CAPITAL STRUCTURE AND CORPORATE PERFORMANCE OF NIGERIAN QUOTED FIRMS: A PANEL DATA APPROACH

BY

OLOKOYO, FELICIA OMOWUNMI

(CUGP040112)

JUNE, 2012

CAPITAL STRUCTURE AND CORPORATE PERFORMANCE OF NIGERIAN QUOTED FIRMS: A PANEL DATA APPROACH

BY

OLOKOYO, FELICIA OMOWUNMI

(CUGP040112)

DEPARTMENT OF BANKING AND FINANCE,

SCHOOL OF BUSINESS, COLLEGE OF DEVELOPMENT STUDIES,

COVENANT UNIVERSITY, OTA, OGUN STATE, NIGERIA

BEING PH.D THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY (PH.D) IN FINANCE OF COVENANT UNIVERSITY, OTA, OGUN STATE, NIGERIA.

JUNE, 2012

DECLARATION

It is hereby declared that this thesis was undertaken by **Olokoyo, Felicia Omowunmi** in the Department of Banking and Finance, College of Development Studies, Covenant University, under the supervision of Prof. E. O. Adegbite. This thesis report has not been previously submitted for the award of any other degree in this institution and/or other institutions. The ideas and views of this thesis are products of the original research undertaken by Olokoyo, Felicia Omowunmi and the views of other researchers have been duly acknowledged.

---------- ----------

Olokoyo, Felicia Omowunmi Date

Researcher

---------- ----------

Prof. J. A. T. Ojo Date

Head, Banking & Finance Department

---------- ----------

Prof. Kayode Soremekun Date

Dean, College of Development Studies

---------- ----------

Prof. C. A. Awonuga Date

Dean, School of Postgraduate Studies

Covenant University

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Covenant University, a thesis titled: "Capital Structure and Corporate Performance of Nigerian Quoted Firms: A Panel Data Approach" in partial fulfillment of the requirements for the award of degree of Doctor of Philosophy (Ph.D) in Finance of Covenant University.

---------- ----------

Signature Date
Prof. E. O. Adegbite
Supervisor

---------- ----------

Signature Date
Dr. R. A. Olowe
Co-Supervisor

---------- ----------

Signature Date
Prof. J. A. T. Ojo
Head of Department

---------- ----------

Signature Date
Prof. I. O. Osanwonyi
External Examiner

DEDICATION

This research work is dedicated to God, the strength of my life, my Alpha and Omega and my inspiration, who has been seeing me through the rigours of the academic world and to my beautiful, loving and wonderful children – Emmanuella, Daniella and David-Olajide Olokoyo.

ACKNOWLEDGEMENTS

I thank God Almighty for His love, protection and abundance blessings showered on me during my course of study and for his help despite some challenges. I praise His Holy Name.

My sincere thanks go to the Chancellor, Bishop David Oyedepo for running with the vision and mandate God gave him that brought forth Covenant University. I thank the Board of Regents and Management of Covenant University for approving my study leave to the United States on the Fulbright Fellowship for this research work with pay. God bless you. I deeply appreciate the Vice-Chancellor, Prof. Aize Obayan for her motherly love and counsels. You are a rare gem and my role model. My appreciation is also extended to the Deputy Vice-chancellor for being a pillar of support, the indefatigable past Registrars – Pastor Yemi Nathaniel and Dr. Rotimi Daniel, and the Registrar Dr. J. N. Taiwo, the former Dean College of Development Studies (CDS) – Prof. M.O. Ajayi and the present Dean, Prof. Kayode Soremekun, the Dean of Post-Graduate Studies, Prof. C. Awonuga and Deputy Dean CDS, Prof J. A. Bello. You are all my fathers in the work place indeed.

I am indebted to my Head of Department, Prof. J. A. T. Ojo. You have been an inspiration to me in character, integrity, learning, work ethics, academics and spiritual matters. Your meticulousness is on record and it has brought forth this beautiful work. I have to dot all my 'Is' and cross all my 'Ts'. I love you sir for your fatherly role in my academic progress. God bless you.

I am profoundly grateful to my supervisors, Prof. E. A. Adegbite and Dr. R. A. Olowe for their contributions, corrections, remarks, efforts and supervisory role in making this thesis a remarkable success. You always spared some time to go through this work in spite of your very busy schedule and have to travel to Ota any time your attention is needed for one reason or the order. My God will bless your labour of love in Jesus name. I equally appreciate my External Examiner, Prof. I. O. Osanwonyi for his undisputable remarks and corrections. Thank you for being so thorough sir.

I am equally grateful to all faculty and staff in the Department of Banking & Finance - Dr. O.A. Ikpefan, Dr. (Mrs) A. A. Babajide, Dr. K. A. Adetiloye, Mr. O. A. Ehimare, Mr. O. Olowe, Mrs. Folashade Adegboye, Miss Victoria Adelegan, Miss Chinasa Onwuzuruike, Mr. David Obaoye and Mr. Taiwo Urhie. You have all contributed in your different ways to the completion of this thesis. I cherish your invaluable contributions.

I will like to specially acknowledge the academic inspiration from my father and erudite mentor, Prof. J. A. Oloyede for his words of advice, prayers, attention and support in getting some materials in writing this thesis. You are a father indeed. I deeply appreciate the support and contributions of Prof. S. O. Otokiti of Landmark University. I am equally grateful to Dr. P. O. Alege of the Economics and Development Studies Department for his support and contribution in the specification of the models and for always sparing time to edit this work from time to time. God bless you sir. I equally appreciate my brother and colleague, Dr. Osabuohien Evans S. C. for his contribution in developing the methodology and in the estimation of data and interpretation of results. Thank you for always being there.

I will also like to acknowledge the contributions of all member of faculty in the College of Development Studies, Dr. I.O. Ogunrinola, Dr. (Mrs.) A. O. Umoren, Dr. F.O. Iyoha, Dr. Daniel Gberevbie, Dr. (Mrs.) D. T. Oyerinde, Dr. (Mrs.) T. O. George, Mr. Ese Urhie, Dr. Okodua, Mrs. A.O. Matthew, Dr. (Mrs.) A. Adeniji, Mrs. O. O. Fayomi, Dr. Samuel Faboyede, Dr. Fakile, Dr. D. Mukoro, Mrs. F. E. Owolabi, Dr. O.S. Ibidunni, Mr. K.A. Adeyemo, Dr. S. T. Akinyele, Dr. Rowland Worlu, Mr. Oni, Dr. Adegbuyi, Dr. Obamiro to mention a few. Your corrections and remarks during my seminars, proposal defence presentation and post-field defence presentation have all cumulated to the successful completion of this thesis.

The Fulbright Fellowship awarded to me by the U.S. Department of State's Bureau of Educational and Cultural Affairs is greatly acknowledged. The fellowship was useful for me in the acquisition of relevant literatures and it also provided me with stipends and other research supports for nine month in the United States of America. I highly appreciate the help of Prof. Emmanuel Emenyonu in the placement process and in locating my accommodation in

the U.S. You also made Connecticut a second home for me by always making yourself available to take me round and get things for myself and my daughter as the need arises. You are really my guardian angel in the U.S. God bless you. I will also like to sincerely appreciate the host department, Department of Economics & Finance, Southern Connecticut State University, CT., U.S.A, led by the Head, Prof. Samuel Kojo Andoh for providing facilities needed including a well-equipped office, online access to databases and journals and free printing and photocopying, which facilitated my research over there. The assistance of my host supervisors, Prof, Robert M. Eldridge and Prof. Benjamin Adams Abugri is greatly appreciated. Your invaluable contributions, remarks and corrections have gone a long way towards the successful completion of this thesis. The contribution of other faculty in the department especially Prof. Gebremariam Yilma, Dr. Sandip Dutta, Dr. Sanja Grubacic, Dr. Peter Bodo and Dr. Mehdi Mostaghimi is also highly appreciated. I also want to specially thank the secretary of the department, Marisol Lopez for all her help in administrative matters and meticulous editing of my work and arrangement of my office. The help and advice of Dr. Patricia C. Zibluk and Diana Sweet of the Sponsored Programme and Research (SPAR) office is also acknowledged. The role of Dr. Doris Marino as my academic mentor in Southern Connecticut State University is also highly appreciated. God bless you all.

I lovingly appreciate my father, Elder Olutunji Odebo and my late mother, Mrs. Victoria Odebo who charted the path of life I follow and laid my feet on the Solid Rock – Jesus Christ. Thank you for being responsible and loving parents. I am equally grateful to my big sister, Mrs. B. O. Alade and her husband, Mr. R. A. Alade who have been my inspiration in matters of academics and values in life. You are my second parents. The roles of my mother-in-law, Mrs. Elizabeth Olokoyo, my pastors; Apostle Lawrence Achudume, Pst. Olubanji Samuel Agbebi, Pst. (Mrs.) Olubunmi Agbebi, Pst. D. K. Aboderin and Pst. Segunlebi Shallom, and my sisters and brothers are profoundly appreciated. Their immense contributions to my success in life is unrivalled, their love for me and their desires to see me succeed in life ignite my will power to do things in life. I love you all.

I am equally grateful to my friends, Tunbi and Tosin Olabisi, Tosin Olaseni, Adekunle Adewale, Ifeoluwa Aboluwade, Badejo Adejoke, Foluke Ajayi, Tosin Matthew-Akinsiku,

Ronke Elliot, Prof. Bayo Aromolaran and Mrs. Simisola Aromolaran. You have all in no small way influenced my thinking and helped me in discovering my true being. You all have really demonstrated that ‘a friend in need is a friend indeed’. I am really blessed to have met and known you all. I also appreciate the D305 cubicle crew – Mr. F. F Fashina, Mr. Ogunnaike O. O., Mrs. I. F Obigbemi, Dr. Osabuohien E.S.C. and Mr. I. O. Ogbu.

I cannot but mention my beautiful children, Emmanuella, Daniella and David-Olajide Olokoyo. Thank you for your understanding, for all the time I have to leave you with neighbours and for all those long boring weekends that I have to leave you alone with daddy to concentrate on my research and academic works. You make my world complete. I love you so much. God bless you and make you great in life.

Finally, my special and loving thanks go to my wonderful and loving husband, Mr. Sesan Olokoyo who has been of tremendous help to me and a great source of inspiration to the completion of this thesis. For being so understanding for the nine months I was away in the U.S, for all the weekends you served as a ‘nanny’ to the children, for all your sacrifices to ensure the success of this course, for standing by me and helping me search out materials in the process of writing this thesis, I say a big thank you. You are really a soul mate and my precious gift from God. I love you. God bless you.

I will forever appreciate the mercy, kindness and goodness of God in my life and his constant leading. You are my Alpha and Omega.

TABLE OF CONTENTS

CHAPTER THREE: THEORETICAL FRAMEWORK & METHODOLOGY

CHAPTER FOUR: DATA ANALYSIS & INTERPRETATION OF RESULTS

CHAPTER FIVE: SUMMARY, CONCLUSION & RECOMMENDATIONS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ABSTRACT

This paper presents empirical findings on the impact of capital structure (leverage) on performance of quoted firms in Nigeria. The main objective of this study is to determine the overall effect of capital structure on corporate performance of Nigerian quoted firms by establishing the relationship that exists between the capital structure choices of firms in Nigeria and their return on assets, return on equity and tobin's Q (a market performance measure). The effect of institutional factors such as size, tax and industry on firms' performance was also established. The study employed panel data analysis by using Fixed-effect estimation, Random-effect estimation and Pooled Regression Model. The usual identification tests and the Hausman's Chi-square statistics for testing whether the Fixed Effects model estimator is an appropriate alternative to the Random Effects model were also computed for each model. The empirical results based on 2003 to 2007 accounting and marketing data for 101 quoted firms in Nigeria lend some support to the pecking order and static tradeoff theories of capital structure. A firm's leverage was found to have a significant negative impact on the firm's accounting performance measure (ROA). An interesting finding is that all the leverage measures have a positive and highly significant relationship with the market performance measure (Tobin's Q). It was also established that the maturity structure of debts affect the performance of firms significantly and the size of the firm has a significant positive effect on the performance of firms in Nigeria The study further reveals a salient fact that Nigerian firms are either majorly financed by equity capital or a mix of equity capital and short term financing. It is therefore suggested that Nigerian firms should try to match their high market performance with real activities that can help make the market performance reflect on their internal growth and accounting performance.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Capital structure is one of the finance topics among the studies of researchers and scholars. Its importance derives from the fact that capital structure is tightly related to the ability of firms to fulfil the needs of various stakeholders. Capital structure represents the major claims to a corporation's assets. This includes the different types of equities and liabilities (Riahi-Belkaoni, 1999). The debt-equity mix can take any of the following forms: 100% equity: 0% debt, 0% equity: 100% debt and X% equity: Y% debt. From these three alternatives, option one is that of the unlevered firm, that is, the firm shuns the advantage of leverage (if any). Option two is that of a firm that has no equity capital. This option may not actually be realistic or possible in the real life economic situation, because no provider of funds will invest his money in a firm without equity capital. This partially explains the term "trading on equity", that is, it is the equity element that is present in the firm's capital structure that encourages the debt providers to give their scarce resources to the business. Option three is the most realistic one in that, it combines both a certain percentage of debt and equity in the capital structure and thus, the advantages of leverage (if any) is exploited. This mix of debt and equity has long been the subject of debate concerning its determination, evaluation and accounting.

Research on the theory of capital structure was pioneered by the seminal work of Modigliani and Miller (1958). Significant empirical and theoretical extensions followed and the broad consensus paradigm, at least until recently, is that firms choose an appropriate (optimal) level of debt, based on a tradeoff between benefits and cost of debt (Krishnan and Moyer, 1997). It has also been argued that profitable firms were less likely to depend on debt in the capital structure than less profitable ones and that firms with high growth rates have high debt to equity ratios (see Harris and Raviv,1991, Krishnan and Moyer, 1997, Tian and Zeitun, 2007). There is no doubt that benefits abound in the use of debt in the capital structure of the firms. The main benefit of debt financing is the tax-deductibility of interest charges, which results in lower cost of capital (Krishnan and Moyer, 1997). Does it then mean that a firm should go on increasing the debt proportion in its capital structure? If every increase in debt financing were going to increase the earnings for the shareholders, then every firm would have been 100% debt financed. However, there are certain costs associated with debt financing. So, between the two extremes of whole equity financing and whole debt financing, a particular debt-equity mix is to be decided. Any attempt by a firm to design its capital structure therefore, should be undertaken in the light of two propositions: first that the capital structure be designed in such a way as to lead to the objective of maximizing shareholders wealth, second, that, though the exact optimal capital structure may be impossible, efforts must be made to achieve the best approximation to the optimal capital structure.

In practice, firms differ from one another in respect of size, nature, earnings, cost of funds, competitive conditions, market expectations and risk. Therefore, the theories of capital structure may provide only a broad theoretical framework for analyzing the relationship

between leverage and cost of capital and value of the firm. A financial manager however, should go beyond these considerations as no empirical model may be able to incorporate all these subjective features. There are in fact, a whole lot of factors, qualitative, quantitative and subjective, which should be considered and factored in the process of planning and designing a capital structure for a firm. Besides, these considerations, care should be taken to ensure that the capital structure is evaluated in its totality and a finance manager should find out as to which capital structure is most advantageous to the firm. The firm should also suitably take care of the interest of the shareholders, debt holders and management. Above all, the legal provisions (if any) regarding the capital structure should also be considered.

A list of factors relative to capital structure decisions such as profitability, growth of the firm, size of the firm, debt maturity, debt ratio, tax and tangibility have been identified; however, considerations affecting the capital structure decisions can be studied in the light of minimization of risk. A firm's capital structure must be developed with an eye towards risk because it has a direct link with the value (Krishnan and Moyer, 1997). Risk may be factored for two considerations: (1) that capital structure must be consistent with the firm’s business risk, and (2) that capital structure results in a certain level of financial risk.

Business risk may be defined as the relationship between the firm's sales and its earnings before interest and taxes (EBIT). In general, the greater the firm's operating leverage-the use of fixed operating cost- the higher its business risk. Although operating leverage is an important factor affecting business risk, two other factors also affect it-revenue stability and cost stability. Revenue stability refers to the relative variability of the firm's sales revenues.

This behaviour depends on both the stability of demand and the price of the firm's products. Firms with reasonably stable levels of demand, and products with stable prices have stable revenues that result in low levels of fixed costs. Firms with highly volatile demand, products and prices have unstable revenues that result in high levels of business risk.

Cost stability is concerned with the relative predictability of input price. The more predictable and stable these input prices are, the lower is the business risk, and vice-versa. Business risk varies among firms, regardless of the line of business, and is not affected by capital structure decisions (Krishnan and Moyer, 1997). Thus, the level of business risk must be taken as given. The higher a firm's business risk, the more cautious the firm must be in establishing its capital structure. Firms with high business risk therefore tend toward less levered capital structure, and vice-versa (Stohs and Mauer, 1996).

The firm's capital structure directly affects its financial risk, which may be described as the risk resulting from the use of financial leverage. Financial leverage is concerned with the relationship between earnings before interest and taxes (EBIT) and earnings before tax (EBT). The more fixed-cost financing, i.e. debt (including financial leases) and preferred stock, a firm has in its capital structure, the greater its financial risk. Since the level of this risk and the associated level of returns are key inputs to the valuation process, the firm must estimate the potential impact of alternative capital structures on these factors and ultimately on value in order to select the best capital structure.

From the foregoing, a capital structure is said to be efficient, if it keeps the total risk of the firm to the minimum level. The long term solvency and financial risk of a firm is usually

assessed for a given capital structure. Since increase in debt financing affects the solvency as well as the financial risk of the firm, the excessive use of debt financing is generally avoided. It may be noted that the balancing of both the financial and business risk is implied so that the total risk of the firm is kept within desirable limits. A firm having higher business risk usually keeps the financial risk to the minimum level; otherwise the firm becomes a high-risk proposition resulting to higher cost of capital.

After over half a century of studies on this great topic, economists and financial experts have not reached an agreement on how and to which extent firms' capital structure impacts the value of firms, their performance and governance. However, the studies and empirical findings of the last decades have at least demonstrated that capital structure has more importance than was found with the pioneering Miller-Modigliani model. We might probably be far from the ideal combination between equity and debt, but the efforts of fifty years of studies have provided the evidence that capital structure does affect firms' value and future performance. This study is an attempt to contribute to the empirical studies on how capital structure affects firm's performance in the Nigerian context.

1.2 Statement of Research Problem

The financing decision mix of debt and equity represents a fundamental issue faced by financial managers of firms. The actual impact of capital structure on corporate performance in Nigeria has been a major problem among researchers that has not been resolved. Hitherto, there is still no conclusive empirical evidence in the literature about how capital structure influences corporate performance of firms in Nigeria. According to Kochar (1997), poor

capital structure decisions may lead to a possible reduction/loss in the value derived from strategic assets. Hence, the capability of a firm in managing its financial policies is import ant, if the firm is to realize gains from its specialized resources. The raising of appropriate fund in an organization will aid the firm in its operation; hence, it is important for firms in Nigeria to know the debt-equity mix that gives effective and efficient performance, after a good analysis of business operations and obligations.

From our preliminary observation of the financial reports of firms considered in this study, debt financing for quoted companies in Nigeria corresponds mainly to short term debts. Also, external finance for Nigerian listed firms as observed from their annual reports often far exceed investments for most of the firms. However, using excessive amounts of external financing can result in the overleveraging of a company, which means the business has extensive obligations to institutional and individual investors who can disrupt the company's operations and financial returns.

Debt financing affects a company's performance because companies will usually agree to fixed repayments for a specific period. These repayments occur regardless of the firm's performance. Although equity financing typically avoids these repayments, it requires companies to give an ownership stake in the company to venture capitalist or investors. Thus, the choice of capital structure is fundamentally a financing decision problem which becomes even more difficult in times when the economic environment in which the company operates presents a high degree of instability like the case of Nigeria. Hence, making ap propriate capital structure decision becomes crucial for Nigerian firms.

In Nigeria, investors and stakeholders appear not to look in detail the effect of capital structure in measuring their firm's performance as they may assume that attributions of capital structure are not related to their firms' value. Indeed, a well attribution of capital structure will lead to the success of firms; hence the issues of capital structure which may influence the corporate performance of Nigerian firms have to be resolved. Also, the capital structure choice of a firm can lead to bankruptcy and have an adverse effect on the performance of the firm if not properly utilized. The research problem therefore is to find an appropriate mix of debts and stocks through which a firm can increase its financial performance more efficiently and effectively.

1.3 Objectives of the Study

The main objective of this study is to determine the effect of capital structure on corporate performance of Nigerian quoted firms. The specific objectives derived from the major objective are:

i. To establish the relationship between the capital structures of the firms in Nigeria and their return on assets;
ii. To determine the effect of capital structures of the firms in Nigeria on their return on equity;
iii. To ascertain the effect capital structures of firms in Nigeria have on their Tobin's Q as a market performance measure;
iv. To examine how Nigerian firms' sizes impact their performance.

v. To establish the effect of tax on corporate performance; and

vi. To ascertain the effect of the industrial sector on the performance of firms in Nigeria.

1.4 Research Questions

1. What is the relationship between the capital structures of firms in Nigeria and their performance measured by their return on assets, return on equity and Tobin's Q?
2. How does the capital structure of a firm affect its performance?
3. To what extent does maturity structure of debts affect the performance of firms in Nigeria?
4. What is the effect of the size of a firm on the performance of firms in Nigeria?
5. What is the effect of tax on the performance of Nigerian firms?
6. How does the industrial sector affect the performance of Nigerian firms?

1.5 Research Hypotheses

From literature, there is evidence that a firm's performance is affected by the capital structure (Tian & Zeitun, 2007, Salawu, 2007, Kim et al 1998, Krisnnan & Moyer, 1997, Rajan & Zingales, 1995, Blaine, 1994). If capital structure does affect a firm's performance and value, then a strong correlation between firm's performance and capital structure is expected. This study therefore argues that a firm's debt ratio affects its performance negatively. Hence, hypothesis 1 and 2 can be stated as follows:

1. H_0: A firm's capital structure does not have significant influence on its accounting performance as measured by the return on assets and return on equity.

H_1: A firm's capital structure has a significant influence on its accounting performance measured by the return on assets and return on equity.

2. H_0: A firm's capital structure does not have significant influence on its market performance as measured by Tobin's Q.

   H_1: A firm's capital structure has a significant influence on its market performance as measured by Tobin's Q.

It has been further argued that short term debt influences a firm's performance negatively because short term debt exposes firms to the risk of refinancing (Tian & Zeitun, 2007, Pandey, 2001, Kim et al., 1998, Stohs and Mauer, 1996). It is therefore expected that the debt maturity ratio (short term debt) will have a significant impact on corporate performance because of banking credit policy. Thus, the third hypothesis;

3. H_0: Short term debt does not significantly affect firm performance

   H_1: Short term debt significantly affects firm performance

From past empirical studies, the firm's size which is measured as log of sales or turnover has been hypothesized to be positively related to the firm's performance, as bankruptcy costs decrease with size. It has also been suggested that firm size should be positively related to borrowing capacity, because potential bankruptcy costs make up a smaller portion of value for larger firms. In addition, there are economies of scale in transactions costs associated with

long-term debt that are not available to smaller firms (Krishnan and Moyer, 1997). Tian & Zeitun (2007) and Gleason et al. (2000) found that firm's size has a positive and significant effect on firm's performance – return on asset (ROA) while in contrast, other researchers such as Tzelepis & Skuras (2004), Durand & Coeuderoy (2001), Lauterbach & Vaninsky (1999), and Mudambi & Nicosia (1998) found an insignificant effect of firm's size on firm's performance. Based on the discussion above, the fourth hypothesis is thus stated as:

4. H_0: A firm's size does not have a significant influence on a firm's performance.

   H_1: A firm's size does have a significant influence on a firm's performance

Modigliani and Miller 1963 work incorporated corporate taxes and concluded that with corporate income taxes, leverage will increase a firm's value. This occurs because interest is a tax-deductible expense; hence more of a levered firm's operating income flows through to investors. DeAngelo and Masulis (1980) present a trade-off model of optimal capital structure that incorporates the impact of debt and non-debt corporate tax shields. They argue that deductions for depreciation and tax-loss carry forwards are substitutes for the tax benefits of debt financing. Their model suggests that firms with large tax benefits relative to assets should also include less debt in their capital structure. According to Kahle and Shastri (2005), ignoring the effect of these tax benefits can potentially impact our understanding of firm profitability and capital structure. However, in the case of companies with large tax benefits from option exercise, operating earnings can increase even if the profitability of the company's basic business has not changed. Hence we state the following hypothesis:

5. H_0: A firm's tax does not have a significant influence on a firm's performance.

   H_1: A firm's tax has a significant influence on a firm's performance

The capital structure for firms varies from one sector to another and so do their optimal capital structures (see Bradley, Jarrell and Kim, 1984). Also, a firm's growth and business cycle varies from one industry to another. Since capital structure, risk, growth, business cycle, and a firm's access to external sources of funds, and the sensitivity to external stocks, vary across industries, the corporate profitability could be affected by the industrial sectors (Tian and Zeitun, 2007). Therefore, the industrial sector is expected to have an impact on corporate performance. Based on this discussion, Hypothesis 6 can be stated as

6. H_0: Industrial sectors have no effect on corporate performance of Nigerian firms

   H_1: Industrial sectors have effect on corporate performance of Nigerian firms.

1.6 Scope and Coverage of the Study

This study is limited in scope to only quoted firms in Nigeria given that comparison with quoted companies in advance countries will be practically impossible. This is attributable to the differences in reporting standard and the size of the market. The attitude of companies to debt also differs across countries. This study also covers only the non-financial quoted companies. All companies whose business are financial in nature are excluded as they exhibit different characteristics from non-financial quoted companies since their debt-like liabilities are not strictly comparable to the debt issued by non-financial firms. This study is also limited

in temporal scope to 5 years i.e. the period from 2003 to 2007. This is done to reduce estimation bias and noises which could be generated as a direct corollary of the global economic downturn in 2008 and 2009.

1.7 Significance of the Study

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 has on an organization's ability to deal with its competitive environment. A company can finance investment decision by debt and/or equity. This is known as financing decision which could affect the debt- equity mix of firms. The debt-equity mix has an overall implication for the shareholders earnings and risk which will in turn affect the cost of capital and market value of the company. It is therefore imperative for financial managers of firms to determine the proportion of equity capital and debt capital (capital structure) to obtain the debt financing mix that will optimize the value of the firm.

The prediction of the Modigliani and Miller Model that in a perfect capital market the value of the firm is independent of its capital structure, and hence debt and equity are perfect substitutes for each other, is widely accepted. However, once the assumption of perfect capital markets is relaxed, the choice of capital structure becomes an important value-determining factor. This paved the way for the development of alternative theories of capital structure decision and their empirical analysis. Although it is now recognized that the choice between debt and equity depends on firm-specific characteristics, the empirical evidence is mixed and often difficult to interpret. Moreover, very little is still understood about the determinants of

firms' financing mix outside the US and other major developed markets with only a few papers analyzing data from developing countries.

Inter-country comparative studies highlighting differences in capital structure started to appear only during the last two decades i.e. 1990 to 2010. An early investigation of seven advanced industrialized countries (G7) was performed by Rajan and Zingales (1995) where they argued that although common firm-specific factors significantly influence the capital structure of firms across the countries, several country-specific factors also play an important role. This led to further studies on developing versus developed economies.

Dirmirguc-Kunt and Maksimovic (1999) compared capital structure of firms from 19 developed countries and 11 developing countries. They found that institutional differences between developed and developing countries explained a large portion of the variation in the use of long term debt. They also observed that some institutional factors such as the stock market size, the financing structure etc. in developing countries influence the leverage of large and small firms differently.

In an analysis of ten developing countries, Booth, Aivaziam, Demirguc-Kunt and Maksimovic, (2001) found that capital structure decisions of firms in these countries were affected by the same firm-specific factors as in developed countries. They assessed whether existing capital structure theories applied across countries with different structures in firms in ten developing countries and the G7 countries between 1980 and1991 and found consistent relations in both the pooled data results between firm's profitability, asset tangibility, growth

option and leverage. However, they found out that there are differences in the way leverage is affected by country-specific factors such as GDP growth and capital market development. They therefore concluded that more research needs to be done to understand the impact of institutional factors on firms' capital structure choices in different countries.

This study, therefore, has contributed to the literature by examining firm-specific factors that influence the performance of Nigerian firms from the view point of their capital structure choices. This has helped us to understand the impact of institutional factors on Nigerian firms' capital structure choices and how it affects their performance. It has also helped us to establish that the western capital structure models exhibit robustness for companies in the Nigerian market to a large extent.

This study also differs from other studies conducted so far in the country based on the fact that the study employs a larger number of quoted firms (a total of 101 quoted firms yielding 505 observation); employs Tobin's Q as a market performance measure in the study of capital structure and performance of Nigerian firms; increases the number of estimation parameters/measurement variables based on the theories of capital structure; and employs five year averages in the analysis to avoid problems of short term measurement instability and to reduce estimation bias and noises. Therefore, the study is also contributing to methodological discourse as the study employed both pooled, cross-section and time series data in a panel data framework. In effect, this study has improved on previous studies in terms of techniques used in the analysis of the data of Nigerian firms, by employing the use of panel data estimation model. Consequently, the results obtained from the study has led to the

recommendation of some policies and guidelines that will help in decision making and directions of the capital structure of firms in Nigeria in order to improve their performance. Hence, scholars, CEOs of firms and finance managers in Nigeria would find the output of this study a useful database and resource material.

1.8 Structure of Study

This study is divided into five parts. Chapter one introduces the background to the study, the objectives of study, the statement of problem, research questions, the hypotheses to be tested, the significance of the study, the scope and limitation of study and definition of terms. Chapter two reviews the existing literature on capital structure and performance of firms both in the developed countries and developing countries, the theories of capital structure and past empirical studies on the effect of capital structure on corporate performance. Chapter three examines the theoretical framework and methodology adopted for the study in terms of the model specification, methods of estimation, data collection and instrument, data description and instrument, study population and sample size. Chapter four examines the data analysis and interpretation of results. The descriptive analysis results, the correlation matrix and the regression results were presented in qualitative form and fully discussed so that meaningful conclusions were drawn. The analyses were used to test the formulated hypotheses to establish the relationship which exists among the variables expressed. Chapter five which is the last part deals with the summary of the study, conclusion and policy recommendations.

1.9 Definition of Terms

***Capital Structure*:** Capital structure represents the major claim to a corporation's assets. This includes the different types of both equities and debt liabilities a firm employs in its business operations.

Optimal Capital Structure: This is the appropriate mix of equity and debt at which the value of a firm is maximized.

Long Term Debts: These are liabilities of a firm whose repayment exceed one year.

Short Term Debts: These are liabilities of a firm whose repayment is within a year.

Equity: Ownership interest in a corporation in the form of common stocks or preferred stocks. It can also be referred to as shares.

Leverage: This refers to the use of fixed charges source of funds such as debt, bond, and debenture capital along with the owners' equity in the capital structure. Leverage provides a good avenue of measuring risk. It could also be defined as a relative change in profit due to a change in sales. It can be further divided into operating leverage, financial leverage and combined leverage.

Risk: The possibility of suffering damage or loss in the face of uncertainty about the outcome of an action, future events or circumstances. It is the deviation of an actual outcome from the expected outcome in the presence of uncertainty.

Financial Risk: This is the increased risk of equity holders due to financial gearing. It is due solely to the capital structure of a firm or the level of gearing.

Business Risk: This is the variability in earnings before interest and tax (EBIT) associated with a company's normal operation.

Weighted Average Cost of Capital (WACC): This is the composite cost of capital representing the aggregate of the various sources of finance in use. It is used as a discount rate in the appraisal of new investment.

Corporate Income Tax: Corporate income tax is a tax based on the income made by a corporation. The corporation begins with Federal Taxable Income from the federal tax return. Corporate income tax is paid after the end of the taxable year based on the income made during the year. Company income subject to tax is often determined much like taxable income for individuals. Generally, the tax is imposed on taxable profits.

Corporate Performance Management: It entails reviewing overall business performance and determining how the business can better reach its goals. This requires the alignment of strategic and operational objectives and the business' set of activities in order to manage performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Harries and Raviv (1991) affirm that the dynamic use of debt has received little attention in the vast theoretical literature on capital structure. It is a fact that a firm financial policy cannot be taken lightly because of its ultimate effect on the value of the firm. Undoubtedly, various financial policies have their own peculiar risk patterns or characteristics of financial risks. Also, rapid development in the business world has led to series of debates, arguments and controversies, yet most of the questions asked had remained unanswered. This chapter begins with the review of theoretical literature on corporate capital structure and performance and related studies. It presents the overview of the background information on the subject of capital structure and corporate performance. It further reviews literature on corporate capital structure in developing countries and reflects on the Nigerian market and institutional environment. The last section reviews past empirical studies on capital structure and performance.

