DETERMINANTS OF THE FINANCIAL PERFORMANCE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

BY

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES AHMADU BELLO UNIVERSITY ZARIA, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN ACCOUNTING AND FINANCE

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DECLARATION

I declare that the work in this dissertation entitled "Determinants of financial performance of listed consumer goods firms in Nigeria" has been carried out by me under the supervision of Dr. (Mrs) A C Dikki and Mal. JibrilYero in the Department of Accounting, Ahmadu Bello University, Zaria. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree at this or any other institution.

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CERTIFICATION

This dissertation, entitled **Determinants of Financial Performance of Listed Consumer Goods Firms in Nigeria**by Emmanuel, Babatunde OYEDELE meets the regulations governing the award of the degree of Master of Science (M.Sc.) in Accounting and Finance of the Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This dissertation is dedicated to God Almighty, the giver of knowledge and understanding, and also to my beloved parents MWO and Mrs. OYEDELE

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Abstract

Firms determining factors have been identified to have an immeasurable role in enhancing the financial performance of companies, but available literatures in this area are mixed and inconclusive. Owing to these mixed and inconclusive findings, this study therefore examines the impact of both internal and external factors on the financial performance of listed consumer goods firms in Nigeria. The population of the study consists of twenty-seven (27) listed consumer goods firms as at 31st December 2015. Fifteen of the listed consumer goods firms were selected to form the sample of the study for the period of eleven years (2006-2016). The study employed multiple regressions as tool for analysis. Secondary data obtained from the financial statements of the companies was analysed. The result revealed that liquidity, leverage and firm size are the most important determinants of financial performance. Hence, all three variables are positively and significantly related to financial performance. While, inflation rate and GDP growth rate are not significantly related to financial performance of listed consumer goods firms in Nigeria. For consumer goods firms to achieve a greater profit and competitiveness in the market, it is therefore recommended that the companies should give more attention to firm specific characteristics (liquidity, leverage and firm size) and also conduct careful evaluation by partnering with government to check activities of macroeconomic indicators (GDP growth rate and inflation rate) that influence the financial performance of the company before making major business decision as this will go a long way to improving their financial performance.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Performance of a firm or an industry is very important as it shows the results achieved over a time period. Firm performance is dependent upon micro economic variables and macro-economic variables. Micro-economic variables are the internal firm specific variables. Management is able to control these variables. Macro-economic variables are the external variable which the management is not able to control.

Financial performance is a key concept in the economic environment, influenced by rapid changes, fierce competition and globalization. Firm financial performance in broader sense refers to the degree to which financial objective being or has been accomplished and is an important aspect of finance and firm's determinant. It is the process of measuring the result of a firm's policies and operations in monetary terms. Financial performance consist of a firms' profitability, that is, how large the revenues exceed the costs incurred in generating them. Financial performance can be defined as a measurement of the results of a firm's polices and operations in monetary terms. In assessing the overall financial condition of a company, the income statement and the statement of financial position are important reports, as the income statement captures the company's operating performance and the statement of financial position shows its net worth.

Profit is indispensable for the existence of business. It is the driving force for the business enterprises. The perpetual existence of the firms depends on the profit earning capacity of the firm, which is considered to be the foremost factor in influencing the reputation of the firm. Profit is an absolute term, whereas, the profitability is a relative concept. Profit refers to the total income earned by the enterprise during the specified period of time, while profitability

refers to the operating efficiency of the enterprise. Profitability delivers the evidence about the company's ability to spawn earnings. An enhancement in profitability sparks to an increase in stock price, thereby registering capital gains. Financial gurus consider profitability as a measure of efficiency. Profitability reveals the snapshot measure of corporate success and thus serves as a prime metric of economic performance.

A firm's financial performance and which factors have an effect on it is a recurring topic in academic literature. Many aspects of a firm have been linked to financial performance in order to determine the extent of influence these have on it. It is used to develop an understanding of what factors can determine the financial performance of a firm and to what extent. However, not one common collection of determinants has yet been established (Nikolaus, 2015).There are on the one hand studies that focus on the effect of corporate governance aspects on performance such as: Hu's and Izumida's (2008) causal analysis of ownership concentration and corporate performance. Other studies focused on capital structure and, more precisely, on leverage and its relationship with performance. An example of such a study is one by Vithessonthi and Tongurai (2015), who compare the effect of leverage on performance in domestically-oriented and internationally-oriented firms.In order to add to the few studies that combine determinants of different natures and also take less developed countries into account this study aims to investigate the determining factors of financial performance of listed Consumer goods firms in Nigeria.

The Consumer Goods sector which is one of the largest industries worldwide is being faced with numerous challenges. The Nigerian manufacturing sector which is a subsector under the Consumer Goods industry has performed dismally in 2016 as manufacturers faced several challenges which affected them negatively (Agency report, 2017). Operators said that the sector was faced with myriads of challenges ranging from the scarcity of foreign exchange, infrastructure deficit, high banking charges and lack of raw materials. About 272 firms were

shut, while some reduce their production, staff strength and remuneration of workers (Agency report, 2017).

The survival of the manufacturing sector was threatened by the fact that more than half of the firms which survived the massive shut down were classified as ailing. The entire business terrain was adversely affected by the poor power supply, bad roads, high interest rate and high cost of energy which contributed to high cost of production (Agency report, 2017). This has posed serious adverse effect on the liquidity of the firms and the inflation rate of the economy as a whole. Another major challenge was the intense scarcity of foreign exchange which distorted the ability of manufacturers to import raw materials for production thereby adversely affecting the liquidity of the firms.

Similarly, one of the manufacturers operators lamented on the foreign exchange rate loss of about N500billion reflected in their account which led to factory closure, unemployment (which affected the GDP of the economy) and loss of investment(which also affected the size of the investment contributed in the company, thereby distorting firm size). According to him, the exchange rate losses required additional working capital to shore up cash differences between N320 and N197 (Agency report, 2017). The Managing Director of May and Baker, said the inability of manufacturers to access foreign exchange through the interbank affected industrial production and contributed to inflation.

Erisco Foods Limited, an indigenous tomato paste manufacturer, relocated its 150 billion dollars tomato paste processing plant to china due to the same problem. Erisco Foods has a production capacity of 450,000 metric tons of tomato paste and had 22 brands with over 2,000 workers in Nigeria (Agency report, 2017).

The financial performance of firms could be affected by both internal and external factors. The internal factors are those management controllable factors which account for the inter-

firm differences in profitability. On the other hand, external factors are uncontrollable factors which affect firms decision and which management have no control over. However, factors such as growth in money supply, interest rate, inflation rate and gross domestic product are macroeconomic or market-specific factors which are out of control of management.

In line with the above explanation, the study therefore combined three firm specific variables (liquidity, leverage and firm size) and two macroeconomic variables (GDP growth rate and inflation rate) against the financial performance of consumer goods firms in Nigeria. The choice of these five variables was based on their empirical relationship with the dependent variable, also, this variables kept reoccurring in the literatures as viable determinants of financial performance as previous researchers likeDuraj and Moci (2015), Mirza and Javaed (2013) andOngor and Kusa (2013)among others all made use of at least one of these variables and their findings proved these variables to be significant determinants of firm's financial performance.

The Consumer Goods sector in Nigeria has significant scope to expand. Poverty levels are still quite high, with food and other necessities dominating consumer budgets. For this reason, the food sub-sector of Consumer Goods has a very large market to cater for, while penetration rates in the other categories still have significant room to expand. In this study, the key determinants (liquidity, leverage, firm size, GDP growth and inflation) of the financial performance of the Consumer Goods sector are analysed.

1.2 Statement of the problem

The Consumer Goods sector is seen as one of the fastest growing sectors in the country with its key drivers as large market size, youthful population and urbanization. The consumer goods sector which is one of the largest industries worldwide is being faced with numerous challenges. This sector has performed poorly in 2016 as manufacturers faced several

challenges which affected them negatively (Agency report, 2017).Operators said that the sector was faced with multiple challenges ranging from the scarcity of foreign exchange, infrastructure deficit, high banking charges and lack of raw materials which led to the shutdown of about 272, while some reduce their production, staff strength and remuneration of workers (Agency report, 2017).

The survival of the manufacturing sector was threatened by the fact that more than half of the firms which survived the massive shutdown were classified as incapacitated. The entire business terrain was adversely affected by the poor power supply, bad roads, high interest rate and high cost of energy which contributed to high cost of production (Agency report, 2017). This has posed serious adverse effect on the liquidity of the firms and the inflation rate of the economy as a whole. Another major challenge was the intense scarcity of foreign exchange which distorted the ability of manufacturers to import raw materials for production thereby adversely affecting the liquidity of the firms.

Having discussed some of the practical issues affecting this sector, there are some pertinent theoretical issues ranging from literature gaps, variable measurement gaps as well as domain gaps which serves as a premise for conducting this research. There has been inconclusive literature and continuous debate on which variable constitute an appropriate determinants of financial performance of firms (Mirza and Javed, 2013). There is wider gap specifically in the case of growing economies like Nigeria, because most of the research done is based on data gotten from developed economies (Duraj and Moci, 2015; Vintilă andNenu; Xu andBanchuenvijit, 2015 2015) among others.The purpose of this study is to empirically investigate the effect of Liquidity, Leverage, Firm size, GDP growth and Inflation rate among other determinants on the financial performance of consumer goods firms in Nigeria.

The choice of these five variables was based on the prevailing problems faced by the consumer goods sector especially the manufacturing subsector which has been discussed above. It was also as a result oftheir empirical relationship with the dependent variable, as previous researchers likeDuraj and Moci (2015), Mirza and Javaed (2013) andOngor and Kusa (2013)among others all made use of at least one of these variables and their findings proved these variables to be significant determinants of financial performance, even though they also had mixed findings as regards the direction of their significant level. However, to the best of the researcher's knowledge, none of these variables have been used in determining the financial performance of consumer goods firms in Nigeria.

Very fewstudies conducted in relation to firm performances have focused on both internal and external factors that affect the overall performances of firms (Chantapong, 2005;Olweny and Shipho, 2011). However, this study intends to consolidate and enrich the empirical literatures with focus on some of the firm specific factors and macroeconomic factors that affect firm's financial performance in relation to the Consumer Goods industry in Nigeria. To the best of our knowledge, no recent similar study in Nigeria has been conducted in this sector. The reason of cause may not be far from the fact that the sector has been recently restructured as the likes of the food and beverages industry has been merged with other house hold and personal care products to form the consumer goods industry.

Most literatures focus on factors influencing the performance of banks (Osuka and Richard, 2013; Ayanda, Christopher and Mudashiru, 2013) and insurance companies (Malik, 2011; Charumathi, 2012; and Wanjugu, 2014). Similarly, the outcome of the studies conducted in developed and some developing countries may not be applicable to Consumer Goods firms in Nigeria simply because the environment in which these firms operate differs in terms of supervision, regulation and operation. In addition, variables that were used in other studies, especially from developed market may not be consistent with the system of operation in the

Nigeria Consumer Goods industry. To this end, the relationship between firm determinants and financial performance of Consumer Goods firms in Nigeria calls for an empirical investigation. Therefore, mere extension of the findings of studies in other countries with their different conditions to Nigeria is not possible.

Profitability is a vital concern to all groups who have a direct or indirect interest in the firm. In spite of these vital roles that profit plays in the going concern of firms, the profitability status of most Consumer Goods firms operating in Nigeria in relation to liquidity, leverage, firm size GDP rate and inflation rate of the firms have not attracted much attention of researchers in the area of finance. This may be attributed to lack of thorough evaluation of factors (internal and external) that play critical role in profit realization of Consumer Goods firms in Nigeria. Therefore, it is of interest to know the extent to which these factors (liquidity, leverage, GDP rate and inflation rate) affect the financial performance of listed Consumer Goods firms in Nigeria. The firm specific and macroeconomic factors of the Consumer Goods firms are to be investigated to provide valuable information in regards to their effects on performance.

1.3 Research questions

The study therefore sought to address the following questions:

1. Does liquidity significantly affect the financial performance of listed Consumer Goods firms in Nigeria?
2. Does leverage significantlyaffect the financial performance of listed Consumer Goods firms in Nigeria?
3. Does firm size significantlyaffect the financial performance of listed Consumer Goods firms in Nigeria

4. Does GDP growth ratesignificantly affect the financial performance of listed Consumer Goods firms in Nigeria?
5. Does inflation rate significantly affect the financial performance of listed Consumer Goods firms in Nigeria?

1.4 Objectives of the study

The main objective of this study was to investigate the determining factors of financial performance of listed Consumer Goods firms in Nigeria. The specific objectivesinclude:

1. To determine the effect of Liquidity on the financial performance of listed Consumer Goods firms in Nigeria.
2. To examine the effect of Leverage on the financial performance of listed Consumer Goods firms in Nigeria.
3. To evaluate the effect of firm size on the financial performance of listed Consumer Goods firms in Nigeria.
4. To ascertain the effect of GDP growth rate on the financial performance of listed Consumer Goods firms in Nigeria.
5. To investigate the effect of Inflation rate on the financial performance of listed Consumer Goods firms in Nigeria.

