The Impact of Capital Structure on Firms' Performance in Nigeria

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ABSTRACT

This study seeks to investigate the impact of capital structure on firm performance in Nigeria from 2000 to 2010. We considered the impact of some key macroeconomic variables (gross domestic product and inflation) on firm performance. The traditional theory of capital structure was employed to determine the significance of leverage and macroeconomic variables on firm's performance.

The study makes a comparative analysis of the selected firms which are classified into highly and lowly geared firms setting a leverage threshold of above 10% as being highly geared. A static panel analysis was used to achieve the objectives of the study. Using fixed effect regression estimation model, a relationship was established between performance (proxied by return on investment) and leverage of the firms over a period of ten years. The results provide strong evidence in support of the traditional theory of capital structure which asserts that leverage is a significant determinant of firms' performance. A significant negative relationship is established between leverage and performance.

From our findings, we strongly recommended that firms should use more of equity than debt in financing their business activities, this is because in spite of the fact that the value of a business can be enhanced with debt capital, it gets to a point that it becomes detrimental. Each firm should establish with the aid of professional financial managers, that particular debt-equity mix that maximizes its value and minimizes its weighted average cost of capital.

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CHAPTER ONE

1.1   Introduction

Financing and investment are two major decision areas in a firm. In the financing decision the manager is concerned with determining the best financing mix or capital structure for his firm. Capital structure decision is the mix of debt and equity that a company uses to finance its business (Damodaran, 2001). Capital structure has been a major issue in financial economics ever since Modigliani and Miller showed in 1958 that given frictionless markets, homogeneous expectations; capital structure decision of the firm is irrelevant. By relaxing the assumptions and analyzing their effects, theories seek to determine whether an optimal capital structure exists or not, and if so what could possibly be its determinants. The relationship between capital structure decisions and firm value has been extensively investigated in the past few decades. Capital structure could have two effects; according to Desai (2007) firms of the same risk class could possibly have higher cost of capital with higher leverage. Second, capital structure may affect the valuation of the firm, with more leveraged firms, being riskier and consequently valued lower than the less leveraged firms. If the manager of a firm has the shareholders' wealth maximization as his objective, then capital structure is an important decision, for it could lead to an optimal financing mix which maximizes the market price per share of the firm.

If capital structure is not irrelevant, then there is also another thing to consider: the interaction between financing and investment. In order to try to distinguish the effects of various determinants on capital structure, it is assumed that the investment decision is held constant. The choice of capital structure of a firm is determined by a number of factors which include the market forces, type of industry, internal policies of the firm, size of the firm, profitability, corporate tax and bankruptcy costs. There have been various schools of thoughts on the relevance of capital structure to a firm's performance and this study intends to examine the impact on Nigeria firms. To get an acceptable result, this study intends to make a comparison between two set of companies; lowly geared and highly geared companies in the private sector of the Nigeria Economy.

In Nigeria, most corporate decisions are dictated by managers. Equity issues are often favored over debt in spite of debt being a cheaper source of fund; even where debts are employed, it is usually on the short term basis. This could be as a result of the manager's tendency to protect his undiversified human capital and avoid the performance pressure associated with debt commitment. More often, when debts are issued voluntarily, particularly long term debt, it is used as an anti-takeover device against the challenge of potential corporate rider. The corporate sector in the country is characterized by a large number of firms operating in a largely deregulated and increasingly competitive environment. Since 1987, financial liberalization resulting from the Structural Adjustment Program changed the operating environment of firms.   The macroeconomic environment has not been conducive for business while both monetary and fiscal policies of government have not been stable. Following the Structural Adjustment Program, lending rate rose to a high side from 1.5 percent in 1980 to a peak of 29.8 percent in 1992; but it declined to 16.9 percent in 2006. The high interest rate implies that costs of borrowing went up in organized financial market, thus increased the cost of operations. The Structural Adjustment Program (SAP) came with its conditions, policies that liberalized and opened up the Nigerian economy to the outside world even when the nation's domestic produce cannot stand in equal comparison to international commodities, causing unfavorable balance of payment as domestic demand for foreign goods increased also led to the high volatility of the exchange rate system thereby rendering business in Nigeria uncompetitive, especially given high cost of borrowing and massive depreciation of Naira, which culminated to increasing rate of Inflation in Nigeria.

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1.2   Problem Statement

A firm's capital structure refers to the mix of its financial liabilities. It has long been an important issue from the strategic management standpoint since it is linked with a firm's ability to meet the demands of various stakeholders (Roy and Minfang, 2000). Debt and equity are the two major classes of liabilities, with debt holders and equity holders representing the two types of investors in the firm. Each of these is associated with different levels of risk, benefits, and control. While debt holders exert lower control, they earn a fixed rate of return and are protected by contractual obligations with respect to their investment. Equity holders are the residual claimants, bearing most of the risk and have greater control over decisions.

An appropriate capital structure is a critical decision for any business organization. The decision is important not only because of the need to maximize returns to various organizational constituencies, but also because of the impact such a decision have on an organization's ability to deal with its competitive environment. Following the work of Modigliani and Miller (1958 and 1963), much research has been carried out in corporate finance to determine the influence of a firm's choice of capital structure on performance. The difficulty facing companies when structuring their finance is to determine its impact on performance, as the performance of the business is crucial to the value of the firm and consequently, its survival.