2.2 Review of Theoretical Literature

If there has been any area of finance theory that has attracted the greatest attention and caused the highest controversy, it is definitely the theory of capital structure and leverage and how they affect firms' performance. Modigliani and Miller (1958) were the first to raise the

question of the relevance of capital structure for a firm. They argue that under certain conditions, the choice between debt and equity does not affect firm value, and, hence the capital structure decision is 'irrelevant'. The conditions under which the irrelevance proposition holds includes, among other assumptions, a situation where there are no taxes, no transaction costs in the capital market, and no information asymmetries among various market players. Financial theorists have however since provided several possible explanations for the financing decisions of firms. Major hypotheses include tax effects, signaling effects, bankruptcy effects, agency issues and industry effects (see Harris and Raviv, 1991; Myers, 1984).

According to Murphy et al. (1996), research on firm performance can be traced to organisation theory and strategic management. Performance measures are either financial or organisational. Financial performance such as profit maximization, maximising profit on assets and maximising shareholders' benefits are at the core of firm's effectiveness (Chakravarthy,1986, Tian and Zeitun, 2007). Tian and Zeitun (2007) say that "in practice, firms' managers who are able to identify the optimal capital structure are rewarded by minimizing the firm's cost of finance thereby maximizing the firm's revenue." This is because the firm financing policy is a crucial aspect of their survival and efficient corporate performance.

Capital structure has been defined as the proportionate mix of debt and equity. Brealey and Myers (2003) are of the opinion that in terms of the proportionate mix, one cannot say more debt is always better or more equity is the better, debt may be better than equity in some cases

and worse in others. The Modigliani and Miller (1958) study lays out the foundation of modern theory of capital structure. They hold the stance that there is independence of investment and financing decisions. They develop a defense of the net operating income approach to the effect of leverage on the cost of capital and the value of the firm which holds that the firm's value and overall cost of capital are independent of the firm's capital structure. Their theory is based on the behavioural proposition that investors would use arbitrage to keep the weighted average cost of capital (WACC) constant when changes in firm's earnings occur. Since then, there have been enormous efforts to study firms' capital structure choices and their implications. Popular models include the tradeoff models, the pecking order models, and the market-timing models, among others. In the tradeoff models firms balance the costs of equity financing and debt financing, and choose the optimal leverage level where the marginal cost of debt equals that of equity.

Classic models include agency models of Jensen and Meckling (1976) and Jensen (1986) who models the agency costs of equity (conflicts between managers and shareholders) and agency costs of debt (conflicts between shareholders and debt holders). Myers (1984) and Myers and Majluf (1984) develop the pecking-order theory of capital structure which postulates that companies prefer internal to external financing, although, they would embrace the latter if necessary to finance real investment with positive net present values. They allege the existence of asymmetric information. Given the information asymmetry between the firms and the investors, firms prefer to finance new projects in the order of retained earnings, followed by risk less debt[1], then risky debt, and then equity.

[1] Most government financial instruments such as government bonds and debentures are regarded as risk less debts.

Undoubtedly, various financial policies have their own peculiar risk patterns or characteristics. Also, rapid development in the business world has led to series of debates, arguments and controversies, yet most of the questions asked had remained unanswered. Harries and Raviv (1991), affirm that the dynamic use of debt has received little attention in the vast theoretical literature on capital structure. According to Pandey (1999), capital structure is the proportionate relationship between long-term debt and equity. It describes the mix of debenture, long-term debt, preference share and equity share capital.

From literature, it is predicted that high-growth firms typically with large financing needs, will end up with high debt ratios because of a manager's reluctance to issue equity (Harris and Raviv,1991). Smith and Watts (1992) and Barclay et al. (2006) however suggested contrary. They found out that high-growth firms consistently use less debt in their capital structure. Myers (2001) also found out that in general, industry debt ratios are low or negative when profitability and business risk are high. In contrast to what is often suggested according to the pecking order theory, Frank and Goyal (2003) found out that internal financing is not sufficient to cover investment spending on average for U.S. firms. External financing was heavily used and debt financing did not dominate equity financing in magnitude.

There is no doubt that benefits abound by the use of debt in the capital structure of the firms. The main benefit of debt financing is its interest tax-deductibility, which results in relatively higher profits for the shareholders. Does it then mean that a firm should go on increasing the debt proportion in its capital structure indefinitely? If every increase in debt financing were

going to increase the earnings for the shareholders, then every firm would have been wholly debt financed. However, there are certain costs associated with the debt financing. So, between the two extremes of whole equity financing and whole debt financing, a particular debt-equity mix is to be decided (Pandey, 2001).

Current financial theory argues that in the absence of bankruptcy costs, the appropriate capital structure for a firm would be composed almost entirely of debt (see, e.g., Brigham and Gapenski, 1996). However, in the presence of bankruptcy costs, diminishing returns are associated with further use of debt in the capital structure (Kwansa and Cho, 1995). Thus, there is some appropriate capital structure beyond which increases in bankruptcy costs are higher than the marginal tax-shield benefits associated with further substitution of debt for equity in the capital structure. Managers who are willing to recognize and maintain this appropriate capital structure minimize financing costs and maximize firm performance (Gleason et al., 2000). According to the free cash flow theory, very high debt levels will increase a firm's value, despite the threat of financial distress, when the firm's operating cash flow significantly exceeds its profitable investment opportunities (Myers 2001).

It has been theorized in the literature that firms may actually have more debt in their capital structure than is appropriate, for two reasons. First, higher levels of debt align the interests of managers and shareholders (Harris and Raviv, 1991). Second, managers may underestimate the costs of bankruptcy, reorganization or liquidation (Gleason et al., 2000). Both of these factors suggest higher than appropriate amounts of debt in the capital structure. If this is the case, then higher than appropriate levels of debt in the capital structure though may increase

firms' value in the short run, could result in greater exposure to financial distress in the long run.

Graham and Harvey (2001) find that firms issue equity rather than debt when their stock prices are high. Baker and Wurgler (2002) also find out that the level of a firm's stock price is a major determinant of which security to issue and Welch (2004) establishes that firms let their capital structure change with their stock prices rather than issuing securities to counter the mechanical effect of stock returns on capital structure.

The theory of capital structure is closely related to the firm's cost of capital. The debate concerns whether or not there is an existence of optimal capital structure and the effect of the capital structure on the overall cost of capital on one hand and the value of the firm on the other hand. This view has been a major source of controversy among famous scholars in the field of finance. Those who assert the existence of an optimal capital structure are said to take to the traditional approach, while those who do not believe in optimal capital structure existence are referred to as supporters of the Modigliani and Miller (MM) hypothesis on capital structure.

The Net Income Approach Theory affirms that the use of debt will positively affect the value of the firm indefinitely, that is, the overall cost of capital or weighted cost can be increased or reduced through the changes in the financial mix or capital structure of the firm. According to Olowe (1998), the net income approach takes the view that leverage or capital structure can affect the value of the firm or its cost of capital. If a firm increases the debt in its capital

structure, the value of the firm will increase while the overall cost of capital will be reduced. This approach is termed the dependent hypothesis, since the cost of capital value of the firm depends on the use of debt. This hypothesis assumes that the cost of debt is less than the cost of equity and that corporate income tax does exist (Pandey, 1999). This hypothesis simply calls for one hundred percent debt finance. Brigham (1999) criticizes this on the ground that it is artificial and incomplete, because there is no firm in the real world that operates on 100% debt finance.

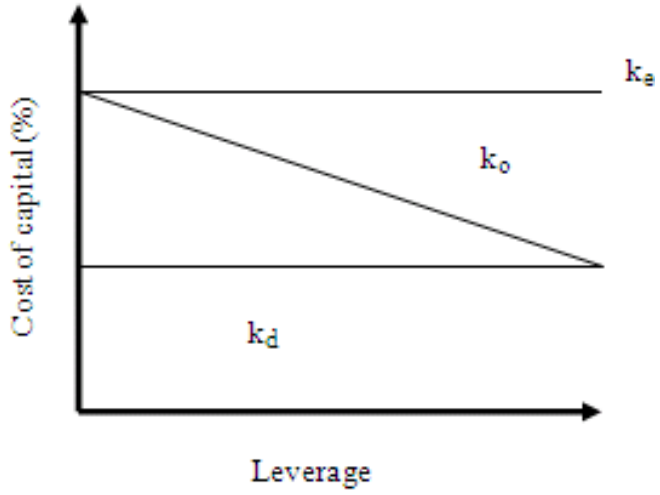

Fig. 2.1: Financial leverage and cost of capital under the Net Income Approach
Source: Brigham, E.F. & Daves, P.R. (2007), Intermediate Financial Management

From Fig. 2.1, as debt in the capital structure is increased, the weighted average cost of capital (K_o) decreases and approaches the cost of debt (K_d) since debt is posited to be a cheaper source of finance while the cost of equity (K_e) remains constant. An optimum capital structure will occur at the point where the value of the firm is at its maximum and the weighted average cost of capital is at its minimum. An optimum capital structure will occur at the point when the firm is 100% debt financed.

On the other hand, the Net Operating Income Approach Theory posits that the weighted average cost of capital and the total value of the firm are independent of one another. It implies that no matter how modest or excessive the firm's use of debt is in financing, the common stock price will not be affected. Riahi-Belkaoni (1999) however states that financial risk is placed on the common stockholders as a result of the decision to use debt financing or financial leverage in the capital structure.

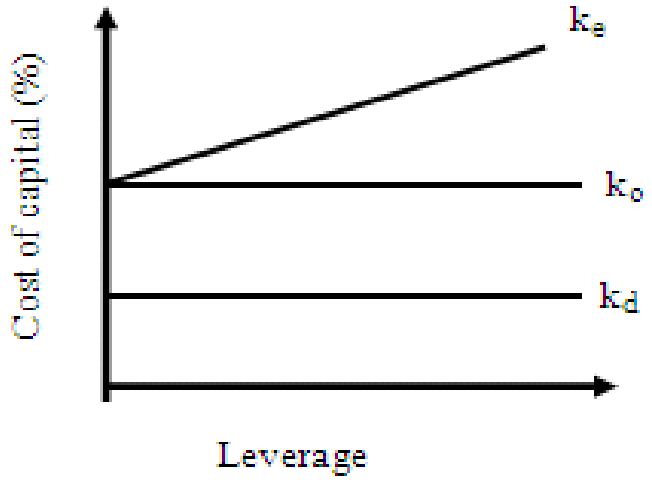

Fig. 2.2: Financial leverage and cost of capital under the net operating income approach

Source: Brigham, E.F. & Daves, P.R. (2007), Intermediate Financial Management

From Fig. 2.2 above, the overall cost of capital (K_o) and Cost of debt (K_d) are constant while the cost of equity (K_e) increases linearly with leverage. As the cost of capital is constant at any level of leverage, there is no unique optimum capital structure in this approach.

Pandey (1999) identifies the underlying assumptions of the net income theory as (a) the market capitalizes on the value of the firm as a whole thus, the split between debt and equity

is not important; (b) the market uses an overall capitalisation rate to capitalise the net operating income depending on the business risk. Hence, if business risk is assumed to be unchanged, cost of capital is constant; (c) the use of less costly debt increases the risk to shareholders. This causes the equity capitalisation rate to increase, thus; the advantage of debt is offset exactly by the increase in the equity capitalisation rate; (d) the debt capitalisation rate is constant; and (e) corporate income tax does not exist. The theory concludes that every capital structure is optimal, regardless of the composition of debt and equity used.

The two positions identified above were criticized on the ground of unrealistic assumptions and this brought about the formulation of a more informed view of the possible situation. This approach is known as the traditional theory and is often referred to as the intermediate or moderate position. The traditional approach is a modification to the net income approach. Olowe (1998) affirms that it is regarded as a middle of the road position between the net income approach and the net operating income approach. This theory assumes that there is an optimal capital structure at the point where the weighted average cost of capital is at a minimum. This is the optimal level of gearing and at this point the shareholders' wealth is maximized. The various views on the traditional position are based on the following underlying assumptions: (a) The weighted average cost of capital does not remain constant but rather, falls initially as the proportion of debt increases in the firm finance mix; (b) as the level of gearing increases, the cost of debt remains constant up to a certain level of gearing, beyond this significant level the cost of debt will increase; and (c) the cost of equity is assumed to rise at an increasing rate of leverage. The traditional approach can be depicted graphically as in figure 2.3 below.

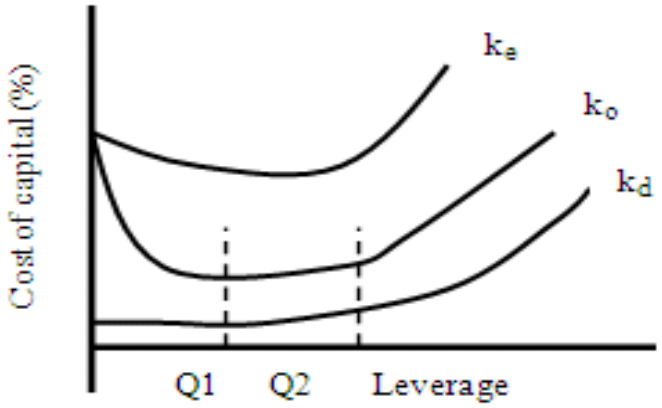

Fig. 2.3: Leverage and the cost of capital under the traditional approach

Source: Brigham, E.F. & Daves, P.R. (2007), Intermediate Financial Management

In Fig. 2.3 above, the cost of capital first decreases with leverage and later increases with leverage. The range Q1 and Q2 is the point of optimum capital structure (Modigliani and Miller, 1958). According to Owualah (1998), the debate on optimal capital structure has shifted from whether it exists or not to determining the optimal for any particular company as well as understanding the underlying influences. These underlying influences affect firms' performance and vary from country to country. Hence, there is a need to establish how capital structure factors affect performance of Nigerian firms and to what degree.

2.3 Corporate Capital Structure in Developing Countries

Singh and Hamid (1992) and Singh (1995) pioneered research into corporate capital structure in developing countries. Singh (1995) observes that firms in developing countries finance their activities differently which is attributable to the differences in their financial environment. He examines financing patterns of top 100 corporations in ten developing countries in the 1980s. The basic conclusions are that first, the determinants of capital structure of corporations in developing countries follow an inverse pecking order theorem as

the corporations rely heavily on external financing, bulk of which is short term finance. Secondly, top corporations in developing countries rely more heavily on equity issues than corporations in developed economies. In most developed economies, large issues of stocks by corporations are only done in periods of high takeover activity, while the developing corporations use the proceeds from equity to finance their regular investments. The study further reveals that government play substantial role in stock market formation and development in developing countries. The government pursues pro-equity financing policies and limit debt and equity of firms. In addition, according to the study, existence of global international markets gives a boost to stock market in less developed countries (LDCs).

Omet and Mashharawe (2002) examined the nature and determinants of capital structure choice of quoted non-financial firms in Jordan, Kuwait, Omani and Saudi from the period 1996 to 2001. The results show that firms in these countries have quite low leverage ratios. The authors therefore conclude that the empirical results indicate that the financing decision of the firms studied can be explained by the determinants suggested by the mainstream corporate finance models.

Booth et al. (2001) examined data from 10 developing countries to assess whether capital structure theories are portable across countries with different institutional structures. The study investigates whether the stylized facts, which were observed from the studies of developed countries, could apply only to these markets or whether they have more general applicability. The results are somewhat skeptical of this premise. They provide evidence that firms' capital structure choices in developing countries are affected by the same variables as

they are in developed countries. Nevertheless, there are persistence differences of institutional structure across countries indicating that specific country factors are at work. Their findings suggest that although some of the insights from modern finance theory are portable across countries, much remains to be done to understand the impact of different institutional choices.

2.4 Review of Empirical Studies

This study will not be complete without taking a critical look at some past empirical studies in terms of the purpose of the studies, the methodology that was adopted and the findings of the studies as are related to this current study. This is necessary in order to enable the researcher to see the gaps that might have been left or to get a glimpse of some recommendations for further studies that might have been reported in these previous studies.

Krishnan and Moyer (1997) carried out an empirical study on the corporate performance and capital structure of large enterprises from four emerging market economies in Asia namely Hong Kong, Malaysia, Singapore and Korea. The study also tries to investigate the influence of country of origin on both financial performance and capital structure of the corporations studied. The study uses Analysis of Variance to test for differences based on country of origin and estimated factor model regression models to capture the effect of expressed variables on performance. They use four different measures of corporate performance viz-a-viz the return on equity (ROE), the return on invested capital (ROIC), the pretax operating profit margin (PTM) and the market return on stock (RETURN) and two measure of leverage namely the ratio of total debts to the market value of equity (TD/Equity) and the ratio of long-term debt to the market value of equity (LTD/Equity). The study corrects for problems of short term

measurement instability and bias by taking the five year average of the variables. The study finds a negative and significant impact of total debt to total equity (TD/TE) on return equity (ROE) of Asian corporations comprising of 81 companies. The study also finds out that both profitability performance and capital structure were influenced by the country of origin. The Hong Kong corporations have significantly higher returns on equity and invested capital while performance differences among firms from the other countries were not statistically significant. The stock market return model was not significant which suggests that expected differences in accounting performance across the countries were rapidly incorporated in their stock prices. Overall, the evidence from the study only lends limited support to the extant capital structure theories in these emerging market economies.

Tian and Zeitun (2007) investigated the effect of capital structure on corporate performance of corporations in Jordan using a panel data sample representing 167 companies during the period 1989 to 2003. The study used panel data models to estimate different measures of corporate performance such as the return on assets (ROA), return on equity (ROE), earnings before interest and tax plus depreciation to total assets (PROF) as accounting performance's measurements and Tobin's Q, market value of equity to book value of equity (MBVR), price/earnings (P/E) ratio and market value of equity plus book value of liabilities divided by book value of equity (MBVE) as market performance's measurements. The study also analyzed the variables using descriptive statistics and correlation matrix. The empirical results show that a firm's capital structure has a significant negative impact on the firms' performance using both the accounting and market measurements. The study finds that the short term debt to total assets (STDTA) as a leverage measure has a significantly positive

effect on the market performance measure (Tobin's Q) contrary to other measures of leverage such as the total debt to assets and long term debt to total assets.

Salawu (2007) carried out an empirical analysis of the capital structure of 50 selected non-financial quoted companies in Nigeria between the period 1990 and 2004. The study investigates the main determinants of the capital structure of the selected quoted firms in Nigeria. The study employs two different analytical techniques namely the descriptive statistics and the inferential statistics (panel data econometrics techniques) in analyzing secondary data obtained from the annual reports of the selected companies and reports of the Nigerian Stock Exchange. The descriptive analysis used in evaluating the selected variables are the mean, mode, median, range and standard deviation. The pooled ordinary least square (OLS) model, Fixed Effects model and Random Effects model are used in the analysis of data. The study also excludes the financial quoted companies. The empirical results show that debt financing for listed companies in Nigeria for the period studied corresponds mainly to a short term debt nature. Leverage is found to be negatively correlated with profitability. The size of the firms is however found to be positively correlated with total debts which according to the author, suggests that large firms can better support higher debt ratios than small firms.

Berger and Bonaccorsi di Patti (2002) propose a new approach to testing the agency theory of capital structure on the U.S. banking industry using profit efficiency or how close a firm's profits are to the benchmark of a best-practice firm facing the same exogenous conditions. The study employs the use of two-equation simultaneous equations and econometric techniques to account for reverse causality from performance to capital structure, using annual

information on 695 U.S. commercial banks to test for agency theory on U.S. firms data from 1990 – 1995. Averages for each bank are used in order to reduce the effects of temporary shocks on the measurement of efficiency and to examine equilibrium relationships in the data used. The study finds that there is reverse causality from performance to capital structure and that data on the U.S. banking industry are consistent with the agency theory of capital structure. The results are statistically and economically significant.

Kochhar (1997) investigated the relationship between the financial management capability of a firm and its competitive advantage. The paper specifically argues that the capital structure decisions of firms are important in realizing the gains from their valuable and idiosyncratic resources. The paper explores the role of financial management in generating superior performance for a firm and concludes that the financial policies of a firm should be in harmony with its source of economic rents. Sound financial management provides firms with the capability to obtain the economic rents present in their strategic assets.

Delcoure (2007) investigated whether capital structure determinants in emerging Central and Eastern European (CEE) countries support traditional capital structure theories developed to explain western economies. The study uses panel data sample consisting of an unbalanced panel of 22 Czech, 61 Polish, 33 Russia and 13 Slovak publicly traded companies from the period 1996 – 2002. The data are analyzed using the pooled ordinary least square regression method, the fixed effects and random effects model for individual country and for the whole sample, the use of panel data provided a greater number of data points and thus additional degrees of freedom which made the result more reliable. The empirical findings suggest that

there is a difference in the determinants of capital structure choices of companies in CEE countries as compared to companies in developed countries. Firms in CEE countries tend to rely more heavily on short term debt in their capital structure than is typical of companies in developed markets. The pecking order, tradeoff and agency theories partially explain to an extent, the corporate capital structure choices in these countries. The empirical evidence however demonstrates the presence of a 'modified pecking order' theory in explaining capital structure choices for firms in CEE countries i.e. retained earnings, equity, bank and market debt.

De Jong, Kabir and Nguyen (2008) analyzed the importance of firm- specific and country-specific factors in the capital structure choice of firms from 42 countries around the world. The study employs data sourced from Compustat Global database and World Bank database for the period 1997 to 2007. The data are analyzed using the firm-level Ordinary Least Square (OLS) regression method with leverage as the dependent variable and the simple Pooled OLS regression method. The authors also test the null hypothesis formulated in the paper using an unrestricted regression model and seven restricted models which are related to the joint test of significance of regression coefficients. The study finds that the firm-specific determinants of leverage differ across countries and shows an indirect impact of country-specific factors on the capital structure of firms. Overall the empirical results indicate that the conventional theories on capital structure developed using listed firms in the United States as a role model, work well in similar economies with developed legal environment and high level of economic development.

Chowdhury and Chowdhury (2010) examined the impact of capital structure on the value of shares of Bangladesh quoted firms. The study aims to provide a status on the extent to which a firm's capital structure may differ and how the value of firm changes as a result. The study analyzes 77 companies from the four most dominant sectors of Bangladesh capital market. Cross sectional and time series fixed effect model is used to analyze available data to find out the impact of capital structure on the firm value (expressed by the share price in the market). Cross sectional regression analysis measures the observations at the same point in time or over the same period but differ along another dimension. Time series analysis identifies the nature of phenomenon represented by the sequence of observation and forecast the future and observes a trend. The model used put value of the firm (share price) as dependent variable; firm size, profitability, public ownership in capital structure, dividend payout, asset and operating efficiency, growth rate, liquidity and business risk were taken as independent variables. Firm size is represented by share capital, profitability is measured through EPS, public ownership is in percentage, capital structure is represented by the ratio of long term debt to total assets, dividend payout at actual, efficiency is measured through fixed asset turnover, growth rate is noted through sales growth rate, liquidity is measured by current ratio, and business risk is represented by operating leverage. All the variables used as independent variables are considered as proxy for the capital structure decision of respective firm. They establish from the empirical findings that there is a strong positive correlation between the firms' capital structure and value expressed by their share prices in the market.

Deesomsak, paudyal and Pescetto (2004) investigated the determinants of firms operating in the Asia pacific Region, in four countries with different legal, financial and institutional

environments namely Thailand, Malaysia, Singapore and Australia. The study use data obtained from Datastream database covering the period from 1993 to 2001. The sample included all quoted non-financial firms. The data are analyzed using the Ordinary Least Square (OLS) regression method to estimate the relationship of the firm-specific determinants while the Fixed Effect model and Pooled OLS are used in analyzing the country-specific determinants. The overall results support the existing evidence with respect to the firm-specific determinants but also suggest that capital structure decisions of firms is also influenced by the environment in which they operate such as the corporate governance, legal framework and institutional environment of the country.

Huang and Song (2006) examined the determinants of capital structure in Chinese listed companies in order to investigate whether firms in the largest developing and transition economy of the world entertain any unique characteristics in their capital structure choice. The paper employs a new database containing both market and accounting data of 1216 Chinese quoted companies from 1994 to 2003. Six measures of leverage are used in the study such as book long term debt (LD) ratio, book total debt (TD) ratio, book total liabilities (TL) ratio, market long term debt (MLD) ratio, market total debt (MTD) ratio and market total liabilities (MTL) ratio together with expressed capital structure determinants such as ROA, Size, tangibility, tax, growth, ownership structure and volatility. The data are analyzed using the Ordinary Least Square (OLS) regression method and the Tobit model. The empirical results show that as in other countries, leverage in Chinese listed firms increase with firm size and fixed assets and decreases with profitability, non debt tax shields, growth opportunity and managers shareholdings. The study also reveals that state ownership or institutional

ownership has no significant impact on capital structure of Chinese companies. However, Chinese firms tend to have much lower long-term debt as compared to those in developed economies.

De Miguel and Pindado (2001) analyzed the firm characteristics which are determinants of capital structure according to different explanatory theories and how institutional characteristics affect capital structure choices in Spanish companies. The study also develops a target adjustment model in studying the debt of Spanish firms in terms of adjusting to their target debt level which was confirmed by the empirical evidence of the study. The study use panel data from non-financial quoted Spanish companies obtained from the database of the CNMV (Spanish Security Exchange Commission) between the period from 1990 and 1997. The econometric analysis used involves the estimation of the dynamic model with predetermined variables using a two-step Generalized Method of Moments (GMM). The model is estimated using the Dynamic Panel Data (DPD) program. The empirical results are consistent with tax and financial distress theories and with the interdependence between investment and financing decisions. The results also provide additional evidence on the pecking order and free cash flow theories. The empirical evidences corroborate the proposed model. The result also shows that Spanish firms bear considerable transaction costs when they decide to adjust their debt ratio in the previous period to their target level in the current period, though these transaction costs according to the authors are inferior to those borne by U.S. firms.

Bauer (2004) examined the determinants of capital structure in transition economy of Czech Republic to establish if there are any differences from the proposals of existing theories on capital structure choices. The study employs data collected from financial reports of listed companies in Czech within the period from 2000 and 2001. The data are analyzed using the Ordinary Least Square regression method. The variables examined are size, return on asset (ROA), tangibility, growth opportunity, tax rate, non-debt tax shield and volatility. Four measures of leverage are also used namely book total liabilities ratio (TL), book total debt ratio (TD), market total liabilities ratio (MTL) and market total debt ratio (MTD) and a comparative analysis is also carried out. According to the empirical results, listed firms in Czech exhibit lower leverage than firms in the G7 countries and firms in the majority of developing countries when measured by book total liabilities ratio. Czech quoted firms' leverage is positively correlated with size, tax and negatively correlated with profitability, tangibility and growth opportunities. The negative relationship between leverage and profitability makes the findings consistent with the pecking order hypothesis rather than the static tradeoff models.

Chen (2004) developed a preliminary study to explore the determinants of capital structure of Chinese-listed companies using firm-level panel data. The study uses data from the annual reports of 88 Chinese publicly listed companies for the period 1995 to 2000. The selected variables such as overall leverage, long term leverage, profitability, size, growth opportunities, asset structure, cost of financial distress and tax shield effects are analyzed using three estimation techniques namely the fixed effect method, random effects method and the pooled OLS regression method. The empirical results show that some of the insights from

modern finance theory of capital structure are portable to China in that certain firm-specific factors that are relevant for explaining capital structure in developed economies are also relevant in China. However, neither the trade off model nor the pecking order hypothesis derived from the western setting provides convincing explanations for the capital structure of the Chinese firms. The capital structure of the Chinese companies seems to follow a 'new pecking order'- retained profit, equity and long term debt.

Adaramola, Sulaimon and Fapetu (2005) aimed at establishing a realistic relationship between the capital structure and corporate performance of selected quoted firms in Nigeria. The study use panel data from fifty quoted firms for the year 2002. The data are further built into three different panels. Panel one comprised of data from both banking and non-banking firms, panel two has data from 25 non-banking firms while panel three has data from 25 banking firms. The study employs the ordinary least square (OLS) regression method of estimation to analyze the variables used i.e. Earnings per share (EPS) on leverage ratio, weighted average cost of capital and business risk. The study reveals that capital structure has no significant impact on the value of non-banking firms as all explanatory variables used in the panel for non-banking firms were not statistically significant from zero. On the other hand, the result shows that the value of the banking firms is positively affected by its capital structure. According to the authors, this result suggests that the concept of optimal capital structure is not applicable to the Nigerian banking institutions.

David and Olorunfemi (2010) investigated the relationship that exists between earnings per share and leverage ratio on one hand and dividend per share and leverage ratio on the other

hand in the Nigerian petroleum industry. The earnings per share and dividend per share are used as performance measures. The study employs panel data analysis using Pooled regression estimation, Fixed-effect estimation, Random-effect estimation and Maximum likelihood estimation. They find that there is positive relationship between earnings per share and leverage ratio on one hand and positive relationship between dividend per share and leverage ratio on the other hand.

Gleason, Mathur and Mathur (2000) show that culture influences the choice of capital structure and that with culture as an additional explanatory variable, the choice of capital structure affects corporate performance. The study uses data for 198 European Community retailers from 14 countries for the year 1994. The data are obtained from 1995 Disclosure/Worldscope database. The 14 European countries are further divided into four cultural clusters to show the influence of culture as a control variable. The variables are analyzed using the Ordinary Least Square (OLS) regression method of estimation. Four performance measures are used namely return on assets (ROA), pretax income to sales (PTAX), sales per employee (SL/EMP) and percentage growth in sales (GSALES). The results show that capital structures for retailers in Europe vary by cultural clusters. Using both financial and operational measures of performance, the result also shows that capital structure influences financial performance. A negative relationship between capital structure and performance is established which suggests that agency issues may lead to use of higher than appropriate levels of debt in the capital structure thereby producing lower performance.

Rajan and Zingales (1995) investigated the determinants of capital structure by analyzing the financial decisions of public firms in the major industrialized countries to establish whether their leverage is similar across the G-7 countries. The study computes leverage for each country after implementing the necessary accounting adjustments. The study also undertakes a comparative study of the cross-sectional determinants of capital structure choices in the G-7 countries. The study employs data obtained from the Global Vantage database on international corporations from the period 1987 to 1991. The sample used covered between 30% and 70% of the companies listed in every country which represents more than 50% of the market capitalization in each country. All the companies are further sorted into deciles according to the market value of their assets (in U.S. dollars) at the end of 1991. The study finds that at an aggregate level, firm leverage is fairly similar across the G-7 countries. The study further shows that factors identified by previous studies as correlated in the cross-section with firm leverage in the U.S., are similarly correlated in other countries as well. However, according to the authors, a deeper examination of the U.S. and foreign evidence suggests that the theoretical underpinnings of the observed correlation are still largely unresolved.

Following the review of past empirical studies, the table below presents a summary of the implications of capital structure theories and empirical evidences on the relationship of capital structure and corporate performance. The expected outcome would be drawn from the signs and magnitude of the explanatory variables that would be obtained from the data analyses. From table 2.1 below, it is expected that capital structure will have a negative influence on the accounting performance of Nigerian firms i.e. higher level of leverage would lead to lower

returns on asset and equity. It is also expected that highly profitable Nigerian firms will require less debt finance. It is further expected that Nigerian firm size is positively related to its borrowing capacity because potential bankruptcy costs make up a smaller portion for most large firms. Corporate tax rate to earnings is also expected to have a positive impact on performance.

Table 2.1: Theories and Expected Relation between Corporate Performance and Firm Leverage and Empirical Evidences

Variables	Predicted signs by the theories (expected relation)	Mostly Reported in empirical literatures	Some Empirical Evidence
ROA	- (pecking order) + (trade-off, signalling)	-	Shyam-sunder &Myers (1999), Fama & French (2002) Graham & Harvey (2001)
ROE	- (pecking order) + (trade-off, signalling)	-	Chen (2004), Krishnan & Moyer (1997), Tian & Zeitun (2007)
Size	- (pecking order) + (trade-off, signalling)	+	Rajan & Zingales (1995), Tian & Zeitun (2007), Gleason et al. (2000).
Tax	- (pecking order) + (trade-off, signalling)	+	Krishnan & Moyer (1997), Tian & Zeitun (2007)

Source: Theoretical extractions by the researcher

CHAPTER THREE

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

3.1 Introduction

In this section, the theoretical framework showing the different underlying theories of capital structure and corporate performance is enunciated. The methods adopted in analysing the relationship between capital structure of firms and their performance vis-à-vis the population, sample size and research design is presented. The empirical model for the study of Nigerian firms' capital structure and performance is also formulated. This empirically linked the performance of quoted Nigerian firms (both their accounting and market performance) to their capital structure. This section further shows the data description; discusses the techniques of estimation adopted for the model as well as the sources of data.