1.5 Statement of hypotheses

In order to achieve the objectives of the study, the following hypotheses are raised in null form regarding the determinants of financial performance of Consumer Goods firms in Nigeria.

H_{01} Liquidity has no significant effect on the financial performance of Consumer Goods firms in Nigeria.

H_{02} Leverage has no significant effect on the financial performance of Consumer Goods firms in Nigeria.

H_{03} Firm size has no significant effect on the financial performance of Consumer Goods firms in Nigeria.

H_{04} GDP growth rate has no significant effect on the financial performance of Consumer Goods firms in Nigeria.

H_{05} Inflation rate has no significant effect on the financial performance of Consumer Goods firms in Nigeria.

1.6 Scope of the study

This study was confined only to know the key determinants of financial performance of listed Consumer Goods firms by analysing the financial statements starting from 2006 to 2016 fiscal year.The span of 11 years selected is to allow for a wider coverage and ensure that recent data is collected and included in the study. The firms under study include all the listed Consumer Goods firms in the Nigerian stock exchange as at 31st December, 2015.

1.7 Significance of the study

Although there have been numerous studies on Financial performance of firms in other countries where Consumer Goods are relatively large and well developed compared to Consumer Goods in Nigeria; it is uncommon to find such studies in sufficient number in Nigeria. This study, as an attempt to assess the determinants of financial performance of Consumer Goods in Nigeria, provides evidence on what impact both the firm-specific factors and the macroeconomic factors have on the Consumer Goods financial performance in Nigeria. Analysing and Understanding the impact of different factors on the financial performance of Consumer Goods in Nigeria is a major stepping stone to enlighten what should be done if financial performance is to be achieved.

The findings of the study will also be of benefits to managers and others interested in the Consumer Goods firm, for it will show the level of financial performance the Consumer

Goods operating in the country have reached. This in turn helps them to know the factors affecting financial performance and thereby take appropriate actions to increase financial performance of firms in this sector and the study will also initiate other Consumer Goods industry to give due attention on the management of identified variables. It is hoped that the outcome of this study will also provide an insight of the Consumer Goods industry to other researchers.

Government is interested in knowing which companies operate successfully or failed to take the necessary measures to avoid crises of the bankruptcy in these companies. More so, customers are interested in knowing the ability of Consumer Goods companies to pay their obligations based on the indicators of success of the companies.Business professionals and policy makersare interested in this study so as to render professional advice and come up with policy to improve the sector. The findings from this study contribute to finance literature by providing evidence that supports the positive role of firms' characteristics in determining the financial performance of listed Consumer Goods firms in Nigeria. Additionally, the results could provide accounting practitioners as well as regulators with valuable insight into the complex interactions between different types of firms' characteristics and the financial performance of Consumer Goods companies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Under this section the empirical and theoretical evidences focusing on the determinants of firm's financial performance has been presented. The first part presented a conceptual framework as well as a review of empirical studies on the determinants of firm's financial performance. Accordingly, the second part discussed the theoretical overview of the variables used in the determination of firm performance.

2.2 Conceptual framework

This section discussed the operationalized concepts used in this study. The Concepts highlighted and discussed in this section are the concept of financial performance asproxied by Return on Assets (ROA) and the firm specific factors (liquidity, leverage and firm size) as well as the macroeconomic factors (GDP growth rate and inflation rate) that affects the financial performance of Consumer Goods firms in Nigeria.More so, this section further explained the concept and activities of the Consumer Goods Industry in Nigeria.

2.2.1 Concept of financial performance

Financial performance is one of the most important variables in management research and arguably the most important indicator of any organization. According Iswatia, &Anshoria (2007) financial performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage. Although the concept of firm financial performance is very common in the academic literature, its definition is difficult because of its many meanings. For this reason, there is no universally accepted measurement of this concept.

The financial performance of firms is a subject that has attracted a lot of attention, comments and interests from both financial experts, researchers, the general public and the management of corporate entities. Yet, selecting out the most successful firms has always proved to be a difficult task to many as a firm may have a high level of profitability, but at the same time be in a very bad situation regarding its liquidity. The Financial performance of a firm can be analysed in terms of profitability, dividend growth, sales turnover, asset base, capital employed among others. However, there is still debate among several disciplines regarding how the performance of firms should be measured and the factors that affect financial performance of companies (Liargovas& Skandalis, 2008). A single factor cannot reflect every aspect of a company performance and therefore the use of several factors allows a better evaluation of the financial profile of firms.

2.2.2 Measures of financial performance

Almajali et al (2012) argued that there are various measures of financial performance. For instance return on sales reveals how much a company earns in relation to its sales, return on assets explain a firm's ability to make use of its assets and return on equity reveals what return investors take for their investments. Company's performance can be evaluated in three dimensions. The first dimension is company's productivity, or processing inputs into outputs efficiently. The second is profitability dimension, or the level of which company's earnings are bigger than its costs. The third dimension is market premium, or the level at which company's market value is exceeds its book value (Walker, 2001).

The profitability measures are generally considered to be the basic firm financial ratio in order to evaluate how well firms are performing in terms of profit. For the most part, if a profitability ratio is relatively higher as compared to the competitor(s), industry averages,

guidelines, or previous years' same ratios, then it is taken as indicator of better performance of the firm. The main performance indicator computed for firms are;

(a) Return on Assets (ROA)

Return on assets indicates the profitability on the assets of the firm after all expenses and taxes (VanHorne 2005). It is a common measure of managerial performance (Ross,Westerfield and Jaffe, 2005). It measures how much the firm is earning after tax for each amount invested in the assets of the firm. That is, it measures net earnings per unit of a given asset, moreover, how firm can convert its assets into earnings (Samad and Hassan 2000). Generally, a higher ratio means better managerial performance and efficientutilization of the assets of the firm and lower ratio is the indicator of inefficient use of assets. Firms can increase ROA either by increasing profit margins or asset turnover butthey can't do it simultaneously because of competition and trade-off between turnoverand margin. ROA is calculated as under:

ROA = Net Profit after Tax / Total Asset.

(b) Return on Equity (ROE)

Return on equity indicates the profitability to shareholders of the firm after all expenses and taxes (VanHorne 2005). It measures how much the firm is earning after tax for each amount invested in the firm. In other words, ROE is net earnings per equity capital.(Samad& Hassan 2000). It is also an indicator of measuring managerial efficiency (Ross1994). By and large, higher ROE means better managerial performance; however, ahigher return on equity may be due to debt (financial leverage) or higher return onassets. Financial leverage creates an important difference between ROA and ROE in thatfinancial leverage always magnifies ROE. This will always be the case as long as theROA (gross) is greater than the interest rate on debt (Ross, Westerfiled, Jaffe 2005). Usually,there is higher ROE for high growth companies. ROE is calculated as under:

ROE = Net profit after tax / Shareholders' Equity

(c) Profit to Expenses Ratio (PER)

It measures the operating profitability of the firm with regards to its total operatingexpenses. Operating profit is defined as earnings before taxes and operating expensesmeans total non-interest expenses. The ratio measures the amount of operating profit earned for each amount of operating expense. The ratio indicates to what extent firm isefficient in controlling its operating expenses. A higher PER means firm is cost efficient and is making higher profits (Samad& Hassan 2000). PER is calculated as under:

PER = Profit before tax/ Operating Expenses

(d) Net Interest Margin (NIM)

Net interest income is the difference between interest income and interest expense. It is the gross margin on a firm's investment activities. The higher the ratio thecheaper the funding or the higher the margin the firm is obtaining. A firm's net interestmargin is a key performance measure that drives ROA (Peters, Raad&Sinkey, 2004).NIM is calculated as under:

NIM= (Interest Income – Interest Expense)/Total Asset

Cohen, Chang and Ledford (1997) measured accounting returns using Return on Assets (ROA). They indicatedthat return on assets (ROA) is widely used by market analysts as a measure of financial performance, as itmeasures the efficiency of assets in producing income. The most used accounting measures of financial performance are Return on Assets (ROA) (Russo &Fouts, 1997; Stanwick&Stanwick,2000;Liargovas& Skandalis, 2008; Mahdi &Kumars, 2009; Hifza, 2011), Return on Equity (ROE) (Bowman &Haire, 1975), and Return on Sales (ROS) (Stanwick&Stanwick, 1998). Thus, the study will use Return on Assets

(ROA) as a measure of financial performance, as it indicates the management's efficiency in using its assets to generate profit (Mahdi &Kumars, 2009).

2.2.3Determinants of financial performance

Financial performance could be affected by a number of determining factors. In most literatures firm's financial performance is usually expressed as a function of internal and external determinants. Muriu (2011) also pointed out that the determinants of firm's profitability can be divided into two main categories namely the internal determinants which are management controllable and the external determinants, which are beyond the control of management. This means that the financial performance of Consumer Goods firms could be ascertained using firm specific attributes (internal factors) and macroeconomics variables (external factors) as major determinants of profitability of the firms. However, this study focused on three specific internal factors (liquidity, leverage and firm size) as well as two macroeconomic factors (GDP growth rate and inflation rate) that affect the financial performance of Consumer Goods firms in Nigeria. The choice of these variables as earlier pointed out was based on their empirical relationship with the dependent variable and due to the fact that studies carried out by previous researchers (Ongor&Kusa, 2013; Mirza &Javaed, 2013; and Duraj&Moci, 2015) using these variables have proved to play a significant determinants of firms financial performance. These determining factors are discussed under the following paragraphs.

2.2.3.1 Specific/Internal factors

Firm specific characteristics are factors that are mostly under the direct control of management. The firm specific indicators include firm size, liquidity, leverage, asset tangibility, age of the firm, management quality or competency, efficiency and productivity to mention but a few. However, as earlier stated, concentration will be given to three internal variables; liquidity, leverage and firm size. This is due to the fact that these variables are seen

as key factors in the determination of firm's financial performance. More so, studies conducted by previous researchers (Charumathi, 2012; Mirza &Javaed, 2013; Ayako, Kungu&Githui, 2015) all proved these variables to be significant determinants of firms' profitability.

(a) Liquidity

According to business dictionary, liquidity is a measure of the extent to which a person or organization has cash to meet immediate and short-term obligations or assets that can be quickly converted to do this. Liquidity can also be a measure of the ability and ease with which assets can be converted to cash. Liquid assets are those that can be converted to cash quickly if needed to meet financial obligations; examples of liquid assets generally include cash, inventories and short term debt. To remain viable, an organisation must have enough liquid assets to meet its short term obligations.

The International Financial Reporting Standards (2006) define liquidity as the available cash for the near future,after taking into account the financial obligations corresponding to that period. Liargovas& Skandalis (2008)argues that firm can use liquid assets to finance its activities and investments when external finance are notavailable. On the other hand, higher liquidity can allow a firm to deal with unexpected contingencies and to copewith its obligations during periods of low earnings.The current ratio is calculated by dividing the current assets by the current liabilities. An increase in the current ratio will reinforce a firm's liquidity position. Companies with a lower level of liquidity will have more cash constraints and will have more difficulties in repaying suppliers.Mateev&Anastasov (2010) measured the level of short term liquidity by the current ratio. This ratio was part of the firm specific characteristics, which may affect the company performance. A good cash cycle begins with healthy working capital and good relationships with suppliers (Beekman& Robinson, 2004).

A company that is not able to hold a certain level of liquidity will struggle to keep its head above water.Current ratio is a financial ratio that measures whether a company has the adequate resources to pay off short-term debt obligations as they fall due. The higher the current ratio is, the more capable the company is to pay its obligations. A current ratio of 2:1 is usually considered the benchmark. A ratio less than one suggest that the company may not have sufficient resources to settle its short-term debt. Current ratio is therefore a measure of relative liquidity that takes into account differences in absolute size. It is used to compare companies with different total current assets and liabilities.

(b) Leverage

According to Rajan&Zingales (1995), leverage can be defined as the ratio of total liabilities to total assets. It can be seen as alternative for the residual claim of equity holders. Leverage ratio measures the extent to which a company utilizes its debt to finance the assets. A company with significantly more debt than equity is considered to be highly leveraged. Leverage refers to the proportion of debt to equity in the capital structure of a firm. The financing or leverage decision is a significant managerial decision because it influences the shareholder's return and risk and the market value of the firm.Leverage is measured by the ratio of total liabilities to total assets. It shows the degree to which a business is utilizing borrowed money. Companies that are highly levered may be at risk of bankruptcy if they are unable to make payments on their debt; they may also be unable to find new lenders in the future. Leverage is not always bad because it can increase the shareholders' return on their investment and make good use of the tax advantages associated with borrowing. The degree of financial leverage reflects a company's ability to manage their economic exposure to unexpected losses. The ratio of debt-equity has implications for the shareholders' dividends and risk, this affect the cost of capital and the market value of the firm (Pandey, 2007).