Managers have numerous opportunities to exercise their discretion with respect to capital structure decisions. The capital structure employed may not be meant for value maximization of the firm but for protection of the manager's interest especially in organizations where corporate decisions are dictated by managers and shares of the company closely held (Dimitris, and Psillaki, 2008). Even where shares are not closely held, owners of equity are generally large in number and an average shareholder controls a minute proportion of the shares of the firm. This gives rise to the tendency for such a shareholder to take less interest in the monitoring of managers who left to themselves pursue interest different from owners of equity

The difficulty facing firms in Nigeria has to do more with the financing – whether to raise debt or equity capital. The issue of finance is so important that it has been identified as an immediate reason for business failing to start in the first place or to progress. Thus it is necessary for firms in Nigeria to be able to finance their activities and grow over time, if they are ever to play an increasing and predominant role in creating value added, as well as income in terms of profits. From the foregoing, it is therefore important to understand how firm's financing choice affects their performance. It is evidently clear that both internal (firm specific) factors and external (macroeconomic) factors could be very important in explaining the performance of firms in an economy. Thus, the central point of this study is to assess the impact of capital structure on firm's performance in Nigeria. A theoretical and empirical analysis of the lowly and highly geared companies in Nigeria will be critically assessed. Furthermore, macroeconomic factors alongside firm's specific factors that could drive the performance of Nigeria firms will be closely considered.

1.3   Objective of the Study

The main objective of this study is to examine the impact of leverage on the value of the selected firms. It intends making a comparison between the firms' value of lowly and highly geared companies and establish whether an optimal capital structure exists. This study will also take a look at the effect of macroeconomic variables like gross domestic product, interest rate and inflation on the financing decisions of firms and consequently their values.

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1.4   Justification of the Study

This study is utmost importance to both researchers and business analysts as it looks into the realm of capital financing. This study adds to existing literatures to verify the claim of traditional theory of capital structure. There are two broad views on the impact of capital structure on the performance of firms, while one asserts the significance of capital structure in determining firms' performance; the other says capital structure does not play any significant role in determining the performance of firms.

While various researchers have incorporated other firm specific factors like size, efficiency and asset growth into their model, this study contributes to existing studies by looking at the effect of macroeconomic variables which are outside the control of the firm like gross domestic product and inflation on firm's performance. Also unlike most works, the firms are carefully classified into lowly and highly geared firms, this enables us make comparisons and arrive at a more reliable conclusion.

1.5   Plan of the Study

The research work is structured as follows: Chapter one embodies the introduction, problem statement, objectives, method of analysis, and scope of the study. Chapter two deals with the Literature reviews and background of the study; Chapter three deals with the theoretical framework and methodology; Chapter four shows the data presentation, analysis and interpretations. While chapter five then gives the conclusions and recommendation.

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CHAPTER TWO

LITERATURE REVIEWS AND BACKGROUND TO THE STUDY

2.1   Theoretical Review of Capital Structure

Several studies have been conducted to examine the theory of capital structure. One of these studies was carried out by Modigliani and Miller (1958), ***Modigliani and Miller (MM) Theory*** illustrates that under certain key assumptions, firm's value is unaffected by its capital structure. Capital market is assumed to be perfect in Modigliani and Miller's world, where insiders and outsiders have free access to information; no transaction cost, bankruptcy cost and no taxation exist; equity and debt choice become irrelevant and internal and external funds can be perfectly substituted. The M-M theory argued that the value of a firm should not depend on its capital structure. The theory argued further that a firm should have the same market value and the same weighted average cost of capital at all capital structure levels because the value of a company should depend on the return and risks of its operation and not on the way it finances those operations.

If these key assumptions are relaxed, capital structure may become relevant to the firm's value. So, research efforts have been contributed to relaxing the ideal assumptions and describing the consequences. This theory was criticized on the ground that perfect market does not exist in real world. Attempts to relax these assumptions particularly the no bankruptcy cost and no taxation led to the static trade off theory. Over the years, several theories have emerged. Myers (1984) proposed the ***Static Trade-off Theory*** that supports the relevance of capital structure. This theory suggests that firms have optimal capital structure and they move towards the target. It further emphasized that when debt is employed in capital structure, firms are faced with the challenges of tax benefit and bankruptcy cost, thus the need for trade-off between the two.

Under trade-off theory, the firms with high growth opportunities should borrow less because it is more likely to lose value in financial distress. This is because trade-off theory predicts that safe firms i.e. firms with more tangible assets and more taxable income to shield, should have high debt ratios. While risky firms i.e. firms with more intangible assets that the value will disappear in case of liquidation, ought to rely more on equity financing. In terms of profitability, trade-off theory predicts that more profitable firms should mean more debt-serving capacity and more taxable income to shield; therefore, a higher debt ratio will be anticipated.

The ***Traditional Theory*** of capital structure which believes strongly on the relevance of optimal capital or level of gearing is adopted in this work. According to the traditional theory, debt capital is cheaper than equity and as such a company can increase its value by borrowing up to a reasonable limit. The theory assumes that;
   a. The cost of debt will remain constant until a significant point is reached when it would start to rise
   b. The weighted average cost of capital (WACC) will fall immediately an external source of finance is introduced and will commence rising thereafter as the level of gearing increases
   c. The company's market value and the market value per share will be maximized where WACC is the lowest point.