3.2 Theoretical Framework

3.2.1 Modigliani and Miller Proposition (No Taxes)

Modigliani and Miller challenge the traditional view as to the effect of leverage on the cost of capital. They develop a behavioral justification support for the net operating income approach. Without taxes, the cost of capital and market value of the firm remain constant throughout all degrees of leverage (Modigliani and Miller, 1958).The Modigliani and Miller (MM) theory proves that under a very restrictive set of conditions, a firms value is unaffected by its capital structure which implies that the financing choice of firms is irrelevant. Modigliani and Miller come to this conclusion under the following assumptions:

- Firms with the same degree of business risk are in a homogenous risk class
- Investors have homogenous expectations about earnings and risks

- There is an existence of perfect capital markets
- Interest rate on debt is the risk-free rate and
- All cash flows are perpetuities

The MM theorem further states that the expected return on equity is positively related to leverage because the risk of equity increases with leverage.

3.2.2 Capital Structure and Corporate Taxes

Miller and Modigliani (1963) correct their earlier proposition on capital structure with the inclusion of corporate taxes. The theory proposes that the value of the firm is equal to the value of the firm's cashflow with no debt tax shield (value of an all equity firm) plus the present value of tax shield in the case of perpetual cash flows. According to Givoly, Hayn, Ofer & Sarig (1992), the relation between capital structure and taxes has been the subject of extensive theoretical analysis, which has led to testable hypotheses. These hypotheses specify particular relations among the optimal capital structure, corporate tax rates and non-debt tax shields. Previous empirical tests concerning the relation between leverage and corporate tax attributes have produced inconclusive results. Some studies [see, e.g., Bradley, Jarrell, and Kim (1984), and Titman and Wessels (1988)] find no evidence to support theoretical predictions that leverage levels are related to firms' non-debt tax shields. Scholes, Wilson, and Wolfson (1990), however, find that there is a relationship between marginal tax rates and financing decisions for commercial banks.

3.2.3 Corporate and Personal Taxes Model

The MM model with the corporate taxes is extended by Miller to include personal taxes (Miller, 1977). Miller introduces a model where leverage affects the firm's value when both corporate and personal taxes are taken into account. It shows that under certain conditions the tax advantage of debt financing at the firm level is exactly offset by the tax disadvantage of debt at the personal level. There has developed, a burgeoning theoretical literature attempting to reconcile Miller's model with the balancing theory of optimal capital structure [see e.g., DeAngelo and Masulis (1980), and Modigliani (1982)]. According to Bradley, Jarell and Kim (1984), "if the income from equity is untaxed, then the marginal bondholder's tax rate will be less than the corporate rate and there will be a positive net tax advantage to corporate debt financing. The firm's optimal capital structure will involve the trade-off between the tax advantage of debt and various leverage-related costs". Thus, the offshoot of the extensions of Miller's model is the recognition that the existence of an optimal capital structure is essentially an empirical issue as to whether or not the various leverage-related costs are economically significant enough to influence the costs of corporate borrowing.

3.2.4 Financial Distress and Bankruptcy Costs Theory

According to this theory, financial distress is generated by the presence of debt in the capital structure which could lead to bankruptcy. It states that the larger the fixed interest charges created by the use of leverage, the greater the probability of decline in earnings and greater the probability of incurrence of costs of financial distress. (Harris and Raviv, 1991; Riahi-Belkaoni, 1999). Costs of financial distress include the legal and administrative costs of bankruptcy as well as the subtler agency, moral hazard, monitoring and contracting costs which could erode firm value even if formal default is avoided (Myers, 1984).

Zeitun and Tian (2007) are of the opinion that since bankruptcy costs exist, deteriorating returns occur with further use of debt in order to get the benefits of tax deduction. It is therefore believed that there is an appropriate capital structure beyond which increases in bankruptcy costs are higher than the marginal tax-sheltering benefits associated with additional substitution of debt for equity.

Harris and Raviv (1991) argue that capital structure is related to the trade-off between costs of liquidation and the gain from liquidation to both shareholders and managers. Zeitun and Tian (2007) however state that underestimating the bankruptcy costs of liquidation or reorganization, or the aligned interest of both managers and shareholders, may lead firms to have more debt in their capital structure than they should (see Riahi-Belkaoni, 1999).

Francis and Cho (1995) in their study of ten U.S. bankrupt restaurant between 1980 -1992, show that the tradeoff between tax savings and bankruptcy cost can be utilized by the firm to serve as a signal for imminent insolvency. The stronger the signal becomes the closer the firm is to the bankruptcy year and the higher the bankruptcy probability levels. Their findings also confirm the fact that the forgone profits represent a sizable proportion of a firm's value and that the size of the indirect bankruptcy cost outweighs the size of the tax savings from debt. The higher the debt used the closer a firm is to filing for bankruptcy. Therefore, the tradeoff between tax savings and indirect bankruptcy cost can be used as an appropriate signal for gauging the onset of financial distress.

Kwansa and Cho (1995) conclude that targeting an optimal capital structure is beneficial to a firm because the indirect costs of financial distress is significant, making the appropriate balancing of tax savings and indirect cost of financial distress necessary.

3.2.5 Agency Costs (Free Cashflow) Theory

Under this model, an optimal capital structure can be obtained by trading off the agency cost of debt against the benefit of debt (Riahi-Belkaoni, 1999). Agency costs are costs due to conflicts of interest. Two types of conflicts are identified by Jensen and Meckling (1976): first is the conflicts between shareholders and managers arising from the situation of managers holding less than 100% of the residual claim and second is the conflict between debt holders and equity holders arising from the debt contract that make equity holders invest sub-optimally.

Gleason, Mathur, and Mathur (2000) are of the opinion that a negative relationship between capital structure and performance suggests that agency issues may lead to use of higher than appropriate levels of debts in the capital structure, thereby producing lower performances.

According to Berger and Bonaccorsi di Patti (2006), greater financial leverage may affect managers and reduce agency costs through the threat of liquidation which causes personal losses to managers of salaries, reputation and perquisites and higher leverage can mitigate conflicts between shareholders and managers concerning the choice of investment (Myers, 1977) and the amount of risk to undertake (Jensen and Meckling, 1976), the conditions under which the firm is liquidated (Harris and Raviv, 1990) and dividend policy.

Using profit efficiency as an indicator of firm performance to measure agency costs, a two-equation structural model to take into account reverse causality from firm performance to capital structure and include measures of ownership has findings that are consistent with the agency costs hypothesis. Berger and Bonaccorsi di Patti (2006) find out that higher leverage or a lower equity capital ratio is associated with higher profit efficiency. They also find that profit efficiency is responsive to the ownership structure of firms consistent with agency theory and that profit efficiency embeds agency costs.

Harris and Raviv (1991) also find results that are consistent with the agency models. Their findings show that leverage is positively associated with firm value, default probability and liquidation value and negatively associated with interest coverage, the cost of investigating firm prospects and the probability of reorganization following default.

3.2.6 The Pecking Order Theory (Asymmetric Information Model)

This model considers the possibility of asymmetric information whereby firm managers are assumed to know more about the characteristics of the firm's return stream or investment opportunities (Harris and Raviv, 1991; Riahi-Belkaoni, 1999). The choice of capital structure by management therefore signals to outside investors some insider information. This asymmetry of information influences the choice between internal and external financing and between new issues of debt and equity securities. This choice is based on the 'pecking order' hypothesis (Baskin, 1989).

The pecking order theory of capital structure was first presented by Myers and Majluf (1984), and relies heavily on information cost to explain corporate behaviour. They show in their pioneering work that, if investors are less well-informed than current firm insiders about the value of the firm's assets, then equity may be mispriced by the market. If firms are required to finance new projects by issuing equity, underpricing may be so severe that new investors capture more than the NPV of the new project, resulting in a net loss to existing shareholders.

Myers (1984), challenges the notion of an optimal capital structure based purely on the tradeoff of debt-related benefits and costs in a world of information asymmetry between corporate managers and investors. He further observes that corporate financing practice does not conform to a simple trade off model and he suggests the existence of a pecking order among the financing sources used by firm. According to this theory, internally generated cash is at the top of the order, followed by external debt financing while external equity financing is used only as a last resort.

Shyam-Sunder and Myers (1999) also find support for the pecking order theory among U.S. firms. They claim that the tradeoff model can be rejected since the pecking order model has much greater time-series explanatory power than the tradeoff model after testing the statistical power of alternative hypothesis. They opine that changes in debt ratios are driven by the need for external funds, not by any attempt to reach an optimal capital structure.

Allen (1991) investigates the financial managers' perceptions of the broad determinants of capital structure decisions of listed Australian companies and finds out that the companies

appear to follow a pecking order with respect to funding sources. His study provides a practical explanation of why debt level and company profitability might be inversely related.

Fama and French (2002) in their study agree that the negative effects of profitability on leverage is consistent with the pecking order model, but also find that there is an offsetting response of leverage to changes in earnings, implying that the profitability effects are in part due to transitory changes in leverage rather than changes in the target.

Baner (2004) examines the capital structure of listed companies in Visegrad countries (Czech Republic, Hungary, Poland and Slovak Republic) during the period from 2000 to 2001 and find that leverage of listed firms in these countries is negatively correlated with profitability but positively correlated with size. This finding is consistent with the pecking order hypothesis.

Chen (2004) using panel data, explores the determinants of capital structure of Chinese listed companies for the period 1995-2000 applying the tradeoff and pecking order models. The author concludes that the capital structure choices of Chinese companies follow a 'New Pecking Order" model – retained earnings, followed by equity before long term debt- due to the unique institutional, legal and financial constraints in the Chinese banking sector. He finds that Chinese companies rely heavily on short term financing, and managers prefer equity to debt financing. De Miguel and Pindado's (2001) examination of the determinants of capital structure of Spanish companies also supports the pecking order theory.

3.2.7 The Static Trade-off Theory

This theory postulates that the tax-deductibility of interest payment induces a company to borrow up to the margin where the present value of interest tax shield is just offset by the value loss due to agency cost from issuing risky debt as well as the cost of possible liquidation or re-organization. This hypothesis by Miller (1977) is based on the proposition that the optimal leverage ratio of the firm is determined by the tradeoff between current tax shield benefits of debt and higher bankruptcy costs implied by the higher degree of corporate indebtedness. It assumes that firms balance the marginal present values of interest tax shields against the costs of financial distress.

According to the static trade off models, the optimal capital structure does exist. A firm is regarded as setting a target debt level and gradually moving towards it. The firm's optimal capital structure will involve the tradeoff among the effect of corporate and personal taxes, bankruptcy costs and agency costs. Both tax-based and agency-based theories belong to the static tradeoff theory. (Jensen and Meckling, 1976; Chang, 1999; Harris and Raviv, 1991).

It has been established that the tax advantage is most important for large, regulated and dividend-paying firms – companies that probably have high corporate tax rates and therefore large tax incentives to use debt (Desai, 1998; Graham and Harvey, 2001).

Graham and Harvey (2001) survey of 392 CFOs on their capital structure provide moderate support for the static trade-off theory. The study reveals that 44% of the CFOs responded to have a somewhat tight target or strict target debt ratio, 55% of which are very large firms.

This finding shows that most large firms have target debt ratios and are more common among investment grade and regulated firms.

Myers (1984) says "the firm is portrayed as balancing the value of interest tax shields against various costs of bankruptcy of financial embarrassment though there is controversy about how valuable the tax shields are, and which, if any, of the costs of financial embarrassment are material". According to the literature, the firm is supposed to substitute debt for equity or equity for debt until the value of the firm is maximized.

3.2.8 The Organizational Theory

This theory focuses on internal finances because it believes that external finances no matter its sources, signals to the market that, internal sources are inadequate. Rooted in this belief is that companies also do pursue the objectives of conserving and when possible enhance corporate wealth. The theory suggests that when a company issues debt to replace equity, a decrease in corporate wealth occurs. However, this is regarded as good news for shareholders because a new debt issue enables a company to afford itself of the associated tax advantage of debt financing.

Filbeck et al. (1996) test Patel et al. (1991) hypothesis that firms have a tendency to keep their capital structure in line with the industry and find results that are contrary. They however, found a weak support for this hypothesis and conclude that firms act rationally with respect to financing decisions.

3.2.9 The Bargaining Based Theory

This theory of capital structure is pioneered by Hart and Moore (1989), and an extension followed by Bolton and Scharf Stein (1991). According to this theory, the firm's capital structure influences potential future negotiations between the firm and its investors, and the anticipation of such negotiations, in turn, influences financial decisions. It has been established in literature that debt strengthens the bargaining position of equity holders in dealing with input suppliers. Sarig (1988) argues that bondholders bear a large share of the costs of bargaining failure but get only a small share of the gains to successful bargaining. That is, bondholders insure stockholders to some extent against failure of negotiations with suppliers. Increases in leverage increase the extent of this insurance and therefore increase the equity holders' threat point in negotiating with suppliers. As a result, debt can increase firm value. This implies that a firm should have more debt for greater bargaining power and/or the market alternatives of its suppliers. Thus, Sarig predicts that highly unionized firms and/or firms that employ workers with highly transferable skills will have more debt, *ceteris paribus.*

3.3 Model Specification

From the literature a firm's performance could be affected by the capital structure choice and by the structure of debt maturity as debt maturity affects a firm's investment options. So, investigating the impact of capital structure variables on a firm's performance will provide evidence of the effect of capital structure on firms' performance. Following the hypotheses earlier formulated, a regression model is formulated to capture the effect of capital structure (measures of leverage) on performance. This model will help in testing the stated hypotheses of the study and in achieving the objectives earlier stated.

Tian and Zeitun (2007) states that the usefulness of a measure of performance may be affected by the objective of a firm which could in turn affect its choice of performance measure and the development of the stock market. For example, if the stock market is not highly developed and active, then the market performance measures may not provide a good result. The most common performance measure proxies that have been used by many authors are return on assets (ROA), return on equity (ROE) and/or return on investment (ROI) [see Gorton and Rosen (1995), Mehran (1995), Krishnan and Moyer (1997), Ang, Cole and Lin (2000) and Tian and Zeitun (2007)]. However, the ROA is widely regarded as the most useful measure to test firm performance (Abdel Shahid (2003), Tian and Zeitun (2007). Other measures of performance called market performance measures are price per share to the earnings per share (P/E) (Abdel Shahid ,2003) and Tobin's Q which mixes market value with accounting value and has been used to measure the firm's value in many studies [see McConnel and Serveas (1990), Zhou (2001) and Tian and Zeitun (2007)].

In this study, three measures of corporate performance were used – ROA, ROE and Tobin's Q. The researcher used the proxies (ROA and ROE) as accounting performance measures and the (Tobin's Q) as a market performance measure. More than one proxy for performance were used in this study in order to investigate whether the independent variables explain the performance measures (accounting and stock market) at the same level or not. Three measures of leverage[2] were also used in the study:

[2] As Harris and Raviv (1991) argued, the choice of measures for both performance and leverage as explanatory variable is crucial, as it may affect the interpretation of the results. Rajan and Zingales (1995) also showed that the determinants of capital structure are sensitive to the measure of leverage. Thus different measures of performance as dependent variable and leverage (independent variables) were used.

1. The ratio of total debt to total assets (TD/TA);

2. The ratio of long term debt to total assets (LTD/TA); and

3. The ratio of short term debt to total assets (STD/TA).

The short term debt to total assets (STD/TA) and the long term debt to total assets (LTD/TA) are used to examine the third hypothesis (H_3) to establish the effect of debt maturity ratio on performance. All are measured as five year averages ending in 2007 to avoid problems of short-term measurement instability and bias (Krishnan and Moyer, 1997). The accounting and market measures used in this study are similar to the variables used by Blaine (1994), Krishnan and Moyer (1997) and Tian and Zeitun (2007). Blaine however did not use a market performance measure and Krishnan and Moyer did not employ Tobin's Q as their market proxy. However, to the best of our knowledge, this study is the first to employ (Tobin's Q), as a market performance measure, in the study of capital structure and performance of Nigerian firms.

Accordingly, a functional relationship between firms' performance (PER) and the chosen explanatory variables (different measures of leverage, size and tax) is shown below:

$$PER = f\,(LEV, S, Tax) \qquad (1)$$

with:

$$(PER)' = (ROA, ROE, Tobin's\ Q)'$$

$$(LEV)' = (Lev1, Lev2, Lev3)'$$

PER represents the different measures of performance (ROA, ROE and Tobin's Q) and LEV shows the different measures of leverage (Lev1, Lev2, Lev3), S connotes the size of the firms and Tax represents the corporate tax of the firms.

Where:

ROA = Return on asset and is measured by earnings before interest and tax (EBIT) divided by total assets

ROE = Return on equity, measured by earnings before interest and tax (EBIT) Preference Dividend), all divided by equity

Tobin's Q = Market value of equity plus total debt to total asset [(E+TD)/TA]

Lev1 = the ratio of total debt to total asset (TD/TA)

Lev2 = the ratio of long term debt to total asset (LD/TA)

Lev3 = the ratio of short term debt to total asset (STD/TA)

S = Size of the firm measured by log of turnover

T = Tax measured as total corporate tax to earnings before interest and tax

The relationships between the components of PER and the different independent variables can be re-written implicitly as follows:

$$ROA_{it} = f(Lev1_{it}, Lev2_{it}, Lev3_{it}, S, Tax, u_{it}) \quad (2)$$

$$ROE_{it} = f(Lev1_{it}, Lev2_{it}, Lev3_{it}, S, Tax, \mu_{it}) \quad (3)$$

$$Tob\ Q_{it} = f(Lev1_{it}, Lev2_{it}, Lev3_{it}, S, Tax, v_{it}) \quad (4)$$

with:

i = 1,…….,N

t = 1, …….,T and

$u_{it,}$ $\mu_{it,}$ and v_{it} = Error terms (the time-varying disturbance term is serially uncorrelated with mean zero and constant variance).

Hence: $u_{it} \cong iid\ N\ (0, \sigma^2 u)$

$\mu it \cong iid\ N\ (0, \sigma^2 \mu)$

$v_{it} \cong iid\ N\ (0, \sigma^2 v)$

Equations 2 – 4 depict short panel models with few time series and large cross sections (individual companies). Using this panel method in estimation of the data obtained will enable us obtain estimates that are unbiased and efficient since it avoids loss of degree of freedom. Hence, the analytical panel data model tested in this study consists of three different equations which are structured as follows:

Setting: $y_{it} = PER_{it}$ and

$x_{it} = LEV_{it}$

Then:

$$y_{it} = \alpha_i + \beta_{ij}\, x_{it} + \mu_{it} \qquad (5)$$

Where:

y_{it} = vector of dependent variables, such that $(y_{it})' = (ROA, ROE, Tobin's\ Q)'$

x_{it} = vector of the explanatory variables, such that $(x_{it})' = (Lev1, Lev2, Lev3)'$

i =1,---------,101

j = 1, --------- ,5

t = 2003 - 2007

The vector of dependent variables (y_{it}) are the firms accounting and market performance indicators to be determined, while (x_{it}) is vector of the explanatory variables i.e. factors that can influence firms' performance. The parameters (β_{ij}) are the various coefficients of the explanatory variables that were obtained when the model was fitted into the data. The constant term (α_i) represents the intercept of the equations while the (μ_{it}) are the error terms that captures variables not included and expected to be identically distributed with zero mean and constant variance. **Apriori expectation**: Theoretically, there is an expectation of a significant negative relationship between the performance indicators and all measures of leverage but a significant positive relationship between size and performance and tax and performance i.e. $\beta_1, \beta_2, \beta_3 < 0, \beta_4, \beta_5 > 0$.

To control for the effect of industrial sectors on a firm's performance, 26 dummy variables are used. Sector 1 (Agric/Agro-Allied), Sector 2 (Airline Services), Sector 3 (Automobiles and Tyre), Sector 4 (Breweries), Sector 5 (Building Materials), Sector 6 (Chemical and paints), Sector 7 (Commercial/Services), Sector 8 (Computer and Office Equipment), Sector 9 (Conglomerate), Sector 10 (Construction), Sector 11 (Emerging Markets), Sector 12

(Engineering Technology), Sector 13 (Food/Beverages and Tobacco), Sector 14 (Healthcare), Sector 15 (Hotel and Tourism), Sector 16 (Industrial/Domestic Products), Sector 17 (Information Communication and Telecommunication), Sector 18 (Machinery), Sector 19 (Maritime), Sector 20 (Media), Sector 21 (Packaging), Sector 22 (Petroleum), Sector 23 (Printing and Publishing), Sector 24 (Real Estate), Sector 25 (Road Transportation) and Sector 26 (Textiles) . The dummy variable takes the value 1 if the firm is in that sector; otherwise it takes the value 0. Another model showing the effect of the industrial sector is therefore structured as follows:

$$y_{it} = \beta_o + \beta_1 Lev_{it} + \beta_2 Size_{it} + \beta_2 Tax_{it} + INDUST_{it} + \varepsilon_i + \mu_{it} \quad (6)$$

This second regression model takes the form of the Random Effects Model. The Random Effects model is better suited for this second data set, since we need to control for the effect of the industrial sectors on firm performance and the Fixed Effects Model does not allow us to control for the effect of the industrial sectors. The reason is that the industrial dummies do not change over time and, so, are not being reported in the Fixed Effects Model.

3.4 Methods of Estimation

The data used in this study is presented in ratios. Two different analytical techniques are employed in this study. They include the use of descriptive statistics and an econometric technique of Panel Data[3] method. Descriptive statistics involve the use of mean, median, maximum and minimum value to evaluate the selected variables. Other measures of

[3]Panel data is more useful to this study because panel data, unlike cross-sectional data, allows controlling for unobservable heterogeneity through individual firm effect.

descriptive estimates like the standard deviation and variance were also employed so as to see the degree of variability of these estimates. The regression model took the form of the Fixed Effects Model, Random Effects Model and the Pooled Ordinary Least Square (OLS) model in order to establish the most appropriate regression with the highest explanatory power, that is better suited to the data set employed in the study i.e. a balanced panel (Greene, 2003; Chen, 2004; Salawu, 2007). We used the Pooled Ordinary Least Square (POLS) in the first instance. However, in view of the weaknesses associated with it, we used the Fixed Effects Model (FEM) and Random Effect Model (REM) to capture the performance of the firms considered in the study. The usual identification tests and the Hausman's Chi-square statistics for testing whether the Fixed Effects model estimator is an appropriate alternative to the Random Effects model is also computed for each model (Judge et al., 2007; Tian and Zeitun, 2007).

3.4.1 Panel Regression Analysis: Panel regression analysis is a regression that involves the combination of time series and cross sectional data: panel data. Panel data are said to be repeated observations on the same cross section, typically of individual variables that are observed for several time periods (Pesaran, Shin and Smith, 2000; Wooldridge, 2003). Panel data is an important method of longitudinal data analysis because it allows for a number of regression analyses in both spatial (units) and temporal (time) dimensions. The spatial aspect refers to a number of cross-sectional units of observation, which could be countries, states, firms (as used in this study), commodities, and so on while the temporal aspect refers to regular episodic observations of a set of variables in the cross-section units over a particular period of time (i.e. 2003 – 2007). Panel data also provides a major means to analyse data longitudinally especially when the data are from various sources and the time series are rather

short for separate time series analysis. Even in a situation when the observations are long enough for separate analyses, panel data analysis gives a number of techniques that can help examine changes over time common to a particular type of cross sectional unit.

The combination of time series with cross-section data made possible by the use of panel data regression technique, usually improve the degree of freedom and quantity of data which may not be possible when using only one of them (Gujarati, 2003). Other advantages of using panel data techniques according to the same author include the following:

i. It gives more informative data, more variability, less-co-linearity among variables, more degree of freedom, and more efficiency because of its combination of cross-section and time series observations;
ii. It can detect and measure effects that are not commonly observed when using only cross-sectional or time series data;
iii. It minimises the bias that might result from aggregation of individual units into broad aggregates. This is due to the fact that data are made available for several units in a panel data setting;
iv. It helps in handling more complicated behavioural models such as technological change, which may not be easy with only cross-sectional or time series data;
v. It helps to take off heterogeneity in the estimation process because it allows for individual specific variables;
vi. It is better suited when a study is dealing with the dynamics of change such as turnover because it involves the repeated cross section of observations.

The advantages of using panel data notwithstanding, there are some estimation and inference problems. Since panel data involve cross-section and time series dimensions, the problems that are associated with cross-sectional and time series data such as the issues of heteroscedasticity and autocorrelation respectively, are encountered. Other possible problems usually faced when dealing with panel data is the issue of cross-correlation in individual units at the same point in time.

A balanced panel data framework (i.e. when there are no missing values) as used in this very study, is usually structured in a particular manner. Basically, a linear model for panel data enables the intercept (the constant term) and slope coefficients to vary over both individual unit and over time, which is presented as follows:

$$y_{it} = \alpha_{it} + \beta_{it} x_{it} + \mu_{it} \quad (7)$$

Where:

$y_{it:}$ is a vector of dependent variable,

$\alpha_{it:}$ vector of constant parameter,

$\beta_{it:}$ vector of coefficients,

$x_{it:}$ is a K x 1 vector of independent variables

$\mu_{it:}$ is a scalar disturbance term,

i: represents individual unit (e.g. a firm) in a cross section,

t: represents time dimension.

Equation (7) above however appears too general and not estimable because there are more parameters to be estimated than observations. Therefore, restrictions usually have to be placed on the extent to which α_{it} and βit vary with *i* and *t*, as well as the behaviour of $\mu_{it.}$ This task of specifying and estimating a more restrictive model calls for the need to make an informed choice from among three possibilities of: Pooled Regression Model, Fixed Effect Model, and the Random Effects Model. These three are commonly used in empirical studies (Pesaran, Shin and Smith, 2000; Greene, 2003; Chen, 2004; Salawu, 2007; Judge et al., 2007; Tian and Zeitun, 2007).

3.4.2 Pooled Regression Model (PRM): The Pooled Regression Model is also known as the Constant Coefficient Model (CCM). It is the simplest among the three models in panel data analysis. However, it disregards the space and the time dimensions of pooled data. In a situation where there is neither significant cross-section unit (e.g. company) nor significant temporal effects, one could pool all the data and run an ordinary least square (OLS) regression model. Since there are situations where neither company (unit) nor temporal effects are statistically significant, equation (7) is restructured thus:

$$y_{it} = \alpha + \beta_{it}\, x_{it} + \mu_{it} \qquad (8)$$

Hence, the PRM is the most restrictive of the three models in panel data framework and if it is correctly specified and the regressors are uncorrelated with $\mu_{it,}$ then the PRM could be estimated using the Pooled Ordinary Least Square (POLS) method.

3.4.3 Fixed Effects Model (FEM): In the FEM, the intercept in the regression model is allowed to vary across space (individual company) as a result of the fact that each cross-sectional unit may have some special characteristics. The FEM is very suitable in cases where individual specific intercept may be correlated with one or more regressors (independent variables). In order to take into cognisance the different intercepts, the mean differencing or dummy method are usually employed based on which is found more suitable. It is also known as the Least Square Dummy Variable (LSDV) model in cases where dummy variables are used. This is another way of calculating the within estimator most especially when the number of observations (*N*) is not relatively large. A disadvantage of LSDV model is that it significantly reduces the degrees of freedom when the number of cross-sectional units, *N*, is very large. In this case, *N* number of dummies is introduced, which will help to reduce the common intercept term. Thus, equation (7) will then be based on the assumptions made on α, β_{it}, and μ_{it} i.e. the intercept, the slope coefficients, and the error term respectively. Under this method, some possibilities exist where each case introduces increasing complexity in estimating panel data models. Two of them are considered relevant for this study, which are as stated below:

a). The slope coefficients, $\beta_{it,}$ are constant but the intercept, α varies across space. Thus, equation (7) can be re-written as:

$$y_{it} = \alpha + \beta^{I} x_{it} + \mu_{it}$$

or more compactly as:

$$y_{it} = \sum_{j=1}^{N} \alpha_j d_{jit} + \beta x_{it} \qquad (9)$$

The $u_{it} = \mu_{it} + V_{it}$. μ_{it} shows the individual-specific effect and $_{Vit}$ shows the time-invariant effect i.e. the components are independent of each other and are assumed to be independently and identically distributed (*iid*) over the cross-sectional units (*i*) and time dimension (*t*). The above is a more parsimonious ('economical') technique of relating equation (1) with (*N-1*) dummies included in order to avoid the dummy variable error that has to do with perfect collinearity. The constant term, α_i are random that help to capture unobserved heterogeneity. The assumption of strict exogeneity (a case where the variables are not explained by other factors in the model) is usually made under this approach. Therefore, the mean of the error term can be stated as:

$$E[\mu_{it} \mid \alpha_i, x_{i1}, \ldots, x_{iT}] = 0 \qquad \text{where } t = 1, \ldots, T \qquad (10)$$

The error term, μ_{it} is assumed to have mean zero with regards to past, current, and future values of the regressors (variables). This assumption of strict exogeneity is not usually applicable to models that have lagged dependent variables or models with endogenous variables as regressors. If fixed effects are present and correlated with the regressors, x_{it}, then many estimators such as pooled OLS would be inconsistent. In this case, estimation method that eliminates the constant term, α_i can be used as an alternative scheme in order to ensure consistent estimation of the coefficients, β in a short panel.

b). The slope coefficients are constant but the intercept varies across units (*i*) and time (*t*). Thus equation (7) can be re-written as:

$$y_{it} = \alpha_i + y_t + \beta_{it} + \mu_{it}$$

or more compactly as

$$y^k_{it} = \sum_{j=1}^{N} \alpha_j d_{jit} + \sum_{s=2}^{T} y_s d_{s.it} + \beta x_{it} + \mu_{it} \quad (11)$$

The number N of individual dummies, d_{jit} equal one if $i = j$ and equal zero otherwise, while the time dummies (T - *1*), $d_{s.it}$ equal one if $t = s$ and zero otherwise. It is equally assumed that x_{it} does not include an intercept. When an intercept is added there will be a loss of one degree of freedom, because one of the N individual dummies would have to be dropped. This model has $N + (T - 1) + \dim [X]$ parameters that can be consistently estimated if both $N \rightarrow \infty$ and $T \rightarrow \infty$. In short panels where $N \rightarrow \infty$ but T does not, the y_s can be consistently estimated, so the $(T - 1)$ time dummies are simply incorporated into the regressors, x_{it}. The problem thus lies in estimating the parameters, β controlling for the N individual intercepts, α_i. To resolve this problem, one can have dummies for groups of observations like industry.

3.4.4 Random Effect Model (REM): The REM also known as the Error Components Model (ECM) is an alternative to FEM. The individual intercept is expressed as a deviation from this constant mean value. One major merit of the REM over the FEM is that it is economical (parsimonious) in degrees of freedom. This is because one does not have to estimate N cross-sectional intercepts but just only the mean value of the intercept and its variance. The REM is suitable in cases where the (random) intercept of each cross-sectional unit is uncorrelated with the regressors. The REM is stated thus:

$$y_{it} = \beta_{1i} + \beta_{2i} x_{2it} + \beta_3 x_{3it} + \mu_{it} \quad (12)$$

Rather than assuming β_{1i} as fixed, it is taken that it is a random variable with a mean value of β_1. The intercept value for an individual cross-section unit (e.g. company) is then stated as:

$$\beta_{1t} = \beta_1 + \varepsilon_i \quad (13)$$

where $i = 1, 2, \ldots, N$

The ε_i is a random error term with a mean value of zero and variance of σ^2_{ε}. Thus, re-writing equation (12) by incorporating equation (13), would result in equation (14) below:

$$y_{it} = \beta_1 + \beta_{2i}\, x_{2it} + \beta_3\, x_{3it} + \pi_{it} \quad (14)$$

where $\pi_{it} = \varepsilon_i + \mu_{it}$

The π_{it} (composite error term) is made up of two components: ε_i, which is the cross-section, or individual-specific error component, and μ_{it}, which is the combined time series and cross-section error component.

3.4.5 Method of Testing Model Selection in Panel Data Analysis

Following the various methods of panel data analysis, the question of which is the most appropriate or suitable methods arises. Therefore, some means of selecting the most suitable method among the different approaches especially between the FEM and REM is needed. In literature, a basic test that has been employed by most empirical studies to choose the most appropriate method is the Hausman Chi-square (see, Judge et al., 2007; Tian and Zeitun, 2007; Salawu, 2007). The Hausman (1978) specification test is the conventional test of whether the fixed or random effects model should be used. The question is whether there is significant correlation between the unobserved unit of observation specific random effects and

the regressors. If no such correlation exists, then the Random Effects Model (REM) may be more appropriate. But when such a correlation exists, the Fixed Effects Model (FEM) would be more suitable because the REM model would be inconsistently estimated.

