# CAPITAL STRUCTURE AND PERFORMANCE OF QUOTED CONGLOMERATES FIRMS IN NIGERIA

BY

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Being a Thesis submitted to the School of postgraduate studies, Ahmadu Bello University, Zaria in partial fulfillment of the Requirements for the award of Master of science (M.sc) Degree in Accounting and Finance.

Department of Accounting

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## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations that have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other Master's programme at Ahmadu Bello University, Zaria or other institutions.

Tajudeen LAWAL

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## CERTIFICATION

This research titled **"Capital structure and performance of Quoted Conglomerates Firms in Nigeria,"** by Tajudeen Lawal meets the regulations governing the award of the degree of Master of Science in Accounting and Finance of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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## DEDICATION

This Thesis is dedicated to my late wife and sister Lateefat AbdulAzeez Lawal and Madina Lawal . May their souls rest in perfect peace. Aameen.

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***ABSTRACT***

*This study investigates the impact of capital structure on the performance of quoted conglomerates firms in Nigeria by analyzing the relationship between financial performance measured by return on asset (ROA), earnings per share (EPS) and net margin (NM) with Short term debt and long term debt. Two variables also identified in literature to have influence on firm performance, namely size and efficiency are used as control variables. The study covers seven (7) conglomerates firms in Nigeria for the year 2002 through 2011. Panel data for the selected firms were generated and analysed using Generalised least square (GLS) with the application Random effect regression model as a method of estimation. The study reveals that short term debt has significant negative impact on all the three accounting measure of performance studied. The result also reveals that long term debt has significant negative impact on both return on asset (ROA) but not significant with respect to earnings per share (EPS) and net margin (NM). The study concludes that capital structure has significant negative impact on financial performance of quoted conglomerates firms in Nigeria for the period under study. Therefore, it is recommended that quoted conglomerates firms in Nigeria should reduce debt levels in their capital structure so as to enhance their financial performance.*

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Financial managers world over are faced with four primary decisions in an organization. The decisions are financing or capital mix decision, liquidity decision, investment decision and dividend decision. These decisions are of great importance to organizations because the survival and growth of the organization depends on them. However, of these decisions, capital structure decision is seen to be the most important because every other decision lies on how a firm plans its capital mix decision. Capital structure is one of the most important reference theories in enterprises' financing policy and the topic continues to keep researchers pondering over the years. Many researches have been conducted on capital structure and performance both in developed and emerging economies, however, the area is still receiving greater attention from researchers. The decision on capital structure is fundamental for any business organization because of the need to maximize returns to the various stakeholders and also because of fact that such decision has great impact on the firm's ability to deal with competitive environment.

An appropriate capital structure is very important because any wrong mix of capital structure decision may be dangerous for a firm because a high levered company may be operating at a risk because of the need to pay interest and the fear that bond holders may call for their principal or even the fear that the shareholders will loose their decision rights. At the same time, a company that desire growth will have to look outward to

source for finance for their firms so as to ensure growth. Therefore, for any firm that desires growth, it has to plan an appropriate financing mix for its organization. Appropriate financing decision which may influence firm's performance is therefore essential tool for the achievement of organization objectives and with the use of balanced capital structure, stakeholders such as shareholders and debenture holders may have higher rate of return on their investments.

The argument about capital structure started in the early 1950s. Modigliani and Miller (1958) suggest that in the perfect market, financing strategies do not affect the value of firm and its future performance. Modigliani and Miller demonstrate that if a company's investment policy is taken as given, then in a perfect world that is a world without taxes, perfect and credible disclosure of all information and transaction costs associated with raising money or going bankrupt, the extent of debt in a company's capital structure does not affect the firm's value. However, Modigliani and Miller (1963) later amended their initial argument in which they argued that firm value can be increased by changing the capital structure because of tax advantage of debts. However, Jensen and Meckling (1976), proceed to the contrary and demonstrate that the amount of leverage in firm's capital structure affect managers choice of operating activities and that these activities in turn affect the performance of the firm. In the same vein, Myers & Majluf (1984), argue that since all firms manager try to get optimal capital structure with least possible cost, this led in 1984 to the emergence of pecking order theory. The theory suggest that there is no an optimal capital structure for a firm, according to these theory since there is asymmetry information between managers and investors. Therefore to



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minimize this asymmetry information managers prefer to finance using retained earning, debt and equity respectively.

Ever since Jensen and Meckling (1976) acknowledge the possibility of this influence, researchers have conducted numerous studies that aim to explain the relationship between capital structure decisions and performance of firms.

Capital structure and the impact on performance have been investigated for many years, but researchers have found different results with different contexts (that is the findings of the studies are mixed and inconclusive). Accordingly, there is no specific results, which can be generalized on the extent of the relationship between capital structure and firm performance, thus there is a need for constant new research in different context for achieving a more complete understanding for the dynamics of the capital structure and firm performance interplay. Therefore, this study seeks to examine the impact of capital structure on performance of quoted conglomerates firms in Nigeria.

## 1.2 Statement of the problem

The choice of an appropriate financing mix constitute a critical decision for the survival and growth of any business organization not only because of the need to achieve the desired goal of the organization, but also because of the impact such informed decision play on the performance of an organization in a competitive environment. The survival and growth of firm need resources but the sources of financing these resources is limited. Therefore, it is fundamental and important for organization to take appropriate

capital structure decision so as to yield maximum return to the various stakeholders in an organization and hence the need to examine the impact capital structure decision plays on the performance of firms.

The literature examining the performance implications of capital structure choices is immense in developed economies like USA and Europe, among them are Berger and Bonacorsi (2002), Zeitun and Tian (2007). However, to the best of our knowledge, few researches is empirically carried out about such implications in developing economies like Nigeria. They include Omorogie and Erah (2010) Capital structure and performance in Nigeria; Onaolapo and Kajola (2010) examine the effect of capital structure performance of listed non financial firms in Nigeria and find a negative relation between capital structure and return on equity (ROE) and return on asset(ROA). Salawu (2009) studies the impact of capital structure and performance in Nigeria and concludes that profitability presents a positive correlation with short term debt and equity and inverse correlation with long term debt. Dare & Folorunso (2010) examine the effect of capital structure and corporate performance of petroleum industry in Nigeria and conclude that there is positive relationship between corporate performance and capital structure. Iorpev & Kwanum (2012) examine the effect of capital structure on the performance of manufacturing firms in Nigeria and conclude that there is no relationship between capital structure and corporate performance. The gap which we intend to fill in this study is the measurement of debt/leverage ratio by many researchers in Nigeria as a ratio of total debt to total asset which is considered as inappropriate measurement of leverage (Welch, 2011). Another important point which differentiate

this study from the previous studies is the time frame that is considered most recent. The data used by most of these studies only covered up to the year 2007 but this study covers from 2002 to 2011.

More so, since researchers investigate the relationships between capital structure and performance in different sectors in Nigeria and there is nothing specifically in the conglomerates firms to the best of our knowledge, it is therefore imperative to study the firms in this sector. Hence, this research explores the extent to which debt affects firm performance in this sector. In addition, it is interesting to differentiate short term debt and long term debt effects since they have different risk and return profiles.

## 1.3 Objectives of the study

The main objective of this study is to examine the impact of capital structure on the performance of quoted conglomerates firms in Nigeria. Specifically the objectives are:

i. To examine the impact of capital structure on performance using return on assets (ROA) of quoted conglomerates firms in Nigeria.
ii. To examine the impact of capital structure on performance using earnings per share (EPS) of quoted conglomerates firms in Nigeria.
iii. To examine the impact of capital structure on performance using net margin (NM) of quoted conglomerates firms in Nigeria.

## 1.4 Hypotheses of the study

In line with the above objectives of the study, the following hypotheses are formulated in a null form and tested in arriving at a dependable solution to the problem under study.

**$Ho_1$:** Short term debt has no significant impact on return on Assets (ROA) of quoted conglomerates firms in Nigeria.

**$Ho_2$:** Long term debt has no significant impact on return on assets (ROA) of quoted conglomerates firms in Nigeria.

**$Ho_3$:** Short term debt has no significant impact on earnings per share (EPS) of quoted conglomerates firms in Nigeria.

**$Ho_4$:** Long term debt has no significant impact on earnings per share (EPS) of quoted conglomerates firms in Nigeria.

**$Ho_5$:** Short term debt has no significant impact on net margin (NM) of quoted conglomerates firms in Nigeria.

**$Ho_6$:** Long term debt has no significant impact on net margin (NM) of quoted conglomerates firms in Nigeria.

## 1.5 Scope of the study

The study is undertaken to examine the impact of capital structure on the performance of quoted conglomerates firms in Nigeria. The study covers a ten year period from 2002 to 2011. The choice of the period is predicated upon the fact that the Nigerian economy witnessed a lot of transformation during this period. It is a period known as pre and post consolidation era as well as global financial crisis period.

The study used return on asset (ROA), net margin (NM) and earning per share (EPS) as proxies for performance of quoted conglomerates firms in Nigeria. Also, the study used the ratio of short term debt to total capital and long term debt to total capital as proxies for capital structure. Also, two control variables SIZE and EFFICIENCY which is natural logarithm of total asset and efficiency which is the ratio of total turnover to total asset of the sampled firms were used in this study. Our choice of these variables is motivated by the assumption that these indicators may have different interpretations regarding firm's performance since researchers use different performance variables.

## 1.6 Significance of the study

Choosing appropriate capital structure is a critical decision to financial managers of organizations. This is as a result of the impact that such decision may play in maximizing returns to the various stakeholders in the organization. The shareholders are rewarded with high return on equity and consequently high dividend. The debenture holders on the other hand expect a fixed, high and timely interest payment on the loan given to the organization. This study will be of significant importance to a great number of individuals; the debenture holders will find the result useful by knowing if the company they granted loan to can pay as at when due. Also, shareholders will find the result useful by appreciating the link between capital structure and financial performance of companies they are committing their fund into.

The study will also help manager of the organizations to make good decisions on the proportions of capital structure to use in their firms. The creditors of the organization may also benefit from the contribution of the study. They would have the knowledge on how performance is affected by capital structure decision of an organization and thereby taking decisions on whether to invest in such company or not and whether to continue having business relationship with them or not. The policy formulator will also find the result of this study useful. This is in the area of formulating appropriate policies for firms in the area of financing decision. The government through its agent will also benefit from the findings of this study. The central bank as agent of government can make it mandatory on the commercial banks to reduce their lending rate so as to reduce interest rate to borrowers as a result of the findings of this study.

The study will also be of great significance to students, researchers and academia who will want to develop future research on this subject matter and it will contribute in filling the gap that exist in the body of existing literature.

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# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter reviews the existing literature on the impact of capital structure on the performance of organizations. It starts by examining the concepts of capital structure including definitions. It also goes on to explain the concept of performance. The review of empirical research on capital structure and performance is also discussed. Finally, the chapter explains the theories/theoretical framework underpinning the concept of capital structure and performance.

## 2.2 The Concept of Capital Structure

Capital structure has been defined by different authors and scholars. Sa'ad (2010) defines capital structure as the way a firm finances its assets through the combination of equity, debt, or hybrid securities. In short, capital structure is a mixture of a company's debt (long term and short term, common equity and preferred equity. Pandey (1999) defines capital structure as the amount of debt level relative to equity on the balance sheet. It is a snapshot of the amount and type of capital that a firm has access to and the financing methods it uses to conduct growth initiatives such as Research and Development in acquiring asset. Rizwan, Nawas, & Akram (2011), define capital structure as how the company finances its entire operations and expansion by utilizing different financial sources whether it is from equity, debt capital and other form of capital such as vendor financing. Vendor financing is a process of selling goods and products before paying the bill to the vendor.

According to Phansamon *et al* (2012, p.6) Capital structure refers to mix of debt and equity capital maintained by a firm with different sources of funds, particularly to the long-term funds/capitals. They contend that it is a framework, which shows how equity and debt is used for financing firms operations. According to Olokoyo (2012, p. 20) 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.

Olokoyo (2012) defines short term debt as liabilities of a firm whose repayment is within a year. Short term debt can be defined as an account shown in the current liabilities portion of a company's balance sheet (Dictionary.com). This account is comprised of any debt incurred by a company that is due within one year. The debt in this account is usually made up of short term bank loans taken out by a company. Frank and Goyal (2003) define short term debt as all liabilities, which are required to be discharged within one year. They cover those obligations whose liquidation is expected to be made out of current assets. On the other hand, long term debt includes all liabilities other than short term debt and shareholders' equity (Frank& Goyal, 2003). They can also be described as loans and obligations with a maturity of longer than one year usually accompanied by interest payments (Dictionary.com). Olokoyo (2012) defines long term debt as liabilities of a firm whose repayment exceed one year.

