

**UNIVERSITY OF CAPE COAST**

**CAPITAL STRUCTURE AND PROFITABILITY OF SELECTED NON-FINANCIAL FIRMS ON THE GHANA STOCK EXCHANGE**

**BY**

**ANTHONY HERCULES TURKSON**

**DISSERTATION SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, SCHOOL OF BUSINESS, UNIVERSITY OF CAPE COAST IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION DEGREE IN FINANCE**

**MARCH, 2011**

## **DECLARATION**

### **Candidate's declaration**

I hereby declare that this dissertation is the result of my own original research and that no part of this has been presented for another degree in this University or elsewhere.

Candidate's Name: ANTHONY HERCULES TURKSON

Signature..... Date.....

### **Supervisor's declaration**

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Name: MR. JOHN GARCHIE GATSI

Signature..... Date.....

## ABSTRACT

The study investigated the relationship between capital structure and profitability of listed non-financial firms in Ghana, covering a seven-year period (2002-2008). Capital structure theories provided theoretical basis for the work. The study adopted the panel data methodology to examine the effects of capital structure on the profitability of twenty selected non-financial firms. The general least square 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 study revealed that 54.99 % of the total capital of the firms is made up of debts. Of this 47.65 % constitute short-term debts while 7.33% is made up of long-term debts. This indicates that the non-financial firms are highly leveraged firms and also shows the importance of short-term debts over long –term debts in financing non-financial firms. The correlation and regression results showed a significantly negative association between leverage and profitability. This implies that, during the period under study, leverage did not bring about profitability. There should therefore be reforms in the financial markets to reduce cost of short-term debts or encourage internal financing. The firms should also focus on growth so as to benefit from leverage. Reforms in the banking sector to provide more long-term debt to non –financial firms is as well necessary to affect profitability.

## **ACKNOWLEDGEMENTS**

I wish to thank Mr. John Gartchie Gatsi, my supervisor, for effectively supervising this work and making fruitful suggestions towards its completion. I am equally grateful to Messrs Frempong Siaw, Steven Asante, Edwerd Marfo-Yiadam and Prof. P. E. Bondze Simpson for their countless but valuable contribution to this work.

Mr. Gorden Mensah and Mr. Jacob Arthur, all of the academic section, University of Cape Coast and Mr. John Kuntu Blankson, Chief Executive Officer of Quality Enterprise Cape Coast, who encouraged me to complete the work are also acknowledged.

## **DEDICATION**

This work is dedicated to my lovely wife Mrs. Linda Turkson and children, Isaac Ayeyie Turkson and Ezba Elohim Turkson.

## TABLE OF CONTENTS

CONTENT	Page
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER ONE: INTRODUCTION	1
Background to the study	1
Statement of the problem	4
Purpose of the study	4
Objectives of the study	5
Hypotheses	5
Significance of the Study	6
Delimitation	6
Limitations	7

Organization of the Study	8
CHAPTER TWO: LITERATURE REVIEW	9
Introduction	9
Theoretical literature review	10
The concept of capital structure	10
Theories of capital structure	11
Modigliani and Miller Theory (M and M Theory)	11
M and M Proposition I	11
M and M Proposition II	13
The pecking order theory	15
Implications of the pecking order theory	16
The static trade-off theory	16
Implications of the static trade-off theory	17
Information asymmetry cost	18
Market timing theories	19
Signaling theory	21
Capital structure and the Issue of tax benefits	22

Bankruptcy cost	26
Agency cost	28
Empirical literature review	30
Negative relationship between leverage and firm profitability	30
Positive association between leverage and firm profitability	32
CHAPTER THREE: RESEARCH METHODOLOGY	36
Introduction	36
The Research Design	36
Quantitative research method	37
Population	37
The sample and sampling procedure	37
Sources of data	38
Variables used	38
Return on asset	39
Return on equity	39
Net profit margin	40
Ratio of short-term debt to total capital	40



Ratio of long-term debt to total capital	41
Ratio of total debt to total capital	42
Firm size	42
Sales growth	43
Panel data	46
Model estimation and specification	46
Data analysis	48
CHAPTER FOUR: RESULTS AND DISCUSSION	50
Introduction	50
Descriptive statistics	50
The correlation matrix	53
Regression results	55
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	64
Summary	64
Conclusions	67
Recommendations	69
Area for further study	70

REFERENCES	71
APPENDICES	78
A: Non-financial institutions covered in the study	78
B: Sample computation of profitability and leverage ratios	79
C: Accra Brewery limited	82
D: Summary of profitability and leverage ratios for 15 listed companies on the Ghana Stock Exchange (2002-2008)	85
E: Background information or profile of the selected listed non-financial firms	90

## LIST OF TABLES

Table	Page
1. Dependent and independent variables used for the study	45
2. Descriptive statistics of the dependent and independents variables	51
3. Correlation matrix of the variables	53
4. Regression model results (dependent variable: return on assets)	55
5. Regression model results (dependent variable: return on equity)	58
6. Regression model results (dependent variable: net profit margin)	61

## LIST OF FIGURES

Figure		Page
1.	Two pie model of capital structure	12
2.	The cost of equity and WACC	13

## **CHAPTER ONE**

### **INTRODUCTION**

#### **Background to the study**

Literature on capital structure has expanded since the publication of the works of Modigliani and Miller (1958; 1963). Using a Ghanaian firm, Abor (2005) maintains that capital structure decision is crucial for any business organization that aims at maximizing returns to various organizational constituencies. He further explains that capital structure decision is crucial because of its impact on a firm's ability to deal with its competitive environment. Thus, the determination of appropriate choice and mix of debt and equity that would maximize the market value of non- financial firm is very important.

Gatsi and Akoto (2010) described the term capital structure as the combination of debt and equity that make the total capital of firms and explained that the proportion of debt to equity is a strategic choice of corporate managers. Van Horne and Wachowicz (2008) posit that capital structure is a mix or proportion of a firm's permanent long-term financing represented by debts, preferred stock and common stock. Literature is replete with the relation between capital structure and profitability of firms. This is so, because firms use debt and

equity which form the basis of capital structure to acquire assets for their operations. In explaining profit maximization, Gowthorpe (2003) describes profit as the surplus remaining when revenue from the use of assets acquired using both debt and equity exceeds expenditure of firms. In Ghana companies in non-financial industries need capital mainly to support funding of property acquisition and to build or acquire production facilities and equipments to pursue new areas of business (Amidu, 2007). They also need excess funds to pay dividends, wages, buy raw materials and cater for other expenses. Such investments and expenses could only maximize returns of the firms when a strategic decision is made to choose an appropriate mix of debt and equity in the capital structure.

To understand how non-financial firms in Ghana finance their operations to maximize profits, it is necessary to examine the effect of leverage on their performance. According to Gowthorpe (2003) financial performance of a company (success or failure) is assessed by profitability ratios. She considered gross profit margin (a relationship between net profit and sales), net profit margin (a relationship between net profit and sales) and return on capital employed (a relationship between the level of profits generated compared to amount of capital invested in the business) as the three main financial ratios used in assessing the profitability of a company. Van Horne and Wachowicz (2008) also explained profitability ratios as ratios used by companies to assess the relative success or failure of business. They further classified the ratios into two main types, namely profitability ratios in relation to sales and profitability ratios in relation to investment. They argue that the returns indicate the firms overall effectiveness of

operation. Three main ratios, namely gross profit margin, return on investment and return on equity were mentioned.

Marfo-Yiadom and Boachie-Mensah (2010) also supported Van Horne and Wachowicz (2008) by stating that profitability ratios measures management's overall effectiveness as shown by returns generated on sales and investments. Ross, Westerfield and Jordan (2008) also explained that return on assets and return on equity are key indicators for assessing the profitability of a company.

Regarding leverage ratios, Van Horne and Wachowicz (2008) posit that leverage ratios are ratios that show the extent to which the firm is financed by debt. The ratios according to them can be classified as short-term debt, long-term debt and total debt.

It should be noted that, a lot of studies have been conducted on leverage and profitability of financial and non-financial firms in Ghana. Mention can be made of studies carried out by Abor (2005) on the profitability of listed firms in Ghana; Abor and Biekpe (2005) on what determines the capital structure of Ghanaian firms. Amidu (2007) also studied the determinants of capital structure of banks in Ghana and Gatsi and Akoto (2010) studied capital structure and profitability of banks in Ghana.

These researchers focused largely on research in financial institutions on one hand and both financial and non-financial institutions on other hand. Much concentration has not specifically been given to non-financial firms. Hence the

need for the current study to empirically examine the influence of capital structure on the profitability of non-financial firms listed on the Ghana Stock Exchange.

### **Statement of the problem**

It is evident that studies to determine the relationship between leverage and firms' profitability are inconclusive. It is also evident that in the non-financial institutions, the issue of capital structure and profitability has been significantly under-researched although this is not the case in other industries. In Ghana all studies on capital structure and profitability were centered on listed financial firms on one hand and both financial and non-financial on the other hand. Much attention has not been given to studies on capital structure and profitability of non-financial firms.

It should be noted that currently in Ghana, no study has so far been carried out specifically on capital structure and profitability of non- financial firms. Therefore this study was to examine the effect of capital structure on the profitability of selected non-financial firms in Ghana and specifically examine the relationship between leverage and profitability of the firms under study.

### **Purpose of the study**

The main purpose of the study was to investigate the effect of capital structure on the profitability of non-financial firms listed on the Ghana Stock Exchange. The study specifically examined the relationships between capital structure and profitability of non-financial firms listed on the Ghana Stock Exchange from 2002 to 2008.



## **Objectives of the study**

The general objective of the study was to examine the capital structure and its effects on the profitability of non-financial firms listed on the Ghana Stock Exchange.

The following specific objectives guided the study:

- To find out whether return on asset, return on equity and net profit margin are positively related to short-term debt.
- To find out whether return on asset, return on equity and net profit margin are positively related to long term debt.
- To find out whether return on asset, return on equity and net profit margin are positively related to total debt.
- To find out whether return on asset, return on equity and net profit margin are positively related to firm size.
- To find out whether return on asset, return on equity and net profit margin are positively related to sales growth.

## **Hypotheses**

The following hypothesis guided the study:

H<sub>1o</sub>: Return on asset, Return on equity and Net profit margin are positively related to short –term debt.

H2<sub>o</sub>: Return on asset, Return on equity and Net profit margin are positively related to long-term debt

H3<sub>o</sub>: Return on asset, Return on equity and Net profit margin are positively related to total debt

H4<sub>o</sub>: Return on asset, Return on equity and Net profit margin are positively related to firm size

H5<sub>o</sub>: Return on asset, Return on equity and Net profit margin are positively related to sales growth

### **Significance of the study**

The result of the study may be useful to corporate managers taking short and long term financing decisions.

The result may also be useful in planning the day to day financial administration and management of Ghanaian firms. The study may help finance managers to pay strategic attention to issues of profitability and leverage.

### **Delimitation**

The study was restricted to only non-financial firms listed on the Ghana Stock Exchange (GSE) from 2002 to 2008. Banking firms, Insurance firms and other financial firms were not considered. As a result the findings may not represent all the listed firms in the GSE.

The study was also restricted to only secondary sources of data. Use of financial data and computation of profitability and leverage ratios of fifteen (15) listed non-financial firms on the GSE were considered. Primary source of data were not used for the study, so the inputs and views of management to determine financial performance was not considered.

Firms listed on the GSE in 2008 but not listed in 2002 and 2003 were not considered for the study. In addition, due to unavailability of financial data of the firms for 2009 and 2010, the researcher did not compute profitability and leverage ratios for 2009 and 2010.

### **Limitations**

During the period of the study, 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 five (5) firms, the researcher could not analyze the data due to unavailability of data for 2002 and 2003, whilst for all the selected firms, no analyses was made for 2009 and 2010.

Another problem was on the issue of the preparation of the financial statements. Some of the companies did not separate long- term liabilities from short-term liabilities. To obtain accurate data, the researcher had a tedious task of re-arranging the financial data of those companies.

It was also observed that whereas some of the firms were not listed in 2002/2003, others were listed but financial statements for some of the firms had either been omitted or not published.

Finally, both the old and new Ghana's currency sign used for the preparation of the accounts was a problem. To ensure accuracy in computation of the ratios, the researcher converted all data from the old Ghana cedi to the new Ghana cedi.

### **Organization of the study**

The dissertation has been organized into five chapters. The first chapter highlights the background to the research problem, the statement of the problem, the purpose of the study, objectives, hypotheses tested by the researcher, the significance of the study, delimitation, limitations and organization of the study.

Relevant literature related to the study is reviewed in the second chapter. The review considers empirical studies, surveys and views of other authors. The panel data methodology and procedure adopted in carrying out the study are discussed in chapter three.

Chapter four presents the findings and discussion of the data. The secondary data are analyzed, discussed and fully presented.

The final chapter recapitulates the results and draw conclusions. Recommendations are made for efficient and effective financing decisions. Further research is then recommended.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **Introduction**

The review of literature is in two main parts: a theoretical review and an empirical review. The theoretical perspectives are on propositions and ideas of some earlier researchers, authors and educators. Research findings and recommendations of some researchers are considered under the empirical review.

Four pieces of related literature in Ghana are reviewed in this chapter. These are the studies carried out by Abor (2005) on the profitability of listed firms in Ghana; Abor and Biekpe's (2005) study on what determines the capital structure of Ghanaian firms; Amidu's (2007) study on determinants of capital structure of banks in Ghana and Gatsi and Akoto's (2010) study on capital structure and profitability of banks in Ghana.

The rest of the reviews are studies carried out in selected developed countries.

## **Theoretical literature review**

The theoretical review dwells mostly on the concept capital structure and theories of capital structure.

### **The concept of capital structure**

Abor (2005) defined capital structure as the specific mix of debt and equity a firm uses to finance its operations. He further stated that the concept is actually a mix of different securities and that a firm can choose among many alternative capital structure such as issue of large amount of debt or very little debt; arrangement of lease financing; use warrants; issue convertible bonds; sign forward contracts or trade bond swaps; and issue of dozens of distinct securities in countless combinations.

Ross et al. (2008) also indicated that capital Structure is a firm's choice of how much debt it should have relative to equity. This is a question of how a firm should go about choosing its debt-equity ratio. Ross et al. (2008) further indicated that such a choice has many implications for a firm, and is far from being a settled issue in either theory or practice.