3.5 Data Description and Measurement

3.5.1 Introduction

The study employed secondary data from the reports of the Nigerian Stock Exchange and individual quoted firms. The researcher first picked all the publicly quoted firms comprising of 226 firms in total from 32 subsectors, then proceeded to eliminate firms which are categorized as financial institutions or whose businesses are financial in nature (92 firms) and firms whose data were not up to date (33 in all) . This exercise resulted in 101 firms that are purposively selected.

3.5.2 Study Population and Sample Size

From the population of 226 firms from 32 subsectors listed on the Nigerian Stock Exchange (NSE) market, a sample of 101 non-financial quoted companies from 26 subsectors were purposively selected for analysis. The study excludes companies from the financial and securities sector as their financial characteristics and use of leverage are substantially different from other companies. First, their leverage is strongly influenced by explicit investor insurance scheme such as deposit insurance and regulations such as the minimum capital requirements may directly affect their capital structure. Secondly, their debt-like liabilities are not strictly comparable to the debt issued by non-financial firms. Moreover, the balance sheets

of the firms in the financial sectors (banks, insurance companies, mortgage companies, leasing, unit trust and funds, real estate, investment trust and other financial institutions) have a strikingly different structure from those of non-financial companies. Other companies whose financial reports were not up to date and that are no longer in existence as at 2007 (e.g. companies in the Aviation Sector) were also excluded. As a result, the final sample set consists of a balanced panel of 101 firms from 26 subsectors over a period of five years.

The structure and distribution of the sample are shown in tables 1 - 3 below:

Table 3.1: Sample Selection by Sector Categorization

Population of Nigerian Quoted Firms	226
Firms in the Financial Sector	92
Actual Workable Population	**134**
Firms with Data irregularities	33
Total Sample selected	**101** (75.4%)

Source: Author's computation from the Nigerian Stock Exchange (NSE) Factbook (2008)

Table 3.2: Structure of the Sample used in the study

Number of annual observation per company	Number of companies	Number of observations
5	101	505

Source: Author's computation from the Nigerian Stock Exchange (NSE) Factbook (2008)

Table 3.3: Sample Distribution by Subsector Classification

S/N	Sub-sectors	No of Companies	% Companies
1	Agric/Agro-Allied	6	5.94
2	Airline Services	2	1.98
3	Automobiles and Tyre	3	2.97
4	Breweries	4	3.96
5	Building Materials	6	5.94
6	Chemical and Paints	6	5.94
7	Commercial/Services	3	2.97
8	Computer and Office Equipment	4	3.96
9	Conglomerate	7	6.93
10	Construction	4	3.96
11	Emerging Markets	4	3.96
12	Engineering Technology	2	1.98
13	Food/Beverages and Tobacco	10	9.90
14	Healthcare	5	4.95
15	Hotel and Tourism	3	2.97
16	Industrial/Domestic Products	5	4.95
17	Information Comm. & Telecomm	2	1.98
18	Machinery	1	0.99
19	Maritime	1	0.99
20	Media	1	0.99
21	Packaging	8	7.92
22	Petroleum	8	7.92
23	Printing and Publishing	3	2.97
24	Real Estate	1	0.99
25	Road Transportation	1	0.99
26	Textiles	1	0.99
Total		**101**	**100.0**

Source: Author's computation from the Nigerian Stock Exchange (NSE) Factbook (2008)

3.5.3 Data Collection and Instrument

Secondary data were used for this study. The data were sourced from the Factbook of the Nigerian Stock Exchange (NSE) and included the traded companies from the period 2003 to 2007. All companies were required to deliver their financial statements for each year to the NSE. Hence, the data set contains detailed information about each firm.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter examines the data analysis and interpretation of results. The descriptive analysis results for the dependent variables and explanatory variables reveal various issues that are fully expatiated under subsection 4.2. The correlation matrix for the variables is reported in table 4.2; subsection 4.3 in order to examine the correlation that exists among variables. The regression results for the panel data for each of the performance measures and for the full sample of observations for the period 2003 to 2007 are displayed in Table 4.3 to Table 4.11 and fully discussed so that meaningful conclusions are drawn. The analyses are used to test the earlier formulated hypotheses to establish the relationship which exists among the variables expressed.

4.2 Descriptive Statistics

Table 4.1 reports summary statistics for the variables used in the study. A critical examination of the descriptive statistics for the dependent and explanatory variables reveals several issues. The average return to assets (ROA) for the sample as a whole is 8.04%, while the average return to equity (ROE) is high at 459%. The first accounting measure of performance (ROA) shows that Nigerian companies have a very low accounting performance. The very high ratio of ROE of 459% recorded may reflect the impact of a relatively small number of very large corporate conglomerates that control a large percentage of the Nigerian's public corporations. Some of these conglomerates maintain tight control by selecting boards of directors that are dominated by insiders. The high average return to equity may also reflect the lower corporate

income tax rate to which Nigerian firms are subject, compared to the corporate tax rate paid in other economies. For instance, the corporate tax rate for large firms in Nigeria is 30 percent (Chartered Institute of Taxation of Nigeria), compared with 35 percent for large firms in U.S. (Don Moyer, 2009)[4]. This is further confirmed by the mean value of tax from the table which is 23% and median of 24%. This shows that the average corporation tax for Nigerian firms fall between 23% and 24%. The measure of market performance (Tobin's Q) also shows high percentage of performance when compared with the accounting measure. The average value for Tobin's Q is 93.32%. This high ratio for the market performance measure could be as a result of the increase in firms' share prices and equity without any increase in the real activities performance of the firms. The disparity in returns (ROA) ranged from profitability of 317% (maximum value) for some firms to a loss of over 602% (minimum value) for others. This presents a great disparity between firms in profitability. This result therefore reveals that the companies under review will most likely prefer less debts and more equity, and this is evidenced by the high percentage value of ROE and Tobin's Q.

A quick review of the measures of leverage shows that the first measure of leverage - total debt to total assets (TDTA) has a high mean ratio of 73.5%. This implies that the total liabilities of the firms reviewed on average amount to about 74 percent of total assets value. Examining the second measure of leverage – long term debt to total assets (LTDTA), the reported mean value of 27.6% for Nigerian firms is low when compared to firms in developed countries. U.S. companies have about ¾ of their debt in long term while the ratio for Germany firms is 55% (Claessens et al, 1998). Based on the low mean value of the long term debt to

[4] Don Moyer, Rjan J. (2009), "Obama Seeks end to Corporate Tax Break to Raise $190 Billion", Worldwide News on Bloomberg.com

assets (27.6%), it can be stated that quoted companies in Nigeria do not use much long-term debt in their respective capital structure choice. This supports earlier studies that have been conducted on Nigerian firms (see Salawu, 2007). The result also suggests that large and small firms have particular difficulty in accessing long-term finance with low and declining leverage ratios. This could also be attributed to the low return on assets recorded because long-term finance is needed for capital projects. However, in contrast to Salawu (2007) results that showed a very close standard deviations between TDTA and LTDTA values, this study revealed that the standard deviation of the second measure of leverage – LTDTA of 0.4704 is different from the standard deviation of TDTA of 0.9195. This observation predicts that companies in every stock market do reflect large differences in their long-term debt holding contrary to the earlier observation by Salawu (2007) that companies in every stock market do not reflect large difference in their long-term debt holding. The mean value of the short-term debt to total assets (STDTA) of 45.92% as compared to 27.57% mean value of the long term debt shows that debt financing for listed companies in the sample corresponds mainly to a short term nature. This reveals a salient fact that Nigerian firms are either financed by equity capital or a mix of equity capital and short term financing. This short-term leverage mean value of 45.92% is however lower than the mean value of 60% reported by Salawu (2007).

The mean value of the size of the companies examined is high at 617%. The companies experienced high growth in size up to 8.13% maximum value and there was no decrease in size growth for the period studied. It could however be noted that this growth in size did not really translate to higher returns as the companies recorded low average returns (ROA) for the period. Looking through the standard deviation (SD) which measures the level of variation of

the variables from their mean value, reveals that the most volatile of the variables examined is return on equity (ROE) with a S.D of 77.3 followed by size with 1.299. The least volatile i.e. most stable variable is return on asset with a S.D of 0.448, followed by LTDTA (0.4704), TAX (0.8095) and the Tobin's Q with 0.9872.

Table 4.1: Descriptive Statistics for Dependent and Explanatory Variables (2003 – 2007)

Variables	Obs	Mean	Median	Std Dev.	Minimum	Maximum
ROA	505	0.0804	0.0927	0.448	-6.0208	3.7104
ROE	505	4.5907	0.7069	77.3011	-696.34	1558.61
TOB Q	505	0.9332	0.7038	0.9872	0.0871	7.1684
TDTA	505	0.7349	0.5209	0.9195	0.0143	6.8064
LTDTA	505	0.2757	0.1377	0.4704	0.0000	6.5521
STDTA	505	0.4592	0.2642	0.6929	0.0000	5.5809
SIZE	505	6.1719	6.3017	1.2999	0.0000	8.1378
TAX	505	0.2307	0.2456	0.8095	-2.5859	14.9367

Note: ROA = the return on assets (EBIT/ total assets); ROE = return on equity (EBIT/total equity); Tob Q (Tobin's Q) = Market value of equity + book value of debt/book value of assets; TDTA = total debt divided by total assets; LTDTA = long-term debt divided by total assets; STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

4.3 Correlation Matrix

The correlation matrix for the variables is reported in Table 4.2 below in order to examine the correlation that exists among variables. The results show that there is a negative relationship between ROA and three of the explanatory variables i.e. the three measures of leverage – total leverage, long term leverage and short term leverage, which ranges from 15.48% to 49.49%. However, it is positively correlated with size of the firms at 22.18% and tax at 7.76%. The return on equity (ROE) is also negatively correlated with all the explanatory variables except with size and tax but at a lower percentage of 1.55% and 0.18% respectively. These results

show the same correlation trend for the accounting performance measures except that the degree of associations are very weak in the case of ROE with lower ratios that ranges from 6.23% to 0.18% when compared with ROA. These results imply that leverage has a negative influence on the accounting performance of Nigerian firms while size and tax tend to have a positive influence on the accounting performance of Nigerian firms.

The market performance measure Tobin's Q is positively correlated with the three leverage measures and size with high coefficients ranging from 96.62% to 33.6% but negatively correlated with tax at 5.53%. This result implies that leverage has a positive strong degree of association with the market performance of Nigerian firms while tax impact negatively on the market performance of the firms.

The results also show that size has a positive relationship with the two accounting performance measures (ROA and ROE) as well as the market performance measure (Tobin's Q). This implies that larger companies tend to have a higher leverage ratio with lower growth opportunities. It also implies that Nigerian firms (which are small relative to firms in developed economy) have high opportunity of growth in size which is consistent with Myers (1977). Size however has a negative relationship with all leverage ratios. This is contrary to the findings of Tian and Zeitun (2007) that reported positive relationship between size and all leverage ratios except short term leverage STDTA and also in line with the findings of Salawu (2007) who reported a negative relationship between size and short term leverage in his study of the capital structure of selected quoted companies in Nigeria. This implies that Nigerian companies tend to have a lower leverage ratio when they get larger in size.

The results further show that tax has a positive relationship with the two accounting performance measures (ROA and ROE) but a negative relationship with the market performance measure (Tobin's Q). This implies that Nigerian firms enjoy tax benefits which increase their operating earnings though not reflected on the market performance. It also implies that there could be an increase in the firms' operating earnings even if the profitability of the companies' basic business has not changed. Tax also has a negative relationship with all leverage ratios which undermines the expected present value of tax savings derivable from debts.

It is however important to point out that the descriptive statistics and correlation analysis only indicate the associate link between variables. They do not necessarily establish a causal relationship even with high coefficients. Consequently, a more rigorous and advanced econometric techniques are required to adequately capture definite significant relationship between the corporate performance measures and the explanatory variables. These are addressed in the subsequent sections of this chapter. It can also be seen from Table 4.2, that most cross-correlation terms for the independent variables are fairly small, thus, giving little cause for concern about the problem of multicolinearity among the independent variables.

Table 4.2: Correlation Matrix of the Variables (2003 -2007)

	ROA	ROE	TOB	TDTA	LTDTA	STDTA	SIZE	TAX
ROA	1.0000							
ROE	0.0639	1.0000						
TOB Q	-0.3665	-0.0688	1.0000					
TDTA	-0.3721	-0.0623	0.9663	1.0000				
LTDTA	-0.4994	-0.0584	0.6705	0.6781	1.0000			
STDTA	-0.1548	-0.0429	0.8271	0.8666	0.2209	1.0000		
SIZE	0.2218	0.0155	0.3359	-0.2697	-0.2521	-0.1867	1.0000	
TAX	0.0776	0.0018	-0.0553	-0.0427	-0.0719	-0.0079	0.04345	1.0000

Note: ROA = the return on assets (EBIT/ total assets); ROE = return on equity (EBIT/total equity); Tob Q (Tobin's Q) = Market value of equity + book value of debt/book value of assets; TDTA = total debt divided by total assets; LTDTA = long-term debt divided by total assets; STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

4.4 Regression Results

The results of the Pooled Ordinary Least Square (OLS), Fixed Effects and the Random Effects estimation models for the panel data for each of the performance measures and for the full sample of observations for the period 2003 to 2007 are displayed in Table 4.3 to Table 4.11. The regression model results using return on equity (ROE) though presented in Table 4.9 to Table 4.11 is not significant using any measure of capital structure and hence is not fully discussed. These results make the ROA and the Tobin's Q, the most useful and powerful measures of performance in the Nigerian case. Therefore, the discussion of results is more concentrated and centered on these two measures of performance. The estimation was done using the White Standard Error for robustness in order to tackle any instantaneous effect of auto-correlation which could bias the results.

From the results in Table 4.3, the total leverage measure TDTA has a positive and significant relationship with the market performance measure Tobin's Q. It is interesting to note that the

results of the three different estimators of the Tobin's Q equation i.e. the fixed effects model, random effect model and pooled OLS give consistent results that are all significant at 1% level. Size also has a positive relationship with the performance measure and the results as given by the random effects and pooled OLS models are significant at 1% level with the exception of the fixed effects model which showed a non-significant positive relationship. Tax shows a non-significant negative relationship with the performance measure as given by the random effects and pooled OLS models with the exception of the fixed effects model which showed a non-significant positive relationship. However, if we are to go by the identification test i.e. the Hausman's Chi-square statistics, the fixed effect result is more reliable as the P-value of the test is significant at 5% level while the P-values for the other two estimators are not significant.

The adjusted R^2 is also satisfactory in all cases. The adjusted R^2 is 0.9856 for the fixed effects model, while it is 0.9668 and 0.9397 for the random effects and pooled OLS models respectively. This indicates that more than 90% of the variation in Tobin's Q as a measurement of performance of Nigerian firms is explained by the variations in their total leverage, size and tax. The F-statistics and Durbin-Watson (DW) statistics also indicate that the regression equations are significant. The DW statistics of 1.7661 further indicates that the regression equation is free from the problem of autocorrelation. The implication of this is that the estimated equation can be relied upon in making valid inference about the influence of the explanatory variables on the market performance of Nigerian firms.

Table 4.3: Estimation Results for Tobin's Q using TDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: TOB			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	0.2632	0.3563	0.5709
	(3.9103)***	(5.704)***	(9.9482)***
TDTA	1.0008	1.0014	1.0135
	(5.869)***	(6.204)***	(6.058)***
SIZE	0.0106	0.0257	0.0615
	(1.0034)	(2.8001)***	(7.118)***
TAX	0.00024	-0.0011	-0.01403
	(0.0033)	(-0.1451)	(-1.0501)
No of Observations	505	505	505
Adjusted R^2	0.9856	0.9668	0.9397
F-Statistics	336.00	736.98	393.03
Prob. (F-Statistics)	(0.0000)	(0.0000)	(0.0000)
D-Watson Statistics	1.7661	1.4078	1.3616
Hausman X^2 Test	6.114	3.2433	3.2212
P-Value (X^2)	(0.047)**	(0.1976)	(0.1998)

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. TOB (Tobin's Q) = Market value of equity + book value of debt/book value of assets; TDTA = total debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

The empirical evidence obtained from Table 4.4 below suggests that the coefficients of the long term leverage (LTDTA) are positive and significant for the Tobin's Q regression all at 1% significant level. The coefficients of size are also positive. The table shows that the three different estimation models offer quite similar results for size but slightly different levels of significance. The significant exception is that while the coefficients of size are highly

significant at 1% level for the random effects and pooled OLS models, it is only significant at 5% level under the fixed effect model. The table further shows that tax has no significant relationship with the market performance of Nigerian firms. Both the fixed effects and random effects models show a non-significant positive relationship while the pooled OLS model shows a non-significant relationship between tax and Tobin's Q. The adjusted R^2 which ranges from 0.4277 and 0.6939 is satisfactory in all cases. This indicates that on the average about 43% to 69% of the variation in the market performance measure Tobin's Q has been explained by the variation in the long term leverage (LTDTA), size and tax of Nigerian firms. The F-statistics and DW statistics also indicate that the regression equation and estimates are significant. The DW obtained i.e. 1.5904 and 1.7499 further indicate that the regression equation is free from the problem of auto correlation. Hence, the results can be used to make valid inference.

Table 4.4: Estimation Results for Tobin's Q using LTDTA for the period 2003 – 2007

Dependent Variable: TOB			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	1.3532	1.4012	1.407
	(4.3940)***	(6.4592)***	(8.5156)***
LTDTA	1.2315	1.2622	1.3127
	(15.0797)***	(17.5453)***	(18.734)***
SIZE	0.1237	0.1326	0.1354
	(2.537)**	(3.9955)***	(5.3482)***
TAX	0.01648	0.0112	-0.00323
	(0.4896)	(0.3412)	(-0.0820)
No of Observations	505	505	505
Adjusted R^2	0.6939	0.4277	0.4762

F-Statistics	12.092	126.58	153.03
Prob. (F-Statistics)	(0.0000)	(0.0000)	(0.0000)
D-Watson Statistics	1.5904	1.2804	1.7499
Hausman X^2 Test	0.3966	0.4996	0.4979
P-Value (X^2)	(0.8301)	(0.7790)	(0.7796)

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. TOB (Tobin's Q) = Market value of equity + book value of debt/book value of assets; LTDTA = long-term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

From the result in Table 4.5, the short term leverage measure STDTA has a positive and highly significant relationship with the market performance measure. The results of the three different estimators also give consistent results that are all significant at 1% level. Size also has a positive and significant relationship with the market performance measure Tobin's Q. The table shows that the three estimation models also offer similar results and same levels of significance for the size coefficients. The size coefficient is significant at 1% level under the random effects, fixed effects and pooled OLS estimation models. Tax still shows a negative non-significance relationship with the market performance measure Tobin Q using STDTA as shown by the fixed effects and random effects models but it is significant at 10% level under the Panel Least Square regression model. The adjusted R^2 is satisfactory and ranges from 0.7183 and 0.8768 which indicates that more than 71% of the variations in the performance measure have been explained by the variation in the short term leverage, size and tax of the Nigerian firms. The F-statistics and D-W statistics also showed significant values. The value of the DW statistics which ranges from 1.81 to 2.32 further indicates that the regression equation is free from the problem of auto correlation. Hence, the results can be relied upon to make meaningful inferences.

Table 4.5: Estimation Results for Tobin's Q using STDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: TOB			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	1.2815	1.2966	1.2999
	(6.7053)***	(8.5308)***	(10.915)***
STDTA	1.1004	1.1070	1.1283
	(34.063)***	(36.569)***	(32.9094)***
SIZE	0.1379	0.1406	0.1415
	(4.5359)***	(6.0613)***	(7.7344)***
TAX	-0.00981	-0.01638	-0.04996
	(-0.4592)	(-0.7802)	(-1.7313)*
No of Observations	505	505	505
Adjusted R^2	0.8768	0.7764	0.7183
F-Statistics	35.83	494.26	429.30
Prob. (F-Statistics)	(0.0000)	(0.0000)	(0.0000)
D-Watson Statistics	2.3243	1.8608	1.8098
Hausman X^2 Test	0.8158	0.3493	0.0839
P-Value (X^2)	(0.6650)	(0.8397)	(0.9589)

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. TOB (Tobin's Q) = Market value of equity + book value of debt/book value of assets; STDTA = short-term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

Having further corroborated the relationships between the significant explanatory variables and the dependent variable Tobin's Q, it is found that:

1. There is a highly significant positive relationship between leverage of Nigerian firms and their market performance as measured by Tobin's Q.

2. A high positive relationship exists between size and the market performance measure (Tobin's Q) for Nigerian firms.
3. There is no significant relationship between tax of Nigerian firms and their market performance.

The empirical evidence obtained from Table 4.6 suggests that the coefficients of total leverage (TDTA) are negative for the ROA regression while the size coefficients are positive. It should be noted that the three different estimation models give consistent results with same levels of significance. TDTA has significant negative relationship with ROA under the fixed effect, random effect and pooled OLS models and all at 1% significant level. The result also shows a non-significant positive relationship between tax and ROA under the three regression models. The pooled OLS regression model and random effect model shows that size is significant at 5% while it is not significant under the fixed effect model. The Hausman's Chi-square statistics however shows that the result of the random effect model is more reliable. The adjusted R^2s are however low with only the fixed effect model showing 0.4037 which indicates that only about 40% of the variation in ROA is explained by the variation in the total leverage, size and tax of Nigerian firms. The F-statistics and DW statistics are satisfactory though, which indicates that the regression equation and estimates are significant and can be relied upon to make valid and meaningful inferences.

Table 4.6: Estimation Results for ROA using TDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROA			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	0.2047	-0.0444	-0.08145
	(0.9289)	(-0.4011)	(-0.8346)
TDTA	-0.2259	-0.1764	-0.1631
	(-7.852)***	(-8.0403)***	(-7.861)***
SIZE	0.00586	0.0414	0.0445
	(0.1691)	(2.4002)**	(3.028)**
TAX	0.02445	0.0291	0.0319
	(0.3069)	(1.3046)	(1.4062)
No of Observations	505	505	505
Adjusted R^2	0.4037	0.1458	0.1527
F-Statistics	2.6359	29.6745	31.271
Prob. (F-Statistics)	(0.0000)	(0.0000)	(0.0000)
D-Watson Statistics	2.4198	1.9528	1.7574
Hausman X^2 Test	0.6185	63.8499	0.4077
P-Value (X^2)	(0.600)	(0.00)***	(0.8931)

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-val ues of the co-efficient. ROA = the return on assets (EBIT/ total assets); TDTA = total debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)

Source: Results obtained from data analysis using the E-Views statistical software package

From the results in Table 4.7, the long term leverage (LTDTA) has a negative significant relationship with return on assets (ROA). The three different estimation models show similar results and same levels of significance. The coefficient of the explanatory variable LTDTA is

significant at 1% as shown for the three regression models. The fixed effects model also shows a non- significant negative relationship between size and ROA while the random effect and pooled OLS models show positive relationship. The size coefficient is only significant under the pooled regression model at 5% significant level. The Hausman's Chi-square statistics however shows that the results of the random effect and pooled regression models which are consistent are more reliable. The coefficient tax is also found to have a positive relationship with ROA under the three regression models but it is not significant at any level. The adjusted R^2s are also low with the highest value of 0.4039 recorded under the fixed effects model. This indicates that about 41% of the variation in ROA has been explained by the variation in the long term leverage, size and tax of the Nigerian firms studied. The F-statistics and DW statistics are also significant, hence the estimated equation can be relied upon in making valid inference about the influence of the explanatory variables on the accounting performance of Nigerian firms.

Table 4.7: Estimation Results for ROA using LTDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROA			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	0.4391	0.0632	-0.0166
	(2.2517)**	(0.6002)	(-0.1859)
LTDTA	-0.6951	-0.5156	-0.4485
	(-13.442)***	(-12.687)***	(-11.841)***
SIZE	-0.02771	0.0251	0.0349
	(-0.8977)	(1.5534)	(2.553)**
TAX	0.01722	0.01916	0.0218
	(0.8078)	(0.9311)	(1.0228)
No of Observations	505	505	505
Adjusted R^2	0.4039	0.2672	0.2563

F-Statistics	4.3158	62.2543	58.9017
Prob. (F-Statistics)	(0.0000)	(0.0000)	(0.0000)
D-Watson Statistics	2.2026	1.7951	1.5752
Hausman X^2 Test	0.7085	25.5321	25.3484
P-Value (X^2)	(0.1116)	(0.00)***	(0.00)***

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROA = the return on assets (EBIT/ total assets); LTDTA = long term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

From the results presented in Table 4.8 below, the short term leverage (STDTA) has a significant negative relationship with return on assets (ROA). The three different estimation models show similar and very close results. The coefficient of the explanatory variable STDTA is significant at 1% level under the random effect and pooled regression models but at 5% significant level for the fixed effect model. The empirical results obtained also show a highly significant positive relationship between size and the accounting performance measure ROA. The size coefficient is significant at 1% level under the random effects and pooled OLS estimation models but at 10% level under the fixed effects model. The results obtained also show a non-significant positive relationship between tax and the accounting measure. The highest adjusted R^2 i.e. 0.6157 is recorded under the Pooled OLS which indicates that more than 61% of the variation in ROA has been explained by the variations in the short term leverage, size and tax of Nigerian firms. The F-statistics and DW statistics are also satisfactory and significant enough for use in making useful inference.

Table 4.8: Estimation Results for ROA using STDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROA			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	-0.2449	-0.3057	-0.03122
	(-1.0725)	(-2.7469)***	(-3.1658)***
STDTA	-0.08635	-0.0780	-0.0759
	(-2.2373)**	(-2.6192)***	(-2.6753)***
SIZE	0.0582	0.06711	0.06786
	(1.6025)*	(3.9177)***	(4.4791)***
TAX	0.0243	0.03373	0.0377
	(0.9533)	(1.4272)	(1.5780)
No of Observations	505	505	505
Adjusted R^2	0.3205	0.4971	0.6157
F-Statistics	1.8365	9.7872	12.0236
Prob. (F-Statistics)	(0.000016)	(0.000003)	(0.0000)
D-Watson Statistics	2.4609	1.9800	1.7969
Hausman X^2 Test	0.8032	1.0254	0.2011
P-Value (X^2)	(0.6692)	(0.5989)	(0.9044)

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROA = the return on assets (EBIT/ total assets); STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)

Source: Results obtained from data analysis using the E-Views statistical software package

Having further corroborated the relationships between the significant explanatory variables and the dependent variable ROA, it is found that:

1. There is a highly significant negative relationship between the leverage of Nigerian firms and their accounting performance as measured by return on assets.
2. There is a significant positive relationship between size and the accounting performance of Nigerian firms.
3. There is a non-significant positive relationship between tax and the accounting performance of Nigerian firms.

As shown in the results presented in Table 4.9 to Table 4.11, it is observed that the ROE measure does not have any significant variable in the estimation and the R^2 value using this measure in most cases for the random effects estimation is less than 0.1%.[5] Hence, it is not discussed. This result is consistent with Tian and Zeitun (2007) findings on Jordanian firms.

Table 4.9: Estimation Results for ROE using TDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROE			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	33.2287	8.9723	8.9628
	(0.7101)	(0.4899)	(0.5832)
TDTA	-11.8731	-5.2664	-5.2641
	(-1.9425)	(-1.3522)	(-1.1750)
SIZE	-3.2416	-0.0795	-0.0815
	(-0.4409)	(-0.0289)	(-0.1486)
TAX	0.4119	-0.0794	-0.0795
	(0.0812)	(-0.0186)	(-0.01864)
No of Observations	505	505	505

[5] It is worth noting that some few firms in the sample used have zero equity for one year or two years in some cases during the period studied which may affect the validity of ROE as a measure of performance.

Adjusted R^2	-0.1349	0.0021	0.0021
F-Statistics	0.4182	0.6501	0.6501
Prob. (F-Statistics)	(1.0000)	(0.5832)	(0.5832)
D-Watson Statistics	3.1256	2.8491	2.8491

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROE = the return on equity (EBIT/ total equity); TDTA = total debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

Table 4.10: Estimation Results for ROE using LTDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROE			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	22.4586	6.9571	6.9571
	(0.4825)	(0.3885)	(0.3886)
LTDTA	-16.4863	-9.5928	-9.5928
	(-0.9668)	(-1.3356)	(-1.2642)
SIZE	-2.1659	0.0539	0.0539
	(-0.2939)	(0.0196)	(0.0197)
TAX	0.2009	-0.2338	-0.2338
	(0.0395)	(-0.0548)	(-0.0548)
No of Observations	505	505	505
Adjusted R^2	-0.1406	0.0025	0.0025
F-Statistics	0.3970	0.5733	0.5733
Prob. (F-Statistics)	(1.0000)	(0.6328)	(0.6328)
D-Watson Statistics	3.1369	2.858	2.858

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROE = the return on equity (EBIT/ equity); LTDTA = long term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)
Source: Results obtained from data analysis using the E-Views statistical software package

Table 4.11: Estimation Results for ROE using STDTA for the 101 sample firms for the period 2003 – 2007

Dependent Variable: ROE			
Independent Variables	Fixed Effects	Random Effects	Pooled OLS
Constant	20.1597	3.3977	3.8580
	(0.4432)	(0.1880)	(0.2192)
STDTA	-12.3249	-4.5095	-4.6279
	(-1.6029)	(-0.8913)	(-0.9131)
SIZE	-1.6249	0.5246	0.4591
	(-0.2245)	(0.1936)	(0.1697)
TAX	0.5180	0.1131	0.1069
	(0.1019)	(0.0265)	(0.0251)
No of Observations	505	505	505
Adjusted R^2	-0.1384	-0.0041	-0.0041
F-Statistics	0.4053	0.3105	0.3184
Prob. (F-Statistics)	(1.0000)	(0.8178)	(0..8121)
D-Watson Statistics	3.1254	2.8496	2.8507

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROE = the return on equity (EBIT/ equity); STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)

Source: Results obtained from data analysis using the E-Views statistical software package

From the regression results in Table 4.12, it is interesting to note that the coefficient of the leverage measures and size still remain significant for both the ROA estimation and the Tobin's Q estimation. However, the result shows that none of the industrial sector dummy variables are significantly related to the accounting measure of performance ROA using TDTA, LTDTA or STDTA as a measure of capital structure[6]. The insignificant impact of these dummy variables indicates that a higher level of investment in these sectors may not be associated with a higher level of ROA.

Table 4.12: Estimation Results for Panel Data Model including Variables for Industrial Sector for the 101 sample firms for the period 2003 – 2007

Dependent Variables ROA & Tob Q

Independent Variab	TDTA		LTDTA		STDTA	
	ROA	TOB Q	ROA	TOB Q	ROA	TOB Q
	-0.5058	0.4349	-0.0819	0.8937	-0.9221	1.9251
Constant	(-1.1388)	(2.6330)***	(-0.2032)	(1.2850)	(-1.9731)**	(4.1897)***
	-0.1802	1.0057	-0.5416	1.2471	-0.0645	1.1057
Leverage	(-7.6307)***	(118.85)***	(-12.915)***	(16.776)***	(-2.0356)**	(35.851)***
	0.0448	-0.0226	0.0292	-0.1394	0.0786	-0.1365
Size	(2.2494)**	(-2.4671)**	(1.5888)	(-3.754)***	(3.867)***	(-5.416)***
	0.0276	-0.0011	0.0177	0.0122	0.0319	-0.0153
Tax	(1.2114)	(-0.1625)	(0.8668)	(0.3680)	(1.3179)	(-0.7218)
	0.5494	-0.1902	0.2056	0.7455	0.6095	-0.7308
Dum-Agric	(1.2476)	(-1.1015)	(0.5156)	(1.0667)	(1.3045)	(-1.5364)
	0.4895	-0.1872	0.2776	0.1439	0.6058	-0.5868
Dum-Airline	(1.0623)	(-0.9374)	(0.6633)	(0.1874)	(0.6437)	(-1.0916)
	0.3578	-0.1396	0.0282	0.4321	0.4950	-0.7950
Dum-Auto	(0.7929)	(-0.7476)	(0.0687)	(0.5874)	(1.0369)	(-1.5664)
	0.2788	-0.0669	-0.0507	0.9919	0.3049	-0.4938
Dum-Breweries	(0.6242)	(-0.3710)	(-0.1254)	(1.3806)	(0.6438)	(-1.0002)
	0.4451	-0.1808	0.1006	0.4528	0.5778	-0.8525
Dum-Building	(1.0088)	(-1.0461)	(0.2518)	(0.1874)	(1.2359)	(-1.7916)*
	0.4802	-0.0798	0.2226	0.4173	0.5866	-0.5513
Dum-Chemicals	(1.0891)	(-0.4621)	(0.5580)	(0.5968)	(1.2554)	(-1.1594)
	0.2324	-0.1020	0.0719	0.4426	0.2634	-0.2545
Dum-Computer	(0.5604)	(-0.7752)	(0.1932)	(0.7358)	(0.5966)	(-0.6623)
	0.5230	0.0438	0.2103	0.5453	0.6670	-0.5860
Dum-Conglomerate	(1.1872)	(0.2560)	(0.5272)	(0.7828)	(1.4291)	(-1.2420)
	0.4694	-0.2427	0.0448	1.1513	0.4790	-0.8160
Dum-Construction	(1.0512)	(-1.3458)	(0.1107)	(1.6022)	(1.0104)	(-1.6516)*
	0.3737	0.1660	-0.0030	0.6166	0.5650	-0.7063
Dum-Emergmkt	(0.8384)	(0.9232)	(-0.0074)	(0.8583)	(1.1983)	(-1.4380)

[6] It is worth noting that we have used each industrial dummy separately in each regression which provided similar results to the one shown in Table 4.12 below.