## 2.3 The Concept of Corporate Performance

Authors agreed that when conceptualizing performance, one has to differentiate between an action (that is behavioural) aspect and an outcome aspect of performance (Campbell 1990, Campbell, Mccloy,Oppler and sager,1993, Kamfer 1990 Roe,1999) as cited in Sonnentag and Michael (2001). According to them, the behavioural aspect refers to the consequence or result of the individual behavior. The outcome aspect described behaviours which may results in outcomes such as number of engines assembled, pupil's reading proficiency, sales figures and so on. According to dictionary.com, financial performance is defined as a subjective measure of how well a firm can use asset from its primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period of time, and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. It can also be referred to as the business independent criteria to assess it overall outcomes, in relation to its own goals.

Zeitun and Tian (2007), explain the concept of performance as a controversial issue in the financial strategy of most corporate organization due to its multidimensional meanings. Performance measures are either financial or organizational. Financial performance such as profit maximization, maximizing profit on assets, and maximizing shareholders benefits are core of firms' effectiveness (Chakravarthy, 1986). Operational performance measures such as growth in sales and growth in market share, provide a broad definition of performance as they focus on the factors that ultimately lead to financial performance (Hoffer and Sandberg 1987, as cited in Zeitun 2007).

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Another way of measuring corporate performance according to Heng and San (2011) are productivity, profitability, growth or even customer satisfaction. They contend that these tools are closely related. Barbosa and Louri, (2005), opine that financial measurement is one of the tools which indicate the financial strengths, weakness, opportunities and threats. These financial measurements are return on investment (ROI), residual income (RI), earnings per share (EPS), dividend yield, price earning ratio (PER), book value per share and so on.

It is important to note that how a firm performance can be measured may be affected by the objective of a firm that could affect its choice of performance measures and the development of the stock and capital market.

The most commonly used performance measure proxies are return on asset (ROA), return on equity (ROE) or return on investment (ROI). These performance measure proxies are termed as accounting measures. However, there are other measure of corporate performance called market performance measures, such as price per share to the earnings per share (P/E), market value to book value of equity and Tobin's Q. All these can be referred to as the financial measures of performance.

Mubaraq (2005) opines that there are many measures of performance based on non-financial information as not all activities of an enterprise are capable of being expressed in monetary terms, and financial statements only are not adequate to measure all aspect

of performance. The following points are what he termed as non-financial measures of performance: staff turnover, training time per employee, number of production stoppage through strikes, absenteeism and accidents, number of complaints received, number of costumers and suppliers, output per employee, production lead time, adherence to quality and product quality.

- **Return on Assets (ROA)**

"ROA is a good internal management ratio because it measures profit against all of the assets an organisation uses to make those earnings. Hence, it is a way to evaluate the organisation's profitability, performance, and effectiveness. It is also more appropriate here because division managers seldom get involved in raising money or in deciding the mix between debt and equity." (Kristy & Susan, 1984). ROA provides good information about a firm's financial performance in terms of using assets to create income. It shows the percentage of profit that a corporation earns in relation to its overall resources. Thus, it is considered as a measure of efficiency. A firm with high ROA means that it is good at translating assets into profits. Therefore, it is also called a profitability or productivity ratio (Casteuble, 1997). ROA is generally seen as a stable financial performance ratio. For this reason, an increasing ROA indicates that a firm generates more profitability while a decreasing ROA indicates that a firm generates less profitability.

- **Earnings per share**

Earnings per share represent the portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a

company's profitability. Earnings per share are used for the purpose of evaluating the prices of company's shares and it gives an idea of its growth in earnings over the years. Earnings per share enable comparison to be made between the company's earnings and its dividend payouts.

- **Net Margin (NM)**

Net profit margin is a ratio derived from the operating income section of an income statement compared to sales. Net margin is obtained by dividing profit before tax by sales and this shows how efficiently the company is able to generate profits from its primary operations. This measurement is especially useful to investors wanting to see how profitable and stable the company operations are.

The modern theory of capital structure began with celebrated paper of Modigiliani and Miller (1958). They suggest that in the perfect market, financing strategies do not affect the value of the firm and future performance. Modigiliani and Miller demonstrate that if a company's investment policy is taken as given, then in a perfect world, a world without taxes, perfect and credible disclosure of all information and no transaction costs associated with raising money or going bankrupt the extent of debt in a company's capital structure does not affect firms value. However, Modigiliani and Miller (1963) later amended their initial argument. They argue that firm value can be increased by changing the capital structure because of the advantage of debts.

However, Jensen and Meckling (1976) proceed to the contrary and demonstrate that the amount of leverage in a firms' capital structure affect managers' choice of operating activities and that these activities in turn affect the performance of the firm. Jensen and Meckling argument is that managers do not always run the firm to maximize returns to shareholders. They may adopt non-profitable investments, even though the outcome is likely to be losses for shareholders. They demonstrate that if debt is included in the capital structure of an organization, it will reduce the agency conflicts between manager and shareholders by constraining or encouraging managers to act more in the interest of shareholders. In the same vein, Myers and Majluf (1984), argue that since all firms managers try to get optimal capital structure with least possible, cost, this led in 1984 to the emergence of pecking order theory. The theory suggests that there is no an optimal capital structure for a firm, according to this theory, since there is asymmetric information between managers and investors. Therefore, to minimize this asymmetry information managers prefer to finance using retained earnings, debt and equity respectively.

The two classical publications of Modigiliani and Miller (1958&1963) triggered a stream of studies and hypotheses over time that contributed to the classification of the capital structure puzzles and since then there has been a lot of theoretical and empirical studies on capital structure.

## 2.4 Review of Empirical Studies

The study of the relationship between capital structure and performance is a topic that has received great attention from scholars in the field of finance. The aim of this section therefore is to review those work as follows: The proxies of capital structure are reviewed separately in order to see the effect of each debt level on the performance of the firms under study.

### 2.4.1 *Capital structure and firm performance*

*Phuong and phung (2013) examine the impact of capital structure on the firm performance of Vietnamese listed firms. The study concluded that debt levels including short term, long term and total debts have a significant negative impact on firm performance measured by Tobin's Q, ROA and ROE. The finding is quite surprising as most studies that used market measure of performance Tobin's Q do have positive performance. Tianyu (2013) studies the comparison of impact from capital structure to corporate performance between Chinese and European listed firms. The study tested the impact from capital structure to firm performance of period 2003-2012 in German and Sweden on one hand and China on the other. T he study concluded that capital structure has a significant negative effect in China. Whereas the study showed that capital structure has significant positive effect on performance in 2 European countries before financial crisis in 2008.The finding of the study may be as a result of the nature of data available in the studied countries. Salteh, Ghanavati, Khanqah and Khosroshahi (2012) examine the impact of capital structure on the performance of 28 Iranian companies listed in Tehran Stock Exchange. The study used ROA, ROE, EPS, MBVR and Tobin's*

Q as measures of dependent variables and short term debt, long term debt and total debt to total assets and total debt to total equity as measure of capital structure. The study concluded that capital structure has significant positive impact on ROE, MBVR and Tobin's Q. The finding is in line with the proposition of agency theory and this may be as a result of the market measure of performance used. The study also reported that capital structure has significant negative impact on ROA and EPS. This finding may be as result of accounting measure of performance used in the study. Ofokoyo (2012) examines the impact of capital structure on firm performance of Nigerian listed firms from 2003-2007.The study concluded that capital structure has negative impact on firms accounting performance ROA. Whereas the study showed that all leverage measures have a positive and significant impact on Tobin's Q. This finding is in line with the expectation of agency theory.

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Skopljak (2012) examines the impact of capital structure on firm performance in the financial sector of the Australian Authorised Deposit-taking Institutions. The study showed a significant and robust quadratic relationship between capital structure and firm performance of Australian ADIs. It further explained that at relatively low levels of leverage, an increase in debt leads to increased profit efficiency hence superior bank performance. However, the study also explained that at relatively high levels of leverage, increase debt leads to decreased profit efficiency and bank performance. Odita and Osuji (2012) examine the impact of capital structure on the financial performance of non-financial firms listed on the Nigerian Stock Exchange from 2004-2010.The study concluded that capital structure has negative impact on ROA and ROE. This finding

may occurred as a result of accounting measure of performance used in the study, if market performance measures had been used, it may have shown something different.

Awunyo and Badu (2012) conduct research on capital structure and performance of listed banks in Ghana and the result revealed a negative relationship between capital structure and performance measured by return on equity (ROE), return on assets (ROA) and Tobin's Q of the banks. The study was carried out on listed banks in Ghana. The financial industry description of capital structure is quite different from that of other sectors, therefore the findings may not be applicable to other sectors. Soumadi and Hayajneh (2012) examine the impact of capital structure on corporate performance of public Jordanian firms. The study concluded that capital structure has negative impact on the performance of the studied firms. This finding could be as a result of the number of years used in the study.

Bistrova, Lace & Peleckiene (2011) examine the influence of capital structure on Baltic corporate performance. The study covered the time period of four years (2007 to 2010) and sample data of 36 blue chip companies listed on the Baltic stock exchange. The result discovered positive relationship between stock performance and sufficiency of equity capital. Beside they find an inverse relationship between the level of debt capital and profitability. The study only covered five year periods. The findings of this study may have shown some thing different if the numbers of years used in the study are increased. Rizwan et al (2011) conduct research on the relationship between capital structure and firm performance of textile sector in Pakistan. The result showed a

positive relationship between capital structure and firms' performance and equity ratio. Oke & Afolabi (2011), conduct research on the effect of capital structure and industrial performance in Nigeria for the period of 1999 to 2007 and the results revealed a positive relationship between firms' performance and equity financing and also a positive relationship between firms' performance and debt-equity ratio. Furthermore, the results show a negative relationship between firms' performance and debt financing. The firms under study were picked from all the sectors and only five companies were chosen. The findings may be bias as a result of the fact that data for five companies may be too small to generalize for the entire sectors.

*Onaolapo et al (2010), conduct research on a sample of thirty non-financial firms listed* on the Nigeria stock exchange during a seven year period 2001-2007. They found a negative relationship between capital structure and firms performance measure in accounting measure. Cheng (2009) studied the relative effects of debt and equity financing on the operating performance of firms and the findings showed that high cash flow firm, debt finance and debt financing have significant negative consequence for operating performance. Madan (2007) examines the role of financing decision in the overall performance of companies and concluded that while leverage seems to be working well for few categories of companies, it is affecting some others negatively. Haung and Song (2006) find a negative correlation between leverage and performance (using earnings before interest and tax to total assets in China firms). A study carried out by Zou and Xiao (2006) on financing behavior of listed Chinese firms conclude that a negative relationship between profitability and firm leverage exists.

Phillips& sipahioglu (2004) study the performance implications of capital structure of the quoted UK organizations with hotel interests. The result revealed no significant relationship between the level of debt found in the capital structure and financial performance. The study was conducted in the UK, the lending rate by the banking industry may have had a significant impact on the outcome of the findings. Gleason et al (2000) examined the relationship between performance and leverage by using return on asset (ROA).The results indicated that total debt has a significant negative influence on performance.

### 2.6.2 **Short term debt and firm performance**

Phansamon & Yalcin (2012) study the influence of short term debt on the performance of Swedish listed firms. The study revealed that short term debt has a significant impact on the *firm performance measured by return on investment (ROI), return on equity* (ROE) and return on asset (ROA).Similarly, Amjed (2012) examines the effect of short term debt and performance of firm in the chemical sector of Pakistan. The study revealed that there is significant positive impact between short term debt and profitability. Also the study revealed that there is negative relationship between short term debt and return on equity (ROE) and return on asset (ROA). Khan (2012) examines the effect of short term debt on the performance of selected firms in the engineering sector of Pakistan economy. The results revealed that there is a negative and significant relationship between short term debt and firm performance measured by return on asset (ROA), gross profit margin (GM) and Tobin's Q. The result also showed

that there is an insignificant negative association between short term debt and return on equity (ROE). The study covered only one sector, if more sectors were included, the findings may have shown something different. Iorpev and Kwanu (2012) examine the impact of short term debt on the performance of some selected manufacturing firms in Nigeria and concluded that short term debt has a significant negative impact on return on asset (ROA) of the firms under study. However the result showed a negative but insignificant impact between short term debt and gross profit margin (GM).The study concentrated on the use of accounting measures of performance, if market measures of performance such as Tobin's Q were introduced, the findings may have been different.

