

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**COLLEGE OF ART AND SOCIAL SCIENCES**

**SCHOOL OF BUSINESS, KNUST**

Assessing the Relationship Between Capital Structure and Profitability Of Industries  
Represented On Ghana Stock Exchange Market. Mohammed Munlata, MBA Finance

(Hons)

August, 2015

**ASSESSING THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND  
PROFITABILITY OF INDUSTRIES REPRESENTED ON GHANA STOCK  
EXCHANGE MARKET**

By

Mohammed Muntala, MBA Finance (Hons)

Thesis Submitted to College of Art and Social Science, Kwame Nkrumah University of  
Science and Technology in partial fulfillment of the requirements for the degree of

**MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION)**

School of Business, KNUST

College of Art and Social Sciences

August, 2015

© 2015 College of Art and Social Sciences



## **ABSTRACT**

This study investigates the relationship between capital structure and profitability of industries represented on Ghana Stock Exchange Market covering nine -year period (2005-2013). The study adopted the panel data methodology to examine the effects of capital structure on the profitability of twenty selected firms (financial and non-financial). The linear regression technique was used as an estimation technique for the study. Financial statements of the selected firms were also used to extract data for the study. Ratios such as return on assets, return on equity and net profit margin were used as indicators for determining the profitability of the firm. Short-term debt, long-term debt and total debt ratios were also used as indicators for leverage of the firms.

The result identified that 64% of the total capital of listed firms in Ghana is made up of debts. Of this, 54% constitutes short-term debts while 10% is made up of long-term debts. This indicates that the listed Ghanaian firms are highly leveraged firms and also shows the importance of short-term debts over long- term debts in financing firms (financial and non- financial). The correlation and regression results showed insignificantly negative association between leverage and profitability. This implies that, during the period under study, leverage did not bring about profitability. However, the financial market needs to be improved to reduce cost of short-term debts or encourage internal financing since short- term debt was positively related to profitability. Furthermore, size of listed firms in Ghana revealed mixed result for the study period. On the other hand, growth, indicate a significant positive relationship with profitability.

## **ACKNOWLEDGEMENTS**

I wish to thank Dr Daniel Domeher, my supervisor, for effectively supervising this work and making productive suggestions towards its completion. Allah will bless you. I am equally grateful to Mr. Krobea Asante, credit manager – Sekyere Rural Bank Ltd., Mr. Richard Tawiah, Miss. Sheilla Opoku, Miss. Yasmin Mohammed Bashir, Mr. Mohammed Abdul Basir, Mr. Uric Asare, and Mr. Samuel Azuug for their countless but valuable contribution to this work.

I express my gratitude to the entire business school lectures who took me through this MBA programme successful especially Prof. Joseph Magnus Frimpong from whom I developed interest in the chosen topic, “Capital Structure!”

## **DEDICATION**

This work is dedicated to my sweet mother Aliatu Mohammed Saani, my sister Rukayyatu Mohammed Saluhu and to all my brothers especially Mohammed Mahmud.

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>ii</b>
<b>ABSTRACT.....</b>	<b>iii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iv</b>
<b>DEDICATION.....</b>	<b>v</b>
<b>LIST OF TABLES .....</b>	<b>x</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.0Background to the Study.....	1
1.1 Problem Statement .....	3
1.2 Objective of the Study; .....	6
1.2.1 General Objective .....	6
1.2.2 Specific Objectives .....	6
1.3 Research Questions .....	7
1.4 Significance of the Study .....	7
1.5. Brief methodology .....	7
1.6 Scope of the Study .....	8
1.7 Limitations of the Study.....	8
1.8 Organization of the Study .....	9
<b>CHAPTER TWO .....</b>	<b>11</b>

<b>LITRATURE REVIEW .....</b>	<b>11</b>
2.0 Introduction.....	11
2.1 The Theoretical Framework.....	11
2.1.1 The Concept of Capital Structure .....	11
2.1.2 Theories of Capital Structure .....	13
2.2 Empirical literature review .....	20
2.2.1 Positive Connection between Leverage and firm Profitability;.....	20
2.2.2 An Inverse Connection between Leverage and Firm Profitability; .....	21
2.3 Empirical Literatures on Variables Used.....	22
2.3.1 Dependent Variables;.....	23
2.3.2 Independent Variables (Capital Structure Ratios); .....	24
2.3.3 Control Variables;.....	25
<b>CHAPTER THREE .....</b>	<b>27</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>27</b>
3.0 Introduction.....	27
3.1 Research Design.....	27
3.1.1 Quantitative Research Methods .....	27
3.2 Source of Data.....	28
3.2.1 Variables Used.....	28
3.3 Population of the Study.....	29



3.4 Sample and Sampling Techniques .....	29
3.5 Data Collection Instruments .....	31
3.5.1 Model estimation and specification .....	32
3.6 Data Analysis .....	33
<b>CHAPTER FOUR.....</b>	<b>34</b>
<b>RESULTS AND DISCUSSION .....</b>	<b>34</b>
4.0 Introduction.....	34
4.1 The Descriptive Statistics for Financial Sector.....	34
4.2 The Correlation Matrix in Financial Sector .....	36
4.3 The Regression Results.....	39
4.4 The Descriptive Statistics under Non- financial Sector .....	46
4.5 The Correlation Matrix for Non- Financial Sector .....	49
4.6 The Regression Results.....	51
4.7 Industrial Dependence on Debt;.....	56
4.8. The descriptive Statistics for the Entire Listed Firms.....	58
4.9 The correlation matrix of the entire listed firms .....	60
4.10 The Regression Results.....	62
<b>CHAPTER FIVE .....</b>	<b>72</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>72</b>
5.1 Introduction.....	72

5.2 Summary .....	72
5.3 Conclusion .....	76
5.4 Recommendations.....	77
5.4.1 Area for further study.....	78
<b>REFERENCES.....</b>	<b>79</b>
<b>APPENDICES.....</b>	<b>84</b>
APPENDIX A.....	84
APPENDIX B.....	87

## LIST OF TABLES

<b>Tables</b>	<b>Pages</b>
Table 4.1.1 Descriptive Statistics of All the Variables .....	35
Table 4.2.1 Correlation Matrix of the Variables .....	37
Table 4.3.1 Regression Model Results (Dependent Variable: Return On Asset) .....	40
Table 4.3.2 Regression Model Results (Dependent Variables: Return On Equity) .....	42
Table 4.3.3 Regression Model Results (Dependent Variable: Net Interest Margin) .....	44
Table 4.4.1 Descriptive Statics of the Dependent and Independent Variables .....	47
Table 4.5.1 Correlation Matrix of the Variables .....	49
Table 4.6.1 Regression Model Results (Dependent Variable: Return On Asset) .....	51
Table 4.6.2 Regression Model Results (Dependent Variable: Return On Equity) .....	53
Table 4.6.3 Regression Model Results (Dependent Variable: Net Profit Margin) .....	55
Table 4.7 Average Profitability and Leverage of Sub-Sectors under Non-Financial Sectors .....	56
Table 4.8.1 Descriptive Statistics of the Dependent and Independent Variables .....	58
Table 4.9.1 Correlation Matrix of the Variables .....	60
Table 4.10.1 Regression Model Results (Dependent Variable: Return On Asset) .....	63
Table 4.10.2 Regression Model Result (Dependent Variable: Return On Equity) .....	65
Table 4.10.3 Regression Model Results (Dependent Variable: Net Profit Margin) .....	68

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Background to the Study**

The pioneer works on capital structure were published by professors Miller and Modigliani (1958; 1963) and ever since all attempt by scholars to clarify the position have added to the confusion. Academic literatures and research works over decades continue on whether a firm can have optimum capital structure which produces the best of returns and the lowers of cost literature on capital structure has expanded. Knowledge in Capital structure theory and practice is therefore fundamental in Finance Theory and practice, especially, for the purpose of maximizing stakeholders' wealth and besides impact on the firms going concern (Abor, 2005). Managers today are bothered with the financing mix that will reduce cost in order to satisfy equity holders. In Finance literature this is aptly known as the optimal capital structure or simply, the financing decision.

Watson and Head (2007) described firms as the mix of debt including preferred stock and equity; well known as firms' long term financing mix. Gatsi and Akoto (2010) explained that the optimum leverage ratio is a strategic decision. Literature on the relation between capital structure and profitability of firms is abundant. This is because equity and debt are the basic generic sources of funding firms operation. In explaining profit maximization, Gowthorpe (2003) described profit as the firm's excess income over it expenditure for the same period.

Generally, funds from debt and equity are used by firm's primary to acquire non-current assets and also to support working capital (Amidu, 2007). In short firms need finance from whatever sources to either expand production capacity or to finance working capital. Therefore, the optimum level of leverage should balance the maximization of returns as against the minimization of cost.

To understand how Ghanaian listed firms finance their activities to get the best operating result, it is crucial to understand the effect of the relative size of debt and equity operating profit. Gowthorpe (2003) said firms that finance it operation with short-term debt increases shareholders returns significantly. Likewise, firms reduces residual income when long-term debt is chosen as financing option since they are expensive than short-term debt.

Leverage ratios deal with short-term debt, long-term debt and the total debt. These ratios show the extent to which the firm is financed by debt (Van Horne and Wachowicz, 2008). To Abore (2005) and Gowthorpe (2003), gross profit margin, net profit margin and return on capital employed are the basic profitability ratios useful in measuring firm's profits.

In Ghana several research works on leverage and profitability of financial and non-financial firms have been carried out extensively. Examples of such studies are; Abor (2005) studied the profitability of listed firms in Ghana; Gill, et al., (2011) foreign scholars extended the work of Abor's (2005) by looking into the capital structure and profitability of the American service and manufacturing firms; Abor and Biekpe (2005)

they studied the relevant factors of capital structure of Ghanaian firms; Amidu (2007); Gatsi and Akoto (2010) study concentrated on listed banks in Ghana.

It is clear from the studies of these scholars' that many of them either focused on financial sector or the non- financial sector with very few scholars concentrating on both sectors. Meanwhile, different industries exhibit different capital structure and therefore it is necessary to study the effect of capital structure on the profitability across industrial sectors represented by listed firms on the Ghana Stock Exchange.

### **1.1 Problem Statement**

In Ghana a number of studies on capital structure and profitability were conducted on listed firms on GSE. Examples of such studies are; Abor (2008) studied the determinants of capital structure of Ghanaian firms covering a period of six years (1998-2003); In the same study Abor extended his work by carrying a survey on non listed firms from June to September, 2005; Turkson (2011), specifically studied the relationship between leverage and profitability of listed non-financial firms covering the period 2002-2008; Addae, et al.(2013), carried their study on similar topic but concentrating on listed firms cover a period of five years ending 2009; Akoto and Awunyo-Vitor (2014) also carried a study on the subject covering the period 2000-2009 on what determines the debt policy of listed manufacturing firms on GSE. This study seeks to extend these works for the period 2005-2013 to reflect the current economic conditions of the economy as previous works reflect the economic condition during the period the studies were undertaken.

Previous research works indicates that different industries have dissimilar capital structures. This difference in capital structure is significantly explained by specific

industry factors. This connection is confirmed by (Ross, Westerfield & Jordan 2001). In the like manner, industrial profit shows differences as a result of different specific industrial factors. However it has been observed in a study of Addae, et al (2013) that industry inherent factors have influence on debt and equity proportion. A local confirmation on industrial effect is also found in the work of Abor, (2007a)

Akoto et al. (2014) was motivated to carry their study on what determines the debt policy of listed manufacturing firms on GSE and their motivation was that the sector plays a central role creating jobs and economic growth is an undeniable fact. However current evidence in Ghana tend to weaken this idea since as a middle-income-economy firms have graduated from typical traditional manufacturing methods to more technological methods which render more Ghanaian employees jobless. In their work all the seven listed manufacturing firms were considered but in this work the researcher has sampled few from the entire listed once since the researcher is considering the entire listed firms on the GSE, hence the outcome will be relevant and applicable to every sector of the economy.

In a like-manner, many scholarly works on similar topics have difficulties in accessing data on financial sector, thus placing limitations on their findings making it difficult to generalize their result on the entire listed firms. Study like Mustafa and Hayajineb (2007), conducted on Jordanian listed did not include such data for the period of their study 2001-2006; Tarus, et al. (2014) in the study they conducted on firm listed on Nairobi Security Exchange (NSE) for the period of seven year (2006-2012) excludes commercial banks due to non availability of current assets and current liabilities on their

financial statements, and again for this reason the outcome cannot be generalized for all firms on the NSE.

More so, capital structure studies in Ghana have turned to concentrates on the financial sector at the expense of other equally important sectors. This is because some industries have dominated in Ghanaian economy relative to the others industries. For example, because Ghana import more than it export scholarly works have not been given attention on industries such as; manufacturing, oil and mining, Agro-processing, among other similar non financial sectors.

However, a lot of scholarly explanations have been offered to explain the phenomenon relating to the difference in capital structure of one firm from another and between industries. Firm listed on the GSE are from several industrial sectors, they are affected by their specific industrial factors in the choice of capital structure. This research work expanded the period of previous scholarly works from 2005 to 2013 to serve as an extension of those earlier works. Notwithstanding that the researcher sampled from the various sectors of the entire listed firms on both financial and non financial with available data without neglecting a firm from the six (6) sectors according to categorization of GSE 2014 edition which makes the findings, results and outcome and generalization relevant and applicable to the entire listed firms. This is a new dimension in the work of previous scholars and therefore improves it relevant.



## **1.2 Objective of the Study;**

### **1.2.1 General Objective**

The study seeks to assess and validate various capital structure theories and their relationship with profitability of industries represented on the Ghana Stock Exchange.

### **1.2.2 Specific Objectives**

The study specifically examined the relationships between capital structure and profitability across industry represented on the Ghana Stock Exchange from 2005 to 2013.

The following specific objectives guided the study:

- To investigate the proportion of total debt financing in the total capital structure of selected listed firms in Ghana.
- To explore the relationship between profitability variants such as return on asset, return on equity and net profit margin and short-term debt of listed firms in Ghana.
- To investigate how return on asset, return on equity and net profit margin relate to long- term debt.
- To investigate how return on asset, return on equity and net profit margin relate to total debt.
- To examine how return on asset, return on equity and net profit margin relates to the control variables - firm size and sales growth.

### **1.3 Research Questions**

- What is the proportion of total debt in the total capital structure of selected listed firms in Ghana?
- How do the profitability variants such as return on asset, return on equity and net profit margin relate to short-term debt of listed firms in Ghana?
- What is the effect of long-term debt on profitability variants?
- How do return on asset, return on equity and net profit margin relate to total debt?
- How do return on asset, return on equity and net profit margin relate to control variables?

### **1.4 Significance of the Study**

The study outcome could educate and guide company management in choosing the mix of debt and equity that reduces cost and maximizes owner's wealth.

The result may again guide finance managers to give priority to issues on profitability and leverage in order to sustain in business.

The study could create awareness to corporate managers to balance tax shield from greater debt against possible large cost of financial distress arising from under investment.

### **1.5. Brief methodology**

A quantitative research method was adopted for the study since it eases the definition of the research problem mathematically in terms of its relevant variables.

However, data is collected in panel form which involves pooling observations on a cross-section of units over 9 years. Findings and analysis was presented in three form, that is; descriptive statistics, correlation matrix and regression model.

### **1.6 Scope of the Study**

The study was conducted across industry represented on the Ghana Stock Exchange (GSE) from 2005 to 2013. This work considered all firms listed on the GSE. The researcher adopted the GSEs categorizations of firms in to industries and hence the results, findings were linked to the industries.

There were no inputs and views from management to determine financial performance therefore the study was strictly based on secondary data. Twenty firms were selected due to non availability of data on five firms covering the study period fifteen (15) firms were finally covered for the study. Financial data of these fifteen (15) listed firms on GES as sampled was used to compute profitability and leverage ratios for the study

Firms not listed in 2005 but listed in 2013 were not considered for the study. In addition, for unavailability of statement of financial position of some sampled firms for 2014, the researcher did not consider 2014 in the study.