Leverage ratios provide an indication of a company's long-term solvency. In order to increase the leverage of the company, the company should have more financial policies, that is, policies of financial project in order to make use of debt.

(c) Firm size

Empirically, firm size is measured as natural logarithm of total asset of a company. It is however established in literatures that company size is positively and strongly related to financial performance (Ahmed, Naved, & Usman,2011). The positive relationship is supported by Hardwick (1997) who opined that larger companies usually have greater capacity or strength for dealing with adverse market fluctuations than small companies. In addition, larger companies are better able to recruit skilful employees with professional knowledge compared with small companies and finally, the larger companies enjoy economies of scale in terms of labour cost which is the most essential production factor for delivery in consumer goods firms.

The majority of the studies measuring the influence of firm size on profitability have found results with positive direction between firm size and profitability. In line with this, a positive relationship between firm size and profitability was found by Vijayakumar and Tamizhselvan (2010). The authors used different measures of size(sales and total assets) and profitability (profit margin and profit on total assets) while applying model on a sample of 15 companies operating in South India in their study, which was based on a simple semi-logarithmeticspecification of the model.

2.2.3.2 Macroeconomic/external factors

On the other hand, the macroeconomic indicators are those factors that are beyond the control of management. Oliver (2000), states that macro-economic variables are such factors that are pertinent to a broad economy at the regional or national level and affect a large population rather than few selected individuals. It is often argued that financial performance is determined by some fundamental macro-economic variables such as the interest rate, Gross Domestic Product (GDP), exchange rate, inflation, unemployment, money supply, stock market and FDI which are closely monitored by the government, businesses and consumers (Mwangi, 2013). The GDP growth rate and inflation rate which forms part of the variables used in this study is discussed below.

(a) Gross Domestic Product

The gross domestic product of a country indicates the level of economic activity in that country. Countries with high levels of GDP are characterized by an economic climate which promotes the growth and development of businesses and this means that the consumers are able to afford basic needs and their living standards are improved. The trend of GDP affects the demand for firm's products. During the declining GDP growth the demand for consumer goods falls which in turn negatively affect the profitability of firms. On the contrary, in a growing economy as expressed by positive GDP growth, the demand for consumer goods is high due to the nature of business cycle. During boom the demand for consumer goods is high compared to recession (Athanasoglou, Sophocles &Mattaios, 2005).

(b) Inflation rate

Oritoni (1981) defined inflation as the creation of money that eventually rises prices of goods and lowers the purchasing power of currency in question. The relationship between inflation level and firms profitability is left to be debatable. The direction of the relationship is not clear (Vong& Chan, 2009). Prices of utilities, high costs associated with plant and machinery

due to either deterioration of currency or import costs, high inflation rate and low income level of people can decrease the demand for industrial goods and hence negatively impact the firm's performance (Forbes, 2002). Tommasi (1994) noted that it is easier to detect emerging changes in relative prices on both input and output prices when the general price level is stable than when all prices are going up. In addition to this, a high average rate of inflation normally involves greater variations in individual price fluctuations. These assertionsare enough proofs to say that inflation affects profitability in various ways either positively or negatively as the case may be. Angus (2006) also, noted that inflation can affect profitability position of enterprises in four major ways thus: Firstly, it changes the cost of funds used to finance the business, secondly it increases the cost of labour, raw materials and the price of the product; thirdly it affects the tax bill to be paid; and finally it causes shifts in demand levels.

2.2.4Consumer goods industry

The consumer goods sector can be broadly grouped into the following sub-sectors; food, beer, soft drinks, personal care and home care (KPMG Sector report, 2014). Although dominated by global brands such as Reckitt Benckiser, Procter and Gamble, Unilever, PZ Cussons, Cadbury and Nestle, which are active in the Nigerian market through their local subsidiaries, the sector remains fragmented. Other key players within the space include Kneipe, Promasidor and United African Company of Nigeria (UACN), Nigerian Breweries and Guinness among others. The following paragraphs discussed the various sub-sectors and their activities in the Nigerian Consumer Goods sector.

(a) Food

The Nigerian retail scene remains dominated by informal trade, although this is quickly starting to change with the entry of supermarkets and the increase in the number of shopping

centres. The US Department of Agriculture (USDA) notes that the major traditional foodstuffs consumed by the majority of the population are predominantly unprocessed and/or semi-processed (including maize, sorghum, tubers, and fish). However, changes that are occurring with regard to purchasing power, demographics, lifestyles, and consumer preferences are resulting in increased demand for a wider range of products. The most important supermarkets in Nigeria are Artee Group's Park n Shop and Spar stores, and South Africa's Shoprite. Artee Group is Spar's partner in Nigeria, opening the first Spar store in the country in 2010. ArteeGroup has identified a further six sites for Spar supermarkets, and will also convert Park n Shop supermarkets to the Spar brand (KPMG Sector report, 2014).

E-commerce has taken off sharply inNigeria, with Konga and Jumia also doing well, although these two websites generally do not offera large variety of food products.Wide-ranging reforms in Nigeria's agriculturalsector are ongoing. These are centred onimport restrictions to boost local production,better distribution of fertilisers, a scrapping ofimport duties on agricultural equipment, andeasier access to credit for farmers. Though thepolicy of restricting imports is meant to supportlocal production, farmers have been unable tosatisfy demand, resulting in shortages and causingheadaches for grocers. Arguably, more needs to bedone to improve the basics, such as high levels ofcorruption and the poor state of infrastructure. In theinterim, and as Shoprite's experience has shown,it is important for entrants into Nigeria's retailindustry to develop and build local supply chains anddistribution networks (KPMG Sector report, 2014).

(b) Beer

Nigeria is Africa's largest alcohol consumer according to Deutsche Bank Market Research. Based on sales of the world's largest distiller Diageo on the continent; the country accounts for around 36% of Africa's formal alcohol market. The Nigerian beer industry has recently

evolved from a duopoly to an oligopoly, with Heineken commanding a 71% share of the market through its two subsidiaries, Nigerian Breweries (61%) and Consolidated Breweries (10%); Diageo has a 27% market share through its stake in Guinness Nigeria; while SABMiller has recently entered the market and shown strong growth. Nigerian Breweries has the largest capacity (13.5 million hectolitres annually), followed by Guinness Nigeria (7.5 million hectolitres annually), and SABMiller (1.8 million hectolitres annually). According to figures released by Heineken, the Nigerian beer market is expected to record a compound annual growth rate of 5.6% between 2011 and 2020 (KPMG Sector report, 2014).

Despite the strong long-term outlook, the Nigerianbeer industry is going through a tough period atpresent due to an increase in the cost of living,as well as distribution pressures stemming fromsecurity concerns. Research by Financial DerivativesCompany, a diversified financial institution, indicatesthat the Nigerian beer industry contracted by about10% between January and September 2013. Inparticular, the demand for premium and mainstreambrands declined to the benefit of lower priced brands.Guinness Nigeria's profit before tax declined by 32% in the six months ending December 2013, following a 17% decline in the 12 monthsending June 2013. Despite consumers' purchasingpower being under pressure, Guinness Nigeriaincreased the price of its Malta Guinness by 10% toN110, and that of Harp Lager by 5% to N210 (both ofthese are mainstream brands). These price increaseswere later reversed due to a decline in sales volume.The value beer segment is currently the largest inthe Nigerian market, accounting for around 25%of total consumption. As a result, Guinness is nowtrying to boost production of its entry-level brandDubic Lager, which was launched in 2011 (KPMG Sector report, 2014).

(c) Soft drinks

Coca-Cola Nigeria Limited remains the dominant producer of carbonates and bottled water in Nigeria due its long established history in the country, strong distribution network, and aggressive marketing techniques. In turn, Chi Nigeria Limited leads Coca-Cola Nigeria Ltd in fruit/vegetable juice, with an off-trade market share of around 45%. Competition is intensifying, with innovative domestic companies gaining market share, such as La Casera (formerly known as Classic Beverages Nigeria Limited) that recently introduced the first sugar-free carbonate with real fruit, Latina. Per capita consumption of Coca-Cola products has fallen in recent years in terms of units of 237 ml servings, decreasing from 31 in 2002 to 26 in 2012. Rising health awareness among Nigerian consumers has resulted in particularly strong growth in the fruit/vegetable juices and bottled water categories. In addition, rising health awareness has bolstered demand for low-calorie carbonates (KPMG Sector report, 2014).

Consequently,manufacturers have responded to this general trendby developing new reduced sugar and sugar-freevariants, as well as products that contain morenatural ingredients. The movement away fromsugary drinks has been supported by an increasein the import duty on raw sugar from 5% to 10% inthe 2013 budget. This is in addition to a levy of 50%,bringing cumulative tax on sugar to 60%.According to Euromonitor International, off-tradechannels such as supermarkets and small grocerscontinued to account for the lion's share of total softdrinks volume sales in Nigeria in 2012. However,on-trade (restaurants and nightclubs) soft drinksvolume sales grew faster, partly because they wereemerging from a much lower base, but also due tothe expansion of large fast-food chains. During 2012,independent small grocers remained by far themost important channel in terms of off-trade volumesales, followed by other grocery retailers. Economicgrowth and the growing influence of Westernconsumption trends will encourage Nigerians totrade up to higher quality and more expensive softdrinks, particularly healthier products (KPMG Sector report, 2014).

(d) Personal care

The Nigerian personal care sector is dominated by international brand names. Key role players in the industry include Unilever Nigeria, PZ Cussons, Soulmate Industries, House of Tara International, MAC Cosmetics, and Sleek Nigeria. According to Euromonitor International, mature personal care categories such as general purpose body care and lip gloss continued to grow rapidly in 2012. Even stronger growth was seen in developing categories such as shower gels, men's deodorants, and women's razors. While demand for the basic products is mainly expected to be driven by population growth, the other categories will rely on increases in disposable income. Hair care products are generally considered to be more essential than many other categories of personal care, and as such, it has performed well in Nigeria over the past decade, driven by the growing young working female population (KPMG Sector report, 2014).

Other factors that havesupported the sector's performance are the rise ofthe internet, and the growing number of Westernstyleshopping centres in the country. Both ofthese factors have brought the Western cultureto Nigeria's doorstep. Soft Sheen Carson had an11% share in the hair care market in 2012, with itsleading brand Dark & Lovely enjoying loyal supportfrom customers. Meanwhile, the men's groomingcategory is also expected to show rapid growth,though from a low base. Demand has increased asthe availability of these products improved, whichindicates that there was in effect a latent demandfor beauty products for men. Over time, the uptakeof these products should increase on the back ofincome growth, the formalisation of the economy,the fast-growing youth population, and increasedexposure to Western culture (KPMG Sector report, 2014).

(e) Home care

Unilever is the main player in this segment, with a market share of around 25%. The company's products enjoy strong brand loyalty, and according to Euromonitor International, 'the effectiveness of its distribution network is phenomenal'. Smaller domestic companies, including Eko Supreme Nigeria and Limex Global Industries, have shown strong growth on the back of affordable product offerings. Growth in Nigeria's home care sector is expected to be robust over the medium term, as consumers continue to switch from (cheaper) general substitutes to products that are task-specific (e.g. switching from using a bar of soap to clean various household items to using different products to fulfil different needs), in line with rising incomes. Other factors driving this market include urbanisation and increased home ownership (KPMG Sector report, 2014).

2.3 Review of empirical studies

Empirical literatures in relations to determinants of Consumer Goods financial performance are very limited, as most studies conducted in recent times have focused on the banking and insurance sector. The following paragraphs present the empirical studies in connection with determinants of firm's financial performance.

Malik (2011) conducted a study to determine 'relationship of profitability and internal factors of insurance companies in Pakistan'. The researcher employed multiple regression model where profitability taken as dependent variable while age, size of company, volume of capital, leverage and loss ratio as independent variables. The study covered the time period from 2005 to 2009. It was found that there was no relationship between profitability and age, but significant positive relationship with size and volume of capital and significantly negative relationship with loss ratio and leverage. Apart from the fact that the study is backward, considering the time period of 2005 to 2009, the study only focused on internal factors, while neglecting other external/economic factors that would have served as major determinants of profitability.

Similarly, Charumathi (2012) studied thefactors that determine the profitability of life insurers operating inIndia. The sample for the study included 1 public and 22 privateplayers and period of three years i.e. 2008-09 to 2010-11 wasstudied. For achieving the purpose, regression analysis was performed which showed that profitability of life insurers waspositively affected by size and liquidity but negatively influencedby leverage, premium growth and equity capital. The study however covered only a period of three years which may not be enough to prove a significant impact or relationship between profitability and the abomveentioned factors.

