THE EFFECT OF CAPITAL STRUCTURE ON PROFITABILITY OF SELECTED FIRMS LISTED ON THE GHANA STOCK EXCHANGE

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DECLARATION

I declare that this submission is my own work towards the attainment of the MBA (Finance) degree and to the best of my knowledge, it contains neither material published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated to my husband, Kwabena Abrefa Nketia for his undying support, encouragement and prayers in all my educational endeavors.

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I bear the full responsibility for any inadequacies and defects in this study.

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LIST OF ABBREVIATION

DAR	Debt to Asset Ratio / Total Debt to Total Asset
DER	Debt to Equity Ratio
FMCG	Fast Moving Consumer Goods
GRWOP	Growth Opportunities
GSE	Ghana Stock Exchange
LTDA	Long Term Debt to Total Assets
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
SIZE	Firm Size
STDA	Short-Term Debt to Total Assets
TANG	Tangibility
TAXS	Taxes

ABSTRACT

The role played by capital in a profit making organization cannot be underestimated. Companies require a mix of equity and debt to finance their fixed assets, current assets and operational expenditure. However, the extent to which the structure of the capital affects the profitability of firms remains a debatable proposition. Against this backdrop, the study sought to examine the extent to which capital structure could impact profitability of Fast Moving Consumer Goods (FMCG) companies in Ghana. Panel regression techniques were used to examine the relationship between the study variables. The Hausman's test indicated that random effect model was appropriate for the selected sample. The result of the analysis also showed that capital structure (measured by debt to equity ratio, long term debt to total assets ratio, short term debt to total assets ratio, and debt to total assets ratio) had significant effect on the profitability of the selected FMCG companies. Furthermore, the findings showed that the main determinants of capital structure of the selected companies include profitability of the companies and asset tangibility.Based on the findings of the study, it is recommended that companies with high asset worth is likely to get funding both short and long term from financing companies as tangible assets of companies are considered as one of the main factors considered by creditors when granting loans. However, companies should do so with caution by not relying so much on debt as the use of too much debt is will cause financial distress.This study recommends that other performance indicators other than Return on Assets and Return on Equity should be explored. It is also recommended that companies take steps to understand their optimal capital structure in order to improve profitability. Future studies should focus on other sectors within the Ghana stock exchange to determine whether variations exist in the findings.

CHAPTER ONE

INTRODUCTION

1.1 Background

The lifeblood of any business organization is capital. It plays a phenomenal role in assisting firms to achieve the goals of their stakeholders. An ultimate goal of a firm is the maximization of wealth or value of that firm (Miller & Modigliani, 1958; 1963; Miller, 1977). The shareholders wealth maximization theory points out the fact that firms should maintain the ultimate combination of debt and equity financing, the optimal capital structure, which maximize returns as well as the firm's value and which reduce significantly the cost of capital. In summary, the combination which best helps the business to achieve its main goal.

Generally, companies have the option of choosing between many capital structures**.** There are various kinds of debt as well as equity such as ordinary and preferred. Companies may go for lease financing, issue bonds; on the other hand they may also issue different kinds of securities in many combinations. (Gill et al., 2011).

Capital structure refers to a mixture of a variety of long term sources of funds and equity shares including reserves and surpluses of an enterprise. According to Riahi-belkaonui (1999), capital structure includes the different kinds of equities and liabilities, stating the proportions of the debt equity mix. Depending on the mix, a firm can be classified as levered or unlevered depending on its use of debt financing or not.

Capital structure decision is a salient decision since the profitability of a company is directly affected by such decision. The successful selection and use of capital is one of the key elements of the firms' financial strategy. Any which ignores the critical planning of its capital structure is

likely to face serious fund management. Hence, proper care and attention need to be given to the determination of capital structure decision.

The relationship between capital structure and its effect on financial performance is one that received considerable attention in the finance.

According to Azhagaiah & Gavoury (2011), the best choice of capital structure is a mix of debt and equity. However, where interest on loan is not tax deductible, firms' owners would be indifferent as to whether they used debt or equity, and where interest was tax deductible, they would maximize the value of their firms by using 100% debt financing.

In using debt financing, there is a tax shield for the company; that is interest payments are not taxable, hence the debt can increase the value of the firm. Another benefit is that debt disciplines managers (Jensen, 1986). Managers use free cash flows of the company to invest in projects, to pay dividends, or sometimes hold on cash balance. However, in the case where the firm is not committed to fixed payments such as interest expenses, managers could be tempted to waste the inflow as they will regard it as excess free cash flow. For this reason, shareholders attract debt in order to discipline managers.

The development of Capital Structure theory has been championed by Miller and Modigliani. Their theorem forms the basis of modern idea of capital structure. The improvement in the profitability of any company is necessary for the long-term survivability of the firm. As interest payment on debt is tax deductible, the addition of debt in the capital structure will improve the profitability of the firm. Therefore, it is important to test the relationship between capital structure and the profitability of the firm to make sound capital structure decisions.