### **1.7 Limitations of the Study**

Unfortunately, during the study period Ghana used two different currencies therefore firms published their statements in two different currencies. The researcher converted cedi ( ) to Ghana cedi (GHS) and hence the result might have been affected by this conversions.

Lack of uniformity and consistencies in the classifications of items on the financial statement made it difficult for the researcher to identify long- term debt from short- term debt. This may introduce some biases in the outcome of this study.

Further to the reported limitations, the researcher could not obtain all the needed data (financial statements) from the data base of some listed non-financial firms. This was due to incomplete records of the data in the data base of the selected firms. As a result, for three (3) firms, the researcher could not analyze the data due to unavailability of data for 2004, 2005 and 2011 to 2013, whilst three (2) firms have their data unavailable for 2012 and 2013 though their data for 2004 and 2005 are available for that reasons no analyses was made for 2004 and 2014 for these selected firms.

Finally, grouping of debt as long-term and short-term was not done by some of the firms when their financial statement was prepared which was considered as an issue by this researcher. To achieve consistencies in the classifications of items on the financial statement, the researcher reclassified items of debt in to short- term and long- term liabilities biased on his experience and understanding of International Financial Reporting Standards, International Accounting Standards and Generally Accepted Accounting Practices.

## **1.8 Organization of the Study**

This research work has been organized and presented in an orderly manner such that it will be easy for the user to read and follow. It has been organized in five chapters;

Chapter one contained the introductory aspect of the research work, followed by the study background, the problem statement, the objective of the study, the research

questions, the significant of the study, the brief methodology, the scope of the study, the limitation of the study, and organization of the chapters.

Chapter Two is on the review of related literatures, that is, the views, ideas and opinions of other scholarly works on the topic already written whiles chapter three covers the methodology; research design, source of data, population of the study, sample and sampling techniques, data collection instruments, data analysis, and organizational profile.

Chapter four concentrate on the findings and analyses of the study whereas the fifth chapter includes the conclusions drawn on the entire findings and recommendations to improve capital structure decisions in Ghana.

## **CHAPTER TWO**

### **LITRATURE REVIEW**

#### **2.0 Introduction**

The purpose of the study was to examine, evaluate and validate the applicability of the effect of the various capital structure theories on profitability of industries represented on the Ghana Stock Exchange. The chapter deals with relevant related literatures on the research topic. It contains the theoretical framework and empirical basis of the study. The theoretical frameworks are propositions of some early authors, educators, and researchers. Study outcome and the recommendations of some earlier studies are dealt with under the empirical review.

#### **2.1 The Theoretical Framework**

This part of the study dwells much on the concept of capital structure and theories of capital structure propounded by some early authors, educators, and researchers.

##### **2.1.1 The Concept of Capital Structure**

Abor (2008) described capital structure as “the specific mix of debt and equity a firm uses to finance its operations”. He further explains this definition by using finance concepts such as asymmetric information, benefits from tax shield, bankruptcy, and agency costs. This explanation captures what is known as the pecking order framework, and the static trade-off choice.

Gajurel (2005) posit that for investment projects, a firm can choose different sources of finance that is a mix of debt/equity ratios. He added that the fundamental problem to solve is to balance maximum returns with minimum cost.

Ross et al (2009, pp. 432) responded by recommending that the optimum capital structure should be at the point where firms value is highest.

Capital structure referrers to the proportion of equity and debt. According to Ajao and Ema, (2012) considered debt to include debentures and residual capital to include paid up capital and all other undistributed profit. Hence, to them firms can used debt and residual capital as their financing options.

Watson and Head (2007) agreed with Pandey (2004) when he suggest that proportion of residual capital and debt as firms financing option has impact on risk and returns of it shareholders. This is because leverage result in the enhancement of investment for both debt holders and residual income holders.

From the various definitions, capital structure can be seen as the proportion of fund a firm need externally (public) and what proportion of fund a need from internally (shareholders) to finance it project to maximize profit since firms may not be able to use only equity financing because the objective is to maximize the value of the firm. On the contrary, debt-capital provides lenders a certain fixed return and first claim in case of liquidation.

### **2.1.2 Theories of Capital Structure**

Pecking Order theory and Static Trade-off theory are the two critical theories emphasis on capital structure concept and have been well documented in finance literature. The most influential financial article written by Professor Franco Modigliani and Merton Miller (MM) in 1958 was the modern capital structure ever published and was given the theoretical foundation for further enquiry into the capital structure theory. The works of leading economists and researchers have given new dimensions to capital structure theories notably corporate taxes (Modigliani & Miller, 1963, bankruptcy costs (Titman, 1984), agency costs (Jensen & Meckling, 1976; Jensen, 1986), personal taxes (Miller, 1977) and information asymmetry (Ross, 1977; Myers & Majluf, 1984; Myers, 1984).

#### **Modigliani and Miller Hypothesis (MM I and II)**

##### **M and M Hypothesis I**

Under M&M preposition I, the value of leverage firm and unleveraged firms are the same. Hence the value of the firm is independent of its capital structure (Ross et al 2009). This theory holds only if tax advantage is equal to the risk associated with the use of debt. This is termed in finance theory as the debt irrelevant theory.

One important underlining assumption of MM I to sustain their debt irrelevant theory is that the individual shareholders and the firm have the same risk characteristics and can therefore borrowed at the same rate. Hence shareholders can easily replicate capital structure of their firm. This means that whether the firm borrows or the individual shareholders borrow it effect on shareholders wealth is the same.

##### **M and M Hypothesis II**



M&M II indicates that firms cost of capital with leverage remains unchanged. In other words, M and M proposition II therefore led us to understand that a firm's cost of owners' capital moves in the same direction at the leverage ratios. It states further that the cost of equity depends on three things: the required rate of return on the firm's assets,  $R_A$ ; the firm's cost of debt,  $R_D$ ; and the firm's debt equity ratio,  $D/E$ . the cost of capital will rather cause important changes to firm's debts and equity. However, with a critical analysis of the M&M Propositions I and II holding its underlying assumptions, the value of the firm and the firm's overall cost of capital are independent of its capital structure.

### **The Pecking Order Theory**

According to this theory the driving forces in the choice of finance are; dilution of controls and ownership, sharing of risk, cost of capital and dilution of returns. Based on these factors a firm designs a financing preference order starting with internal source of funding and ending with the external source of funding. (Fama & French, 2002; Gajurel, 2005). They added that equity should only be used under hard conditions. Two critical theories underpin the pecking order theory.

### ***Signaling theory***

Another of the influential assumptions of MM is the information flow between investor and managers. In a situation of unequal information will create an asymmetric environment while equal information availability between manager and investors also create symmetric environment which has important implications on firm's capital structure.

According to Ross (1977) there is an information imbalance between managers and debt holders regarding the appropriation of returns. To external stakeholders, especially debt

holders the signal from high debt is a good omen and that the basic difference between equity and debt is that the latter is returnable in the future failure of which has dire consequences for both the firm and its managers. Even though shareholders' expectations are that dividends be maintained, managers exercise their discretions which may be at variance with shareholders' expectations. (Gajurel, 2005). Based on the argument above, Leland and Pyle (1977) proposed that the size of debt equity ratio communicates the firm's closeness to bankruptcy to investors therefore management action is always geared toward acceptable ratios.

### ***Market Timing Theory***

The theory expects managers to critically observe the financial market and capitalize on the information gap created as a result of market inefficiencies. (Gatsi & Akoto, 2010). According to Barclay and Smith (2005), it is always preferred that firms finance their investment with debt unless their equity shares are overvalued and that additional equity issued will not dilute ownership claims and control significantly.

Myers and Majluf (1984) also indicate that managers have the best information on the outcome of a project and therefore they should ensure equity shareholders get the best from their investment.

### **The Static Trade-Off Theory;**

According to Ross et al. (2008), the marginal benefit in the investment of one Ghana cedi (GHS) debt finance must be equal to the marginal cost of using that one Ghana cedi debt finance. This is otherwise referred to as the static trade-off theory because it assumes that the firm remains unchanged with its assets and operations but changes when

it considers proportion of debt-equity. It is driven by three competing forces: taxes, bankruptcy cost (financial distress), and the agency conflict.

Gajurel, (2005) agreed with Jensen & Meckling, (1976 cited in Melinda & Cristina, n.d.), linked the optimal capital structure with net tax advantage from the used of debt finance. This means that a firm can set leverage ratio limit and gradually move towards it in future as a means of mitigating its tax liabilities.

**Taxes;** the basic theory assumes that there is no tax what so ever and for that matter the decision point matches the full marginal benefit of using debt should be match with the cost of using debt. Gajurel, (2005) states added an attempt to straighten the theory taxation was introduce into their analysis. Capital structure of the firm can also be explained in terms of the tax benefits associated with the use of debt. Green, Murinde and Suppakitjarak (2002) observe that with the introduction of tax coupled with the advantage of debt finance company may fiance their operation with 100% debt in order to realize the related advantages. Miller (1977) and Myers (2001) introduce tax into the basic MM proposition and concluded that increase in debt rather increases the cost of debt. The consequence is that firms reduce the tax benefit from debt. Therefore the optimum capital structure is linked to the net tax effect of debt finance.

***Bankruptcy Costs:***

Titman, (1984) referred this as the consequences of firms not able to settled it both short-term and long- term obligation as and when they are due for payment. These consequences are direct and indirect (Ross et al, 2008)

Abor (2008) attribute bankruptcy costs as the consequences that will occurred when there is higher possibility that the firm is not financially sound to pay its debt. The possible consequences are legal and administrative charges in the default process. Haugen and Senbet (1978) argue that under efficient market bankruptcy costs must not exist since prices sensitive information are available hence price are determine by the invisible hands of demand and supply. Examples firms' inability to making profits when stakeholders withdraw their investment from the firms is the indirect consequences of bankruptcy.

Titman (1984) is of the view that stakeholders have major influence in the firm's solvency. If they speculate the firm insolvency in the near future they may not be willing to do business with such a firm because the possibility that it may not be able to meet its contractual obligations is high (Abor, 2008). The prominent works of Kim, Heshmati and Aoun (2006), are regarded as pillars in the bankruptcy cost aspect of capital structure theory. They argued that, when a firm raises excessive debt to finance its operations, there is a high probability that it may default. It implies that, as the proportion of debt in the capital structure is increased relative to equity, the probability of insolvency also increases if prudent steps are not taken to repay the loans taken by the firm.

***Agency Costs:***

A firm increases it stakeholders when it uses debt to finance operation. Agency costs ensure that firm alien the interest of the various stakeholders for their mutual benefits. Example Abor (2008) identified a typical agency problem as managers may invest in projects with high NPV to ensure going concern of the firm whiles equity interest holders expect immediate fold up. Harris and Raviv (1990) support these positions.

The shareholders (owners) want their wealth to be maximized by the management (their agent), the management want to secure their jobs and live better life, customer (principal) pay for their goods and firms (agent) must supply for the customer goods. As these relationships continue it create agency problem which necessitates the incurrent of agency cost (Jensen and Meckling, 1976). In effect agency costs are cost for harmonizing the interest of the various stake holders.

On the other hand due to moral hazard there is a disagreement between the providers of debt (creditors) and shareholders. According to Chittenden et al, (1996) agency theory suggests that insufficient information and moral hazard will be higher for smaller firms. As a result of selfish interest debt providers charged higher interest rate to compensate probable risk that could imamate from default. Apparently debt providers are of the view that equity holders benefit more from the residual income arisen from the firm's cash flow. Likewise, lenders are concerned about the risk profile of projects into which their funds are invested because naturally they are risk averse. This is because borrowers, in this case firms may after receiving debt from lenders invest in high risk projects, thus indulging in diversion of funds.

In a high yielding investment, residual interest holders benefit more than debt holders. On the other hand, when companies are not performing well debt holders will be worse off. In addition Chittenden et al, (1996) believes that moral hazard is the cause of agency cost and it has great influence on small firms. Jensen and Meckling (1976) are of the view that debt allows firms to invest in otherwise risky project. The implication is that in good times equity holders will be better off and in the worse period debt holders will worse off,

and still worse off in the period where firms default in its debt obligations equity holders will be covered under the legal principle of limited liability.

It is important to resolve the agency cost of debt through the entire structure of financial claim. Barnea et al. (1980) also demonstrate that both features of the corporate debt serve as identical purposes in solving agency problems. He argue that the agency problems associated with information asymmetry, managerial (stockholder) risk incentives and forgone growth opportunities can be resolved by means of the maturity structure and call provision of the debt.

***Information Asymmetry Costs:***

Klein, O'Brien and Peters (2002), refers information asymmetry as the idea that management of firm have better knowledge than outside investors who are not directly involve in day to day running of the business in terms of firms' assets value and investment prospect. According to Gatsi & Akoto (2010), asymmetry information prevents firm's claims to be correctly price by market participants, which end up providing a positive role for corporate financing decisions. Abor (2008), argues that the unequal access to information in the market leads to price differentials in the pricing of similar securities.

The issues of information asymmetry and moral hazards can be resolved by financial institutions when they adopt the principle of monitoring and enforcing restrictive loan covenants. These covenants restrict borrowers from engaging in risky activities other than those agreed upon in loan agreements.

## **2.2 Empirical literature review**

The empirical viewpoint of this study concentrated much on the positive and negative connection of debt and profitability.

### **2.2.1 Positive Connection between Leverage and firm Profitability;**

Study on the connections between leverage and firms profitability were carried on by many scholars both local and international. It should be noted that most of the studies conducted revealed that an increase in debt financing will rise firms profit and vice versa.

Ajao and Ema (2012), argument based on capital structure and its consequence on firms' profit can be explained by financing preference order well known as pecking order theory. Likewise, Abore (2008) basically grouped all the capital structure theories in to two main categories to serve as a guide for corporate managers in their choice of financing mix. These theories are the pecking order theory and the static trade-off theory.

Abor (2005) and Graham (2004) have linked Pecking order theory and the static trade off theory by emphasizes that the preference order established according to the pecking order and the net tax benefit guide established in accordance with the trade off theory should yield similar capital structure.

The joy of leverage and Leibenstein's (1966), study allocative efficiency versus x-efficiency and argue that debt financing will bring about managing efficiency which will avoid the consequences of firms' bankruptcy. Scholarly works like; Roden and Lewellen (1995); Nerlove (1968); Peterson and Rajan (1994); Iwarere and Akinyele (2010); Taub (1975), reported that debt are important factor in determining firm's profitability since they move in the same direction. Iwarere and Akinyele (2010) concluded that the pecking

order theory therefore supports results that capital structure of quoted in Nigeria was significantly influenced by the return on asset (profitability).

### **2.2.2 An Inverse Connection between Leverage and Firm Profitability;**

Regardless of the observed evidence on debt and profitability, many scholarly study reported different views. Earlier work of Amidu's (2007); Abor's (2005); Graham's (2004); Cassar and Holmes' (2003); Rajan and Zingales (1995); Fama and French's (1998) and Graham (2004) and Gatsi and Akoto's (2010) concluded in their study that an increase in leverage will reduced the benefit from the use of debt and vice versa. Gatsi and Akoto's (2010) stressed that this relationship come about as a result of poor management of deposit liability as well as an equally poor credit administration.

Titman and Wessels (1988) argued that *cutrise paribus*, firms that finance it operation through the internal source of fund or maintain lower proportion of debt have the potential to increase it returns and vice versa.

Base on the inverse association between debt and profitability Fama and French (1998) are of the view that debt using firms cannot fully benefit from tax shield. They concluded that firms with higher debt have the potential of generating agency problems among firm's stakeholders. The above empirical evidences, seems to be consistent with the pecking order theory.