In like manner, Mirza and Javaed (2013) carried out a study on determinant of financial performance of firms, using a case study of the Pakistani stock exchange market. The study examined the performance of firms in terms of profitability using Returns on Equity and its association with multiple determinants for 60 Pakistani corporate firms listed in Karachi stock exchange for the period of 2007 to 2011 and attempted to explain the observed behaviour with the help of fixed effect model. The result showed that a positive association exist between corporate governance, and risk management and performance, while inflation, leverage and liquidity showed a negative relationship. However, since the study period is quite backward, the reliability of the findings might be an issue as the stock exchange firm has had significant changes since 2011.

Similarly, Abbas, Bashir, Manzoor andAkram (2013) conducted a research on determinant of firm's financial performance in Pakistani textile sector for the period 2005 to 2010. The researcher used one-way fixed effect model in the regression results. The dependent variable was profitability (ROE) as a measure of firm's financial performance while the independent variables were leverage, growth, firm's size, risk, tax, tangibility, liquidity and non-debt tax shield. The firm's performance in textile sector is significantly affected by Short term leverage, Size, risk, tax and non-debt tax shield while taking long term leverage as first

independent variable, the leverage becomes insignificant along with tax factor. The study however is limited and restricted to just five year period and it used ROE as a measure of financial performance which may not be efficient enough to provide the researcher with a more adequate and a reliable result.

In one of the African context, Ongor andKusa (2013) also carried out a research on the determinant of financial performance of commercial banks in Kenya. The study is based on secondary data obtained from published statements of accountsof all commercial banks in Kenya,covering a period of ten years from 2001 to2010. The authors used linear multiple regression model and Generalized Least Square on panel data to estimate the parameters. The findings showed that bankspecific factors significantly affect the performance of commercial banks in Kenya, except forliquidity variable. But the overall effect of macroeconomic variables was inconclusive at 5%significance level. The moderating role of ownership identity on the financial performance ofcommercial banks was insignificant. Thus, it was concluded that the financial performance ofcommercial banks in Kenya is driven mainly by board and management decisions, whilemacroeconomic factors have insignificant contribution, leaving the result inconclusive.

Consequently, Omondi andMunturi (2013) conducted a research on 'Factors Affecting the Financial Performance of Listed Companies at the Nairobi Securities Exchange in Kenya'. The study adopted anexplanatory research design and 29 listed firms (excluding listed banks and insurance companies) which haveconsistently been operating at the Nairobi securities exchange during the period 2006-2012 were sampled.Study findings showed that leverage had asignificant negative effect on financial performance. The findings also showed that liquidityhad a significant positive effect on financial performance. Company size had a significantpositive effect on financial performance. The study suggested that there is need to

determine an optimal debt level that balances thebenefits of debt against the costs of debt and developing sound techniques of managing current assets to ensurethat neither insufficient nor unnecessary funds are invested in current assets as maintaining a balance betweenshort-term assets and short-term liabilities is critical. Also, the study failed to incorporate external factors like GDP and inflation rate.

Duraj and Moci (2015) also studied the factors influencing bank profitability in Albania. The study performed multi linear regression analysis with secondary data using a sample of data from 16 banks in the period 1999 – 2014.The estimated results suggested that the profitability of Albanian banks is influenced not only by factors related to their management decisions, internal factors, but also by changes in the external macroeconomic environment. The findings showed that except the Non-performing loan ratio, which has an insignificant relationship with profitability; other factors which include deposit/loans (positive), GDP (positive) and inflation (negative) all have a significant relationship with profitability. The problem with this study is that most of the literatures reviewed by the researcher are dated as far back as the 60s, 70s and 90s, which may not be too relevant in the present day research.

Xu &Banchuenvijit (2015) carried out a study on the impacts of factors, including liquidity, asset utilization, leverage and firm size on financial performance of firms listed on Shanghai Stock Exchange 50（SSE 50）(excluding financial firms). The study covers 28 companies listed on SSE 50 as a sample. Dependent variables of the study are return on assets (ROA) and return on equity (ROE), and independent variables are liquidity as measured by current ratio (CR), asset utilization as measured by total asset turnover ratio (TAT), leverage as measured by debt ratio (DR), and a dummy variable is firm size. The study used annual data from financial statements starting from January 2008 to December 2012. Multiple regressions with Ordinary Least Squares were used. The study found that asset utilization and leverage

are factors thataffect financial performance of firms listed on SSE 50. For both types of firm performance measurement (ROA and ROE), the results show a positive and significant relationship between assets utilization and firm performance and a negative and significant relationship between leverage and firm performance. However, the study did not take into account some other macroeconomic factors like GDP and inflation rate, which are considered key determinants of financial performance of firms.

Nwangi&Murigu (2015) conducted a study on the determinants of financial performance of general insurance company in Kenya. The study employed multiple linear regression, with return on assets as thedependent variable, and considered all the general insurance companies inKenya for the period 2009-2012. Profitabilitywas positively related toleverage, equity capital, management competence index and negativelyrelated to sizeand ownership structure. The study did not find a relationshipbetween performance and retention ratio, liquidity, underwriting risk and age. The study suggested that for general insurers in Kenya to performbetter they should increase leverage, equity capital and quality of staff.The model used in the study focused on firm specific determinants offinancial performance of general insurers in Kenya. Therefore, otherdeterminants such as macroeconomic factors were not part of the study.Thus, industry and macro-economic factors were not controlled for in the study.

Ayako, Kungu&Githui(2015) also conducted a study on Determinant of the Performance of Firms Listed at the Nairobi Security Exchange. The study analyzed the factors affecting the performance of 41 non-financial companies listed on the NairobiSecurities Exchange (NSE) using panel data over the period 2003 to 2013. The empirical results of theestimation of both ROA and ROE showed that corporate governance was statistically significant in determining theperformance of firms and it had the expected sign (Positive). The leverage of the firm also had the expectednegative sign and was statistically significant in explaining the performance

of companies. Firm size andliquidity were however found to be statistically insignificant in determining the performance of these firms. The study is of the view that firms should invest more since there is a lagged invests and thatthe returns from the investments will improve the financial performance of the firms in the subsequent periods. Again, the study only focused on internal factors of non-financial firms in the Nairobi Stock Exchange.

Vintilă&Nenu (2015) carried out a research on 'An Analysis of Determinants of Corporate Financial Performance: Evidence from the Bucharest Stock Exchange Listed Companies.'The analysis was conducted on Romania's case and included a sample of 46 companies listed on the Bucharest Stock Exchange, within 2009-2013 periods.The results were contradictory regarding the impact of company size. Based on the accounting approach they obtained a positive impact determined by the number of employees, while based on the market approach, performance is negatively correlated with total assets. In terms of indebtedness a negative relationship was revealed. At the same time, the relationship regarding transparency and disclosure in reporting was not statistically validated. The main restrictive issue with this study is that it focused only on internal factors, neglecting other macroeconomic indicators like inflation which plays a major role in the stock exchange market.

The above literatures have not been able to address the current problem of this study, as most of the recent studies reviewed (Omondi&Munturi, 2013; Xu &Banchuenvijit, 2015;Nwangi&Murigu. 2015; Vintilă&Nenu, 2015; and Ayako, et al, 2015) have focused only on internal factors, failing to incorporate other key macroeconomic variables in their study. Also, previous studies like Abbas, et al (2013) and Mirza &Javaed (2013) have failed to extend their study beyond 2011, which questions the currency of their research. While other researchers including Malik (2011) and Charumathi (2012) were only able to cover a period of five and three years respectively in their study, thereby not allowing for a wider

coverage. Above all, we have not been able to identify any study conducted in Nigeria that have made use of our variables combination in the Consumer Goods sector. It is to this end that this study is geared towards filling these gaps.

2.3.1 Liquidity and financial performance

Binti&Binti (2010) found that current ratio is negatively significant to financial performance of 172 listed Malaysian firms. Eljely (2004) empirically examined the relationship of liquidity and profitability as measured by current ratio and cash gap on a sample of 29 joint stock companies in Saudi Arabia and found significant negative relation between the firm's profitability and its liquidity level, as measured by current ratio using correlation and regression analysis.Almajali, et al (2012) found that firm liquidity had significant effect on Financial Performance of insurance companies. The result suggested that the insurance companies should increase the current assets and decrease current liabilities because the positive relationship between the liquidity and financial performance. In contrast to the above reasoning, based on a theoretical model by Jovanovic (1982) suggested that a moderate amount of liquidity may propel entrepreneurial performance, but that an abundance of liquidity may do more harm than good. Therefore, they concluded that the effect of liquidity on firms' financial performance is ambiguous.Agbada&Osuji (2013) in the study of the efficacy of Liquidity management and Banking performance in Nigeria found that there is significant relationship between efficient liquidity management and banking performance and that efficient liquidity management enhance the soundness of bank.

2.3.2 Leverage and financial performance

Akhtar,Javed, Maryam,& Sadia (2012) examines the relationship between financial leverage and financial performance, evidence from fuel and energy sector of Pakistan. Their result shows that there is a general perception that a relationship exists between the financial leverage and the performance of the companies' i.e most of the financial performance

indicators have positive relationship among leverage and the financial performance when compare with debt to equity ratio while the gearing ratio indicates negative relationships with the leverage indicators. The gearing ratio also takes into account the effect of capital with return numerator which not only accommodates the debt but also the outstanding shares of preferred stock. The result adds that gearing ratio may differ from that of debt to equity ratio while debt equity ratio takes into account the long term debt.

Similarly, Rehman (2013) studies the relationship between financial leverage and financial performance in listed sugar companies of Pakistan. The results shows positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity. This negative relationship between debt equity ratio and earnings per share (EPS) support the fact that as debt increases, the interest payment will also rises, so EPS will decrease. Enuju&Soocheong (2005) examine the effect of financial leverage on profitability and risk of Restaurant firms. They find that financial leverage does not influence the restaurant firms' profitability. It is noteworthy that the sign of financial leverage is positive meaning that more leveraged firms had more profits on average even though it was not statistically significant.

2.3.3 Firm size and financial performance

Previous studies in finance have shown that firm size can predict the future stock price (Simerly& Li,2000). For instance, Hvide and Moen (2007) in their study concluded that larger firms have better performance. Flamini et.al (2009) suggested that bigger firms are more competitive than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. Athanasoglou et al., (2005) assert that increase in firm size increases the performance of the bank. Almajali et al (2012) argued that the size of the firm can affect its financial performance. However, for firms that become exceptionally large, the effect of size could be negative due to bureaucratic and other reasons (Yuqi 2007).

Several studies have therefore been conducted to examine the effect of firm size on financial performance. However, the empirical evidence of the relationship between firm size and financial performance reveals mixed results. For example, recent studies conducted internationally by Yavaraj and Abate (2013), Daniel and Tilahun (2012), Abate (2012), Almajali and Yahaya (2012) and Malik (2011) suggested that firm size is positively and strongly related to financial performance of firms. On the other hand, study conducted by Adams & Buckle (2000) found no significant relationship between firm size and financial performance of firms.

2.3.4 GDP and financial performance

Illo (2012) conducted a study on effect of macro-economic factors on financial performance of commercial banks in Kenya. The study use ROA which was regressed against the macroeconomic variables including GDP growth rate, exchange rate (US dollar) the money supply, inflation (CPI), and lending rate of the selected commercial banks. The study found out that financial performance of commercial banks as measured by ROA was found to be positively correlated with money supply, lending interest rate of individual banks, GDP growth and inflation but negatively correlated with exchange rate.

Mwangi (2013) conducted study on effect of macroeconomic variable on financial performance of aviation industry in Kenya. The macroeconomic variables included real exchange rate (USD/Ksh) GDP growth rate, exchange in money supply, and average annual lending interest rate as computed by CBK and inflation rate measured by annual percentage changes in the consumer price index/CPI. The study revealed that ROA of aviation has a weak positive insignificant correlation with GDP growth and annual change in money supply; it also found that ROA has a weak negative significant correlation with exchange rate, annual average lending rate and annual average inflation.Doumpos and Gaganis (2012) estimated the

performance of non-life insurers and found that macroeconomic indicators such as gross domestic product (GDP) growth, inflation and income inequality influence the performance of firms.Grace and Hotchkiss (1995), show that GDP is negatively related to premium and interest rates have a reverse effect on the underwriting profits.

2.3.5 Inflation and financial performance

There are considerable empirical supports for ascertaining the relationship between inflation and performance of firms in the literature. For example, John (1977) carried out empirical study on how inflation affects profit margins of corporate entities. His study revealed that inflation has significant negative effect on the profit margin of corporate organization because provision for such effect has not been made in the preparation of the financial statement.Sheshinski& Weiss (1977) studied a monopolistic firm that faces additional cost for adjusting its selling price in an inflationary environment. Their result revealed that as price increases, the demand for the product decreases; thus the magnitude of a price change increases and this move affects profit of the firm negatively.

Reilly (2010) carried out a study on the impact of imported inflation on reported profit of corporate organization in both developed and emerging economies. His study revealed that during inflationary trend, most of the firms' investment decision is subject to misleading as a result of misleading reported profit as contained in the financial statement because of inflationary effect. Cooper (2003) conducted a research on the way out of inflationary effect on the macroeconomic factors that determine the profitability position of firms. His result revealed that overstated profits as measured in monetary terms based on rising prices will

always induce external users to make investment decision without appreciating the consequences of the reduced value of their investment caused by inflation.