Brealey and Myers (2003) opined that the choice of capital structure is fundamentally a marketing problem. They therefore indicated that the firm can issue dozens of distinct securities in countless combinations but it attempts to find the particular combination that maximizes market value.

Weston and Brigham (1992) noted that the optimal capital structure is the one that maximizes the market value of the firm's outstanding shares.

From the plethora of definitions, capital structure can be seen as the ratio of how much money a firm should borrow from the public to how much shareholders should contribute to finance the operations of the firm.

### **Theories of capital structure**

A lot of theories of capital structure have been developed and discussed by renowned scholars and researchers in corporate finance. These include the Modigliani and Miller theory; the pecking order theory and the static trade-off theory. The others are asymmetric information; tax benefits associated with debt use; bankruptcy cost; agency cost; market timing theory and signaling theory.

### **Modigliani and Miller Theory (M and M Theory)**

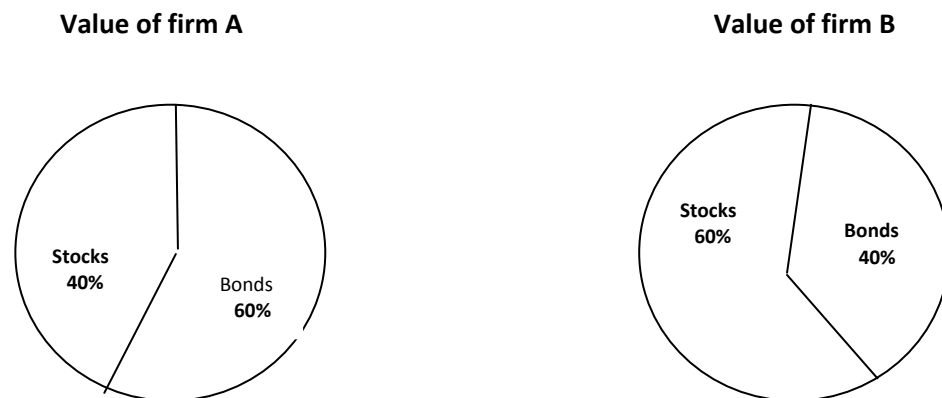
Discussions on capital structure would virtually be incomplete without the mention of Modigliani and Miller. In corporate finance literature, they are seen as the originators of the capital structure theories. In their contribution to theories on capital structure, they came out with two main propositions. Namely M and M proposition I, and M and M proposition II.

#### **M and M proposition I**

The M and M proposition I states that it is completely irrelevant how a firm chooses to arrange its finance. In other words, the value of the firm is

independent of its capital structure. In 1963, Modigliani and Miller as cited in Ross et al, (2008) explained the M and M proposition I by using the "pie" model. Modigliani and Miller took into consideration two identical firms on the left hand side of a balance sheet with exactly the same assets and operations, but different means of finance of the operations at the right hand side.

According to Modigliani and Miller Pie A had a total value of 100% with debts to equity slice of 60% to 40% respectively. Pie B however had 40% debt and 60% equity. This two-pie model is shown in Figure 1.



**Figure 1: Two pie model of capital structure**

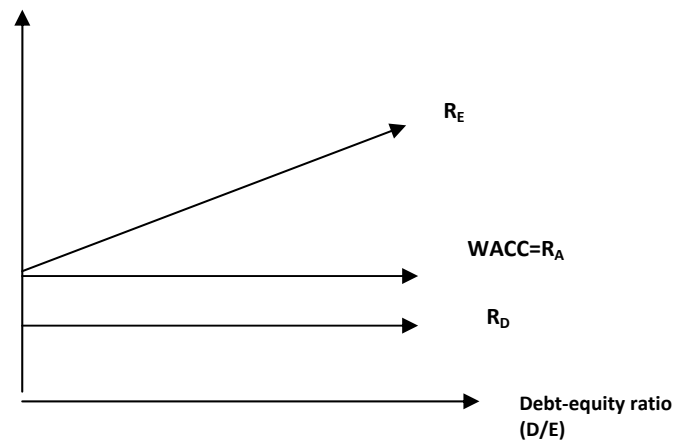
Considering the illustration in Figure 1, they concluded that, the value of the firm is independent of its capital structure and therefore two identical firms can choose different means of finance given the same assets and operations.



## M and M proposition II

The M and M proposition II however indicates that although changing the capital structure of the firm may not change the firms' total value, it does cause important changes firms' debt and equity. Modigliani and Miller (1963) ignoring taxes, explained these changes by using a linear function illustrated in Figure 2.

### Cost of capital (%)



$$R_E = R_A + (R_A - R_D) \times (D/E)$$
$$R_A = WACC = (E/V) \times R_E + (D/V) \times R_D$$

Where  $V = D + E$

**Figure 2: The cost of equity and the WACC**

From Figure 2, it can be seen that the cost of equity,  $R_E$ , is given by a straight line with a slope of  $(R_A - R_D)$ . The y-intercept corresponds to a firm with a debt-equity ratio of zero, so  $R_A = R_E$  in that case. Figure 2 shows that, as the

firm raises its debt- equity ratio, the increase in leverage raises the risk of the equity and therefore the required return, or cost of equity (RE).

M and M proposition II therefore tells us that the cost of equity depends on three things: the required rate of return on the firm's assets; the firm's cost of debts and the firm's debt-equity ratio. This established the equation in Figure 2, that is:

$$RE = RA + (RA - RD) \times (D/E)$$

where RE is the cost of equity; RA is the required rate of return on the firm's assets; RD is the firm's cost of debt and D/E is the firm's debt- equity ratio. The equation means that there is a linear relation between RE and D/E represented by the capital structure. M and M proposition II therefore states that, a firm's cost of equity capital is a positive linear function of its capital structure.

It can be concluded from Figure 2 that the weighted average cost of capital (WACC) or the required rate of return on the firm's assets (RA) does not depend on the debt-equity ratio; it is the same no matter what the debt-equity ratio is. It therefore denotes that the firm's overall cost of capital is unaffected by its capital structure. In short, the fact that the cost of debt is lower than the cost of equity is exactly offset by the increase in the cost of equity from borrowing. In other words, the change in the capital structure weights (E/V and D/V) is exactly offset by the change in the cost of equity (RE), so the WACC stays the same.

## **The pecking order theory**

The theory explains how firms use internally generated funds to initially finance their operations instead of external borrowings.

In 1984, Myers and Majluf noted that the pecking order theory discusses how firms will initially rely on internally generated funds than funds from external sources to finance their operations.

Gatsi and Akoto (2010) commenting on the model, argued that raising external finance is costly because insiders have more information about the firms' prospects than outside investors, and outside investors know this and would thus demand higher returns on their investments. Thus from the point of view of outside investors, equity is riskier than debt and therefore demand a higher result premium for equity than for debt. Thus, insiders perceive debt to be a better source of funding than equity, and internal funding is even better.

Myers and Majluf (1984) therefore opined that firms prefer retained earnings to debt and would only issue equity as a last resort. Abor (2008) supported this by saying that debt financing will only be used when there is an inadequate amount of internal funding available, and equity will only be used as a last resort.

## Implications of the pecking order theory

Barclay and Smith (2005) argued that companies with few investment opportunities and substantial free cash flow will have low (or even negative) debt ratios because the cash will be used to pay down the debt. It may also suggest that high-growth firms with lower operating cash flow will have high debt ratios because of their reluctance to raise new equity. It should be noted that where there is no existence of information asymmetry, the firm will then turn to debt if additional funds are needed, and finally issue equity to cover any remaining capital requirements. It is clear at this point that, firms would prefer internal sources to costly external finance.

Thus, according to the pecking order theory, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those that do not generate high earnings.

## **The static trade-off theory**

This theory, according to Ross et al. (2008), says that firms borrow up to the point where the tax benefit from an extra dollar in debt is exactly equal to the cost that comes from the increased profitability of financial distress. Ross et al. (2008) further noted that the static theory is called static theory because it assumes that the firm is fixed in terms of its assets and operations and it only considers possible changes in the debt – equity ratio. They also stated that the

model is not capable of identifying a precise optimal capital structure, but it does point out two of the more relevant factors, namely taxes and financial distress.

The static trade-off theory has been questioned by many authors, including Miller (1977), who argued that the static trade-off model implies that firms should be highly leveraged than they really are, as the tax savings of debt seem large while the costs of financial distress seem minor.

#### Implications of the static trade-off theory

The static trade-off model, therefore, implies that the tax benefit from leverage is obviously only important to firms that are in a tax – paying position. As a result, firms with substantial accumulated losses will get little value from the interest tax shield. Furthermore, firms that have substantial tax shields from other sources, such as depreciation, will get less benefit from leverage (Ross et al, 2008). It should further be noted that not all firms have the same tax rate. The higher the tax rate the greater the incentive to borrow (Ross et al, 2008).

The static trade-off model also implies that firms with a greater risk of experiencing financial distress will borrow less than firms with a lower risk of financial distress. For instance, all things being equal the greater the volatility in earnings before interest and tax (EBIT), the less a firm should borrow. It should also be noted that financial distress is more costly for some firms than for others. The cost of financial distress depends primarily on the firm's assets. In particular,

financial distress costs will be determined by how easily ownership of those assets can be transferred.

### **Information asymmetry cost**

Myers (1984) and Myers and Majluf (1984) contend that the concept of optimal capital structure is based on the notion of asymmetric information. According to them, the existence of information asymmetries between the firm and likely finance providers causes the relative costs of finance to vary among different sources of finance.

They further indicated that an internal source of finance where the funds provider is the firm, will have more information about the firm than new equity holders, thus these new equity holders will expect a higher rate of returns on their investments. This means it will cost the firm more to issue fresh equity shares than to use internal funds. Similarly, this argument could be provided between internal finance and new debt holders.

Gatsi and Akoto (2010) also stated that the presence of this information “gap” between managers and investors has led to the formulation of two distinct but related theories of financial decisions, namely: market timing theory and signally theory. These are reviewed within the “pecking order” model and are discussed in turn.

Barclay and Smith (2005) also argued that business executives often have better information about the value of their firms than outside investors.

Klein, O'Brien and Peter (2002) contend that in corporate finance, information asymmetry refers to the idea that insiders of a firm, for example managers have superior knowledge than other market participants on the value of their firms' assets and investment opportunities. Information asymmetry usually creates an avenue for market participants to price firms' claims incorrectly, thus providing a positive rate for corporate financing decisions.

### **Market timing theories**

This theory argues that managers critically observe the funds market and taking advantage of the information gap, would only issue new shares when they believe these shares are overvalued by investors and vice versa (Abor, 2008 & Amidu 2007). Abor (2008) and Amidu (2007) further explain that pertinent problems within the firm may not be known immediately to outside investors (unless there is a presence of insider – trading) and thus would not reflect in the share prices of the companies. This assumption is true because in the real world, capital market is not efficient.

As a result companies that have profitable uses for more capital but believe their shares are undervalued will generally choose to issue debt rather than equity to avoid diluting the value of existing shareholders claim (Barclay & Smith 2005).

Myers (1984) and Myers and Majluf (1984), also argue that firms will always use the cheapest source of funding to stimulate their operations. This is based on the assumption that managers would act in best interest of shareholders.

Gatsi and Akoto (2010) commenting on the performance of the firm, stated that investors are aware that managers know more than they do about the future performance of the firm, and they also understand management's motivation to issue overpriced shares and to avoid issuing undervalued ones.

They further argued that this well – known propensity of companies to “tie” their share often is evident with decreases in share prices after the release of some amount of new shares. As a result, the issues may be relatively expensive all things being equal, and managers would reasonably avoid them and rather use internally generated funds. Thus, by choosing the timing of new share, managers have the advantage of controlling to some level the informational disadvantage of the market.

It has also been suggested that firms should issue shares to invest in growth opportunities to avoid the cost of financial distress (Lucas & McDonald, 1990; Korajczyk, Lucas & McDonald, 1992).

It should be noted that the issue of new equities become rather expensive as investors are not aware that firms would only issue equity when it is overpriced and would thus demand higher returns as compensation. They further mentioned that astute managers would prefer to use internally generated funds rather than issuing new shares.

The same notion, according to them would also inform debt – holders to demand higher returns in these investments to pay-off. As a result, internally generated funds become a cheaper source of funding companies' debt. Therefore,



it is necessary to note that firms may not necessarily issue new equity as they believed it is overvalued or use internal funds because their existing shares are undervalued. This explains why information asymmetry can be costly to firms as investors may misinterpret manager behaviour and charge them unfairly.

From the fore-going discussion it can therefore be concluded that firms maximize value by steadily choosing to finance new investments with the “cheapest available” source of funds. It can also be seen that managers would prefer internally generated funds (retained earnings) to external fund and, if outside funds are needed, they prefer debt to equity because of the lower information costs associated with debt issues.

### **Signaling theory**

This theory is based on the idea that managers have more superior information than outside investors on the performance of the firm, and would thus communicate this potential to investors by increasing leverage.

Barclay and Smith (2005) however argue that in contrast to market timing, where securities often are seen as an attempt to raise “cheap” capital, signaling model assumes that financing decisions are designed basically to convey future prospects to outside investors. This is usually done to raise the value of shares when managers think they are undervalued.

Gatsi and Akoto (2010) argue that debt mandates firms to make a fixed set of cash payments to debt-holders over the term of the debt security. They also

mentioned that firms could be forced into bankruptcy, if they default in honouring their debt obligations, and this may affect the managers as they could lose their jobs. Managers may be aware of this and do everything possible to maintain their positions, all things being equal.

Barclay and Smith (2005) contend that, dividend payments are not obligatory and managers have more judgment over their payments and can reduce or omit them in times of financial difficulty. Ross (1977) also argued that adding more debt to the company's capital structure can show as a credible signal of higher expected future cash flows.

From the fore-going discussion, it can be seen that higher – value firms would use more debt in their capital structure to signal this value relative to their low – value counterpart and this is based on the premise that inefficient firms cannot manage debt and any attempt to use more debt would jeopardize the financial health of the firm due to bankruptcy and its associated costs.

### **Capital structure and the issue of tax benefits**

Capital structure of the firm is also explained in terms of the tax benefits associated with the use of debt. It should be noted that tax policy has an important effect on the capital structure decisions of firms. Tax can generally be said to be a payment to support the cost of government. It can also be seen as a compulsory payment from households and firms to government to enable government to finance its projects and programmes. According to Ross et al. (2008) the benefits associated with tax is called tax shield.