It is clear from the literature review that the effect of debt on profitability is not conclusive however in another development some scholarly work revealed mixed result. Evident is found in Abor (2005) study. He reported that an increased short- term debt will significantly increase firm's profitability and vice versa, but an increase long- term will



reduce the firms benefit. However, he found out that benefit arisen from total debt exceeds the cost associated to it hence the positive correlations. And this revealed mix result

### **2.3 Empirical Literatures on Variables Used**

Three main set of variables, namely, dependent, independent and control were used in the study. Patel (2009) defines the variables as “dependent variables are variables whose change the researcher wishes to explain” whiles “independent variable helps to explain the change in the dependent variable”. Variables that you control (do not change) in an experiment are the control variables. The control variables are all other variables other than the experimental variables.

Notwithstanding the variable used by this researcher on capital structure and profitability such as return on assets, returns on equity, net profit margin, long- term debt, short- term debt, total debt, size and growth, different variables of capital structure and profitability can also be used. Opong-Boakye, et al., (2013) study on similar topic tangible assets, profitability, size of firm, growth opportunities, and business risk and non-debt tax were the variable considered.

Finally there were two control variables, namely, the firm size and the sales growth were considered to ensure non bias in the regression model used in the study. The control variables are introduced in the study to ensure non bias in the regression result but to police the researcher attention to improve the quality of work. Researcher like Abor (2005: 2008), Turkson (2011) Boamah et al. (2010) Opong- Boakye (2013) included

growth and size in their study to indicate that they are important variable in determining firm capital structure.

### **2.3.1 Dependent Variables;**

#### ***Return on asset (ROA)***

Return on assets (ROA) in order words, return on investment (ROI) stated by Van Horne and Wachowicz (2008). He explains return on assets (ROA) as a marginal return on a cedi of an investment in assets. It is mathematically defined bellow;

$$\frac{\text{pre tax profit}}{\text{Total assets}} \times 100$$

#### ***Return on equity (ROE)***

Return on equity (ROE) as the residual income after all the rewards of external financing and other commitment have been paid. It is mathematically defines as;

$$\frac{\text{Profit After Int. \& Tax}}{\text{Total Equity}} \times 100$$

Wachowicz (2008) added that return on equity (ROE) as benefit available to equity holders for investing in the company.

#### ***Net profit margin (NPM)***

Gowthorpe (2003) explained net profit or interest margin (NPM/NIM) as the income that is generated from a cedi of sales when all operating expenses have been catered for. This is mathematically defined as;

$$\frac{\text{Pre tax profit}}{\text{Sales}} \times 100$$

### **2.3.2 Independent Variables (Capital Structure Ratios);**

#### ***The Ratio of Short- term Debt to Total Capital***

Van Home and Wachowicz, (2008), explained that short-term debt is evaluated as the degree to which firms use debt to finance it operation relative to total capital. They concluded that debts with maturities up to one year are considered the short- term debt. Relationships between this type of debt and profitability established by much scholarly work have been reviewed in this literature review. However the mathematical definition is shown bellow;

$$\frac{\text{Short – term debt}}{\text{Total capital}} \times 100$$

#### ***The Ratio of Long- term Debt to Total Capital***

According to Van Home and Wachowicz, (2008), relationship between obligations with maturities beyond one year is long- term debt. It can mathematically be presented as;

$$\frac{\text{Long – term debt}}{\text{Total capital}} \times 100$$

It is evidence from the scholarly work that the connection between profitability and long-term debt is inconclusive. Alternatively, this researcher hopes that this inconclusive position would be confirmed further by this study.

#### ***The Ratio of Total Debt to Total Capital***

This ratio expresses a relationship between total obligations irrespective of it maturities to the total capital. It is mathematically defined as;

$$\frac{\text{Long Term + Long Term Ddebt}}{\text{Total capital}} \times 100$$

It is also evident that the relationship between these ratios is inconclusive. Whiles and Graham (2004) study revealed an inverse association firms total debt and profitability. Abor (2005) result did not correspond to Graham's (2004) result.

### **2.3.3 Control Variables;**

#### ***The Firm Size***

Available literature's explains size as the log of total assets of a firm. However A, argued that the bigger the size of the firm the higher it has capacity to take more debt and vice versa. This implies that the variance of earnings of large firms has inverse relationship with the firm size (Titman and Wessels, 1988; Wald, 1999).

#### ***Sales Growth***

Marsh (1982) concurs with Hall et al., (2004) explained that growth has the potential to push the firm into debt financing. Nonetheless, "growing forms place a greater demand on the internally generated funds of the firm" (Abor, 2008). However, it is clear that pecking order theory can explained the association between sales growth and capital structure. Michaelas et al. (1999) emphasized that firms financing its operations with short- term debt other than long- term debt have the potential to reduce the consequences of agency relationship.

Growth is mathematically defined as;

$$\frac{\text{Current Yr. Sales}(2008) - \text{previous Yr. Sales}(2007)}{\text{previous Yr Sales}(2007)} \times 100\%$$

Finally, it is obvious that apart from the Modigliani and Miller's (1963) proposition I which states that the value of leverage firm and unleveraged firms are the same, proposition II therefore led us to understand that the cost of owners' capital moves in the same direction at leverage ratios. It can therefore be deduce from the available literature

that there are two main capital structure theories, namely; the pecking order theory and the static trade-off theory, which were used in this current study. It also clear from this review that the observed relationships between profitability ratios and leverage ratios are unsettled and therefore a source of active academic debate.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

The purpose of the study was to examine, evaluate and validate the applicability of the effect of the various capital structure theories on profitability of industries represented on the Ghana Stock Exchange. This chapter is devoted to the description of the methodology used for the study. It describes specific issues such as the research design, the population, the sample and sampling technique, instruments for the study as well as the data analysis plan.

#### **3.1 Research Design**

An explanatory study methodology was adopted for the study because data was gathered in a panel form and analyzed quantitatively. This methodology involves the pooling of observations on cross-section of units over a period of nine years with available data that lend its self to panel data form. Abor (2005) explains that “Panel Data involves the pooling of observations on cross-section of units over several time periods”. However, regression and correlation matrix were specifically used to find out the relationship between variables (dependent and independent).

##### **3.1.1 Quantitative Research Methods**

Cooper and Schindler (2001) explained quantitative research methodology as the conversion of observed facts into numbers and subjecting these numbers into mathematical models and techniques.

This methodology will make it possible for the researcher's to conduct his works in a specified set time. In addition, this method helps the researcher to clearly define variables to be used for the study. It also helps the researcher to focus keenly on the research objective to avoid bias in the study.

### **3.2 Source of Data**

This study was purely based on data published by the sampled firms in their financial statement as contained in the GSE fact book 2014 edition. Since the study was based on secondary data management views on financial performance was not considered.

#### **3.2.1 Variables Used**

Three main set of variables, namely, dependent, independent and control were used in the study. Patel (2009) defines the variables as “dependent variables are variables whose change the researcher wishes to explain” whiles “independent variable helps to explain the change in the dependent variable”. Variables that you control (do not change) in an experiment are the control variables. The control variables are all other variables other than the experimental variables.

The dependent variables used were return on asset (ROA), return on equity (ROE) and net profit margin (NPM) while independent variables used were ratio of short- term debt to total capital, the ratio of long-term debt to total capital, the ratio of total debt to total capital were also used as the three independent variable. Finally firm size and sales growth used as control variables.

### **3.3 Population of the Study**

The entire observation for the study was made up of the full list of firms listed on the Ghana stock exchange. Thus, as at 2014 thirty-five (35) companies were listed within the period (See Appendix A)

In the study of Addae, et al. (2013) on similar topic, Ghanaian firms listed were divided into 12 industry categories as shown on appendix A of their study. However, the researcher adopted grouping made by GSE for 2013 to ensure that no company listed within the period will be left out so as to ensure nonbiased interpretations and generalization of the result. On the data file of GSE for 2014 thirty-five (35) were listed and categorized into six (6) sectors. Besides, firms from each category were considered in this work.

### **3.4 Sample and Sampling Techniques**

The stratified sampling technique was used to select twenty (20) members out of the entire population of thirty-five (35) because the population was categorized into six (6) significant strata based on a number of attributes or functions they perform. In effect the population was categorized and each category is considered as a stratum.

Categorizing the population into a series of relevant strata means that the sample is representative, as it ensures that each of the categories is represented properly within the sample. More so, this technique is appropriate since the researcher is aware of, and can easily distinguish a member within the sampling frame.

Addae, et al. (2013) states that only financial and manufacturing sector of their categories out of the twelve categories they made were haven more firms which to extent poses



restrictions to their interpretations hence their conclusion. Likewise many scholarly works on similar topics have difficulties in accessing data on financial sector placing limitations on their findings, making it difficult to generalize their result.

The researcher in this study reduced the Banking and financial sector from eleven (11) to five (5) because the sector is well regulated by the various Acts (Banking Act 2004 and 2007) and rigorous prudential requirements the sector is primarily in financial intermediation, debt figure was higher on their financial statement; and also because the sector has a lot of scholarly works on the same topic. Ultimately, the researcher adopted this approach to avoid possible biases on interpretations and generalization of this work.

This means that the sample was drawn from the entire population thus including banking and financial sector and the other remaining categories (non-financial). Nonetheless, Ghana is an import-led economy so there is the need to prioritize the study of capital structure of non-financial companies since their existence and sustenance will improve the GDP.

The researcher seeks to find out, with the inclusion of companies from all various categories of firms listed and widening the period of research over the periods of some scholarly works to find out if the outcome of this study will correspond with the outcome of the study conducted by scholars' earlier on mentioned in chapter one of this work. Among the outcomes of some of scholars reviewed by this researcher are:

Tarus, at al. (2014); Profitability and liquidity correlation coefficients indicated an inverse association with capital structure where as firm size indicated no correlation; on correlation results - the findings indicate that profitability was negatively correlated to

capital structure ( $r = -0.337$ ). In addition, firm size was positively associated with capital structure ( $r = 0.036$ ).

Turkson (2011); non-financial firms finance their operations with 55% debt out of their total capital which 45% constitute either equity finance or other internal sources. This suggests that the companies are greatly financed by leverage, with a larger percentage of the total debts being short-term debts; whereas ROA is insignificantly and negatively correlated with STD and FS, it is negative and significantly correlated to LTD and TD. However, ROA is positive and has positive correlation with SG.

Abor (2008), among the outcomes of his results for all the firms he sampled financing with short-term debt takes higher proportion out of the firms total debt. His regression outcome revealed the following as an important in influencing the capital structure decisions of Ghanaian firms; the age of the firm, size of the firm, assets structure, profitability, risk as well as managerial ownership.

### **3.5 Data Collection Instruments**

Data is collected in panel form. The method involves pooling observations on a cross-section of units over a numerous time periods. The researcher adopted this as the instrument mainly used to compute data for capital structure and profitability.

The use of panel data reduces data interdependence and interrelationship there by allowing data to be tested at the various degrees of freedom. Similarly, the technique reduces differences that exist in data and their structure, and this eases the stress related to their manipulation (Baltagi, 1995).

### 3.5.1 Model estimation and specification

Regression equations on panel data is quoted as  $Y_{it} = \beta_0 + \beta_1 X_{it} + U_{it}$ , where;

$U_{it}$  = to mean random term on the model;  $U_i$  represent the firms specific effect while  $V_{it}$  also means the random term of the model.

However, the researcher has run a regression by using the independent and control variables as against the dependent variables. Three (3) regression equations were set for each dependent variable i.e., ROA, ROE and NPM. This is to conclude that the researcher has adopted regression equation of Abore (2005) when he carried his study on the similar study. These equations are shown below;

$$Y_{it} = \beta_0 + \beta_1 STD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + \alpha_{it} \quad \text{Regression 1}$$

$$Y_{it} = \beta_0 + \beta_1 LTD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + \alpha_{it} \quad \text{Regression 2}$$

$$Y_{it} = \beta_0 + \beta_1 TD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + \alpha_{it} \quad \text{Regression 3}$$

**Where;**

$Y_{it}$  = firm  $i$  return on assets, return on equity, and net profit margin in time  $t$ ;  $STD$  = firm  $i$  short- term debt in time  $t$ ;  $LTD$  = firm  $i$  long- term debt in time  $t$ ;  $TD$  = firm  $i$  total debt in time  $t$ ;  $FS$  = firm  $i$  size in time  $t$ ;  $SG$  = firm  $i$  sales growth in time  $t$ ;

$\alpha_{it}$  = Error term introduced;

$\beta_0$  = Intercept of variables and

$\beta_1$ ,  $\beta_2$  and  $\beta_3$  represent the coefficient of slope.

**Note:** any factor that might have effect on the dependent variables is the error term.

### **3.6 Data Analysis**

The statements of financial positions of fifteen (15) sampled firms were first collected on the fact book 2014 edition of GSE for nine years. An excel spread sheet was designed by the researcher to take care of computation of ratios for the three; dependent variables, independent variables and two control variable covering the study period. Ratio computed was set to two decimal places on the designed excel spread sheet.

Ratio's computed for all the firms covering the study period were coded as; ROA to represent the return on assets; ROE to represent the equity; NPM to represent the net profit margin; STD, LTD and TD to represent short –term debt to total capital, long–term debt to total capital, and total debt to total capital respectively. (Trace from Appendix B)

Finally, the ratios were transposed and then fed into software called “SPSS1” (Version 16). Output of the regression were used for analysis and presented findings in three (3) sections. First, descriptive statistics for the variables considered. Reports on the correlation matrix would be followed and finally, the results of the regression for leverage and profitability.

#### **ORGANIZATIONAL PROFILE**

This study was conducted on industries represented on GSE for the period 2005 to 2013. Sampled firms under each industry covered for the study are detailed on Appendix A. The firms detail profile can be assessed on their site since the researcher could not consider it in this chapter.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.0 Introduction**

The objective of the study was to examine, evaluate and validate the applicability of the effect of the various capital structure theories on profitability of industries represented on the Ghana Stock Exchange. In this study firms listed on GSE were categorized into two sectors these are financial and non- financial. Non- financial was then categorized into five sub- sectors (industries) as detailed in the Appendix A. For this reasons discussions are considered for each sector and finally consolidated as the entire listed firms to examine the effect of leverage on profitability. However, this chapter presents the discussion of study and divided the findings into three main sections. Table 4.1.1 contain the statistical descriptions of the entire variables used followed by Table 4.2.1 discusses the correlation matrix of the independent and dependent variables of this study while outcome of linear regression are discussed in Table 4.3.1

#### **4.1 The Descriptive Statistics for Financial Sector**

In this sector firms seven (7) firms were sampled from eleven (11) listed firms but for non availability of data of some firms as discussed in chapter three earlier only five (5) firms were covered in this sector for the study as they can be traced on Appendix A. Statistical results of all the variables are shown on the Table 4.1.1 and followed up with detailed discussions.

**Table 4.1.1 Descriptive Statistics of All the Variables**

Variables	Mean	Std.		Minimum	Observation
		Deviation	Maximum		
Return on Assets (ROA)	4.0740	2.0345	9.14	.98	45
Return on Equity (ROE)	26.5718	24.9401	171.75	3.71	45
Net Profit Margin NPM	58.8847	22.1718	100.44	15.71	42
Short-Term Debt to Total Capital (STD to TC)	58.4240	73.1558	366.65	.00	45
Long-Term Debt to Total Capital (LTD to TC)	13.5524	22.2428	78.57	.00	45
Total-Debt to Total Capital (TD to TC)	71.9762	68.6389	366.65	4.32	45
Firm Size (FS)	2.5389	30.8994	9.8400	1.00	45
Sales Growth (SG)	37.5344	30.1614	112.51	.00	45

Source: GSE annual report from 2005 to 2013

From table 4.1.1, the mean value for the ROA, ROE and NPM of the selected firms under financial sector of this study were 4.07%, 26.57% and 58.88% respectively. It implies that profitability of the firms' measured by ROA, ROE, and NPM shows a mean value of 4.07%, 26.57% and 58.88% respectively. The ratio of STD to TC, LTD to TC and TD to TC recorded a mean of 55.42%, 13.55% and 71.97% respectively. This implies that for the firms total capital debt financing contributed 72% out of which 28% was generated

from either equity finance or other internal sources. The above position suggests that the Ghanaian banks are greatly financed by leverage, with a larger percentage of the total debts being short-term debts.