2.4 Theoretical framework

The theoretical framework was done through a review of existing literature carried out on determinants of firm's financial performance which serve as a platform for the review of empirical study as discussed earlier. The following theories therefore have been pinned to this study.

2.4.1 Agency theory

The principal–agent problem or agency dilemma occurs when one person or entity (the "agent") is able to make decisions on behalf of another person or entity (the "principal"). The dilemma exists because sometimes the agent is motivated to act in her own best interests rather than those of the principal. Researchers have extensively studied the conflict between managers and owners regarding the functioning of the firm, although, the research on understanding the differences in behaviour of different shareholder identities is limited. Berle& Means (1932) indicates that with an increase in professionalism of management, firms might be operating for the managers‟ benefit rather than that of the owners. The principal-agent framework is used by Jensen &Meckling (1976) to explain the conflict of interests between managers and shareholders. The agency problem developed by Coase (1960), Jensen &Meckling (1976) and Fama and Jensen (1983) is an essential part of the contractual view of the firm.

Problem arises where the two parties have different interests and asymmetric information (the agent having more information), such that the principal cannot directly ensure that the agent is always acting in his best interests, particularly when activities that are useful to the principal are costly to the agent, and where elements of what the agent does are costly for the

principal to observe. Moral hazard and conflict of interest may arise. Indeed, the principal may be sufficiently concerned at the possibility of being exploited by the agent that he chooses not to enter into a transaction at all, when that deal would have actually been in both parties' best interests: a suboptimal outcome that lowers welfare overall. The deviation from the principal's interest by the agent is called agency costs (Lucian &Jese, 2004).

Agency theory has been used by various researches in determining the financial performance of the firm, where a separation of ownership and control exist. Agency control mechanisms are put in place to align the goals of managers (agents) with those of owners (principals). Agency costs represent the costs of all activities and operating systems designed to align the interests and actions of managers with the interests of owners.

The manner in which the firm finances its activity either with debt or equity, the management of the companies policy and the ability of the Consumer Goods firms to maintain adequate liquidity within the firm to meet up with its daily activities as they arise in a business has the potential to both increase or decrease financial performance due to agency costs.

2.4.2 Liquidity/profitability trade-off theory

The general claim in literature centre around liquidity/profitability trade-off hypothesis which posit that these two financial terms pose conflicting ends to an organisation, hence a pursuit of one will mean a trade-off of the other (Dash & Hanuman, 2008). However, the other side of thinking holds that managers can pursue both liquidity and profitability goals as these two objectives have a direct relationship. These two viewed were observed by Chakraborty (2008) when evaluating the relationship between working capital and profitability of Indian pharmaceutical companies. He pointed out that there were two distinct schools of thought on this Issue: first that working capital is not a factor of improving profitability and there may be a negative relationship between them. Secondly, that investment in working capital plays a

vital role to improve corporate profitability, and unless there is a minimum level of investment of working capital, output and sales cannot be maintained. Under perfect capital market assumptions holding cash neither creates nor destroys value. The firm can always raise funds from capital markets when funds are needed, there are no transaction costs in raising these funds, and the funds can always be raised at a fair price because the capital markets are assumed to be fully informed about the prospects of the firm.

The trade-off theory suggests that firms target an optimal level of liquidity to balance the benefit and cost of holding cash. The cost of holding cash includes low rate of return of these assets because of liquidity premium and possibly tax disadvantage. The benefits of holding cash are in twofold; firstly, the firms save transaction costs to raise funds and do not need to liquidate assets to make payments. Secondly, the firm can use liquid assets to finance its activities and investment if other sources of funding are not available or are extremely expensive.

2.5 Summary

As observed from the review of literatures, factors influencing the financial performance of various firms have been studied, particularly in developed and some developing economies and none from Nigeria in the Consumer Goods sector to the best of my knowledge. Most of the studies carried out in Nigeria were cantered on banking sector and insurance sectors of the economy. Prior researches similar to this study were examined in this chapter. More so, the concepts of micro and macroeconomic attributes and financial performance of listed Consumer Goods firms were discussed.

There is no universal theory on the firm characteristics. This studies reviewed several useful conditional theories that attempt to approach the determination of financial performance such as Agency theory and Liquidity/profitability trade-off theory.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section explained the research design and methodology, target population and sample size, sources and methods of data collection, data analysis and techniques and also operational definition, model specifications and model assumptions were presented.

3.2 Research design

This study investigated determinants of financial performance of listed Consumer Goods in Nigeria and made use of the quantitative research approach by adopting correlational research design to realize it stated objective. The correlational research design was chosen owing to the fact that the design is appropriate in determining the relationship and the degree to which the determinants influence the financial performance of consumer goods firms.The quantitative research approach employed in this study tends to assume that there is a cause and effect relationship between known variables of interest. In line with this, quantitative research tests the theoretically established relationship between variables using sample data with the intention of statistically generalizing for the population under investigation.

3.3 Population and sample size of the study

This study focused on the investigation of main determining factors that drive the financial performance of listed Consumer Goods firms in Nigeria. The population of the study comprised of all the twenty-seven (27) Consumer Goods firms listed on the Nigerian stock

exchange market as at 31st December, 2015.(See Appendix A for population)The use of listed Consumer Goods firms can be justified based on availability and reliability of data. The non-listed Consumer Goods firm are excluded because of poor regulatory oversight as well as data reliability, availability and measurement issues. A sample of fifteen (15) listed Consumer Goods firms was selected from the total of twenty-seven (27) firms after applying the filter sampling criteria. The criteria which was derived by using a purposive sampling technique to filter out consumer goods firms that do not satisfy the following inclusion criteria for selection.

(a) Availability of audited annual reports throughout the sample period.

(b) Retaining of name without change throughout the study period. This is because same data cannot be used for two different names within the same study period. See Appendix B for sampled firms;

Consequently, twelve (12) firms which do not fall into these criteria were eliminated leaving a total of fifteen (15) firms. The remaining 15firms that met the criteria was used as the sample size of the study.

3.4 Sources and method of data collection

The source of data for this research was basically secondary sources. This is due to the fact that the research approach adopted for this study is quantitative in nature.

The main sources of secondary data for this study was derived from the audited annual account and financial statement of listedConsumer Goods industry in Nigeria. Also data was extracted from the CBN statistical bulletin which provided information kon real GDP figures and inflation rate figures.

3.5 Technique of data analysis and justification

The collected data was first analysed using descriptive statistics. Under this, mean, median and standard deviation were extracted and interpreted to a good view of the range of data. From there, panel regression was estimated using fixed and random effect model (see Appendix C for the result).Base on Hausman specification test, the random effect model is more appropriate. The study also went further to conduct panel effect test by carrying out the Breusch and Pagan Langrangian multiplier test for random effect (see Appendix C). The test indicated that there is no panel effect. Thus, the pooled OLS regression was run and the result interpreted based on the hypotheses test result.To conduct this analysis, the researcher used STATA 13. This is due to the fact that the STATA software has a range of advanced tool for panel analysis that a researcher needs to organize and manage their data and then obtain and analyse statistical results. Various robustness tests (normality, multicollinearity, heteroscedasticity) was also carried out to improve the validity of the results.

3.6 Variable measurement

The variablesused as dependent and independent (explanatory) variables in this study are described and summarized below.

3.6.1 Dependent variable

Return on Asset: The reason for choosing this variable is that the Return on Assets (ROA) measures the effectiveness of the economic unity in using its assets to generate profit, the higher this ratio, the better the economic unity of the asset as it indicates the management's efficiency in using its assets to generate profit (Mahdi &Kumars,, 2009), and also it represents the ratio of how much a firm has earned on its asset base, and the return on assets (ROA). It was also used in this study as a dependent variable because accordingly the net profit in relation to the selected firms asset base is a good way to measure the extent of returns on investments made in the firms, return on assets (ROA) has been used as a

dependent variable by: Russo &Fouts(1997), Stanwick&Stanwick (2000), Liargovas&Skandalis (2008), Hifza (2011) and Sayeda (2011).

Return on asset = Net profit before interest and tax/ Average total asset (Liargovas&Skandalis, 2008)

3.6.2 Independent variables

The choice of explanatory variables was based on their theoretical relationship with the dependent variable. This study will take into account both macroeconomic and firm specific variables affecting the performance of Consumer Goods in Nigeria. The macroeconomic variables reflect the market structure in which the industry operates while the firm-specific variables refer to the operating characteristics of the Consumer Goods firms.

The explanatoryvariables will include Liquidity, Leverage, Firm size, GDP growth rate and Inflation rate.

Table 3.1 Variable measurement

S/NO	VARIABLE	MEASUREMENT	PROXIED	SOURCE	EXPECTED EFFECT
1.	Financial performance	Net profit before interest and tax/Average total asset	ROA	Liargovas& Skandalis (2008)	
2.	Liquidity	Current assets/ Current liability	LIQ	Mateev&Anastasov (2010)	Significant
3.	Leverage	Total liability/Total assets	LEV	Ekwe&Duru (2012)	Significant
4.	Firm size	Logarithm of Total assets	FSZ	Omondi&Muturi (2013)	Significant
5.	GDP Growth Rate	Yearly Gross Domestic Product	GDP	Ongore&Kusa (2013)	Significant
6.	Inflation Rate	Yearly average Inflation Rate	INR	Ongore&Kusa (2013)	Significant

Source: Researcher (2016)

Therefore the independent variables liquidity, leverage, firm size, real GDP and inflation are expected to have a significant relationship with the financial performance of listed Consumer Goods in Nigeria.

3.7 Model specification

The major dependent performance indicator used in this study isReturn on Asset (ROA). This is because the ROA is a better way to measure the extent of returns on investments made in the firms (Liargovas& Skandalis, 2008).The major determinants (independent variables) are liquidity, leverage and firm size which was proxied using selected ratios. The macroeconomic variables used as independent variables are GDP growth rate and annual average inflation rate. As earlier stated, the choice of these variables is based on their empirical relationship with the dependent variables, as carried out by previous researchers (Ongor&Kusa, 2013; Mirza &Javaed, 2013; and Duraj&Moci, 2015),and have proved these variables to be significant determinants of firms' financial performance. Therefore in order to determine a dynamic and more consistent relationship between firm's financial performance of consumer goods firms in Nigeria and its determinant, the multiple regression model used for this study is the model adopted by Ongor and Kusa (2013).

Financial performance (FP) of consumer goods firms is estimated using Return on Asset (ROA) as its proxy. This is expressed as follows:

FP=(ROA)

Financial performance proxied by ROA is a function of five explanatory variables, namely: liquidity (LIQ), leverage (LEV), firm size(FSZ), gross domestic product (GDP) and inflation rate (INR)

Therefore,

ROA = ƒ (LIQ, LEV, FSZ, GDP, INR)……. (1)

The panel regression model was used to estimate the impact and the equation is given below;

$$ROA_{it} = \alpha_i + \beta_1 LIQ_{it} + \beta_2 LEV_{it} + \beta_3 FSZ + \beta_4 GDP_{it} + \beta_5 INR_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where,

ROA = Return on asset (measure of financial performance)

α_i = Intercept, a sample-wide constant

LIQ_{it} = Liquidity of firm *i* at time *t*

LEV_{it}= Leverage of firm *i* at time *t*

FSZ_{it}= Firm size of firm *i* at time *t*

GDP_{it}= Gross Domestic Product of firm *i* at time *t*

INR_{it}= Inflation Rate of firm *i*at time *t*

ε_{it}= Error Term where *i* is cross sectional and *t* is time identifier

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Coefficients for the respective determinants

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents the results from the analysis of data and its interpretation. The chapter is divided into four sections. The first section deals with the preliminary analysis of the sample using descriptive statistics. The second section presents correlation analysis between the explained and explanatory variables. This is followed bydiscussion of the various robustness tests conducted in order to improve the validity of the results and testing the hypotheses of the study as well as discussion of findings. The last section ends with a policy implications from the findings.

4.2 Descriptive statistics

The summary statistics of the explained and the explanatory variables are presented in Table 4.1 where minimum, maximum, mean, standard deviation, kurtosis and skewness of the data for the variables in the study are described.

Table 4.1 Summary of descriptive statistics

	Min	Max	Mean	Std. Dev	Kurtosis	Skewness
ROA	-6.83	28.57	8.810	9.873	17.304	-2.099
LIQ	-1.21	2.45	0.682	0.699	3.848	-0.525
LEV	0	2.24	0.594	0.385	15.406	-0.537
FSZ	4.85	8.55	7.167	0.914	3.323	-0.930
GDP	5.42	5.75	5.558	0.450	143.186	-11.538
INR	5.4	13.7	9.882	2.357	2.163	-0.937

Source: Stata Output (2016)

The table 4.1 shows the detail account of the descriptive statistics for the explained and explanatory variables respectively.