This study mainly examines listed companies on the Ghana stock exchange with emphasis on Fast Moving Consumer Goods (FMCG) firms on the stock exchange.

1.2 Statement of the Problem

According to Ross et al. (2001), capital structure decision is about the choice of how much debt a firm should have relative to equity. Indeed, the relationship between capital structure and profitability is very essential and has attracted the attention of many researchers.

On the one hand, research conducted has revealed a positive relationship between ratio of shortterm debt to total assets and Return on Equity (ROE). For example, Abhor (2005) reported a significant positive relationship between short term debt and profitability at the industry level.

Gill et al. (2011) revealed a positive relationship between short term debt to total assets and profitability and also between total debt to total asset and profitability. Also, in the research conducted by Amponsah et al. (2013), there again was a positive relationship short term debt and profitability.

On the other hand, there has been studies reporting a negative association between capital structure and profitability. In the research conducted by Shubita & Alsawalhah (2012) and Velnampy & Niresh (2012), a significantly negative relationship exists between debt and profitability. In India, Majumdar & Chhibber (1999) conducted a study which showed leverage was negatively related to the performance of the firm measured in the form of profitability.

Based on the analysis above, there has still not been any consensus about what would qualify as optimal capital structure decision. In Ghana, some studies have examined the effect of capital structure on the performance and profitability of firms listed on the Ghana Stock Exchange. Amponsah et al. (2013) and Abor (2005) are examples of this. These studies have focused on data from all companies on the Ghana Stock Exchange which gave a more generalized result.

In the review of relevant literature, it was found that, there has not been an industry specific research conducted with regards to capital structure and profitability. There is therefore the need

to investigate what happens within the industry. This is because the capital decision in any industry is attributed to the financial and business risk of the individual firms. According to Readers' Guide, Fast Moving Consumer Goods over the years have been an integral part of Ghana's economy. It forms part of the indicators in the economy of Ghana because the public cannot do without them. People even link inflation rate with Fast Moving Consumer Goods to judge the performance of the government .As a result of this, in 1982, during the PNDC era, the government placed a price control on most of the Fast Moving Consumer Goods in the country.

Fast Moving Consumer Goods have been one of the major sources of employment in the country. Jobs are created for especially the youth as they are employed to take up sales promotion activities even apart from the normal employees of the FMCG companies. For instance, companies such as Nestle Ghana Limited and Unilever Ghana Limited do organize sales promotion on their products. Such promotion requires a lot of workers so they recruit personnel to help run the promotion. For this reason, it is obvious that there need to concentrate on FMCG companies because of its immense contribution to Ghana's Economy

The industry chosen for the purposes of this study is Fast Moving Consumer Goods (FMCG) Industries on the Ghana Stock Exchange.

1.3 Objectives of the Study

The general objective of this study is to examine the effect of capital structure on profitability of Fast Moving Consumer Goods (FMCG) companies listed on the Ghana Stock Exchange.

The specific objectives are;

1. To examine the capital structure of the FMCG companies of the GSE.

2. To examine the major determinants of capital structure of the FMCG companies on GSE.
3. To examine the effect of capital structure on the profitability of the FMCG companies on GSE.

1.4 Research Questions

The study addresses the following research questions:

1. What are the capital structures adopted Fast Moving Consumer Goods (FMCG) companies on the Ghana Stock Exchange?
2. What are the major determinants of capital structure of the selected companies?
3. What is the effect of capital structure on the profitability of Fast Moving Consumer Goods (FMCG) companies on the Ghana Stock Exchange?

1.5 Hypothesis

Based on the research questions, the following research hypothesis are formulated;

1. **H_1:** Profitability (ROA) is a significant determinant of the capital structure of FMCG companies.
2. **H_2**: There is significant relationship between total debt to total assets and profitability of FMCG companies in Ghana.

1.6 Scope of Study

The primary objective of this research is to examine the effect of capital structure on profitability of selected firms. The study also seeks to examine the main factors that determine the capital

structure of the selected companies. The study mainly focuses on Fast Moving Consumer Goods (FMCG) companies listed on the Ghana Stock Exchange (GSE). Fast Moving Consumer Goods (FMCG) companies are companies whose products are sold quickly and at relatively low cost (https://en.wikipedia.org/wiki). The time period will be the ten-year financial statement commencing from financial year end 2005 to financial year end 2014 of the companies.

1.7 Brief Methodology

The population of the study consists of all listed companies on the Ghana Stock Exchange (GSE). The study mainly used secondary data in order to meet the objectives set. The secondary data was sourced from the annual financial report of the selected companies. In addition, data from the Ghana Stock Exchange on the selected companies were sourced. Data was collected from fast moving consumer goods (FMCG) firms. The companies selected for the study are listed in Table 1.1.