Banking Act mandatory required banks to hold majority ownership of the firm and allow smaller proportion to be held by outsiders that account for 72% debt financing to prevent capital dilution. However long-term debt takes approximately 14% prevent interest rate swapping in the financial sector. Many financial institutions especially banks have mismatched assets and liabilities and since banks grants soft loans facilities period of which does not exceeds two years, they equally would not want to go in for debt ( borrowing) that are long-term in nature and that pays a fixed interest as the market interest is not stable. There is risk associated with banks financing their operations with higher LTD and pay fixed interest whiles given out soft loans that received variable interest. Higher cost associated to LTD and other market factors could also contributes for smaller percent LTD financing in the financial sector. Firm size and sales growth registered an average value of 2.54% and 37.53% respectively. The mean sales growth of 38% indicates reasonable growth because per stock market statistics, financial institutions records higher growth as compared to non-financial sector. The researcher set the P value of the entire variable to 5% significant level.

#### **4.2 The Correlation Matrix in Financial Sector**

In order to examine the strength and relationships among the variables to meet the requirement of the objective of this study, dependent variables (ROA, ROE, and NPM) were regressed with independent variables (STD, LTD, and TD) as well as the control variables (FS and SG) and present on Table 4.2.1 and followed up with discussion;

**Table 4.2.1 Correlation Matrix of the Variables**

	ROA	ROE	NPM	STD to TC	LTD to TC	TD to TC	Firm Size	Sales Growth
ROA	1							
ROE	.433 (.001)*	1						
NPM	.813 (.000)*	.384 (.005)*	1					
STD to TC	.093 (.272)	.018 (.453)	.062 (.343)	1				
LTD to TC	-.206 (.087)	.145 (.170)	-.270 (.037)*	-.349 (.009)*	1			
TD to TC	.036 (.417)	.066 (.333)	-.021 (.445)	.953 (.000)*	-.048 (.378)	1		
Firm Size	.029 (.426)	.307 (.020)*	-.045 (.073)	.103 (.250)	.384 (.005)*	.234 (.061)	1	
Sales Growth	.025 (.435)	.178 (.121)	.049 (.374)	.098 (.261)	-.032 (.417)	.094 (.269)	-.251 (.048)*	1

P value is significant at 5%

Source; GSE annual report from 2005 to 2013

From Table 4.2.1, correlations between dependent, independent and control variables can easily be established;

It depict on Table 4.2.1 when ROA was positive and insignificantly correlate with STD, TD, FS and SG, it was negative and statistically insignificantly correlate with LTD. This correlation showed that firm size is attached to sales growth meaning that when sales



grow profit grow to finance firms' assets and with high debt (STD and TD) thus leverage, return on assets also grow but profit generated from sales will be reduced by the interest paid on debt though there is a tax shield on debt this makes increased in debt on return on assets to be insignificant. Argument can be posed that tax shield would cover the interest on cost of debt but in reality cost of debt does not constitute only interest paid on debt. According to Fama and French (1998), tax benefits cannot fully settled the cost arisen from debt financing it will rather generate agency problems among stakeholder group. However, both STD and TD are insignificant and positively correlate with ROE means that all things being equal, an increase in STD and TD will result increase in ROA and vice versa. On LTD to be insignificant and negatively correlated to ROA means that as debt increases return on asset reduces but the decrease is not significant and vice versa. This because in the banking there is understanding among banks as they are all in the same industry they may lend to each other at a reduced interest rate which may not affect ROA significantly.

Return on equity (ROE) was statistically insignificant and positively relate with short-term debt, long-term debt, total debt as well as sales growth for the period in which the study was conducted as it could refer on the Table 4.2.1 This correlation supporting the result of Gatsi and Akoto's (2010) They further revealed positive and statistically significant correlation between ROE and sales growth. Undoubtedly, the direct relationship between the residual income and debt proved firm's ability to use it assets to earn income higher than the average cost of debt financing (Hutchinson, 1995). ROE is rather insignificant but positively related to SG. This close findings on ROE and SG with the findings of Gatsi and Akoto's (2010) could mean that with tax shield the interest paid

on debt has wiped off higher proportion of profit generated as a result of sales growth that could have been added to what will be given to equity holders consequently adding insignificant to equity. FS was positive and significantly correlates with ROE for the period of study.

It can be observed from the Table 4.2 when there was insignificant and positive correlation between STD, SG and NIM. This means that as deposits increase in the banking sector of Ghana, profitability measured by net interest margin increase. On another development LTD was significant and has negative correlation with NIM which to some extent turned to confirmed Gatsi and Akoto's (2010) finding on NIM. They further found this relationship not astonishing. More so, there exist negative and insignificant correlations between NIM and TD. It means that as debt raises in Ghanaian banking, net interest margin or profitability decrease as well. It basically suggests that all the deposits mobilized by Ghanaian banks are not being well managed posing many challenges that proliferated in the sector and preventing them from achieving their full potentials. Firm size was insignificant and negatively correlates with NIM indicating it relevant with profitability of banks for the study period. This finding closely confirms Gatsi and Akoto's (2010).

#### **4.3 The Regression Results**

Regression analysis was carried out by using the various panel data regressions that were run to investigate the relationship between capital structure ratios and profitability ratios. This implied that measures of profitability were regressed against measures of debt and the control variables FS and SG. Linea regression results are presented in Tables 4.3.1, 4.3.2 and 4.3.3. Meanwhile significant level is set at 50%.

**Table 4.3.1 Regression Model Results (Dependent Variable: Return On Asset)**

Variable	Profitability: ROA					
	1	Sig.	2	Sig.	3	Sig
	Coef.		Coef.		Coef.	
Firm Size	.036	.828	.173	.336	.107	.555
Sales Growth	.060	.718	.079	.946	.089	.595
Constant	3.646	.000	3.860	.000	3.735	.000
STD to TC	.092	.572				
LTD to TC			-.266	.132		
TD to TC					-.124	.484
R- squared		.014		.063		.019
Wald chi <sup>2</sup> (3)		.119		.251		.136

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn..1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

Table 4.3.1, STD was statistically insignificant and positively relate with returns on asset (profitability) as it depicts P value of 0.6. ROA increased during the period when short-term debt was used more to finance operation but the increment was not significant. This will depend on the level utilization of the debt within the period.

On the other hand, long- term debt and total- debt were found to be insignificant with the probability values of 0.1 and 0.5 respectively and negatively relate to return on asset meaning that increase in amount of long- term debt and total- debt result in decrease in

the return on assets. The under developed nature of Ghana capital market leading to non availability of long- term loan facility might account for the inverse relation.

However, control variables firm size and sales growth with a probability value of 0.8, 0.3, 0.5 and 0.7, 0.9, 0.6 respectively, were statistically insignificant and positively related to return on asset for all measure of debts. It indicates that increase in both firm size and sales growth increase return on assets but with debt component, their increase to the return on asset is not significant. Firm size is attached to sales growth, all things being equal, an increase in either or both of them have increase profit for the period. Undoubtedly, tax shield may not be enough to cover all interest payment and as result portion of the profit generate by sales will wipe some and small would be left for financing the bank's assets.

The result of regress 1, 2, and 3 of ROA with STD, LTD and TD indicates; STD was found to be insignificant and positively relate to returns on asset (profitability); long-term debt and total- debt were found to be insignificant respectively and has negatively relate with return on asset for the banks sampled during the period of study. However, size and growth were statistically insignificant and positively related to return on assets for all measures of debt.

**Table 4.3.2 Regression Model Results (Dependent Variables: Return On Equity)**

Variable	Profitability: ROE					
	Coef.	1 Sig.	Coef.	Sig.	Coef.	Sig.
Firm Size	.473	.002	.483	.005	.448	.005
Sales Growth	.283	.058	.0274	.065	.271	.068
Constant	9.408	.210	8.561	.243	7.933	.287
STD to TC	-.086	.536				
LTD to TC			-.056	.725		
TD to TC					-.032	.831
R- squared		.234		.229		.227
R		.484		.478		.477

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn...1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013.

From Table 4.3.2, STD, LTD and TD with probability of 0.50, 0.70, and 0.80 respectively were statistically insignificant and negatively relates to ROE indicating an inverse relationship. The inverse relationship between ROE and leverage (STD, LTD and TD) implies that profitability fall as firms finance their operations more with debt. Though, theories shows that short- term debt are cheap for that reason it increase profitability this study revel that existence of short- term can insignificantly reduce profit that will be added to equity holders. It is important for corporate managers to note that whether debt would have a significant effect on returns on equity depends to the extent

on what the debt is used for the period. When deposits are taken but are not competently utilized means returns on equity will be nil or little since a significant proportion of banks' capital come from debt. This relationship closely confirms the result of Gatse and Akoto (2010) when they conducted a study on the profitability leverage of banks in Ghana from 1997 to 2006. Moreover, insignificance of debt (being it short-term, long-term, and total) in influencing returns on equity is as a result of increasing costs in doing the business of banking in emerging economies including Ghana. The resultant effect of this is that it reduces profits which could have gone to shareholders, all else equal. These costs include increasing employee salaries, investments in information technology, acquisition and maintenance of chauffeured premises, and finally increasing cost of raising deposits.

The outcome of the three equations on firm size was found to be significant and positively relates to ROE exhibiting a probability of 0.002, 0.005 and 0.005 respectively illustrating that bank size increase profit which increase return on equity. In this study there exist a positive relationship between sales growth and return on equity which in line with theoretical prediction that as sales grow in the banking sector profitability also increase as well. This confirming the earlier studies position on firm's growth, for example Kyereboah-Coleman (2004) and Abor (2005). They said, "it is intuitive that any attempt by policy makers to increase economic growth should be welcome by banks".

**Table 4.3.3 Regression Model Results (Dependent Variable: Net Interest Margin)**

Variable	Profitability: NIM					
	1	Sig.	2	Sig.	3	Sig.
	Coef.		Coef.		Coef.	
Firm Size	-.027	.874	.127	.475	.100	.536
Sales Growth	.062	.708	.080	.616	.084	.584
Constant	3.646	.000	58.232	.000	60.298	.000
STD to TC	.068	.960				
LTD to TC			-.314	.074		
TD to TC					-.384	.018
R- squared		.010		.085		.140
R		.098		.291		.370

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn.:1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 201.

Short- term debt to total capital with profitability value of 0.960 was insignificantly and positively related to net interest margin. This indicates that, increasing the amount of short term debt will result in increase in the return of asset of the firms but the increment will not be significant. This will depend on the level utilization of the debt within the period.

Long- term debt shows P value of 0.074 while total debt shows P values of 0.074 and 0.018. It implied an insignificant and negative relationship of NIM with LTD but

significant and negatively related with TD. This means that debt did not bring about profitability for that reason internal financing needs to be considered. Also, this outcome closely confirms Gatse and Akoto (2010) findings on NIM with debt Ghanaian banks.

Financial statement of the sampled firms covered in the study indicates that financial institutions in Ghana did not finance their operations with more long- term debt. This could mean that Ghanaian bond market is very young making the accessibility of long-term debt impossible for Ghanaian financial firms.

The negative and insignificant association of debts with NIM also means that financial firms covered in this study were profitable because opted for small proportion of debt financing in their total capital. According to Titman and Wessels (1988) opting for higher proportion internal source of fund like equity increases firms income. Amidu (2007) added, profitable banks will rather go for relatively lower debt if their accumulated reserves can finance their new project, thought they have better chance and access for more debt. As perking order theory suggest that profitable firm's rather choose internal source of finance over external financing.

Table 4.3.3 depicts mixed result on the relationships of control variables; size with profitability ratio (NIM). Firm size was negatively relate to NIM implying that to some extent firm size have the potential to reduce profit when large firm diversified and fail to manage their operation and vice versa base on the state of the market. This mixed result confirmed earlier study like Rajan and Zingales (1995). They argued that firm size has inverse connection with optimum capital structure is inverse meaning that due to their sheer size large firms are somehow immune to failure. Sales growth with probabilities of



0.06, 0.08, and 0.08 respectively for all measure of debt indicate positive relationship with NIM for the period understudied. There is continuous debate on the relationship between profitability and growth opportunities by scholars. Oppong-Boakye et al (2013) while some scholars find a negative correlation, others like Kester (1986) study did not support an inverse relationship between growth opportunities and gearing. Meanwhile, outcome of this study revealed significant negative association between growth and gearing with p-value of 0.000

The co-efficient of determination brings out the degree to which changes in the independent variables results in changes in the dependent variables. Statistically the greater the co-efficient of determination ( $R^2$ ) value is to 100%, the more powerful the regression equation. From Tables 4.3.1, 4.3.2 and 4.3.3, ROA, AOE and NIM highlighted the aggregate co-efficient of determination ( $R^2$ ) values of 10%, 69% and 24% respectively. This indicates that the independent variables (leverage ratios) explain 10%, 69%, and 24% of the variations in the profitability (ROA, ROE and NPM) respectively, of banks in Ghana within the period under study. The negative and insignificant relationship established in this study between NIM and LTD is not astonishing as a matter of fact Ghanaian financial firms used very low levels of long-term debt in their operations during the study period.

#### **4.4 The Descriptive Statistics under Non- financial Sector**

As highlighted in the in Appendix A and stated in the methodology, the non- financial sector has five industry categories constituting twenty- four firms out of which ten firms were selected for the study. Findings and generalization can be confidently applied on the entire non- financial firms listed GSE for the study period, 2005 to 2013. Summary of

descriptive Summary of descriptive statistics of dependent and independent variables is presented on table 4.4.1

**Table 4.4.1 Descriptive Statics of the Dependent and Independent Variables**

Variables	Mean	Std. Deviation	Minimum	Maximum	Observation
Return on Assets (ROA)	11.7371	14.7315	-25.22	78.2	90
Return on Equity (ROE)	10.9134	31.6939	-142.16	152.45	90
Net Profit Margin NPM	8.1789	15.5554	-42.75	103.65	90
Short- Term Debt to Total Capital (STD to TC)	51.8337	104.3619	.00	447.56	90
Long- Term Debt to Total Capital (LTD to TC)	8.5833	11.8290	.00	47.20	90
Total- Debt to Total Capital (TD to TC)	60.3052	107.9416	.00	475.51	90
Firm Size (FS)	81.7222	125.7943	1.00	798.00	90
Sales Growth (SG)	21.7641	34.5486	-100.00	182.31	90

Source; GSE annual report from 2005 to 2013

The mean value for the ROA, ROE and NPM of the selected firms under non- financial category of this study were 11.74%, 10.91% and 8.18% respectively as shown on Table 4.6. This indicates that profitability ratio ROA, ROE, and NPM registered a mean of 11.74%, 10.91% and 8.18% respectively.

The ratio of STD to TC, LTD to TC and TD to TC recorded a mean of 51.83%, 8.58% and 60.31% respectively. This means that 60% of firms (financial sector) operations were financed by debts, while 40% were from either equity finance or other internal sources. The above position suggests that non- financial firms are greatly financed by leverage, with a larger percentage of the total debts being short-term debts.

Out of total debt only 9% approximately were finance by LTD which may perhaps result from Ghanaian long term debt market not well developed (Abor, 2005). He emphasized firms in Ghana preferred STD than LTD. Firms financial statement for the study period confirms their reliance on STD over LTD.

Firm size and sales growth registered an average value of 82% and 22% respectively. The mean sales growth of 22% indicates reasonable growth that could possibility contributed to a growth in residual income of 10.18%. While, recorded a mean of 82% indicating economic of scale that has some level of advantage in terms credit assessment from banks and other business investors. The researcher set the P value of the entire variable to 5% significant level.