	0.3322	0.7316	-0.0275	1.2894	0.4892	-0.0340
Dum-Engtech	(0.7221)	(3.6671)***	(-0.0657)	(1.6784)*	(1.0062)	(-0.0633)
	0.4528	-0.1523	0.1767	0.5377	0.5294	-0.5821
Dum-Foodbev	(1.0345)	(-0.9107)	(0.4467)	(0.7834)	(1.1401)	(-1.2559)
	0.4253	-0.1732	0.1086	0.2673	0.5842	-0.8501
Dum-Healthcare	(0.9592)	(-0.9857)	(0.2702)	(0.3776)	(1.2445)	(-1.7628)*
	0.3963	-0.0963	0.0808	0.5470	0.5082	-0.6738
Dum-Hotel	(0.8786)	(-0.5156)	(0.1972)	(0.7439)	(1.0644)	(-1.3265)
	0.4758	-0.0445	0.2051	0.4851	0.5845	-0.5361
Dum-Industprod	(1.0733)	(-.0.2529)	(0.5110)	(0.6859)	(1.2447)	(-1,1112)
	0.4061	-0.2458	0.1411	0.5597	0.4470	-0.5931
Dum-Infotech	(0.8817)	(-1.2304)	(0.3375)	(0.7290)	(0.9176)	(-1.1025)
	0.4992	-0.3397	0.1241	-0.0490	0.7179	-1.3094
Dum-Machinery	(1.0177)	(-1.4421)	(0.2763)	(-0.0565)	(1.3912)	(-2.1051)**
	0.4516	-0.0563	0.1541	0.2680	0.6242	-0.7283
Dum-Maritime	(0.9246)	(-0.2402)	(0.3450)	(0.3113)	(1.2136)	(-1.1776)
	0.2543	-0.1394	-0.1049	0.2607	0.4508	-0.9570
Dum-Media	(0.5200)	(-0.5947)	(-0.2343)	(0.3025)	(0.8758)	(-1.5466)
	0.3561	-0.1918	0.0549	0.4076	0.4681	-0.7509
Dum-Packaging	(0.8111)	(-1.1329)	(0.1381)	(0.5893)	(1.0059)	(-1.6049)
	0.4633	-0.1693	0.1297	0.6551	0.5463	-0.7155
Dum-Petroleum	(1.0547)	(-0.9988)	(0.3262)	(0.9462)	(1.1725)	(-1.5263)
	0.5365	-0.1113	0.2001	0.3339	0.7065	-0.8498
Dum-Printing	(1.1895)	(-0.5962)	(0.4884)	(0.4540)	(1.4811)	(-1.6752)*
	0.3141	-0.2682	-0.0728	0.4556	0.4548	-1.0258
Dum-Realest	(0.6423)	(-1.1437)	(-0.1625)	(0.5283)	(0.8827)	(-1.6558)*
	0.4272	-0.1822	0.1254	0.3324	0.5596	-0.7770
Dum-Roadtrans	(0.8742)	(-0.7775)	(0.2808)	(0.3861)	(1.0870)	(-1.2553)
	0.6631	0.1199	0.4560	0.7570	0.6957	-0.1549
Dum- Services	(1.5614)	(0.6641)	(1.1837)	(0.0803)	(1.5478)	(-0.3171)
	0.1951	-0.2375	-0.1379	0.3654	0.3315	-0.8703
Dum-Textiles	(0.3981)	(-1.0113)	(-0.3076)	(0.4230)	(0.6421)	(-1.4023)
No. of Observations	505	505	505	505	505	505
R-Square	0.1782	0.9697	0.3048	0.5367	0.0908	0.7589
F-Statics	3.5539	525.13	7.1825	13.5146	1.6375	51.5730
Durbin-Watson stat	2.0550	1.4510	1.8759	1.3542	2.0836	1.9587
Hausman Chi-Square	9.3804	17.3630	27.3391	1.0217	2.4994	3.2838
P-Value (Chi-Square)	(0.0520)*	(0.0016)***	(0.000)***	(0.9065)	(0.6447)	(0.0511)*

Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. Numbers in parentheses are the asymptotic t-values of the co-efficient. ROA = the return on assets (EBIT/ total assets); Tob Q (Tobin's Q) = Market value of equity + book value of debt/book value of assets; TDTA = total debt divided by total assets; LTDTA = long-term debt divided by total assets; STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT), Dum refers to the dummy variables for industry, Leverage refers to TDTA, LTDTA or STDTA.

Source: Results obtained from data analysis using the E-Views statistical software package

4.5 Discussion on Findings

From hypothesis 1, a firm's capital structure is predicted not to have any significant influence on its accounting performance. However, from the regression results in Table 4.6, Table 4.7 and Table 4.8, the coefficients of the leverage measures TDTA and LTDTA as expected are highly significant and negatively related to the accounting measure ROA. These results show that higher level of leverage lead to lower return on assets (ROA). Furthermore, it may provide support for the proposition that due to agency conflicts, companies over-leverage themselves, thus affecting their performance negatively. This findings are consistent with the finding of previous studies such as Tian and Zeitun (2007), Salawu (2007), Chen (2004), Tzelepsis and Skuras (2004), Gleason et al (2000), Krishnan and Moyer (1997) and Rajan and Zingales (1995) among others. The negative and significant coefficient of LTDTA does not support Brick and Ravid's (1985) argument that long term debt increases a firm's value, which could however be due to the lower ratio of long term debt in the capital structure of Nigerian companies. This findings support the pecking order theory of capital structure which suggests that profitable firms initially rely on less costly internally generated funds before looking out for external finances. It is therefore, expected that highly profitable Nigerian firms will require less debt finance. The negative relationship between leverage and ROA also suggests that there might be agency issues which may lead Nigerian firms to use higher than appropriate levels of debt in their capital structure thereby producing lower performance. The significant negative relationship further reflects that the bond market in the Nigerian economy is underdeveloped and is consistent with signs of underdeveloped bond market in all markets. Intuitively, upon taking a closer look at the results, there may be other reasons for this negative relationship rather than the propositions of the pecking order hypothesis. It could be due to decisions by the firms to avoid underinvestment problems and mispricing of new

projects. More so, listed firms in Nigeria are most times attracted by equity finance due to the substantial capital gains in the secondary market. Hence, there could be a little deviation from the reasons proposed by the pecking order theory.

Hypothesis 2 predicts no significant relationship between Nigerian firms' capital structure and their market performance. It is however interesting to note that there is empirical evidence of a highly positive relationship between the firms' leverage and their Market performance measure Tobin's Q indicating that higher levels of debt in the capital structure of Nigerian firms are associated with a higher level of market performance as measured by Tobin's Q. This empirical evidence shows that the impact of leverage varies among different performance measurements for Nigerian firms. The positive relationship further suggests that debt improves the market performance of Nigerian firms which may not reflect on their profitability. It could also be that this positive impact is not reflected because of the underdeveloped nature of the market or due to market imperfections. This empirical evidence of a significant relationship between firms' leverage and Tobin's Q as a market performance supports the static tradeoff theory of capital structure. These findings indicate that leverage negatively affects the accounting performance measure but positively affect the market performance measure. Based on this discussion therefore, we come to two conclusions:

i. We accept the alternative hypothesis that a firm's capital structure has a significant negative influence on its accounting performance ROA.
ii. We accept the alternative hypothesis that a firm's capital structure has a significant influence on its market performance Tobin's Q.

Hypothesis 3 predicts that firms with high short term debt in their capital structure tend to have lower performance i.e. short term debt has no significant influence on a firm's performance. From the regression results in Table 4.5 and Table 4.8, the coefficients of the short term leverage STDTA are consistent with the prediction under the different regression models. Though the STDTA shows a negative relationship as expected, the relationship is not significant with the accounting measure ROA. The insignificant relationship with the performance measure ROA indicates that short term debt has no significant impact on returns of Nigerian companies. However, while STDTA is found to have an insignificant negative effect on ROA, it has a highly significant positive relationship with Tobin's Q using the different estimation models. These findings show that the STDTA ratio has no significant effects on the accounting performance of Nigerian companies which suggests that short term debt may not necessarily expose these firms to the risk of refinancing as it does for firms in developed economy. This supports the arguments of Myers (1977) that firms with high short-term debt to total assets have a high growth rate and high performance. This finding is contrary to the findings of Pandey (2001), and Stohs and Mauer (1996). Interestingly, the highly significant positive relationship between STDTA and Tobin's Q indicates that higher level of short-term debt in the capital structure of Nigerian firms is associated with a higher market performance. This result also supports the findings of Tian and Zeitun (2007). Therefore, the hypothesis that short term debt has no significant effect on firm performance is rejected and we conclude that short term debt increases the market performance of Nigerian firms.

Hypothesis 4 predicts that a firm's size has no significance influence on a firm's performance. Interestingly, as expected the coefficient of firm's size is found to be positive and highly significant for both the accounting performance measure and the market performance measure. The significance of firm's size on performance indicates that large firms can earn higher returns compared to smaller firms, presumably as a result of diversification of investment and economies of scale. The result also suggests that firm size is positively related to the borrowing capacity because potential bankruptcy costs make up a smaller portion for large firms. This result is consistent with previous findings such as Tian and Zeitun (2007), Gleason et al. (2000) and Krishnan and Moyer (1997). The significant positive relationship does not support the findings of Tzelepsis and Skuras (2004), Durand and Coeuderoy (2001), Lauterebach and Vaninsky (1999) and Mudambi and Nicosis (1998). It can also be observed from Table 4.5 and Table 4.8 that the best significant results for size under the Tobin's Q and ROA models are recorded where the short term leverage (STDTA) is used. This may suggest the fact that larger firms are more able to access short term debts from banks and also extract trade credits from suppliers and/or suppliers are more willing to extend trade credit to larger firms. This could also indicate that larger firms are being perceived to have lower default risk. Going by this discussion, the null hypothesis of no significance influence of size on firm's performance is therefore rejected and we conclude that the size of Nigerian firms has a positive impact on their performance.

Hypothesis 5 predicts that there is no significant relationship between tax and performance of Nigerian firms. The results for tax under the different estimation models are mixed. Though in line with our apriori expectation, the coefficient of tax records a positive relationship with the

accounting performance, a negative relationship with the market performance was shown from the estimations. However, the coefficients are not significant at any significance level. The lack of significance of the tax rate variable suggests that the better performance of Nigerian firms is not related to Nigeria's lower marginal corporate income tax rate when compared to developed economy but may be attributable to other factors as explained above. This indicates that lower corporate tax does not necessarily translate into better performance i.e. firms with low tax payment may not have a higher performance rate. This result provides weak support for the static tradeoff model of capital structure. The null hypothesis is therefore accepted and we conclude that tax has no significance influence on the performance of Nigerian firms.

From hypothesis 6, the industrial sector is predicted to have no effect on corporate performance of Nigerian firms. The research further investigates the effect of the Industrial Sector on corporate performance and whether the significance of the firm's performance measures and capital structure will be affected as the industrial dummy variables are added to the model. From the regression results in Table 4.12, it is interesting to note that the coefficient of the leverage measures and size still remain significant for both the ROA estimation and the Tobin's Q estimation. However, the result shows that none of the industry dummy variables are significantly related to the accounting measure of performance ROA using TDTA, LTDTA or STDTA as a measure of capital structure[7]. The insignificant impact of these dummy variables indicates that a higher level of investment in these sectors may not be associated with a higher level of ROA.

[7] It is worth noting that we have used each industrial dummy separately in each regression which provided similar results to the one shown in Table 4.13 above.

The result also shows that the Engineering Technology sector has a positive and highly significant impact on the market performance measure Tobin's Q using both the TDTA and LTDTA measure of leverage. This implies that higher level of investment in this sector could yield a better market performance. It could also be a reflection of the recent wave of technology use in Nigeria which could lead to the presence of the industry sector. Table 4.13 further shows that the industry dummy variables for six sectors including Building sector, Construction sector, Healthcare sector, Machinery sector, Printing sector and Real Estate sector are significantly and negatively related to the market measure of performance using STDTA as a measure of capital structure. This significant negative relationship may indicate that higher level of short term debt usage by these industrial sectors may lead to lower market performance for these industry sectors. Therefore we reject the null hypothesis and conclude that industrial sector impact on market performance of Nigerian firms. However, the significance and sign of these industrial sectors changed as the performance measure changed which may imply the presence of the industry sector. But it should be noted that including the industrial dummy variables in the regression do not increase the model robustness and accuracy.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Capital structure remains the most controversial issues in finance literature because of the dynamic nature of the mix of corporate financing, which mirrors the many events and exogenous shocks to firms' activities.

This study examines the impact of capital structure on performance of Nigerian firms. The study combines two strands of business research: one from the international business field on corporate performance, and the other from corporate finance field on capital structure. The study employed descriptive econometric analytical tools in studying 101 Nigerian quoted companies with 505 observations for the period 2003 to 2007. The analyses were performed using panel data.

This study tries to fill the gap left by other studies in this field by investigating the effect of capital structure on corporate performance of Nigerian quoted firms by extending the performance measures and leverage measures that has been hitherto employed by other studies. The study employed different measures of capital structure such as short term leverage, long term leverage and total debt leverage in order to investigate the varying effects of these debt structures on corporate performance. Also, three performance measures were employed namely the return-on-asset (ROA) and the return-on-equity (ROE) as accounting performance and Tobin's Q to see the varying relationship of these measures with the leverage of the firm. Moreover, investigating the effect of capital structure on corporate performance using market and accounting measures was quite valuable as it provides evidence about whether the stock market is efficient or not.

A balanced panel of 101 quoted Nigerian firms was studied in this research work. Only non-financial firms were studied. The study excluded companies from the financial and securities sector as their financial characteristics and use of leverage are substantially different from other companies. First, their leverage is strongly influenced by explicit investor insurance scheme such as deposit insurance and regulations such as the minimum capital requirements may directly affect their capital structure. Secondly, their debt-like liabilities are not strictly comparable to the debt issued by non-financial firms. Moreover, the balance sheets of the firms in the financial sectors (banks, insurance companies, mortgage companies, unit trust and funds, real estate investment trust and other financial institutions) have a strikingly different structure from those of non-financial companies. Other companies whose financial reports

were not up to date and that are no longer in existence as at 2007 (e.g. companies in the Aviation Sector) were also excluded. Also, firms with any missing reports during the period under investigation from 2003 to 2007 were also dropped.

A firm's capital structure was found to have a significant and negative impact on the firm's accounting performance measure (ROA). An interesting finding is that all the leverage measures have a positive and highly significant relationship with the market performance measure (Tobin's Q), which could to some extent support Myers's (1977) argument that firms with high short term debt to total assets have a high growth rate and high performance. The results also interestingly showed size to have positively and highly significant relationship with both the accounting performance measure and the market performance measure. The significance of firm's size on performance indicates that large firms earn higher returns. Tax has no significant influence on firms' performance while some industry sector presence was observed.

The results of this study further confirm some prior findings by other scholars and earlier researchers and the research work has been able to find answers to the research questions earlier raised in the introductory chapter in the following ways:

i. There is a significant relationship between the capital structure of firms in Nigeria and their accounting and market performance.
ii. Capital structure has positive influence on the market performance of Nigerian firms but negative influence on their accounting performance.

iii. The maturity structure of debts does affect the performance of firms in Nigeria significantly.

iv. The size of the firm has a significant positive effect on the performance of firms in Nigeria.

v. Corporate tax rate has no significant impact on performance of Nigeria firms.

vi. The industrial sectors influence the performance of Nigerian firms to a little extent.

5.2 Conclusion

A remarkable difference between the capital structure of Nigerian firms and firms in developed economies is that Nigerian firms presumably prefer short term finance and have substantially lower amounts of long term debt. This reveals that Nigerian firms rely heavily on short term financing rather than long term finance. This difference in long-versus short-term debt, to an extent, might limit the explanatory power of the capital structure theories in Nigeria. It suggests that the theoretical underpinnings of the observed correlations are still largely unresolved.

The results of this empirical study suggest that some of the insights from modern capital structure theories are portable to Nigeria in that certain firm-specific factors that are relevant for explaining capital structure and corporate performance in the Western countries are also relevant in Nigeria. This is true despite profound institutional differences that exist between Nigeria and the Western countries. Overall, the empirical results from this study offer some support for the Pecking Order Theory and Static Tradeoff Theory of capital structure.

5.3 Recommendations

In line with the findings of this study, the following recommendations are made:

1. Nigerian firms should try to match their high market performance with real activities that can help make the market performance reflect on their internal growth and accounting performance.
2. The firms should rely less on short term debt, which formed the major part of their leverage and focus more on developing internal strategies that can help improve more on their accounting performance as their accounting performance for the period studied was very low.

3. The firms should develop a good strategy targeted at using more of equity to maximize their market performance in such a way that it yields growth opportunities.

4. The findings show that quoted companies in Nigeria do not use much of long term debt in their respective capital structure choices. This may be due to the general poor participation of both public and private sectors in the bond market. The Nigerian Stock Exchange should therefore strive to remove any rigid policies which could hinder the effective participation of the companies. Economic policies that could help further develop the capital market in such a way that it can absorb increase in demand for funds should be formulated.

5. Though there is high positive impact of leverage on market performance of the firms, it does not translate to better internal/accounting performance. Hence, the firms should

set a debt level that will maximize their performance as reflected in the high positive impact of leverage on their market performance.

5.4 Contribution to Knowledge

This study has contributed to the literature by examining firm-specific factors that influence the performance of Nigerian firms from the view point of their capital structure choices. This has helped us to understand the impact of institutional factors on Nigerian firms' capital structure choices and how it affects their performance. This study will be of help to CEOs and finance managers of firms in Nigeria as the output of this study will serve as a useful database and resource material in the area of capital structure choices and capital budgeting.

The following are the specific contributions of the study:

- The study uses a diversified range of econometric models anchored on the "received theories of capital structure.
- The study establishes the significance of the relationship between capital structure and corporate performance in Nigerian non-financial firms.
- The study employs a larger number of quoted firms and used an increased number of estimation parameters/measurement variables based on the theories of capital structure. The study uses various measures of performance to show the sensitivity of each of these performance measures to leverage. Different measures of leverage are also used to show the sensitivity of the determinants of capital structure to the measure of leverage.

- This study has contributed to methodological discourse in terms of techniques used in the analyses of the data of Nigerian firms.
- The study of the influence of industrial sector in the analysis is an improvement on previous studies on Nigerian firms.
- The study established that the western capital structure models exhibit robustness for companies in the Nigerian market to a large extent.

5.5 Limitation of the Study

There are many issues related to the study topic, however not all issues are touched. This thesis only focuses on the issues raised in the research questions. The limitations are therefore listed below.

1. The analysis does not touch on other performance indicators such as growth opportunities, maturity, sustainability, shareholders' wealth maximization and profitability. The analysis is restricted only to the accounting performance such as return on asset, return on equity and market performance (Tobin's Q).
2. This study does not tackle the instantaneous effect on corporate performance of any changes in corporate governance structure, but rather concentrates on the relation between capital structure and corporate performance.
3. The study is within the agency, static tradeoff and pecking order framework given the increased support for these theories in the literature. Hence, no other perspectives of interpreting the interrelationships among corporate variables are considered. However, all the frameworks (theories) are reviewed.

4. The effects of the geographical location of the firms and ongoing global economic downturn on the capital structure decisions and corporate performance of Nigerian firms are not studied as this on its own deserves a separate study.

5.6 Recommendations for Further Studies

The study has laid some groundwork to explore the impact of capital structure on performance of Nigerian firms upon which a more detailed evaluation could be based. Further work is required to develop new hypotheses and design new variables to reflect the institutional influence. In addition, a more detailed work that studies the effects of the geographical location of the firms and the ongoing global economic downturn on the capital structure decisions and corporate performance of Nigerian firms could help in resolving some theoretical underpinnings of the results as obtained in this study.

REFERENCES

Abdel Shahid, S. (2003), " Does Ownership Structure Affect Firm Value? Evidence from the Egyptian Stock Market" *Social Science Research Network (SSRN) Working Paper,* pp. 1 – 19

Adaramola, A. O., L. A. Sulaiman, and D. Fapetu (2005), "Capital Structure and Corporate Performance: An Empirical Investigation", *Nigerian Journal of Banking and Financial Issues,* Vol. 6, pp. 40 -55

Adetifa, S.B. (2005), *Corporate Finance and Investment Strategy,* Lagos, The Chartered Institute of Bankers of Nigeria.

Allen, D. E. (1991), "The Determinants of the Capital Structure of Listed Australian Companies: The Financial Manager's Perspective", *Journal of Management,* Vol. 16, pp. 123 - 128

Ang, J.S., R.A. Cole, and J.W. Lin, (2000), "Agency Costs and Ownership Structure" *Journal of Finance,* Vol. 55, pp. 81-106

Baker, M. and J. Wurgler (2002), "Market Timing and Capital Structure", *Journal of Finance*, Vol. 57, pp. 1 – 32.

Bauer, P. (2004), "Capital Structure of Listed Companies in Visegrad Countries", Unpublished Research Seminar Paper presented at the Seminar for Comparative Economics, LMU, Munich.

Bauer, P. (2004), "Determinants of Capital Structure: Empirical Evidence from the Czech Republic", *Czech Journal of Economic and Finance,* Vol. 54, pp. 1 -21

Barclay, M. J., E. Morellec and C. W. Smith (2006), "On the Debt Capacity and Growth Options", *The Journal of Business*, Vol. 79, No 1, pp. 37 - 60

Baskin, J. (1989), "An Empirical Investigation of the Pecking Order Hypothesis", *Financial Management,* Vol. 18, pp. 26 - 35

Bello, F. O. and N. E. Onyesom, (2005), "Leverage and Corporate Performance in Nigeria", Nigerian Journal of Banking and Financial Issues, Vol. 6, pp. 127 – 139

Benninga, S.Z. and O.H. Sarig, (1997), *Corporate Finance: A Valuation Approach*, New York, McGraw-Hill.

Berger, A. N. and Bonaccorsi di Patti (2006), "Capital Structure and Firm Performance: A new Approach to Testing Agency Theory and an Application to the Banking Industry" *Journal of Banking and Finance,* Vol. 30, Issue 4, pp. 1065 – 1102.

Blaine, M. (1994), "Comparing the Profitability of Firms in Germany, Japan and the United States", *Management International Review*, Vol. 4, No 2, pp. 125 -148

Booth, L., V. Aivaziam, A. Demirguc-Kunt, and V. Maksimovic, (2001), "Capital

Structure in Developing Countries, Journal of Finance, Vol. 56, pp. 87 - 130

Brealey, R.A. and S.C. Myers, (2003), *Principles of Corporate Finance,* New York, McGraw-Hill/Irwin

Brick, I.E and S. A. Ravid, (1985), "On the Relevance of Debt Maturity Structure", *Journal of Finance,* Vol. 40, pp. 1423 – 1437.

Brigham, F. E. (1999), *Fundamentals of Financial Management*, Hinsdale Illinois, The Dryden Press.

Brigham, F. E. and P. R. Daves (2007), *Intermediate Financial Management*, Mason, South-Western, Cengage Learning.

Brigham F. E. and J.F. Houston, (2007), *Fundamentals of Financial Management*, Mason, Thomson South-Western.

Brigham F. E. and E. J. Ramon, (1990), *Issues in Managerial Finance*, Hinsdale Illinois, The Dryden Press.

Brigham, F. E. and L. Gapenski (1996), *Financial Management*, Dallas, the Dryden Press

Bradley, M., Jarrell, G. A. and Kim, E. H. (1984), "On the Existence of an Optimal Capital Structure: Theory and Evidence", Journal *of Finance,* Vol. 39, 857-878.

Chakravarthy, B. S. (1986), "Measuring Strategic Performance", *Strategic Management Journal,* Vol. 7, pp 437 – 458.

Chang, C. (1999), "Capital Structure as Optimal Contracts", *North American Journal of Economics and Finance*, Vol. 10, pp. 363 -385

Chathoth, P.K. (2002), "Co-alignment between Environment Risks, Corporate Strategy, Capital Structure and Firm Performance: An Empirical Investigation of Restaurant Firms" Unpublished Ph.D. Dissertation, Virginia Polytechnic Institute and State

University.

Chen J. J. (2004), “Determinants of Capital Structure of Chinese-listed Companies”, *Journal of Business Research*, Vol. 57, pp. 1341 – 1351.

Chirinko R. S. and A. R. Singha (2000), “Testing Static Tradeoff Against Pecking Order Models of Capital Structure” A Critical Comment” *Journal of Financial Economic*s, Vol.58, pp 417 -425

Chowdhury, A. & S. P. Chowdhury (2010), Impact of Capital Structure on Firm’s Value: Evidence from Bangladesh, *Business and Economic Horizons,* Vol. 3, Issue 3, pp. 111-122

Claessens, S., S. Djankoo and L. Lang, (1998), “East Asian Corporate: Growth Financing and Risk Over the Last Decade”, *World Bank Policy Research Paper*, pp. 1 - 23

Clifford, W. S. (1990), *The Modern Theory of Corporate Finance*, USA, McGraw-Hill.

David, D. F. & S. Olorunfemi (2010), Capital Structure and Corporate Performance in Nigeria Petroleum Industry: Panel Data Analysis, Journal of Mathematics and Statistics Vol. 6, No. 2, pp. 168-173.

DeAngelo, H. and R. Masulis, (1980), "Optimal Capital Structure Under Corporate and Personal Taxation," *Journal of Financial Economics,* Vol. 8, pp. 3 -29

Deesomsak, R., K. Paudyal, and G. Pescetto, (2004), “The Determinants of Capital Structure: Evidence from the Asia Pacific Region”, *Journal of Multinational Financial Management*, Vol. 14, pp. 387 – 405.

De Jong, A., R. Kabir and T.T. Nguyen (2008), “Capital Structure around the World: The Roles of Firm- and Country-Specific Determinants”, *Journal of Banking and Finance*, Vol. 32, pp. 1954 - 1969

De Miguel, A. and J. Pindado, (2001), "Determinants of Capital Structure: New Evidence from Spanish Panel Data", *Journal of Corporate Finance*, Vol. 7, pp. 77 – 99.

Demirguc-Kunt, A. and V. Maksimovic (1999), "Institutions, Financial Markets and Firm Debt Maturity", *Journal of Financial Economics*, Vol. 54, pp. 295 -336.

Desai, M. A., C. F. Foley and J. R. Hines (2004), "A Multinational Perspective on Capital Structure Choice and International Capital Markets" *The Journal of Finance*, Vol. 59, Issue 6, pp. 2451 -2487

Durand, R. and R. Coeurderoy (2001), "Age, Order of Entry, Strategic Orientation and Organizational Performance", *Journal of Venturing*, Vol. 16, 471 – 494.

Fama, E. F. and R. Kenneth, (1997), "French Industry Cost of Equity" *Journal of Financial Economics*, Vol. 43, No. 2, pp. 153 –194.

Filbeck, G., R. F. Gorman and D. C. Preece (1996), "Behavioural Aspects of the Inter-Industry Capital Structure *Decision*", *Journal of Financial Strategic Decisions*, Vol. 9, pp. 55 – 67

Frank, Z. M. and V. K. Goyal (2003), "Testing the Pecking Order Theory of Capital Structure", *Journal of Financial Economics*, Vol. 67, pp. 217 -248

Gleason K.C., L.K. Mathur and I. Mathur (2000), "the Interrelationship between Culture, Capital Structure and Performance: Evidence from Europeans Retailers", *Journal of Business Research*,Vol. 50, pp. 185 -191.

Givoly D., C. Hayn, A. R. Ofer, and O. Sarig (1992), "Taxes and Capital Structure: Evidence from Firms' Response to the Tax Reform Act of 1986", *The Review of Financial Studies*, Vol. 5, No. 2, pp. 331-355.

Gorten, G. and R. Rosen (1995), "Corporate Control, Portfolio Choice and the Decline

of Banking", *Journal of Finance*, Vol. 50, pp 377-420.

Graham, J. and C. Harvey (2001), "The Theory and Practice of Corporate Finance: Evidence from the Field", *Journal of Financial Economics*, Vol. 60, pp. 187- 243.

Green, W. H. (2003), *Econometrics Analysis*, New York, Prentice Hall.

Gujarati, D. N. (2003), *Basic Econometric 4th Ed.*, New York, McGraw-Hill Inc.

Harris, M. and A. Raviv, (1990), "Capital Structure and the Informational Role of Debt", *Journal of Finance*, Vol., 45, pp. 321 - 349

Harris, M. and A. Raviv (1991), "The Theory of Capital Structure", *Journal of Finance*, Vol., 48, pp. 297 – 356

Huang, G. and F. M. Song, (2006), "The Determinants of Capital Structure: Evidence from China", *China Economic Review*, Vol. 17, pp. 14 -36.

Hull, R.M. (1999), "Leverage Ratios, Industry Norms and Stock Price Reaction: An Empirical Investigation of Stock-for-Debt Transactions", *Journal of Financial Management Association International*, Vol. 28, No. 2, pp. 32 – 45.

Izedonmi, O.I.F. (2002), "Another Look at Capital Structure, Cost of Capital and Cost of Financing Models", *Nigerian Journal of Banking and Financial Issues*, Vol. 5, Pp 63 – 84.

Jensen, M. and W. H. Meckling, (1976), "Theory of the Firm: Managerial Behaviour, Agency Cost and Ownership Structure", *Journal of Financial Economics*, Vol. 3, pp. 305 – 360.

Johnson, S.A. (1998), "The Effect of Bank Debt on Optimal Capital Structure", *Journal of Financial Management Association International*, Vol. 27, No. 1, pp. 49-54.

Judge, G. G., W. E. Griffiths, R. Carter Hill, H. Lutkepohl and Tsoung-Chao Lee (2007),

The Theory and Practice of Econometrics, Second Edition, New York , John Wiley and Sons.

Kahle, K. M. and Shastri, K. (2005), Firm Performance, Capital Structure and the Tax Benefits of Employee Stock Options, *Journal of Financial and Quantitative Analysis*, Vol. 40, No. 1, pp. 135-160.

Kochha, R. (1997), "Strategic Assets, Capital Structure and Firm Performance", Journal of Financial and Strategic Decisions, Vol. 10, No 3, pp. 1065 -1102

Korajezk, R. A. et al (1990), "Understanding Stock Price Behaviour Around the Time of Equity Issues", In Hubbard R. G. (ed.), *Asymmetric Information Corporate Finance and Investment*, University of Chicago Press.

Krishnan, V. S. and R. C. Moyer (1997), "Performance, Capital Structure and Home Country: An Analysis of Asian Corporations", *Global Finance Journal*, Vol. 8, Issue 1, Pp. 129 -143.

Kwansa, F. A. and M. Cho, (1995), "Bankruptcy Cost and Capital Structure: The Significance of Indirect Cost", *International Journal of Hospitality Management*, Vol. 14, No 3/4, pp. 339 -350

Lauterbach, B. and A. Vaninsky (1999), "Ownership Structure and Firm's Performance: Evidence form Isreal", *Journal of Management and Governance*, Vol. 3, pp. 189 – 201.

McConell, J.J. and H. Serveas, (1990), "Additional Evidence on Equity Ownership and Corporate Value", *Journal of Financial Economics*, Vol. 27, pp 595 -612.

Mehran, H. (1995), "Executive Compensation Structure, Ownership and Firm

Performance" *Journal of Financial Economics*, Vol. 38, pp. 163 -184.

Michael, S. (1992), *Corporate Finance and Model Building Approach,* Second Edition, London, Prentice Hall.

Miguel, de A. and J. Pindado (2001), "Determinants of Capital Structure: New Evidence from Spanish Panel Data", *Journal of Corporate Finance*, Vol. 7, pp. 77 - 99

Miller M.H. (1977), "Debt and Taxes", *The Journal of Finance,* Vol. 32 pp. 262 – 275.

Modigliani, F. and M. H. Miller, (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review*, Vol. 48, pp. 261 - 297.