Table 1.1: List of selected FMCG companies

No.	Name
1	PZ Cussons Ghana Limited
2	Fan Milk Ghana Limited

3	Benso Oil Palm
4	African Champion Industries Limited
5	Guinness Ghana Limited
6	Unilever Ghana Limited
7	Pioneer Kitchenware Limited
8	Produce Buying Limited
9	Cocoa Processing Limited

The data for this study was gathered from the financial statements as published by Ghana Stock Exchange (GSE) for a period of ten years (2005 to 2014). The study variables include return on assets (ROE) and return on equity (ROA), long term debt to total assets (LDTA), short-term debt to total assets (SDTA), total debt to total (DAR) and debt to equity ratio (DER). Other variables considered include firm size (SIZE), growth opportunities (GRWOP), taxes (TAXS) and Tangibility (TANG). These variables were chosen based on previous studies such Abor (2005) and Gill et al. (2011). A number of statistical techniques were used to analyze the data collected. These techniques include descriptive statistics (such as means, standard deviation and ratios), Pearson's moment correlation analysis (for examining the relationship between capital structure and profitability), and regression analysis (for examining the effect of capital structure on profitability). Similar to Amponsah et al. (2013), a panel data analysis methodology is the main analytical tool used to capture data for capital structure and profitability. This methodology involves pooling observations on a cross-section of units over several time periods.

1.8 Justification

In deciding on targets that need to be achieved by a firm, capital structure decisions cannot be disregarded. The reason being that, any decision made with respect to profitability must involve stringent capital decisions for financial targets to be met and high performance of firms. Therefore, it is important to test the relationship between capital structure and the profitability of the firm to make sound capital structure decisions. So far, no consensus has been met regarding optimal capital structure in the manufacturing industries. A better understanding of the issues at hand requires a look at the concept of capital structure and its effect on the firm's profitability of FMCG companies.

1.9 Organisation of the Study

The study consists of five chapters. Chapter one is the Introduction that focuses on the background of study, statement of problem, objectives of the study, justification, methodology, the scope of the study and limitations of the study. Chapter Two reviews literature on capital structure. It focuses on capital structure and its effects on the performance of companies and narrows it down to profitability. Chapter Three entails the methodology adopted for the study. This includes data collection, sampling design, mode of analysis and research mode. Chapter Four deals with the presentation and analysis of the data collected. Chapter Five is the final chapter and it focuses on the conclusions and recommendations to the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is designed to review relevant literature on the topic being examined. The literature review is divided into theoretical review, conceptual review and empirical review. The theoretical review examines various theories of capital structure. Some of the theories considered for the purposes of this study are the Modigliani-Miller theorem, trade-off theory, the pecking order theory, and the market timing theory. The conceptual review will define and explain concepts relevant to the topic. The concepts examined include the determinants of capital structure, organizational performance, and the relationship between capital structure and firm performance (profitability). The empirical review focuses on similar empirical studies conducted on capital structure and how such studies are relevant to the current research.

2.2 The Concept of Capital Structure

Every organization needs capital (funds) to finance its assets. The major sources relied on by firms include retained earnings (internal sources), debt financing and equity financing. Capital structure of the firm basically connotes the blend of these sources, usually debt and equity, that meets the objectives of the firm. Each source of capital structure has a different cost to the business. In simple terms, the capital structure of a firm connotes the mix of its liabilities. One of the critical resources needed to finance a firm's assets is financial capital. Suppliers of a firm's capital resources have control over the firm and its operations (Harris & Raviv, 1991). Equity and debt are the two main

categories of liabilities faced by the firm. This means that debt holders and equity holders represent the two main investors in the firm. The use of any of these two categories comes with different levels of risk, benefits and control.

2.2.1 Importance of Capital Structure

In every business, choices made with regards to financing of assets is very vital. The finance manager is usually put to a test as to the best combination of equity and debt which will produce an optimal capital structure. There should be a proper mix of debt and equity capital in financing the firm's assets. In most cases, capital structure is usually structured to serve the interest of the equity shareholders. This highlights the main objective of any business is the maximization of shareholder's wealth. Below are some of the critical advantages associated with the use of optimal capital structure.

Value Maximization: In deciding the most appropriate debt-equity mix, the market value of the business is maximized. That is, the overall profit of the business is increased leading to increase in the value of the firm through maximization of shareholders value.

Cost Minimization: The choice of either debt or equity in financing a business comes with its own cost. Capital structure reduces the firm's cost of capital by the use of proper combination of sources of funds.

Increase in Share Price: Optimal capital structure will result in an increase in the earnings per share of the ordinary shareholders. With this, the market price of share is maximized and an increase in its dividend by increasing earnings per share of the ordinary shareholders. It also increases dividend receipt of the shareholders**.**

Investment Opportunity: Capital structure boosts the capacity of a business to find new wealth; thus creating investment opportunities. With proper capital gearing it also increases the confidence of suppliers of debt.

2.3 Theories of Capital Structure

This section provides a brief review of common capital structure theories and how such theories relate to the current study. The theories examined include the Modigliani-Miller Theorem, the trade-off theory, the static trade-off theory, and the pecking order theory.