This theory posits that there is an optimal capital structure which maximizes the firm's value and minimizes the cost of capital; it is of the belief that the firm's value cannot be the same at different levels of capital structure.

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2.2 Measures of Firm Performance

The performance of a firm reflects how effectively the firm has been managed and resources utilized. It can be measured in terms of profitability.

2.2.2 Profitability and Efficiency Ratios

The performance of a firm can also be viewed in terms of the following;
- Return on Investment
- Return on equity
- Operating expenses ratio
- Asset turnover

Our measure of performance in this study will be return on investment.

2.3 Empirical Evidence on Impact of Capital Structure on firm's performance

Ibrahim (2009) examined the impact of capital structure choice on firm performance in Egypt, using a multiple regression analysis in estimating the relationship between leverage level and firm's performance, the study cover between 1997 and 2005. Three accounting based measures of financial performance (return on Equity, return on Assets and gross profit margin) were used. The result revealed that capital structure choice decision in general, has a weak-to-no impact on firm's performance. Stulz (1990) noted that debt can have both a positive and negative effect on the value of the firm (even in the absence of corporate taxes and bankruptcy cost). He built a model in which over investment and under investment can be can be alleviated by debt financing. His model assumes that managers have no equity ownership in the firm and receive utility by managing a larger firm. The "power of manger" may motivate the self-interested managers to undertake negative present value project. In order to solve this problem, shareholders force firms to issue debt. Chowdhury and Chowdhury (2010), empirically support the argument of Modigliani and Miller (MM). Their work test the influence of debt-equity structure on the value of shares given different sizes, industries and growth opportunities with the companies incorporated in the Dhaka Stock exchange (DSE) and Chittagong Stock Exchange (CSE) of Bangladesh.

2.4 Structure of Nigerian Industry

The Nigerian business industry has been in existence ever since the colonial era to date. These industries have transformed over time with certain permanent features like ownership characteristics of firms, firm size, market structure, output and nature of product. In Nigeria, most businesses in the formal sector are not publicly listed. Development policy centre (1999), in a survey of enterprises in six randomly selected states found 13.3% of the enterprises not listed on the Nigerian Stock Exchange, while 48.5% are limited liability companies operating in the formal sector. 87% of the formal sector businesses may be operating outside the legislation governing the capital market. Ownership characteristics of Nigerian firms show that the composition of listed securities also changed rapidly during the period. In 1990, government stock's share was 19.82%, industrial loan stock 19.82% and equity 60.36 % (Uwubanmwen, 2001). While in 1995, government's share was 12%, industrial loan stock was 22% and equity 66%. By 2005, government stock stood at 8%, industrial loan stock 18% and equity 74% , a similar trend was observed as time passes, to 2009, government stock grew exponentially, to 27%, industrial bond and loan however declined to 2% which can be accounted to the high inflation and political-economic unhealthiness of the nation, however, as equity remained relatively stable at 71% (CBN, 2009). The phenomenal growth of the capital market during the last four decades was

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brought about by government legislation, monetary policies and technical advancement in stock operations-privatization policies and exercises (1972,1977,1989-1993, 2001 and likely 2003), recapitalization for banks (2004-2005,electronic processing/automated trading activities, on-line trading, etc. The market capitalization as at 1995 stood at ₦180.31 Billion, N472.30 Billion in 2000 and N2, 900.10 Billion in 2005. That is an increase of 161.9% and 574.03% respectively.

The market structure of Nigerian industry is such that few large firms often control the market share in most of the industry i.e. oligopolistic market structure in most of the industry. More than 70% of the market shares are usually controlled by few leading firms. The market powers allow them to form barrier to entry for many new entrant that can come with very large scale of operation like the existing leading firms. The banking sector for example is controlled by few leading banks that have been in existence for a long period of time. The same goes for the telecommunication industry that has been deregulated. The market structure is such that few firms still control substantial size of the market. The beverage industry has the same oligopolistic feature.

Firms in Nigeria industry often produce goods that are close substitute. This often led to serious and at times unethical competition among the firms. Some of the firms even behave in such a way that the interest of the consumers becomes not well protected. The firms engage in price wars, advertisement and promotions just to ensure they gain more customers. These market conducts that arises from the market structure and the nature of product that are close substitute often serve as barrier to entry to new firms as most of the potential new entrant have to come to the industry to be the same or even higher cost with existing firms. These practices are discouraging to investors that may not have a strong and huge financial backing, thereby reducing the output level of the economy and revenue the government could have realize if these firms come to existence.

It is evident that the structure of the Nigeria business industry is such that ownership concentration is not diluted until recent time when government ownership is reducing due to privatization of most government companies and domestic individual investor are taking over government shares in most of these firms. Similarly, the Nigerian industry has certain permanent features in term of market structure, output size, and nature of products, ownership characteristics and size distribution of firms. This has wide implication for the conducts and performance of firms that make up the Nigerian industry.

2.5 CORPORATE INFORMATION OF THE FIRMS UNDER STUDY

2.5.1 MAY & BAKER NIGERIA PLC

May & Baker Nigeria Plc is Nigeria's leading pharmaceutical manufacturer founded on September 1944, the first to be established in the country. The company which started as a trading outpost to serve the West Coast of Africa began local manufacturing of pharmaceuticals in 1976 and was listed on the Nigeria Stock Exchange in 1994 where it has won the coveted award of sectoral leadership of the healthcare sector six times including 2008.