Modigliani and Miller (1963) argue that corporate tax laws allow firms to deduct interest payments but not dividends in computing taxable profits. According to them, this suggests that tax advantages derived from the introduction of debt into a firm would lower the firm's expected tax burden and thereby increase its after-tax cash flow.

Brownlee, Ferris, and Haskins (2001) also state that every major business decision is affected in one way or other by taxes. They are of the view that when managers are tasked to make corporate business decisions, they try to minimize taxes within the confines of the tax laws of that country. Modigliani and Miller (1963) and Miller (1977) mentioned that a tax benefit is created, as the interest payments associated with debt are tax deductible, while payments associated with equity, such as dividends are not tax deductible. Therefore, this tax effects encourage debt use by the firm, as more debt increases the after tax proceeds to the owners.

Abor (2008) further mentioned that while there is corporate tax advantage resulting from deductibility of interest payments on debt investors receive this interest as income. He also indicated that the interest income received by the investors is also taxable on their personal accounts, and the percentage income tax effect is negative.

Modigliani and Miller (1963) argue that, normally, the basic corporate profit tax law allows companies to subtract interest payments but not dividends in their computation of taxable income. As a result, introducing debt into a firm's

capital structure can lower its expected tax burden and thereby increase its after-tax cash flows. Miller (1977) also argues that if there were only a corporate tax and no individual taxes on the returns from corporate securities, the value of a leverage firm would equal that of an identical all-equity firm plus the percent value of its interest tax shield.

This is expressed as  $V_L = V_u + D_t$  Where  $V_L$  is the market capitalization of the leveraged or geared firms (i.e. market value of debt and market value of equity);  $V_u$  is market capitalization of the un-leveraged or un-gearred firms (i.e. value of equity if un-leveraged or un-gearred);  $D$  is market value of the geared or leveraged firm's debt;  $t$  is the corporate tax rate and  $D_t$  is the tax shield.

Gatsi and Akoto (2010) opined that the present value represents the contribution of debt financing to the market value of the firm. This could be estimated basically by multiplying the tax rate by the principal amount of outstanding debt, (provided the firm expects to maintain its current debt level).

According to them, the above illustration echoing the benefits of debt usage over equity can certainly not be true. They went further to explain that holders of debt and equity must pay taxes on the intended income and the dividend/capital gain that they receive respectively. However, debt-holders do know that they pay higher taxes than equity holders thus debt-holders being rational will therefore demand high returns on their investments relative to equity holders. This is meant to compensate for the risk that debts –holders take.

Barclay and Smith (2005) therefore stated that it is the equity holders that bear all the tax costs of the firm's operations, whether the company pays the taxes directly in the form of corporate income tax or it pays it indirectly in the form of required returns on the debt it sells. Miller (1977) and Myers (2001) argue that as the supply of debt from all corporations expands, investors with higher and higher tax brackets have to be enticed to hold corporate debt and to receive more of their income in the form of interest rather than capital gains.

Abor (2008) also indicated that interest rates rise as more and more debt is issued, so corporations face rising costs of debt relative to their cost of equity. Miller (1977) and Myers (2001) concluded by saying that the tax benefits rising from the issue of more corporate debt may be offset by a high tax on interest income. It is the trade-off that ultimately determines the net effect of taxes on debt usage. Modigliani and Miller (1963) posit that the implication of the tax theory on capital structure therefore suggests that, firms must use more debt to create value.

It should however be noted that managers must not be deceived to introduce very high levels of debt into their operations because of the associated tax benefits. It should further be recognized that the tax advantage has an eminent possibility of being dashed away by the higher tax, that debt-holders pay on their interest income compared to what equity-holder pay on their dividends and capital gains. It is worth mentioning that investors in general, and debt – holders in particular being interested in their after tax profits would incorporate this loss value in their expected returns to pay off this making the ultimate cost of debt higher than equity.

The conclusion therefore is that firms that can derive maximum benefit from debt usage are those whose managers can accurately determine the point where the advantages of interest tax shield ends and where the costs of financial distress starts.

### **Bankruptcy cost**

Bankruptcy cost are the costs incurred when the perceived probability that the firm will default on financing is greater than zero (Abor; 2008). Titman (1984) also maintains that Bankruptcy Cost refers to cost that occurs when a firm fails to honour its debts obligation and stands on the possibility of being closed down. According to him the cost of bankruptcy may be both direct and indirect. Examples of direct bankruptcy costs are the legal and administrative costs in the bankruptcy process. The loss in profits incurred by the firm as a result of the unwillingness of stakeholders to do business with them is an example of indirect bankruptcy costs.

Warner (1977) opined that the direct costs are often small in relation to corporate market value while indirect costs are substantial. Titman (1984) also argues that customer dependency on a firm's goods and services and the high probability of bankruptcy affect the solvency of firms. Abor (2008) also had this to say: "if a business is perceived to be close to bankruptcy, customers may be less willing to buy its goods and services because of the risk that the firm may not be able to meet its warranty obligations" (page 4). He further indicated that

employees might be less inclined to work for the business or suppliers are less likely to extend trade credit.

Kim, Heshmati and Aoun (2006) stated that such restrictions or limitations can affect a firm's value and its performance, as they eventually may have to forge attractive investment opportunities leading to underinvestment. This could adversely impact on the profitability and existence of the firm.

Modigliani and Miller (1963) contend that firms may be unable to pay their debts if they over-borrow and become financially distressed. Nevertheless, it is reasonable for firms to increase value because of tax deductibility of debt. It should be noted that bankruptcy cost increases with increased debt use thus reducing the value of the firm (Warner, 1977).

As a result, managers of financially distressed firms would advocate for less debt in their capital structure relative to their low-debt counterparts so as to safeguard against underinvestment and associated problems.

In conclusion, Grossman and Hart (1982) contend that if bankruptcy is costly to managers, perhaps because they would lose benefits of control or reputation then debt finance should rather create incentives for managers to work harder, consume fewer prerequisites and make better investment decisions.

## **Agency cost**

The use of debt in the capital structure of the firm also brings about agency costs. According to Jensen and Meckling (1976), agency cost arises as a result of the relationships between shareholders and managers, and those between debt-holders and shareholders.

They further mentioned that the relationships can be characterized as principal agent relationships. Here whereas the management of a firm is seen as the agent, both the shareholder and debt-holders are noted to be the principals. Conflict usually occurs when the agent decides not to maximize the principals' wealth. Harris and Raviv (1990) stated that the conflict between shareholders and managers arises because managers hold less than 100% of the residual claim. As a result, they do not capture the entire gain from their profit enhancing activities but they do bear the entire cost of these activities.

The whole concept is about separation of ownership and control. This may result in managers exerting insufficient work, indulging in perquisites, and choosing inputs and outputs that suit their own preferences. Another issue is that managers may invest in projects that reduce the value of the firm but enhance their control over its resources. For example, it may be optimal for the investors to liquidate the firm and managers may choose to continue operations to enhance their position (Abor, 2008).

Harris and Raviv (1990) supported the idea and thus indicated that managers have an incentive to continue a firm's current operations even if



shareholders prefer liquidation. Abor (2008) further stated that the conflict between debt-holders and shareholders is due to moral hazard.

Chittenden, Hall and Hutchinson (1996), opined that Agency theory suggests that information asymmetry and moral hazard will be greater for smaller firms. Jensen and Meckling (1976) however noted that the conflict between debt-holders and equity – holders arises because debt control gives equity – holders’ incentive to invest sub optimally.

According to Abor (2008), in the event of an investment yielding large returns, equity – holders receive the majority of the benefits. He further indicated that in the case of the investment failing, because of limited liability, debt-holders bear the majority of the consequences. 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 debt (Barnea, Haugen and Snebet, 1980). According to them, shortening the maturity structure of the debt and the ability to call the bond before the expiration date can help reduce the agency costs of underinvestment and risk-shifting. They also demonstrated that both features of the corporate debt serve identical purposes in solving agency problems.

Abor (2008) argues that the agency costs of debt can be resolved by the entire structure of the financial claim. As a result, to effectively reduce agency problems, there is a need to change the capital structure of the firm. Barnea et al. (1980) also contend that this provision would inevitably allow debts to be

withdrawn between their maturity, an act which is capable of changing the capital structure of the firm by reducing the debt levels and reducing the agency costs.

From the above discussion, it can be concluded that firms with higher agency costs due to conflict between the firm and the debt-holders should have lower levels of debt in their capital structure to maximize value.

### **Empirical literature review**

The empirical perspectives cover issues mostly on the negative relationship between leverage and firm profitability, and the positive relationship between leverage and firm profitability.

#### Negative relationship between leverage and firm profitability

In examining the association between leverage and firm profitability, numerous studies have been conducted by researchers. It should be noted that most of the studies conducted revealed a negative relationship between profitability and leverage. These include Amidu's (2007) study on determinants of the capital structure of banks in Ghana; Abor's (2005) study on the effect of capital structure on the profitability of listed firms in Ghana and Graham's (2004) study on how big are the tax benefits of debt?.

Others are Cassar and Holmes' (2003) study on capital structure and financing of SME's Australian evidence; Fama and French's (1998) study on taxes, financing decisions and firm value; Kester's (1986) study on capital and

ownership structure: a comparison of United States and Japanese manufacturing companies; Titman and Wessels' (1988) study on the determinants of capital structure choice and Hall, Hutchinson and Michaels' (2004) study on determinants of the capital structure of European SMEs.

Amidu (2007) found an inverse relationship between short-term debt and firm profitability. Abor (2005) in his studies also found an inverse relationship between company profitability and long-term debt. Graham (2004) concluded by saying that there is an inverse relationship between total debt and profitability. He further indicated that big and profitable companies present low debt levels.

Titman and Wessels (1988) opined that firms with high profit levels, all things being equal, would maintain relatively lower debt levels since they can realize such funds from internal source. Cassar and Holmes (2003), and Hall, Hutchinson and Michaels (2004) all found a negative association between profitability and both long-term debt and short-term debt ratios. Kester (1986) also found a significantly negative relationship between profitability and debt/asset ratios.

Furthermore, Rajan and Zingales (1995) also observed a significantly negative correlation between profitability and leverage in their work. According to Fama and French (1998), debt usage does not necessary grant tax benefits; high leverage may rather generate agency problems among shareholders and debt-holders that predict negative relationship between leverage and profitability. The above empirical evidences, seems to be consistent with the pecking order theory.

## Positive association between leverage and firm profitability

Despite the above empirical evidence on leverage and profitability, other researchers are of a different view. These researchers in their studies found a positive association between profitability and leverage. For example in a study designed to examine the effect of capital structure on profitability of listed firms in Ghana., Abor (2005) observed a significantly positive relationship between the ratio of short-term debt to total assets and profitability, but a negative association between the ratio of long term debt to total assets and profitability.

It should be noted, however, that on average, Abor (2005) reported a significantly positive relationship between total debt and profitability thus supporting the above previous works. Studies conducted by Peterson and Rajan (1994) to examine the relationship between profitability and leverage, also revealed a significantly positive association between profitability and debt ratio.

Taub (1975) in a regression analysis of four profitability metrics against debt ratio observed a significantly positive relationship between debt and profitability. Champion's (1999) study on finance: the joy of leverage and Leibenstein's (1966) study on allocative efficiency versus x-efficiency, argue that companies can use more debt to enhance their financial performance because of debts capability to cause managers to improve productivity to avoid bankruptcy. Furthermore Roden and Lewellen (1995) in a study to find the percentage of total debt in leverage buyout observed a significantly positive relationship between profitability and total debt. Nerlove (1968) and Baker (1973) also supported the

notion that there exist a significantly positive relation between profitability and firm leverage.

Gatsi and Akoto's (2010) study on capital structure and profitability of Ghanaian Banks, revealed a significantly negative association between short-term debts and net interest margin. This denotes that as deposits increase in the banking sector, net interest margin falls. In their study, long-term debts was negative but insignificant in determining net interest margin in the banking sector

Regarding total debts, it was significant and negatively related to net interest margin. Finally their study revealed that bank size was significantly and negatively related to both returns on equity and net interest margin in the banking sector. However there was a positive and statistically significant relationship between sales growth and both returns on equity and net interest margin in the banking sector. Gatsi and Akoto (2010) concluded that short-term debts, long term-debts, and total debt are insignificant in determining returns on equity (ROE) in the banking sector of Ghana. They attributed this to increase cost of doing the business of banking in Ghana coupled with underutilization of deposits due to high lending rates.

In this chapter the researcher reviewed theories and some empirical studies on capital structure. Of all the theories and empirical studies reviewed in the study, the picture that emerges is that all the various writers agreed that strategic choice of corporate managers on either debt finance or equity finance becomes the watch word for profit maximization of a firm.

It is evident that apart from the Modigliana and Miller's (1963) proposition I which emphasizes on the fact that the value of the firm is independent of its capital structure, and proposition II which however states that although changing the capital structure of the firm may not change the firm total value, it does causes important changes in the firm's debt and equity finance. As a result two main theories, the pecking order theory and the static trade-off theory were considered in the study.

Regarding the pecking order and static trade-off theories, all the writers argued that whereas the Pecking order theory emphasizes how firms initially uses internally generated fund to finance its operations, instead of external borrowings, the static trade-off theory considers firms that are highly leveraged and recognizes the benefits associated with tax payments. As a result, the higher the profit and consequently the tax rate, the grater the incentives to borrow. The discussions of the writers indicate that embedded in the Static Trade- off model and the pecking order theory are six other theories that explain the capital structure decisions. These are based on asymmetric information, tax benefits associated with debt use, bankruptcy cost, agency cost, market timing theory and signaling theory. The asymmetric information, market timing theory and signaling theory, according to Abor (2008), are rooted in the pecking order frame work, while bankruptcy cost, agency cost, and the benefits of tax savings are in terms of the static trade -off choice.

Finally it should be noted that empirical studies has proved that studies to determine the relationship between leverage and firms' profitability are

inconclusive. Whereas some studies show a positive relationship between leverage and profitability, others show a negative relationship between leverage and profitability. The present study was interested on the effect of leverage on profitability as mentioned in the literature. The study was therefore designed to investigate the effect of capital structure on the profitability of selected non-financial firms listed on the Ghana Stock Exchange, with a view to making suggestions that might enhance optimal choice of capital structure.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **Introduction**

The chapter discusses the research design, the population, the sample and the sampling procedure. It also discusses the sources of data, variables to be used, the panel regression model and the data analyses.