2.3.1 The Modigliani-Miller Theorem

One cannot examine capital structure and its relevance to value creation without mentioning the capital structure irrelevant proposition put forward by Modigliani & Miller (1958). The theory's main argument is that the capital structure of an organization does not affect its profitability/performance in any way. Put differently, the authors argue that the leverage position of an organization has no effect on its value. The theory posits that when firms decide to choose a particular proportion of equity and debt to finance its assets, it only succeeds in dividing up the cash floors among investors. The authors further explain that firms and investors are assumed to have equal access to the financial market, which makes it possible for them to create their own leverage position. This means that the investor can create any leverage position that was demanded but not offered or get rid of any leverage position that has been taken up by the firm but not wanted by the investor. Based on this proposition, the authors are of the view that leverage position of a firm does not affect its value. The theory however makes a number of assumptions. The theory

assumes that there are no corporate income taxes, no agency cost, no bankruptcy cost and no transaction cost.

This theory has received criticisms and clarity from different authors. Various studies have been conducted with the aim of confirming or disproving the theory. A number of these studies have shown that Modigliani-Miller theory fails under a number of circumstances (Harris & Raviv, 1991). For instance, the theory fails to account for or give consideration to transactions costs, taxes, agency conflict, bankruptcy costs, and adverse selection. The importance of these factors in the capital structure decision makes it difficult for the theory to be accepted and empirically applied (Harris & Raviv, 1991). Given that so many different ingredients are available, it is not surprising that many different theories have been proposed to explain how capital structure decisions affect the value of the firm.

Though the Modigliani-Miler theory has received some criticisms for the strict assumptions underpinning it, it demonstrates when capital structure becomes relevant and circumstances under which it becomes irrelevant. For instance, if there are no corporate income tax, no transaction cost, no agency cost and no information asymmetry, then capital structure of an organization becomes irrelevant. On the other hand, once these elements are present, then capital structure decision become relevant it affecting the value of the firm.

2.3.2. The Trade-off theory

Every manager who runs an organization is expected to evaluate the costs and benefit of alternative leverage positions. Weighing the cost and benefit of each leverage position will enable managers to make informed decisions that will improve the value of the firm and therefore the value of shareholders. The original version of the trade-off theory emanated from the controversy of

Modigliani-Miller theory. In Modigliani-Miller theorem, it was assumed that there is no corporate tax. However, when corporate income tax is fused into the capital structure irrelevance theory, it favors the use of debt. This is because earnings are shielded from taxes, making it profitable for the organization to use 100% debt and forget about equity financing. However, according to Senbet (1978), using 100% debt financing makes the firm prone to financial distress. This means that the bankruptcy cost increases and put the firm in a dire financial situation. The implication of this theory is that when a firm decides to use 100% debt to finance its assets, it is shielded from some taxes but may also face financial distress if it is unable to manage the leverage position well.

2.3.3 Static Trade-off Theory

Closely related to the trade-off theory examined above is the static trade-off theory. This theory affirms that every organization has an optimal capital structure, which can be determined by trading off the benefits as against the cost of using equity and debt (Luigi & Sorin, 2010). The major disadvantage associated with the use of debt is the potential financial distress, especially when it happens that the firm relies mainly on debt to finance its assets. While the firm may obtain some level of tax benefits based on its decision to use debt financing, it may also face the problem of financial distress. This leads to a trade-off between the disadvantage of higher risk of financial distress and the benefits of tax shield. However, there are other costs and benefits associated with the use of equity and debt. One of such costs is the agency cost. Agency cost arises from the conflict of interest between major stakeholders within the firm, especially between managers and shareholders. This agency problem comes about as a result of asymmetry of information among these stakeholders Jensen (1986). Thus, incorporating costs into the static trade-off theory means that a firm determines its capital structure by trading off the tax advantage of debt against the costs

of financial distress of too much debt and the agency costs of debt against the agency cost of equity.

2.3.4 The Pecking Order theory

The pecking order theory does not indicate an optimal capital structure that should be used by the firm but rather provides the order for financing the assets of the firm. The theory asserts that firms usually show preference for the use of internal finance (retained earnings) to external sources of funds (Luigi & Sorin, 2010). In situations where the internal source funds needed to finance the firm's assets are inadequate, the firm may decide to source external funding. The firm may consider all the external sources and choose the one that seeks to minimize cost of asymmetric information. The pecking order of financing, according to Luigi & Sorin (2010), is as follows: internal financing (retained earnings), followed respectively by debt financing and equity financing. Managers use this order or ranking in an attempt to preserve the value of the firm and more importantly to counter the wrong signals of issuing equity in the first place. Managers must rank the order of generating funds this way because, when a firm requires capital, issuing shares may send the wrong signals that can lead to a fall in firm value. When new shares are issued, investors suspect the shares may be overpriced and refuse to buy, thus bringing down the value of the shares (Braeley, Myers, & Marcus 2009). Also, according to Myers & Majluf (1984), when managers decide to use equity instead of riskless debt, outside investors rationally discount the share price of the firm. To avoid this situation, managers try as much as possible to avoid equity financing. The authors support the pecking order theory by asserting that managers will follow the pecking order theory by employing the use of internal funds first, and then followed by risky debt, and then finally resorting to equity financing. The authors therefore argue that, in the absence of

any investment opportunity or positive net present value (NPV), firms try as much as they can to build up financial assets to avoid the situation where they will be forced to use external finance in the future

The pecking order theory has also received empirical evidence support. Empirical studies such as Shyam-Sunder & Myers (1999) and Fama & French (2002) have shown that the pecking order theory is a better predictor of observed capital structure. Pandey (2005), also sides with the pecking order theory by arguing that managers also prefer the use of internal funds to finance their activities, and will only use equity financing as the last resort.