The mean values of all the variables as shown in the table ranges from minimum of 0.594 for leverage to a maximum of 9.882 for inflation rate. The standard deviation also stood at a minimum of 0.385 for leverage and a maximum of 9.873 for ROA. The average financial performance as proxied by ROA for listed consumer goods firms during the study period is about 8.810 with standard deviation of 9.873. This implies that there exists a significant variation among the values of profitability across the listed consumer goods firms in Nigeria during the period. In respect of liquidity of the firm, its average value shows 0.682 with a standard deviation of 0.699. This implies that there is moderate variation among the values of liquidity due to its standard deviation.

The mean value of leverage is 0.594with a standard deviation of 0.385. This shows that there is moderate variation across the sample of listed consumer goods firms in Nigeria. Hence, the moderately deviated leverage may have significant impact on the financial performance of listed consumer goods firms in Nigeria as this will be reflected in our regression result. The average value of firm size has become 7.167 with a standard deviation of 0.914. Therefore, there exists a high variation among the value of firm size across the sample consumer goods firms included in this study. The analysis of GDP shows a mean value of 5.558 with the value of standard deviation of 0.450. This implies that GDP rate through the analysis of its standard deviation revealed that GDP across the sample firm deviates from its mean value up to 0.45. Finally, the mean value of inflation rate is 9.882. This implies that there were large differences among the values of inflation across the sample of listed consumer goods firms under the study and this is confirmed by its standard deviation of 2.357. Therefore, this study

is conducted to determine the extent to which the variation in factors affect the financial performance of listed consumer goods firms in Nigeria.

The result as well showed that all the variables used for determinants were all negatively skewed and at the same time, the variables had positive kurtosis which depicts that the data are not likely to be normally distributed, hence, the need to conduct normality test to ascertain the result of normality using Shapiro Wilks test.

4.3 Correlation Matrix

The correlation coefficient represents the linear association or relationship between two variables (explained and explanatory) and also between the explanatory variables themselves. The correlation matrix derived from the Spearman correlation which shows in the table belowcorrelation values displaying the Spearman correlation coefficient between all pairs of variables. Observing the pattern of the correlation between the explained and explanatory variables, it is however deduced that three of the variables correlate perfectly while two of them are not highly correlated. On the other hand, the relationships between most of the explanatory variables are less minimal and could be neglected as there is no problem of singularity of data (that is, there is no interdependency among the independent variables).

Table 4.2 shows the correlation between the dependent variable which is Return on assets(ROA) and independent variables which are liquidity of the firms (LIQ), the leverage (LEV), firm size (FSZ), gross domestic product (GDP) and inflation rate (INR).

Table 4.2 Correlation matrix table

	ROA	LIQ	LEV	FSZ	GDP	INR
ROA	1.000					
GDP	-0.062	1.000				
INR	0.058	-0.213	1.000			
FSZ	0.296	0.240	-0.009	1.000		
LEV	0.133	-0.086	0.014	0.230	1.000	
LIQ	0.311	-0.040	0.058	0.1000	0.091	1.000

Source: Stata Output (2016)

The significance level of this result is indicated in the table 4.2. The coefficient of correlations between liquidity (which is measured as current asset divided by current liability) and financial performance of listed consumer goods firms is 0.311. This implies that liquidity is positively related to financial performance up to the tune of 31.1%. The result therefore revealed that the more liquid the firms are, the more their financial performance.

The analysis of leverage which is measured by ratio of total assets to total liability revealed a positive relationship with return on asset of 0.133, which explains about 13.3% of their correlation. This result is an indication that firms with high leverage will report higher ROA. In other words, as leverage increases, financial performance of consumer goods firm increases.

Analysis of firm size shows that the variable is positively correlated with financial performance of listed consumer goods firms in Nigeria to the tune of 29.6%. This implies that the larger the firm, the higher the financial performance. The table also shows that financial

performance (ROA) is 5.78% correlated with inflation rate. This implies that an increase in inflation rate will slightly increase the financial performance of consumer goods firm in Nigeria. Lastly, the GDP growth is 6.18% correlated negatively with the financial performance of consumer goods firm in Nigeria, which reveals that an increase in GDP will as a matter of fact reduce the financial performance of consumer goods firms. Therefore, liquidity, leverage and firm size are strongly correlated with the dependent variable (ROA).

4.4 Presentation of regression result

This sub section deals with the regression result of the explained variable proxied by ROA and the explanatory variables (LIQ, LEV, FSZ, GDP and INR) of the study. The results generated from the pooled regression result were presented first, followed by the fixed and random effect model before Hausman specification test so as to decide the appropriate model from two possible options. The results are presented below in Table 4.3.

Table 4.3Regression result

ROA	Coefficient	T	P-value
GDP	-1.307	-0.86	0.389
INR	0.204	0.72	0.471
FSZ	3.259	4.18	0.000
LEV	5.390	2.98	0.003
LIQ	4.390	4.54	0.000
_cons	-15.501	-1.64	0.102
F-stat	12.16		
P-value f-stat			0.0000
R-squared	0.2765		
Adj-r-squared	0.2538		

Source: Stata Output (2016)

The regression result revealed that there is significant and positiveimpact of liquidity, leverage, firm size and inflation on returns on asset. While on the other hand, a negative impact can be inferred from the interactions between return on asset and GDP. This implies that liquidity, leverage and firm size significantly impacts returns on asset at 1% significance

level. The t-values of 4.54, 2.98 and 4.18 respectively further substantiated the level of association and its associated significance.

The R-squared value of 0.2765 which is a coefficient of determination reveals that financial performance predictors have a collective impact of 27.65% on returns on asset while the f-stat value of 12.16 reveals that the model used to measure financial performance is properly fit for analysis and well combined as revealed by the p-value of 0.0000 which is statistically significant at 1% significance level. The adjusted R-squared value revealed that on adjustment, there is still a traceable collective effect of 25.38%.

This study went further to conduct both the fixed and random effect models and the result proved to be both significant at 1% and 5% level of significance respectively (see appendix C). As a result, it is hard to choose which model is appropriate. To handle this problem, the study conducted Hausman's specification test in order to decide the appropriate one from the two possible options.

4.5 Robustness test

This sub section presented the result of robustness test conducted to improve the validity of the statistical inferences for the study. The problem of multicollinearity is discussed based on the result generated for the purpose of the study. Multicollinearity is investigated using tolerance and variance inflation factor (VIF) value. An insignificant tolerance value indicates that variable under consideration is almost a perfect linear combination of the explanatory variable already in the equation and that it should not be included in the regression equation. The tolerance value and VIF are employed in this study to test for multicollineraity of the explanatory variable. The result of multicollinearity test is presented in Table 4.4

Table 4.4: Collinearity test

Variables	VIF	1/VIF

FSZ	1.15	0.872
LEV	1.10	0.910
GDP	1.04	0.958
LOQ	1.03	0.971
INR	1.00	0.999

Source: Stata Output (2016)

The Variance Inflation Factors (VIF) and Tolerance Values (TV) for all the variables as shown in Table 4.4 are found to be consistently smaller than 10 and 1.00 respectively, indicating absence of multicollinearity. This shows the appropriateness of the model of the study with the five explanatory variables. In addition, the absence of multicollinearity between the independent variables were further substantiated by the tolerance values which were consistently smaller than 1.

Table 4.5: Robust OLS regression result

ROA	**Coefficient**	**T**	**P-value**
GDP	-1.189	-1.32	0.186
INR	0.107	0.35	0.726
FSZ	3.319	2.88	0.004
LEV	5.306	2.73	0.006
LIQ	4.384	5.15	0.000
_cons	-15.570	-2.24	0.025
F-stat	246.59		
P-value f-stat			0.0000
R-squared: within	0.2945		
between	0.0004		
overall	0.2747		

Source: Stata Output (2016)

Table 4.5 shows the results of the robust OLS regression model. Here, liquidity, leverage and firm size are all significant at 1% level of significance, while Inflation and GDP of the firm are not significant. The R^2 within, between and overall are 29.45%, 0.04% and 27.47% respectively. Within R^2 means that independent variables explain about 29.45% variations in the profitability in this panel from year to year. Between R^2 indicates that independent variables explain just 0.04% variations in profitability from firm (cross-sectional unit) to

other firm. While overall R^2 shows that independent variables explains 27.47% variations in the whole panel.

The outcome of the hausman specification test suggests that the most appropriate model is Random Effect model. The result obtained indicates, that ($p > 0.05$) which is (0.8868) and as such the random effect model should be used in favour of the fixed effect model (see appendix C).Therefore, Hausman specification test proved that random effects model is the more appropriate for this study. To further consolidate on this result, panel effect test was conducted by carrying out the Breusch and Pagan Langrangian multiplier test for random effect. The test indicated that there is no panel effect. Thus, robust OLS regression result was ran and interpreted based on the hypotheses test result. The robust regression resulthas three significant variables which include liquidity (LIQ), leverage (LEV) and firm size (FSZ) while GDP of the firm (GDP) and inflation rate (INR) are insignificant. Therefore, our interpretation is based on the robust OLS regression result.

4.6 Discussion of regression result

The summary of the regression result obtained from panel regression model of the study ***(ROAit= α_i+β1LIQit+β2LEVit +β3FSZit + β4GDPit +β5INRit +eit***) were analysed and discussed.

4.6.1 Liquidity and Financial Performance

Liquidity ratio as measured by the ratio of current assets to current liabilities showed a t-value of 5.15 with a beta value of 4.384 and a p-value of 0.000, which is said to be significant at 1% level of significance. This implies that liquidity ratio is positively and strongly influencing the financial performance of listed consumer goods firms in Nigeria within the study period. This means that the higher the liquidity position of the firm, the more the reported financial performance as proxied by ROA. The positive effect of liquidity is

consistent with our a priori expectation. This implies that for every one point increase in liquidity ratio, the financial performance of listed consumer goods firms in Nigeria will also increase by 5.15 point. Therefore, it can be concluded that the more liquid firms are, the more the return on assets. The positive effect of liquidity may be as a result of adequate liquidity maintained by the consumer goods firms to meet their daily demand as they arise. The result is congruent with the findings of Almajali, et al (2012), Abbas, et al (2013) and Omondi&Munturi (2013). They all suggested that liquidity is positively and strongly related to financial performance. The study contradicts the findings of Ongor&Kusa (2013), Xu &Banchuenvijit (2015), Nwangi&Murigu (2015) and Ayako, et al (2015).

4.6.2 Leverage and Financial Performance

The table 4.5 shows that t-value for leverage is 2.73 and coefficient of 5.306 with a p-value of 0.006 which is therefore significant at 1% level of significance. This signifies that leverage is positively and significantly influencing the financial performance of listed consumer goods firms in Nigeria. This implies that the higher the level of leverage, the higher the financial performance of listed consumer goods firm proxied by ROA. The positive effect of the value of leverage is consistent with our a priori expectation, implying that every one point increase in value of leverage causes financial performance to increase by 5.390. It can be concluded that firms with high leverage will have positive impact on their profitability. This finding is in harmony with the findings of Akhtar,et al (2012), Rehman (2013) andNwangi&Murigu (2015), but contradict the findings ofMalik (2011), Charumathi (2012), Mirza &Javaed (2013), Abbas, et al (2013), Xu &Banchuenvijit (2015) and Ayako, Kungu&Githui(2015).

4.6.3 Firm size and Financial Performance

The random effects regression result of firm size of consumer goods firms measured by the natural logarithm of total assets, revealed that firm size as shown in table 4.5 has a t-value of 2.88 and a coefficient value of 3.319 with a significant value of 0.004. This signifies that firm size has positive influence of 1% significance level on financial performance of listed consumer goods firms in Nigeria, that is, the greater the size of a firm, the higher the reported ROA. The positive effect of firm size is consistent with our a priori expectation. This implies that for every one unit increase in firm size, the ROA will increase by 3.259. The findings is in support of the resource based theory which articulates a positive and significant relationship between firm size and financial performance of a firm. But contradicts Majumdar (1997) who opined that as firms becomes larger; they might suffer from inefficiencies leading to inferior financial performance. The finding is in line with the findings of Malik (2011), Abate (2012), Almajili and Yahya (2012),Abbas, et al (2013) and Omondi&Munturi (2013), but contradict that of Ayako, et al (2015) and Adams & Buckle (2000).

4.6.4 GDP growth rate and Financial Performance

The results revealed that there is no significant relationship between GDP growth and the financial performance of listed consumer goods firms in Nigeria. As shown in Table 4.3, the coefficient of GDP growth is -1.189 with a t-statistics of -1.32 and a p-value of 0.186. This signifies that the GDP growth rate does not significantly influence the financial performance of listed consumer goods firms in Nigeria. This implies that whether there is an increase or decrease in GDP growth, the financial performance may not necessarily change either by increasing or decreasing ROA. Thus, it can be concluded that the increase or decline of GDPin the economy does not produce any outcome to the consumer goods firms. The finding is in line withMwangi (2013), Ongor andKusa (2013) and contradicts those reported byDoumpos and Gaganis (2012), Duraj and Moci (2015).