#### **The research design**

The methodology adopted in the study was purely quantitative and panel data form. According to Abor (2005) panel data involves the pooling of observations on cross-section of units over several time periods. Since this study involves the pooling of observations on cross-section of units over a period of seven years with available data, it lends its self to panel data form. Besides, the method effectively addresses the objectives of the study. Regression and correlation matrix were specifically used to find out the relationship between the dependent and independent variables.



## **Quantitative research method**

According to Cooper and Schindler (2001) quantitative research methodology relates to numbers and measuring of observed facts. They further explain that it involves reliance on observable hard facts for which data is collected, analyzed and described in terms of numbers.

Cooper and Schindler (2001) also argue that quantitative research methodology permits specification of dependent variable and allows for longitudinal measures of subsequent performance of the research subject.

This method is compatible with the study because it allows the research problem to be conducted in a very specific and set terms. Besides, this approach plainly and distinctively specifies both the independent and the dependent variables under investigation. It also follows resolutely the original set of research goals, arriving at more objective conclusions, testing hypothesis, determining the issues of causality and eliminates or minimizes subjectivity of judgments.

## **Population**

The target population for this study is made up of twenty non-financial firms currently listed on the Ghana stock exchange (see Appendix A).

## **The sample and sampling procedure**

The purposive sampling technique was used to purposely select fifteen non-financial firms listed on the Ghana Stock Exchange between the periods 2002 to 2008. The selected firms are shown in Appendix D. The choice of the seven year

period was based on regression assumption that, the larger the data in terms of time frame, the more suitable the model for forecasting or prediction. More so the data available effectively covered a seven year period.

This method was appropriate because five of the firms namely Clydestine Ghana Limited , Ayrton Drugs Manufacturing Limited, Golden Web Limited, Starwin Company Limited, Super Paper Products Company Limited were not listed between the period of 2002 and 2003. Whereas Clydestine Ghana Limited and Starwin Company Limited were listed in 2004, Ayrton Drugs Manufacturing Limited and Golden Web Limited were listed on 2005. Though Super Paper Products Company Limited was listed in 1992, at the time of the study the company had been de-listed.

### **Sources of data**

Secondary data, specifically the financial statement of the fifteen (15) listed non-financial firms on the GSE between 2002 -2008 provided information for the study. The data were obtained from the data file of the 20 listed firms. In addition, scholarly articles from academic journals, relevant text books on the subject and the internet search engines were used.

### **Variables used**

Three dependent variables, namely, return on asset (ROA), return on equity (ROE) and net profit margin (NPM), three independent variables, namely, the 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 and two control variables firm size and sales growth were considered for the study.

#### Return on asset (ROA)

Van Horne and Wachowicz (2008) stated that return on asset (ROA) is calculated as the ratio of net income that is pre-tax profit to total asset. This ratio measures after tax profit per cedi of assets. It is also called return on investment (ROI)

#### Return on equity (ROE)

Van Horne and Wachowicz (2008) also defined return on equity (ROE) as the ratio of net income to total stock of equity. It was also defined as the ratio of pre-tax profit to total equity capital.

The use of ROE as a profitability measure is appropriate due to the fact that ROE represents the return that goes to the owners of a business. This will assist the researcher to distinguish the returns specifically to the owners as against returns to the whole firm.

The use of ROA even though embedded in ROE (Saunders et al. 2004), is necessary to determine the profitability of the firm in terms of their investments and thus measure the profitability linked to the asset size of the firm.

## Net profit margin (NPM)

The third dependent variable is the ratio of net profit margin. Gowthorpe (2003) stated that net profit margin (NPM) is the profit that is available from each cedi of sales after all expenses have been paid, including cost of goods, selling and administrative expenses, dependable interest and taxes. It is calculated as the ratio of pre-tax profit to total sales.

Literature on corporate finance indicates generally ROE is preferred to ROA and NPM as a profitability indicator. Nonetheless, the researcher considered NPM as another dependent variables in the study since it reflects the profit that emanates from the core business or sales of the firms and thus the researcher will desire to see how the explanatory variables would influence it in the regression model.

## The ratio of short-term debt to total capital

Van Horne and Wachowicz (2008) explained the ratio of short-term debt to total capital as the ratio that measure the extent to which the listed firms under study use short-term debt to finance their operations and how this category of debt associates with the firm's profitability for the chosen period of the study. They further indicated that settlement of the short-term debt is within a period of one year. That is debt finance payable within one accounting period.

Literature on the relationship between short-term debt to capital and firms' profitability has proved to be inconclusive. Whereas some studies revealed a positive relationship between profitability and short-term debt, other results showed a negative relationship between firms' profitability and short-term-debt. In this study, the researcher expects a significantly positive relationship between short-term debt and the three profitability matrices. This relationship is expected so as to meet the dictates of theoretical and durational matching perspectives in the non-financial firms in Ghana.

The ratio of long-term debt to total capital

Concerning the ratio of long-term debt to total capital, Van Horne and Wachowicz (2008) argue that, the ratio measures the extent to which the non-financial firms use long-term debt to finance their operations and how this category of debts associates with the firm's profitability for the chosen period of the study. They further defined it as debt finance payable in more than one accounting period.

It is evident that whereas some studies revealed a positive relationship between profitability ratios and long-term debt, other results showed a negative relationship between firms' profitability and long-term-debt. In this study, the researcher also expects a positive relationship between long-term debt and the three profitability matrices.

The ratio of total debt to total capital

This is the ratio of total liabilities to total capital. Basically it is the summation of short term debt and long term debt of the firms to their total capital. This ratio measures the extent to which the operations of the firms have been funded with total debt relative to equity and also how leverage associates with firms' profitability in Ghana. Many studies have been inconclusive to determine the relationships between leverage (TD) and profitability. In this study, the researcher expects a negative relationship between total debt and firm's profitability.

Firm size

Size has been viewed as a determinant of a firm's capital structure (Abor, 2005). Larger firms tend to be more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias, 1983; Wald, 1999). Smaller firms on the other hand may find it relatively more costly to resolve information asymmetries with lenders thus may present lower debt ratios (Castanias, 1983). Studies conducted on the relationship between firm size and capital structure revealed varying findings. Most of the studies support a positive relationship between firm sizes and leverage (Marsh, 1982; Friend and Lang 1988; Rajan and Zingales, 1995; Cassar and Holmes, 2003). It should be noted that, Fischer, Heinkel and Zechner (1989) however found a negative relationship between size and debt ratio.

Firm size has been taken as the logarithm of the total asset of selected non financial firms. The use of logarithm enables us to get the real total asset of the firms due to its capabilities to standardize values thus, bringing them on the same platform for a more efficient analysis to be done. It is statistically noted that, the regression model is the line of best fit for the data under study. Generally in plotting the data points, some data will fall slightly above or below the line of best fit, thus to reduce this effect a logarithm of total asset is considered for firm size. In this study, firm size and profitability relationship is expected to be positive.

#### Sales growth

The relationship between sales growth and capital structure can also be explained by pecking order hypothesis. Growing forms place a greater demand on the internally generated funds of the firm (Abor, 2005). Marsh (1982) argues that firms with high growth will capture relatively higher debt ratios. He further stated that, there is also a relationship between the degree of previous growth and future growth. Michaelas, Chittenden and Poutziouris (1999) opine that future opportunity will be related to leverage, in particular short term leverage. They argue that agency problem and consequentially the cost of financing are reduced if the firm issues short term rather than long term debt. Myers (1977) however, argues that firms with growth opportunities will have smaller proportions of the debt in their capital structure. This is due to the fact that, conflict between debt and equity holders are especially serious for assets that give the firm that option to undertake such growth opportunities in the future.

Empirical evidence from studies conducted on sales growth and the dependent variables are quite varying with respect to conclusions. Some researchers found positive relationship between sales growth and leverage (Kester, 1986 and Titman and Wessels, 1988). Other evidence showed that higher growth firms use less debt, as such indicated negative relationship between growth and debt ratio (Kim and Sorenson, 1986; Rajan and zingales, 1995; Al-Sikran, 2001). In the present study, a positive relationship is also expected between the dependent variables and sales growth. The positive relationship between the dependent variables and sales growth indicates that, non financial firms in Ghana really gain much from their core businesses. The summary of the variables used and the expected impact of the dependent variables on the explanatory ones are shown in Table 1.

In the study, Pre- tax profit has been used instead of after tax profit or net income, for computation of the profitability ratio so as to prevent the result of the estimation from being distorted by the influence of tax payment. Usually profit making firms pay taxes proportional to the profit made for the period. This presupposes that the higher the profit the higher the tax charge, and the lower the profit the lower the tax charged. As a result the researcher believes that using after tax profit as a numerator in computing the profitability ratios for the non-financial firms in Ghana for the chosen period of study may therefore not reflect the true and fair profitability of the firm.



**Table 1 .**

**Dependent and Independent Variables Used for the Study**

Category	Variables	Measurement or Ratio Used	Expected Association between Dependent and Independent variables
Respondent Variables	1. Return on Asset (ROA)	$\frac{\text{Pre Tax Profit}}{\text{Total Assets}}$ (Pre -Tax Profit to Total Assets)	
	2. Return on Equity (ROE)	$\frac{\text{Pre Tax Profit}}{\text{Total Equity}}$ (Pre-Tax Profit to Total Equity)	
	3. Net Profit Margin (NPM)	$\frac{\text{Pre Tax Profit}}{\text{Sales}}$ (Pre-Tax Profit to Sales)	
Independent Variable	1. Short term Debt	$\frac{\text{Short Term Debt}}{\text{Total Capital}}$ (Short Term Debt to Total Capital)	POSITIVE
	2. Long Term Debt	$\frac{\text{Long Term Debt}}{\text{Total Capital}}$ (Long Term Debt to Total Capital)	POSITIVE
	3. Total Debt	$\frac{\text{Short Term} + \text{Long Term Debt}}{\text{Total Capital}}$ (Total Debt to Total Capital)	POSITIVE
	4. Size	Log of Total Assets	POSITIVE
	5. Sales growth	% change in net interest income	POSITIVE

Source: Author's construct.

## Panel Data

Panel data involves the pooling of observations on a cross-section of units over several time periods. Panel data approach is more useful than either cross-section or time series data alone. One advantage of using panel data set is that, because of the several data points, degrees of freedom are increased and collinearity among the explanatory variable is reduced. Thus the efficiency of the economic estimates is improved. Also, panel data can control for individual heterogeneity due to hidden factors which, if neglected in time series or cross section data will lead to biased results (Baltagi, 1995).

## Model estimation and specification

The study employed generalized Least Squares (GLS) panel model for the estimation. The panel regression equation differs from regular time-series or cross-section regression by the double subscript attached to each variable. The general form of the model can be written as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + U_{it}$$

Here  $U_{it}$  is a random term and  $U_{it} = U_i + V_{it}$  where  $U_i$  is the firms specific effect and  $V_{it}$  is the random term.

The choice of the model estimation which was random effect depends on the underlying assumption that model  $U_i$  and  $V_{it}$  are random with unknown disturbances. For most panel applications a major error compound model for the disturbances is adopted with  $U_{it} = U_i + V_{it}$  where  $U_i$  accounts for any

unobserved firm-specific effect that is not included in the regression model, and  $V_{it}$  represents the remaining disturbances in the regression which varies with individual firms and time.

Considering the dependent variables (return on asset, return on equity and net profit margin), the independent variables (short-term debt, long-term debt and total debt) and the control variables sales growth and firm size, the relationship between debt and non-financial firms' profitability in Ghana is thus estimated in the following regression models:

$$Y_{it} = \beta_0 + \beta_1 STD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + a_{it} \dots \dots \dots 1$$

$$Y_{it} = \beta_0 + \beta_1 LTD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + a_{it} \dots \dots \dots 2$$

$$Y_{it} = \beta_0 + \beta_1 TD_{it} + \beta_2 FS_{it} + \beta_3 SG_{it} + a_{it} \dots \dots \dots 3$$

**Where:**

$Y_{it}$  Represents Return on Assets, Return on Equity and Net Profit Margin for firm  $i$  in time  $t$

STD Represents Short Term Debts for firm  $i$  in time  $t$

LTD Represents Long Term Debts for firm  $i$  in time  $t$

TD Represents Total Debt for firm  $i$  in time  $t$

FS Represents Firm Size for firm  $i$  in time  $t$

SG     Represent Sales Growth for firm  $i$  in time  $t$

$e_{it}$      is the error term

The error term represents other factors that might have effect on the dependent variable, but for the purpose of the study were not accounted for.

### **Data analysis**

The quantitative data from the financial statements of the twenty (20) listed firms between 2002 -2008 were used for the study. Sample of the financial data can be seen in Appendix C. Two main ratios, the profitability ratio and the leverage ratios were computed using the raw data (financial statements) from the twenty (15) listed firms. The results of the computation are shown in Appendix D.

The profitability ratios computed were return on assets (ROA), return on equity (ROE) and net profit margin (NPM). The leverage ratios computed were short –term debt to total capital, long –term debt to total capital, and total debt to total capital. Sample of the computations is shown in Appendix B. Other variables computed were firm size and sales growth.

The data obtained after computation of the ratios, were fed into *excel programme*. This was then imported into software called *Stata* (Version 11) for the model estimations to establish the relationship between three dependent variables, three independent variables and two control variables. Since the study was quantitative in nature four main sections were considered for discussion under the analysis column. First, the descriptive statistics of the variables were

considered. This was followed by reports on the correlation matrix. Finally the results of the regression estimate of profitability and debt nexus concludes the discussion.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **Introduction**

This chapter presents the discussion of findings of the study. The findings are based on the panel data methodology discussed in chapter three. The chapter is divided into three main sections. The first section deals with the descriptive statistics of the variables as shown in Table 2. This is followed by Table 3 which discusses the correlation matrix of the dependent and independent variables of the study. Finally, the general regression results are described in Table 4.

#### **Descriptive statistics**

Table 2 provides a summary of the descriptive statistics of the dependent and independent variables. It shows the average indicators of variables computed from the financial statements of fifteen (15) non-financial firms listed on the GSE from 2002 to 2008. The list of the selected firms and their profiles are shown in Appendix A and E respectively. As indicated in the methodology, eight (8) variables, consisting of three dependent and three independent variables and two control variables were considered for the study.