Ahmad, Abdullah & Roslan (2012) examine the impact of short term debt on the performance of chemical and industrial sectors of Pakistan. The results reported that there is a significant negative relationship between short term debt and return on equity (ROE). The results also revealed that short term debt has significant positive impact on return on asset (ROA). Umar, Tanveer, Aslam & Sajid (2012) examine the impact of current liabilities on the performance of Pakistan top 100 consecutive companies in Karachi stock exchange. The results revealed that current liabilities have negative impact on earning before interest and taxes (EBIT), return on asset (ROA), earning per share (EPS) and net profit margin (NM).The study used current liabilities as capital structure measures. Capital structure measures may have been wrongly used, because any kind of liabilities could be included which actually are not source of financing. Gatsi (2012) examined the impact of short term debt on Ghanian banks. He concluded that short term debt positively influences profitability of the selected banks.

Nour (2012) investigates the impact of capital structure on the performance of companies in the Palestine stock exchange. The results showed that there is no relationship between short term debt and return on equity (ROE), return on asset (ROA), earnings per share (EPS) and Tobin's Q. The result also showed that there is a negative and statistically significant relationship between short term debt and MBVR. The study covered only five year period. The number of years may be considered as small to make generalization. Uwalomwa and Uadiale (2012), examine the relationship between capital structure and financial performance of firms in Nigeria and concluded that significant positive relation exist between short term debt and return on assets (ROA). Only one performance measure was used, at least two or three performance measure should have been used in study of this type. Shubita and Alsawallah (2012) report a significant negative relationship between short term debt and profitability.

Prahalantan and Ranjani (2011) examine the impact of capital structure choice on the performance of listed companies in Colombo stock exchange Sri Lanka. The results revealed that short term debt has a significant negative impact on gross profit margin. The result also revealed that there is no significant relationship between short term debt and firm performance measured by return on equity (ROE) and return on asset (ROA) respectively. Koptleuova, Tang and Tleubayev (2011) examine the impact of short term debt on the performance of Malaysian economy and concludes that short term debt has a significant negative impact on firm's accounting performance. The study also revealed that short term debt has a negative influence on market performance measurements.

Saeedi and Mahmoodi (2011) examine the impact of capital structure on the performance of selected 320 firms in the Tehran stock exchange. The study concluded that short term debt has positive impact on earning per share (EPS) and Tobin's Q. The results also showed that short term debt has no relationship with return on equity (ROE). Where as the results show a significant negative relationship between short term debt and return on asset (ROA). The result is impressive and supports the argument of agency theory. Premkanth and Lingesiga (2011), find no relationship between short term debt and return on equity (ROE) of listed manufacturing companies in SriLanka.

Heng *et al* (2011) investigate the relationship between capital structure and corporate performance of 49 Malaysian Construction companies. The study found that short term debt has a significant negative impact on earnings per share (EPS). Manawaduge, Dezoysa,Chowdhury and Chandarakumara (2011) examine the impact of short term debt on firm performance in Emerging economies. The study concluded that short term debt is negatively related to firm performance. Doan and Nguye (2011) examine the relationship between firm characteristics, capital structure and operational performance of a sample of 427 companies listed on the Vietnamese stock exchange and found that short term debt has significant impact on operational performance. Ahmad (2009) examines the impact of short term debt on the performance of Malaysian firms and concluded that there is no significant relationship between short term debt and return on equity (ROE) and return on asset (ROA).The asymmetric level of information in emerging economy may brought about this findings.

Salawu (2009) examines the impact of short term debt on the performance of some listed non-financial firms in Nigeria. The results indicated that profitability presents a positive correlation with short term debt and equity. Ebaid (2009) in his study on the emerging market economy of Egypt finds that short term debt has insignificant relationship with performance measured by return on equity (ROE) and gross profit margin (GM).The result also showed that short term debt has significant negative impact on return on asset (ROA). The nature of data presented and used for study in emerging market most at times resulted in a kind of findings that is supported by theories. Zeitun *et al* (2007) find that short term debt has significant negative relationship with return on asset (ROA) and profitability of listed firms in Jordan listed firms. Whereas, the results showed that short term debt has no significant impact on MBVR. However, the result showed that short term debt has significant positive impact on Tobin's Q.

Abor (2007) finds positive relationship between short term debt and return on asset (ROA) in small and medium enterprises in South Africa. The study also find that negative relationship exist between short term debt and return on asset(ROA) and gross profit margin(GPM) of the listed firm in Ghana. Abor (2005) finds that short term debt has significant positive impact on return on equity (ROE) of the firms in Ghana. Mesquita and Lara (2003) conclude that short term debt has a significant positive relationship with performance. Majmudar and Chibber (1999), examine capital structure and performance of transition economy and concluded that short term debt has a significant negative relationship with performance.

### 2.6.3 **Long Term Debt and Firm Performance**

Khan (2012) finds that there is an insignificant relationship between long term debt and return on asset (ROA) and return on equity (ROE). Where as the results reported a significant positive relationship between long term debt and gross margin (GM) and Tobin's Q. Phansamon *et al* (2012) report that there is a negative and significant relationship between long term debt and return on asset (ROA), return on investment (ROI) and return on equity (ROE).Ahmad (2009) concluded that long term debt has significant positive relationship with return on asset but not with return on equity (ROE). Amjed (2012) concludes that there is a significant negative relationship between long term debt and firm performance measured by return on equity (ROE) and return on asset (ROA).

Nour (2012) in his study finds that long term debt has no significant impact on all the performance measured by return on equity (ROE), return on asset (ROA), earning per share (EPS), MBVR and Tobin's Q. This findings is contrary to theoretical believe, however the technique of data analysis used in the study may have resulted in the findings. Umar *et al* (2012) conclude that long term liabilities have positive impact on return on equity(ROE).Long term liabilities are not defined and wrong findings may have been reported due to wrong measures of capital structure. Uwalomwa *et al* (2012), find that long term debt has significant negative impact on return on assets (ROA) Shubita *et al* (2012), find that significant relationship exist between long term debt and profitability.

Prahalantan *et al* (2011) examine the impact of long term debt on the performance of listed companies in the Colombo stock exchange Sri Lanka. The study revealed that there is no relationship between long term debt and firm performance measured by return on asset (ROA) and return on equity (ROE). Saeedi *et al* (2011) find that there is positive correlation between long term debt and earning per share (EPS) and Tobin's Q. The results also reveal that there is negative and significant relationship between long term debt and return on asset (ROA). However the results report that there is no relationship between long term debt and return on equity (ROE). The result is impressive and supports the argument of agency theory.

Heng *et al* (2011) investigate the relationship between capital structure and corporate performance of 49 Malaysian Construction companies. The study found that long term debt has a significant positive impact on earnings per share (EPS) and return on capital (ROC).The study also revealed that long term debt has no significant impact on net margin (NM). Manawaduye *et al* (2011) conclude that long term debt is negatively related to firm performance. Doan *et al* (2011) examined the relationship between firm characteristics, capital structure and operational performance of a sample of 427 companies listed on the Vietnamese stock exchange and found that long term debt has significant impact on operational performance. Premkanth *et al* (2011), conclude that significant negative relationship exist between long term debt and return on equity (ROA).

Ebaid (2009) reports that there is no significant relationship between long term debt and all three performance measures used in his study that is return on asset (ROA), return on equity (ROE) and gross profit margin (GM). Zeitun *et al* (2007) find that long term debt has significant negative impact on return on asset (ROA) and profitability of firms in Jordanian firms. Whereas, the result showed that long term debt has no significant impact on Tobin's Q and MBVR. Abor (2007) finds that long term debt has significant negative impact on Ghana firms. Whereas, the results show that long term debt has significant negative impact on return on asset (ROA) of listed firms in South Africa.

Abor (2005) finds that long term debt has significant negative impact on return on equity (ROE) of Ghananian firms. The findings of the study may be as a result of the nature of capital market in developing economies. Mesquita *et al* (2003) find that long term debt has no significant relationship with performance. Majmudar *et al* (1999) report that significant negative relation exist between long term debt and performance.

From the above, it can be seen that various researchers have contributed to the debate on capital structure and performance. Most of them are derived from the experience of developed economies. They include Zeitun and Tian 2007; Mesquita *et al* (2003); Rajan & Zingales (1995); Berger and Bonacorsi (2002). Also, some studies were conducted in developing economies and include Nour (2012); Saeedi & Mahmoodi (2011); Awunyo & Badu (2012) Rizwan *et al* (2011) and so on.

However, to the best of our knowledge few researches has been conducted in this area of study in Nigeria and include Kajola & Onaolapo (2010); Omorogie & Erah (2010); Salawu (2009); Akintoye (2008); Dare & Folorunsho (2010); Simon and Afolabi (2011), Onimisi (2011) Iorpev & Kwanun (2012). However, because of the peculiarity of capital structure decision in a company and the fact that to the best of our knowledge nobody has actually carried out research on capital structure and performance of conglomerates firms in Nigeria, there is the need to proceed with this study so as to know how capital structure particularly short term debt and long term debt affect the performance of this sector. The study adopts the estimation procedure used by Awunyo & Badu (2012) but with difference in scope, contexts and sector of study.

## 2.5 Theories of capital structure

Various theories have been advanced by scholars to explain the financing patterns of firms. These theories include: agency cost theory, Pecking order theory, trade off theory, Modigiliani &Miller (M&M) theory. However, these theories have been subject of considerable debate due to inherent controversies in them. The controversies in the various theories being propounded to inform such all important decision further make capital structure decision crucial. Hence, capital structure decisions are very important, particularly in relation to performance of a firm in terms of profitability and value of the equity. The following are some of the theories of capital structure.

- *Modigiliani &Miller Theorem*

Modigiliani and Miller (1958) most famous theories of capital structure, the irrelevance theory is considered the basis of modern corporate finance. It can be concluded that the

M&M (1958) seminar paper open floor for debate into capital structure. In their proposition, they argue that, capital structure has no impact on the firm's total value assuming that economy is tax free, there is no agency cost and problem of asymmetry information. In reality, the financial market they assumed do not exist in the real life situation even as their theory was used as that time.

- Agency cost Theory

Jensen and Meckling (1976) who are founders of the agency cost theory, subsequently defined agency relationship inside the firm as: "A contract under which one or more persons (the principal) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent". According to the agency theory, the way of professional management style, which is the separation of ownership and management may result agency conflicts that is caused by insufficient work effort of manager, indulging in perquisites, choosing inputs or outputs according to one's preferences. Due to these reasons, a firm may fail to maximize its value. The theory suggests that choosing best/optimal capital structure may mitigate agency conflicts and decrease agency cost. Therefore, according to the theory, high leverage/debt ratio help a firm to reduce its agency cost and mitigate agency conflicts. This debt ratio also encourages managers to act more in the interests of shareholders. As a result, the firm's value increases. The contribution of agents cost theory is that leverage firms are better for shareholders as debt level can be used for monitoring the mangers. Thus, higher leverage is expected to lower agency costs, reduce inefficiency

and thereby lead to improvement in firms' performance (Jensen, 1986, 1988 and Akintoye 2007 ).

- Pecking order Theory

The so called pecking-order theory or pecking-order hypothesis was developed by Stewart Myers in 1984, as a way of describing the corporate finance behaviour that he has observed and based on that he pointed out three major points that corporate finance managers tends to adhere to and that is highly relevant for capital structure choices. The theory suggests that there is no an optimal capital structure for a firm, according to this theory, since there is asymmetric information between managers and investors. Therefore, to minimize this asymmetry information managers prefer to finance using retained earnings, debt and equity respectively.

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Myers ranks different securities based on their perceived riskiness, with going from straight debt on one end of the spectrum, through common stock on the other end. Thus it is argued that corporate financing behaviour are a result of information asymmetry and that investors are under informed about the value of projects within a company for instance, leading to that the company surrenders a substantial amount of a projects net present value to the investors, when utilizing external financing, particularly external equity financing. This is because the cost of debt financing is smaller than equity financing, as the differences in the market's and the management valuation of it are smaller than in the case of equity financing. To avoid getting into this scenario with

external financing however, it is argued that companies maintain financial slack at all times, thus being able to internally finance its profitable projects. The theory predicts that there is a negative relationship between debt usage and profitability.

The theories that underpinned this study are the Pecking order and the agency cost theories.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 *Introduction*

The purpose of this chapter is to present the methodology adopted in this study. The chapter spells out the nature of the research design employed in the study, population of the study, sampling procedure and sample size, method of data collection, the techniques of data analysis variable measurements, model specification and lastly the justification for the method and techniques used.

## 3.2 **Research Design**

The study adopted correlational research design as it attempt to find the relationship between capital structure and performance of quoted conglomerates firms in Nigeria. Capital structure is proxied by short term debt (STD), long-term debt (LTD). Two control variables SIZE and EFFICIENCY are used in the study. Performance on the other hand which is the dependent variable is proxy by return on asset (ROA), earnings per share (EPS), and net margin (NM). Each independent variable along with the dependents variable was measured separately for the sampled conglomerates firms in Nigeria. The motive of studying short term debt and long term debt separately is to investigate the impact of different type of financing options minutely.