Empirical study shows that firms that opted for internal funding are profitable and they turned to avoid gearing (debt). This will give them credibility and better access to debt when the need arise. This study confirms the positions of these scholars as ratios of ROA,

ROE and NPM could interpret. Nonetheless 60% total debt financing has to some extent affected profitability for the period.

#### 4.5 The Correlation Matrix for Non- Financial Sector

In order to examine the strength and relationships among the variables to answer the requirement of the objective of this study, dependent variables (ROA, ROE, and NPM) were regressed with independent variables (STD, LTD, and TD) as well as the control variables (FS and SG). Correlation matrix of the sampled firms is discussed in Table 4.5.1

**Table 4.5.1 Correlation Matrix of the Variables**

	ROA	ROE	NPM	STD to TC	LTD to TC	TD to TC	Firm Size	Sales Growth
ROA	1							
ROE	.596 (.001)*	1						
NPM	.645 (.000)*	.675 (.000)*	1					
STD to TC	.041 (.349)	-.020 (.426)	-.104 (.165)	1				
LTD to TC	-.180 (.045)*	-.377 (.000)*	-.240 (.011)*	.254 (.008)*	1			
TD to TC	.021 (.423)	-.060 (.286)	-.127 (.117)	.994 (.000)*	.355 (.000)*	1		
Firm Size	.128 (.114)	.248 (.009)*	-.045 (.349)	.228 (.015)*	-.047 (.330)	.215 (.021)*	1	
Sales Growth	.160 (.066)	.334 (.001)*	.019 (.430)	.244 (.010)*	-.006 (.478)	.235 (.013)*	.203 (.027)*	1

Correlation is significant at the 50%

Source; GSE annual report from 2005 to 2013

From Table 4.5.1, how profitability ratios (ROA, ROE and NPM,) correlates with leverage ratios (STD, LTD and, TD) as well as sales growth (SG) and firm size (FS) been control variables, is highlighted.

Short- term debt and total debt to total capital have positively correlation with ROA for the period of study supporting Abor (2005). Long- term debt was negative and significantly correlate with ROA to mean that an increase in LTD all things being equal will reduce returns from assets. This correlation confirms earlier work of Abor (2005) on LTD. FS and SG was found to be insignificant and positively correlates with ROA. This support the result of Opong- Boakye et al (2013), their results suggest that “the bigger the firm in terms of sales or turnover, the more debt it will use” and vice versa.

The next profitability ratio ROE was insignificant and negatively related to STD, LTD, TD providing support to Gatsi and Akoto’s (2010) on ROE and NIM in banking sector. More so, this result is consistent with the result of Turkson (2011) when he conducted study on non- financial firms listed on GES. This study concluded that FS and SG are both positive and significantly correlated with ROE. The correlations on SG support the result of Gatsi and Akoto’s (2010) while correlation on FS confirms Kurshev and Strebulaev (2005) study.

The correlation table revealed further that LTD, STD, TD, and FS were all insignificant and negatively correlates with net profit margin but LTD was negative and has significant correlations with NPM. This correlations results on LTD support the result of scholarly works like; Miller (1997), Fama and French (1998) and Graham (2004) which stated that there is an inverse relationship between LTD and profitability. SG was positive and has

insignificant correlations with NPM this means that SG has increased profit insignificantly. Significant level was set at 0.050.

#### 4.6 The Regression Results

Regression analysis was carried out by using the various panel data regressions that were run to explore the extent of relationship between capital structure ratios and profitability ratios. This implied that measures of profitability were regressed against measures of debt and the control variables FS and SG. Linea regression results are presented in Tables 4.6.1, 4.6.2 and 4.6.3. Meanwhile significant level is set at 50%.

**Table 4.6.1 Regression Model Results (Dependent Variable: Return On Asset)**

Variable	Profitability: ROA					
	1	Sig.	2	Sig.	3	Sig
	Coef.		Coef.		Coef.	
Firm Size	.103	.353	.091	.394	.106	.336
Sales Growth	.143	.199	.140	.191	.147	.187
Constant	9.547	.000	11.426	.000	9.659	.000
STD to TC	-.017	.880				
LTD to TC			-.175	.098		
TD to TC					-.037	.741
R- squared		.035		.065		.036
R		.188		.256		.191

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn.:1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

As highlighted on Table 4.6.1, STD has co- sufficient of -0.017 and a P value of 0.9 showing negative and statistically insignificant relationship with ROA for the study period of non- financial firms listed on GSE. To some extent confirms the findings of Cassar and Holmes (2003), and Hall et al. (2004). They argued that there was negative association between profitability and both long-term debt and short-term debt ratios.

The result also revealed that LTD was negative and insignificantly relate with ROA. It comes out with co-efficient of -0.175 and P value of 0.1 implying that long term debt has no significant impact on the profitability of listed non- financial firms in Ghana during the study period. Thus, the larger the debt, the lower is the profitability. This concurs with the findings of Gatsi and Akoto, (2010), Fama and French (1998).

Total debt to total capital is statistically insignificant and negatively has relationship with ROA since it depicted a co- efficient of -0.037 and a P value of 0.7. Amidu's (2007) and Abor's (2005) study on capital structure of listed firms in Ghana reported a negative relationship between leverage and corporate profitability. This closely confirms the result of this study.

As shown on Table 4.8, size and growth are all positive and statistically has relationship with ROA as their co- efficient are showing positive and P values also shows figure more than 0.050. Meanwhile, significant is set at 0.050 in this study. Opong- Boakye et al (2013) said "Lenders are more willing to lend to larger companies because they are perceived to have lower risk levels".

**Table 4.6.2 Regression Model Results (Dependent Variable: Return On Equity)**

Variable	Profitability: ROE					
	1	Sig.	2	Sig.	3	Sig
	Coef.		Coef.		Coef.	
Firm Size	.216	.038	.171	.072	.221	.032
Sales Growth	.326	.002	.297	.002	.333	.002
Constant	2.296	.578	9.905	.025	7.933	.287
STD to TC	-.149	.154				
LTD to TC			-.367	.000		
TD to TC					-.186	.072
R- squared		.165		.280		.177
R		.407		.529		.421

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn... 1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

As highlighted on Table 4.6.2, STD has co- sufficient of -0.149 and a P value of 0.2 showing negative and statistically insignificant relationship with ROE for the study period. To some extent confirms the findings of Cassar and Holmes (2003), and Hall et al. (2004). They argued that there was a negative association between profitability and both long-term debt and short-term debt ratios. Nonetheless, some earlier like; Petersen and Rajan (1994), Abor (2005), Ooi (1999) Taub (1975), and Champion (1999), stressed a positive relationship between profitability and short term debt and Gatsi and Akoto



(2010), stress an insignificant association between profitability and short term debt respectively. This shows that relationship between short- term debt and profitability is found by the researcher to be inconclusive.

LTD came out with a co- efficient of -0.367 indicating negative relationship with ROE and was significant as the P value was 0.000. It mean that cost associate with LTD exceeds it benefit for that reason over dependent it has decreased profit.

Total debt to total capital is statistically insignificant and negatively relate with ROE since it depicted a co- efficient of -0.186 and a P value of 0.07 confirming the result of Boamah et al. (2010) when they study the capital structure and profitability of manufacturing firms listed on GSE.

For all measure of debt, sales growth has positive relationship with ROE with a P value of 0.02 for the debt shows significant relationship. All things beige quall, an increase in sale will result in significant increased in ROE even if debts increase. This is to attest to the theory of M&M that with the present of tax capital structure matters. On the other hand for a measure of LTD size is positive with it P value of 0.7 shows the insignificant relationship with ROE whereas with the measure of both STD and LTD their P values show an insignificant relationship with ROE. Al-Sakran (2001) and Hovakimian *et al* (2004) found a positive relationship between firm size and capital structure.

**Table 4.6.3 Regression Model Results (Dependent Variable: Net Profit Margin)**

Variable	Profitability: NPM					
	1	Sig.	2	Sig.	3	Sig.
	Coef.		Coef.		Coef.	
Firm Size	-.027	.810	-.059	.582	-.024	.830
Sales Growth	.051	.649	.029	.784	.055	.621
Constant	8.801	.000	11.230	.000	9.049	.000
STD to TC	-.110	.330				
LTD to TC			-.243	.023		
TD to TC					-.135	.231
R- squared		.014		.061		.019
R		.116		.248		.138

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn...1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

Short-term debt with profitability of 0.33 was negative and insignificantly related to net profit margin statistically. The results also show that long- term debt with probability of 0.02 was significantly and negatively related to NPM as can be read on the Table 4.10. This to some extent confirms the findings of Hall et al. (2004), and Cassar and Holmes (2003). They reported negative association between profitability with long-term debt and short-term debt ratios. This will also means that leverage did not bring about profitability and hence firms need to consider internal financing. It is closely confirms the findings of Turkson (2011) when he was finding the relationship between STD and LTD with NPM.

The relationship between total debts to capital with probability value of 0.2 and NPM was found to be insignificant and negative. Firm size was insignificantly and negatively related to NPM for all measures of debts. Sales growth however was significantly and positively related to NPM for all measures of debts. This result support the findings of Turkson (2011) when he studied the relationship between capital structures of non-financial firms listed on GSE.

An interesting relationship established on profitability ratios and leverage ratios which cannot be over look under non-financial sector. Detail of which presented on Table 4.7.

**Table 4.7 Average Profitability and Leverage of Sub-Sectors under Non-Financial Sectors**

Industries/Sub- Sectors Under Non- Financial Sector	Net Profit Margin (NPM)	Short- Term Debt(STD)	Long-Term Debt(LTD)	Total Debt(TD)
Manufacturing & Trading	27%	19%	11%	30%
Mining & Oil	-0.27%	21%	13%	35%
FMCGs & Pharmaceuticals	14%	50%	21%	60%
Agric & Agro Processing	10%	175%	9%	184%
ICT & Paper Product	7%	7%	9%	16%

*Source; Author's computation of GSE annual report from 2004 to 2013*

#### **4.7 Industrial Dependence on Debt;**

Table 4.11 depicts that of all the industries; FMCGs & Pharmaceuticals; Agric & Agro processing finance their assets with debt more than either equity finance or other internal sources. The above position suggests that Ghanaian firms are greatly financed by

leverage, with a larger percentage of the total debts being short-term debts. It could also be seen that out of TD 60% and 184% for FMCGs & Pharmaceuticals; Agric & Agro Processing respectively, only 21% and 9% respectively are long-term financing. As emphasized by Abor (2005) Ghanaian capital market is young to issue more of LTD as concur with this study.

On another hand; Manufacturing & Trading; Mining & Oil; ICT & Paper Product for the period of study have their TD ratio to be 30%, 35% and 16% respectively to mean that they did not highly finance their assets with leverage. A firm with relatively low debt should be able to make profit as confirm by Titman and Wessels (1988) support this by saying that high profitable firms will go for lower debt since they can realize funds from internal source. This preposition of scholars was found operative under these sectors for the study period as the sectors were able to make profit though the profit was insignificant. Reasons assigned to this insignificant could result from the fact that cost of operations gone up, high inflations, and foreign exchange losses as a result consistent fluctuations in Ghana Cedi as against US dollars under the period reviewed which to some extent has hit the mining industry to insignificant net lost.

The co-efficient of determination brings out the degree to which changes in the independent variables results in changes in the dependent variables. Statistically the greater the co-efficient of determination ( $R^2$ ) value is to 100%, the more powerful the regression equation. From Tables 4.6.1, 4.6.2 and 4.6.3, ROA, ROE, and NPM highlighted the aggregate co-efficient of determination ( $R^2$ ) values of 14%, 62% and 9.4% respectively. This indicates that the independent variables (leverage ratios) explain 14 %, 62% and 9.4% of the variations in the profitability (ROA, ROE and NPM) respectively of

non- financial firms in Ghana within the period under studied. The negative and significant relationship established, may be due to the fact that firms under non- financial sector paid high interest rate for the loan during the year under study.

#### 4.8. The descriptive Statistics for the Entire Listed Firms

It was explained in chapter three and highlighted in the Appendix A that twenty firms were sampled from the entire listed firms on GSE from 2005 to 2013. Lack of available data of some firms made the researcher to cover fifteen firms out of twenty sampled firms. Eight (8) variables; three dependent, three independent and two control variables were considered for the study. Regression output used for analysis is highlighted on Table 4.8.1.

**Table 4.8.1 Descriptive Statistics of the Dependent and Independent Variables**

Variables	Mean	Std. Deviation	Maximum	Minimum	Observation
Return on Assets (ROA)	9.1827	12.5982	78.27	-25.22	135
Return on Equity (ROE)	16.1329	30.4352	171.75	-142.16	135
Net Profit Margin NPM	25.0808	29.9624	103.65	-42.75	135
Short-Term Debt to Total Capital (STD to TC)	54.0304	94.8729	447.56	.00	135
Long-Term Debt to Total Capital (LTD to TC)	10.2397	16.1529	78.57	.00	135
Total-Debt to Total Capital (TD to TC)	64.0059	96.6214	475.51	.00	135
Firm Size (FS)	13.9112	220.2205	984.00	1.00	135
Sales Growth (SG)	26.8643	34.0374	182.31	-100.00	135

Source: GSE annual report from 2005 to 2013

From table 4.8.1, the mean value for the ROA, ROE and NPM of the selected firms under financial sector of this study were 9.18%, 16.13% and 25.08% in that order indicating how profitability were measured for the period.

The ratio of STD to TC, LTD to TC and TD to TC recorded a mean of 54.03%, 10.24% and 64.01% respectively. This concludes that 64% operations of firms under financial sector were financed by debts, while 36% of their total capital constitutes equity funding or other internal sources. The above position suggests that the Ghanaian banks are greatly financed by leverage, with a larger percentage of the total debts being short-term debts.

Out of total debt only 10.24% were financed by LTD which could be ascribed to the underdeveloped market of LTD. Firms statement of financial positions during the study period shows that some of the sampled firms did not financed their operation with LTD.

Firm size and sales growth registered an average value of 13.91% and 26.86% respectively. The mean sales growth of 26% indicates reasonable growth that could possibility contributed to a growth in residual income of 25%. The researcher set the P value of the entire variable to 5% significant level.

However, Myers and Majuluf (1984), agrees with Abor and Biekpe, (2005) when they concluded that profitable firms are more credible than less or non profitable ones when it come debt accessibility, usually the stay away from debt. The findings clearly provide support for the pecking order theory that states that, profitable firms prefer internal financing to external financing. The results of the study show that during the period of study the firms were heavily financed by debt.

Finally, many researchers on similar study concluded that listed firms on GSE were heavily financed their operation with debt; Oppong- Boakyei et al (2013) find 72% debt financing; Addae et al (2013) 63%; Abore (2005) study, 59% debt financing that concur with the result of this study on ration of debt financing.

#### 4.9 The correlation matrix of the entire listed firms

In order to examine the strength and relationships among the variables to rejoin the requirement of the objective of this study, dependent variables (ROA, ROE, and NPM) were regressed with independent variables (STD, LTD, and TD) as well as the control variables (FS and SG). Correlation matrix of the variables of the sampled firms is discussed in Table 4.9.1

**Table 4.9.1 Correlation Matrix of the Variables**

	ROA	ROE	NPM	STD to TC	LTD to TC	TD to TC	Firm Size	Sales Growth
ROA	1							
ROE	.431 (.000)*	1						
NPM	.062 (.238)*	.514 (.000)*	1					
STD to TC	.030 (.360)	-.003 (.484)	-.001 (.493)	1				
LTD to TC	-.159 (.033)*	-.101 (.121)	-.034 (.346)	.019 (.413)	1			
TD to TC	.004 (.482)	-.020 (.410)	-.006 (.472)	.985 (.000)*	.184 (.016)*	1		
Firm Size	-.047 (.292)	.304 (.000)*	.273 (.001)*	.144 (.048)*	.284 (.000)*	.190 (.014)*	1	
Sales Growth	.066 (.224)	.332 (.000)*	.187 (.015)*	.212 (.007)*	.019 (.417)	.213 (.007)*	.041 (.320)	1

P value is significant at 0.050

Source; GSE annual report from 2005 to 2013

Table 4.9.1, shows how profitability ratios (ROA, ROE and NPM,) correlates with leverage ratios (STD, LTD and, TD) as well as sales growth (SG) and firm size (FS) been control variables.