**Table 2:****Descriptive statistics of the dependent and independent variables**

Variable	Mean	Std. Deviation	Minimum	Maximum	Observation
Return on Asset (ROA)	8.9467	11.14532	-17.08	43.89	105
Return on Equity (ROE)	18.6404	26.18799	-57.29	82.95	105
Net Profit Margin (NPM)	6.2037	9.53608	-38.05	29.07	105
Short-Term Debt to Total Capital (STD to TC)	47.6545	18.66467	5.01	100.51	105
Long-Term Debt to Total Capital (LTD to TC)	7.3365	12.43250	-14.59	57.48	105
Total Debt to Total Capital (TD to TC)	54.9903	19.17640	5.68	90.96	105
Firm Size (FS)	7.4225	.84946	5.74	9.99	105
Sales Growth (SG)	24.9892	28.85927	-40.23	130.12	90

Source: GSE annual report for 2007 and 2009

From table 2 the mean value for the ROA, ROE and NPM of the selected firms were 8.95%, 18.64% and 6.2% respectively. This means that profitability of the firms' measured by ROA, ROE, and NPM registered a mean of 8.95%, 18.64% and 6.2% respectively. The ratio of STD to TC, LTD to TC and TD to TC

recorded a mean of 47.65%, 7.34% and 54.99% respectively. This means that whereas 55% of the total assets of the firms are financed by debts, 45% was generated from either equity finance or other internal sources. The above position suggests that the companies are greatly financed by leverage, with a larger percentage of the total debts being short-term debts.

This attest to the fact that Ghanaian firm largely depend more on debts, especially short- term debts (STD) as compared to equity and other internal sources to finance their operation. This explains why most of the firms find it difficult to expand their operations and profitability as there is always pressure on them to pay off at shorter periods. This can leave the firms in a continuous cycle of financing pressure. The 7.34% average long-term debts recorded, which is lower as compared to short-term debts (STD) might be due to inability of the firms to provide the needed collateral to assess the long-term facility and the fear of financial institutions to accommodate exceptional risk associated with the firms. It may also be due to high cost associated with long-term debts. Firm size and sales growth registered an average value of 7.42% and 24.98% respectively. The mean sales growth of 25% indicates that gradually the non-financial firms are catching up with the financial institutions since per the stock market statistics, the non-financial firms are far behind the financial firms in terms of growth. The mean values of the entire variables were at 5% significant level.



### The correlation matrix

In order to examine the strength and relationships among the regressors, a correlation matrix of the variables for the sample firms is discussed in Table 3.

**Table 3:**

#### Correlation matrix of the variables

	ROA	ROE	NPM	STD to TC	LTD to TC	TD to TC	Firm Size	Sales Growth
ROA	1							
ROE	.910 (.000)	1						
NPM	.786 (.000)	.717 (.000)	1					
STD to TC	-.177 (.071)	-.019 (.847)	-.269 (.006)	1				
LTD to TC	-.220 (.024)	-.162 (.098)	-.094 (.340)	-.291 (.003)	1			
TD to TC	-.315 (.001)	-.124 (.208)	-.322 (.001)	.784 (.000)	.365 (.000)	1		
Firm Size	-.082 (.406)	-.078 (.427)	-.033 (.739)	.089 (.367)	.101 (.304)	.152 (.121)	1	
Sales Growth	.208 (.033)	.264 (.006)	.095 (.337)	-.004 (.964)	.055 (.574)	.032 (.748)	.020 (.841)	1

**Note:** P-Value in brackets (Significant at 5%)

Source: GSE annual report for 2007 and 2009

From Table 3, comparing the profitability ratio (ROA, ROE and NPM,) to the leverage ratios ( STD to TC, LTD to TC, TD to TC) and the two control variables sales growth (SG) and firm size (FS), a relationship between the dependent and independent variables can easily be established.

As shown in Table 3, whereas ROA is insignificantly and negatively correlated with STD and FS, it is significantly and negatively correlated to LTD and TD. ROA however is significantly and positively correlated to SG. The second profitability ratio ROE is insignificant and negatively related to STD, LTD, TD and FS. This confirms Gatsi and Akoto's (2010) study on capital structure and profitability of Ghanaian banks. They concluded that short-term debts, long term-debts, and total debt are insignificant in determining returns on equity (ROE) in the banking sector of Ghana. They also concluded that ROE was positively and statistically significant to sales growth. From Table 3, ROE is rather insignificant but positively related to SG. It can also be seen apart from the negative and significant relationship between NPM and TD, NPM is insignificant and negatively correlated to STD, LTD and FS. Regarding sales growth NPM is however insignificant and positively correlated to SG. 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.

## Regression results

In order to investigate the relationship between capital structure and profitability, regression analysis was made. Measures of profitability (ROA, ROE AND NPM) were regressed against measures of debt (STD, LTD AND TD) and the control variables FS and SG. General least squares (GLS) regression results are presented in Tables 4, 5 and 6. It should be noted that the values of all the variables are at 5% significant level.

**Table 4:**  
**Regression model results (dependent variable: return on asset)**

Variable	Profitability: ROA					
	1		2		3	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Firm Size	-.7045	0.601	-.6753	0.608	-.3583	0.784
Sales Growth	.1192	0.002	.1211	0.001	.1195	0.001
Constant	13.6028	0.188	11.4685	0.250	16.1761	0.106
STD to TC	-.0694	0.239				
LTD to TC			-.1817	0.029		
TD to TC					-.1519	0.007
R-squared		0.2185		0.2513		0.1747
Wald chi <sup>2</sup> (3)		11.56		15.34		18.20
Prob > chi <sup>2</sup>		0.0091		0.0016		0.0004

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD  
Regression eqn.: eqn 1, 2 and 3 in page 47.  $Y_{it}$  rep ROA

Source: GSE annual report for 2007and 2009

From Table 4, short-term debt with probability value of 0.2 was found to be insignificant and negatively associated with returns on asset. This indicates that, increasing the amount of short term debt will result in a decrease in the return of asset of the firms. The result also shows that long term debt with a probability value of 0.03 recorded a significantly negative relationship with return on asset. The relation between total debts to capital ratio and return on asset was found to be significantly and negatively related. The negative relationship between long-term debt and profitability on one hand and short-term debt and profitability on the other hand, denotes that though high geared firms could be profitable, at the time of the study, the increase amount of short-term debt and long-term debt did not result in increase in profitability. All things being equal, this could be as a result of high lending rate or costs of borrowing. It therefore means that for such firms to be profitable, they will initially prefer internal finance to external borrowings as stated by the pecking order theory.

Titman and Wessels (1988) support this by saying that firms with high profit levels, all things being equal, would maintain relatively lower debt levels since they can realize such funds from internal source. The control variable firm size with a probability value of 0.6, 0.6 and 0.7 for STD, LTD and TD respectively, were statistically insignificant and negatively related to return on asset for all measures of debts. Sales growth however was significantly and positively related to return on asset for all measure of debts. The results also show that apart from sales growth that registered positive association with returns on asset, all the order explanatory variable were inversely related to return on asset.

From the results it can therefore be concluded that whereas STD was found to be insignificant and negatively related with ROA, LTD and TD were significantly and negatively related to ROA. Regarding the control variable FS and SG, it can be seen that whereas FS was statistically insignificant and negatively related to ROA for all measures of debts, SG however was significantly and positively related to ROA for all measures of debts. The conclusion therefore shows that the null hypothesis, ROA is positively related to short-term debt, Long term debt, total debt and firm size needs to be rejected in favour of the alternative hypothesis. However regarding ROA and SG the null hypothesis, ROA is positively related to SG needs not be rejected.

Table 5 shows the relationship between ROE and leverage (short term debt, long term debt and total debt). Control variables, firm size and sales growth are also considered.

**Table 5:****Regression model results (dependent variable: return on equity)**

Variable	Profitability: ROE					
	1		2		3	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Firm Size	-2.6865	0.404	-2.3293	0.461	-1.7776	0.577
Sales Growth	.3124	0.001	.3147	0.001	.3057	0.001
Constant	29.2404	0.237	29.4687	0.219	31.1391	0.202
STD to TC	.0063	0.965				
LTD to TC			-.3310	0.098		
TD to TC					-.1471	0.279
R-squared	0.2253		0.2523		0.2368	
Wald	12.32		15.45		12.97	
chi <sup>2</sup> (3)						
Prob > chi <sup>2</sup>	0.0064		0.0015		0.0047	

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD

Regression eqn.: eqn 1, 2 and 3 in page 47.  $Y_{it}$  rep ROE

Source: GSE annual report for 2007 and 2009

From Table 5, short-term debt and ROE with probability value of 0.1 registered insignificant and positive association. This indicates that short-term debts though insignificant tends to be less expensive and therefore increasing short-term debts with relatively low interest rate will lead to an increase in profit level. The results also showed that ROE was insignificantly and negatively related to long-term debts and total debts. The ROE with probability value of 0.09 and

0.3 LTD and TD respectively, though insignificant, to some extent confirms studies conducted by Abor (2005), who observed a significantly positive relationship between the ratio of short-term debt to total assets and profitability, but a negative association between the ratio of long term debt to total assets and profitability.

The inverse relationship between ROE and LTD implies that an increase in LTD finance will lead to a decrease in profitability. This is explained by the fact that LTD finance is relatively more expensive and therefore employing high proportions of it could lead to low profitability. The results support early finding by Miller (1997), Fama and French (1998) and Graham (2004) which stated that there is an inverse relationship between LTD and profitability.

The control variable, firm size with a probability value of 0.4, 0.5 and 0.6 for STD, LTD and TD respectively were also insignificantly and negatively associated with ROE and all measures of debts. The results though insignificant, to some extent confirms Gatsi and Akoto's (2010) conclusion that bank size was significantly and negatively related to both returns on equity and net interest margin in the banking sector. However there was a positive and statistically significant relationship between sales growth and both returns on equity and net interest margin in the banking sector. The current study which revealed that the control variable sales growth was significant and positively related to ROE for all measures of debts, confirms Gatsi and Akoto's (2010) findings.

Considering the findings, it can be concluded that whereas STD and ROE recorded insignificant and positive association, ROE was also insignificantly and negatively related to both LTD and TD. However ROE was insignificant and negatively related to TD. The control variable FS and SG provided varying results. Whereas FS was insignificant and negatively related to ROE and all measures of debts, SG however was significant and positively related to ROE for all measures of debts. The conclusion therefore indicates that the null hypothesis, ROE is positively related to Long term debts, total debt and firm size needs to be rejected in favour of the alternative hypothesis. However the null hypothesis, ROE is positively related to STD and SG needs not be rejected.

Table 6 shows that the effects of leverage (short term debt long term debts and total debt) on profitability (NPM). Firm size and sales growth are the control variables.



**Table 6:**  
**Regression model results (dependent variable: net profit margin)**

Variable	Profitability: NPM					
	1		2		3	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Firm Size	-.6940	0.545	-.8980	0.445	-.4939	0.664
Sales Growth	.0584	0.077	.0598	0.077	.0592	0.069
Constant	14.6866	0.096	11.0880	0.213	15.4448	0.075
STD to TC	-.1162	0.021				
LTD to TC			-.0601	0.418		
TD to TC					-.1402	0.004
R-squared	0.2986		0.2499		0.2270	
Wald chi <sup>2</sup> (3)	9.41		4.52		12.52	
Prob > chi <sup>2</sup>	0.0243		0.2104		0.0058	

Notes: Significant level at 5%; 1 represents regression result for STD; 2 represent regression result for LTD; 3 represents regression result for TD  
Regression eqn.: eqn 1, 2 and 3 in page 47.  $Y_t$  rep NPM

Source: GSE annual report for 2007and 2009

Short-term debt to total capital with profitability value of 0.02 was significantly and negatively related to net profit margin. The results also show that long- term debt with probability value of 0.4was insignificantly and negatively related to NPM. This 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. This means that leverage did not bring about profitability and hence the need to consider internal financing (Myers and Majuluf (1984), Chittenden et al.(1996), Friend and Lang(1988), Kester (1986)).

Myers and Majuluf (1984), maintain that firms would prefer internal source of finance to costly external source. The implication is that firms that generate internal funds, generally tend to avoid gearing(debt), while profitable firms may have better access to debt finance than less profitable ones, the need for debt finance may possibly be lower for highly profitable firms if the retained earning ease significantly to fund new investments (Abor and Biekpe, 2005). 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 under study the firms were heavily financed internally.

The relationship between total debts to capital with probability value of 0.004 and NPM was found to be significant 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.

From the results, it can be concluded that whereas STD and NPM were significant and negatively related to both LTD and TD, NPM was found to be significant and negatively related. Concerning the control variable FS and SG, whereas FS with probability value of 0.5, 0.4 and 0.6 for STD, LTD and TD respectively, were insignificant and negatively related to NPM for all measures of debts, SG however was significant and positively related to NPM for all measures of debts. The conclusion indicates that the null hypothesis, NPM is positively related to short-term debt, Long term debts, total debt and firm size needs to be

rejected in favour of the alternative hypothesis. However the null hypothesis, NPM is positively related to SG needs not be rejected.

The  $R^2$  measures the extent to which the explanatory variables explain the variations 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, 5 and 6, the aggregate  $R^2$  values of 64.45%, 71.46% and 77.56% were recorded for ROA, ROE and NPM respectively. This indicates that the explanatory variables (debt ratios in this case) explain of 64.45%, 71.46% and 77.56% of the variations in the profitability (ROA, ROE and NPM) respectively, of non-financial firms in Ghana within the period under study. The negative relationship established, may be due to the fact that the non- financial firms paid high interest rate for the loan during the year under study.