Modigliani, F. and M. H. Miller, (1963), "Corporate Income Taxes and the Cost of Capital: A Correction", *American Economic Review*, Vol. 53, pp. 433 – 442.

Mudambi, R. and C. Nicosia (1998), "Ownership Structure and Firm Performance: Evidence from the UK Financial Service Industry", *Applied Financial Economics*, Vol. 8, pp. 175 – 180.

Murphy G. B., J. W. trailer and R.C. Hill (1996), "Measuring Research Performance in Entrepreneurship", *Journal of Business Research*, Vol. 36, pp 15 – 23.

Myers, S. C. (1984), "The Capital Structure Puzzle", *Journal of Finance*, Vol. 39, No 3, pp. 575-592.

Myers, S. C. (2001), "Capital Structure", *The Journal of Economic Perspective*, Vol. 15, No 2, pp. 81 - 102.

Myers S.C. and N. S. Majluf, (1984), "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have, *Journal of Financial Economics*, Vol. 13, pp.187 - 221

Olowe, R. A. (1998), *Financial Management: Concepts, Analysis and Capital Investments,* First Edition, Lagos: Brierly Jones Nig. Ltd.

Oloyede, J. A. and S. O. Akinmulegun, (1999), "Effect of Capital Structure on Corporate Performance of Selected Quoted Companies in Nigeria", *Nigerian Journal of Banking and Financial Issues*, Vol. 2, No. 1, pp. 119 – 128.

Omet, G. and F. Mashharawe, (2002), "The Capital Structure Choice in Tax Contrasting Environment: Evidence from Jordanian, Kuwaiti, Omani and Saudi Corporate Sectors", *The Economic Research Forum*, 10th Annual Conference, Morocco.

Owualah, S. I. (1998), "Capital Structure Decision: Trends in Innovative Financing", *First Bank Review*.

Owualah, S. I. (2000), *Principles of Financial Management, Lagos*, G-Mag Investment Limited.

Pandey, I. M. (1999), *Financial Management,* New Delhi, India, Vikas Publishing House, PVT Ltd.

Pandey, I. M. (2001), "Capital Structure and the Firm Characteristics: Evidence from an Emerging Market", *IIMA Working Paper*, No 2001-10-04, SSRN

Patel, S. A., M.E. Blume and D.B. Keim, (1991), "Returns and Volatility of Low-grade Bonds: 1977 -1989", *Journal of Finance*, Vol. 46, pp. 49 - 74

Pesaran M. H., Y. Shin and R. J. Smith, (2000), "Structural Analysis of Vector Error Correction Models with Exogenous I(1) Variables", *Journal of Econometrics*, Vol. 97, pp. 293 – 343.

Rajan, R. and L. Zingales, (1995), "What Do We Know About Capital Structure? Some

Evidence from International Data", *Journal of Finance*, Vol. 50, pp 1421 - 1460

Riahi-Belkaoni, A (1999),*Capital Structure: Determination, Evaluation and Accounting*, Westport, Quorum Books Publisher.

Ross, S.A., R.W. Westerfield and B.D. Jordan,(2008), *Fundamentals of Corporate Finance*, New York, McGraw-Hill/Irwin.

Salawu, R. O. (2006), "The Determinants of the Capital Structure of Financial Firms in Nigeria: The Financial Managers' Perspectives", *Proceeding of the 2006 Global Conference on Business and Finance*, Institute for Business and Finance Research, Costa Rica, pp. 74 -77.

Salawu, R. O. (2007), "An Empirical Analysis of the Capital Structure of Selected Quoted Companies in Nigeria" *The International Journal of Applied Economics and Finance*, Vol. 1, No I, pp. 16 – 28.

Sarig, O. H. (1988), "Bargaining with a Corporation and the Capital Structure of the Bargaining firm", *Working paper*, Tel Aviv University.

Scholes, M. S., G. P. Wilson, and M. A. Wolfson (1990), "Tax Planning, Regulatory Capital Planning, and Financial Reporting Strategy for Commercial Banks," *Review of Financial Studies*, Vol. 3, pp. 625-650.

Shyam-Sunder, L. and S.C. Myers, (1999), "Testing Static Tradeoff Against Pecking Order Models of Capital Structure", *Journal of Financial Economics*, Vol. 51, pp 219 - 244

Singh, A. and J. Hamid, (1992), "Corporate Financial Structures in Developing

Countries", *International Finance Corporation Technical Paper*, No. 1, Washington DC, USA.

Singh, A. (1995), "Corporate Financial Patterns in Industrializing Economies: A Comparative Study", *International Finance Corporation Technical Paper*, No. 2, Washington DC, USA

Smith, C. W. and R. L. Watts, (1992), "The Investment Opportunity Set and Corporate Financing, Dividend and Compensation Policies", *Journal of Financial Economics*, Vol. 32, pp 263 -292

Stohs, M. H. and D. C. Mauer, (1996), "The Determinants of Corporate Debt Maturity Structure", *Journal of Business*, Vol. 69, pp 279 – 312.

Tian G. G. and R. Zeitun (2007), "Capital Structure and Corporate Performance: Evidence from Jordan" *Australasian Accounting Business & Finance Journal*, Vol. 1, Issue 4, pp. 40 – 61.

Titman, S., and R. Wessels, 1988, "The Determinants of Capital Structure Choice," *Journal of Finance*, Vol. 43, pp. 1-19.

Tzelepis, D. and D. Skuras, (2004), "The effects of Regional Capital Subsidies on Firm Performance: An Empirical Study", *Journal of Small Business and Enterprise Development*, Vol. 11, pp. 121 – 129.

Van Horne, J. C. (1993), *Fundamentals of Financial Management*, Englewood Cliffs N. J., Prentice Hall Inc.

Van Horne, J. C. and J.M. Wachowicz, (1998), *Fundamentals of Financial Management*, Englewood Cliffs, N.J., Prentice Hall.

Welch, I, (2004), "Capital Structure and Stock Returns", *Journal of Political Economy*, Vol. 112, pp 106 -131

Wooldridge, J. (2003), *Introductory Econometrics: A Modern Approach 2nd Ed.*, KY, Cengage Learning Inc.

Zhou, X. (2001), "Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance: Comment", *Journal of Financial Economics*, Vol. 62, pp 559 – 612.

APPENDICE

Appendix A: Data Employed in the Study

FIRMS	YEARS	ROA	ROE	Tob Q	TDTA	LTDTA	STDTA	SIZE	TAX
AFPRINT	2003	-0.021	-0.263	0.3395	0.2581	0.249	0.0091	6.8423	-0.3052
	2004	-0.066	-0.8	0.5101	0.4273	0.3089	0.1184	6.795	-0.7535
	2005	-0.039	-0.456	0.5895	0.5036	0.2567	0.2469	6.7775	-0.487
	2006	-0.011	-0.074	0.7139	0.5684	0.1553	0.4132	6.7967	-0.579
	2007	-0.011	-0.077	0.8158	0.6692	0.209	0.4602	6.7945	-0.5971
ELLAH LAKE	2003	0.0015	0.0045	0.4592	0.1232	0.0592	0.064	3.9779	0
	2004	0.001	15.117	0.3727	0.3727	0.2265	0.1462	4.103	0.33076
	2005	0.0022	32.183	0.4354	0.4353	0.2575	0.1778	4.3304	0.25893
	2006	0.0055	0.0805	0.5977	0.5295	0.3026	0.2269	4.3222	0.06209
	2007	0.0062	0.0927	0.6814	0.6141	0.3454	0.2687	4.4458	0.05394
LIVESTOCK	2003	-0.755	-19.1	3.6928	3.6533	0.2328	3.4205	5.6122	-0.1494
	2004	-0.731	-19.15	4.3323	4.2942	0.2111	4.083	5.7687	-0.1489
	2005	2.2632	58.818	2.1058	2.0674	0.1833	1.8841	5.7482	0.0315
	2006	0.023	0.7141	1.9078	1.8757	0.1681	1.7076	5.7685	2.59446
	2007	0.0425	0.0632	1.1245	0.4518	0.0407	0.4111	5.9694	0.51904
OKITIPUPA	2003	0.0953	0.2292	4.0404	3.6245	2.0934	1.5311	0	0.04799

	2004	0.0802	0.4158	2.0958	1.9029	0.7325	1.1704	5.3081	0.05371
	2005	0.1003	0.7493	1.6553	1.5214	0.4991	1.0222	5.3393	0.04257
	2006	0.0577	0.2991	2.3095	2.1166	0.6438	1.4728	5.2696	0.31218
	2007	0.1103	0.2651	6.3565	5.9405	1.2776	4.663	5.3312	0.43305
OKOMU	2003	0.1265	3.2303	0.327	0.2879	0.1717	0.1162	6.3296	0.03961
	2004	0.149	4.2199	0.3122	0.2769	0.2071	0.0698	6.3638	0.00894
	2005	0.1569	4.5572	0.2426	0.2082	0.1564	0.0518	6.3919	0.03205
	2006	0.0796	2.5516	0.3775	0.3463	0.3421	0.0042	6.4379	0.02451
	2007	0.0263	0.6323	0.4864	0.4448	0.3177	0.1271	6.4484	0.07295
PRESCO	2003	0.1247	1.6305	0.6409	0.5644	0.4129	0.1515	6.328	0.08009
	2004	0.197	2.689	0.5159	0.4426	0.3333	0.1093	6.3703	0.09803
	2005	0.122	1.8145	0.5823	0.5151	0.3772	0.1378	6.3706	0.24897
	2006	0.1362	2.0184	0.7289	0.6614	0.4181	0.2433	6.3232	0.15228
	2007	0.1282	1.7394	0.7815	0.7078	0.4232	0.2846	6.3554	0.46605

AIRLINE SER	2003	0.05015	1.1518	0.8262	0.7826	0.6598	0.1228	5.75788	0.0363
	2004	0.04515	1.1359	0.7434	0.7037	0.6481	0.0555	5.95918	0.0839
	2005	0.26098	7.9447	0.4889	0.456	0.456	0	6.21649	0.02916
	2006	0.21214	0.6894	0.6467	0.339	0.339	0	6.26658	0
	2007	0.24136	1.0182	0.7193	0.4823	0.0858	0.3965	6.54047	0
NAHCO	2003	0.135	1.6318	0.7602	0.6775	0.034	0.6435	6.34596	0.22315
	2004	0.0621	0.8653	0.7211	0.6493	0.4046	0.2447	6.36989	0.42616
	2005	0.2362	3.0515	0.5667	0.4893	0.4827	0.0067	6.48438	0.30586
	2006	0.2473	3.7063	0.4562	0.3894	0.3892	0.0002	6.51129	0.21914
	2007	0.2551	2.0959	0.4637	0.342	0.3353	0.0068	6.56363	0.24941
DUNLOP	2003	-0.0644	-0.91303	0.7203	0.6498	0.3911	0.2586	6.69852	-0.1122
	2004	-0.0661	-1.00032	0.8454	0.7793	0.497	0.2823	6.71749	-0.2351
	2005	-0.0158	-0.54351	0.6546	0.6255	0.3273	0.2982	6.71184	-0.1996
	2006	-0.0428	-1.72876	0.536	0.5112	0.1498	0.3614	6.70629	-0.0103
	2007	-0.1326	-0.87503	0.4233	0.2717	0.064	0.2077	6.78118	-0.0023
INCAR	2003	-0.1051	-0.33961	0.7224	0.4129	0.032	0.3809	5.22249	-0.069
	2004	-0.2575	-0.77705	1.174	0.8426	0.1402	0.7023	5.23551	-0.0256
	2005	0.09176	0.54195	0.5791	0.4098	0.2021	0.2078	5.063	0.06262

	2006	0.01416	0.05216	0.7925	0.521	0.0788	0.4422	5.03751	1.7492
	2007	0.01575	0.03072	2.4925	1.9798	0.135	1.8448	5.10571	1.3801
R.T. BRISCO	2003	0.46197	6.15068	0.1598	0.0847	0.0579	0.0268	6.62346	0.09158
	2004	0.12311	1.27992	0.1503	0.0542	0.0369	0.0172	6.74681	0.33099
	2005	0.15359	1.67742	0.1545	0.063	0.0398	0.0232	6.88796	0.34424
	2006	0.29911	4.15496	0.1244	0.0524	0.0486	0.0038	7.11932	0.28305
	2007	0.29374	3.9631	0.1537	0.0796	0.0722	0.0074	7.21057	0.32176
GUINNESS	2003	0.37104	27.9722	0.2341	0.2208	0.0812	0.1396	7.57921	0.32978
	2004	0.32272	19.8103	0.381	0.3647	0.2141	0.1507	7.6755	0.32291
	2005	0.16488	10.6381	0.4536	0.4381	0.2924	0.1458	7.6708	0.2258
	2006	0.2616	19.3853	0.4305	0.417	0.2576	0.1594	7.72958	0.34946
	2007	0.33097	20.1833	0.3189	0.3025	0.1547	0.1478	7.79425	0.28173
INT BREW.	2003	-0.34	-0.5559	1.7607	1.1489	0	1.1489	5.65514	-0.1
	2004	-0.533	-0.94514	2.2226	1.659	0	1.659	5.7743	-0.1
	2005	-0.382	-0.59585	3.7088	3.0685	1.0081	2.0604	5.60358	-0.1
	2006	-0.236	-0.85141	2.5613	2.2844	0.5217	1.7628	5.49561	-0.1
	2007	-0.042	-0.1049	3.4615	3.058	0.4848	2.5732	5.74948	-0.1
JOS IN BREW	2003	0.399	1.79295	1.1544	0.9316	0.9316	0	5.91717	0.16581
	2004	0.085	0.46715	0.7531	0.5707	0.5707	0	5.92222	0.25881
	2005	-0.107	-0.5515	0.6562	0.4622	0.4622	0	5.9429	-0.1207
	2006	-2.173	-4.0416	2.3448	1.8072	1.1249	0.6823	5.85668	0
	2007	-2.182	-5.3744	5.466	5.0599	0.7978	4.2621	5.57238	0
NIG BREW	2003	0.2197	5.81393	0.4574	0.4196	0.0773	0.3423	7.79917	0.331127
	2004	0.168	2.41932	0.5264	0.4569	0.076	0.3809	7.86684	0.443996
	2005	0.246	3.41095	0.4364	0.3643	0.0826	0.2816	7.9038	0.36
	2006	0.3231	4.34674	0.3797	0.3053	0.1326	0.1727	7.93612	0.3368
	2007	0.458	7.37219	0.3571	0.295	0.1083	0.1867	8.04824	0.320468
ASHAKA	2003	0.5232	7.14643	0.1929	0.1197	0.071	0.0487	6.9416	0.182039
	2004	0.7372	11.1519	0.1766	0.1104	0.0633	0.0472	7.00855	0.206898
	2005	0.8627	8.91521	0.1945	0.0977	0.053	0.0447	7.19908	0.231962
	2006	0.5971	6.77123	0.1912	0.1031	0.0483	0.0548	7.22457	0.421969
	2007	0.3492	3.43795	0.2244	0.1228	0.0497	0.0731	7.21677	0.626087
BENUE CEM	2003	-0.473	-6.5618	1.8433	1.7712	0	1.7712	5.59217	-0.00068
	2004	-0.121	-3.6842	1.5066	1.4736	0.028	1.4457	0	-0.00068
	2005	0.069	5.55357	1.0811	1.0686	0.0508	1.0178	6.60261	0.048601
	2006	0.061	1.43834	0.7555	0.713	0.1996	0.5134	6.78026	0.424497
	2007	0.051	1.51136	0.7723	0.7387	0.0143	0.7244	6.73826	0.330466
CEM. COY	2003	-0.026	-0.1922	0.9138	0.7802	0.0522	0.728	6.51928	-0.16068
	2004	0.1656	1.73949	0.8867	0.7915	0.1041	0.6874	6.74276	0.0213
	2005	0.0661	0.70137	0.9147	0.8204	0.0671	0.7533	6.77204	0.409607
	2006	-0.002	-0.0193	1.0579	0.9767	0.0548	0.922	6.80443	-2.34722
	2007	0.0199	0.27509	0.7602	0.6878	0.0456	0.6423	6.90542	0.197769
LAFARGE	2003	-0.179	-3.7646	1.493	1.4453	0.7077	0.7377	7.10292	0
	2004	-0.103	-2.7872	1.2745	1.2377	0.8872	0.3505	7.34096	0
	2005	0.1237	2.28196	0.6127	0.5585	0.4281	0.1304	7.42265	0.095746

	2006	0.3746	8.07542	0.259	0.2126	0.2047	0.0079	7.59679	0.015395
	2007	0.3597	8.35317	0.1017	0.0586	0.0502	0.0084	7.58732	0.023435
NIGROPES	2003	0.1084	0.30637	0.4818	0.1278	0.1067	0.0211	5.61549	0.117607
	2004	0.0706	0.16556	0.5899	0.1635	0.1297	0.0338	5.54739	0.342298
	2005	0.0743	0.18805	0.5694	0.1743	0.1203	0.0541	5.62072	0.425719
	2006	0.1002	0.28122	0.5327	0.1763	0.1092	0.0671	5.65389	0.386255
	2007	0.0654	0.2097	0.5442	0.2323	0.1878	0.0445	5.56482	0.203755

NIG. WIRE	2003	0.0804	0.33747	0.7839	0.5455	0.0842	0.4613	5.43568	0.732122
	2004	-0.101	-4.9429	0.1439	0.1236	0.0484	0.0752	5.22419	-0.00739
	2005	-0.106	-5.0795	0.3288	0.3078	0.1525	0.1553	5.28229	-0.04619
	2006	-0.022	-1.0207	0.3302	0.3088	0.1451	0.1637	5.43568	-0.24206
	2007	-0.06	-2.6845	0.3622	0.34	0.1484	0.1916	5.39167	-0.05786
BERGER	2003	0.2971	1.54596	0.3753	0.1831	0.1107	0.0723	6.27782	0.354045
	2004	0.2749	1.53115	0.3563	0.1767	0.1024	0.0743	6.26509	0.389812
	2005	-0.053	-0.6289	0.3924	0.3074	0.0465	0.2609	6.282	-0.34296
	2006	0.0882	1.01566	0.3135	0.2267	0.0541	0.1726	6.36184	0.260069
	2007	0.1575	1.94975	0.2179	0.1371	0.0556	0.0816	6.35705	0.468545
CHE & ALL	2003	0.3281	2.4837	0.269	0.1369	0.1308	0.0061	6.08028	0.272496
	2004	0.3667	2.389	0.284	0.1305	0.1248	0.0057	6.16636	0.356348
	2005	0.3469	2.8825	0.2077	0.0873	0.0828	0.0045	6.18339	0.334002
	2006	0.4362	3.9338	0.2058	0.0949	0.0908	0.0041	6.29803	0.347785
	2007	0.5121	5.397	0.1905	0.0956	0.0921	0.0035	6.3222	0.37968
DN MEYER	2003	0.3335	1.6088	0.38347	0.1761	0	0.1761	6.17615	0.430243
	2004	0.2349	0.9277	0.4371	0.1839	0	0.1839	6.24573	0.304591
	2005	-0.825	-1.706	1.07503	0.5916	0.3166	0.275	6.13638	-0.00791

	2006	0.1309	0.3896	0.88412	0.5482	0.4148	0.1334	6.30294	0.284011
	2007	0.1089	0.6861	0.37026	0.2116	0.0807	0.1309	6.32098	0.354607
IPWA	2003	-0.171	-0.515	2.22033	1.888	1.2488	0.6392	5.35774	-0.01328
	2004	-0.083	-0.192	2.4602	2.0264	1.4264	0.6	5.46524	-0.01173
	2005	-0.086	-0.185	2.78628	2.3233	1.6363	0.687	5.40479	-0.03356
	2006	-0.196	-0.274	4.16087	3.4454	2.7289	0.7165	5.48276	-0.02350
	2007	0.1931	0.2872	2.29202	1.6194	1.6194	0	5.68634	0.069188
NIG-GERM	2003	0.1094	1.6224	0.18008	0.1126	0.0108	0.1018	6.20502	0.506761
	2004	0.1316	2.0795	0.19077	0.1275	0.0113	0.1162	6.3192	0.406264
	2005	0.1528	2.7245	0.21566	0.1596	0.0362	0.1234	6.39653	0.420676
	2006	0.1345	2.8964	0.29315	0.2467	0.144	0.1027	6.39653	0.329535
	2007	0.0994	2.5278	0.36639	0.3271	0.248	0.0791	6.42011	0.292977
PREMIER	2003	0.063	0.1705	0.98214	0.6124	0.0059	0.6065	5.23601	0.68506
	2004	0.0979	0.3544	0.98598	0.7096	0.0203	0.6893	5.3943	0.063651
	2005	0.1986	1.2565	0.20602	0.048	0.048	0	5.27658	0.089133
	2006	0.2486	1.6713	0.57824	0.4295	0.0443	0.3852	5.30767	0.566631
	2007	0.0738	0.3863	4.24888	4.0579	0.0341	4.0238	5.26955	3.259858

NAT. SPORT	2003	-0.63	-1.135	5.12917	4.5737	2.3147	2.259	0	-0.1
	2004	-0.868	-1.749	6.39519	5.8989	2.9361	2.9628	0	-0.1
	2005	-0.236	-0.414	7.11735	6.5462	3.2768	3.2693	0	-0.1
	2006	-0.138	-0.18	2.50996	1.7449	0.9839	0.7611	5.02982	-0.1
	2007	0.1963	0.3238	2.07486	1.4684	0.7189	0.7496	4.68514	-0.1
RED STAR	2003	0.6843	6.2646	0.17786	0.0686	0	0.0686	6.21425	0.320812
	2004	0.6094	7.2394	0.13751	0.0533	0.0004	0.0529	6.31928	0.348113
	2005	0.3679	6.206	0.12588	0.0666	0.0226	0.044	6.35201	0.275339
	2006	0.229	0.8618	0.43414	0.1684	0.1203	0.0481	6.42623	0.465547
	2007	0.2295	1.0366	0.337	0.1157	0.0537	0.0619	6.49115	0.359559
TRANS-NAT	2003	-0.147	-0.194	0.93489	0.1785	0.1695	0.009	5.07319	-0.06142
	2004	0.128	0.1915	0.7968	0.1283	0.1166	0.0118	5.06939	0.091833
	2005	0.3031	0.6032	0.7431	0.2405	0.1855	0.055	5.26341	0.181433
	2006	0.3515	0.5475	1.72007	1.0781	0.3957	0.6825	5.43782	0.212374
	2007	0.4291	0.8391	1.371	0.8596	0.1328	0.7268	5.57806	0.17804
NCR NIG	2003	0.6535	0.7141	2.29357	1.37844	0.7317	0.6468	5.7846	0.012525
	2004	0.6187	1.0302	1.11898	0.51842	0.4135	0.1049	5.8182	0.222386
	2005	0.2651	0.4774	0.78853	0.2331	0.1361	0.097	5.935	0.844978

	2006	-6.021	-11.48	7.1684	6.6438	6.5521	0.0916	6.2016	-0.00703
	2007	-0.121	-0.68	3.10673	2.9289	2.7814	0.1475	6.6242	-0.13349
OMATEK	2003	0.0005	0.0222	0.76037	0.73856	0.366021	0.3725	5.63854	0.099099
	2004	0.0824	3.0742	0.64055	0.61375	0.026802	0.587	5.81515	0.099993
	2005	0.0036	0.1368	0.63977	0.6132	0.350952	0.2622	5.88701	0.099415
	2006	0.0092	0.5671	0.59702	0.5808	0.119222	0.4616	6.03393	0.099982
	2007	0.0543	4.2404	0.62718	0.61438	0.278768	0.3356	5.8798	0.099991
TOM WYAT	2003	-0.213	-1.575	1.78324	1.64813	0.17233	1.4758	4.67356	-0.00358
	2004	-0.457	-3.264	2.26826	2.12835	0.165972	1.9624	4.54023	-0.00130
	2005	0.007	0.0728	1.46107	1.3682	0.221819	1.1463	4.90076	0.27375
	2006	-0.077	-0.584	1.21112	1.0791	0.186374	0.8927	5.08583	-0.99065
	2007	0.007	0.0289	0.72049	0.47179	0.17551	0.2963	5.21151	0.3
TRIPP GEE	2003	0.027	0.2182	0.88073	0.75752	0.484657	0.2729	5.6122	0.134247
	2004	0.043	0.3545	0.74978	0.62714	0.453088	0.1741	5.61351	0.218712
	2005	0.021	0.1718	0.75868	0.6361	0.464129	0.172	5.58417	0.270129
	2006	0.051	0.3986	1.08209	0.9542	0.433681	0.5205	5.80027	0.208074
	2007	0.105	0.7758	0.95785	0.82273	0.361198	0.4615	5.88953	0.214078

A.G. LEV	2003	0.082	0.5943	0.23234	0.09378	0.035412	0.0584	6.74885	0.390898
	2004	0.076	0.3172	0.31209	0.07341	0.024943	0.0485	6.78681	0.260364
	2005	0.125	0.5379	0.3329	0.1002	0.046306	0.0539	6.84731	0.35569
	2006	0.132	0.6401	0.32751	0.1218	0.068402	0.0534	6.85437	0.337335
	2007	0.122	0.9425	0.25081	0.12147	0.044859	0.0766	6.85962	0.275824
CHELLARAMS	2003	0.066	1.1228	0.08712	0.0286	0.023533	0.0051	6.6714	0.230795
	2004	0.076	1.0131	0.20204	0.12685	0.086906	0.0399	6.80343	0.274966
	2005	0.068	1.1685	0.14076	0.0824	0.039971	0.0424	6.89852	0.335502
	2006	0.066	1.1896	0.17401	0.1186	0.057094	0.0615	6.94734	0.683256
	2007	0.098	1.1929	0.18044	0.09852	0.05749	0.041	7.04829	0.162334
JOHN HOLT	2003	-0.046	-0.682	0.37483	0.30683	0.050209	0.2566	4.08174	-0.63901
	2004	0.07	1.2564	0.30765	0.25158	0.057217	0.1944	4.21445	0.714286
	2005	0.005	0.0769	0.30561	0.2389	0.066735	0.1721	3.96251	0.666667
	2006	-0.106	-1.928	0.40158	0.3464	0.062217	0.2842	4.07653	-0.26596
	2007	0.023	0.4872	0.39849	0.35114	0.058524	0.2926	4.21882	0.6
P.Z. CUSSONS	2003	0.153	3.7919	0.17354	0.13315	0.057099	0.0761	7.44708	0.371048
	2004	0.187	4.0218	0.18046	0.13401	0.062804	0.0712	7.53319	0.260911

	2005	0.156	3.7808	0.16395	0.1228	0.058978	0.0638	7.62557	0.32644
	2006	0.16	4.2154	0.12396	0.086	0.023789	0.0622	7.73413	0.344208
	2007	0.165	3.7655	0.14217	0.0984	0.029267	0.0691	7.81918	0.339341
SCOA	2003	0.11	0.4593	0.31743	0.0779	0.077897	0	6.68296	0.079646
	2004	0.061	0.2642	0.60955	0.37921	0.074906	0.3043	6.70018	0.353846
	2005	0.347	1.0708	0.49303	0.1693	0.074701	0.0946	6.65254	0.060345
	2006	3.71	2.5231	3.8371	2.3665	0.294118	2.0724	6.57066	0.007317
	2007	1.004	2.6123	0.4539	0.06974	0.06974	0	6.27138	0.136631
UAC	2003	0.138	0.1955	1.18784	0.4834	0.295563	0.1878	7.31897	0.310703
	2004	0.13	0.1706	1	0.24068	0.184568	0.0561	7.39996	0.40408
	2005	0.164	0.2058	1	0.2007	0.149612	0.0511	7.43503	0.313734
	2006	0.154	0.19	1	0.1906	0.125053	0.0655	7.45337	0.351306
	2007	0.206	0.2483	1	0.17006	0.113173	0.0569	7.49802	0.304373
UNILEVER	2003	0.494	0.7113	2.0466	1.35149	0.304888	1.0466	7.27883	0.326789
	2004	0.364	0.4891	1.8733	1.12929	0.25599	0.8733	7.37464	0.270298
	2005	0.268	0.4095	1.19033	0.5348	0.344493	0.1903	7.52363	0.291468
	2006	0.273	0.5363	1	0.4914	0.329155	0.1622	7.40747	0.351787
	2007	0.233	0.4002	1	0.41779	0.298658	0.1191	7.53136	0.355967

CAPPA/ D'AL	2003	0.21	3.177	1.0334	0.96721	0.154556	0.8127	6.41728	0.287644
	2004	0.153	2.9755	1.06889	1.01735	0.209044	0.8083	6.47071	0.138854
	2005	0.221	5.3439	5.56261	5.5212	0.193444	5.3277	6.64409	0.249592
	2006	0.389	5.0909	5.77924	5.7028	0.274493	5.4283	6.72087	0.744691
	2007	0.543	12.381	1.82035	1.77653	0.075281	1.7013	6.83568	0.313957
COSTAIN	2003	-0.532	-5.862	0.96535	0.8746	0.047504	0.8271	6.10103	-0.00064
	2004	-0.239	-3.511	0.94405	0.87598	0.834454	0.0415	6.34564	-0.00091
	2005	-1.4	-18.62	2.34458	2.2694	0.952536	1.3169	6.04601	-0.00040
	2006	0.062	1.429	1.31312	1.2699	0.684585	0.5853	6.47949	0
	2007	0.033	4.7588	0.57717	0.57016	0.325265	0.2449	6.58138	0.016556
JULIUS BERG	2003	0.118	6.4646	0.65408	0.63588	0.177278	0.4586	7.4837	0.496763
	2004	0.095	6.1656	0.66294	0.64757	0.149566	0.498	7.46963	0.441444
	2005	0.083	7.4408	0.78831	0.7772	0.063842	0.7132	7.60035	0.438353
	2006	0.047	14.698	0.91508	0.9119	0.018396	0.8935	7.75487	0.492442
	2007	0.106	21.017	0.81521	0.81015	0.029208	0.7809	7.89803	0.439093
ROADS NIG.	2003	-0.045	-0.858	1.0573	1.00522	0.836301	0.1689	5.61747	-0.62264
	2004	0.013	0.1421	0.84598	0.75346	0.225119	0.5283	5.42441	4.365939

	2005	0.101	1.1559	0.82295	0.7358	0.038281	0.6975	6.10979	0.681979
	2006	0.153	1.8444	0.73292	0.6502	0.053243	0.5969	6.12478	0.351713
	2007	0.244	3.3442	0.58094	0.50794	0.052002	0.4559	6.24462	0.248789
ADSWITCH	2003	0.093	0.1408	1.24383	0.58516	0.043786	0.5414	4.55621	1.087216
	2004	-0.396	-0.733	1.14085	0.60075	0.051265	0.5495	4.18361	-0.40948
	2005	0.165	0.3168	1.1626	0.6433	0.024676	0.6186	4.74441	0.300088
	2006	0.176	0.208	1.28834	0.4427	0.026179	0.4166	4.58092	0.178654
	2007	0.257	0.316	1.41858	0.6057	0.087788	0.5179	4.7574	0.166709
CAPITAL OIL	2003	-0.02	-0.044	1.29615	0.85057	0.094023	0.7565	4.93399	-0.56647
	2004	-0.056	-0.122	1.38614	0.90116	0.102335	0.7988	4.99633	-0.07748
	2005	0.009	0.0393	0.80091	0.5809	0.046424	0.5345	5.14888	0.503226
	2006	0.024	0.1148	0.78788	0.5747	0.044983	0.5297	5.13306	0.214412
	2007	0.018	0.0749	0.5557	0.31104	0.044249	0.2668	5.34229	0.877203
JULI PLC	2003	-0.107	-0.25	0.70497	0.27702	0.214508	0.0625	4.96822	-0.07003
	2004	0.012	0.0156	0.82691	0.08401	0.017604	0.0664	5.17842	0.605054
	2005	-0.041	-0.051	0.88359	0.0623	0.017957	0.0443	5.27615	-0.84234
	2006	-0.196	-0.215	1.09193	0.1772	0	0.1772	5.26868	-0.23081
	2007	-0.047	-0.052	1.16429	0.25264	0	0.2526	5.42098	-0.53450