2.3.5 The Market Timing Theory

According to the market timing theory of capital structure, firms usually time the issue of their equity by issuing new stock when their stocks are perceived to be overvalued and buying back their own stocks when there is perceived undervaluation. Thus, fluctuations in the stock price of the firm affect its capital structure two major assumptions underpin the theory of market timing. The first assumes that economic agents are rational. Companies are assumed to issue new equity after positive information has been released, which goes a long way to minimize information asymmetry problem between the firm's management and shareholders. When information asymmetry is reduced, it leads to a reduction in stock price. The second assumption also perceive economic agents as irrational (Baker & Wargler, 2002)

Due to irrational behavior there is a time-varying mispricing of the stock of the. Managers issue equity when they believe its cost is irrationally low and repurchase equity when they believe its cost is irrationally high. According to Baker & Wurgler (2002), the equity market timing theory has an effect on the capital structure of the firm. The authors find that changes in leverage potion

of the firm due to equity market timing decisions strongly affect the leverage position of the organization.

2.4 Determinants of Capital Structure

A number of studies have been conducted to examine the main factors that determine the capital structure of companies. These studies generally agree that specific characteristics of the company and other economic factors combine to determine the capital structure decisions of firms. In the financial literature, the main factors examined as determining the capital structure of firms include size, profitability, growth opportunities, tax, and non-debt tax shields.

2.4.1 Size

The effect of firm size on its capital structure/leverage is theoretically ambiguous. While other studies have found some evidence to the effect that firm size affect its leverage, others have found contrary view. According to Rajan & Zingales (1995), larger firms are more likely to be more diversified, so size may have an inverse relationship with the possibility of bankruptcy. In such a scenario, size is expected to have a positive impact on the supply of debt. However, size may also be a proxy for the information outside investors have, which should increase their preference for equity relative to debt. A number of empirical studies have also found a positive relationship between size and leverage. For instance, Rajan & Zingales (1995), Friend & Lang (1998) and Haung & Song (2008) have all found a positive relationship between size and capital structure.

On the other hand, other studies report a negative relation, for example Kester (1986), Kim–Sorensen (1986) and Titman – Wessels, (1988). Moreover, the results are very often weak as far as the level of statistical significance is concerned. To proxy for the size of a company, the natural logarithm of sales is used in this study (as it is in most studies of similar character). Another possibility is to proxy the size of the company by the natural logarithm of total assets.

2.4.2 Profitability

Theoretically, there is no consensus as to the effect of profitability on a firm's leverage. If the theory of trade-off is considered, then profitable companies should have higher leverage since they have enough income to shield from taxes. As far as the free cash flow theory is concerned, companies that are more profitable should opt for debt in order to discipline managers to induce them to pay out cash instead of spending money on inefficient projects. However, from the point of view of the pecking-order theory, firms prefer internal financing to external. So more profitable companies have a lower need for external financing and therefore should have lower leverage. Empirical studies that have been conducted show a negative relationship between leverage and profitability. For instance, studies such as Huang & Song, (2002), Booth et al., (2001), and Kester, (1986) have found negative relationship between profitability and the leverage of firms.

2.4.3 Growth Opportunities

In the view of Myers (1977), if a firm has higher future growth prospects, it should finance its activities using equity, because a higher leveraged is more likely to pass up profitable investment opportunities. According to Huang & Song (2002) "Such an investment effectively transfers

wealth from stockholders to debt holders." Therefore, a negative relation between growth opportunities and leverage is predicted. As market-to-book ratio is used in order to proxy for growth opportunities, there is one more reason to expect a negative relation – as Rajan & Zingales (1995) point out: "The theory predicts that firms with high market-to-book ratios have higher costs of financial distress, which is why we expect a negative correlation." Some empirical studies confirm the theoretical prediction, such as Rajan (1995), Kim–Sorensen (1986) and Titman–Wessels (1988). However, for example, Kester (1986) and Huang & Song (2002) demonstrate a positive relation between growth opportunities and leverage.

2.4.4 Tax

The tradeoff theory suggests that if a firm has high tax rate, it should use more debt and thus, should have higher leverage. This is because it has more income to shield from taxes. However, according to Fama & French (1998), there is no tax benefits associated with debt. In the view of MaKie-Mason (1990), even though many people claim that taxes are important for financing decisions little has been found to support such assertion. According to the author, many papers claim most tax shields have very insignificant effect on the marginal tax rate of most firms. Thus, tax may not have significant effect on the capital structure of an organization.