## **CHAPTER FIVE**

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

#### **Summary**

Non-financial firms play a major role in the economic development of every country. Apart from provision of job opportunity to the citizenry, they provide goods and services and other social responsibilities to the Ghanaian community. One crucial decision managers of non-financial firms face is the debt-equity choice. Among others, this choice is necessary for the profit determination of the firm. What this means is that firms that are able to make prudent choice between debt and equity would have a competitive advantage in the industry. All things being equal, this will maximize profit levels. Nonetheless, it is essential for as to recognize that this decision can only be wisely taken if and only the firms know how debt policy influences their profitability

The purpose of this study was to investigate the relationship between capital structure and profitability of twenty non-financial firms listed on the GSE during the period of 2002 to 2008. This was motivated because earlier research focused only on listed financial institutions, though the non-financial firms play useful role in the economy. The researcher initially selected twenty (20) firms

over the period 2002-2008 for the study, but due to the limited information, fifteen (15) non-financial firms over the same period were finally considered. The study adopted the panel data methodology, specifically general least square technique to investigate the relationship between capital structure and profitability of twenty listed non-financial firms for the period of 2002-2008. Regression and correlation matrix were used as an indicator to establish the relationship between the dependent and independent variables. Major findings of the study are summarized below:

Firstly, it was observed that 55% of the total capital of the non-financial firms in Ghana is made up of debts. Of this, 48% constitutes short-term debts while 7% is made up of long-term debts. Secondly, at 5% significance level for all the profitability and leverage ratios it was revealed that ROA was insignificantly and negatively related to STD. This means that though borrowings or debt financing did not increase profitability of the firms, it was very low and thus insignificant. This may be due to the high interest rate of the banks and other financial institutions. It is also important to note that when loans are obtained at high interest rate and not used judiciously, it would not yield any positive result or bring about profitability. In the worst scenario, it would rather constrain return on assets.

Concerning the relationship between ROE and STD, it was found that ROE was positively and insignificantly related to STD. This means that STD though insignificant tends to be less expensive and therefore increasing STD with relatively low interest rate will lead to increase in profit levels

The relationship between NPM and STD however was statistically negative and significant. This presupposes that as leverage increases, profitability expressed by NPM falls. This suggests that to enhance profitability, firms should rather consider internal sources of finance rather than external borrowings.

Regarding the relationship between ROA and LTD, the results show that ROA was significantly and negatively related to LTD. This also implies that as leverage increases, profitability expressed by ROA falls. This might be due to the high cost of long-term borrowings and to some extent lack of collateral security for such loans. It also means that the firms do not issue bond, hence the LTD finance is only long-term bank borrowings.

Concerning the relationship between ROE or NPM and LTD, the results show that ROE and NPM were all insignificantly and negatively related to LTD. This means that as leverage increases, profitability expressed by ROE and NPM falls, but the fall does not have any significant effect on the LTD. This again might be due to high cost of long-term finance and the difficulty of accessing the loans, based on collateral security.

The study also revealed that whereas ROA and NPM were significantly and negatively related to TD, ROE however was insignificant and negatively related to TD. It denotes that considering ROA or NPM and TD, debt-financing completely did not increase profitability. The insignificant and negative relationship between ROE and TD indicates that as leverage increases

profitability expressed by ROE would also not have any significant effect on the TD.

The control variable firm size was insignificantly and negatively related to ROA for all measures of debts. Firm size was also insignificant and negatively related to both ROE and NPM for all measures of debts. Finally, the study revealed that sales growth and ROA were however positively and significantly 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 matrices 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. The rather significant and positive relationship between sales growth and the profitability matrices for all measures of debt suggests that growth is very important in determining firms profit in Ghana. What is important for us to acknowledge is that as growth increases in firms in Ghana, profitability also increases and is in line with the theoretical prediction.

## **Conclusions**

The results of the study show that apart from NPM that was significantly and negatively related to STD, ROA and ROE were all insignificantly related to STD. It should however be noted that whereas ROA was inversely related to STD, ROE

was positively related to STD. It can also be concluded that apart from ROA that was significantly and negatively related to LTD, NPM and ROE were all insignificant and negatively related to total LTD. Regarding the association between TD and the profitability ratios ROA, ROE and NPM, whereas ROA and NPM were all significant and negatively related to TD, ROE was insignificant and negatively related to TD.

Finally, whereas firm size was insignificant and negatively related to ROA, ROE and NPM for all measures of debts, sales growth however was significantly and positively related to ROA, ROE and NPM for all measures of debts. The negative association for all measures of profitability and LTD suggests that the firms did not focus largely on LTD finance due to the high cost of capital. This was probably due to the absence of a well developed bonds market in Ghana where the non-financial firms can raise enough long-term debts. It also means that the profitable firms use more short-term debts to finance their operations.

The negative association between the profitability ratios and TD denotes that the firms' profitability was not influenced by debt financing. This situation denotes that leverage did not bring about profitability and hence the need to consider internal finance. This implies that non-financial firms in Ghana use less debt and depend more on internal source of financing, thus supporting the pecking order theory

Furthermore, firm size influences profitability measured by return on assets, return on equity and net profit margin negatively. The insignificant negative



relationship between firm size and profitability suggest that though insignificant, larger firms tend to exhibit lower margins and is consistent with models that emphasizes the negative role of size from scale inefficiencies. The positive effect of sales growth on profitability of non-financial firms was highly significant. Theoretically firms increase their profits levels as the level of economic activities increase in an economy. The findings suggest that growth is crucial in determining non-financial firms' profits in Ghana and when it increases, profit also increases. This result is in line with the theoretical prediction.

### **Recommendations**

From the findings, the following recommendations would be useful to the management of non-financial firms and policy makers in general.

- Non-financial firms in Ghana should focus on growth so as to benefit from leverage.
- There should be reforms in the financial markets to reduce cost of short-term debts for firms in Ghana.
- Firms are to be managed in a manner to qualify to issue bonds.
- The government through the bank of Ghana (BOG), must develop our bond market so that non-financial firms can raise a lot of long-term debts to support their operation.
- Non-financial firms in Ghana should attach much importance to internal finance which is cheaper as compared to external financing.

### **Areas for further study**

Considering the findings of this study, it would be useful to also consider the following direction for future research:

- A comparative study of non-financial firms listed on the Ghana stock exchange and other African countries in terms of capital structure and profitability.
- A comparative study of financial and non- financial firms listed on the GSE in terms of capital structure and profitability.
- Capital structure and profitability of non-financial firms spanning a longer period of time (1995-2010).

## 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. (2005). What determines the capital structure of listed firms in Ghana? *African Finance Journal*, 7 (1), 37-48.
- Abor, J. (2008). Determinants of the capital structure of Ghanaian Firms. *African Economic Research consortium*, Research paper No. 176, Nairobi.
- 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.
- Bakar, S.H. (1973). Risk, leverage & profitability: an industry analysis. *Review of Economics & Statistics*, 55, 503-7.
- Baltagi, B.H.(1995). *Econometric analysis of panel data*. Manchester: Wiley press.
- Barclay, M., & Smith, C. (2005). The capital structure puzzle: The evidence revisited. *Journal of Applied Corporate Finance*, 17(1).
- Barnea, A., Haugen, R.A., & Snebet, L.W. (1980). A rationale for debt maturity and call provisions in the agency theoretic frame work. *The Journal of*

*Finance*, 35 (5), 23-34.

Brealey, R.A., & Myers, S.C. (2003). *Principles of corporate finance*.

International edition. Boston, MA: McGraw-Hill.

Brownlee, E.R., Ferris, K.R., & Haskins, M.E. (2001). *Corporate financial reporting*, 4<sup>th</sup> ed., McGraw-Hill, Boston.

Castanias, R. (1983) Bankruptcy risk & optimal capital structure *The Journal of Finance*, 38: 1617-1635.

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*, 77(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 McGrawHill.

Fama, E.F., & French, K.R. (1998). Taxes, financing decisions and firm value. *Journal of Finance*,53,819-43.

Fischer, E.O., Heinkel, R., & Zechner, J. (1998). Dynamic capital structure choice: Theory and Test. *The Journal of Finance*, 44,.19-40

- Friend I., & Lang, H.P. (1988). An empirical test of the impact of managerial self interest on corporate capital structure. *Journal of Finance*, 43, 271-281.
- Gatsi, J.G, & Akoto, R. K. (2010). Capital structure and profitability in Ghanaian banks. *Social Science Research Net Work*, 1-69
- 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.
- Grossman, S. J., & Hart, O. (1982). Corporate Financial Structure and Management Incentives. In J. J. McCall (ed), *The Economics of Information & Uncertainty* (pp.107-140). Chicago: University of Chicago Press.
- 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.
- Harris, M., & Raviv, A. (1990). Capital structure and the Information role of debt. *Journal of Finance*, 45(2),321-49.
- Jensen, M., & Meckling, W. (1976). Theory of firm: managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 15,5-16.

- Kester, W.C.(1986). Capital & ownership structure: a comparison of United States & Japanese manufacturing companies. *Asian Economic Journal*, 20 (3),275-302.
- Kim, W.S., & Sorensen, E.H. (1986). Evidence on the impact of the agency costs of debt on corporate debt Policy. *Journal of Financial & Quantitative Analysis*, 21, 131-143.
- Kim, H., Heshmati, A., & Aoun, D. (2006). Dynamics of capital structure: The case of Korean listed manufacturing companies. *Asian Economic Journal*, 20 (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.
- Korajczyk, R.A., Lucas , D.J., & McDonald, R.L.(1992). Equity issues with time varying asymmetric information. *Journal of Financial & Quantitative Analysis*,27,397-417.
- Lucas, D.J., & McDonald, R.L. (1990). Equity Issues and stock price dynamics. *Journal of Finance*, 45, 1019-1043.
- Leibenstein, H. (1966). Allocative Efficiency vs. X-Efficiency. *American Economic Review*, 56,392-415.

Marfo-Yardom, E., & Boachie-Mensah, F.O. (2010). *Strategic management*.

Cape Coast: Nyakod Printing Works.

Marsh. P. (1982). The choice between equity and debt: An empirical study.

*Journal of Finance*, 37(1), 121-144.

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 & Taxes. *Journal of Finance*, 32, 261-76.

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., & M. Miller. (1963). Corporate income taxes and the cost of

capital: A correction. *American Economic Review*, 53, 443-53.

Myers, S.C. (1984). The capital structure puzzle, *Journal of Finance*, 39, 575-92.

Myers, S.C., & Majluf, N.S. (1984). Corporate financing and investment

Decisions: When firms have information that investors do not have.

*Journal of Financial Economics*, 12, 187-221.

Myers, S.C. (2001). Capital structure. *Journal of Perspectives*, 15(2), 18-102.

Nerlove, M. (1968). Factors affecting difference among rates of return on

individuals common status. *Review of Economics and Statistics*,  
50, 312-31.

Petersen, M., & Rajan, R. (1994). The benefits of lending relationships:

Evidence from small business data. *Journal of Finance*, 47,3-37.

Rajan, R.G., & Zingales, L. (1995). What do we know about capital structure?

Some evidence from international data. *Journal of Finance*, 50,21-60.

Ross,S.A., Westerfied, R.W., & Jordan, B. D.(2008). *Essentials of corporate  
finance*. New York: McGraw-Hill/Irwin.

Ross, S. (1977). The determination of financial structure: The incentive signaling  
approach. *Bell Journal of Economics*,8,23-40.

Roden, D.M., & Lewellen, W.G. (1995). Corporate capital structure decisions:

Evidence from leveraged buyouts, *Financial Management*, 24,76-87.

Sounders, A., & Cornett, M..M. (2004). *Financial markets and institutions: A  
modern perspectives*. Boston: McGraw-Hill press.

Taub, A.J. (1975). Determinants of the firms' capital structure. *Review of  
Economics & Statistics*,57,137-51.

Titman, S. (1984). The effect of capital structure on a 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.

Warner, J.B. (1977). Bankruptcy cost: some evidence. *The Journal of Finance*, 32 (2), 337-47.

Weston, J.F., & Brigham, E.F. (1992). *Essentials of managerial finance*. Hinsdale, IL.: Dryden press,

## APPENDICES

### APPENDIX A

#### Non- Financial Institutions covered in the study

<b>Non- Financial Institutions</b>	<b>Number of years Financial Data is obtained</b>
Accra Brewery Limited	7 Years (2002-2008)
AngloGold Ashanti Limited	7 Years (2002-2008)
Aluworks Limited	7 Years (2002-2008)
Ayrton Drug Manufacturing Limited	7 Years (2002-2008)
Benso Oil Palm plantation Limited	7 Years (2002-2008)
Camelot Ghana Limited	7 Years (2002-2008)
CFAO (Ghana) Limited	7 Years (2002-2008)
Clydestone(Ghana) Limited	7 Years (2002-2008)
Cocoa Processing Company Limited	7 Years (2002-2008)
Fan Milk Limited	7 Years (2002-2008)
Guinness Ghana Breweries Limited	7 Years (2002-2008)
Golden Web Limited	7 Years (2002-2008)
Mechanical Lloyd Company Limited	7 Years (2002-2008)
Pioneer Kitchenware Limited	7 Years (2002-2008)
Produce Buying Company Limited	7 Years (2002-2008)
PZ Cussons Ghana Limited	7 Years (2002-2008)
Starwin Products Limited	7 Years (2002-2008)
Super Paper Products Company Limited	7 Years (2002-2008)
Total Petroleum Ghana Limited	7 Years (2002-2008)
Unilever Ghana limited.	7 Years (2002-2008)

## APPENDIX B

### Sample computation of profitability and leverage ratios

Firm: Accra Brewery Ltd

Year: 2002 (value in Ghana Cedis)

Profitability Ratio: ROA, ROE and NPM

NB: Figures used for computation can be found in Appendix C

A. Return on Assets (ROA):

$$= \frac{\text{Pre-tax profit}}{\text{Total Assets}} \times 100 = \frac{652600}{8156800} \times 100 = 8.00\%$$

Note that;  $\text{Total Assets} = \text{Fixed Assets} + \text{Current Assets}$

$$= 4054200 + 4102600 = 8156800$$

B. Return on Equity (ROE):

$$= \frac{\text{Pre-tax profit}}{\text{Total Equity}} \times 100 = \frac{652600}{3794900} \times 100 = 17.20\%$$

Note that;  $\text{Total Equity} = \text{Shareholders' Fund}$

C. Net Profit Margin (NPM):

$$= \frac{\text{Pre-tax profit}}{\text{Sales}} \times 100 = \frac{652600}{8978000} \times 100 = 7.30\%$$

Leverage Ratios:

1. Short – Term Debt to Total Capital:

$$= \frac{(\text{Short - Term Debt})}{\text{Total Capital}} \times 100 = \frac{3874100}{8156800} \times 100\% = 47.50\%$$

Note That; **Total Capital = Total Equity + Total Debt**

2. Long – Term Debt to Total Capital

$$= \frac{(\text{Long - Term Debt})}{\text{Total Capital}} \times 100 = \frac{487800}{8156800} \times 100\% = 5.98\%$$