SMART PROD	2003	0.006	0.0296	0.90798	0.71458	0.436873	0.2777	4.94338	0.514344
	2004	0.008	0.0441	0.90291	0.71358	0.424165	0.2894	4.99518	0.57989
	2005	0.088	0.3988	0.48014	0.2591	0.112383	0.1468	4.41888	0.00533
	2006	0.046	0.1938	0.48307	0.2479	0.120412	0.1275	4.0235	0.323588
	2007	0.062	0.2644	0.68951	0.45557	0.089505	0.3661	4.09851	0.187815
CUTIX PLC	2003	0.349	0.6942	0.67214	0.16975	0.069277	0.1005	5.6377	0.227481
	2004	0.356	0.8372	0.5266	0.10129	0.016233	0.0851	5.75905	0.211054
	2005	0.442	0.6122	0.87894	0.1573	0.012926	0.1443	5.8538	0.328334
	2006	0.626	1.4198	0.64341	0.2022	0.0963	0.1059	6.02695	0.351189
	2007	0.434	0.7402	0.73141	0.14472	0.144718	0	6.11639	0.414572
INTERLINKED	2003	-1.151	-1.306	1.28681	0.40544	0.075949	0.3295	4.71842	-0.02963
	2004	-2.066	-1.388	3.0573	1.56873	0.192486	1.3762	4.24199	-0.03359
	2005	0.372	0.2132	3.22231	1.476	0.383218	1.0928	4.64839	0.486379
	2006	0.961	0.4829	2.68144	0.6923	0.481777	0.2105	5.1086	0.115254
	2007	-0.726	-0.422	2.77856	1.06121	0.146627	0.9146	4.88698	-0.75153
7UP BOTT CO.	2003	0.459	9.7981	0.30748	0.2606	0.113282	0.1473	7.15296	0.311823
	2004	0.288	8.2276	0.35818	0.32321	0.177376	0.1458	7.17427	0.3217

	2005	0.209	7.4127	0.42275	0.3946	0.221455	0.1732	7.23922	0.371978
	2006	0.188	8.3224	0.40869	0.3861	0.233026	0.1531	7.34384	0.315815
	2007	0.142	7.652	0.56421	0.54568	0.419013	0.1267	7.43631	0.378082
BIG TREAT	2003	0.007	0.1287	1.59236	1.53937	0.927255	0.6121	4.9745	0.696193
	2004	0.006	0.1903	1.76184	1.73134	0.955489	0.7759	5.11848	0.545072
	2005	0.008	0.2888	1.49542	1.4691	0.864045	0.6051	5.41096	0.48658
	2006	0.064	0.1787	1.025	0.6679	0.452809	0.2151	6.20005	0.152317
	2007	0.097	0.3532	0.85589	0.58112	0.429563	0.1516	6.47758	0.303977
CADBURY	2003	0.429	10.105	0.09963	0.05716	0.057165	0	7.31336	0.266522
	2004	0.365	10.256	0.09203	0.05644	0.056443	0	7.34543	0.287737
	2005	0.22	7.6997	0.62679	0.5982	0.0621	0.5361	7.46915	0.269044
	2006	-0.385	-11.52	1.90669	1.8732	0.463692	1.4095	7.28364	-0.19820
	2007	-0.142	-7.625	0.9463	0.92771	0.114159	0.8136	7.29966	-0.26146
FLOUR MILLS	2003	0.136	5.1847	0.59835	0.57221	0.33182	0.2404	7.72887	0.273806
	2004	0.096	3.4766	0.47418	0.44645	0.325449	0.121	7.82481	0.278011
	2005	0.227	10.831	0.43888	0.418	0.396913	0.021	7.93738	0.260016
	2006	0.278	12.61	1.6325	1.6105	0.784559	0.8259	8.02395	0.236658
	2007	0.223	12.721	1.81543	1.79791	0.718779	1.0791	8.10606	0.355845

NOR NIG FLR	2003	0.175	5.9097	0.552	0.52235	0.012975	0.5094	6.62771	0.332832
	2004	0.127	3.6646	0.5955	0.56072	0.013949	0.5468	6.57829	0.291513
	2005	0.11	2.8604	0.63599	0.5975	0.019344	0.5781	6.73359	0.238414
	2006	0.044	1.1295	0.62507	0.5864	0.027354	0.559	6.68874	0.161973
	2007	-0.048	-1.26	0.72377	0.68537	0.027144	0.6582	6.67981	-1.11554
NAT. SALT CO	2003	-0.147	-0.29	1.48093	0.9753	0.48782	0.4871	4.12349	0
	2004	-0.205	-0.374	1.65358	1.10448	0.529757	0.5747	3.64464	0
	2005	-0.176	-0.289	1.98015	1.3725	0.586286	0.7862	3.79775	0
	2006	-0.069	-0.373	1.36636	1.1819	0.190761	0.9912	4.1283	0
	2007	0.333	1.1413	1.01082	0.71919	0.093401	0.6258	6.79606	0.390879
NESTLE	2003	0.491	22.129	0.6662	0.64401	0.193732	0.4503	7.3915	0.349382
	2004	0.455	23.088	0.6938	0.67408	0.239584	0.4345	7.45425	0.354867
	2005	0.469	29.929	0.66174	0.6461	0.217423	0.4287	7.53575	0.329384
	2006	0.434	31.027	0.67759	0.6636	0.276204	0.3874	7.58459	0.309539
	2007	0.398	25.627	0.72209	0.70655	0.318977	0.3876	7.64372	0.357037
NIG BOTT. CO	2003	0.179	12.407	0.85211	0.83765	0.573451	0.2642	7.64247	0.271951
	2004	0.093	6.8358	0.8516	0.83804	0.520737	0.3173	7.67719	0.089555

	2005	0.081	5.505	0.86348	0.8487	0.46377	0.3849	7.74386	0.349303
	2006	0.042	2.977	0.86814	0.8542	0.431819	0.4224	7.77579	0.225962
	2007	0.09	6.6428	0.84223	0.82862	0.475235	0.3534	7.83588	0.270211
TANTALIZERS	2003	0.067	10.847	0.47481	0.46867	0.327359	0.1413	6.3153	0.171627
	2004	0.133	31.109	0.52089	0.5166	0.490348	0.0263	6.49686	0.104097
	2005	0.034	10.343	1.0473	1.044	0.609437	0.4346	6.53243	0.308936
	2006	0.099	31.888	1.55831	1.5552	0.550733	1.0045	6.54476	0.121639
	2007	0.112	0.2702	1.01303	0.60006	0.302804	0.2973	6.57336	0.093462
UTC NIG. PLC	2003	-0.145	-0.57	0.89148	0.6366	0.154493	0.4821	6.17516	-0.09596
	2004	-0.021	-0.052	1.32099	0.91325	0.105256	0.808	6.29658	-1.55199
	2005	-0.579	-0.511	1.72429	0.5923	0.199618	0.3926	5.78716	-0.41813
	2006	0.058	0.0969	0.86397	0.2608	0.121845	0.139	5.97843	0.032347
	2007	0.021	0.0716	0.64358	0.3573	0.13771	0.2196	6.16585	0.064803
FIDSON	2003	0.3	2.2728	0.77338	0.64129	0.087539	0.5538	5.88306	0.10016
	2004	0.202	2.162	0.14912	0.05562	0.054678	0.0009	6.03352	0.005192
	2005	0.229	2.7614	0.13397	0.051	0.049987	0.001	6.21071	0.202925
	2006	0.254	4.1537	0.1228	0.0616	0.044942	0.0167	6.34246	0.134908
	2007	0.24	5.666	0.10292	0.0606	0.036076	0.0245	6.51949	0

GLAXOSMITH	2003	0.221	2.6661	0.70062	0.61791	0.105416	0.5125	6.75375	0.356088
	2004	0.22	3.3246	0.64811	0.58191	0.087783	0.4941	6.85425	0.279189
	2005	0.17	2.9459	0.63658	0.5789	0.068627	0.5103	6.93398	0.307574
	2006	0.172	3.1827	0.58117	0.5272	0.077787	0.4494	7.0166	0.289105
	2007	0.134	2.4385	0.52706	0.4722	0.09009	0.3821	6.99631	0.282543
MAY /BAKER	2003	0.177	1.4862	0.27955	0.16077	0.07255	0.0882	6.25053	0.41135
	2004	0.137	1.3941	0.31985	0.22132	0.138371	0.0829	6.27895	0.27758
	2005	0.106	1.4239	0.51271	0.438	0.380882	0.0571	6.30037	0.341881
	2006	0.089	0.7605	0.23854	0.121	0.09826	0.0227	6.35284	0.20557
	2007	0.139	1.1374	0.21119	0.08934	0.033714	0.0556	6.58656	0.47669
MORRISON	2003	0.125	0.4314	0.55003	0.25921	0.082734	0.1765	5.18471	0.492308
	2004	0.06	0.2407	0.65004	0.40064	0.106748	0.2939	5.25365	0.925666
	2005	0.055	0.2366	0.63629	0.4023	0.097611	0.3047	5.29006	0.928175
	2006	0.064	0.3128	0.64899	0.4451	0.105915	0.3392	5.32497	0.002941
	2007	0.046	0.2308	0.78743	0.58667	0.123166	0.4635	5.34596	0.582289
NEIMETH	2003	0.094	1.0859	0.64592	0.55963	0.504589	0.055	6.00088	0.336268
	2004	0.152	1.6601	0.55616	0.46457	0.380206	0.0844	6.0941	0.359208

	2005	0.065	0.3809	0.34656	0.1754	0.100484	0.0749	6.08046	0.340022
	2006	0.089	0.5261	0.32826	0.159	0.04756	0.1115	6.17721	0.324371
	2007	0.069	0.5025	0.45157	0.31414	0.175844	0.1383	6.28926	0.404911
CAPITAL HOT	2003	0.121	0.2853	0.86067	0.43708	0.2346	0.2025	6.40099	0.319999
	2004	0.011	0.0264	0.65383	0.23422	0.2225	0.0117	6.30172	0.319988
	2005	0.017	0.0406	0.65716	0.2411	0.2294	0.0118	6.34819	0.325011
	2006	0.163	0.4467	0.81354	0.4497	0.2518	0.1978	6.45502	0.319999
	2007	0.117	0.3362	0.86231	0.51313	0.2371	0.276	6.44898	0.319999
IKEJA HOTEL	2003	0.293	0.9714	0.33215	0.03016	0.0302	0	6.48885	0.28916
	2004	0.036	0.6557	0.90159	0.84735	0	0.8473	6.51794	0.41439
	2005	0.071	1.3789	0.89538	0.8441	0.1395	0.7045	6.62218	0.179055
	2006	0.066	1.5792	0.89167	0.8501	0.1329	0.7172	6.66679	0.364107
	2007	0.071	1.2561	0.77952	0.7229	0.1358	0.5871	6.7228	0.300388
THE TOURIST	2003	0.024	0.1947	0.76179	0.63693	0.341	0.296	6.00137	0.129404
	2004	-0.009	-0.083	0.86406	0.75677	0.351	0.4058	6.01793	-1.05836
	2005	-0.036	-0.384	0.84802	0.7539	0.3226	0.4313	6.013	-0.45116
	2006	-0.026	-0.298	0.94929	0.8617	0.3787	0.483	6.08998	-0.03663
	2007	0.033	0.3821	1.54703	1.46035	0.4079	1.0524	6.16376	0.58475

ALEX IND. PLC	2003	-0.176	-0.383	1.38674	0.92805	0.9143	0.0137	5.60911	0
	2004	-0.012	-0.029	1.38715	0.98001	0.9492	0.0308	5.81476	0
	2005	0.032	0.0766	1.36473	0.9476	0.8452	0.1023	5.89157	0
	2006	0.072	0.1882	1.26114	0.8805	0.4046	0.4759	5.93666	0
	2007	0.149	0.4701	1.06859	0.75107	0.3683	0.3828	6.01803	0
B.O.C GASES	2003	0.392	0.836	0.65323	0.18463	0.0238	0.1608	5.92997	0.320241
	2004	0.354	0.8682	0.61428	0.20656	0.0342	0.17233	5.95509	0.348069
	2005	0.217	0.6377	1.19478	0.8552	0.3053	0.5499	6.00178	0.108447
	2006	0.138	0.4886	1.03867	0.7555	0.2881	0.46737	6.05254	0.368257
	2007	0.248	0.8917	1.22372	0.94537	0.1934	0.75192	6.1203	0.166023
FIRST ALUM	2003	0.152	0.3758	0.45121	0.0472	0	0.04717	6.68411	0.183258
	2004	0.067	0.2086	0.58102	0.2604	0.1516	0.1088	6.80581	0.287372
	2005	0.098	0.3153	0.54335	0.2319	0.0989	0.13304	6.9086	0.187641
	2006	0.012	0.0497	1.19291	0.9493	0.7147	0.23459	6.93929	0.823208
	2007	-0.092	-0.515	2.39537	2.217	0.2529	1.96411	6.94067	-0.32
NIG. ENAMEL	2003	0.241	1.8197	0.94152	0.8089	0.6754	0.13355	6.25008	0.339338
	2004	0.234	1.8494	0.26269	0.1363	0	0.13628	6.21475	0.445008

	2005	0.222	2.4352	0.44012	0.349	0.2857	0.06329	6.24961	0.304018
	2006	0.199	2.1813	0.38226	0.2909	0.2523	0.03856	6.19684	0.354048
	2007	0.225	2.6551	0.77823	0.6934	0.3045	0.38892	6.19535	0.279026
VITAFOAM	2003	0.189	2.2237	0.76352	0.6784	0.0858	0.59258	6.58962	0.287239
	2004	0.195	1.8417	0.70378	0.5979	0.1392	0.45874	6.56241	0.385845
	2005	0.089	0.5296	0.77254	0.6036	0.1794	0.42415	6.54722	1.030595
	2006	0.192	1.9911	0.35801	0.2614	0.1015	0.15993	6.7888	0.1993
	2007	0.221	3.0922	0.27156	0.1999	0.0724	0.12759	6.91233	0.061051
CHAMS PLC	2003	-0.326	-696.3	3.0503	3.0498	0.7009	2.34897	5.10716	-0.02023
	2004	0.152	1558.6	0.74644	0.7463	0.04	0.70635	5.47059	0.014057
	2005	0.024	241.66	0.71671	0.7166	0.0479	0.66867	5.13592	0.098775
	2006	0.4	3.9954	0.37239	0.2722	0.0585	0.21373	6.03954	0.094736
	2007	0.431	1.2158	0.53777	0.1836	0.1016	0.082	6.65003	0.236433
STARCOMMS	2003	-0.311	-61.47	1.19942	1.1944	0.7245	0.46988	6.49743	-0.56923
	2004	-0.222	-51.74	1.37501	1.3707	0.5575	0.81318	6.71335	-0.07322
	2005	-0.266	-73.22	1.5895	1.5859	1.0945	0.49139	6.80238	-0.15016
	2006	-0.104	-50.11	1.43128	1.4292	1.086	0.34322	7.13401	-0.27724
	2007	0.016	0.2446	0.84363	0.7793	0.4679	0.31141	7.3119	1.248866

STOKVIS	2003	-0.027	-0.489	1.04943	0.9939	0.3232	0.67074	3.36418	-0.1
	2004	-0.156	-2.931	1.02137	0.9681	0.3257	0.64235	3.08493	-0.1
	2005	-0.146	-3.311	0.88826	0.8441	0.3042	0.53993	3.01662	-0.1
	2006	0.016	0.414	0.77672	0.7385	0.2743	0.46414	2.31387	0.1
	2007	0.04	0.9342	0.74723	0.7045	0.2987	0.40576	0	0.1
JAPAUL OIL	2003	0.177	92.835	0.17794	0.176	0	0.17603	5.63838	0.052114
	2004	0.171	0.6518	0.49745	0.2356	0	0.23555	5.692	0.193024
	2005	0.163	0.4072	0.48771	0.0877	0.0134	0.07436	5.72685	0.159679
	2006	0.161	0.4133	0.65393	0.2655	0.2324	0.03304	6.14648	0.211873
	2007	0.147	0.8186	0.84307	0.663	0.5272	0.13581	6.36708	0.207849
DAAR COMM.	2003	-0.144	-0.447	0.49273	0.1698	0.0063	0.16351	5.81473	-0.04336
	2004	-0.002	-0.013	0.34059	0.1684	0.0042	0.16422	5.8189	-1.86410
	2005	-0.003	-0.017	0.42544	0.2642	0.0038	0.26037	6.05358	-1.43527
	2006	0.015	0.2218	0.12851	0.0587	0.0018	0.05691	6.26258	0.117716
	2007	0.021	0.2795	0.14164	0.0682	0.004	0.06414	6.40354	0.195274
AVON	2003	0.043	0.4952	0.72026	0.6326	0.0285	0.60408	6.65397	0.538967
	2004	0.043	0.709	0.79363	0.7324	0.0473	0.68514	6.71209	0.490391

	2005	0.058	0.7911	0.72719	0.654	0.046	0.60801	6.78924	0.298207
	2006	0.067	0.9669	0.70106	0.6321	0.0645	0.56754	6.79086	0.373486
	2007	0.06	0.9632	0.75075	0.6886	0.0806	0.60802	6.83917	0.237677
BETA GLASS	2003	0.396	3.4294	0.92322	0.8077	0.2033	0.60444	6.72104	0.02887
	2004	0.114	0.9862	0.74473	0.6295	0.2708	0.35875	6.78199	0.274487
	2005	0.073	0.6509	0.8243	0.7121	0.3639	0.34822	6.68331	0.478111
	2006	0.108	2.1736	0.58169	0.5319	0.1499	0.38206	6.72194	0.24877
	2007	0.155	4.6467	0.34821	0.3149	0.1218	0.19307	6.84708	0.281001
GREIF NIG.	2003	-0.262	-4.564	0.25687	0.1995	0.0559	0.14362	5.60015	-0.07599
	2004	-0.32	-4.782	0.41084	0.3439	0.0706	0.27323	5.66141	-0.21904
	2005	-0.093	-1.464	0.37397	0.3106	0.0473	0.26628	5.76854	-0.85814
	2006	0.005	0.0889	0.15037	0.0922	0.0569	0.03532	5.77239	14.93671
	2007	-0.038	-0.642	0.17721	0.118	0.0048	0.11318	5.72642	-0.14001
NAMPAK NIG.	2003	0.106	0.6329	0.18161	0.0143	0	0.01427	6.37014	0.032929
	2004	0.196	1.3235	0.29165	0.1439	0.141	0.0029	6.2222	0.435035
	2005	0.095	0.7028	0.31408	0.179	0.1473	0.03174	6.26495	0.379352
	2006	0.203	1.8195	0.29688	0.1851	0.1188	0.06631	6.43174	0.334971
	2007	0.094	0.88	0.24552	0.1382	0.1019	0.03628	6.45479	0.589682

NIG. BAG.	2003	0.012	0.2017	1.31509	1.2534	0.9052	0.34822	6.7569	0.91601
	2004	0.02	0.7135	1.12876	1.1014	0.7193	0.38206	6.79913	0.43679
	2005	0.157	8.5952	0.93761	0.9193	0.7277	0.1916	6.9957	0.05633
	2006	0.148	9.6528	0.81917	0.8038	0.5275	0.27631	7.0415	0.124778
	2007	0.078	0.2961	0.7915	0.5288	0.2072	0.32156	7.07232	0.670105
POLY PROD.	2003	0.075	0.2569	0.71305	0.4209	0.0186	0.40226	6.05781	0.248443
	2004	0.084	0.3177	0.77876	0.5128	0.0574	0.45538	6.12941	0.679722
	2005	0.005	0.0187	0.74413	0.4673	0.0197	0.4476	6.14605	3.798398
	2006	0.029	0.1032	0.74991	0.4733	0.0269	0.44647	6.17708	0.941447
	2007	0.074	0.23014	0.69672	0.3748	0.0374	0.3374	6.22829	0.504834
STUDIO PRESS	2003	0.041	0.6277	0.64559	0.5808	0.3858	0.195	5.30175	0.088936
	2004	0.032	0.6891	0.7154	0.6687	0.4748	0.19388	5.80346	0.108834
	2005	0.022	0.4032	0.6536	0.5991	0.355	0.24417	5.71335	0.31998
	2006	0.015	0.4797	1.55216	1.5201	1.0729	0.44721	6.03427	0.45682
	2007	0.02	1.5677	0.80644	0.7937	0.6991	0.09457	6.26247	0.121992
WEST AFRI.	2003	0.025	0.3224	0.99166	0.9129	0.0189	0.89404	6.03673	0.0328
	2004	0.031	0.4348	0.96112	0.8892	0.0093	0.87992	6.16484	0.074158

	2005	-0.097	-1.349	1.05797	0.9863	0.0119	0.97438	6.07262	-0.03222
	2006	-0.103	-1.464	1.15934	1.0892	0.0255	1.06374	6.14854	-0.09217
	2007	-0.15	-3.441	1.99742	1.9539	1.1159	0.83793	6.1529	-0.04255
AP PLC	2003	0.197	6.4683	6.83677	6.8064	1.2255	5.58093	7.5365	0.12557
	2004	0.102	4.7538	1.77461	1.7531	0.2855	1.46765	7.76425	0.133123
	2005	-0.329	-8.544	1.00982	0.9714	0.2454	0.72596	7.63105	-0.05921
	2006	0.227	6.1807	0.80798	0.7712	0.2192	0.55206	7.91347	0.113266
	2007	0.737	17.874	0.27054	0.2293	0.0972	0.13205	8.00871	0.191199
AFROIL	2003	-0.107	-0.203	1.31754	0.7898	0.4992	0.29066	0	-0.10008
	2004	-0.134	-0.223	1.52126	0.92	0.7081	0.21194	0	-0.10009
	2005	-0.157	-0.224	1.79181	1.0929	0.9856	0.1073	0	-0.1
	2006	-0.04	-0.411	0.41643	0.3187	0.1891	0.12957	0	-0.09995
	2007	-0.069	-0.732	0.24162	0.1476	0.0913	0.05627	4.83448	-0.07647
CHEVRON	2003	0.056	7.9501	0.85191	0.8449	0.0534	0.79151	7.51427	0.375464
	2004	0.08	10.35	0.83446	0.8267	0.0455	0.7812	7.62728	0.372766
	2005	0.125	14.016	0.79063	0.7817	0.0734	0.7083	7.71552	0.412538
	2006	0.108	14.586	0.81023	0.8028	0.063	0.73987	7.81898	0.291362
	2007	0.143	23.583	0.81285	0.8068	0.0653	0.74147	7.8611	0.345787

CONOIL	2003	0.379	10.486	0.19049	0.1544	0.0611	0.09326	7.53788	0.330684
	2004	0.361	9.7252	0.22537	0.1883	0.0603	0.12803	7.77838	0.34414
	2005	0.335	11.127	0.29358	0.2635	0.1446	0.11885	7.87815	0.320264
	2006	0.29	11.854	0.22897	0.2045	0.074	0.13057	7.95676	0.317122
	2007	0.248	10.834	0.23107	0.2081	0.0962	0.11196	7.93876	0.310111
ETERNA OIL	2003	-1.319	-3.974	1.21372	0.8818	0.1493	0.73252	5.69974	-0.11881
	2004	-0.418	-1.145	1.50961	1.1442	0.0765	1.06772	5.25586	-0.19593
	2005	-0.501	-0.919	1.81682	1.271	0.0594	1.21161	6.15155	-0.025802
	2006	0.076	0.1308	1.34311	0.7639	0.0608	0.70305	6.54558	0.286156
	2007	-0.131	-0.521	0.78637	0.5359	0.0867	0.4492	6.69086	-0.20051
MOBIL	2003	0.41	18.012	0.89279	0.87	0.2589	0.61113	7.56947	0.326814
	2004	0.342	16.518	0.86874	0.848	0.2214	0.62661	7.66789	0.113824
	2005	0.557	28.236	0.47726	0.4575	0.321	0.1365	7.70685	0.286211
	2006	0.342	21.094	0.63446	0.6183	0.2816	0.33668	7.70595	0.323123
	2007	0.197	14.681	0.76288	0.7495	0.2245	0.52499	7.73673	0.35902
OANDO	2003	0.045	6.251	0.74584	0.7387	0.2383	0.50045	7.80241	0.217476
	2004	0.044	3.4666	0.13744	0.1248	0.081	0.04384	7.93375	0.098831

	2005	0.076	7.3748	0.24601	0.2357	0.0624	0.17335	8.0849	0.345765
	2006	0.096	10.014	0.28125	0.2716	0.0697	0.20195	8.12188	0.175765
	2007	0.068	9.859	0.22328	0.2164	0.1675	0.0489	8.1173	0.281318
TOTAL	2003	0.748	29.103	0.39987	0.3742	0.2953	0.07887	7.82447	0.379068
	2004	0.582	26.539	0.53831	0.5164	0.2931	0.22323	7.97778	0.383182
	2005	0.535	28.391	0.56052	0.5417	0.2947	0.24695	8.10285	0.24995
	2006	0.311	19.139	0.46403	0.4478	0.2539	0.1939	8.10234	0.225404
	2007	0.42	28.445	0.463	0.4482	0.2477	0.2005	8.1378	0.325834
ACADE. PRESS	2003	0.297	0.8294	0.56578	0.2077	0.0233	0.18439	5.89254	0.247883
	2004	0.183	0.425	0.72753	0.2979	0.0846	0.21324	5.90445	0.542414
	2005	0.159	0.6946	0.75307	0.5235	0.3584	0.16505	5.9689	0.317094
	2006	0.186	0.8088	0.64871	0.4191	0.237	0.18209	6.04554	0.241453
	2007	0.286	1.358	0.53843	0.3276	0.0719	0.25568	6.20559	0.183449
LONGMAN	2003	0.166	0.707	0.38158	0.1468	0.0897	0.0571	5.9009	0.372604
	2004	0.321	1.5224	0.3146	0.1038	0.0383	0.06544	6.02198	0.437289
	2005	0.381	2.3592	0.29256	0.1311	0.1207	0.01043	6.11549	0.30886
	2006	0.458	3.215	0.90576	0.7634	0.1037	0.65964	6.24152	0.281456
	2007	0.525	5.202	0.2291	0.1281	0.0825	0.04559	6.36448	0.396722

UNIV. PRESS	2003	0.115	0.9725	0.50217	0.3835	0.0475	0.33598	5.52584	0.310445
	2004	0.098	0.8478	0.44957	0.3336	0.0232	0.31037	5.56328	0.349709
	2005	0.161	1.3977	0.45672	0.3418	0.0192	0.32262	5.7389	0.327701
	2006	0.211	2.2436	0.52264	0.4285	0.0471	0.38138	5.83995	0.348816
	2007	0.17	1.6069	0.45604	0.3501	0.0318	0.31832	5.98089	0.320673
UACN PROP.	2003	0.057	1.9339	0.31887	0.2894	0.0241	0.26532	6.51675	0.136796
	2004	0.026	1.3305	0.38013	0.3605	0.0079	0.35265	6.601	0.311419
	2005	0.037	2.0061	0.40962	0.3912	0.0101	0.38108	6.65801	0.168294
	2006	0.035	2.4889	0.50239	0.4885	0.0097	0.47882	6.73916	0.296956
	2007	0.029	2.5784	0.58999	0.5788	0.0109	0.56786	6.75406	0.245629
ASSOC. BUS	2003	0.029	1.0656	0.51694	0.4899	0.0661	0.42381	6.16106	0.351616
	2004	0.115	3.6316	0.52778	0.496	0.1702	0.32584	6.24787	0.326976
	2005	0.202	6.6411	0.51199	0.4816	0.0609	0.42069	6.34236	0.221004
	2006	0.183	1.2662	0.58251	0.4379	0.4247	0.0132	6.43281	0.220731
	2007	0.108	0.3318	0.82059	0.4949	0.2611	0.23381	6.49582	0.49159
UNI. NIG TEXT	2003	-0.027	-0.795	0.26651	0.233	0.0474	0.18561	7.35628	-0.088736
	2004	0.027	0.8075	0.2556	0.2218	0.0455	0.17635	7.33923	0.612051

	2005	0.019	0.5849	0.27763	0.2452	0.0428	0.20237	7.24711	0.658673
	2006	-0.016	-0.5	0.34301	0.3108	0.0631	0.24765	7.3072	-2.585912
	2007	-0.201	-5.155	0.36307	0.324	0.0567	0.26729	7.26838	-0.031431

Note: ROA = the return on assets (EBIT/ total assets); ROE = return on equity (EBIT/total equity); Tob Q (Tobin's Q) = Market value of equity + book value of debt/book value of assets; TDTA = total debt divided by total assets; LTDTA = long-term debt divided by total assets; STDTA = short term debt divided by total assets; Size = log of turnover, Tax = total tax to earnings before interest and tax (EBIT)

Source: Authors computation from data extracted from the Factbook of Nigerian Stock Exchange (2008)

Appendix B: Raw Results from Panel Data Estimation

B.1: Regression Results

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/15/11 Time: 20:29
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.081447	0.097586	-0.834617	0.4043
TDTA	-0.163145	0.020754	-7.860720	0.0000
SIZE	0.044457	0.014682	3.028054	0.0026
TAX	0.031951	0.022722	1.406202	0.1603

R-squared	0.157719	Mean dependent var	0.080404
Adjusted R-squared	0.152675	S.D. dependent var	0.447978
S.E. of regression	0.412365	Akaike info criterion	1.074075
Sum squared resid	85.19263	Schwarz criterion	1.107537
Log likelihood	-267.2040	F-statistic	31.27104
Durbin-Watson stat	1.757484	Prob(F-statistic)	0.000000

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/15/11 Time: 20:49
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.204719	0.220366	0.928994	0.3535
TDTA	-0.225992	0.028783	-7.851582	0.0000
SIZE	0.005855	0.034626	0.169104	0.8658
TAX	0.024451	0.023899	1.023083	0.3069

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.403719	Mean dependent var	0.080404
Adjusted R-squared	0.250559	S.D. dependent var	0.447978
S.E. of regression	0.387816	Akaike info criterion	1.124713
Sum squared resid	60.31095	Schwarz criterion	1.994722
Log likelihood	-179.9901	F-statistic	2.635934
Durbin-Watson stat	2.419797	Prob(F-statistic)	0.000000

Dependent Variable: ROA
Method: Panel EGLS (Two-way random effects)
Date: 05/15/11 Time: 20:56
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.044401	0.110705	-0.401077	0.6885
TDTA	-0.176387	0.021938	-8.040299	0.0000
SIZE	0.040137	0.016722	2.400223	0.0167
TAX	0.029132	0.022331	1.304586	0.1926

Effects Specification

	S.D.	Rho
Cross-section random	0.134039	0.1062
Period random	0.000000	0.0000

Idiosyncratic random		0.388879	0.8938

Weighted Statistics

R-squared	0.150881	Mean dependent var	0.063684
Adjusted R-squared	0.145797	S.D. dependent var	0.421844
S.E. of regression	0.389882	Sum squared resid	76.15581
F-statistic	29.67447	Durbin-Watson stat	1.952804
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.156987	Mean dependent var	0.080404
Sum squared resid	85.26666	Durbin-Watson stat	1.744144

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/11 Time: 02:22
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.016611	0.089371	-0.185863	0.8526
LTDTA	-0.448500	0.037875	-11.84147	0.0000
SIZE	0.034941	0.013684	2.553402	0.0110
TAX	0.021805	0.021318	1.022830	0.3069

R-squared	0.260741	Mean dependent var	0.080404
Adjusted R-squared	0.256314	S.D. dependent var	0.447978
S.E. of regression	0.386324	Akaike info criterion	0.943610
Sum squared resid	74.77247	Schwarz criterion	0.977072
Log likelihood	-234.2615	F-statistic	58.90174
Durbin-Watson stat	1.575206	Prob(F-statistic)	0.000000

Dependent Variable: ROA
Method: Panel EGLS (Two-way random effects)
Date: 05/15/11 Time: 21:00
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.063214	0.105327	0.600173	0.5487
LTDTA	-0.515527	0.040634	-12.68709	0.0000
SIZE	0.025101	0.016159	1.553354	0.1210
TAX	0.019155	0.020572	0.931093	0.3523

Effects Specification		
	S.D.	Rho
Cross-section random	0.145748	0.1508
Period random	0.000000	0.0000

Idiosyncratic random		0.345826	0.8492

Weighted Statistics

R-squared	0.271551	Mean dependent var	0.058515
Adjusted R-squared	0.267189	S.D. dependent var	0.414719
S.E. of regression	0.355018	Sum squared resid	63.14485
F-statistic	62.25434	Durbin-Watson stat	1.795062
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.255998	Mean dependent var	0.080404
Sum squared resid	75.25218	Durbin-Watson stat	1.506255

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/15/11 Time: 21:02
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.439137	0.195021	2.251741	0.0249
LTDTA	-0.695149	0.051716	-13.44174	0.0000
SIZE	-0.027711	0.030870	-0.897672	0.3699
TAX	0.017221	0.021318	0.807830	0.4197

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.525739	Mean dependent var	0.080404
Adjusted R-squared	0.403922	S.D. dependent var	0.447978
S.E. of regression	0.345867	Akaike info criterion	0.895758
Sum squared resid	47.96913	Schwarz criterion	1.765766
Log likelihood	-122.1788	F-statistic	4.315794

Durbin-Watson stat	2.202552	Prob(F-statistic)	0.000000

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/15/11 Time: 21:03
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.312238	0.098629	-3.165800	0.0016
STDTA	-0.075963	0.028395	-2.675268	0.0077
SIZE	0.067860	0.015150	4.479115	0.0000
TAX	0.037715	0.023900	1.578046	0.1152