It depicts in Table 4.9.1, STD and SG are insignificantly and positively correlated with ROA. This correlation showed that firm STD and size increase ROA but the increment turn to be insignificant for the period of study. This finding confirms with earlier findings by Abor (2005), Petersen and Rajan (1994), which stress a positive relationship between profitability and short term debt. Long- term debt to total capital is significant and negatively correlates with ROA while total debt to total capital is insignificant and negatively correlates with profitability (ROA). The significant negative relationship implies that, an increase in long- term debt will result in a decrease in the profitability of listed firms in Ghana. According to Abor (2005), there exist an inverse relationship between company profitability and long-term debt. Firm Size and Sales are insignificant and positively related to Profitability ROA which is significant at a significant level of 0.05.

Short-term debt, long-term debt, total debt was found to be insignificant and negatively correlate Return on equity (ROE). It implies that an increased in debt would result in decrease in ROE. The negative relationship between the profitability ratios and the leverage ratios to some extent, agrees with the study conducted by Rajan and Zingalas (1995) and Wald (1999). They recorded a significantly negative correlation between profitability and leverage. Both FS and SG for the study period are significant and positively correlate with ROE. All things being equal, an increase in size and growth will increase profitability. This confirms findings of writers like; Turkson (2011) find insignificant positive correlation between ROE and SG as well, Gatsi and Akoto's (2010)



result support on correlation between ROE and SG. They concluded that ROE was positively and statistically significant to sales growth.

On NPM, STD, LTD and TD are negative and insignificant correlates to NPM as highlighted on the Table 4.9.1 meaning that as any of the leverage variable increases NPM will reduce but the reduction is insignificant. An inverse connection between long-term debt and net profit margin in this study support findings of Gatsi and Akoto, (2010).

As the results revealed size to be positive and significantly correlate with NPM, growth also exhibits similar correlations. This agreed with the Kurshev and Strebulaev (2005) in their study found that firm size was strongly positively related to capital structure.

#### **4.10 The Regression Results**

Regression analysis was carried out by using the various panel data regressions that were run to investigate the relationship between capital structure and profitability. Profitability ratios (ROA, ROE and NPM) were regressed against the ratio of debt (STD, LTD and TD) and the control variables FS and SG. Linea regression results are presented in Tables 4.10.1, 4.10.2 and 4.10.3. All variables are set at significant levels of 50%.

**Table 4.10.1 Regression Model Results (Dependent Variable: Return On Asset)**

Variable	Profitability: ROA					
	1	Sig.	2	Sig.	3	Sig.
	Coef.		Coef.		Coef.	
Firm Size	-.054	.544	-.005	.955	-.050	.593
Sales Growth	.063	.481	.069	.424	.068	.446
Constant	8.810	.000	9.806	.000	8.913	.000
STD to TC	.024	.789				
LTD to TC			-.159	.079		
TD to TC					-.001	.991
R- squared		.007		.030		.007
R		.086		.174		.083

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn... 1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

Table 4.10.1, indicate that short- term debt with co- efficient value 0.024 and P value of 0.7 was found to be insignificant and positively relate to returns on asset (profitability). This indicates that, increasing the amount of short term debt will result in increase in the return of asset of the firms but the increment will not be significant. This will depend on the level utilization of the debt within the period. This confirms with by Abor (2005), Taub (1975), and Ooi (1999) among other writer. They stress a positive relationship between profitability and short term debt for the period of their study.

Long-term debt and total debt were found insignificant with probability values of 0.08 and 1 respectively and negatively related to return on asset as it co-efficient of -0.159 and -0.001 respectively highlighted on the Table. This implies that long term debt and total debt has no significant impact on the profitability of listed firms in Ghana. Thus, the larger the debt, the lower is the profitability. This support Myers and Majluf (1984) predictions, “state that the pecking order theory of capital structure assumes that information asymmetry causes companies to prefer internally generated finance to other sources of finance”.

Comparatively, regression 1, 2, and 3 of ROA of financial sector was consistent with the result of regression 1, 2, and 3 of the consolidated sector while was inconsistent with the non-financial sector as categorized in this study. Under non-financial sector STD was negative and statistically has insignificant relationship with ROA. This attests to the fact that sector and industry has effect on the choice of debt mix. As gain from higher debt is more than related cost the result is an enhancement on profit of firms under financial sector and the entire sector or industries STD was not under non-financial sector. Since tax will take care of interest on obligation maturity of which is up to bone year tax liability will be lower and hence direct relationship. In Ghanaian situation, most short-term debt is trade creditors and is interest-free as compared to bank loan facilities.

However, the control variable firm size have probability value of 0.5, 1 and 0.6, for STD, LTD and TD respectively, were statistically insignificant but showing co-efficient of -0.054, -0.005 and -0.050 respectively showing their relationship with ROA to be negative. Likewise, as indicated by the co-efficient and P values for all measure of debt

with return on assets, there exist positive and insignificant relationship between size and ROA as significant level is set at 0.050 in this study.

Comparatively, control variables size and growth for all measure of debt size was statistically insignificant and positively relate with ROA in financial sector and non-financial sector but inconsistent with the overall firms result. Likewise, on growth both sectors are consistent with the entire firm's findings

**Table 4.10.2 Regression Model Result (Dependent Variable: Return On Equity)**

Variable	Profitability: ROE					
	1	Sig.	2	Sig.	3	Sig
	Coef.		Coef.		Coef.	
Firm Size	.307	.000	.350	.000	.319	.000
Sales Growth	.345	.000	.321	.000	.352	.000
Constant	4.035	.240	.682	.102	4.678	.176
STD to TC	-.121	.135				
LTD to TC			-.207	.011		
TD to TC					-.155	.056
R- squared		.208		.234		.217
R		.456		.484		.466

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression eqn... 1, 2 and 3 on pp. 32

Source: GSE annual report from 2004 to 2013

From Table 4.10.2, STD, and TD with probability of 0.1, and 0.05 respectively are statistically insignificant and negatively relates to ROE at co- efficient of -0.121 and -0.155 respectively indicating an inverse relationship. The inverse relationship between ROE and debt (STD, and TD) implies that a rise in debt finance will lead to a fall in profitability. However, theories show that short- term debts are cheap for that reason it increase profitability. This study revealed that existence of short- term can insignificantly reduce profit that will be added to equity holders.

Long- term debt shows co- efficient -0.207 and a P value of 0.011 indicating an inverse relationship with ROE which found to be consistent with the findings of Abor (2005). It also implies that a rise in debt financing will lead to a significant fall in profitability which confirms the results of early finding by Miller (1997), Fama and French (1998) and Graham (2004) which states that there is an inverse relationship between LTD and profitability. Non availability of long-term credit, poor economic performance, and the industry inherent future created risk of listed firms during the period of the study.

Comparatively, regression 1, 2, and 3 of non- financial for a measure of ROE was found to be consistent with the entire industrial outcome for all measure of debt and closely consistent with the result of the financial sector. However, for a measure of debt with ROE financial sector was found to be insignificant for the period of study.

Growth and size in this study depicts statistically significant positive relationship with ROE for all measure of debt for the period of study. A growth in size could mean economic of scale that could give large firms a bargain power for long term to finance a profitable long- term project which small firms do not have. This is to support the result

that size was important in determining capital structure and leverage. Kurshev and Strebulaev (2005) and Al-Sakran, (2001) said “firm size was strongly positively related to capital structure”. The consequence of growth is the need for more capital, and the immediate response for a firm is to utilize the existing reserves or surpluses. Where available reserves are insufficient, then the firm needs to resort to external finance in debt or equity. Weighing these options in terms of their implication in cost of finance and possible dilutions, debt is the better of the two options

In comparing the relationship between control variables in financial and non- financial sectors, for all measure of debt size was positive and insignificant for non-financial closely consistent to overall firms but positive and significant for financial sector which was consistent to the result of entire listed firms result used in the study. In addition to that growth results, for non-financial sector was consistent to overall firms result but financial sector is closely consistent with both non- financial and the overall firms.

**Table 4.10.3 Regression Model Results (Dependent Variable: Net Profit Margin)**

Variable	Profitability: NPM					
	1	Sig.	2	Sig.	3	Sig.
	Coef.		Coef.		Coef.	
Firm Size	.276	.021	.300	.001	.284	.001
Sales Growth	.194	.023	.178	.032	.198	.020
Constant	16.674	.000	17.537	.000	17.061	.000
STD to TC	-.082	.335				
LTD to TC			-.123	.152		
TD to TC					-.102	.235
R- squared		.112		.119		.115
R		.334		.345		.339

Notes; P value at 0.050; 1 represent regression result for STD;

2 represent regression result for LTS;

3 represent regression result for TD.

Regression egn...1, 2, and 3 on pp.32

Source: GSE annual report from 2004 to 2013

Short- term debt, Long- term debt and Total debt to Total capital recorded a P value of 0.3, 0.2 and 0.2 respectively, with co- efficient of -0.082, -0.123, and -0.102 respectively implying a statistically insignificant and negative relationship with NPM. To some extent confirms the findings of Hall et al. (2004). They argued that “there was a negative association between profitability and both long-term debt and short-term debt ratios”. The result of TD confirms the result of Addae et al (2013) when they conducted study on the same topic.

Control variable; FS and SG indicate positive and insignificant relationship with NPM for all measure of debt. The conformed to Wald (1999), Booth et al. (2001), and Rajan and Zingales (1995), on growth and gearing. This means that growth is important in determinant variable in capital structure of a firm.

Comparatively, for the non- financial sector regression result was closely consistent with that of the entire industry (consolidated) result but LTD turned to be significant and negatively relate to NPM while the entire firms result revealed the relationship between LTD to be insignificant. However, that for all measure of debt financial sector revealed different relationship with NIM. Under financial sector, STD brought about profitability but it turned to be insignificant.

On the control variables size and growth, size; under non-financial sector is found to be inconsistent with the entire firms' results while both financial sector and entire firms result are closely consistent to each other. Result of non- financial sector on growth for all measure of debt were found to be consistent with the overall firms result and closely consistent with the financial sector.

Finally the result of regression shows that industrial characteristics have effect in the choice of debt mix when determining capital structure. The choice of appropriate debt mix has influence on profitability which corporate manager must be guided with to ensure that shareholders wealth is maximized.

From the regression result the researcher found that perking order theory were applied in Ghanaian industries like; manufacturing & trading supporting the work of Boamah et al(2010); mining and oil; ICT and pharmaceutical. On sector bases, perking order theory



were not apply to financial and non- financial sectors. In effect Ghanaian listed firms for the period of study did not apply perking order theory. From the literature reviewed, the pecking order theory recommends use of finance in the following order; reserves, debt and finally additional equity.

Theoretical literatures made us to understand the cause of agency problem as firm's stakeholders struggling to satisfy their selfish motive. That is, when owners of firms anticipate increase in income arisen from dividend, management turns to focus on expenses resulting in fall of their income. The researcher did not identified agency problem in Ghanaian listed firms for the study period.

The trade-off theory compared benefit from debt financing with cost/risk associated with financing with debt as well as the consequences of financial distress. The theory assumes that profitable firms depend more on debt. The researcher found this theory applied to Ghanaian listed firms thus financial and non- financial sector. Likewise, for the period of study all industries under non- financial sector that depend on debt (sub- sectors) were profitable with exception of mining and oil industry.

The  $R$  is the correlation coefficient and it measures the strength of the linear relationship between the dependent variable and the independent variable. The bigger the better. The co-efficient of determination brings out the degree to which changes in the independent variables results in changes in the dependent variables. Statistically the greater the co-efficient of determination ( $R^2$ ) value is to 100%, the more powerful the regression equation. From Tales 4.10.1, 4.10.2 and 4.10.3, ROA, ROE, and NIM/NMP highlighted the aggregate co-efficient of determination ( $R^2$ ) values of 4.4%, 66% and 35%

respectively. It indicates that the independent variables (leverage ratios) explain 4.4%, 66% and 35% of the variations in the profitability (ROA, ROE and NPM) respectively, of the entire listed firms covered within the study.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter deals with summary, conclusions and recommendations based on the findings of the study. It also reveals some limitations to the study and finally proposes topics for further studies.

#### **5.2 Summary**

Financing decision has been recognized as a critical business decision because of its relationship with growth and survival. Managers therefore need guide to be able to take the right decisions these guide have come about in the form of capital structure theories.

The purpose of the study was to examine, assess, evaluate and validate the applicability of the various capital structure theories and its effect on profitability of industries represented by firm listed on Ghana stock exchange during the period 2005 to 2013. This was motivated because some earlier study on the topic considered study period of five years while others considered six years meanwhile a period of nine was considered in this study. Initially, the researcher selected twenty (20) firms over the period 2005 to 2013 for the study, due to the limited information, fifteen (15) financial and non-financial firms over the same period were finally considered for the study. Panel data methodology, specifically linear regression technique was adopted in the study to examine the association of capital structure with profitability of twenty firms for nine years (2005-2013). Regression and correlation matrix were used in this study as guides to depict the

extent the degree of association between the variables. Below are the Major findings that provide answers to the research questions that lead to the attainment of the research objectives;

Firstly observation was that 64% of the total capital of listed firms in Ghana was made up of debts out of which 54% constitutes short-term debts while 10% is made up of long-term debts. However, firms under financial sector in Ghana 71% of their total capital was made up debt out of which 58% constitute short- term debt while 13% was made up of long- term debt. For firms under non- financial sector, 60% of their total capital was made up debt out of which 51% constitute short- term debt while 9% constitute long-term debt. This confirms the result that firms listed in GSE are greatly financed by leverage, with a larger percentage of the total debts being short-term debts. Nonetheless, Of all the industries under non- financial constitute such as; manufacturing & trading; Mining & Oil; ICT & Paper Product; FMCGs & Pharmaceuticals; and Agric & Agro Processing only FMCGs & Pharmaceuticals and Agric & Agro Processing that have 60% and 184% of their total capital respectively to made up debt out of which 50% and 175% respectively constitute short- term debt while 21% and 9% respectively constitute long-term debt. This does not invalidate the result that, listed Ghanaian financial and non-financial are highly finance by debt. Secondly, at 5% significance level for all the profitability and leverage ratios it was revealed that ROA was insignificantly and positively related to STD. This means that though leverage or debt financing brought increase profitability of the firms, it was very low and thus insignificant. It means that benefit tax as a result of financing with debt exceeded it associated risk resulting in rising profit.

With respect to the relationship between ROE and STD, it was found that ROE was negatively and insignificantly related to STD. The negative relationship between ROE and leverage (STD) implies that debt has decreased residual profit that will be available to equity holders. This may be due to the high interest rate of the banks, other financial institutions and high prime rate. It is also important to note that when loans are obtained at high interest rate and are not prudently used it will affect the firm's profit adversely.

The relationship between NPM/NIM and STD however was negative and statistically insignificant. This means that as debt increases, benefits that will be left for equity holders decrease. Management might have overestimated their tax advantage leading to decreased residual income. Hiding costs that might escape the attention of theorists could bring about an inverse relationship. Concerning return on assets and long-term debt, LTD was negative and insignificantly related to ROA. This again implied LTD for the study period led to decreased ROA and vice versa. It is important to know that depending on the internal source of funds like equity to finance a project or operation will increase returns to equity holders and returns from assets.