## 3.3 **Sources and Method of Data Collection**

Basically there are two sources of data collection. These are primary and secondary sources of data collection. For the purpose of this study only secondary source are

utilized. The method of data collection employed is also secondary. This comprise of annual reports and, financial statement of the sampled conglomerate firms in Nigeria for the period of 2002-2011, and the Nigeria Stock Exchange fact books 2005, 2009 and 2011 editions.

### 3.4 Population of the study

The population of this study comprises all conglomerates firms in Nigeria that are quoted on the Nigerian Stock Exchange as at 31st December, 2011. As at 31st December 2011, a total of eight conglomerates firms are quoted on the Nigerian stock exchange. The study is restricted to Conglomerates firms industry keeping in view the fact that financial structure is an industry specific phenomenon thus leading to different financial structures for different industries.

### 3.5 Sampling Procedure and Sample Size

By sampling procedure and sample size, we mean the number choosing out of the population to represent the entire population. Therefore, for the purpose of this study some filters were employed in arriving at the sample of the study. The following filters were applied to obtain the sample for this study (i) the firms to be selected into the sample must have been quoted on the Nigeria stock exchange prior to the year 2002. (ii) the firms to be selected into the sample must not have any missing data on the stock exchange fact book or their official websites during the period under study.

After the application of the above filters, seven firms were selected as sample of the study. The firms are: A.G Leventis (Nigeria) Plc, Chellarams Plc, John Holt Plc, PZ Cussons Nig plc, SCOA (Nigeria) Plc, UACN and Unilever Nigeria Plc. The only firm that was left out is Transnational Corporation of Nigeria and the reason is that it was incorporated in 2004 and quoted on the Nigerian stock exchange in 2006.

### 3.6 **Technique of Data Analysis**

The nature of data involved in a research normally determines the tool to be adopted for analysis. For the purpose of this study, Generalized Least square regression (panel regression) technique was used with the application of Stata 10.1-Statistical package. The regression model took the form of the Fixed Effects Model and Random Effects Model. The usual identification tests and the Hausman 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. After test for Hausman specification, the test preferred we used the randon effect. The rationale behind random effects model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. Thus, an essential assumption for selecting the random-effect estimation is that the unobserved heterogeneity should not be correlated with the independent variables. It is argued that if the researcher has the course to believe that differences accross the entities has some influence on the explained variable, then the random effect regression should be used. The role of the Hausman test is to check for strict exogeneity. If no correlation is found, random effects should be employed but if correlation exists, fixed-

effects should be employed. Descriptive statistics as well as correlational analysis of the data were also carried out.

### 3.7 Variable Measurement

The purpose of this study is to examine the relationship between capital structure choices and firm performance. Performance measures and capital structure are dependent and independent variables, respectively. Three financial performance indicators including ROA, EPS and NM are used as proxies of firm performance. Furthermore, two measures of leverage including the ratio of short-term debt to total capital (STD) and the ratio of long-term debts to total capital (LTD) are employed. In addition, size and efficiency of the firm, are considered as control variables.

Where:

**$ROA_{it}$** = ratio of after tax profit to total asset of firm i in period t

**$EPS_{it}$** = ratio of after tax profit to total number of ordinary shares in issue for firm i in period t

**$NM_{it}$** = ratio of pre-tax profit to total turnover (net sales) for firm i in period t.

**$STDTC_{it}$** = ratio of short term debt to total capital of firm i in period t

**$LTDTC_{it}$** = ratio of long term-debt to total capital of firm i in period t

**$SIZE_{it}$** = natural logarithm of Turnover (log of turnover)

**$EFF_{it}$** = ratio of turnover to total asset of firm i in period t.

**Dependent Variables**

We used three accounting based measurements of financial performance as dependent variables, which are return on asset (ROA), earning per share (EPS) and net margin (NM) to determine firm performance. These are the most commonly used performance measure proxies. These accounting measures represent the financial ratios from balance sheets and income statements. In the literature, a number of researchers used these accounting based measurements of financial performance such as Majumdar and Chhibber (1999), Abor (2005). Furthermore, we chose more than one proxy for performance in this thesis because we wanted to investigate whether the independent variables explained the performance measures at the same level or not.

**Independent variables**

We used measurements of capital structure as independent variables according to our research objectives. Concerning the independent variables, we employed short-term debts and long-term debts as a ratio of total capital. In the literature, many researchers use leverage ratios as measurements of capital structure, such as Kyereboah &Coleman (2007), Abor (2005), Abor (2007), Titman and Wessels (1988). In addition, Rajan and Zingales (1995) state that choosing independent variables depends on research objectives.. Below, are the ways we measure our independent variables;

**Short term debt (STD)**

Following Welch (2011), Kyereboah and Coleman (2007) and Abor (2007) short term is calculated as short term debt divided by total capital.

**Long term debt (LTD)**

Based on Welch (2011) and Abor (2007), long term debt is calculated as long term debt divided by total capital.

According to Welch (2011), measuring leverage as financial debt to total asset (FD/AT) is an incorrect measure, but he does not advocate the use of one best suitable, appropriate measure of leverage. He contends that a universal best measure may not even exist, but might depend on the question being asked. He however suggests two ways of measuring leverage.

i. The total liabilities to asset (LT/AT) ratio (balance sheet leverage). He concludes that this measure of leverage correctly indicates more leverage when either the firm's financial or non-financial liabilities are higher.
ii. The financial debt to total capital (FD/CP). He concludes that the denominator is financial debt plus equity. However for the purpose of this study, the second definition given by Welch is adopted

**Control Variables**

After forming both dependent and independent variables, we planned to control the firm characteristics by using the factors potentially influencing performance which are , *firm size and efficiency.*

**Firm Size**

The measure for *firm size* is varied such as by the total number of employee, the amount of total assets (Arcas & Bachiller, 2008) and the natural logarithm of total assets (Cassar & Holmes, 2003 and Degryse, Goeij, & Kappert, 2010; Ebaid, 2009). In this study, we used the natural logarithm of total assets for measuring firm size, as it is firmly established in previous research.

**Efficiency**

Most of the empirical study conducted showed that efficiency is positively and significantly related to firm performance. Besides that, efficiency has a strong relationship with sales. Thus in this study efficiency is used as a control variable in the relationship between debt and firm performance.

### 3.8 Model Specification

This study assumes a linear relationship between capital structure (independent variable) and performance (dependent variable) of Conglomerates firms in Nigeria. The study also assumes that the performance of Conglomerates firms in Nigeria is affected by its capital structure decision. Therefore, to reveal the relationship between capital structure and performance of the selected firms, the estimation procedure used by Awunyo & Badu (2012) was adopted with slight modification in the contents of measurement of variables.

$y_{it} = \alpha_i + \beta_1 x_{it} + e_{it}$

Where:

$y_{it}$ is performance measure ( Return on asset (ROA), Earnings per share and net margin (NM)

$\alpha_i$ = refers to time – invariant firm specific effects

$\beta_1$ = beta coefficient

$x_{it}$ = the independent variables and control variables

$e_{it}$ = random disturbance or error term.

$$\mathbf{ROA}_{it} = \beta o + \beta_1 \mathbf{STDTC}_{it} + \beta_2 \mathbf{LTDTC}_i + \beta_4 \mathbf{SIZE}_{it} + \beta_5 \mathbf{EFF}_{it} + e_{it} \ldots\ldots \textbf{Model 1}$$

$$\mathbf{EPS}_{it} = \beta o + \beta_1 \mathbf{STDTC}_{it} + \beta_2 \mathbf{LTDTC}_{it} + \beta_4 \mathbf{SIZE}_{it} + \beta_5 \mathbf{EFF}_{it} + e_{it} \ldots\ldots \textbf{Model 2}$$

$$\mathbf{NM}_{it} = \beta o + \beta_1 \mathbf{STDTC}_{it} + \beta_2 \mathbf{LTDTC}_{it} + \beta_4 \mathbf{SIZE}_{it} + \beta_5 \mathbf{EFF}_{it} + e_{it} \ldots\ldots \textbf{Model 3}$$

### 3.9 Justification for the method used

The study used Generalised least square (GLS) regression as tool of analysis because it involves three dependent variables, two independent variables and two control variables. The reason behind the choice of multiple regression techniques is that it reveals the actual impact the independent variables have on dependent variables. In this study, multiple regression is the better tool that can clearly bring out the impact of capital structure decisions on the performance of the selected conglomerates firms in Nigeria. The study also used correlational research design in order to actually find and explain the degree to which the independent variable correlated with the dependent variables used in the study.

# CHAPTER FOUR

# DATA PRESENTATION, ANALYSIS AND INTERPRETATION

## 4.1 Introduction

This chapter presents the data presentation, analysis and findings of this study. The hypotheses formulated are tested in this chapter in order to determine the impact of the independent variables on the dependent variables. The descriptive analysis of the variables under study is also presented in this chapter that is the description of the dependent variables and the explanatory (independent and control) variables in terms of mean, standard deviation, minimum, maximum, skeweness and kurtosis. The correlation analysis which discloses the strength of the relationship between the dependent variables and the independent variables as well as the control variables is also presented in this chapter. Lastly the outcome of the robust random regression analysis, which represents the main findings of the study is presented.

## 4.2 Data presentation

This section presents the data used in the study upon which the analysis is based. The data collected are in respect of return on asset (*ROA*) earnings per share (*EPS*), net margin (NM), short-term debt, long-term debt, size and efficiency of the selected conglomerates firms in Nigeria. For the detailed data, see appendix 5

## 4.3 Descriptive Statistics

Table 4.1 and below provides a summary of the descriptive statistics of the dependent variables and the explanatory variables (independent and control variables) for the firms

under study. This sample consists of seventy (70) observations derived from annual reports of seven (7) quoted conglomerates firms in Nigeria for the year 2002 through 2011.

**Table 4.1: Descriptive statistics of the Variables**

| Variable | Mean | Std dev. | Min. | Max. | Skeweness | Kurtosis | N valid |
|---|---|---|---|---|---|---|---|
| ROA | 0.06121 | 0.944503 | -0.2325 | 0.3173 | -0.715 | 2.349 | 70 |
| EPS | 0.46043 | 1.28669 | -5.4272 | 3.3967 | -2.33 | 9.754 | 70 |
| NM | 0.08926 | 0.1356 | -0.2407 | 0.6389 | 1.073 | 4.076 | 70 |
| STD | 0.303726 | 0.3465404 | 0.000 | 1.5790 | 1.465 | 1.781 | 70 |
| LTD | 0.026235 | 0.0625375 | 0.000 | 0.3046 | 3.461 | 12.091 | 70 |
| SIZE | 6.9973E0 | 0.3581823 | 6.4484 | 7.7347 | 0.300 | -1.009 | 70 |
| EFF | 1.3748E0 | 0.6215267 | 0.3271 | 2.6737 | 0.314 | -0752 | 70 |

Source: output of data analysis by author (2013) using Stata

Table 4.1 showed that return on assets (ROA) for the sampled firms has an average of about 6% and a standard deviation of 9%. The return on assets (ROA) measures how effective the firm is utilizing its assets in making earnings. That is earning per unit of a given asset. The ratio of 6.12% indicates that for every ₦100 invested in asset, the average return is ₦6.12k, this is a relatively low accounting performance indicator. This confirms that the quoted conglomerates firms in Nigeria are not performing very well with regard to utilization of asset which averages 6.12%. The highest ROA is 31.7% and the lowest return on assets (ROA) is -23.25%.

The table also revealed the average earnings per share (EPS) to be 46% and the standard deviation is 128%. The EPS with the average of 46% suggest a remarkable average

performance of the firms in respect of amount of investment by shareholders. It indicates that an average of ₦46 was earned by shareholders on every ₦100 invested.. The minimum EPS is -5.4272, while the maximum EPS is 3.3967.

The table also revealed, that average net margin (NM) is about 9% while the standard deviation is 13.5%. The result indicates that only ₦9 was earned as profit before tax on every ₦100 by the sampled firms. This means that the firms are not generating enough profit on their sales. The highest net operating margin (NM) is 63.08% while the lowest NM is -24%.

Short-term debt which is measured as the ratio of short term to total capital has an average of 30.3% while the standard deviation is 34.6%. The result indicates that 30% of the finance of quoted conglomerates firms in Nigeria comes from short term debt. The maximum STD is 157% while the lowest STD is 0.000. The average long term debt (LTD) which s measured by the ratio of long term debt to total capital is 2.62% and its standard deviation is 6.25%. This indicates that only about 3% of the finance of the sample firms comes from long term debt. The minimum long-term debt is 0.00, while the highest ltd is 30%.