2.4.5 Non-debt Tax Shields

Apart from interest expenses, there are other items which may contribute to a decrease in tax payment of a firm (ie, tax deduction from depreciation). In the view of Angelo – Masulis (1980): "all other things being equal, decreases in allowable investment-related tax shields (e.g.,

depreciation deductions or investment tax credits) due to changes in the corporate tax code or due to changes in inflation which reduce the real value of tax shields will increase the amount of debt that firms employ. In cross-sectional analysis, firms with lower investment related tax shields (holding before-tax earnings constant) will employ greater debt in their capital structures." So they argue that non-debt tax shields are substitutes for a debt-related tax shield and therefore the relation between non-debt tax shields and leverage should be negative.

2.5 Financial Performance

The performance of a firm is important not only for managers but especially for shareholders/investors who supply funds for the running of the business. In the view of the shareholder, the financial performance of the firm is measured in terms of how better off they are at the end of the period, than they were at the beginning of the same period. For instance, if the share price of the firm has increased compared to the beginning of the period, then shareholders can describe the firm as performing well. In most cases, the financial performance is measured by financial ratios calculated from the firm's balance sheet and income statement. In some cases, stock prices of the firm are also used (Berger & Patti, 2002). These ratios give an indication as to whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare a firm's ratios with other firms or to find trends of performance over time. According to Severin (2002), a good performance measure must be able to give an account of all the consequence of investment on shareholder's wealth. The main objective of shareholders in investing in a business is to increase their wealth. Thus the measurement of performance of the

business must give an indication of how wealthier the shareholder, has become as a result of the investment over a specific time.

Since profitability of the firm directly affect the wealth of shareholders, the major profitability ratios (Return on Assets, and return on equity) are often used. In this study, these two ratios are used as a proxy for measuring the financial performance of the selected companies. These ratios are further explained below.

2.5.1 Return on Equity (ROE)

Among the various financial ratios that can be estimated from the incomes statement and balance sheet, return on equity (ROE) has been identified as one for the main measures of financial performance in an organization. It measures the percentage of income earned on each equity invested. In other words, it shows the profit generated with the money provided by shareholders. It is generally calculated as the ratio of net income to total common equity. The return on equity is important measure of profitability since it helps gauge the efficiency with which a firm is generating profit. Companies with consistently high ROE relative to the industry average, usually have some level of competitive edge over their counterpart. One major drawback associated with the use of ROE as a measure of profitability is that it fails to indicate whether a firm has excessive amount of debt in its books. Since shareholder's equity is calculated as assets less liabilities, the more debt a company has, the less its equity, which will result in higher return on equity (Severin, 2002).

2.5.2 Return on Assets (ROA)

While return on equity show how a firm is able to generate income form shareholder's equity, return on assets measure how efficient an organization is able to generate profit from its assets.

Since the firm's assets are obtained from both equity and debt, ROA measures the total return to all providers of capital (both equity and debt). The implication is that if a company has no debt, its ROA should be equal to its ROE. In general, a company with a high ROA is making a judicious and productive use of its assets. A firm's ROA is calculated as the ratio of net income to total assets. In some cases, average total assets may be used to overcome anomalies in the net assets values (Severin, 2002).

2.6 Empirical Literature Review

A number of empirical studies have been conducted all over the world to examine the effect of capital structure on the financial performance (profitability) of firms. This section seeks to examine some of these empirical studies and how such studies relate to the current study.

Gleasson, et al. (2000), examined the capital structure of selected retail shops in 14 European countries. The findings of the study show that capital structure of these firms influences their financial performance. The study found a negative but significant relationship between capital structure and performance of the selected firms, indicating that agency issues may force firms to use more debt in their capital structure.

In Romania, Vatavu (2015), examined the relationship between the capital structure and financial performance of listed companies on the Bucharest Stock Exchange. The companies selected were

those operating in the manufacturing sector. The period of the study was eight years, spanning from 2003 through to 2010. The study was conducted based on cross sectional regression analysis. The indicators used to measure capital structure are long-term debt, short-term debt and total equity. The financial measures used as proxy for financial performance were return on assets and return on equity. The result of the study shows that the performance of the companies is better when debt is avoided, and equity is mainly used. However, the study found that the Romanian companies do not have sufficient internally generated funds to undertake profitable investment. The study further indicates that companies prefer the use of debt when they are faced with financial difficulties.

Shubita & Alsawalhah (2012) also sought to examine the effect of capital structure on the profitability of selected firms in Jordan by extending the findings of Gill et al. (2011) and Abor (2005). The study was conducted mainly among industrial companies listed on the Amman Stock Exchange. The study was conducted using six-year data from 2004 to 2009. The main focus of the study was to ascertain whether capital structure affects the profitability of industrial companies in Jordan. The study gathered data from 39 of these companies. The main analysis techniques adopted were correlation and multiple regression analysis. The findings of the study revealed a negative but significant relationship between debt and profitability. The result indicates that profitable firms depend more on equity as their main source of capital for investment.