3. Total Debt to Total Capital:

$$= \frac{\text{Total Debt (STD + LTD)}}{\text{Total Capital}} \times 100 = \frac{(3874100 + 487800)}{8156800} \times 100\% \\ = 53.48\%$$

4. **Firm Size = log of Total Assets**

$$\text{Total Assets} = \text{Fixed Assets} + \text{Current Assets}$$

$$= 4054200 + 4102600 = 8156800$$

$$\text{Therefore, } \log 8156800 = 6.91$$

5. **Sales Growth = % Change in Net Interest Income**

For example; Sales Growth for 2003:

$$\text{■ } \frac{\text{Current Year (2003) Sales} - \text{Previous Year (2002) Sales}}{\text{Previous Year (2002)}} \times 100\%$$

$$\text{■ } \frac{14360900 - 8978000}{8978000} \times 100\% = 59.96$$

## APPENDIX C

### Accra Brewery Limited

	2006	2005	2004	2003	2002
<b>PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 31ST MARCH.....</b>					
<b>Turn over</b>	198,949	198,246	183909	143,609	89,780
<b>Operating and Other Expenses</b>	206,549	181,919	164712	131,884	83,971
<b>Operating Profit</b>	-7,600	16,327	19,197	11,725	3,809
<b>Other income</b>	2,163	2,374	0	168	2,717
<b>Profit before tax</b>	-5,437	18,701	19,197	11,893	6,526
<b>Taxation</b>	-2,966	4,959	5,552	3,867	1,462
<b>Profit after Tax</b>	-2471	13,742	13645	8,026	5,064
<b>BALANCE SHEET AS AT 31ST MARCH...</b>					
<b>SHARE HOLDERS FUNDS</b>					
<b>Stated Capital</b>	73316	73316	73,316	32206	32206
<b>Capital Surplus</b>	1598	1598	1,598	1598	1711
<b>Income Surplus</b>	27012	29483	19,483	9580	4032
<b>(1)</b>	101926	104397	94397	43384	37949
<b>FIXED ASSETS</b>	106,732	99504	59644	58396	40502
<b>INVESTMENT AT COST</b>	0	3	3	3	3
	106732	99507	59647	58399	40522
<b>CURRENT ASSET</b>					
<b>stocks</b>	32724	32146	25997	24486	12796
<b>Accounts Receivable</b>	76698	71695	56953	38554	27354
<b>Cash and Bank balances</b>	355	794	19888	1124	876

(2)	109777	104635	102838	64361	41026
<b>LESS CURRENT LIABILITIES</b>					
<b>Account Payable and Loans due</b>	108996	85439	53498	24486	12796
<b>Dividend</b>	0	3742	3742	38554	27354
<b>Taxation</b>	365	2011	4584	1124	876
(3)	<u>109,361</u>	<u>91192</u>	<u>61816</u>	<u>67206</u>	<u>38741</u>
Working Capital (4)= (2)-(3)	416	13,443	41,022	3,042	2,285
Less Deferred Liabilities (5)	(5,222)	(8,553)	(6,272)	(11,973)	(4,878)
(6)=(4)-(5)	4,806	4,890	3,4750	(15,015)	(2,593)
NET ASSETS = (1)+(6)	101,926	104,397	94,397	43,384	37,949
	2006	2005	2004	2003	2002
<b>OTHER STATITICS</b>	249.5	249.5	249.45	166.3	166.30
Issued no. of share(millions)	-2471.00	13742.00	13645	8,026	5064.00
Aggregate Earnings (millinos)	3742.00	3742.00	3742.00	2494.00	
Aggregate Dividends:					
Final (million)					
Debt/Equity Ratio	0.05	0.08	0.07	0.28	0.13
Earnings per share (cedis)	-9.91	55.09	54.7	48.26	30.45
Dividend per share(cedis)	15.00	15.00	15.00	14.99	
Net Assets per share (cedis)	408.6	418.51	378.42	260.88	228.2
Return on Equity %	-2.42	13.16	14.45	18.5	13.31
<b>MARKET STATISTICS</b>					
Market price March. 31 (cedis)	1150	1480	605	552	410
Dividend Yield %	1.3	1	2.5	2.7	
Price earnings Ratio- Times		26.9	11.1	11.4	13.5
Share Prices: Year High (Cedis)	1150				
Year Low (cedis)	1150				

## Accra Brewery Limited

<b>CASH FLOW STATEMENTS FOR THE YEAR ENDED 31</b>					
<b>MARCH(in millions)</b>					
	2006	2005	2004	2003	2002
Net Cash inflow from Operating Activities	32083	32449	20339	15812	13600
<b>RETURNS ON INVESTMENTS and SERVICING OF FINANCE.</b>					
Interest Received	0	0	0	0	4
Interest Paid	-7496	-4238	(7379)	(4429)	(4092)
Dividend Received	0	0	0	0	0
Dividend Paid	-3742	-3742	(2494)	(2070)	0
<b>Net Cash Outflow from return on investment and servicing of Finance</b>	<b>20845</b>	<b>24469</b>	<b>10467</b>	<b>9313</b>	<b>9512</b>
<b>TAXATION</b>					
Income Tax Paid	-2011	-4728	(722)	0	(275)
<b>INVESTMENT ACTIVITIES</b>					
Payments to acquire tangible fixed assets	-28054	-58042	(18883)	(24419)	(9387)
Receipt from sale of tangible fixed assets	0	0	0	152	125
Purchase of investment	0	0	0	0	0
Sale of investment in Shares	0	0	0	0	2593
	-28054	-58042	(18,883)	(24,267)	(6,669)
<b>Net cash(Outflow)/inflow before Financing</b>	<b>9,220</b>	<b>(38,301)</b>	<b>(9138)</b>	<b>(14954)</b>	<b>2568</b>
<b>FINANCING</b>					
Net proceeds from rights issue	0	0	1259	9417	806
Additional Loan	-577	-1531	(11,466)	(1,045)	
Loan Repaid					
	-577	-1531	30903	8372	<b>806</b>
<b>INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS</b>					
	(9,797)	(39,832)	21,765	(6,582)	3,374



## APPENDIX D

### Summary of Profitability and Leverage Ratio for 15 Listed Companies on the Ghana Stock Exchange (2002 – 2008)

Accra brewery	Year						
	2002	2003	2004	2005	2006	2007	2008
ROA	8.00	9.70	11.81	9.16	-2.51	1.35	6.22
ROE	17.20	27.41	20.34	17.91	-5.33	3.10	15.01
NPM	7.27	8.28	10.44	9.43	-2.73	1.33	6.65
STD to TC	47.50	54.83	38.04	44.67	50.51	54.44	55.32
LTD to TC	5.98	9.77	3.86	4.19	2.41	2.11	3.25
TD to TC	53.48	64.60	41.90	48.86	52.92	56.55	58.57
Firm Size	6.91	7.09	7.21	7.31	7.34	7.38	7.43
Sales Growth		59.96	28.06	7.80	0.35	23.17	2.92
<b>AngloGold Ashanti</b>							
ROA	12.92	9.72	0.73	-2.36	1.88	-5.01	-17.08
ROE	34.52	28.08	1.83	-7.36	5.51	-20.15	-54.84
NPM	29.07	23.26	2.50	-7.46	5.67	-15.00	-38.05
STD to TC	52.45	53.08	43.42	53.99	53.59	64.43	61.19
LTD to TC	10.14	12.31	16.45	13.92	12.33	10.70	7.66
TD to TC	62.59	65.39	59.87	67.90	65.93	75.13	68.85
Firm Size	9.60	9.69	9.91	9.92	9.95	9.99	9.91
Sales Growth		15.22	18.09	9.72	12.74	10.66	10.34
<b>Aluworks Limited</b>							
ROA	18.00	9.06	12.50	10.70	8.74	-7.64	-5.14
ROE	35.01	22.51	22.04	24.36	18.32	-45.92	-16.32
NPM	11.59	6.74	5.52	5.93	5.10	-6.49	-6.38
STD to TC	35.40	51.39	35.95	53.33	43.53	58.19	50.19
LTD to TC	13.18	8.37	7.32	2.76	8.79	25.18	18.29
TD to TC	48.58	59.75	43.27	56.09	52.32	83.37	68.48
Firm Size	7.33	7.45	7.31	7.42	7.46	7.66	7.85
Sales Growth		12.32	21.41	4.32	3.08	8.32	7.09

<b>Benso Oil Palm Plantation</b>	<b>Year</b>						
	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
ROA	25.90	12.86	4.04	0.16	5.51	4.19	2.25
ROE	40.68	14.97	4.52	0.14	6.06	4.46	2.47
NPM	28.79	23.22	6.27	0.21	7.41	5.68	2.39
STD to TC	36.33	14.09	10.55	7.32	9.22	6.13	8.74
LTD to TC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TD to TC	36.33	14.09	10.55	7.32	9.22	6.13	8.74
Firm Size	6.81	7.13	7.10	6.98	7.09	7.25	7.34
Sales Growth		29.19	10.11	-	23.99	44.45	56.99
<b>Camelot Ghana Limited</b>							
ROA	6.10	7.27	0.68	2.52	1.06	0.68	4.56
ROE	13.38	21.06	2.38	10.68	11.26	5.00	28.53
NPM	4.77	6.84	0.64	2.58	1.22	0.78	5.78
STD to TC	54.43	65.48	71.61	38.01	33.13	35.44	35.04
LTD to TC	0.00	0.00	0.00	38.38	57.48	55.52	48.98
TD to TC	54.43	65.48	71.61	76.39	90.62	90.96	84.02
Firm Size	5.74	5.89	6.04	6.18	6.59	6.36	6.51
Sales Growth		18.59	39.36	27.14	130.12	40.23	27.09
<b>CFAO Ghana Limited</b>							
ROA	-2.63	16.24	5.18	9.12	1.32	11.37	13.45
ROE	-	12.08	49.22	20.71	30.73	3.63	41.34
NPM	-1.47	13.20	3.39	3.96	0.47	5.88	7.71
STD to TC	78.24	67.00	75.01	69.44	62.87	72.49	73.61
LTD to TC	0.00	0.00	0.00	0.89	0.88	0.00	0.00
TD to TC	78.24	67.00	75.01	70.33	63.74	72.49	73.61
Firm Size	6.49	6.83	7.02	6.92	6.96	7.24	7.45
Sales Growth		50.52	91.41	21.19	33.02	32.86	46.29

<b>Cocoa Processing Co. Limited</b>	<b>Year</b>						
	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
ROA	3.02	-0.72	1.26	1.14	1.03	0.61	0.70
ROE	5.97	-2.17	4.07	4.68	4.88	2.07	1.51
NPM	4.05	-1.01	1.91	2.72	2.81	1.34	2.15
STD to TC	49.43	65.98	46.78	40.68	52.66	28.69	6.87
LTD to TC	0.00	0.93	22.14	34.86	26.33	42.00	46.96
TD to TC	49.43	66.91	68.92	75.54	78.99	70.68	53.83
Firm Size	7.52	7.68	7.71	7.82	7.90	8.03	8.26
Sales Growth		37.96	-0.66	18.29	3.86	66.02	22.91
<b>Fan Milk Ltd</b>							
ROA	32.17	43.89	32.50	30.76	24.35	25.33	28.57
ROE	82.95	77.67	65.64	56.35	40.54	38.75	43.84
NPM	14.87	17.19	15.15	15.55	13.76	14.62	17.05
STD to TC	58.56	48.54	50.49	43.62	36.80	32.03	32.38
LTD to TC	0.00	0.00	0.00	0.00	0.00	2.06	2.46
TD to TC	58.56	48.54	50.49	43.62	36.80	34.09	34.84
E to TC	41.44	51.46	49.51	56.38	63.20	65.91	65.16
Firm Size	6.75	6.82	7.08	7.20	7.26	7.37	7.52
Sales Growth		37.22	51.22	22.36	3.61	26.85	34.02
<b>Guinness Ghana Limited</b>							
ROA	29.60	23.49	16.82	13.55	15.84	11.46	14.82
ROE	56.52	61.21	57.38	30.99	36.68	23.60	37.13
NPM	18.75	18.00	14.66	16.99	18.19	12.17	14.04
STD to TC	41.27	57.02	51.28	46.25	53.87	30.42	42.47
LTD to TC	6.36	4.60	19.41	10.03	2.95	21.03	17.52
TD to TC	47.62	61.62	70.69	56.27	56.82	51.45	60.00
Firm Size	7.21	7.44	7.66	8.00	8.08	8.12	8.19
Sales Growth		40.93	45.61	51.64	31.04	19.18	31.71

<b>Mechanical Lloyd Co. Ltd.</b>	<b>Year</b>						
	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
ROA	6.34	6.58	5.77	6.74	5.63	9.62	5.73
ROE	14.28	17.53	10.80	13.05	10.67	17.34	12.37
NPM	6.65	7.97	6.37	9.00	7.02	9.86	6.46
STD to TC	55.62	53.36	38.22	42.62	38.53	36.73	43.94
LTD to TC	0.00	14.59	8.39	5.76	8.69	5.87	8.44
TD to TC	55.62	67.95	46.61	48.38	47.23	42.59	52.38
Firm Size	6.94	7.05	7.12	7.17	7.19	7.35	7.47
Sales Growth		12.49	30.46	-7.17	12.35	72.86	19.30
<b>Pioneer Kitchenware Limited</b>							
ROA	8.33	10.64	2.53	16.74	-9.57	-6.91	-15.30
ROE	17.05	19.35	3.15	26.80	22.91	23.50	-29.07
NPM	3.16	4.04	2.68	19.90	12.38	-6.61	-12.91
STD to TC	42.67	36.86	18.51	36.44	57.26	69.42	45.89
LTD to TC	8.46	8.16	1.13	1.08	0.95	1.17	1.48
TD to TC	51.14	45.02	19.64	37.52	58.21	70.59	47.37
E to TC	48.86	54.98	80.36	62.48	41.79	29.41	52.63
Firm Size	5.92	5.89	6.44	6.42	6.48	6.49	6.39
Sales Growth		-7.63	28.93	15.26	5.00	37.40	-9.90
<b>Produce Buying Company Limited</b>							
ROA	17.71	34.09	17.90	10.18	-6.64	1.07	4.37
ROE	25.08	68.64	67.07	57.29	29.51	7.77	40.11
NPM	1.44	2.58	2.49	-1.34	-0.51	0.20	1.20
STD to TC	29.41	50.35	73.06	82.22	77.49	92.86	100.51
LTD to TC	0.00	-3.68	0.00	0.00	0.00	-9.08	-14.59
TD to TC	29.41	46.67	73.06	82.22	77.49	83.78	85.92
Firm Size	6.77	7.08	7.50	7.48	7.28	7.56	7.83
Sales Growth		122.53	43.92	0.36	7.92	-	27.07

