061717	87266556
2015	0.969318	33511512	46100344	0.726925	0.654099	7794899	118495882	0.063764	122246632	48341376	73905256
2016	0.744370	47869835	67109622	0.713308	0.437006	-2015886	101973030	-0.014715	136992444	41660605	95331839
2017	0.862239	57226823	63719662	0.898103	0.416537	1923720	125919817	0.013173	146038216	42943015	103095201
2018	0.932928	54610047	42847115	1.274533	1.333827	6717605	142975792	0.043833	153254968	87588174	65666794

Source: Financial Statement of Guinness Nigeria Plc

International Breweries Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL	ROA
2009	0.317530	200505861 2	3.94E+0 9	0.508864	0.23933 3	2855460 46	16165033 63	0.056090	5.09E+09	11505974 51	4.81E+09	0.056090
2010	0.714070	2439542	2342470	1.041440	0.25168 4	1373572	8937321	0.109740	12516033	2516680	9999353	0.109740
2011	0.693446	3053452	1015359 1	0.300726	0.12462 2	1685342	9908167	0.117950	14288312	1583323	12704989	0.117950
2012	0.754821	6624318	7854517 .	0.843377	0.68686 1	2506490	17388632	0.108804	23036762	9380173	13656589	0.108804
2013	0.754821	6624318	7859335 .	0.842860	0.68686 1	232734	17388632	0.010103	23036762	9380173	13656589	0.010103
2014	0.758863	5575071	6604447 .	0.844139	0.86025 9	2105500	18493907	0.086395	24370540	11269923	13100617	0.086395
2015	0.684395	7329665	9975208 .	0.734788	0.67588 9	1946490	20649295	0.064514	30171590	12168259	18003331	0.064514
2016	0.694979	8083481	1594073	0.507096	0.71837	2652748	23269364	0.079229	33482106	13997391	19484715	0.079229

			4		8								
2017	0.143912	40053162	1.68E+08	0.238584	0.200412	1429319	36527807	0.005631	2.54E+08	42375992	2.11E+08	0.005631	
2018	0.267072	60568488	99669724	0.607692	0.127286	-7137459	83348916	0.022870	3.12E+08	35238533	2.77E+08	0.022870	

Source: Financial Statement of International Breweries Plc

Nigeria Breweries Plc

YR	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	1.534817	37629344	-42318498	0.889190	0.720126	27910091	164206848	0.260872	106987883	46570094	64669385
2010	1.624825	40284272	-44879962	0.897600	0.721803	30332118	185862785	0.265165	114389432	50172162	69509470
2011	0.962201	52143019	85652875	0.608771	0.570974	38434033	207303379	0.178392	215447123	78304741	137142382
2012	0.996217	56866627	86834468	0.654885	0.583372	38042714	252674213	0.149991	253633629	93447892	160185737
2013	1.062723	45285469	100295715	0.451519	0.800277	43080349	268613518	0.170440	252759633	112359185	140400448
2014	0.761768	56930683	114554626	0.496974	0.966753	42520253	266372475	0.121599	349676784	171882830	177793954
2015	0.823941	57480020	140655590	0.408658	0.933648	38049518	293905792	0.106669	356707123	172233465	184473658
2016	0.853398	74558034	144856800	0.514702	0.821493	28396777	313743147	0.077241	367639915	165805542	201834373
2017	0.955769	874911662	156699905	5.583358	0.870832	33009292	365798057	0.086248	382726540	178150934	204575606
2018	0.900866	86282924	140383143	0.614625	0.750237	19401169	350226472	0.049904	388766316	166644184	222122132

Source: Financial Statement of Nigeria Breweries Plc

Nestle Nigeria Plc

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	1.445814	21847186	22012398	0.992495	0.287239	9783578	68317303	0.207052	47251802	10543935	36707867
2010	1.370841	20105323	19455299	1.033411	0.326842	12602109	82726229	0.208827	60347062	14865353	45481709
2011	1.260304	22210405	24814835	0.895045	0.425728	16496453	97961260	0.212232	77728293	23209984	54518309
2012	1.311861	26356145	25179644	1.046724	0.624079	21137275	116707394	0.237596	88963218	34185562	54777656
2013	1.229897	41755808	33233095	1.256453	0.600402	22258279	133084076	0.205700	108207480	40594801	67612679
2014	1.351369	37389330	44638052	0.837611	0.512527	22235640	143328982	0.209647	106062067	35939643	70122424
2015	1.352778	48714686	59731857	0.815556	0.468021	23736777	161271526	0.199109	119215053	38007074	81207979
2016	1.072677	97736155	121033434	0.807514	0.222612	7924968	181910977	0.046731	169585932	30878075	138707857
2017	1.663110	72270783	79680495	0.907007	0.440302	33723730	244151411	0.229719	146804128	44878177	101925951
2018	1.640284	82734317	92117501	0.898139	0.447942	43008026	266274621	0.264935	162334422	50220486	112113936