Velnampy & Niresh (2012) investigated the relationship that exists between profitability and capital structure decisions among listed companies in Srilanka. The study was conducted by using financial data from the period 2002 to 2009. Descriptive statistics and correlation analysis were employed to analyze the data in order to find association between the variables. The result of the analysis indicates that there is a negative relationship between capital structure and profitability of

the selected companies. However, the result showed that there is a positive relationship between debt to equity and return on equity. The result of the study further indicates that almost 90% of the total assets of the banking sector in that country are represented by debt, confirming the longheld view that companies are highly geared institutions.

Yusuf et al. (2014) also examined the relationship between capital structure and profitability among financial service firms and consumer goods firms in Nigeria. The researchers' randomly selected 10 among the industries for the purposed of data collection. The data was collected from 2000 to 2011. Return on equity (ROE) and Return on Assets (ROA) were used as proxies for performance. In addition, the researchers used debt equity ratio and debt asset ratio as measures of capital structure of the selected firms. The data was analyses by using correlation and regression analysis. The result of the study indicates that the relationship between capital structure and return on assets is not statistically significant. The result further shows that there is insignificant relationship between profitability and debt to asset ratio. However, the result shows that there is a significant relationship in almost all firms between return on equity and debt to equity. This justifies that a highly geared firm tends to have high profitability. The result further indicates that in the financial sector there is a significant negative relationship between ROE and debt to assets ratio.

Singh (2013), investigated the effect of capital structure on the profitability of corporate firms in India. The aim of the study was to establish a relationship between profitability and capital structure of selected firms. The study categorized the selected firms based on business revenue and assets size. The data from the selected firms were examined using regression technique in addition to descriptive statistics such as mean, standard deviation and ratio analysis. The study proves that there has been a strong one-to-one relationship between Capital Structure variables

and Profitability variables, Return on Assets (ROA) and Return on Capital Employed (ROCE) and the

Capital Structure has significant influence on Profitability, and increase in use of debt fund in Capital Structure tends to minimize the net profit of the Manufacturing firms listed in Bombay Stock Exchange in India.

Gill et al. (2011) examined the effect of capital structure on the performance (profitability) of selected service firms in America by basing their study on Abor (2005). The study was conducted by using 272 sampled firms from the New York Stock Exchange. To estimate the relationship between the study variables, correlation and regression techniques were employed. The performances of the companies were measured by the return on equity. Capital structure was measured using short-term debt to total debt. Empirical results show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. The findings of their study show also a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry.

In Hong Kong, Chiang et al. (2002) examined the relationship between capital structure and profitability of 35 listed companies on the Hong Kong Stock Exchange. The findings of their study revealed that there is significant relationship between capital structure and profitability/performance of the firms listed on the Hong-Kong Stock exchange. In a similar study, Raheman et al. (2007) examined the effect of capital structure on the profitability of listed firms on the Islamabad stock exchange. The findings of their study also revealed that there is a significant positive relationship between capital structure and profitability of the firms.

In Ghana, Abor (2005), examined the relationship between capital structure and profitability of companies listed on the Ghana stock exchange. Return on Equity (ROE) was used as a proxy for profitability while short-term debt and long-term debt were used as proxies for capital structure. The findings of the study revealed that there is a significant positive relationship between capital structure and profitability of firms listed on the Ghana stock exchange. For instance, the study found that there is a positive significant relationship between ROE and short-term debt to total assets. However, there was a negative relationship between the ratio of long-term debt to total assets and ROE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a detailed description of the methodology adopted in meeting the objectives of the study. The main issues examined in this chapter include the research design, research purpose, study population, sample size, sources of data and data collection method. In addition, the statistical techniques employed in analyzing the data will be examined.

3.2 Research Design

Saunders et al. (2009) reported that a research design can be qualitative quantitative or a mixture of the two depending on the research objective. In quantitative research, variables are quantified and analyzed using statistical techniques such as descriptive statistics, regression analysis, correlation analysis, etc. Hypotheses are also formulated to established relationship among variables. Data for quantitative studies are usually obtained through structured questionnaires, past records and economic data. On the other hand, qualitative design deals with manipulation and analysis of statement and facts that cannot be quantified and given numeric values. According to the author, qualitative research usually uses interview, observations and focus group discussions to gather data for analysis. According to Babbie (2004), qualitative study involves non-numerical examination and interpretation of observations for the purpose of discovering the underlying meaning and pattern of relationships.

In mixed design, both qualitative and quantitative designs are used in a single study. Put differently, this method combines both quantitative and qualitative design. According to Creswell and Plano (2007), the overall strength of mixed design is greater than either qualitative or quantitative design since it combines the advantages of both designs. For the purposes of this study, quantitative design is deemed appropriate. This is because the objectives of the study require the collection and analysis of quantitative data in the form of financial data of selected companies on the Ghana stock exchange. Also, statistical techniques such as correlation and regression analysis are used which means quantitative design must be employed.