For size (SIZE), which is used as a control variable in this study, measured by natural logarithm of total asset, the average reported is 6.99, whereas the standard deviation is 0.358. The highest size is 7.73 and the lowest size is 6.44.The result indicate that size of the firms generate only about 7% to their returns. Also for efficiency which is also used

as a control variable, measured by sales divided by total asset, which has a mean value of 1.374 and the standard deviation of 0.621.The maximum value is 2.763 and the minimum is 0.327.

**4.4 Correlation Analysis**

Table 4.2 presents a summary of the correlational analysis for the dependent variables and the explanatory variables (independent and control variables) for the firms under study. Correlation is a single number that describes the degree of the relationship between two variables. The sample consists of seventy (70) observations derived from annual reports of seven (7) quoted conglomerates firms in Nigeria for 2002 through 2011.

**Table 4.2 Correlation Matrix of Dependent and Explanatory Variables**

| Variable | ROA<br>EPS<br>NM | STD | LTD | SIZ | EFF |
|---|---|---|---|---|---|
| ROA<br>EPS<br>NM | 1.000 | | | | |
| STD | -0.620***<br>(0.000)<br>-0.602<br>(0.000)***<br>-0.540***<br>(0.000) | 1.000 | | | |
| LTD | -0.250**<br>(0.037)<br>-0.121<br>(0.321)<br>-0248**<br>(0.039) | 0.133<br>(0.273) | 1.000 | | |
| SIZE | 0.237*<br>(0.048)<br>0.309***<br>(0.009)<br>0.134<br>(0.267) | -0.299**<br>(0.012) | -0.216*<br>(0.073) | 1.000 | |
| EFF | -0.242**<br>(0.044)<br>-0.180<br>(0.136)<br>-0.508***<br>(0.000) | -0.468***<br>(0.000) | -0.086<br>(0.479) | -0.004<br>(0.974) | 1.000 |

***correlation is significant at the 1% level **correlation is significant at 5% level

*Correlation is significant at 10%

Source: output of data analysis by author (2013) using Stata

Table 4.2 presents the correlations among the variables. From the table, return on assets (ROA) is reported to be negatively correlated with short-term debt and significant at 1%.ROA is also negatively correlated with both long-term debt (LTD) and efficiency (EFF) and significant at 5% and 10% level respectively. Meanwhile, return on asset (ROA) is reported to be positively correlated with size (size) and significant at 5%.

The table revealed that earnings per share (EPS) is negatively correlated with short-term debt (STD) and significant at 1%. The table also reports an insignificant negative relationship between EPS and long-term debt (LTD). Also, the table reports a positive relationship between EPS and SIZE and significant at 1%. However, the results show a negative and insignificant correlation between EPS and EFF.

The table also revealed a negative relationship between net margin (NM) and short-term debt and significant at 1% and also a negative relationship between net margin (NM) and long-term debt with level of significance at 5%. Also the results show that EFF is negatively correlated with net margin and significant at 1%. Meanwhile, the results show a positive and insignificant correlation between net margin (NM) and size.

### 4.5 **Presentation and Discussion Of Regression Results**

The three (3) dependent variables ROA, EPS and NM were regressed separately against the explanatory variables and the results are presented in the table 4.3 Using Generalised Least square (GLS) method. Two sets of regression were run controlling for fixed effect and random effect. The outputs which are attached as appendix 4 showed considerable difference between fixed effect (FE) and random effect (RE), thereby casting doubt on the pooled regression results. Therefore, in order to clear doubt and to determine which of the two results best fit the model, Hausman specification test was carried out based on the estimates of the two models.

Generally, the null hypothesis in the Hausman specification test is that the preferred model is the RE. The result of the Hausman specification test showed a p-value of 0.7695, 0.2401 and 0.7091 which are not statistically significant. Based on the results, the null hypothesis could not be rejected and RE model was considered as the best fitted model.

Diagnostic tests were carried out on the RE results. First, Multicolinearity test was conducted and the output is attached as appendix 5. The result revealed that the interacting variables are of harmless colinearity relations. This was followed by heteroskedacity test. The null in this test is homoskedasicity. The result showed a p-value that is significant at 1%, thereby indicating the presence of heteroskedacity. Normality test for the residuals was also conducted using Shapiro-wilk. The result revealed a p-value that is statistically significant at 1%, thereby indicating that the residuals are not normally distributed. A robust random regression was then run to correct for the heteroskedacity earlier revealed. A random effects result with robust standard error was obtained after correction for heteroskedacity and non-normality of residuals. In addition, since the sample used for the study was drawn from the same sector, another test for panel effect using Breusch-pagan Lagrangian Multiplier (LM) was conducted to determine whether the entities are of the same or different characteristic and thus decide between random effect and simple ordinary least square (OLS) regression. The rule is that if the entities are of the same characteristics, they would not have to be treated separately since there would be no panel effect, and thus OLS regression would have preferred. The null hypothesis in the LM test revealed a p-

value of 0.0014 and 0.0346, which are statistically significant. Therefore we uphold our random effect regression model. Based on the new result which is attached as appendix 3, the result of the robust random effect regression is thus considered as the best fitted model interpreted in this study.

**Table 4.3: Output Of Robust RE regression analyses**

| | **Dependent Variables** | | |
|---|---|---|---|
| **Independent Variables** | **M1(ROA)** | **M2(EPS)** | **M3(NM)** |
| Short-term debt | -0.1673 | -1.7989 | -0.1652 |
| | (0.019) | (0.085) | (0.027) |
| Long-term debt | -0.3346 | -2.1202 | -0.3878 |
| | (0.073) | (0.132) | (0.163) |
| Size | -0.0125 | 0.0971 | 0.0118 |
| | (0.783) | (0.825) | (0.839) |
| Efficiency | 0.0361 | 0.4531 | -0.0118 |
| | (0.173) | (0.216) | (0.169) |
| R Squared within | 0.285 | 0.115 | 0.197 |
| R Squared between | 0.515 | 0.644 | 0.814 |
| Overall R Squared | 0.382 | 0.349 | 0.399 |
| Wald chi2 | 39.59 | 44.92 | 50.30 |
| Prob.chi2 | 0.000 | 0.000 | 0.000 |

Source: Output of data analysis by author 2013 using stata

The figures in the parentheses above represent the P-values.

### 4.5.1 Capital structure and Return on Assets (ROA)

The beta coefficient of -0.1673 in the table 4.3 under model 1 (M1) signifies that there is a negative relationship between short term debt and return on assets (ROA) of quoted conglomerates firms in Nigeria. The implication of the above results is that short term debt ratio has a significant negative impact on return on assets (ROA) of quoted conglomerates firms in Nigeria. This result produce evidence that for every one naira increase in short term debt, there is a decrease in return on assets (ROA) of quoted conglomerates in Nigeria. The finding of the study is in line with our prior expectations Hypothesis one (1) predicts that short term debt has no significant impact on ROA of quoted conglomerates firms in Nigeria. Based on the p-value of (0.019), we therefore reject the hypothesis. This finding is consistent with the findings of khan (2012), Iorpev and Kwanum (2012), Ebaid (2009), but inconsistent with the findings of Mesquita *et al* (2003) and Ahmad *et al* (2012).

Also, the beta coefficient -0.3346 in the table (M1) signifies that there is a negative relationship between long term debt and return on assets (ROA) of quoted conglomerates firms in Nigeria. This result produce an evidence that for every one naira increase in long term debt, there is a decrease in ROA of quoted conglomerates firms in Nigeria. Hypothesis two (2) of this study predicts that long term debt has no significant impact on ROA of quoted conglomerates firms in Nigeria. Based on the p-value of (0.073) from the results, we therefore, reject the hypothesis. The results is consistent with the findings of Phansamon *et al* (2012), Amjed (2012), Saeedi *et al* (2011), but inconsistent with the findings of Prahalatan *et al* (2011) and Mesquita *et al* (2003).

The control variables size (SIZE) showed a negative and insignificant impact on the ROA of the conglomerates firms in Nigeria. Also efficiency (EFF) used in this study present a positive and insignificant impact on return on asset (ROA) of the sampled conglomerates firms. The implication of this result is that both size and efficiency have no significant impact on return on assets (ROA) of the sampled conglomerates firms.

The result in table indicates that the coefficient of determination ($R^2$) for the model is computed as 38%. The $R^2$ showed the extent of the explanatory power of the independent variables (short-term debt and long-term debt) and control variables (size and efficiency) on the dependent variable, return on assets (ROA) of quoted conglomerates firms in Nigeria. The explanatory variables have the power of explaining 38% of the variations in return on asset (ROA), the remaining percentage being other factors not captured in this study. The Wald chi2 and prob.chi2 change are normally used to determine the fitness of a regression model. In this study, Wald and prob.chi2 change in model 1 showed 39.59 and 0.0000 respectively. This means that the regression model used in model 1 of this study is fit at 1%. It also indicates that the regression model1 is well fitted and captured important variables that affect the return on assets (ROA) of the selected conglomerate firms in Nigeria during the period from 2002 through 2011.

### 4.5.2 Capital structure and Earnings per share (EPS)

The beta coefficient of -1.7989 in Table 4.3 under model 2 (M2) signifies that there is a negative relationship between short term debt ratio and earnings per share (EPS) of quoted conglomerates firms in Nigeria. The implication of the results is that as short term debt ratio rises earnings per share (EPS) of the firms in Nigeria falls. In this study, *hypothesis three (3) predicts that short term debt has no significant impact on* performance (EPS) of the firms under study. However, based on the p-value of 0.085, there is sufficient evidence to reject the hypothesis. The result is consistent with that of Umar *et al* (2012), but, inconsistent with the findings of Nour (2012) and saeedi *et al* (2011).

Also, the beta coefficient -2.1202 the table under M2 signifies that long term debt has negative and insignificant impact on earnings per share (EPS) of quoted conglomerates firms in Nigeria. This result produce evidence that whatever the amount of long term debt ratio that may be on the finance of the selected firms, it has no impact on their EPS. *The fourth hypothesis predicts that there is no significant impact between long* term debt and EPS. Based on the p-value of 0.132 from Table 4.3, we therefore fail to reject the hypothesis. This finding is consistent with that of Nour (2012) who reports that long term debt ratio has no significant impact on EPS of firms in Palestine Stock Exchange; but, inconsistent with that of Saeedi *et al* (2011) and Heng *et al* (2011).

Like in model 1, the two control variables used in this study size (SIZE) and efficiency (EFF) present positive but insignificant impact on earnings per share (EPS). This

therefore means that size and efficiency have no significant impact on earnings per share. The result obtained in this study on the control variables is a striking revelation as in theory size and efficiency are believed to have positive impact on performance of firms.

As for the extent of the explanatory power of the independent variables (short-term debt and long term debt) and control variables (size and efficiency) in explaining variations in EPS, Table 4.3 shows that all the explanatory variables have the power of explaining not less than 44% of the variations in EPS of the firms. In this study Wald chi2 equals 44.92 and prob.chi2 is 0.0000 in model 2. This indicates that the regression model 2 of this study is fit at 1%. It also indicated that the regression model 2 is well fitted and captured important variables that affect EPS of the selected conglomerate firms in Nigeria for the period under study.

### 4.5.3 Capital structure and Net Margin (NM)

The beta coefficient of -0.1651 in Table 4.3 under M3 signifies that there is a negative relationship between short term debt and net margin (NM) of quoted conglomerates firms in Nigeria. The implication of the above results is that short term debt has a significant negative impact on net margin (NM) of quoted conglomerates firms in Nigeria. Hypothesis five (5) predicts that short-term debt has no significant impact on net margin (NM). Based on the p-value, of 0.027 we therefore reject the hypothesis. This finding of this study is inconsistent with those of Heng *et al* (2011); Iorpev *et al* (2012) and Ebaid (2009).

Also, the beta coefficient of -0.3878 under M3 signifies that there is a negative and insignificant relationship between long term debt and net margin (NM) of quoted conglomerates firms in Nigeria. The implication of the above results is that long term debt has no significant impact on net margin (NM) of quoted conglomerates firms in Nigeria. Hypothesis six (6) predicts that long term debt has no significant impact on net margin (NM). Based on the p-value (0.103) from the results, we therefore, fail to reject the hypothesis .The above results is consistent with the finding of Heng *et al* (2011) who report that long term debt has no significant impact on net margin (NM) of Malaysian firms.

The control variable size (SIZE) shows a positive and insignificant impact on the net margin. Whereas the table shows efficiency has a negative and significant impact on net margin (NM). The implication of this result is that size has no significant impact on net margin, whereas efficiency has negative impact on net margin (NM) of the firms.

The result in table 4.3 indicates that the coefficient of determination ($R^2$) for the model is computed as 50%. The $R^2$ showed the extent of the explanatory power of the independent variables (short-term debt and long-term debt) and control variable (size and efficiency) on the dependent variable net operating margin. Table 4.3 shows that all the explanatory variables have the power of explaining not less than 50% of the variations in net margin (NM) of the firms, the remaining percentage being other factors not captured in this study. The Wald chi2 and prob.chi2 in model 3 showed 50.30 and

0.000 respectively. This means that the regression model used in model 3 of this study is fit at 1% and this indicates that the regression model 3 is well fitted and captured important variables that affect the net margin (NM) of quoted conglomerates firms in Nigeria during the period from 2002 through 2011.