<b>PZ Cussons GH. Ltd.</b>	<b>Year</b>						
	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
ROA	20.93	19.23	11.51	8.56	14.42	14.67	12.27
ROE	3.35	31.49	18.59	12.97	23.73	24.01	22.44
NPM	19.04	14.71	12.41	8.20	15.51	14.64	11.00
STD to TC	5.01	34.84	33.66	29.20	33.50	33.93	41.34
LTD to TC	0.67	4.10	4.43	4.81	5.72	4.99	3.99
TD to TC	5.68	38.93	38.09	34.01	39.22	38.92	45.33
Firm Size	6.96	7.06	7.27	7.27	7.38	7.46	7.58
Sales Growth		49.63	16.20	12.75	14.18	30.18	46.84
<b>Total Petroleum Ghana Limited</b>							
ROA	9.49	12.23	-3.03	5.23	4.06	8.19	5.46
ROE	27.04	42.98	-17.12	26.36	9.26	21.37	14.56
NPM	1.66	2.02	-0.56	1.13	2.88	2.79	1.43
STD to TC	64.79	69.91	81.88	80.08	56.13	56.80	58.77
LTD to TC	0.13	1.64	0.41	0.16	0.05	4.91	3.71
TD to TC	64.91	71.55	82.29	80.23	56.17	61.71	62.48
Firm Size	7.25	7.37	7.40	7.42	8.10	8.14	8.17
Sales Growth		38.59	-3.81	-9.66	45.43	127.40	40.09
<b>Uniliver Ghana Limited</b>							
ROA	25.12	24.10	17.86	21.25	20.41	13.92	23.04
ROE	44.28	56.59	42.53	48.72	45.95	26.45	52.93
NPM	17.47	18.15	12.84	12.63	11.04	9.57	18.01
STD to TC	38.91	50.64	49.50	46.19	45.50	31.62	43.84
LTD to TC	2.29	1.91	2.79	3.24	2.92	5.53	4.37
TD to TC	41.20	52.55	52.29	49.43	48.41	37.15	48.21
Firm Size	7.71	7.84	7.81	7.79	7.81	7.98	8.11
Sales Growth		23.64	-2.54	16.57	14.67	17.14	19.08

ROA: RETURN ON ASSETS

STD-SHORT TERM DEBT

TC: TOTAL CAPITAL

ROE: RETURN ON EQUITY

LTD: LONG TERM DEBT

NPM: NET PROFIT MARGIN

TD: TOTAL DEBT

**APPENDIX E**  
**Back ground information or profile of selected Non-Financial Firms**

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Accra Brewery Limited	April 1,1975	The Manufacturer & distribution of Beer, Sparkling soft drinks and Non-alcoholic malt beverages. (Club Premium Lager, castle milk stout, club Shandy,stone lager, Chairman malt Liquor, Vitamalt plus+,Redds Friut fusion, Peroni Nastro Azzurro, club ginger ale, club Muscatella, club orange, club soda and club Quinine Tonic)	Provisional:- November 12,1990	1st floor, PFK Building 20 Farrar avenue, Adabraka, Accra	Peasah-Boadu & Co legal Practioners & consultants P.O.Box c3523, Accra	PricewaterCoopers, Chartered Accountants, UNA Home,12 Aviation Road ,Airport City PMB CT42 Cantonments	Dr Charles Mensa-Chairman Brain Richard Hirsch- Vice Chairman Gregory Metcalf- Managing Director Abraham T.D. Okine	Authorised no. of shares:- 1 billion issued no. of shares:- 249.45 stated capital:- GH¢7,332,000	Overseas Breweries Ltd. Owns 69.2%

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
AngloGold Ashanti Ltd	May 29,1994	Exploration, refining and marketing of gold	April 27,2004	11 diagonal street Johannesburg 2001 P.O.box 62117, Marshalltown 2107		Ernst and young, Wanderers office Park 52 Corlett Drive ,Illovo Johannesburg 22196	M Cutifani (CEO) S. Venkatakrishman	Authorised no. of shares:- 400,000,000 issued no. of shares:- 349.74 stated capital:- GH¢2,511 million	Anglo American Plc hold 41.66% of AngloGold Ashanti Shares
Aluworks limited	Feb. 24,1978	Production and sale of Aluminium based products which consist of aluminium sheet-in-Coil, Circles, Flat sheets, Corrugated roofing sheets, Aluminium Louvre blades and Others	Nov.29, 1996	Plot No.63/1, heavy industrial Area, Tema	KPMG Chartered Accountants 2nd floor, Mobil house, Liberia road, P.O.Box 242, Accra.		William Ekroo Inkumash;- Chairman Ernest Kwasi okoh Kwasi Kwarteng Benjamin Akuete Gogo Napoleon Kpoh	Authorised no. of shares:- 100 million issued no. of shares:- 41,68 stated capital:- GH¢5,002,000	None

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Benso Oil Palm Plantation Limited	January 22, 1976	Producing and Processing crude palm oil	August 30, 2004	Adum Bansa Estate Takoradi-Ghana	Legal Department Unilever Ghana Limited P.O. Box 721 Tema- Ghana	PricewaterCoopers, Chartered Accountants, Gulf House 4th floor PMB CT42 Cantonments	Ishmel Evans Yamson - chairman Neneyo A. Matekole- managing director Issa Adam K. Amoasi-Andoh F.S.O. Koranteng DR. J.A. Opoku C.A. Cofie Stephane Achio	Authorised no. of shares:- 50,000,000 issued no. of shares:- 34,800,000 stated capital:- GH¢2,000,000	Unilever Ghana Ltd owns 58.45%



Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
CFOA	CFAO (Ghana) Ltd	General merchandising of consumer goods/equipments' and marketing of motor vehicles. New technologies/Equip. solutions, car rental services, other related business activities.	January 24,1973	CFA Building Otublohum Road, Industrial Area Accra.	Lynes Quarshie-idun &Co Legal Practitioners P.O.Box 2549, Accra.	KPMG Chartered Accountants 2nd floor, Mobil house, Liberia road, P.O.Box 242, Accra.	Thomas Pelletier-chairman and managing director Stephen Decam Felix Adu Andoh E.K. Akyea-Djamson Alhaji Asuma Banda Jacques Zyelman	Authorised no. of shares:- 500 million issued no. of shares:- 241.75 million stated capital:- GH¢1,596,400	CFAO France 88.21%
Camelot Ghana Limited	February, 1977	Having begun as an importer of klisting paper in commercial reels for collating locally and later advancing into the printing of preprinted and customized forms, Camelot has evolved into a household name. it has arrange of products from ordinary continuous forms to share certificates, dividend warrants and security printing products	September 17,1999	Osu-La Road (Behind Regal cinema Building)	Gyandoh Asmah & Co. Hse. NO. 622/14, 1st Tetteh kwei street, Dzorwulu P.O. Box 18168 KIA-Accra.	Deloitte 4 Liberia road ,Accra-Ghana	DR. Sam Mensah-Chairman john Colin Villars - Managing director Elizabeth Villars Caroline Andoh Suganthan Allotey Dzifah Amegashie S.S Sapong	Authorised no. of shares:- 20,000,000 issued no. of shares:- 6.54m stated capital:- GH¢168,664	

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Cocoa Processing Co.	November 27,1981	Processing of raw cocoa beans into semi-finished and confectionery products	Feb. 14,2003	Plot No. IND/A/10/1		Darko Srapong & Co. Chartered Accountants house No. C63A/4 , New Town Loop p.o.box 9504 Airport- Accra.	Richard A. Tetteh- Managing Dir. Dramani Egala David Coleman Charles Boakye Nimako Alex Braye Bonney Oliver Kwabena Ayivi	Authorised no. of shares:- 20,000 million issued no. of shares:- 1,100.83 stated capital:- GH¢16,778,215	none
Fan Milk Ltd	January 6,1960	Production of diary and juice- based products	October 18,1991	No.1 dadeban road, off ring road North industrial area, Accra P.O. Box 6460, Accra- North	Quist,Brown,Wontumi & Associates 50 Kwame Nkrumah avenue, Adabraka, P.O. Box 7566, Accra.	PricewaterCoopers, Chartered Accountants, UNA Home,12 Aviation Road ,Airport City PMB CT42 Cantonments	Dr. Charles Mensah:- chairman Jespers B. Jeppesen Peace P. Ayisi- Okyere(Mrs.) Kojo B.Aziagbe Einar M. Christensen jens jorgen kollerup George H.O.Thompson	Authorised no. of shares:- 40 million issued no. of shares:- 19,784,548 stated capital:- GH¢6,000,000	Fan Milk international A/S Denmark 55.45% BBGN RE Epack investment fund 3.85% BBGN/JP Moorgan Chase aonshore 5.05% Enterprise Insurance Co. Ltd, 8.04%

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Guinness Ghana Breweries Ltd	October 29,1990	To manufacture, sell and deal in beer, stout, mineral water and their ancillary products \and carry on such other activities as in the opinion of directors, may conveniently be carried on in connection or together with, or, incidental, or ancillary to any of the foregoing	August 23,1991	Kaasi industrial area, Kumasi	Sam Okudzeto &Assoc. Mob. House Liberia road P.O.Box 5520, Accra.	KPMG Chartered Accountants 2nd floor, Mobil house, Liberia road, P.O.Box 242, Accra.	N.B.Blazquez Ekwunif Okilife E.M. Boye J.W. Acheampong Kwame Donkor Fordwor Thomas Arie de Man Kwaku sarfo- Menash Robert Pilkington P.V.Obeng Preba Greenstreet pamella Djamson- Tettey David Harlock John Lloyd	Authorised no. of shares:- 200 million issued no. of shares:- 164,671,000 stated capital:- GH¢26,252,000	Diageo 51% Heineken 20%

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Pioneer Kitchen Ware Ltd	7/11/1959	Production of aluminium household wares-mainly aluminium products including casseroles, various cookware sets, pans, buckets, e.t.c.	8/25/1995	2nd Floor, cedar house 13 Samora Machel Road Asylum Down, Accra.	Anyarko Chambers D484/1, bannerman Road, P.O.box 242, Accra.	KPMG Chartered Accountants 2nd floor, Mobil house, Liberia road, P.O.Box 242, Accra.	Togbe Afede XIV:- Executive Chairman Alhaji Abdul Rahman Isaka	Authorised no. of shares:- 100 million issued no. of shares:- 480m stated capital:- GH¢ 909,003	Strategic Initiatives Ltd (SIL) 55.18%
PZ Cussons GH.Ltd.	5/24/1958	Manufactures of over-the-counter pharmaceutical and beauty products.	November 12,1990	Sanyo Road, Heavy Industrial Area Tema	Kudjawa & Co. P.O. Box 294 Accra.	Deloitte and Touche P.O. Box C3464 cantonments, Accra	P.K. Pepera:- Chairman James B. judsopn :- Managing Director P.W. Davies F.S. Quarchey Christopher Davies C.B. Janney Richard Hollings	Authorised no. of shares:- 30 million issued no. of shares:- 28 million stated capital:- GH¢1,160,000	PZ Cussons Plc of UK owns 90.24%

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Total Petroleum Ghana Ltd	December 31,1951	Marketing of petroleum Products and services	July 19,1991	Total House, 25 Liberia Road. Accra	Gyampoh & Co. Ceder house, Asylum down, P.O.box 5897, Accra. Messrs. Peasah Boadu & Co. 3rd floor, gulf house, Airport west . P.O.box C3523, cantonments , Accra.	KPMG Chartered Accountants 2nd floor, mobil house, liberia road, lp.o.box 242, Accra.	Stanislas Mittleman: chairman Jonathan Molapo: Managing director Alain champeaux Francios de lignville E.P.L gyampoh John sackah addo Rexford Adomako-Bonsu Jonas Ayi Kwadwo Owusu-Tweneboa Kofi Ampem Ronan Bescond C.Joret des Closieres	Authorised no. of shares:- 50 million issued no. of shares:- 13,984,259 stated capital:- GH¢49,722,000	TOTAL S.A.

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Unilever Ghana Ltd	January 1, 1992	Manufacturing(Soaps, Detergents, Foods, and Personal Care Products), Distribution and Service Enterprises	November 12,1990	Unilever Ghana, Tema Factory Heavy industrial area, Tema	Afua Oduro-Asante Unilever Ghana limited P.O. Box 721, T	PricewaterCoopers, Chartered Accountants, UNA Home,12 Aviation Road ,Airport City PMB CT42 Cantonments	Ishmael Yamson Charles A. Cofie S. Achio Joseph N-A. Hyde Franklyn A. Boateng Aurore Lokko Sampson Aaron Dontoh	Authorised no. of shares:- 100 million issued no. of shares:- 62.5 million stated capital:- GH¢1,200,000	Unilever PLC of England through CWA holding Ltd. And Unilever Overseas Holdings limited and others own 66.6% shares of Unilever Ghana limited.

Name of the Firm	Date of Incorporation	Nature of Business	Date Listed on GSE	Location of Reg. Officer	Company Solicitors	Auditors	Directors	Shares and Capital	Holding Company
Mechanical Lloyd Co. Ltd	The company was incorporated in the 160's as Technical Lloyd Ltd	Exclusive agents for the sales and servicing of BMW cars and Motor cycles, Ford vehicles, Massey Ferguson agricultural machinery and Delphi products in Ghana.	May 10,1994	No.2 Adjuma Crescent, Ring Road West South industrial area, Accra.	Gaisie Zwennes Hughes & Co., P.O.box 3238, Accra	PricewaterCoopers, Chartered Accountants, UNA Home,12 Aviation Road ,Airport City PMB CT42 Cantonments	C.B.K Zwennes :-Chairman T.R. Darko:- Managing Director C.S. Aidoo N.K. Bulley A. Lawson Yaw Assah-Sam	Authorized no. of shares:- 100 million issued no. of shares:- 50.1m stated capital:- GH¢2,771,486	None