The company began a very ambitious expansion programme which started with the introduction of Lily table water in 2002. In 2007, it moved into the fast moving consumer goods (FMCG) sector. The company also invested heavily in setting up Anti-Retroviral (ARV) plant to produce drugs for the HIV/AIDS pandemic. In 2006, the company took advantage of new openings in the economy especially with the 2005 fiscal policy measures, which banned the importation of some category of drugs into the country. Its new drugs such as

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Artemisinin Combination Therapy (ACT), the World Health Organization (WHO) recommended first line for the treatment of malaria now controls the anti-malaria market.

With these outstanding projects, May & Baker went to the primary market to raise 105billion Naira by issuing 375 million ordinary shares of 50 kobo each at 4 Naira per share which was overwhelmingly subscribed by 267 percent. In line with these developments, the company adopted a new vision statement in 2008, To be among The Top 10 Conglomerates in Nigeria by 2020". This vision was based on ordered quantum leap which removes all forms of restriction on growth and investment. This vision allows the company to invest in all areas of human that promotes its mission "To Improve the quality of life, throughout life, For All Lives". With this May & Baker could explore investment opportunities in various aspects of the economy

2.5.2 GLAXOSMITHKLINE CONSUMER NIGERIA PLC

GlaxoSmithKline (GSK) is one of the world's largest research-based pharmaceutical companies that that discovers, develops, manufactures and markets human health products. It is an innovative company that produces branded products only, which it has developed itself. The company has two main divisions, pharmaceuticals and consumer healthcare. The consumer healthcare businesses of GSK consist of over-the-counter (OTC) medicines, oral care products, such as the toothpaste brands Aquafresh, Macleans and Sensodyne, and nutritional healthcare drinks. The pharmaceuticals division is the largest part of GSK's businesses and can be divided into prescription drugs and vaccines. This report deals with the pharmaceuticals division only. The headquarters of GSK are located in the UK, with additional operational headquarters in the USA. The company operates in some 160 national markets, the major ones being the USA, Japan, France, Germany, the UK and Italy.

GlaxoSmithKline Consumer Nigeria plc, an affiliate of GlaxoSmithKline world-wide was incorporated in Nigeria on June 1971 and commenced business on July 1972 under the name Beecham Limited. The company's operations are guided by the global company's mission which is to "improve the quality of human life by enabling people to do more, feel better and live longer". To achieve this, the company takes full advantage of the huge Research and Development (R&D) facilities of the global company, which currently spends 8 million Pounds every day. In order to the health and safety of the lives of the end-users, the company goes extra mile to invest in anti-counterfeiting devices on its products.

2.5.3 NEIMETH INT. PHARMACEUTICALS PLC

The company was incorporated on 30th August 1957 as a limited liability company, Pfizer incorporated. It was converted to a public limited company in 1991 and the shares are currently quoted on the Nigeria Stock exchange. On 14th May, 1997, Pfizer Inc. N.Y. divested from the company through a management buy-out. The company's name was subsequently changed to Neimeth International Pharmaceuticals Plc by a special resolution.

2.5.4 THE FORTE OIL PLC

Forte Oil Plc engages in the marketing and sale of refined petroleum products for the automobile, industrial, aviation, and marine markets in Nigeria and Abuja. It procures and markets motor spirit, automotive motor oil, and fuel oils. The company also imports various industrial, organic, and petrochemicals such as ketones, alcohol, pure aromatic solvents, plasticides, water treatment chemicals, and foam chemicals. In addition, it engages in the manufacture and distribution of various lubricants; and aerosol insecticide to kill crawling and

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flying insects at homes and offices. Further, the company involves in marketing cooking gas through its retail outlets, and automotive gas oil, low pour fuel oil, and marine lubricants, as well as providing aircraft refueling and defueling services to airlines. Additionally, it engages in the development and management of residential and commercial properties; and provision of various services, such as property management, property brokerage, real estate consulting, construction, re-designing, refurbishment, maintenance, and development of private fuel storage and fuel retailing facilities. In addition, the company provides M-I PC products for various applications, including demulsifiers, wax inhibitors, scale inhibitors, oxygen scavengers, sludge breakers, water clarifiers, biocides, pour point depressants, corrosion inhibitors, and commodity products; and chemical laboratory services to major oil and services companies. It operates approximately 500 company owned, dealer developed, and dealer assisted retail outlets. The company was formerly known as African Petroleum Plc and changed its name to Forte Oil Plc in January 2011. Forte Oil Plc was incorporated in 1964 and is headquartered in Lagos, Nigeria.

The company was highly geared during the period 2001 to 2005, with debt capital much in use compared with equity capital. The situation changed right from 2006 when the company rolled out new share issue to the public. The company drastically reduced the use of debt capital in favor of equity capital such that as at the year 2009, the company's equity was far greater than debt by over 1000 percent. This is a departure from the case of financial firms where the source of capital was majorly from debt financing.