## 4.6 Discussions of Major Findings

The main findings of this study as reported in the table 4.3. After controlling for size and efficiency's effect on performance, short-term debt is found by the p-value to have negatively and significant impact on all three accounting measures of performance return to asset (ROA) earnings per share (EPS) and net margin (NM) used in this study. The findings of this study is in consistent the findings of khan (2012), Iorpev *et al* (2012), Ebaid (2009). However, the result is inconsistent with the findings of Mesquita *et al* (2003), Ahmad *et al* (2012). The result is also consistent with the findings of Umar *et al* (2012), who report that current liabilities have negative impact on earnings per share (EPS) and the margin (NM). However, the result is inconsistent with the findings of Nour (2012).

The p-values also revealed that long-term debt has significant negative impact on return on assets (ROA). Whereas, the results also reveal that long-term debt has insignificant impact on EPS and NM. The result is consistent with the findings of Phansamon *et al* (2012), Amjed (2012) and Saeedi *et al* (2011), who report that long-term debts has significant negative impact on return on assets (ROA), but inconsistent with the findings of Prahalatan *et al* (2011) and Mesquita *et al* (2003) who found no significant

relationship between long-term debt and return on asset (ROA). Also the result revealed that long-term debt has no significant relationship with earnings per share (EPS) of conglomerates firms in Nigeria. The finding here, therefore concur with the finding of Nour (2012), but however contrasts with the findings of Saeedi *et al* (2011) who report that long term debt has significant positive impact on earnings per share(EPS) of listed firms in Palestine stock exchange. The finding also concur with the finding of Heng *et al* (2011) who found that long term debt has no significant impact on NM of firms in Malaysia.

Size used as a control variable in this study showed that firm size do not have significant impact on the three accounting variables used in the study ROA, EPS and NM. As for, efficieney it only has significant negative impact on net margin (NM) but not on return on assets (ROA) and earnings per share (EPS). It can be concluded that both size and efficiency have no significant impact on the performance of the selected conglomerates firms in Nigeria for the period under study.

### 4.7 Policy implication of the study

From the view point of capital structure and firm performance, the findings of this study will assist in establishing financial policy guidelines that will guide against the negative impact of debt financing on performance of conglomerates firms in Nigeria.

Regarding short debt, the finding of negative and significant impact on ROA, EPS and NM provides substantial evidence to managers and other stakeholders that any increase

in short term debt ratio and on the firms' finance leads to decrease in their financial performance. To help users make an informed decision on the capital of the firms there is the need to adequately define short term debt. The securities and exchange commissions (SEC) can as well formulate a policy in issuing out guidelines for sourcing fund by companies in the capital market which will enhance firms' performance positively.

## *CHAPTER FIVE*

# SUMMARY, CONCLUSION AND RECOMMENDATION

## 5.1 *Summary*

The objective of this study is to investigate the impact of capital structure (short-term debt and long-term debt) on the performance of conglomerates firms in Nigeria from 2002 to 2011. The research problem emanates from the fact that limited researches have been conducted in Nigeria in this area of study. More importantly, most of these studies used incorrect measurement of capital structure. To this end our study used measurement of capital structure according to Welch (2011).

Theoretical literature of capital structure especially the M&M theorem, pecking order, theory and agency cost theory were reviewed to provide a sufficient understanding of how capital structure could affect firm performance. The concept of capital structure was reviewed as well as concept of performance. Extensive amount of related empirical literature was reviewed to identify the proxies and measurement of capital structure and firm performance and many control variables used by these studies. As a result, in this study return on assets (ROA), earnings per share (EPS) and net margin (NM) were used as the measures of firm performance. Capital structure on the other hand is proxy by short-term debt (STD) and long-term debt (LTD).

Two variables found by most literature to have an impact on firm performance, namely size and efficiency were used in this study as control variables.

This study covers the conglomerates sectors as defined by the Nigerian Stock Exchange market. Seven (7) firms were identified as the sample and their financial data from 2002 through 2011 were used. Related information was collected from the firms' statement of financial position, income statement, cash flow statement and notes to the accounts.

Three general pooled regression models were utilized, with each of the dependent variables return on asset (ROA) earnings per share (EPS) and net margin (NM), to examine the impact of capital structure on performance. From the regression results, it is found that short-term debt has a significant negative impact on performance measures ROA, EPS and NM of conglomerates firms in Nigeria. Whereas the results reveal that long-term debt has a significant negative impact on return on assets (ROA), but insignificant impact on earnings per share (EPS) and net margin (NM) of the firms.

## 5.2 **Conclusion**

In line with the findings of this study, the following conclusions are arrived at:

i. The finding of this study revealed that short term debt has a significant negative impact on ROA, EPS and NM. The study therefore concludes that short term debt has significant negative impact on the performance of quoted conglomerates firms in Nigeria for the period under study.

ii. The findings of this study also revealed that long term debt has a negative impact on ROA of quoted conglomerates firms in Nigeria. The study therefore concludes that long term debt has significant negative impact on the ROA of quoted conglomerates firms in Nigeria for the period under study.

iii. The findings of this study also revealed that long term debt has no significant impact on earnings per share (EPS) and net margin (NM) of the quoted conglomerates firms in Nigeria. The study concludes that long term debt has no significant impact on EPS and NM of the firms. Firm size and efficiency used in this study as control variables have no significant impact on the performance of selected conglomerates firms in Nigeria. The study therefore concludes that the size and efficiency of the firms have no impact on the performance of the firms.

### 5.3 **Recommendations**

In line with the findings and conclusions of this study, the following recommendations are offered:

i. The financial managers of conglomerates firms in Nigeria should reduce the level of both short term debt and long term debt in their capital structure so as to improve return on assets (ROA) of their firms.

ii. The conglomerates firms in Nigeria should also reduce the level of short term debt in their capital structure in order to have good earnings to be paid to the shareholders

iii. Also as a result of the negative impact the short term debt and have on the net margin of conglomerates firms in Nigeria, it is therefore recommended that they should reduce the level of debt in their capital structure to enhance positive net margin.

## 5.4 Limitations of the study

The following are the limitations pose by this study:

i. This study only used accounting measures of performance return on asset (ROA), earnings per share (EPS) and net margin (NM). Hence, the study does not consider other measure of performance like market performance measures such as Tobin's Q, MBVR and price-earnings ratio.

ii. The study covers one sector (conglomerates firms) listed on the Nigerian stock exchange market. Therefore, the results for the study may not be necessarily applicable to other sectors and private firms.

iii. As with quantitative study of this type, the methodological approach is a limitation on its own as the question of why a relationship may or may not exist can never be thoroughly answered.

## 5.5 Areas for further study

Based on the focus of this study and limitations there from, the following areas are suggested for further study/research.

i. The same type of research such as this, can be replicated, but with different performance measures, for instance market measures of performance such MBVR, Tobin's Q and P/E ratio.

ii. As we have observed from the review of related literature, in Nigeria context, no study have been conducted on financial sector, therefore studies should be conducted in Nigeria to include financial sector.

iii. Lastly, research on capital structure and performance should also be conducted on small and medium scale firms in Nigeria.

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**APPENDIX 1: LIST OF THE FIRMS IN THE SECTOR**

A.G LEVENTIS (NIGERIA) PLC

CHELLARAMS PLC

JOHNHOLTS PLC

PZ CUSSONS (NIGERIA) PLC

SCOA (NIGERIA) PLC

0000493511

UACN PLC

UNILEVER PLC

TRANSNATIONAL CORPORATION OF NIGERIA PLC

## APPENDIX 2: LIST OF THE FIRMS USED IN THE STUDY

A.G LEVENTIS (NIGERIA) PLC

CHELLARAMS PLC

JOHNHOLTS PLC

PZ CUSSONS (NIGERIA) PLC

SCOA (NIGERIA) PLC

UACN PLC

UNILEVER PLC

## APPENDIX 3: ROBUST RANDOM EFFECT REGRESSION

```
. xtreg roa std ltd size eff, re vce(robust)

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.2853                         Obs per group: min =        10
       between = 0.5150                                        avg =      10.0
       overall = 0.3817                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     39.59
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                               (Std. Err. adjusted for clustering on id)
------------------------------------------------------------------------------
             |               Robust
         roa |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |   -.167308   .0714959    -2.34   0.019    -.3074375   -.0271786
         ltd |  -.3346092   .1865797    -1.79   0.073    -.7002987    .0310804
        size |  -.0125003   .0454646    -0.27   0.783    -.1016093    .0766088
         eff |   .0360859   .0265037     1.36   0.173    -.0158604    .0880321
       _cons |   .1586651   .3450348     0.46   0.646    -.5175906    .8349209
-------------+----------------------------------------------------------------
     sigma_u |  .05547343
     sigma_e |  .06518031
         rho |  .42006503   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

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

        Estimated results:
                     |       Var     sd = sqrt(Var)
             ---------+-----------------------------
                 roa |    .0089209       .0944503
                   e |    .0042485       .0651803
                   u |    .0030773       .0554734

        Test:   Var(u) = 0
                             chi2(1) =    10.26
                          Prob > chi2 =   0.0014
```

```
. xtreg eps std ltd size eff, re vce(robust)

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.1153                         Obs per group: min =        10
       between = 0.6435                                        avg =      10.0
       overall = 0.3498                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     44.92
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                               (Std. Err. adjusted for clustering on id)
------------------------------------------------------------------------------
             |               Robust
         eps |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -1.798983   1.043749    -1.72   0.085    -3.844694    .2467269
         ltd |  -2.120168    1.40657    -1.51   0.132    -4.876996    .6366592
        size |    .097185   .4397357     0.22   0.825    -.7646811    .9590511
         eff |   .4531401   .3664563     1.24   0.216    -.2651011    1.171381
       _cons |  -.2406009   3.052525    -0.08   0.937     -6.22344    5.742238
-------------+----------------------------------------------------------------
     sigma_u |  .58476745
     sigma_e |  .90278217
         rho |  .29555942   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

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

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 --------+------------------------------
                     eps |   1.65559        1.286697
                       e |  .8150156        .9027822
                       u |   .341953        .5847675

        Test:   Var(u) = 0
                                 chi2(1) =     4.47
                              Prob > chi2 =   0.0346
```

```
. xtreg nm std ltd size eff, re vce(robust)

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.1972                         Obs per group: min =        10
       between = 0.8136                                        avg =      10.0
       overall = 0.3995                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(5)       =     50.30
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                    (Std. Err. adjusted for clustering on id)
------------------------------------------------------------------------------
             |               Robust
          nm |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -.1651577   .0747916    -2.21   0.027    -.3117465   -.0185689
         ltd |  -.3878055   .2380044    -1.63   0.103    -.8542855    .0786745
        size |   .0118159   .0581635     0.20   0.839    -.1021825    .1258142
         eff |  -.0627661   .0456536    -1.37   0.169    -.1522454    .0267132
       _cons |   .1532157   .4087117     0.37   0.708    -.6478446    .9542759
-------------+----------------------------------------------------------------
     sigma_u |  .04368608
     sigma_e |  .10598765
         rho |   .145221   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. hettest
last estimates not found
r(301);

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

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

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 --------+------------------------------
                      nm |   .0183876       .1356007
                       e |   .0112334       .1059877
                       u |   .0019085       .0436861

        Test:   Var(u) = 0
                                 chi2(1) =     0.04
                              Prob > chi2 =     0.8412
```

## APPENDIX 4: COLLINEARITY, HETEROSKEDACITY AND NORMALITY TEST

```
. vif
```

| Variable | VIF | 1/VIF |
|---|---|---|
| std | 1.45 | 0.691764 |
| eff | 1.32 | 0.757815 |
| size | 1.17 | 0.854005 |
| ltd | 1.06 | 0.944997 |
| Mean VIF | 1.25 | |

```
. hettest

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

         chi2(1)      =    14.07
         Prob > chi2  =   0.0002

. predit e resid
unrecognized command:  predit
r(199);

. predit e, resid
unrecognized command:  predit
r(199);

. predict e resid
(option xb assumed; fitted values)
too many variables specified
r(103);

. predict e, resid

. swilk e

                    Shapiro-Wilk W test for normal data

    Variable |   Obs        W          V          z       Prob>z
-------------+-------------------------------------------------
           e |    70     0.93612     3.932      2.977     0.00145

. kdensity e normal
variable normal not found
r(111);

. kdensity e, normal

. hettest vtest
variable vtest not found
r(111);

. ovtest

Ramsey RESET test using powers of the fitted values of roa
       Ho:  model has no omitted variables
                  F(3, 62) =      3.08
                  Prob > F =      0.0338
```