Source: Financial Statement of Nestle Nigeria Plc

Northern Nigeria Flour Mill

	AT	CA	CL	CR	DER	PAT	REV	ROA	TA	TE	TL
2009	1.394513	59415804	55244418	1.075508	0.609094	2469513	147388331	0.023365	105691585	50447167	82823346

2010	1.011589	32238619	51275097	0.628738	0.613679	11863726	122463538	0.097998	121060621	46039111	75021510
2011	1.386067	56810652	14746864	3.852389	1.159517	10095752	161796284	0.086488	116730494	86577309	74666706
2012	1.063149	84550488	4533987	18.64815	1.335051	8896718	183402710	0.051573	172508941	123482114	92492440
2013	3.229477	2765711	1634103	1.692495	0.795816	225145	11701741	0.062136	3623417	1605717	2017700
2014	3.487407	2576926	1187714	2.169652	1.188389	233545	11392017	0.071494	3266615	1773912	1492703
2015	4.344196	1688990	599740	2.816204	1.568448	-199558	10529075	0.082340	2423711	1480063	943648
2016	0.562743	1081103	375277	2.880813	2.559080	-197240	979038	0.113370	1739760	1250937	488823
2017	0.306756	2291796	2980114	0.769030	0.400139	-18042	1330536	0.004160	4337444	1239578	3097866
2018	0.483597	3715732	3374312	1.101182	0.247558	-60988	2861752	0.010310	5917639	1174262	4743377

Source: Financial Statement of Northern Nigeria Flour Mill

Appendix III: Output of Descriptive Statistics

	CR	DER	ROA	AT	TE
Mean	1.362857	0.899993	0.057526	1.183156	46999618
Median	0.986756	0.720965	0.060274	0.857819	25173762
Maximum	19.43662	4.164767	1.000000	10.28898	1.15E+09
Minimum	-27.38560	-0.335310	-1.499910	-0.340680	-4608386.
Std. Dev.	4.040633	0.700237	0.237871	1.472809	1.19E+08
Skewness	-1.876102	1.977216	-1.734738	4.398203	8.155248
Kurtosis	33.75667	8.594359	24.14357	24.17073	75.69510
Jarque-Bera	4000.216	195.5599	1912.865	2189.902	23127.54
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	136.2857	89.99930	5.752586	118.3156	4.70E+09
Sum Sq. Dev.	1616.345	48.54289	5.601679	214.7473	1.40E+18
Observations	100	100	100	100	100

Appendix IV: Output of Unit Root Tests

Current Ratio

Panel unit root test: Summary

Series: D(CR)

Date: 07/26/20 Time: 09:47

Sample: 2009 2018

Exogenous variables: None

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t^*	-11.1996	0.0000	10	70
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	83.1478	0.0000	10	70
PP - Fisher Chi-square	158.559	0.0000	10	80

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Debt to Equity Ratio

Panel unit root test: Summary

Series: D(DER)

Date: 07/26/20 Time: 09:52

Sample: 2009 2018

Exogenous variables: None

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t^*	-5.43281	0.0000	10	70
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	51.0393	0.0002	10	70
PP - Fisher Chi-square	95.8343	0.0000	10	80

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Return on Assets

Panel unit root test: Summary

Series: ROA

Date: 07/26/20 Time: 09:56

Sample: 2009 2018

Exogenous variables: None

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.38870	0.0000	10	80
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	47.7042	0.0005	10	80
PP - Fisher Chi-square	66.6251	0.0000	10	90

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Assets Turnover

Panel unit root test: Summary

Series: D(AT)

Date: 07/26/20 Time: 09:53

Sample: 2009 2018

Exogenous variables: None

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.05299	0.0000	10	70
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	70.2831	0.0000	10	70
PP - Fisher Chi-square	125.430	0.0000	10	80

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Total Equity

Panel unit root test: Summary

Series: D(TE)

Date: 07/26/20 Time: 09:58

Sample: 2009 2018

Exogenous variables: None

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.08044	0.0000	10	70
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	60.1088	0.0000	10	70
PP - Fisher Chi-square	97.5943	0.0000	10	80

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Appendix V: Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.947777	4	0.7454

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
	2486931.2686	1966410.84614	1453682805843	
CR	17	6	.5253	0.6659
	-	-		
	7168955.5771	15836556.5006	1506172555538	
DER	49	37	79.44	0.4800

	-	-		
	23011448.768	28495472.9512	9802108268420	
ROA	394	38	40.00	0.8610
	-	-		
	4768640.6998	3228790.21704	1391693075277	
AT	88	8	8.141	0.6798

Cross-section random effects test equation:

Dependent Variable: TE

Method: Panel Least Squares

Date: 07/26/20 Time: 13:46

Sample: 2009 2018

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	57859033	26339686	2.196649	0.0307
CR	2486931.	3823209.	0.650483	0.5171
DER	-7168956.	22862125	-0.313573	0.7546
ROA	-23011449	76090020	-0.302424	0.7631
AT	-4768641.	10683994	-0.446335	0.6565