4.6.5 Inflation rate and Financial Performance

The inflation rate of consumer goods firms measured by the annual inflation rate shows a t-value of 0.35 and a coefficient of 0.107 with p-value of 0.726 which is statistically insignificant. This shows that inflation rate has a positive coefficient but insignificant in explaining and predicting the financial performance of listed consumer goods firms in Nigeria within the study period. Therefore, it can be concluded that inflation rate still explains the variation in profitability of consumer goods firm positively, although not to a significant level. Our findings is in line with the findings of Ongor andKusa (2013), but contradicts the findings of Cooper (2003),Reilly (2010), Duraj and Moci (2015). Based on the findings of this study, inflation rate is not considered as a powerful explanatory variable in determining the financial performance of consumer goods firm in Nigeria.

Cumulatively, the R^2(0.2747) which is the multiple coefficient of determination gives the percentage or proportion of total variation in the dependent variables measured by ROA explained by the independent variables jointly. Hence, the result of R^2 signifies that 27.47% of total variation in the profitability measured by ROA is caused by liquidity of consumer goods firm, leverage, firm size, GDP growth rate and inflation rate. This indicates that the model is fit and the explanatory variables are properly selected, combined and used.

The F-statistics or Wald chi-square is used interchangeably. Therefore, Wald chi^2 of 246.59 which is significant at one percent (1%) indicates that financial performance and firm specific characteristics model is fit. This means that there is 99.9% probability that the relationship among the variables is not due to mere chance. Hence, the function for our regression equation is given below:

$$ROAit=(15.570)+4.384LIQit+5.306LEVit+3.319FSZit+(1.189)GDPit+0.107INRit+eit$$

4.7 Hypothesis Testing

This section presents the result generated from the robust OLS regression analysis in order to test the hypotheses of the study stated in chapter one. The regression result used to test the hypotheses of the study is presented in table 4.6 below;

Table 4.6Test result

ROA	Coefficient	Hypotheses	P-value	Decision
LIQ	4.384	1	0.000	Supported
LEV	5.306	2	0.006	Supported
FSZ	3.319	3	0.004	Supported
GDP	-1.189	4	0.186	Not supported
INR	0.107	5	0.726	Not supported

Table 4.6 shows that four of our explanatory variables are positive, while the remaining one of them is negative. Three of the independent variables (liquidity, leverage and firm size) are significant at 1%, except for GDP and inflation rate which are statistically insignificant. This indicates that all the firm specific attributes used in the study explained financial performance of listed consumer goods firms in Nigeria within the study period,while the macroeconomic factors (GDP and inflation) does not explain the financial performance of consumer goods firms. This shows the fitness of the study model and correct selection of the explanatory variables. The results for each hypothesis stated in chapter one is presented below:

4.7.1 Impact of Liquidity on the financial performance

H01: Liquidity has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

Liquidity measured by the ratio of current assets to current liabilities is found to be positively significant at 1% level. This means that liquidity is associated with financial performance of

listed consumer goods firms in Nigeria. Therefore, liquidity has significantly affected the financial performance of listed consumer goods firms in Nigeria.

From the result above, it can be deduced that liquidity is statistically significant in influencing financial performance of listed consumer goods firms in Nigeria. This provided evidence for rejecting null hypothesis one of the study. Thus, H01is rejected.

4.7.2 Impact of Leverage on financial performance

H02; Leverage has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

Leverage is taken as total liabilities divided by the total assets of insurance firms and it is found to be positively significant at 1% level. This means that the leverage of the firm is associated with the financial performance of listed consumer goods firms in Nigeria. Therefore, leverage has significantly affected the financial performance of listed consumer goods firms in Nigeria.

As seen in the above result, leverage is statistically significant in influencing the financial performance measured by ROA. As a result, null hypothesis two is rejected. Thus, H02 is rejected.

4.7.3 Impact of Firm size on the financial performance

H03: Firm size has no significant impact on financial performance of listed consumer goods firms in Nigeria.

Firm size which measured by natural logarithm of total assets is found to be positively significant at 1% level. This means that the larger the firm, the higher the reported ROA. This implies that the variable is associated with financial performance of listed consumer goods firms in Nigeria. Therefore, firm size has significantly influenced the financial performance proxied by ROA.

With respect to firm size, the variable is statistically significant in influencing the ROA of listed consumer goods firms as evident in the above result. This provided grounds for rejecting null hypothesis three which states that firm size has no significant impact on the financial performance of listed insurance firms in Nigeria. Thus, H03 is rejected.

4.7.4 Impact of GDP growth rate on the financial perfromance

H04: GDP growth rate has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

GDP growth rate measured by real GDP of the country is found to be statistically insignificant which means that GDP growth is not significantly associated with the financial performance of listed consumer goods firms in Nigeria.

As evident in the result above, GDP growth is statistically insignificant in influencing the financial performance of listed consumer goods firms in Nigeria. This provides an evidence of failing to reject null hypothesis four of the study which states that GDP growth rate has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

4.7.5 Impact of Inflation rate on the financial performance

H05: Inflation rate has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

Inflation rate which is measured by the annual inflation rate of the country is found to be statistically insignificant which means that the variable is not significantly associated with financial performance of listed consumer goods firms in Nigeria. Therefore, inflation rate has insignificant influence on the financial performance measured by ROA.

The inflation rate from the above result is statistically insignificant in influencing the financial performance measured by ROA. This provided enough evidence of failing to reject

null hypothesis five of the study which states that inflation rate has no significant impact on the financial performance of listed consumer goods firms in Nigeria.

4.8 Policy implications

Findings of this study have several implications for investors and consumer goods firms. Viewing evidence about what drives consumer goods firm's profitability will help business understand which factors are critical to track and analyse in order to attain operational success. It is paramount to note that, if consumer goods firms know the factors that can boost performance, it will culminate into creating increased competition in the market place. Investors can use the knowledge derived from the findings of this study to take care of their investment. The outcomes of this study contribute towards a better understanding of the firm specific and macroeconomic characteristics that affect financial performance of listed consumer good firms in Nigeria.

The findings revealed that liquidity is positively and significantly influencing the financial performance of listed consumer goods firms in Nigeria. The implication of this is that higher liquidity would allow a firm to cope with its obligation during the period of low earning. This can also be advantageous to the management as they can make use of their liquid assets to finance their activities and investments when external finances are not available or too costly.

The findings also revealed that leverage is positively and significantly related with the performance of the listed consumer goods firms in Nigeria. This predicts that the performances of highly levered consumer goods companies in Nigeria are going to be more profitable and implies debt financingis better thanequity financing. The leverage ratio level of the consumer goods firms affects their profitability positively. From the result, it implies that highly profitable consumer goods firms most likely rely more ondebt capital thaninternally generated funds and equity capital as the source of financing.

Finally, the analysis revealed that firm size is positively and significantly influencing the financial performance of listed consumer goods firms in Nigeria. This implies that the larger the firm, the higher the reported financial performance. This result has implication on the firm, as it prescribes that increasing firm size allows for incremental advantages because the size of the firm enables it to raise the barriers of entry to potential entrants as well as gain leverage on the economies of scale to attain higher profitability. In other words, the higher the barrier to entry, the lower will be the threat of potential competition, and the higher the profits that existing firms can earn without inducing entry.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This study investigates firm specifics and macroeconomic factors affecting the financial performance of listed consumer goods companies in Nigeria for the period 2006-2016. The study used secondary data obtained from the annual reports and accounts of 15 of the consumer goods companies. Multiple regression was used with the aim of explaining and predicting empirically the relationship between firm specific with macroeconomic factors and financial performance of the companies. The model used for the purpose of the study estimates the association and impact of five explanatory variables on one explained variable through the use of generalized least square techniques.

Panel data techniques (fixed effects and random effects models) were utilized to investigate the impact of both internal and external factors on financial performance of listed consumer goods firms in Nigeria. The Hausman specification test showed that random effects model is the more appropriate model in this study. Panel effect test was further conducted by carrying out the Breusch and Pagan Langrangian multiplier test for random effect (see Appendix C). The test indicated that there is no panel effect. Thus, the robust OLS regression result was ran and interpreted based on the hypotheses test result. The results of the pooled regression revealed that liquidity, leverage and firm size are significant determinants of firm performance while GDP growth rate and interest rate are insignificant. Specifically, liquidity, leverage and firm size have significant positiverelationships with performance. However, interest rate and GDP growth are not significant. Thus, firm specific characteristics used in this study proved to be determinants of financial performance of listed consumer goods firms in Nigeria.

5.2 Conclusion

After careful review of the results and discussion, as well as relevant literatures, the study concludes that:

There is a positive and insignificant impact of interest rate on financial performance of consumer goods firms proxied by ROA. This means that interest rate is positively and insignificantly in explaining the financial performance of listed consumer goods firms in Nigeria within the period under review. Although the result showed no statistical significance between these variables, it can be concluded that inflation rate still explains the variation in profitability of consumer goods companies positively.

There is positive and significant impact of firm size on the financial performance of consumer goods companies. This implies that the larger the firm, the higher the financial performance of listed consumer goods firms in Nigeria.

GDP growth ratehas negative and insignificant impact on the financial performance of listed consumer goods firms in Nigeria. This implies that the GDP growth rate do not significantly influence the financial performance of listed consumer goods firms in Nigeria. Thus, it can be concluded that the increase or decline of GDPin the economy does not produce any outcome to the consumer goods firms.

There is a positive and significant impact of liquidity on financial performance of listed consumer goods firms in Nigeria. This implies that the more liquid the firms are, the better is their financial performance.

Finally, there is positive and significant impact of leverage on financial performance of listed consumer goods firms in Nigeria. This implies that the higher the level of leverage, the higher the financial performance of listed consumer goods firms.

5.3 Recommendations

In the light of the analysis and findings, the following suggestions are proffered;

(i) Consumer goods firms in Nigeria should maintain a high liquidity profile and standard in order to remain profitable and sustainable.

(ii) More attention should be paid on leverage. Leverage has shown positive results. The results showed a positive relation between leverage and financial performance (ROA). Increased level of leverage provides the firm with tax advantage but leverage beyond certain level increases the bankruptcy cost

(iii) Considerable attention should be paid on increasing the firm's assets as it has been seen from the result that relation between size and firm's financial performance is positive. Increasing the assets of the firm, can lead to a sustainable position and improve competitive advantage. Larger companies have more negotiating power and enjoy economies of scale. Therefore attention should be given to this regard.

(iv) The result proved GDP is negatively insignificant with financial performance, there is therefore need for government and private organization partnership effort, gearing towards controlling the economic growth through the monetary policy timely implementation.

(v) Finally, there should be a frantic effort to increase the expansionary policy mechanism as a tool to checkmate inflationary effects on firms' performance and the economy at large.

5.4 Limitations of the study

The following are the limitations of this study:

This study focused on both firm specific attributes and microeconomic factors that influence the financial performance of listed consumer goods firms in Nigeria. However, there are still other likely determinants which the study did not cover. These include, among others, the industry specific attributes and other macro–economic determinants such as industry size, interest rate and unemployment rate.

The study used only return on assets as tool for measuring financial performance. Other measurement tools of financial performance such as return on equityand net profit margin need to be used as well.

5.5 Suggestions for further Research

This study has considered only five explanatory variables relating to financial performance of listed consumer goods firms in Nigeria. Future studies may consider more internal variables, both industry specific and macro-economic variables. Again, it is suggested that Return on Equity should be regressed on the explanatory variables used in this study to find their extent of relationship on financial performance.