# APPENDIX 5: RANDOM EFFECT, FIXED EFFECT AND HAUSMAN SPECIFICATION TEST

```
. xtset id year, yearly
       panel variable:  id (strongly balanced)
        time variable:  year, 2002 to 2011
                delta:  1 year

. xtreg roa std ltd size eff, fe

Fixed-effects (within) regression               Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.2939                         Obs per group: min =        10
       between = 0.2265                                        avg =      10.0
       overall = 0.2645                                        max =        10

                                                F(4,59)           =      6.14
corr(u_i, Xb)  = -0.0455                        Prob > F          =    0.0003

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -.1396724   .0512089    -2.73   0.008    -.2421411   -.0372037
         ltd |  -.3886093   .1606143    -2.42   0.019    -.7099978   -.0672208
        size |  -.0127818   .0544316    -0.23   0.815    -.1216992    .0961356
         eff |   .0581796    .030157     1.93   0.059    -.0021643    .1185235
       _cons |   .1232819   .3942785     0.31   0.756    -.6656675    .9122313
-------------+----------------------------------------------------------------
     sigma_u |  .05809689
     sigma_e |  .06518031
         rho |  .44272981   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 59) =     4.26                 Prob > F = 0.0013

. est store fixed

. xtreg roa std ltd size eff, re

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.2853                         Obs per group: min =        10
       between = 0.5150                                        avg =      10.0
       overall = 0.3817                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(4)      =     28.36
corr(u_i, X)       = 0 (assumed)                Prob > chi2       =    0.0000

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |   -.167308   .0411101    -4.07   0.000    -.2478824   -.0867337
         ltd |  -.3346092   .1460873    -2.29   0.022     -.620935   -.0482833
        size |  -.0125003   .0416721    -0.30   0.764     -.094176    .0691755
         eff |   .0360859   .0232225     1.55   0.120    -.0094294    .0816011
       _cons |   .1586651    .299183     0.53   0.596    -.4277228     .745053
-------------+----------------------------------------------------------------
     sigma_u |  .05547343
     sigma_e |  .06518031
         rho |  .42006503   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. est store random
```

```
. hausman fixed random
```

| | Coefficients (b) fixed | (B) random | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
|---|---|---|---|---|
| std | -.1396724 | -.167308 | .0276356 | .0305337 |
| ltd | -.3886093 | -.3346092 | -.0540001 | .0667492 |
| size | -.0127818 | -.0125003 | -.0002816 | .0350177 |
| eff | .0581796 | .0360859 | .0220938 | .0192395 |

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

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 1.82
Prob>chi2 = 0.7695

```
. xtreg eps std ltd size eff, fe

Fixed-effects (within) regression               Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.1621                         Obs per group: min =        10
       between = 0.0326                                        avg =      10.0
       overall = 0.0084                                        max =        10

                                                F(4,59)            =      2.85
corr(u_i, Xb)  = -0.4123                        Prob > F           =    0.0314
```

| eps | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| std | -.7387483 | .7092702 | -1.04 | 0.302 | -2.157995 | .6804981 |
| ltd | -3.641423 | 2.224594 | -1.64 | 0.107 | -8.092826 | .8099797 |
| size | -.2043868 | .7539069 | -0.27 | 0.787 | -1.712951 | 1.304178 |
| eff | .9629336 | .41769 | 2.31 | 0.025 | .1271379 | 1.798729 |
| _cons | .8865865 | 5.460968 | 0.16 | 0.872 | -10.04079 | 11.81396 |
| sigma_u | 1.1440977 | | | | | |
| sigma_e | .90278217 | | | | | |
| rho | .61627818 | (fraction of variance due to u_i) | | | | |

F test that all u_i=0: F(6, 59) = 4.42 Prob > F = 0.0009

```
. est store fixed
```

```
. xtreg eps std ltd size eff, re

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.1153                         Obs per group: min =        10
       between = 0.6435                                        avg =      10.0
       overall = 0.3498                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(4)       =     14.47
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0059

------------------------------------------------------------------------------
         eps |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -1.798983   .5517528    -3.26   0.001    -2.880399   -.7175677
         ltd |  -2.120168   2.054258    -1.03   0.302    -6.146441    1.906104
        size |    .097185   .5446079     0.18   0.858    -.9702268    1.164597
         eff |   .4531401   .3077254     1.47   0.141    -.1499906    1.056271
       _cons |  -.2406009   3.893537    -0.06   0.951    -7.871793    7.390592
-------------+----------------------------------------------------------------
     sigma_u |  .58476745
     sigma_e |  .90278217
         rho |  .29555942   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. est store random

. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed       random       Difference          S.E.
-------------+----------------------------------------------------------------
         std |  -.7387483    -1.798983        1.060235        .4456828
         ltd |  -3.641423    -2.120168       -1.521255        .8537227
        size |  -.2043868     .097185       -.3015718        .5213233
         eff |   .9629336    .4531401        .5097935        .2824359
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        5.50
                Prob>chi2 =      0.2401
                (V_b-V_B is not positive definite)
```

```
. xtreg nm std ltd size eff, fe

Fixed-effects (within) regression               Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.2128                         Obs per group: min =        10
       between = 0.6478                                        avg =      10.0
       overall = 0.3422                                        max =        10

                                                F(4,59)            =      3.99
corr(u_i, Xb)  = -0.5816                        Prob > F           =    0.0063

------------------------------------------------------------------------------
          nm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -.2113671   .0832691    -2.54   0.014    -.3779883   -.044746
         ltd |  -.4388131   .2611699    -1.68   0.098    -.9614129   .0837867
        size |   .0987407   .0885095     1.12   0.269    -.0783665   .2758479
         eff |  -.0512046   .0490373    -1.04   0.301     -.149328   .0469187
       _cons |  -.4555524   .6411239    -0.71   0.480    -1.738438   .8273335
-------------+----------------------------------------------------------------
     sigma_u |  .06577253
     sigma_e |  .10598765
         rho |  .27803279   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 59) =     1.39                 Prob > F = 0.2347

. est store fixed

. xtreg eps std ltd size eff, re

Random-effects GLS regression                   Number of obs      =        70
Group variable: id                              Number of groups   =         7

R-sq:  within  = 0.1153                         Obs per group: min =        10
       between = 0.6435                                        avg =      10.0
       overall = 0.3498                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(4)       =     14.47
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0059

------------------------------------------------------------------------------
         eps |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -1.798983   .5517528    -3.26   0.001    -2.880399   -.7175677
         ltd |  -2.120168   2.054258    -1.03   0.302    -6.146441   1.906104
        size |    .097185   .5446079     0.18   0.858    -.9702268   1.164597
         eff |   .4531401   .3077254     1.47   0.141    -.1499986   1.056271
       _cons |  -.2406009   3.893537    -0.06   0.951    -7.871793   7.390592
-------------+----------------------------------------------------------------
     sigma_u |  .58476745
     sigma_e |  .90278217
         rho |  .29555942   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. est store random
```

Fixed-effects (within) regression  Number of obs = 70
Group variable (i): id  Number of groups = 7

R-sq: within = 0.2128  Obs per group: min = 10
between = 0.6478  avg = 10.0
overall = 0.3422  max = 10