Regarding the relationship between ROE or NPM and LTD, the results show that when ROE was significantly and negatively related to LTD, NPM was insignificantly and negatively related to LTD. This means that as leverage increases, profitability expressed by ROE and NPM falls, but the fall has a significant effect on ROE but does not have any significant effect on the NPM. This might be the fact that in Ghanaian, long-term debt is expensive hence associated with falling profits. It also means that the risk in long-term debt outweighs its benefits.

The study also revealed that whereas ROA, ROE and NPM/NIM were insignificant and negatively related to TD. The insignificant and negative relationship between profitability (ROE, ROE and NPM) and TD indicates that profitability did not decreased significantly when TD increases. Global economic crunch coupled with high cost of debt resulted into negative correlation between profitability and total debt during the study period.

The control variable firm size was insignificantly and negatively related to ROA for a measures of STD and TD but significant and negatively relate to LTD. Firm size was also significant and positively related to both ROE and NPM for all measures of debts. Finally, the study revealed that sales growth and ROA were however positively and insignificantly related for all measures of debts. Sales growth was also significant and positively related to ROE and NPM for all measures of debts.

The results on the relationship between the firm size and profitability indicate that profitability decreases with the control variable firm size for all measures of debts. As a result leverage did not bring about increase in profit levels. The insignificant negative relationship between firm size and profitability, suggests that larger firms to some extent tend to exhibit low profit margins. While the significant negative relationship between firm size and profitability suggest significant low profit margins. However, the significant and positive relationship between sales growth and the profitability matrices for all measures of debt suggests that growth is very important when insignificant relationship equally growth to be important in determining firms profit in Ghana.

### **5.3 Conclusion**

The results of this study revealed that apart from ROA that was insignificantly and positively related to STD, ROE and NPM were all insignificantly and negatively related to STD for entire listed firms for the study period. This is to conclude that as ROE and NPM were inversely relate to STD, ROA for the period was positively related to STD. when ROA and NPM were insignificant and negatively relate to LTD, ROE was significantly and negatively relate to LTD. This also concludes that LTD has inverse relationship with all the profitability ratios i.e. ROA, ROE and NPM for the study period. Concerning the association between TD and the profitability ratios ROA, ROE and NPM, all were found to insignificant and positively had association with TD. This means that profitability ratios ROA, ROE and NPM were inversely relate with TD for the study period.

Finally, apart from firm size which was found to be negative and significantly relate to ROA for a measure of LTD, it was insignificant and negatively relate to ROA for a measure of STD and TD which could be conclude that, size, was negatively relate to ROA for a measure of all debts. Further, firm size was positive and significantly relate to ROE and NPM for all measure of debts. This means that large firms tend to be more diversified and fail less often, so size may be an inverse proxy for the probability of bankruptcy. Sales growth was positive and insignificantly relates with ROA for all measure of debts but positive and significantly relate with ROE and NPM for all measure of debt for the study period.

## 5.4 Recommendations

Capital structure decision is a strategic choice therefore management of every company needs it understanding and guided with when selecting source of finance. It must also be noted that choice financing source has consequences' ongoing concern of every companies. For this reason, the researcher found the following recommendations useful to corporate managers of listed firms and policy makers as well;

- Government, security exchange commissions, and the exchange itself should take measures to develop Ghanaian bond market. This will make long- term debt cheap and available for corporate institutions which will facilitate economic growth and lift more pressure on government budget.
- Companies should gear their effort toward more internal source of funds in support perking order theory. Because, internal source of funds is cheaper as compare to external source.
- Companies should know that tax benefit is not universal, therefore, each firm should look consider it industrial tax circumstance before using debt to finance to finance it operations. This practice will guide companies to prevent bankruptcy cost from the use of debt.
- Business regulators should strengthen business regulations to ensure that their practices are conformed to the best international practices.
- Corporate manager at all industrial sector in Ghana must put efforts that will gear towards prudent cutting down of cost and effective cost controls. Costs on employee salaries and remunerations, premises and others can be negotiated wisely so as to cut some cost.



#### **5.4.1 Area for further study**

In view of this study finding, the researcher found it helpful to consider future research in the following direction:

- A broad study on how leverage mitigate free cash flow problem when determining capital structure of Ghanaian firms
- Comprehensive study must be considered on non listed firms by emphases on SMEs and Rural banking industries in the country.
- Study on the extent on which the size of debt introduced efficiency in the management of firms in Ghana.

## REFERENCES

- Abor, J. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, 6 (5).
- Abor, J., & Biekpe, N. (2007) Small business reliance on banking and finance in Ghana. *Emerging Markets Finance and Trade*. Vol. 43, No. 4, pp.93-102.
- Abor, J. (2008) Determinants of the capital structure of Ghanaian Firms. *African Economic Research Consortium (AERC) Research Paper 176*.
- Abor, J., & Biekpe, N. (2005). What determines the capital structure of listed firms in Ghana? *African Finance Journal*, 7 (1), 37-48.
- Addae, A, A. Nyarko- Baase, M. & Daniel, H. (2013).The effect of capital structure on profitability of listed firms in Ghana. *European Journal of Business and Management*, Vol.5, No.31.
- Ajao Owolabi, Sunday and Ema Inyang, Uduakobong, (2012). Determinants of Capital Structure in Nigerian Firms: *A Theoretical Review*. Volume No. 2 (2012), Babcock University, Nigeria.
- Akoto, R.K at al. (2014). What determines the Debt policy of Listed Manufacturing Firms in Ghana? *International Business Research*, Vol. 7, No. 1
- Al-Sakran, S.A. (2001). Leverage determinants in the absence of corporate tax system: The case of non- financial publicity traded corporations in Saudi Arabia. *Managerial Finance*, 27(10/11), 58-86.
- Amidu, M. (2007).Determinants of capital structure of banks in Ghana: an empirical approach. *Baltic Journal of Management*, 2 (1), 67-79.
- Baltagi, B.H.(1995). *Econometric analysis of panel data*. Manchester: Wiley press.
- Barnea, A., Haugen, R.A., & Snetbet, L.W. (1980). A rational for debt maturity and call provisions in the agency theoretic frame work. *The Journal of Finance*, 35 (5), 23-34.
- Barclay, M., & Smith, C. (2005). The capital structure puzzle: The evidence revisited. *Journal of Applied Corporate Finance*, 17(1).
- Boamah, D, Attipoe, K.K, Odarte, F.K, & Kpodo, B.B. (2010). Effect of Capital Structure on Profitability of Listed Manufacturing Firms in Ghana. *Dissertation submitted to Business School, University of Ghana – Legon*.
- Booth, L., Varouj, A., Demirguc-Kunt, A. & Maksimovic, V. (2001), “Capital Structure in Developing Countries”, *Journal of Finance*, Vol LVI, 56, 87-130.

- Cassar, G., & Holmes, S. (2003). Capital structure & financing of SME's. Australian evidence. *Journal of Accounting & Finance*, 43(2), 1223-47.
- Champion, D. (1999). Finance: The joy of leverage, *Harvard Business Review*, Vol. 77, No. 4, 19-22.
- Chittenden, F. Hall, G., & Hutchinson, P. (1996). Small firm growth, access to capital markets and financial structures: review of issues & empirical investigations. *Small Business Economics*, 8(1), 59-67.
- Cooper, D.R. & Schindler P.S. (2001). *Business research methods*. Boston Irwin McGraw Hill.
- French, K.R. and Fama, E.F. (2002) "Testing Trade-Off and Pecking Order Predictions about Dividends and Debt", *Review of Financial Studies*, Vol. 15, pp 1-33.
- Fama, E.F. and French, K.R. (1998), "Taxes, Financing Decisions, and Firm Value", *Journal of Finance*, Vol. 53, pp. 819-43.
- Gatsi, J.G, & Akoto, R. K. (2010). Capital structure and profitability in Ghanaian banks. *Social Science Research Net Work*, 1-69.
- Gajurel, P. D. (2005). Capital structure management in Nepalese enterprises, *Master's Degree Thesis*, Kathmandu: Faculty of Management, Tribhuvan University.
- Ghana, S. E. (2014). *Fact Book*. Accra.
- Gill, Amarjit, Nahum Biger, Neil Mathur, (2011). The effect of capital structure on profitability: Evidence from the United States". *International Journal of Management*, Vol. 28, No. 4, Part 1, pp. 3-15.
- Gowthorpe, C. (2003). *Business accounting and finance: For non- specialist*. Bedford Row, London: Thompson Learning, High Holborn House.
- Graham, J.R. (2004). How big are the tax benefits of debt? *Journal of Finance*, 55, 1901-41.
- Green, C.J., V. Murinde and J. Suppakitjarak. 2002. *Corporate Financial Structure in India*. Economic Research Paper No. 02/4. Centre for International, Financial and Economics Research, Department of Economics, Loughborough University, Loughborough.
- Hall, G.C., Hutchinson, P.J., & Michaels, N. (2004). Determinants of the capital structures of European SME's. *Journal of Business Finance and Accounting*, 31 (5), 711-28.

- Haugen, R. and L. Senbet. 1978. "The insignificance of bankruptcy costs to the theory of optimal capital structure". *Journal of Finance*, 33(2): 383–93.
- Harris, M., & Raviv, A. (1990). Capital structure and the Information role of debt. *Journal of Finance*, 45(2), 321-49.
- Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target Capital Structure: The case of dual debt and equity issues. *Journal of Financial Economics*, 71(3). [http://dx.doi.org/10.1016/S0304405X\(03\)00181-8](http://dx.doi.org/10.1016/S0304405X(03)00181-8)
- Hutchinson, R.W. (1995), "The Capital Structure and Investment Decisions of the Small Owner-managed Firm: Some Explanatory Issues", *Small Business Economics*, Vol. 7, pp. 231.
- Iwarere and Akinleye G.T (2010), Capital Structure Determinants in the Nigerian Banking Industry: Financial Managers' Perspectives, *Pakistan Journal of Social Sciences*, Volume: 7 Page No.: 205-213
- Jensen, M. & Meckling, W. (1976), "Theory of the Firm: Managerial Behaviour, Agency Costs and capital structure", *Journal of Financial Economics*, 3: 305-360.
- Jensen, M. (1986). Agency cost of free cash-flow, corporate finance and takeovers, *American Economic Review*, Vol. 76, 323-329.
- Kester, W.C.(1986). Capital & ownership structure: a comparison of United States & Japanese manufacturing companies. *Asian Economic Journal*, 20 (3), 275-302.
- Kyereboah-Coleman, A. (2004), "An Investigation into the Determinants of Bank Profitability and Interest margins: The case of Ghana", *First African Finance Conference*, ACIA. July 14-15, 2005.
- Kim, H., Heshmati, A., & Aoun, D. (2006). Dynamics of capital structure: The case of Korean listed manufacturing companies, *Asian Economic Journal*, Vol. 20 No. 3, 275-302.
- Klein, L.S., O'Brien, T.J., & Peter, S.R. (2002). Debt vs. equity and asymmetric information: A review. *Journal of Financial and Quantitative Analysis*, 27, 397-417.
- Kurshev, A. and I.A. Strebulaev (2005), 'Firm Size and Capital Structure', Working Paper (London Business School).
- Leibenstein, H. (1966). Allocative Efficiency vrs. X-Efficiency, *American Economic Review*, Vol. 56, 392-415.
- Leland, H.E. and Pyle, D.H. (1977), "Information Asymmetries, Financial Structure, and Financial Intermediation, *Journal of Finance*, Vol. 32, pp. 371-378.

- Marsh, P. 1982. "The choice between equity and debt: An empirical study". *Journal of Finance*, 37(1): 121–44.
- Myers, S.C. and Majluf, N.S. (1984), "Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have", *Journal of Financial Economics*, Vol. 12, pp. 187-221.
- Myers, S.C. 1984. "The capital structure puzzle". *Journal of Finance*, 39: 575–92.
- Modigliani, F., & M. Miller. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, Vol.48 No. 3, .261-97.
- Modigliani, F. and M. Miller. (1963), "Corporate income taxes and the cost of capital: A correction". *American Economic Review*, Vol.53, pp. 443–53.
- Michaelas, N., Chittenden, F., & Poutziouris, P. (1999). Financial policy and capital structure choice in U.K. SMEs: Empirical evidence from company panel data. *Small Business Economics*, 12, 113-130.
- Miller, M.H. (1977), "Debt and Taxes", *Journal of Finance*, Vol. 32, pp. 261–76.
- Mustafa M S, & Hayajineb, O.S. (2007). Capital structure and corporate performance. Empirical study on the public Jordanian shareholdings firms listed in the Amman stock market, *European Scientific Journal October edition vol. 8, No.22*
- Nerlove, M. (1968), "Factors Affecting Differences among Rates of Return on Investments In Individual Common Stocks", *Review of Economics and Statistics*, Vol. 50, pp. 312- 31.
- Ooi, J. (1999), "The Determinants of Capital Structure: Evidence on UK Property Companies", *Journal of Property Investment & Finance*, Vol. 17 No. 5, pp. 464-80.
- Opong-Boaky, P. K, Appiah, K. O, & Afolabi, J. K. (2013). The determinant of capital structure: Evidence of Ghanaian firms. *Research Journal of Finance and Accounting*, Vol.4, No.4.
- Pandey I. M. (2004), *Financial Management* 9th Edition, Indian Institute of Management, Ahmedabad. Vikas Publishing. House P.VT. LTD. Pp. 289 – 350.
- Patel, D. C. (2009), Capital Structure: A Comparative Study of Cooperative Society. *International Journal of Research (IJR)* Vol-1, Issue-8,
- Petersen, M. and Rajan, R. (1994a), "The Benefits of Lending Relationships: Evidence from

- Small Business Data”, *Journal of Finance* Vol. 47, pp. 3–37.
- Rajan, R.G. and Zingales, L. (1995), “What Do We Know About Capital Structure? Some Evidence from International Data”, *Journal of Finance*, Vol. 50, pp. 1421-60.
- Roden, D.M. and W.G. Lewellen. (1995). “Corporate capital structure decisions: Evidence from leverage buyouts”. *Financial Management*, 24: 76–87.
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2001) **Essentials of corporate finance**. 3rd ed. New York, McGraw-Hill
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2008). *Essentials of Corporate Finance*, 6th Edition, Boston MA: McGraw-Hill.
- Ross, S. A., Westerfield, R. W., Jaffe, J. F., & Jordan, B. D. (2009). *Corporate Finance: Core principles and applications*. 2nd Ed. New York, McGraw-Hill Irwin.
- Ross, S. (1977). The determination of financial structure: The incentive signaling approach. *Bell Journal of Economics*, 8, 23-40.
- Taub, A.J. (1975). Determinants of the firms’ capital structure. *Review of Economics & Statistics*, 57,137-51.
- Tarus, T. K. et al. (2014). Do Profitability, Firm Size and Liquidity Affect Capital Structure? Evidence from Kenyan Listed Firms. *European Journal of Business and Management*, Vol.6, No.28, 2014
- Turkson, A. H. (2011). Capital Structure and profitability of non- financial firms listed on Ghana stock exchange. *Dissertation submitted to Business School, University of Cape Coast*.
- Titman, S. (1984). The effect of capital structure on firms liquidation decisions. *Journal of Financial Economics*, 13,137-51.
- Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *Journal of Finance*, 43, 1, 1-19.
- Van Horne, J.C., & Wachowicz, Jr, J. M. (2008). *Fundamentals of financial management*. England &: Prentice Hall.
- Wald, J. K. (1999). How firm characteristics affect capital structure: An international comparison. *Journal of Financial Research*, 22(2) , 61-87.
- Watson, D. and Head, A. (2007), *Corporate Finance – Principles and Practices*, 4<sup>th</sup> ed., FT Prentice Hall, UK.