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.135100	Mean dependent var	47337557
Adjusted R-squared	0.004360	S.D. dependent var	1.19E+08
S.E. of regression	1.19E+08	Akaike info criterion	40.14867
Sum squared resid	1.21E+18	Schwarz criterion	40.51340
Log likelihood	-1993.434	Hannan-Quinn criter.	40.29628
F-statistic	1.033345	Durbin-Watson stat	1.223857
Prob(F-statistic)	0.427944		

Source: Author's Computation from E-View 9.0, 2020

Appendix VI: Analytical Tables for Test of Hypotheses

Test of Hypothesis One

Dependent Variable: TE

Method: Panel EGLS (Cross-section random effects)

Date: 07/26/20 Time: 13:58

Sample: 2009 2018

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	1966411.	3628118.	0.541992	0.5891
DER	-15836557	19288844	-0.821022	0.4137
ROA	28495473	69350417	0.410891	0.0021
AT	3228790.	10011533	0.322507	0.0478
C	65694510	25793835	2.546907	0.0125

Effects Specification

	S.D.	Rho
Cross-section random	32150156	0.0685
Idiosyncratic random	1.19E+08	0.9315

Weighted Statistics

R-squared	0.011456	Mean dependent var	35932806
Adjusted R-squared	-0.030167	S.D. dependent var	1.16E+08
S.E. of regression	1.17E+08	Sum squared resid	1.31E+18
F-statistic	0.275231	Durbin-Watson stat	1.135185
Prob(F-statistic)	0.893312		

Unweighted Statistics

R-squared	0.015272	Mean dependent var	47337557
Sum squared resid	1.38E+18	Durbin-Watson stat	1.077598

Source: Author's Computation from E-View 9.0, 2020

Test of Hypothesis Two

Dependent Variable: TE

Method: Panel EGLS (Cross-section random effects)

Date: 07/26/20 Time: 13:58

Sample: 2009 2018

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	1966411.	3628118.	0.541992	0.5891
DER	-15836557	19288844	-0.821022	0.4137
ROA	28495473	69350417	0.410891	0.0021
AT	3228790.	10011533	0.322507	0.0478
C	65694510	25793835	2.546907	0.0125

Effects Specification		S.D.	Rho
Cross-section random		32150156	0.0685
Idiosyncratic random		1.19E+08	0.9315

Weighted Statistics			
R-squared	0.011456	Mean dependent var	35932806
Adjusted R-squared	-0.030167	S.D. dependent var	1.16E+08
S.E. of regression	1.17E+08	Sum squared resid	1.31E+18
F-statistic	0.275231	Durbin-Watson stat	1.135185
Prob(F-statistic)	0.893312		

Unweighted Statistics			
R-squared	0.015272	Mean dependent var	47337557
Sum squared resid	1.38E+18	Durbin-Watson stat	1.077598

Source: Author's Computation from E-View 9.0, 2020

Test of Hypothesis Three

Dependent Variable: TE

Method: Panel EGLS (Cross-section random effects)

Date: 07/26/20 Time: 13:58

Sample: 2009 2018

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	1966411.	3628118.	0.541992	0.5891
DER	-15836557	19288844	-0.821022	0.4137
ROA	28495473	69350417	0.410891	0.0021
AT	3228790.	10011533	0.322507	0.0478
C	65694510	25793835	2.546907	0.0125

Effects Specification

	S.D.	Rho
Cross-section random	32150156	0.0685
Idiosyncratic random	1.19E+08	0.9315

Weighted Statistics

R-squared	0.011456	Mean dependent var	35932806
Adjusted R-squared	-0.030167	S.D. dependent var	1.16E+08
S.E. of regression	1.17E+08	Sum squared resid	1.31E+18
F-statistic	0.275231	Durbin-Watson stat	1.135185
Prob(F-statistic)	0.893312		

Unweighted Statistics

R-squared	0.015272	Mean dependent var	47337557
Sum squared resid	1.38E+18	Durbin-Watson stat	1.077598

Source: Author's Computation from E-View 9.0, 2020

Test of Hypothesis Four

Dependent Variable: TE

Method: Panel EGLS (Cross-section random effects)

Date: 07/26/20 Time: 13:58

Sample: 2009 2018

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	1966411.	3628118.	0.541992	0.5891
DER	-15836557	19288844	-0.821022	0.4137

ROA	28495473	69350417	0.410891	0.0021
AT	3228790.	10011533	0.322507	0.0478
C	65694510	25793835	2.546907	0.0125
Effects Specification				
			S.D.	Rho
Cross-section random			32150156	0.0685
Idiosyncratic random			1.19E+08	0.9315
Weighted Statistics				
R-squared	0.011456	Mean dependent var		35932806
Adjusted R-squared	-0.030167	S.D. dependent var		1.16E+08
S.E. of regression	1.17E+08	Sum squared resid		1.31E+18
F-statistic	0.275231	Durbin-Watson stat		1.135185
Prob(F-statistic)	0.893312			
Unweighted Statistics				
R-squared	0.015272	Mean dependent var		47337557
Sum squared resid	1.38E+18	Durbin-Watson stat		1.077598

Source: Author's Computation from E-View 9.0, 2020