2.5.5   TOTAL NIGERIA PLC

Formerly known as TOTALFINAELF Nigeria Plc, is the entity which emerged following the successful merger between TOTAL Nigeria Plc and ELF Oil Nigeria Ltd in 2001. Total Nigeria was incorporated as a private company in 1956 to market petroleum products in Nigeria. It became Total Nigeria in 1967 and Total Nigeria Plc in 1978 after, went public with ₦10Million share capital. Elf Oil Ltd was incorporated as a Private Limited Liability Company on November 1981 to engage in the business of marketing petroleum products, lubricants and chemicals. The share capital of Total Nigeria Plc after the merger is currently ₦169,760,918 made up of 50k ordinary shares authorized and fully paid up. Total S.A Paris holds 42.5%, Enifor Limited holds 8.12% while other Nigeria shareholders hold 30.16% of the share capital.

Total has a diversified portfolio of proved reserves representing 11.1 billion barrels of oil equivalent and of proved probable reserves of 20.5 billion barrels of oil equivalent, a record that looks likely to be unmatched among its peers. Unlike in forte oil where the initial period was basically financed by debt capital, Total capital was more of equity financing than debt financing in all the period observed. Both types of financing increased steadily over the period by an average of 11.6% for equity and 28% for debt.

2.5.6   MOBIL OIL NIGERIA

Mobil Oil Nigeria Plc is one of the leading companies in the Nigerian Oil and Gas sector with primary activities revolving round marketing of petroleum products as well as manufacturing of automotive/industrial lubricants and petroleum jelly. The company is a subsidiary of Mobil Oil Corporation, Fairfax, U.S.A, (now Exxon Mobil), which owns 60 per cent of its total equity. Mobil became a quoted company on the Nigerian Stock Exchange on April 24, 1979 under Petroleum Marketing sector.

Mobil benefits from the technical know-how of its parent company, Exxon Mobil Corporation in form of provision of assistance in lubricants manufacturing and specialties, research and development, marketing

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support and training. The company is well known for giving high returns to shareholders. The company's return on equity averaged 123% over the past five years. The company, amidst industry production crisis, has recorded a 5-year average turnover growth rate of 12.4% and stable net profit margin of 4%. In view of the resolve of the present government to stop the production crisis in the industry, Mobil has much more earnings potentials. Moreover, the increasing trend in the international crude oil price places Mobil at a vantage position to make greater returns.

A major threat to Mobil's supply of oil is the vicious circle of violence and disruptive activities of the Niger Delta militants. If not abated on time by the government, it might further impact negatively on the company's turnover. Between the periods 2001 to 2004, Mobil oil capital structure was tilted toward more of debt financing as debt capital was on average 54% greater than the equity capital. But between 2000 and 2010, equity was more in use in financing the operations of the firm when compared with debt.

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CHAPTER THREE

THEORETICAL FRAMEWORK AND METHODOLOGY
3.1   Introduction

This chapter presents the theoretical framework and the methodology for the study. Specifically, it develops the theoretical framework for the capital structure and firm performance. A robust and appropriate model will be specified and the methodological frame work to be adopted will be explicitly stated.

3.2   Theoretical Framework

The traditional theory of capital structure postulates that debt capital is cheaper than equity and that as such a company can increase its value by borrowing up to a reasonable limit. This shows that an optimal level of leverage or gearing ratio exists. It also asserts that there exist a significant relationship between leverage and firm performance value in a company. The theory also posits that there exist a negative relationship between leverage and performance. This is as shown:

$$per = f\,(leverage)$$

$$per = \beta_0 + \beta_1 lev + \varepsilon_t --3.1$$

Where "per" represents firm performance and "lev" is leverage. From equation 3.1 the traditional theory assert that "lev" should be statistically significant in determining firm performance "per".

Various works on capital structure and firm performance have modified the traditional capital structure theory by augmenting it with various control variables. Ahmad et al. (2012) augmented the traditional capital structure theory with four control variables; size, growth and efficiency.

This is seen below;
$$performance = f\,(lev, Z)$$

Where performance refers to the firm's performance level, "lev" is the leverage level and "Z" is a vector of control variables that explains variations in firm's performance. The modified equation between firm's performance and capital structure can be seen below;

$$performance = \beta_0 + \beta_1 lev + Z + \varepsilon_t --3.2$$

From equation 3.2, the traditional theory asserts that leverage or capital structure has a significant impact on firm's performance. Also, the theory established a negative relationship between leverage or capital structure and firms performance. On the contrary, the Modigliani and Miller (MM) theory postulates that capital structure or leverage has no significant impact on firm's performance.

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3.3   Model Specification

In order to capture the impact of capital structure on firm's performance, we specify a model in line with the above theoretical framework. In our study, we adopt the above capital structure model (equation 4.1), which states that firms performance depends on capital structure and some control variables. We modify the capital structure model by augmenting it with macroeconomic variables to adequately capture firm performance. This is seen below;

$$performance = f\ (levrage, inflation, gdp\ )$$

$$ROI_{it} = \beta_0 + \beta_1 LEVERAGE_{it} + \beta_2 INFLATION_{it} + \beta_3 GDP_{it} + \beta_4 ROI_{it} + \varepsilon_t -----3.3$$