## APPENDICES

### APPENDIX A

**Entire listed companies on GSE 2014 edition sampled once and once covered for the study**

#### **[A] Financial Sector**

<b>Industries</b>	<b>Sampled for study</b>	<b>Sampled not used</b>	<b>Sampled and used</b>	<b>Period covered Years</b>
Finance;				
Cal Bank	**		**	9 yrs.(2005-2013)
Ecobank Ghana Limited	**		**	9 yrs.(2005-2013)
Ecobank Transnational incorporation	**		**	9 yrs.(2005-2013)
Enterprise insurance ltd.	**	**		
Ghana Commercial Bank limited				
HFC Bank Ghana Limited.	**		**	9 yrs.(2005-2013)
Standard chartered bank Ghana limited	**		**	9 yrs.(2005-2013)
GH- SSB Limited				
SIC Insurance company limited	**	**		
Trust bank limited (the Gambia)				
UT financial services limited				
	<b>07</b>	<b>02</b>	<b>05</b>	
<b>Total population</b>				<b>11</b>

**B] Non- financial Sectors:**

<b>Industries</b>	<b>Sampled for study</b>	<b>Sampled not used</b>	<b>Sampled and used</b>	<b>Period covered Years</b>
<b>Finance;</b>				
<b>ICT &amp; Paper Production;</b>				
Camelot Ghana limited	**	**		
Clydestone Ghana limited				
Sam- Woode limited	**	**		
Super paper plastic company	**		**	9 yrs.(2005-2013)
Transaction solution Ghana limited				
<b>Manufacturing &amp; Trading;</b>				
Aluworks limited				
CFAO Ghana limited				
Mechanical Lloyd Company Limited	**		**	9 yrs.(2005-2013)
Pioneer kitchenware Limited				
PZ Cussons Ghana limited	**		**	9 yrs.(2005-2013)
Uniliver Ghana limited	**		**	9 yrs.(2005-2013)
<b>Agric and Agro Processing;</b>				
Benso Oil Palm Plantation Limited	**		**	9 yrs.(2005-2013)
Cocoa processing company limited				
Golden Web Company	**	**		
Produce Buying Company limited	**		**	9 yrs.(2005-2013)



**Continuation**

<b>Mining &amp; Oil;</b>				
AngloGold Ashanti limited	**		**	9 yrs.(2005-2013)
Golden star resources limited				
Ghana oil company limited				
Total petroleum Ghana limited	**		**	9 yrs.(2005-2013)
Tallow oil Ghana limited				
<b>FMCGs &amp; Pharmaceuticals;</b>				
Accra breweries limited				
Guinness Ghana breweries limited	**		**	9 yrs.(2005-2013)
Fan milk limited				
Ayton drug manufacturing limited				
Starwin products limited	**		**	9 yrs.(2005-2013)
<b>Totals</b>	<b>13</b>	<b>03</b>	<b>10</b>	
	<b>Analysis</b>			
<b>A- Population</b>				<b>24</b>
<b>B - population</b>				<b>11</b>
<b>C-Total GSE 2014; (A + B = C)</b>				<b>35</b>
<b>Sampled and used from [A]</b>		<b>05</b>		
<b>Sampled and used from [B]</b>		<b>10</b>		
<b>Sample NOT used for study</b>			<b>05</b>	
<b>Sample used for study</b>				<b>15</b>

Source; Author's own compilation form GSE, 2014 edition.

## APPENDIX B

### Summary of Profitability and Leverage Ratio for 15 Listed Companies on the Ghana Stock Exchange (2005 – 2013)

Cal Bank	Years								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROA	4.71	4.23	2.83	3.09	2.43	2.33	3.13	5.55	8.06
ROE	14.90	22.08	15.63	22.53	15.57	11.51	19.74	24.27	32.72
NPM	56.63	70.59	55.37	63.43	48.73	31.65	60.46	75.96	88.12
STD to TC	9.24	13.54	234.69	366.65	179.02	160.68	121.72	107.13	149.33
LTD to TC	0	0	0	0	0	0	0	0	0
TD to TC	9.24	13.54	234.69	366.65	179.02	160.68	121.72	107.13	149.33
Firm Size	4.99	5.20	5.37	5.53	5.65	5.70	5.90	6.06	6.19
Sales Growth	-	16.64	27.38	36.44	37.60	63.70	10.39	108.51	67.90
<b>Ecobank Ghana Limited</b>									
ROA	5.92	5.57	4.51	4.77	5.24	5.96	4.71	5.81	5.66
ROE	43.18	38.91	34.56	39.34	26.03	26.41	27.95	31.36	33.36
NPM	76.33	75.84	84.49	95.11	88.15	83.17	81.75	73.54	68.22
STD to TC	15.80	4.21	-	-	28.51	25.04	29.13	22.44	19.87
LTD to TC	33.86	26.81	46.26	41.99	0	0	0	0	0
TD to TC	49.66	31.02	46.26	41.99	28.51	25.04	29.13	22.44	19.87
Firm Size	5.50	5.64	5.83	5.96	6.14	6.18	6.34	6.53	6.67
Sales Growth	-	27.97	12.60	29.19	78.68	32.27	15.10	112.51	43.89
<b>Ecobank Transnational incorporation</b>									
ROA	3.35	3.69	2.91	1.26	1.12	1.61	1.62	1.70	0.98
ROE	23.00	22.60	21.32	9.60	5.23	11.41	15.27	13.19	6.92
NPM	67.47	71.28	68.53	41.59	22.02	35.60	47.55	39.90	21.11
STD to TC	8.15	10.09	31.39	5.94	20.66	17.01	95.57	55.36	55.90
LTD to TC	0	0	0	0	0	0	0	0	0
TD to TC	8.15	10.09	31.39	5.94	20.66	17.01	95.57	55.36	55.90
Firm Size	6.30	6.50	6.80	7.21	7.11	7.19	7.45	7.58	7.72
Sales Growth	-	67.14	63.04	84.08	32.05	8.04	36.11	69.06	52.87

HFC Bank	Years								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROA	1.15	1.62	1.79	2.10	2.60	3.37	3.06	2.67	4.88
ROE	11.59	6.63	16.12	20.75	17.24	16.73	13.36	10.23	171.75
NPM	15.71	26.70	23.75	48.20	33.44	38.83	36.08	36.73	62.37
STD to TC	-	9.04	15.09	19.09	15.15	27.94	7.36	2.14	53.52
LTD to TC	25.60	24.45	78.57	65.45	65.31	45.85	45.53	38.29	41.62
TD to TC	25.60	33.49	93.66	84.54	80.46	73.79	52.89	40.43	95.14
Firm Size	7.88	8.03	8.21	8.58	8.41	8.56	8.63	8.77	8.99
Sales Growth	-	25.55	87.33	34.85	22.46	56.01	16.50	17.06	78.12
<b>Standard chartered bank Ghana limited</b>									
ROA	6.89	6.56	5.34	4.45	5.96	6.09	5.79	7.13	9.14
ROE	29.70	28.79	37.43	3.71	39.22	44.00	33.40	43.77	42.72
NPM	60.89	61.30	45.50	57.48	70.10	66.46	75.82	100.44	97.42
STD to TC	147.07	80.53	121.79	4.32	73.94	60.13	43.53	63.56	97.81
LTD to TC	0	30.27	0	0	0	0	0	0	0
TD to TC	147.07	110.79	121.79	4.32	73.94	60.13	43.53	63.56	97.81
Firm Size	5.71	5.85	5.91	5.99	6.15	6.22	6.29	6.38	6.48
Sales Growth	-	30.68	24.74	(19.60)	56.58	27.91	(1.54)	12.86	65.24

**Non- financial sector**

Super paper plastic company	Years								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROA	11.60	-16.26	1.81	-6.10	-2.64	0.94	-6.93	-	35.90
ROE	-18.24	-29.75	3.32	-11.25	-8.31	-5.41	-23.95	-142.16	152.45
NPM	18.45	-20.44	2.12	17.27	-5.89	1.91	-18.29	-	103.65
STD to TC	1.95	2.31	8.83	5.58	6.17	20.75	4.23	9.17	5.17
LTD to TC	9.54	12.03	-	-	-	-	19.74	36.27	-
TD to TC	11.49	14.34	8.83	5.58	6.17	20.75	23.98	45.44	5.17
Firm Size	6.59	6.54	6.56	6.93	6.94	6.96	7.00	6.93	6.12
Sales Growth	13.47	12.81	2.83	31.21	13.11	-15.97	-100.00		
	<b>Mechanical Lloyed Company Limited</b>								
ROA	7.26	7.15	10.03	6.24	7.02	11.07	11.51	9.61	0.26
ROE	10.35	9.10	13.05	10.97	7.47	9.96	18.22	15.47	-2.68
NPM	9.69	8.93	10.28	7.04	8.97	10.48	12.00	16.71	0.04
STD to TC	12.13	1.93	0.27	6.13	7.04	1.53	9.01	-	15.41
LTD to TC	10.04	14.14	8.79	14.35	19.83	7.84	-	1.99	5.71
TD to TC	22.17	16.08	9.06	20.47	21.80	9.38	9.01	1.99	21.12
Firm Size	7.17	7.19	7.35	7.47	7.42	7.43	7.55	7.91	6.82
Sales Growth.	-	12.10	73.27	19.30	-14.41	28.40	19.01	38.64	-18.19
	<b>PZ Cussons Ghana limited</b>								
ROA	-1.54	18.78	14.36	12.16	5.44	12.04	13.61	1.55	14.15
ROE	5.52	14.79	18.97	16.73	3.90	15.12	20.24	2.44	20.06
NPM	-	-	14.33	10.90	4.68	9.21	11.71	1.17	10.78
STD to TC	-	-	0.11	15.55	1.49	1.67	18.90	5.88	4.76
LTD to TC	-	-	0.04	-	1.07	1.78	2.11	2.06	1.73
TD to TC	-	-	0.15	15.55	2.56	3.45	21.01	7.94	6.49
Firm Size	7.55	7.63	4.46	7.78	7.58	7.62	7.76	7.8	7.86
Sales Growth	-	-	-	46.84	4.37	22.77	20.76	24.38	16.30

Uniliver Ghana limited	Years								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROA	20.81	21.53	19.26	20.34	4.61	26.29	30.76	16.39	11.09
ROE	36.35	30.81	24.02	41.07	-10.47	46.26	52.40	40.53	51.67
NPM	10.71	10.27	10.05	12.86	2.43	14.88	16.34	8.93	6.59
STD to TC	15.01	7.93	0.70	5.37	0.32	0.18	2.18	1.56	37.37
LTD to TC	6.06	5.41	0	0	0	0	0	0	0
TD to TC	21.07	13.35	0.70	5.37	0.32	0.18	2.18	1.56	37.37
Firm Size	4.72	4.74	4.86	5.01	4.93	5.01	5.1	5.19	5.28
Sales Growth	-	14.15	18.71	16.39	-0.23	11.69	33.33	18.05	14.63
<b>Benso Oil Palm Plantation Limited</b>									
ROA	0.13	7.64	10.81	22.23	7.19	11.17	31.01	31.70	13.35
ROE	0.14	7.06	4.46	24.69	8.14	12.23	32.46	33.07	13.30
NPM	0.21	14.37	14.66	23.65	10.21	13.78	28.08	33.58	17.30
STD to TC	4.25	2.03	0.17	0.74	3.77	3.28	0.45	1.38	0.66
LTD to TC	-	-	-	-	-	-	-	-	-
TD to TC	4.25	2.03	0.17	0.74	3.77	3.28	0.45	1.38	0.66
Firm Size	7.08	4.23	2.25	4.34	4.35	4.38	4.5	4.64	4.66
Sales Growth		-99.88	44.45	56.99	-24.22	24.12	79.68	17.36	-13.22
<b>Produce Buying Company limited</b>									
ROA	-10.18	-6.64	18.15	16.46	22.60	22.28	26.24	21.05	12.58
ROE	-1.24	-0.55	3.41	4.52	4.99	5.95	5.53	5.24	3.66
NPM	-57.99	-25.70	2.50	28.70	45.90	63.25	59.12	19.83	16.27
STD to TC	431.48	328.11	355.22	293.93	295.37	381.56	294.96	308.88	447.56
LTD to TC	-	-	34.96	27.62	22.77	10.33	16.63	19.53	27.95
TD to TC	431.48	328.11	390.18	321.56	318.14	391.89	311.59	328.41	475.51
Firm Size	4.48	4.28	7.56	7.83	7.89	8.23	8.44	8.46	8.51
Sales Growth	-	-7.34	182.31	27.07	78.18	44.69	105.68	-10.67	-3.41

<b>Anglogold Ashanti limited</b>	<b>Years</b>								
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
ROA	-0.41	2.75	-5.58	- 15.14	-2.14	5.27	20.39	8.88	- 25.22
ROE	-5.97	-0.46	-26.04	- 46.00	-8.84	3.14	30.93	15.52	- 70.81
NPM	-1.25	7.89	-17.41	- 32.59	-5.34	9.39	31.80	16.99	- 42.75
STD to TC	2.90	0.92	5.47	23.21	24.38	1.57	0.32	8.00	3.29
LTD to TC	26.34	22.08	29.01	19.55	15.85	31.87	25.84	25.46	43.06
TD to TC	29.24	23.00	34.48	42.76	40.23	33.44	26.17	33.45	46.35
Firm Size	3.87	3.91	3.97	4.01	4.14	4.16	4.25	4.38	4.36
Sales Growth	-	14.97	6.22	57.65	17.50	47.09	39.11	11.30	6.27
<b>Total petroleum Ghana limited</b>									
ROA	8.30	4.86	9.65	8.21	13.11	16.75	13.83	14.42	13.89
ROE	25.98	6.94	16.68	11.19	21.79	31.79	31.08	35.47	34.50
NPM	1.81	3.44	3.29	2.15	3.48	3.97	3.44	3.31	3.52
STD to TC	58.43	44.78	47.35	63.12	11.23	19.32	19.47	16.07	32.07
LTD to TC	-	-	-	-	-	-	-	-	-
TD to TC	58.43	44.78	47.35	63.12	11.23	19.32	19.47	16.07	32.07
Firm Size	4.38	5.06	5.12	5.27	5.31	5.41	5.57	5.74	5.9
Sales Growth	-	46.43	141.85	83.68	7.54	42.30	35.78	59.61	32.82
<b>Guinness Ghana breweries limited</b>									
ROA	78.27	78.07	18.48	15.96	7.42	11.16	10.14	16.79	10.73
ROE	20.48	28.83	21.80	22.03	8.47	-10.27	1.17	17.67	12.38
NPM	21.15	27.31	22.71	18.04	7.36	10.65	8.47	14.02	9.96
STD to TC	34.70	58.07	20.87	50.81	161.10	61.03	120.76	18.78	42.52
LTD to TC	12.61	1.03	30.51	20.13	-	47.20	27.38	4.63	1.68
TD to TC	47.31	59.10	51.38	70.94	156.09	108.23	148.14	23.41	44.20
Firm Size	4.23	4.42	5.1	5.19	5.3	5.3	5.31	5.39	5.47
Sales Growth	-	19.75	23.87	46.91	46.19	2.75	18.30	19.66	9.82

Starwin products limited	Years								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROA	20.90	6.53	3.31	2.27	5.30	14.99	24.81	13.82	20.70
ROE	11.03	4.12	1.25	-6.83	-8.67	4.46	20.38	11.78	21.33
NPM	18.37	10.77	5.49	3.07	6.42	14.91	21.80	12.79	16.10
STD to TC	0.68	23.25	31.98	33.26	90.14	51.98	31.25	34.84	26.72
LTD to TC	-	2.98	9.02	14.32	5.02	16.61	-	-	-
TD to TC	0.68	26.23	41.00	47.58	95.15	68.58	31.25	34.84	26.72
Firm Size	6.16	6.50	6.53	6.52	6.57	6.57	6.57	6.65	6.72
Sales Growth	-	14.70	7.36	21.19	25.00	21.91	14.24	13.26	38.87

**Source;** *Author's own computation of firms' ratios from GSE. (2014 edition)*