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Appendix A

Population

S/no.	Company	Abbrev.	Date of enlistment
1.	7 up Bottling Company Plc	7 up	June 1, 1986
2.	Beta Glass Plc	Betaglass	1986
3.	Cadbury Nig. Plc	Cadbury	1976
4.	Champion Brew. Plc	Champion	Sept 1, 1983
5.	Dangote Flour Mill Plc	Dangflour	Feb 4, 2008
6.	Dangote Sugar Refinery Plc	Dangsugar	Mar 8, 2007
7.	DN Tyre and Rubber Plc	Dunlop	1961
8.	Flour Mill Nig. Plc	Flourmill	Aug 14, 1979
9.	Golden Guinea Brew. Plc	Goldbrew	1979
10.	Guinness Nig. Plc	Guinness	Nov, 1965
11.	International Brew. Plc	Intbrew	Apr 6, 1995
12.	Mcnichols Plc	Mcnichols	Dec 18, 2009
13.	Multitrex Integrated Foods Plc	Multitrex	Nov 1, 2010

14.	N.Nigeria Flour Mill Plc	NNFM	1978
15.	Nascon Allied Industries Plc	Nascon	Oct 20, 1992
16.	Nestle Nig. Plc	Nestle	Apr 20, 1979
17.	Nigerian Enamelware Plc	Enamelware	Dec 28, 1979
18.	PS Mandrids and Co. Plc	Mandrids	Feb, 1979
19.	PZ Cussons Nig. Plc	PZ	Feb 18, 1974
20.	Premier Brew. Plc	Prembrew	1988
21.	Nigerian Brew. Plc	NB	Sept 5, 1973
22.	UTC Nigeria Plc	UTC	Jan 31, 1972
23.	Unilever Nig. Plc	Unilever	Sept, 1973
24.	Union Dicon Salt Plc	Uniondicon	Sept 23, 1993
25.	Vita Foam Nig. Plc	Vitafoam	Nov, 1978
26.	Vono Product Plc	Vono	Apr, 1974
27.	Honeywell Flour Mill Plc	Honeywell	Oct 20, 2009

Appendix B

Sample size

S/no.	Company	Abbrev.	Date of enlistment
1.	7 up Bottling Company Plc	7 up	June 1, 1986
2.	Cadbury Nig. Plc	Cadbury	1976
3.	Champion Brew. Plc	Champion	Sept 1, 1983
4.	Flour Mill Nig. Plc	Flourmill	Aug 14, 1979
5.	Guinness Nig. Plc	Guinness	Nov, 1965
6.	International Brew. Plc	Intbrew	Apr 6, 1995
7.	Nascon Allied Industries Plc	Nascon	Oct 20, 1992
8.	N.Nigeria Flour Mill Plc	NNFM	1978
9.	Nestle Nig. Plc	Nestle	Apr 20, 1979
10.	Nigerian Brew. Plc	NB	Sept 5, 1973
11.	PZ Cussons Nig. Plc	PZ	Feb 18, 1974
12.	UTC Nigeria Plc	UTC	Jan 31, 1972
13.	Unilever Nig. Plc	Unilever	Sept, 1973

14.	Union Dicon Salt Plc	Uniondicon	Sept 23, 1993
15.	Vita Foam Nig. Plc	Vitafoam	Nov, 1978

Appendix C

```
. sum roa gdp inf fsz lev liq, detail
```

roa

Percentiles		Smallest		
1%	-22.95	-61.24		
5%	0	-22.95		
10%	.11	-13.67	Obs	165
25%	3.4	-6.83	Sum of Wgt.	165
50%	7.43		Mean	8.809758
		Largest	Std. Dev.	9.872634
75%	15.26	25.88		
90%	20.96	26.09	Variance	97.46889
95%	22.87	26.52	Skewness	-2.098563
99%	26.52	28.57	Kurtosis	17.30391

gdp

Percentiles		Smallest		
1%	5.39	0		
5%	5.42	5.39		
10%	5.42	5.42	Obs	165
25%	5.48	5.42	Sum of Wgt.	165
50%	5.61		Mean	5.558485
		Largest	Std. Dev.	.4497135
75%	5.71	5.75		
90%	5.71	5.75	Variance	.2022422
95%	5.75	5.75	Skewness	-11.53802
99%	5.75	5.75	Kurtosis	143.1863

inf

Percentiles		Smallest		
1%	5.4	5.4		
5%	5.4	5.4		
10%	8	5.4	Obs	165
25%	8.5	5.4	Sum of Wgt.	165
50%	9		Mean	9.881818
		Largest	Std. Dev.	2.356938
75%	12.2	13.7		
90%	12.5	13.7	Variance	5.555155
95%	13.7	13.7	Skewness	-.093717
99%	13.7	13.7	Kurtosis	2.163038

fsz

Percentiles		Smallest		
1%	4.84	4.84		
5%	5.03	4.84		
10%	5.57	4.84	Obs	165
25%	6.64	4.85	Sum of Wgt.	165
50%	7.39		Mean	7.167429
		Largest	Std. Dev.	.9137494
75%	7.84	8.54		
90%	8.09	8.54	Variance	.834938
95%	8.4	8.55	Skewness	-.9303546
99%	8.55	8.55	Kurtosis	3.322856

lev

	Percentiles	Smallest		
1%	0	-1.88		
5%	.01	0		
10%	.31	0	Obs	165
25%	.48	0	Sum of Wgt.	165
50%	.5904849		Mean	.5939816
		Largest	Std. Dev.	.3854622
75%	.7	1.68		
90%	.84	1.82	Variance	.1485811
95%	1.13	1.87	Skewness	-.5365185
99%	1.87	2.24	Kurtosis	15.40578

liq

	Percentiles	Smallest		
1%	-1.33	-1.44		
5%	0	-1.33		
10%	0	-1.32	Obs	165
25%	.12	-1.21	Sum of Wgt.	165
50%	.74		Mean	.6819394
		Largest	Std. Dev.	.699382
75%	1.08	1.89		
90%	1.58	2.03	Variance	.4891352
95%	1.78	2.08	Skewness	-.524679
99%	2.08	2.45	Kurtosis	3.847641

```
. swilk roa gdp inf fsz lev liq
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
roa	165	0.84143	20.025	6.828	0.00000
gdp	165	0.15548	106.651	10.639	0.00000
inf	165	0.95880	5.203	3.757	0.00009
fsz	165	0.92308	9.714	5.180	0.00000
lev	165	0.78817	26.751	7.488	0.00000
liq	165	0.96270	4.710	3.531	0.00021

```
. spearman  roa gdp inf fsz lev liq
(obs=165)
```

	roa	gdp	inf	fsz	lev	liq
roa	1.0000					
gdp	-0.0618	1.0000				
inf	0.0578	-0.2133	1.0000			
fsz	0.2961	0.2404	-0.0088	1.0000		
lev	0.1331	-0.0864	0.0137	0.2303	1.0000	
liq	0.3106	-0.0404	0.0576	0.1000	0.0914	1.0000

```
. reg roa gdp inf fsz lev liq
```

Source	SS	df	MS		
Model	4420.38777	5	884.077553	Number of obs	= 165
Residual	11564.5108	159	72.7327723	F(5, 159)	= 12.16
				Prob > F	= 0.0000
Total	15984.8986	164	97.4688936	R-squared	= 0.2765
				Adj R-squared	= 0.2538
				Root MSE	= 8.5284

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gdp	-1.30715	1.51309	-0.86	0.389	-4.295496	1.681197
inf	.2040676	.2826876	0.72	0.471	-.3542394	.7623746
fsz	3.259292	.7802564	4.18	0.000	1.718289	4.800295
lev	5.39596	1.811286	2.98	0.003	1.818677	8.973243
liq	4.390341	.9661598	4.54	0.000	2.482179	6.298503
_cons	-15.50082	9.427964	-1.64	0.102	-34.12101	3.119373

```
. vif
```

Variable	VIF	1/VIF
fsz	1.15	0.872484
lev	1.10	0.909806
gdp	1.04	0.957823
liq	1.03	0.971313
inf	1.00	0.999025
Mean VIF	1.06	

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa

         chi2(1)      =    30.50
         Prob > chi2  =   0.0000

. xtreg roa gdp inf fsz lev liq, re

Random-effects GLS regression                   Number of obs      =       165
Group variable: id                              Number of groups   =        15

R-sq:  within  = 0.0732                         Obs per group: min =        11
       between = 0.5277                                        avg =      11.0
       overall = 0.2757                                        max =        11

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     21.71
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0006
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
gdp	-.8343629	1.355087	-0.62	0.538	-3.490285	1.821559
inf	.2006475	.2414528	0.83	0.406	-.2725913	.6738864
fsz	2.392674	1.255962	1.91	0.057	-.0689657	4.854313
lev	4.596407	1.865852	2.46	0.014	.9394041	8.25341
liq	3.651904	1.099257	3.32	0.001	1.4974	5.806408
_cons	-10.90509	10.48671	-1.04	0.298	-31.45866	9.648488
sigma_u	5.2158591					
sigma_e	7.3340274					
rho	.33589493	(fraction of variance due to u_i)				

```
. estimates store random

. xtreg roa gdp inf fsz lev liq, fe

Fixed-effects (within) regression               Number of obs      =       165
Group variable: id                              Number of groups   =        15

R-sq:  within  = 0.0756                         Obs per group: min =        11
       between = 0.4986                                        avg =      11.0
       overall = 0.2536                                        max =        11

                                                F(5,145)           =      2.37
corr(u_i, Xb)  = 0.3404                         Prob > F           =    0.0422

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         gdp |  -.4704978   1.399886    -0.34   0.737    -3.237316     2.29632
         inf |    .19714   .2431489     0.81   0.419     -.283434     .677714
         fsz |   1.02012   1.783016     0.57   0.568    -2.503939     4.544179
         lev |   4.216002   1.966602     2.14   0.034     .3290926     8.102912
         liq |   3.354725    1.19409     2.81   0.006     .9946536     5.714796
       _cons |  -2.626674   12.94394    -0.20   0.839    -28.20984     22.95649
-------------+----------------------------------------------------------------
     sigma_u |  5.5090677
     sigma_e |  7.3340274
         rho |  .36071578   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(14, 145) =     5.00                 Prob > F = 0.0000

. estimates store fixed
```

```
. xtreg roa gdp inf fsz lev liq, fe

Fixed-effects (within) regression               Number of obs      =       165
Group variable: id                              Number of groups   =        15

R-sq:  within  = 0.0756                         Obs per group: min =        11
       between = 0.4986                                        avg =      11.0
       overall = 0.2536                                        max =        11

                                                F(5,145)           =      2.37
corr(u_i, Xb)  = 0.3404                         Prob > F           =    0.0422

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         gdp |  -.4704978   1.399886    -0.34   0.737    -3.237316     2.29632
         inf |     .19714   .2431489     0.81   0.419     -.283434     .677714
         fsz |    1.02012   1.783016     0.57   0.568    -2.503939     4.544179
         lev |   4.216002   1.966602     2.14   0.034     .3290926     8.102912
         liq |   3.354725    1.19409     2.81   0.006     .9946536     5.714796
       _cons |  -2.626674   12.94394    -0.20   0.839    -28.20984     22.95649
-------------+----------------------------------------------------------------
     sigma_u |  5.5090677
     sigma_e |  7.3340274
         rho |  .36071578   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(14, 145) =      5.00                 Prob > F = 0.0000

. estimates store fixed

. xtreg roa gdp inf fsz lev liq, re

Random-effects GLS regression                   Number of obs      =       165
Group variable: id                              Number of groups   =        15

R-sq:  within  = 0.0732                         Obs per group: min =        11
       between = 0.5277                                        avg =      11.0
       overall = 0.2757                                        max =        11

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     21.71
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0006

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         gdp |  -.8343629   1.355087    -0.62   0.538    -3.490285     1.821559
         inf |   .2006475   .2414528     0.83   0.406    -.2725913     .6738864
         fsz |   2.392674   1.255962     1.91   0.057    -.0689657     4.854313
         lev |   4.596407   1.865852     2.46   0.014     .9394041      8.25341
         liq |   3.651904   1.099257     3.32   0.001       1.4974     5.806408
       _cons |  -10.90509   10.48671    -1.04   0.298    -31.45866     9.648488
-------------+----------------------------------------------------------------
     sigma_u |  5.2158591
     sigma_e |  7.3340274
         rho |  .33589493   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store random
```

```
. hausman fixed
```

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
gdp	-.4704978	-.8343629	.3638651	.3513111
inf	.19714	.2006475	-.0035076	.0286695
fsz	1.02012	2.392674	-1.372554	1.265585
lev	4.216002	4.596407	-.3804049	.6213854
liq	3.354725	3.651904	-.2971788	.4663541

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 1.72
Prob>chi2 = 0.8868

```
. xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

roa[id,t] = Xb + u[id] + e[id,t]

Estimated results:

	Var	sd = sqrt(Var)
roa	97.46889	9.872634
e	53.78796	7.334027
u	27.20519	5.215859

Test: Var(u) = 0

chi2(1) = 1.08

Prob> chi2 = 0.4200

```
. xtreg roa liq lev fsz inf gdp, re vce (robust)

Random-effects GLS regression                   Number of obs      =       165
Group variable: fyears                          Number of groups   =        11

R-sq:  within  = 0.2945                         Obs per group: min =        15
       between = 0.0004                                        avg =      15.0
       overall = 0.2747                                        max =        15

Random effects u_i ~ Gaussian                   Wald chi2(6)       =    246.59
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                    (Std. Err. adjusted for clustering on fyears)
```

roa	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
liq	4.384233	.8515963	5.15	0.000	2.715135	6.053331
lev	5.305693	1.946996	2.73	0.006	1.489651	9.121735
fsz	3.319103	1.153973	2.88	0.004	1.057359	5.580848
inf	.1066532	.3040624	0.35	0.726	-.4892981	.7026046
gdp	-1.189219	.8992281	-1.32	0.186	-2.951673	.573236
_cons	-15.56985	6.95196	-2.24	0.025	-29.19545	-1.944264
sigma_u	1.1651099					
sigma_e	8.4827876					
rho	.01851569	(fraction of variance due to u_i)				