The model above shows that firm's performance depends on capital structure and macroeconomic variables. Where "ROI" represents returns on investment (a proxy for firm performance), "LEVERAGE" captures the gearing level of firms, "INFLATION" is proxied by consumer price index, "GDP" is the income level proxied by gross domestic product. We expect a negative relationship between capital structure and returns on investment. This is evident from the fact that interest is paid on the debt and this tends to reduce firm performance. Also, lagged returns on investment are expected to be positively related to current returns on investment. GDP is expected to be positively related to firm performance and inflation is expected to negatively affect firm performance. Following the theoretical framework above, the a priori expectations for the parameters are;

$$\beta_1 < 0, \beta_2 < 0, \beta_3 > 0, \beta_4 > 0$$

3.4 Hypothesis Testing

Black, (2002) defined hypothesis testing as the act of testing whether there are statistical grounds for disbelieving any statement. Hypothesis testing involves avoiding two types of errors; accepting statements when there is good reason to doubt, and rejecting them when there is in fact no good reason to do so. The hypotheses tested in this study are stated below:

HYPOTHESIS 1
H_o: there is no significant relationship between leverage and firm's performance
H_1:   there is significant relationship between leverage and firm's performance

HYPOTHESIS 2
H_o: there is no significant relationship between macroeconomic variables and firms performance
H_1:   there is significant relationship between macroeconomic variables and firms performance

3.5 Data Sources
In other to achieve the stated objectives of the study, an annual panel data was employed. The data (secondary data) were obtained from various sources which include; annual reviews from various companies and Central Bank of Nigeria Statistical Bulletin (various issues). The period covered spans from 2000 to 2010.

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3.6 Method of Data Analysis

To determine the relationship between the various variables correlation will be employed and to determine the degree of significance and impact of leverage on firm performance, we consider the both pooled and fixed effect model estimation technique. Since the number of cross sectional unit is smaller than the parameters in the above equation, random effect estimate is not appropriate.

3.7 Description of Data

Leverage: describes the relationship between shareholders capital plus reserves and either prior charge capital and borrowing, or both.

Inflation rate (consumer prices index): annual percent change in consumer prices compared with the previous year's consumer prices.
GDP: real GDP is an inflation- adjusted measure that reflects the value of all goods and services in a country

ROI: a performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. In this study, it is calculated as the ratio of benefit (return) of an investment (profit before interest and tax) and total capital employed.

3.8 Criteria for Decision Making
***R*-Squared:** In a multiple regression model, this is the proportion of the total sample variation in the dependent variable that is explained by the independent variable. The closer the R^2 is to 1 or 100% the better the goodness of fit. The R^2 lies between zero and one, because sum of square error cannot be greater than sum of square total. A value of R^2 that is nearly equal to zero indicates a poor fit of the OLS line (Wooldridge, 2004).

Adjusted *R*-Squared: A goodness-of-fit measure in multiple regression analysis that penalizes additional explanatory variables by using a degrees of freedom adjustment in estimating the error variance.
T-Statistic: The t-statistic is used to test a single hypothesis about the parameters in a regression model. When the calculated t-value is less than the tabulated t-value, the parameter is not statistical significant and vice-versa. It is the ratio of the estimated parameter to the estimated standard error (Wooldridge, 2004).

***F*-Statistic:** A statistic used to test multiple hypotheses about the parameters in a multiple regression model. This statistic tests the null hypothesis that all the regression coefficients are equal to zero. If the $F_{cal} > F_{0.05}$(tab), we reject the null hypothesis and accept the alternative hypothesis vice-versa (Wooldridge, 2004).

P-Value: the probability value aids us in accepting or rejecting the null or alternative hypothesis. If the P-value is less than or equal to 0.01 (1%) we reject the null and accept the alternative hypothesis at 1% level of significance. If the p-value is less than or equal to 0.05 (5%), we reject the null and accept the alternative hypothesis at 5% level of significance and if the p-value is less than or equal to 0.10 (10%), we reject the null hypothesis and accept the alternative hypothesis at 10% level of significance.

Durbin-Watson (DW) Statistic: this is a statistic used to test for first order serial correlation in the errors of a regression model under the classical linear model assumptions (Wooldridge, 2004). It assists in specifying the right combination of the explanatory variables (Gujarati, 2004)

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1   Introduction

To empirically verify our hypothesis, we employed various statistical and econometrics techniques. This segment presents the empirical results on the impact of leverage on firm's performance. We present the correlation matrix and the estimates from the firm performance equation (both for highly geared and lowly geared). The specified equations are presented in this section, also detailed analysis on firm performance and leverage will be intuitively analyzed.

4.2   Data Analysis and Interpretation
The correlation result from the four variables employed is seen below;

Table 4.1   Correlation Coefficient Matrix for the highly geared Companies

	ROI	GEARING	INFLATION	GDP
ROI	1	-0.1531	0.2647	0.1045
LEVERAGE		1	0.2163	-0.1257
INFLATION			1	0.2599
GDP				1

Source: Author's Computation

Table shows the correlation matrix for highly geared firms. The correlation matrix computed above was calculated to gain insight into the nature of the relationship among the variables in the model. The relationship falls between zero and one, thereby measuring the linear association between the observed values. Leverage has a negative relationship with firm performance (returns on investment). This shows that there exists an optimal debt financing on companies performance. Inflation and GDP has a positive relationship. This finding conforms to the results from Kinsman and Newman (1998). Conversely, macroeconomic variables (GDP and Inflation) are positively correlated with firm performance. It should be further noted that impact analysis is not provided for in correlation analysis.