R-squared	0.67162	Mean dependent var	0.080404
Adjusted R-squared	0.61576	S.D. dependent var	0.447978
S.E. of regression	0.433967	Akaike info criterion	1.176193
Sum squared resid	94.35201	Schwarz criterion	1.209655
Log likelihood	-292.9887	F-statistic	12.02355
Durbin-Watson stat	1.796881	Prob(F-statistic)	0.000000

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/15/11 Time: 21:04
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.244883	0.228334	-1.072478	0.2842
STDTA	-0.086345	0.038595	-2.237226	0.0258
SIZE	0.058220	0.036331	1.602512	0.0798
TAX	0.024326	0.025518	0.953318	0.3410

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.320531	Mean dependent var	0.080404
Adjusted R-squared	0.320510	S.D. dependent var	0.447978
S.E. of regression	0.413986	Akaike info criterion	1.255313

Sum squared resid	68.72498	Schwarz criterion	2.125321
Log likelihood	-212.9664	F-statistic	1.836568
Durbin-Watson stat	2.460873	Prob(F-statistic)	0.000017

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/15/11 Time: 21:05
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.305712	0.111294	-2.746874	0.0062
STDTA	-0.078073	0.029807	-2.619249	0.0091
SIZE	0.067109	0.017130	3.917675	0.0001
TAX	0.033729	0.023633	1.427184	0.1541

Effects Specification

	S.D.	Rho
Cross-section random	0.134113	0.0950
Idiosyncratic random	0.413986	0.9050

Weighted Statistics

R-squared	0.55362	Mean dependent var	0.065115
Adjusted R-squared	0.49705	S.D. dependent var	0.423900
S.E. of regression	0.413231	Sum squared resid	85.55063
F-statistic	9.787277	Durbin-Watson stat	1.980002
Prob(F-statistic)	0.000003		

Unweighted Statistics

R-squared	0.067096	Mean dependent var	0.080404
Sum squared resid	94.35865	Durbin-Watson stat	1.795177

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:08
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.299879	0.119090	10.91509	0.0000
STDTA	1.128309	0.034285	32.90940	0.0000
SIZE	0.141490	0.018294	7.734436	0.0000
TAX	-0.049962	0.028858	-1.731303	0.0840

R-squared	0.719944	Mean dependent var	0.933247
Adjusted R-squared	0.718267	S.D. dependent var	0.987213
S.E. of regression	0.523998	Akaike info criterion	1.553233
Sum squared resid	137.5617	Schwarz criterion	1.586695
Log likelihood	-388.1913	F-statistic	429.3093
Durbin-Watson stat	1.809830	Prob(F-statistic)	0.000000

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:09
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.281494	0.191116	6.705312	0.0000
STDTA	1.100366	0.032304	34.06310	0.0000
SIZE	0.137933	0.030409	4.535968	0.0000
TAX	-0.009807	0.021358	-0.459155	0.6464

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.901980	Mean dependent var	0.933247
Adjusted R-squared	0.876802	S.D. dependent var	0.987213
S.E. of regression	0.346507	Akaike info criterion	0.899458
Sum squared resid	48.14698	Schwarz criterion	1.769466
Log likelihood	-123.1132	F-statistic	35.82510
Durbin-Watson stat	2.324300	Prob(F-statistic)	0.000000

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Date: 05/15/11 Time: 21:09
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.296615	0.151993	8.530761	0.0000
STDTA	1.107034	0.030272	36.56900	0.0000
SIZE	0.140633	0.023202	6.061342	0.0000
TAX	-0.016388	0.021006	-0.780151	0.4357

Effects Specification

	S.D.	Rho
Cross-section random	0.394672	0.5647
Idiosyncratic random	0.346507	0.4353

Weighted Statistics

R-squared	0.747477	Mean dependent var	0.341078
Adjusted R-squared	0.776435	S.D. dependent var	0.687590
S.E. of regression	0.346558	Sum squared resid	60.17145
F-statistic	494.3266	Durbin-Watson stat	1.860761
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.718946	Mean dependent var	0.933247
Sum squared resid	138.0518	Durbin-Watson stat	0.811034

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Date: 05/15/11 Time: 21:10
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.356667	0.062530	5.703956	0.0000
TDTA	1.001420	0.008493	117.9066	0.0000
SIZE	0.025792	0.009211	2.800133	0.0053
TAX	-0.001052	0.007246	-0.145127	0.8847

Effects Specification

	S.D.	Rho
Cross-section random	0.211465	0.7612
Idiosyncratic random	0.118450	0.2388

Weighted Statistics

R-squared	0.967006	Mean dependent var	0.226775
Adjusted R-squared	0.966808	S.D. dependent var	0.655452
S.E. of regression	0.119414	Sum squared resid	7.144099
F-statistic	736.980	Durbin-Watson stat	1.407803
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.937245	Mean dependent var	0.933247
Sum squared resid	30.82479	Durbin-Watson stat	0.326279

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:11
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.263185	0.067306	3.910261	0.0001
TDTA	1.000801	0.008791	113.8418	0.0000
SIZE	0.010612	0.010576	1.003402	0.3163
TAX	2.40E-04	0.007300	0.003285	0.9974

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.988546	Mean dependent var	0.933247
Adjusted R-squared	0.985604	S.D. dependent var	0.987213
S.E. of regression	0.118450	Akaike info criterion	-1.247362
Sum squared resid	5.626221	Schwarz criterion	-0.377354

Log likelihood	418.9590	F-statistic	336.0004
Durbin-Watson stat	1.766046	Prob(F-statistic)	0.000000

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:11
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.570874	0.057384	9.948256	0.0000
TDTA	1.013469	0.012204	83.04155	0.0000
SIZE	0.061449	0.008633	7.117515	0.0000
TAX	-0.014031	0.013361	-1.050148	0.2942

R-squared	0.940027	Mean dependent var	0.933247
Adjusted R-squared	0.939668	S.D. dependent var	0.987213
S.E. of regression	0.242486	Akaike info criterion	0.012143
Sum squared resid	29.45852	Schwarz criterion	0.045605
Log likelihood	0.933804	F-statistic	393.0340
Durbin-Watson stat	1.361645	Prob(F-statistic)	0.000000

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:12
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.407547	0.165290	8.515608	0.0000
LTDTA	1.312301	0.070050	18.73377	0.0000
SIZE	0.135358	0.025309	5.348241	0.0000
TAX	-0.003233	0.039428	-0.082003	0.9347

R-squared	0.479295	Mean dependent var	0.933247
Adjusted R-squared	0.476177	S.D. dependent var	0.987213
S.E. of regression	0.714502	Akaike info criterion	2.173427
Sum squared resid	255.7669	Schwarz criterion	2.206889
Log likelihood	-544.7903	F-statistic	153.7190
Durbin-Watson stat	1.749905	Prob(F-statistic)	0.000000

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.401196	0.216930	6.459213	0.0000
LTDTA	1.262177	0.071938	17.54532	0.0000
SIZE	0.132628	0.033194	3.995547	0.0001
TAX	0.011192	0.032803	0.341186	0.7331

Effects Specification

	S.D.	Rho
Cross-section random	0.467766	0.4231
Idiosyncratic random	0.546181	0.5769

Weighted Statistics

R-squared	0.431176	Mean dependent var	0.431978
Adjusted R-squared	0.427770	S.D. dependent var	0.720770
S.E. of regression	0.545233	Sum squared resid	148.9368
F-statistic	126.5881	Durbin-Watson stat	1.280363
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.478484	Mean dependent var	0.933247
Sum squared resid	256.1652	Durbin-Watson stat	0.744414

Dependent Variable: TOB
Method: Panel Least Squares
Date: 05/15/11 Time: 21:16
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.353227	0.307971	4.394011	0.0000
LTDTA	1.231530	0.081668	15.07977	0.0000
SIZE	0.123685	0.048748	2.537218	0.0116
TAX	0.016481	0.033665	0.489565	0.6247

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.756463	Mean dependent var	0.933247
Adjusted R-squared	0.693908	S.D. dependent var	0.987213
S.E. of regression	0.546181	Akaike info criterion	1.809553
Sum squared resid	119.6240	Schwarz criterion	2.679561
Log likelihood	-352.9122	F-statistic	12.09286
Durbin-Watson stat	1.590479	Prob(F-statistic)	0.000000

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 10:54
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.858014	17.60411	0.219154	0.8266
STDTA	-4.627923	5.068112	-0.913145	0.3616
SIZE	0.459072	2.704180	0.169764	0.8653
TAX	0.106990	4.265810	0.025081	0.9800

R-squared	0.001903	Mean dependent var	4.590750
Adjusted R-squared	-0.004074	S.D. dependent var	77.30105
S.E. of regression	77.45833	Akaike info criterion	11.54525
Sum squared resid	3005897.	Schwarz criterion	11.57871
Log likelihood	-2911.175	F-statistic	0.318427
Durbin-Watson stat	2.850718	Prob(F-statistic)	0.812061

Dependent Variable: ROE
Method: Panel EGLS (Two-way random effects)
Date: 05/16/11 Time: 10:55
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.397701	18.07084	0.188021	0.8509
STDTA	-4.509529	5.059130	-0.891365	0.3732
SIZE	0.524615	2.709891	0.193593	0.8466
TAX	0.113142	4.260677	0.026555	0.9788

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Period random	9.342980	0.0127
Idiosyncratic random	82.52336	0.9873

Weighted Statistics

R-squared	0.001856	Mean dependent var	3.030605
Adjusted R-squared	-0.004121	S.D. dependent var	77.11859
S.E. of regression	77.27732	Sum squared resid	2991864.
F-statistic	0.310531	Durbin-Watson stat	2.849612
Prob(F-statistic)	0.817783		

Unweighted Statistics

R-squared	0.001901	Mean dependent var	4.590750
Sum squared resid	3005902.	Durbin-Watson stat	2.850966

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 10:56
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.15973	45.48900	0.443178	0.6579
STDTA	-12.32487	7.688857	-1.602952	0.1097
SIZE	-1.624884	7.237816	-0.224499	0.8225
TAX	0.518001	5.083637	0.101896	0.9189

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.094298	Mean dependent var	4.590750
Adjusted R-squared	-0.138338	S.D. dependent var	77.30105
S.E. of regression	82.47476	Akaike info criterion	11.84415
Sum squared resid	2727636.	Schwarz criterion	12.71415
Log likelihood	-2886.647	F-statistic	0.405347
Durbin-Watson stat	3.125434	Prob(F-statistic)	1.000000

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 10:56
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.962801	18.31239	0.583248	0.6244
TDTA	-5.264110	3.894635	-1.175022	0.1769
SIZE	-0.081513	2.755091	-0.148569	0.9769
TAX	-0.079478	4.263798	-0.018640	0.9851

R-squared	0.003878	Mean dependent var	4.590750
Adjusted R-squared	0.002087	S.D. dependent var	77.30105
S.E. of regression	77.38168	Akaike info criterion	11.54327
Sum squared resid	2999950.	Schwarz criterion	11.57673
Log likelihood	-2910.675	F-statistic	0.650064
Durbin-Watson stat	2.849068	Prob(F-statistic)	0.583197

Dependent Variable: ROE
Method: Panel EGLS (Two-way random effects)
Date: 05/16/11 Time: 10:59
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.972301	18.31239	0.489958	0.6244
TDTA	-5.266411	3.894635	-1.352222	0.1769
SIZE	-0.079813	2.755091	-0.028969	0.9769
TAX	-0.079478	4.263798	-0.018640	0.9851

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Period random	0.000000	0.0000
Idiosyncratic random	82.41386	1.0000

Weighted Statistics

R-squared	0.003878	Mean dependent var	4.590750
Adjusted R-squared	0.002087	S.D. dependent var	77.30105
S.E. of regression	77.38168	Sum squared resid	2999950.
F-statistic	0.650064	Durbin-Watson stat	2.849068
Prob(F-statistic)	0.583197		

Unweighted Statistics

R-squared	0.003878	Mean dependent var	4.590750
Sum squared resid	2999950.	Durbin-Watson stat	2.849068

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 11:00
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	33.22873	46.79432	0.710102	0.4781
TDTA	-11.87308	6.112007	-1.942582	0.5280
SIZE	-3.241608	7.352854	-0.440864	0.6595
TAX	0.411921	5.074991	0.081167	0.9353

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.096993	Mean dependent var	4.590750
Adjusted R-squared	0.134952	S.D. dependent var	77.30105
S.E. of regression	82.35199	Akaike info criterion	11.84117
Sum squared resid	2719522.	Schwarz criterion	12.71117
Log likelihood	-2885.895	F-statistic	0.418173
Durbin-Watson stat	3.125627	Prob(F-statistic)	1.000000

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 11:04
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.957116	17.90531	0.388551	0.6978
LTDTA	-9.592864	7.588268	-1.264170	0.2068
SIZE	0.053911	2.741612	0.019664	0.9843
TAX	-0.233887	4.271041	-0.054761	0.9564

R-squared	0.003421	Mean dependent var	4.590750
Adjusted R-squared	0.002547	S.D. dependent var	77.30105
S.E. of regression	77.39942	Akaike info criterion	11.54372
Sum squared resid	3001325.	Schwarz criterion	11.57719
Log likelihood	-2910.791	F-statistic	0.573253
Durbin-Watson stat	2.858275	Prob(F-statistic)	0.632823

Dependent Variable: ROE
Method: Panel EGLS (Two-way random effects)
Date: 05/16/11 Time: 11:05
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.957116	17.90531	0.388551	0.6978
LTDTA	-9.592864	7.588268	-1.264170	0.2068
SIZE	0.053911	2.741612	0.019664	0.9843
TAX	-0.233887	4.271041	-0.054761	0.9564

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Period random	0.000000	0.0000
Idiosyncratic random	82.60729	1.0000

Weighted Statistics			
R-squared	0.003421	Mean dependent var	4.590750
Adjusted R-squared	0.002547	S.D. dependent var	77.30105
S.E. of regression	77.39942	Sum squared resid	3001325.
F-statistic	0.573253	Durbin-Watson stat	2.858275
Prob(F-statistic)	0.632823		

Unweighted Statistics			
R-squared	0.003421	Mean dependent var	4.590750
Sum squared resid	3001325.	Durbin-Watson stat	2.858275

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/16/11 Time: 11:05
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.45856	46.54970	0.482464	0.6297
LTDTA	-16.48633	12.34405	-1.335568	0.1824
SIZE	-2.165996	7.368270	-0.293963	0.7689
TAX	0.200877	5.088438	0.039477	0.9685

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.092532	Mean dependent var	4.590750
Adjusted R-squared	-0.140559	S.D. dependent var	77.30105
S.E. of regression	82.55516	Akaike info criterion	11.84609

Sum squared resid	2732957.	Schwarz criterion	12.71610
Log likelihood	-2887.139	F-statistic	0.396978
Durbin-Watson stat	3.136986	Prob(F-statistic)	1.000000

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 10:05
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.505810	0.444143	-1.138843	0.2553
TDTA	-0.180165	0.023611	-7.630670	0.0000
SIZE	0.044787	0.019911	2.249371	0.0249
TAX	0.027571	0.022759	1.211412	0.2263
AGRIC	0.549448	0.440396	1.247621	0.2128
AIRLINE	0.489469	0.460757	1.062317	0.2886
AUTO	0.357735	0.451145	0.792949	0.4282
BREWERIES	0.278823	0.446663	0.624237	0.5328
BUILDING	0.445137	0.441221	1.008875	0.3135
CHEMICALS	0.480187	0.440914	1.089072	0.2767
COMPUTER	0.232403	0.414744	0.560353	0.5755
CONGLOMERATE	0.523042	0.440569	1.187196	0.2357
CONSTRUCTN	0.469422	0.446551	1.051218	0.2937
EMERGMKT	0.373724	0.445756	0.838406	0.4022
ENGTECH	0.332245	0.460105	0.722106	0.4706
FOODBEV	0.452828	0.437698	1.034566	0.3014
HEALTHCARE	0.425302	0.443392	0.959202	0.3379
HOTEL	0.396330	0.451109	0.878569	0.3801
INDUSTPROD	0.475761	0.443256	1.073333	0.2837
INFOTECH	0.406008	0.460474	0.881717	0.3784
MACHINERY	0.499183	0.490509	1.017684	0.3093
MARITIME	0.451570	0.488412	0.924569	0.3557
MEDIA	0.254258	0.488926	0.520034	0.6033
PACKAGING	0.356072	0.438996	0.811104	0.4177
PETROLEUM	0.463299	0.439265	1.054714	0.2921
PRINTING	0.536542	0.451080	1.189462	0.2349
REALEST	0.314072	0.488948	0.642343	0.5210
ROADTRANS	0.427108	0.488575	0.874192	0.3825
SERVICES	0.663123	0.424687	1.561438	0.1191
TEXTILES	0.195125	0.490081	0.398149	0.6907

Effects Specification

	S.D.	Rho
Cross-section random	0.150072	0.1302
Idiosyncratic random	0.387950	0.8698

Weighted Statistics

R-squared	0.178293	Mean dependent var	0.060811
Adjusted R-squared	0.128126	S.D. dependent var	0.417825
S.E. of regression	0.390141	Sum squared resid	72.29959
F-statistic	3.553960	Durbin-Watson stat	2.055040
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.199409	Mean dependent var	0.080404
Sum squared resid	80.97587	Durbin-Watson stat	1.834850

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.380362	4	0.0523

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 10:14
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.081866	0.402914	-0.203185	0.8391

LTDTA	-0.541639	0.041939	-12.91498	0.0000
SIZE	0.029150	0.018347	1.588844	0.1128
TAX	0.017717	0.020440	0.866760	0.3865
AGRIC	0.205596	0.398729	0.515628	0.6064
AIRLINE	0.277619	0.418516	0.663342	0.5074
AUTO	0.028155	0.409638	0.068732	0.9452
BREWERIES	-0.050732	0.404603	-0.125387	0.9003
BUILDING	0.100683	0.399841	0.251807	0.8013
CHEMICALS	0.222632	0.398978	0.558007	0.5771
COMPUTER	0.071897	0.372220	0.193158	0.8469
CONGLOMERATE	0.210331	0.398966	0.527191	0.5983
CONSTRUCTN	0.044786	0.404746	0.110651	0.9119
EMERGMKT	-0.003013	0.404810	-0.007442	0.9941
ENGTECH	-0.027521	0.418854	-0.065705	0.9476
FOODBEV	0.176751	0.395707	0.446672	0.6553
HEALTHCARE	0.108623	0.401877	0.270290	0.7871
HOTEL	0.080751	0.409440	0.197223	0.8437
INDUSTPROD	0.205111	0.401362	0.511037	0.6096
INFOTECH	0.141149	0.418258	0.337469	0.7359
MACHINERY	0.124098	0.449129	0.276308	0.7824
MARITIME	0.154025	0.446455	0.344995	0.7303
MEDIA	-0.104826	0.447357	-0.234324	0.8148
PACKAGING	0.054859	0.397267	0.138091	0.8902
PETROLEUM	0.129682	0.397580	0.326177	0.7444
PRINTING	0.200085	0.409703	0.488367	0.6255
REALEST	-0.072718	0.447442	-0.162520	0.8710
ROADTRANS	0.125414	0.446568	0.280839	0.7790
SERVICES	0.456039	0.385252	1.183742	0.2371
TEXTILES	-0.137851	0.448143	-0.307605	0.7585

Effects Specification

	S.D.	Rho
Cross-section random	0.153544	0.1644
Idiosyncratic random	0.346158	0.8356

Weighted Statistics

R-squared	0.304837	Mean dependent var	0.057086
Adjusted R-squared	0.262396	S.D. dependent var	0.412837
S.E. of regression	0.354560	Sum squared resid	59.71365
F-statistic	7.182533	Durbin-Watson stat	1.875891
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.307044	Mean dependent var	0.080404
Sum squared resid	70.08914	Durbin-Watson stat	1.598198

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	27.339122	4	0.0000

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 10:30
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.922063	0.467322	-1.973078	0.0491
STDTA	-0.064506	0.031690	-2.035557	0.0423
SIZE	0.078593	0.020324	3.866994	0.0001
TAX	0.031906	0.024209	1.317933	0.1882
AGRIC	0.609491	0.467208	1.304541	0.1927
AIRLINE	0.605846	0.486960	1.244139	0.2141
AUTO	0.494956	0.477343	1.036899	0.3003
BREWERIES	0.304904	0.473691	0.643677	0.5201
BUILDING	0.577772	0.467506	1.235859	0.2171
CHEMICALS	0.586564	0.467248	1.255360	0.2100
COMPUTER	0.263387	0.441452	0.596637	0.5510
CONGLOMERATE	0.667031	0.466746	1.429111	0.1536

CONSTRUCTN	0.479019	0.474079	1.010420	0.3128
EMERGMKT	0.565001	0.471494	1.198319	0.2314
ENGTECH	0.489162	0.486129	1.006239	0.3148
FOODBEV	0.529360	0.464303	1.140117	0.2548
HEALTHCARE	0.584177	0.469414	1.244480	0.2139
HOTEL	0.508212	0.477480	1.064364	0.2877
INDUSTPROD	0.584511	0.469600	1.244699	0.2139
INFOTECH	0.446993	0.487155	0.917559	0.3593
MACHINERY	0.717902	0.516032	1.391197	0.1648
MARITIME	0.624174	0.514304	1.213630	0.2255
MEDIA	0.450786	0.514697	0.875828	0.3816
PACKAGING	0.468134	0.465393	1.005889	0.3150
PETROLEUM	0.546347	0.465953	1.172537	0.2416
PRINTING	0.706467	0.477003	1.481054	0.1393
REALEST	0.454801	0.515239	0.882700	0.3778
ROADTRANS	0.559564	0.514777	1.087004	0.2776
SERVICES	0.695701	0.449471	1.547820	0.1223
TEXTILES	0.331544	0.516365	0.642072	0.5211

Effects Specification

	S.D.	Rho
Cross-section random	0.145711	0.1101
Idiosyncratic random	0.414294	0.8899

Weighted Statistics

R-squared	0.090889	Mean dependent var	0.063200
Adjusted R-squared	0.035385	S.D. dependent var	0.421158
S.E. of regression	0.413639	Sum squared resid	81.27128
F-statistic	1.637526	Durbin-Watson stat	2.083635
Prob(F-statistic)	0.020764		

Unweighted Statistics

R-squared	0.120085	Mean dependent var	0.080404
Sum squared resid	88.99914	Durbin-Watson stat	1.902712

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.499413	4	0.6447

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 11:04
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.434866	0.165158	2.633030	0.0087
TDTA	1.005679	0.008462	118.8493	0.0000
SIZE	-0.022587	0.009155	-2.467120	0.0140
TAX	-0.001177	0.007239	-0.162527	0.8710
AGRIC	-0.190188	0.172663	-1.101498	0.2712
AIRLINE	-0.187243	0.199739	-0.937438	0.3490
AUTO	-0.139635	0.186777	-0.747600	0.4551
BREWERIES	-0.066896	0.180333	-0.370959	0.7108
BUILDING	-0.180800	0.172837	-1.046072	0.2961
CHEMICALS	-0.079826	0.172744	-0.462105	0.6442
COMPUTER	-0.101969	0.131539	-0.775198	0.4386
CONGLOMERATE	0.043785	0.171045	0.255986	0.7981
CONSTRUCTN	-0.242664	0.180308	-1.345827	0.1790
EMERGMKT	0.165973	0.179776	0.923223	0.3564
ENGTECH	0.731609	0.199508	3.667059	0.0003
FOODBEV	-0.152311	0.167254	-0.910657	0.3629
HEALTHCARE	-0.173200	0.175716	-0.985681	0.3248
HOTEL	-0.096321	0.186812	-0.515607	0.6064
INDUSTPROD	-0.044456	0.175759	-0.252938	0.8004
INFOTECH	-0.245806	0.199771	-1.230435	0.2191
MACHINERY	-0.339706	0.235559	-1.442124	0.1499
MARITIME	-0.056253	0.234241	-0.240152	0.8103
MEDIA	-0.139359	0.234345	-0.594675	0.5523
PACKAGING	-0.191785	0.169288	-1.132894	0.2578
PETROLEUM	-0.169306	0.169513	-0.998774	0.3184
PRINTING	-0.111309	0.186691	-0.596222	0.5513
REALEST	-0.268185	0.234487	-1.143712	0.2533
ROADTRANS	-0.182208	0.234352	-0.777496	0.4373
SERVICES	0.119934	0.180588	0.664129	0.5069
TEXTILES	-0.237549	0.234890	-1.011320	0.3124

Effects Specification

	S.D.	Rho
Cross-section random	0.164996	0.6599

Idiosyncratic random		0.118461	0.3401

Weighted Statistics

R-squared	0.969753	Mean dependent var	0.285303
Adjusted R-squared	0.967906	S.D. dependent var	0.670483
S.E. of regression	0.120116	Sum squared resid	6.853204
F-statistic	525.1334	Durbin-Watson stat	1.451020
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.962144	Mean dependent var	0.933247
Sum squared resid	18.59483	Durbin-Watson stat	0.534780

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.363094	4	0.0016

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 11:09
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.893664	0.695466	1.284986	0.1994
LTDTA	1.247052	0.074334	16.77643	0.0000
SIZE	-0.139397	0.037131	-3.754229	0.0002
TAX	0.012182	0.033101	0.368011	0.7130
AGRIC	0.745504	0.698889	1.066699	0.2866
AIRLINE	0.143900	0.768009	0.187367	0.8515
AUTO	0.432056	0.735555	0.587388	0.5572
BREWERIES	0.991948	0.718500	1.380581	0.1681
BUILDING	0.452848	0.700616	0.646357	0.5184
CHEMICALS	0.417348	0.699332	0.596781	0.5509
COMPUTER	0.442591	0.601515	0.735794	0.4622
CONGLOMERATE	0.545317	0.696583	0.782847	0.4341
CONSTRUCTN	1.151270	0.718544	1.602225	0.1098

EMERGMKT	0.616646	0.718422	0.858333	0.3911
ENGTECH	1.289439	0.768273	1.678360	0.0939
FOODBEV	0.537664	0.686336	0.783384	0.4338
HEALTHCARE	0.267267	0.707809	0.377598	0.7059
HOTEL	0.547003	0.735330	0.743889	0.4573
INDUSTPROD	0.485078	0.707173	0.685940	0.4931
INFOTECH	0.559655	0.767693	0.729009	0.4664
MACHINERY	-0.049037	0.867336	-0.056537	0.9549
MARITIME	0.267967	0.860767	0.311311	0.7557
MEDIA	0.260720	0.861966	0.302471	0.7624
PACKAGING	0.407559	0.691595	0.589303	0.5559
PETROLEUM	0.655092	0.692327	0.946218	0.3445
PRINTING	0.333901	0.735544	0.453951	0.6501
REALEST	0.455592	0.862365	0.528306	0.5975
ROADTRANS	0.332421	0.861065	0.386058	0.6996
SERVICES	0.756962	0.700724	1.080258	0.2806
TEXTILES	0.365370	0.863798	0.422981	0.6725

Effects Specification

	S.D.	Rho
Cross-section random	0.490954	0.4466
Idiosyncratic random	0.546459	0.5534

Weighted Statistics

R-squared	0.452087	Mean dependent var	0.415872
Adjusted R-squared	0.418635	S.D. dependent var	0.714443
S.E. of regression	0.544743	Sum squared resid	140.9541
F-statistic	13.51467	Durbin-Watson stat	1.354215
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.536776	Mean dependent var	0.933247
Sum squared resid	227.5325	Durbin-Watson stat	0.838923

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.021737	4	0.9065

Dependent Variable: TOB
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/11 Time: 11:15
Sample: 2003 2007
Cross-sections included: 101
Total panel (balanced) observations: 505
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.925054	0.459470	4.189725	0.0000
STDTA	1.105673	0.030841	35.85045	0.0000
SIZE	-0.136452	0.025194	-5.416013	0.0000
TAX	-0.015251	0.021131	-0.721755	0.4708
AGRIC	-0.730845	0.475699	-1.536360	0.1251
AIRLINE	-0.586829	0.537610	-1.091552	0.2756
AUTO	-0.794996	0.507708	-1.565853	0.1180
BREWERIES	-0.493757	0.493639	-1.000239	0.3177
BUILDING	-0.852536	0.475856	-1.791585	0.0738
CHEMICALS	-0.551317	0.475515	-1.159409	0.2469
COMPUTER	-0.254454	0.384181	-0.662329	0.5081
CONGLOMERATE	-0.586039	0.471843	-1.242020	0.2148
CONSTRUCTN	-0.816008	0.494060	-1.651638	0.0993
EMERGMKT	-0.706346	0.491210	-1.437971	0.1511
ENGTECH	-0.033977	0.536942	-0.063279	0.9496
FOODBEV	-0.582091	0.463488	-1.255893	0.2098
HEALTHCARE	-0.850050	0.482209	-1.762827	0.0786
HOTEL	-0.673757	0.507903	-1.326548	0.1853
INDUSTPROD	-0.536138	0.482492	-1.111186	0.2671
INFOTECH	-0.593147	0.538006	-1.102491	0.2708
MACHINERY	-1.309420	0.622037	-2.105051	0.0358
MARITIME	-0.728321	0.618472	-1.177613	0.2395
MEDIA	-0.956981	0.618767	-1.546593	0.1226
PACKAGING	-0.750892	0.467883	-1.604872	0.1092
PETROLEUM	-0.715458	0.468755	-1.526292	0.1276
PRINTING	-0.849792	0.507278	-1.675201	0.0946
REALEST	-1.025776	0.619518	-1.655765	0.0984
ROADTRANS	-0.777045	0.618988	-1.255348	0.2100
SERVICES	-0.154860	0.488314	-0.317132	0.7513
TEXTILES	-0.870336	0.620665	-1.402264	0.1615

Effects Specification

	S.D.	Rho
Cross-section random	0.404818	0.5767
Idiosyncratic random	0.346803	0.4233

Weighted Statistics			
R-squared	0.758959	Mean dependent var	0.333883
Adjusted R-squared	0.744243	S.D. dependent var	0.685238
S.E. of regression	0.346542	Sum squared resid	57.04328
F-statistic	51.57299	Durbin-Watson stat	1.958659
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.760101	Mean dependent var	0.933247
Sum squared resid	117.8367	Durbin-Watson stat	0.948162

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.283800	4	0.05115

B.2: Descriptive Statistics

	ROA	ROE	TOB	STDTA	LTDTA	TDTA	SIZE	TAX
Mean	0.080404	4.590750	0.933247	0.459229	0.275740	0.734964	6.171858	0.230722
Median	0.092650	0.706993	0.703784	0.264201	0.137710	0.520988	6.301720	0.245629
Maximum	3.710407	1558.610	7.168396	5.580930	6.552142	6.806386	8.137795	14.93671
Minimum	-6.020781	-696.3400	0.087124	0.000000	0.000000	0.014265	0.000000	-2.585912
Std. Dev.	0.447978	77.30105	0.987213	0.692967	0.470431	0.919548	1.299929	0.809584
Skewness	-4.630140	14.71276	3.470651	4.245704	6.741749	3.823898	-2.163101	12.24031
Kurtosis	82.64679	338.3479	18.00951	25.83175	73.24879	20.97887	11.13895	219.8928
Jarque-Bera	135284.5	2384527.	5754.202	12485.98	107663.8	8032.203	1787.670	1002463.
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	40.60382	2318.329	471.2899	231.9105	139.2486	371.1566	3116.788	116.5145
Sum Sq. Dev.	101.1451	3011628.	491.1935	242.0221	111.5379	426.1667	851.6675	330.3345
Observations	505	505	505	505	505	505	505	505

B.3: Correlation Matrix

	ROA	ROE	TOB	STDTA	LTDTA	TDTA	SIZE	TAX
ROA	1.000000	0.063939	-0.366523	-0.154810	-0.499366	-0.372132	0.221817	0.077640
ROE	0.063939	1.000000	-0.068880	-0.042937	-0.058432	-0.062250	0.015515	0.001783
TOB	-0.366523	-0.068880	1.000000	0.827118	0.670459	0.966315	-0.335971	-0.055313
STDTA	-0.154810	-0.042937	0.827118	1.000000	0.220949	0.866632	-0.186717	-0.007886
LTDTA	-0.499366	-0.058432	0.670459	0.220949	1.000000	0.678098	-0.252056	-0.071828
TDTA	-0.372132	-0.062250	0.966315	0.866632	0.678098	1.000000	-0.269657	-0.042680
SIZE	0.221817	0.015515	-0.335971	-0.186717	-0.252056	-0.269657	1.000000	0.043450
TAX	0.077640	0.001783	-0.055313	-0.007886	-0.071828	-0.042680	0.043450	1.000000