F(4,59) = 3.99
corr(u_i, Xb) = -0.5816  Prob > F = 0.0063

```
------------------------------------------------------------------------------
          nm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -.2113671   .0832691    -2.54   0.014    -.3779883    -.044746
         ltd |  -.4388131   .2611699    -1.68   0.098    -.9614129    .0837867
        size |   .0987407   .0885095     1.12   0.269    -.0783665    .2758479
         eff |  -.0512046   .0490373    -1.04   0.301     -.149328    .0469187
       _cons |  -.4555524   .6411239    -0.71   0.480    -1.738438    .8273335
-------------+----------------------------------------------------------------
     sigma_u |  .06577253
     sigma_e |  .10598765
         rho |  .27803279   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 59) =     1.39                 Prob > F = 0.2347

. estimtes store fixed
. estimates store fixed

. xtreg nm std ltd size eff, re

Random-effects GLS regression                   Number of obs      =        70
Group variable (i): id                          Number of groups   =         7

R-sq:  within  = 0.1972                         Obs per group: min =        10
       between = 0.8136                                        avg =      10.0
       overall = 0.3995                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(4)       =     26.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
          nm |      Coef.   Std. Err.      z    P>|z|     [95%     Conf. Interval]
-------------+----------------------------------------------------------------
         std |  -.1651577   .0550735    -3.00   0.003    -.2730999   -.0572155
         ltd |  -.3878055    .222639    -1.74   0.082    -.8241699    .0485589
        size |   .0118159   .0517081     0.23   0.819    -.0895301    .1131618
         eff |  -.0627661   .0301358    -2.08   0.037    -.1218312   -.0037009
       _cons |   .1532157   .3673544     0.42   0.677    -.5667858    .8732171
-------------+----------------------------------------------------------------
     sigma_u |  .04368608
     sigma_e |  .10598765
         rho |   .145221   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```



KASHIM IBRAHIM

. estimates store random

. hausman fixed random

| ---- Coefficients ---- | | | | |
|---|---|---|---|---|
| | (b) fixed | (B) random | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
| std | -.2113671 | -.1651577 | -.0462094 | .0624552 |
| ltd | -.4388131 | -.3878055 | -.0510076 | .1365343 |
| size | .0987407 | .0118159 | .0869248 | .0718346 |
| eff | -.0512046 | -.0627661 | .0115614 | .0386845 |

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

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 2.15
Prob>chi2 = 0.7091

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## APPENDIX 6: EXPLANATORY AND DEPENDENT VARIABLES

| ROA | EPS | NM | STD/TCAP | LTD/TCAP | SIZE | EFF |
|---|---|---|---|---|---|---|
| 0.01170923 | 0.0390629 | 0.0237878 | 0.3531323 | 0.05213209 | 6.4668922 | 0.7831877 |
| 0.00442606 | 0.015075091 | 0.0250214 | 0.2371585 | 0 | 6.5091673 | 0.6887407 |
| 0.05842691 | 0.099597378 | 0.0931784 | 0.0711446 | 0 | 6.5443479 | 0.8011319 |
| 0.06901991 | 0.122862097 | 0.1280043 | 0.0043523 | 0 | 6.5940638 | 0.8080477 |
| 0.06931695 | 0.136254207 | 0.1413183 | 0.0009635 | 0 | 6.6371307 | 0.749889 |
| 0.07917777 | 0.245680677 | 0.2816874 | 0.0007424 | 0 | 6.835388 | 0.3582184 |
| 0.06598666 | 0.217854863 | 0.2943209 | 0.0021133 | 0 | 6.9415126 | 0.3271094 |
| 0.09330904 | 0.33051649 | 0.3381366 | 0.0049802 | 0 | 6.9720709 | 0.3824155 |
| 0.08286684 | 0.339275637 | 0.1808933 | 0.0007785 | 0 | 7.0349734 | 0.5051813 |
| 0.10521785 | 0.415988048 | 0.2656236 | 0.006026 | 0 | 7.0197929 | 0.5435937 |
| 0.09118221 | 1.018808412 | 0.0910392 | 0.4524499 | 0.00187545 | 7.0065724 | 1.2014506 |
| 0.24146342 | 2.8425255 | 0.1950294 | 0.212155 | 0.03853904 | 7.029243 | 1.3881146 |
| 0.12393985 | 1.400259643 | 0.1266463 | 0.1033802 | 0.04147545 | 7.1107915 | 1.3462701 |
| 0.12925008 | 1.382127377 | 0.1359578 | 0.0477714 | 0.06017435 | 7.1378933 | 1.2362667 |
| 0.18697346 | 2.007705757 | 0.1405414 | 0.0304896 | 0.03454911 | 7.1396961 | 1.2692003 |
| 0.15187754 | 1.902693007 | 0.1637201 | 0.0618833 | 0.01697363 | 7.2052805 | 1.1320393 |
| 0.14982146 | 2.018986768 | 0.1710513 | 0.1090796 | 0 | 7.2369648 | 1.1729589 |
| 0.10705772 | 1.475129942 | 0.1298656 | 0.1696211 | 0.02908086 | 7.2466177 | 1.1411065 |
| 0.0851782 | 0.997920936 | 0.0993691 | 0.1147893 | 0.01242002 | 7.2730831 | 1.030534 |
| 0.19657647 | 3.396718352 | 0.6389318 | 0 | 0 | 7.4418434 | 0.3422292 |
| 0.14633221 | 0.519361258 | 0.1080382 | 0.1567697 | 0 | 7.03109 | 1.769051 |
| 0.12148811 | 0.617933039 | 0.1172501 | 0.2230323 | 0 | 7.187368 | 1.5391076 |
| 0.13798316 | 0.712754453 | 0.1039314 | 0.247597 | 0 | 7.1940742 | 1.8278578 |
| 0.06198787 | 0.50103696 | 0.0683244 | 0.607803 | 0 | 7.3885234 | 1.364914 |
| -0.03314613 | -0.16315483 | -0.0829693 | 0.5825028 | 0 | 7.2700374 | 1.3722352 |
| 0.05294058 | 0.284803515 | 0.0592262 | 0.445112 | 0 | 7.308627 | 1.6700713 |
| 0.11061948 | 0.686315054 | 0.1108916 | 0.2812871 | 0 | 7.3705622 | 1.5923844 |
| 0.17286841 | 1.082078167 | 0.1272682 | 0.1545956 | 0 | 7.3744133 | 1.8782956 |
| 0.16119395 | 1.105020596 | 0.1314278 | 0.0806095 | 0 | 7.413892 | 1.8047906 |
| 0.1768167 | 1.451400049 | 0.1458812 | 0 | 0.00396777 | 7.4921342 | 1.7621774 |
| 0.02773128 | 0.543686473 | 0.0257374 | 0.2024347 | 0.02897845 | 6.5494112 | 1.142472 |
| 0.03500638 | 0.671782926 | 0.019874 | 0.2159889 | 0.0292875 | 6.5401144 | 1.7558558 |
| 0.03227929 | 0.615068804 | 0.0237156 | 0.1543023 | 0 | 6.5370324 | 2.260416 |
| 0.04120751 | 0.441144574 | 0.0230742 | 0.4327265 | 0.02084731 | 6.5876672 | 2.1596722 |
| 0.06113016 | 0.719489186 | 0.0219464 | 0.203917 | 0.01293928 | 6.6288314 | 2.3340642 |
| 0.03652095 | 0.265601182 | 0.0194066 | 0.2928648 | 0.00557981 | 6.7207818 | 2.3912253 |
| -0.04469754 | -0.46882668 | -0.0355518 | 0.3610061 | 0 | 6.8798226 | 1.8989114 |
| 0.05104611 | 0.578106196 | 0.0208724 | 0.2484331 | 0.10226078 | 6.9131388 | 2.1770897 |
| 0.02660677 | 0.306680075 | 0.01451 | 0.1836532 | 0.30463697 | 6.9207873 | 2.5697821 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.01345257 | 0.215030307 | 0.0111863 | 0.5632031 | 0.1660935 | 7.0627884 | 1.9518279 |
| 0.0370659 | 0.421161258 | 0.0427723 | 0.4293279 | 0.29534295 | 6.6514108 | 1.1170051 |
| 0.0060646 | 0.064193486 | 0.012974 | 0.5404048 | 0.03075429 | 6.8372503 | 0.7293033 |
| -0.05650333 | -0.50341969 | -0.0775226 | 0.4672529 | 0.09027345 | 6.7624179 | 0.7763879 |
| -0.2122484 | -1.33513164 | -0.2204956 | 0.7257103 | 0.26064915 | 6.6112588 | 0.9106879 |
| 0.20903167 | 1.129099307 | 0.4544178 | 0.6395244 | 0.07071277 | 6.5450992 | 0.5324985 |
| 0.31730181 | 1.371935335 | 0.3899711 | 0.1072992 | 0 | 6.4484403 | 0.977733 |
| 0.08358831 | 0.553736721 | 0.1376189 | 0.1642668 | 0 | 6.6337369 | 0.6945654 |
| 0.17149373 | 1.092675905 | 0.2396493 | 0.1226077 | 0 | 6.6168223 | 0.8132846 |
| 0.05121681 | 0.326615858 | 0.0699398 | 0.0796975 | 0 | 6.6172039 | 0.759528 |
| 0.05391451 | 0.315790608 | 0.0773159 | 0.104177 | 0.02835195 | 6.5802727 | 0.853299 |
| 0.08327279 | 1.172774541 | 0.1187108 | 0.0557847 | 0.00296126 | 7.310696 | 1.0082839 |
| 0.08518064 | 1.152698006 | 0.1189337 | 0.1071438 | 0.00146977 | 7.3725405 | 1.0188776 |
| 0.07739114 | 1.176107851 | 0.1166508 | 0.0244996 | 0.00065431 | 7.4229217 | 1.0572052 |
| 0.0952393 | 1.342803557 | 0.1151197 | 0.0006273 | 0 | 7.4872721 | 1.1115341 |
| 0.06883444 | 1.030517826 | 0.0912012 | 0.0234276 | 0 | 7.5802723 | 1.1099454 |
| 0.05186991 | 0.806693545 | 0.0549015 | 0.0331439 | 0 | 7.5968157 | 1.3718872 |
| 0.06501178 | 0.863461279 | 0.055401 | 0.0503862 | 0 | 7.6251834 | 1.5631464 |
| 0.06583485 | 0.945430979 | 0.0540383 | 0.0002573 | 0 | 7.6591066 | 1.7751678 |
| 0.09172191 | 1.500205422 | 0.1053155 | 0 | 0 | 7.7156102 | 1.2062435 |
| 0.06141124 | 1.049696809 | 0.0723542 | 0 | 0 | 7.7347486 | 1.2133656 |
| 0.03624382 | 0.395733276 | 0.0195205 | 0.8164444 | 0.012 | 6.6282867 | 2.640386 |
| -0.05062167 | -0.58589082 | -0.0127055 | 0.8901734 | 0 | 6.6535984 | 2.6736234 |
| 0.01194705 | 0.190157548 | 0.0144866 | 0.7493527 | 0 | 6.7919712 | 2.6412657 |
| 0.000424 | 0.005139393 | 0.0039306 | 0.8907767 | 0 | 6.6736659 | 1.9417002 |
| -0.08171479 | -1.20004831 | -0.0308041 | 1.0647482 | 0 | 6.7570162 | 2.0846894 |
| 0.0068824 | 0.146472706 | 0.0064095 | 1.0105128 | 0 | 6.9181352 | 1.9968607 |
| 0.00858412 | 0.218424211 | -0.0018211 | 1.5790147 | 0 | 6.9957229 | 2.1072511 |
| -0.2117081 | -5.42719921 | -0.1548278 | 1.0223986 | 0.03373972 | 6.9989564 | 1.84583 |
| -0.10128559 | -2.16625423 | -0.082589 | 0.9277751 | 0.03635482 | 6.9202799 | 2.0716088 |
| -0.23246201 | -4.91325989 | -0.2406631 | 1.013245 | 0.01135289 | 6.9151359 | 1.2175076 |

**Source: Output of Data Analysis by Author 2013**

## APPENDIX 7: DESCRIPTIVE STATISTICS AND CORRELATION ANALYSIS

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| ROA | 70 | -.2325 | .3173 | .061216 | .0944503 | -.715 | .287 | 2.349 | .566 |
| STD | 70 | .0000 | 1.5790 | .303726 | .3465404 | 1.456 | .287 | 1.781 | .566 |
| LTD | 70 | .0000 | .3046 | .026235 | .0625375 | 3.461 | .287 | 12.091 | .566 |
| SIZE | 70 | 6.4484 | 7.7347 | 6.997375E0 | .3581823 | .300 | .287 | -1.009 | .566 |
| EFF | 70 | .3271 | 2.6736 | 1.374894E0 | .6215267 | .314 | .287 | -.752 | .566 |
| Valid N (listwise) | 70 | | | | | | | | |

## Correlations

**Correlations**

| | | ROA | STD | LTD | SIZE | EFF |
|---|---|---|---|---|---|---|
| ROA | Pearson Correlation | 1 | -.620** | -.250* | .237* | -.242* |
| | Sig. (2-tailed) | | .000 | .037 | .048 | .044 |
| | N | 70 | 70 | 70 | 70 | 70 |
| STD | Pearson Correlation | -.620** | 1 | .133 | -.299* | .468** |
| | Sig. (2-tailed) | .000 | | .273 | .012 | .000 |
| | N | 70 | 70 | 70 | 70 | 70 |
| LTD | Pearson Correlation | -.250* | .133 | 1 | -.216 | .086 |
| | Sig. (2-tailed) | .037 | .273 | | .073 | .479 |
| | N | 70 | 70 | 70 | 70 | 70 |
| SIZE | Pearson Correlation | .237* | -.299* | -.216 | 1 | -.004 |
| | Sig. (2-tailed) | .048 | .012 | .073 | | .974 |
| | N | 70 | 70 | 70 | 70 | 70 |
| EFF | Pearson Correlation | -.242* | .468** | .086 | -.004 | 1 |
| | Sig. (2-tailed) | .044 | .000 | .479 | .974 | |
| | N | 70 | 70 | 70 | 70 | 70 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

## Correlations

**Correlations**

| | | EPS | STD | LTD | SIZE | EFF |
|---|---|---|---|---|---|---|
| EPS | Pearson Correlation | 1 | -.602** | -.121 | .309** | -.180 |
| | Sig. (2-tailed) | | .000 | .320 | .009 | .136 |
| | N | 70 | 70 | 70 | 70 | 70 |
| STD | Pearson Correlation | -.602** | 1 | .133 | -.299* | .468** |
| | Sig. (2-tailed) | .000 | | .273 | .012 | .000 |
| | N | 70 | 70 | 70 | 70 | 70 |
| LTD | Pearson Correlation | -.121 | .133 | 1 | -.216 | .086 |
| | Sig. (2-tailed) | .320 | .273 | | .073 | .479 |
| | N | 70 | 70 | 70 | 70 | 70 |
| SIZE | Pearson Correlation | .309** | -.299* | -.216 | 1 | -.004 |
| | Sig. (2-tailed) | .009 | .012 | .073 | | .974 |
| | N | 70 | 70 | 70 | 70 | 70 |
| EFF | Pearson Correlation | -.180 | .468** | .086 | -.004 | 1 |
| | Sig. (2-tailed) | .136 | .000 | .479 | .974 | |
| | N | 70 | 70 | 70 | 70 | 70 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

## Descriptives

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| EPS | 70 | -5.4272 | 3.3967 | -460438 | 1.2866971 | -2.330 | .287 | 9.754 | .566 |
| STD | 70 | .0000 | 1.5790 | .303726 | .3465404 | 1.456 | .287 | 1.781 | .566 |
| UTD | 70 | .0000 | .3046 | .026235 | .0625375 | 3.461 | .287 | 12.091 | .566 |
| SIZE | 70 | 6.4484 | 7.7347 | 6.997375E0 | .3581823 | .300 | .287 | -1.009 | .566 |
| EFF | 70 | .3271 | 2.6736 | 1.374894E0 | .6215267 | .314 | .287 | -.752 | .566 |
| sValid N (listwise) | 70 | | | | | | | | |

## Descriptives

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| NM | 70 | -.2407 | .6389 | .089262 | .1356007 | 1.073 | .287 | 4.076 | .566 |
| STD | 70 | .0000 | 1.5790 | .303726 | .3465404 | 1.456 | .287 | 1.781 | .566 |
| UTD | 70 | .0000 | .3046 | .026235 | .0625375 | 3.461 | .287 | 12.091 | .566 |
| SIZE | 70 | 6.4484 | 7.7347 | 6.997375E0 | .3581823 | .300 | .287 | -1.009 | .566 |
| EFF | 70 | .3271 | 2.6736 | 1.374894E0 | .6215267 | .314 | .287 | -.752 | .566 |
| Valid N (listwise) | 70 | | | | | | | | |



KASHMIR RESEARCH

## Correlations

**Correlations**

| | | NM | STD | LTD | SIZE | EFF |
|---|---|---|---|---|---|---|
| NM | Pearson Correlation | 1 | -.540** | -.248* | .134 | -.508** |
| | Sig. (2-tailed) | | .000 | .039 | .267 | .000 |
| | N | 70 | 70 | 70 | 70 | 70 |
| STD | Pearson Correlation | -.540** | 1 | .133 | -.299* | .468** |
| | Sig. (2-tailed) | .000 | | .273 | .012 | .000 |
| | N | 70 | 70 | 70 | 70 | 70 |
| LTD | Pearson Correlation | -.248* | .133 | 1 | -.216 | .086 |
| | Sig. (2-tailed) | .039 | .273 | | .073 | .479 |
| | N | 70 | 70 | 70 | 70 | 70 |
| SIZE | Pearson Correlation | .134 | -.299* | -.216 | 1 | -.004 |
| | Sig. (2-tailed) | .267 | .012 | .073 | | .974 |
| | N | 70 | 70 | 70 | 70 | 70 |
| EFF | Pearson Correlation | -.508** | .468** | .086 | -.004 | 1 |
| | Sig. (2-tailed) | .000 | .000 | .479 | .974 | |
| | N | 70 | 70 | 70 | 70 | 70 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

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