Table 4.2   Correlation Coefficient Matrix for the lowly geared Companies

	ROI	GEARING	INFLATION	GDP
ROI	1	-0.265	0.4081	0.04
LEVERAGE		1	0.2647	0.0867
INFLATION			1	0.404
GDP				1

Source: Author's Computation

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The above table shows the correlation matrix for the lowly geared firms. In line with table (4.3) leverage is negatively correlated to firms performance (ROI). This indicates higher levels of debt are correlated with lower firm performance. It also shows that there is an optimal amount of debt financing that tends to exert a negative effect on firms performance. In addition, the macroeconomic variables are positively correlated to firm performance.

Table 4.3: PANEL REGRESSION RESULT FOR HIGHLY GEARED FIRMS

Variables	Pooled		Fixed Effect	
	Coefficient	*p-value*	*Coefficient*	*p-value*
Const	*2.42981****	*0.0000****	*2.6918****	*0.0000*
LEVERAGE	*-0.1582***	*0.0185***	*-0.1758****	*0.0000*
INFLATION	*0.6275****	*0.0000****	*0.6393****	*0.0000*
GDP	*0.3289****	*0.0000****	*0.4425****	*0.0000*
ROI(-1)	*-0.1618****	*0.0000****	*0.2929****	*0.0006*
R-squared	*0.4979*		*0.6194*	
Adjusted R^2	*0.3797*		*0.4671*	
P-value(F)	*0.0149*		*0.0127*	
Durbin-Watson	1.5906		1.8771	

Note: *, **, and *** signifies 10%, 5% and 1% respectively

Source: Author's Computation.

The above table presents the estimated result for the highly geared firms (Total Nigeria plc, Mobile and AP oil). The pooled and fixed effect regression were run and compared. Due to small cross sectional unit (cross sectional units is less than regressors), we fail to run the random effect because the cross sectional units are smaller than number of regressors. For the two set of firms, the fixed effect model performs better compared to the pooled regression; hence we adopt the fixed effect in our analysis.

Fitting the values into the model, we then have the following:

$$ROI = 2.6918 - 0.1758 LEVERAGE + 0.6393 INFLATION + 0.4425 GDP + 0.2929\ ROI(-1)$$
$$- - - - - - 4.1$$

The R^2 shows that the regressors jointly account for 61.9 % of variations in firm performance in the highly geared firms. Also, the explanatory variables are jointly significant in the model and the Durbin Watson statistics shows the absence of autocorrelation.

However, from the fixed effect regression, all the explanatory variables are statistically significant in explaining changes in firm performance level. Leverage has a negative impact on firm performance. A 100 percent increase (decrease) in leverage will reduce (increase) firms performance by 17.5 percent. The result conforms to a priori expectation on a negative relationship between leverage and capital structure. This shows that overleveraging negatively affects firm performance. Also, debt financing reduces firm performance because of the compounding nature of interest rates on debt. This finding corroborates with other studies on capital structure (Gleason *et*. al 2000; Agarwal *et. al* 2001; Abor 2007 and Chen *et. al* 2008) and firms performance level. Also, the findings are in tandem with the traditional theory of capital structure, because leverage has a significant impact on firm performance in Nigeria, hence we accept the traditional theory of capital structure and reject the MM theory of capital structure.

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In addition, inflation has a positive impact on firm performance. This positive relationship is statistically significant at 1 percent level of significance. A percentage increase (decrease) in inflation rate will increase (decrease) firm's performance by 63 percent. Furthermore, gross domestic product has a positive impact on firm performance. The relationship between GDP and firms performance is statistically significant at 1 percent level of significance. Also, a 100 percent increase or decrease in gross domestic product (income) in Nigeria will increase (decrease) firms performance by 44.2 percent. This conforms to a priori expectation of a positive relationship between GDP and firm's performance.

Lagged return on investment has a positive and significant impact on firm's performance. The relationship between lagged returns on investment and firm performance is statistically significant at 1 percent level of significance. A 100 percent increase (decrease) in lagged returns will lead to 29.2 percent increase (decrease) in firm performance.

Table 4.4   PANEL REGRESSION RESULT FOR LOWLY GEARED FIRMS

Variables	Pooled		Fixed Effect	
	Coefficient	*p-value*	*Coefficient*	*p-value*
Const	*-0.3929*	*0.15344*	*0.8947*	*0.00841****
LEVERAGE	*-0.1556*	*0.20336*	*-0.1585*	*0.01001***
INFLATION	*0.4241*	*0.23622*	*0.5542*	*0.12572*
GDPGR	*0.1135*	*0.72175*	*0.1181*	*0.59463*
ROI(-1)	*0.5679*	*0.01562***	*0.0240*	*0.92368*
R^2	*0.4436*		*0.6678*	
Adjusted R^2	*0.3424*		*0.5681*	
P-value(F)	*0.0092*		*0.0005*	
Durbin-Watson	*1.9718*		*2.1327*	

Note: *, **, and *** signifies 10%, 5% and 1% respectively

Source: Author's Computation.
The table presents the estimated result for the lowly geared firms. The table shows both the poled regression and fixed effect regression analysis. From both, we accept the fixed effect model because it gives more robust estimates from our result. In the fixed effect model, the explanatory variables account for 66.7 percent variation in firm's performance. The f-statistics shows that the explanatory variables are jointly statistical significant in the model and the Durbin-Watson statistics shows that there is no autocorrelation in the model.

Fitting the values into the model, we then have the following:

ROI= 0.8947- 0.1585LEVERAGE+0.5542INFLATION+0.1181GDP+0.0240ROI (-1) -----4.2

Leverage has a negative and statistically significant relationship with firm performance. The relationship between leverage and firms performance is statistically significant at 10 percent level of significance for the lowly geared firms. This result is in tandem with Gleason *et*. al (2000); Agarwal *et. al* (2001); Abor (2007) and Chen et. al (2008). This shows that leveraging negatively impacts on firm performance. A percentage increase (decrease) in leverage will reduce (increase) firm performance by 15.8 percent. Since the relationship is statistically significant, it conforms to the expectation on traditional theory of capital structure. On the contrary, macroeconomic variables in our study exhibit a positive impact on firm performance. Though not

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statistically significant a percentage increase or decrease in inflation and gross domestic product will increase or decrease firm performance.

With regards to both the highly and lowly geared estimates, we conclude that leverage determines firm's performance; hence we accept the traditional theory of capital structure because leverage is statistically significant in both models (highly geared and lowly geared). We can also conclude based on this work that though the highly geared firms have better performance in terms of value than the lowly geared firms, probably because of the size of their investments, it is however important to know that since a significant negative relationship exists between gearing and returns, an optimal capital structure exists and this further supports the belief of the proponents of the traditional theory of capital structure

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   **Introduction**

This chapter presents the summary and empirical conclusions drawn from the research study. It also contains relevant recommendations based on findings from the study.

5.2   Summary

The purpose of this study is to determine the impact of leverage (gearing ratio) on firm's performance and to determine nature of capital structure theory (traditional theory or Modigliani and Miller) that best suit this research work. Chapter one introduces the topic by giving insight on leverage levels of selected firms in Nigeria, the performance of selected firms and the nature of macroeconomic variables on firm's performance over the years. The chapter also covers the statement of problem, objectives of the study and plan of the study.

Chapter two reviews relevant literature with respect to capital structure; **Modigliani and Miller (MM) theory** which asserts that capital structure is not significant in determining firm's performance and **traditional capital structure theory** which postulates that capital structure is a significant determinant of firm's structure. Also we reviewed various ways of performance measurement, empirical studies on capital structure, structure of Nigerian economy and trend behavior of macroeconomic variables in Nigeria.

Chapter three comprises the theoretical framework and methodology. The framework is adapted from the traditional capital structure theory, but augmented with macroeconomic variables to determine the impact of macroeconomic variables on firm's performance. The chapter also entails the stated hypothesis for the study, model specification and source of data, method of data analysis, data description and criteria for decision making. Chapter four discusses the results obtained from the regression analysis. By using the a priori evaluation, the statistical criteria and the economic criteria to explain our findings from the analysis carried out in examining the relevance and impact of leverage on firm's performance. Also the impact of macroeconomic variables on firm's performance was also determined.

5.3   Conclusion

Traditional capital structure theory provides models that can assess the effects of leverage (gearing) on firm's performance. This study has examines the effectiveness of leverage on firm's performance in some selected firms in Nigeria. We considered six firms which were selected into two classes; highly geared (Total Nigeria PLC, Mobil Oil and Forte Oil) and lowly geared firms (May and Baker, GSK, NEIMETH). The study employed panel data spanning from 2000 to 2010.

The study confirms that the traditional capital structure theory is valid. It reaffirms that leverage in both the highly and lowly geared firms is statistically significant and is an important determinants of firm's performance. Also, in line with various empirical studies on capital structure and firm's performance, this study confirms the negative relationship between leverage (gearing) and firm's performance in selected companies in Nigeria.

As it is well known leverage negatively impacts on firm's performance, but the extent of its impact on firm's performance varies in relation to highly and lowly geared firms. Our findings report that high gearing has a

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larger impact on firm's performance compared to low gearing. In the highly geared firms a 100 percent increase in leverage reduces firm's performance by 17%, but for the lowly geared firms it reduces firm's performance by 15 percent.

Furthermore, macroeconomic variables have a significant effect on the performance of highly geared firms while it's not significant for lowly geared firms. Gross domestic product and inflation have a higher impact on firm's performance in the highly geared firms compared to lowly geared firms. In addition, lagged returns on investment affects firm's performance in the highly geared firms.

5.4   Recommendations

In line with our finding, we strongly recommend that firms (both highly and lowly geared) should take into cognizance the amount of leverage incurred because it is a major determinant of firm's performance, this is obvious in both the highly geared and lowly geared firms.

Also, firms should use more of equity than debt in financing their business activities, in as much as the value of a business can be enhanced using debt capital, it gets to a point that it becomes detrimental to the value of the business, hence firms should establish the point at which the weighted average cost of capital is minimal and maintain that gearing ratio so that the company's value will not be eroded, as the firm's capital structure is optimal at this point ceteris paribus. This is because the highly geared firms are more prone to lower firm performance as a result of an additional leverage incurred. Firms can also employ the use of cheap finance sources instead of expensive fixed interest bearing debts.

In addition, the government should create an enabling business friendly environment so that businesses can thrive and thus increase firm's performance level. This is evident in the fact that macroeconomic variables positively affect the performances of most firms in Nigeria.

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