3.3 Model Specification

Following similar studies by Abhor (2005) and Amponsah et al. (2013) which adopted panel data methodology, this study also used panel data in the analysis of data. According to Abhor (2005) panel data involves the pooling of observations on a cross-section of units over several time periods and provides results that are simply not detectable in pure cross-sections or pure time-series studies. The following regression models (Abor 2005; Gill et al., 2011) are estimated;

$$ROA = \alpha + \beta_1 DER_{it} + \beta_2 DAR_{it} + \beta_3 LDTA_{it} + \beta_4 SDTA_{it} + \varepsilon_{it} \quad \text{Model 1}$$

$$ROE = \alpha + \partial_1 DER_{it} + \partial_2 DAR_{it} + \partial_3 LDTA_{it} + \partial_4 SDTA_{it} + \varepsilon_{it} \quad \text{Model 2}$$

$$DAR = \alpha + \beta_1 ROA_{it} + \beta_2 GRWOP_{it} + \beta_3 SIZE_{it} + \beta_4 TAXS_{it} + TANG_{it} + \varepsilon_{it} \quad \text{Model 3}$$

Where:

ROA_{it} represents return on assets,

DE_{it} represents debt to equity ratio;

DAR_{it} represents debt to assets ratio;

$LDTA_{it}$ represents long term debt to total assets;

$SDTA_{it}$ represents short term debt to total assets;

α represents the intercept;

ε_{it} represents the error term.

$GRWOP_{it}$ represents growth opportunity

$SIZE_{it}$ represents logarithm of total assets,

TAX_{it} represents tax payment;

$TANG_{it}$ represents the tangibility of the

β_i represents the coefficient estimates of the independent variables.

3.3 Variable Description

The variables of the study divided into dependent and independent variables.

3.3.1 Dependent Variables

This study has three models and therefore there are three dependent variables. For model 1, the dependent variable is Return on Asset (ROA). For model 2, Return on Equity (ROE) will be used as a dependent variable and Debt to Asset Ratio (DAR) as the third model.

The dependent variables used in the study include Return on Assets (ROA), Return on Equity (ROE) and Debt to Asset Ratio (DAR). These variables are used as proxy for profitability (Ferati & Ejupi, 2012; Yusuf et al., 2014; Vatavu, 2015). Return on assets measure the return obtained for each cedi of asset invested. The higher the ROA the better the performance of the organization, all other things being equal. Return on equity is a profitability ratio that measures the how a firm generates profits from shareholders in the company. That is, how much profit each cedi of common shareholders' equity generates. Debt to Asset Ratio shows the percentage of a company's assets financed by debt. The higher the debt to total asset ratio, the greater the risk for the company.

3.3.2 Independent Variables

As adopted by Vatavu (2015), this study also will use long term debt to total assets, short term debt to total assets, debt to total equity, debt to total assets as its independent variables. Long term debt to total asset measures the percentage of a company's assets financed by financial obligations lasting more than a year. The decrease in this ratio denotes a good mark for the company and lesser risk. Short term debt to total assets also measures the percentage of a company's assets financed by financial obligations within a year. Debt to total asset ratio defines the total amount of debt relative to the assets of the company. Debt to total equity indicates how much debt a company is using to finance its assets relative to equity. A higher debt to equity ratio indicates that the company is using more debt relative to equity and the opposite is true. These variables were used as proxies

for capital structure of the selected firms as indicated by (Vatavu, 2015). The variables used as the determinants of capital structure of the companies include firm size, asset tangibility, growth opportunity, return on asset, and taxes (Vatavu, 2015).

3.3.3 Measurement of Variables

The variables used in the study and their measurement are captured in table 3.1. These variables and the way they are measured were adopted from studies such as Vatavu (2015), Ferati & Ejupi (2012) and Yusuf et al. (2014).

Table 3.1 List of dependent and independent variables and their measurement

Variable	Variable Description	Hypothesis
Dependent Variables		
ROA	ROA is expressed as profit after tax divided by total assets	N/A
ROE	Measured by profit after tax divided by total equity	N/A
DAR	Total debt to total assets	N/A
Independent Variable		-
DAR	DAR is calculated as total debt divided by total assets	
DER	DE is expressed as total debt divided by total equity	+

LDTA	Long term liabilities are all liabilities more than one year	-
SDTA	Short-term liabilities are all liabilities within or up to a year but not more than a year	+
Growth opportunity (GRWOP)	Percentage growth in total assets	+/-
TAX	Tax/profit before interest and tax	-
Asset Tangibility	TANG	+
SIZE	Logarithm of total assets	+

Source: Researcher's own construct

3.4 Target Population

Saunders et al. (2009) describe a study population as all individuals, institutions and objects with common characteristics. The population of the study consists of listed companies on the Ghana stock exchange. According to the Ghana Stock Exchange (2015), there are 40 listed companies on the exchange. This constitutes the population from which samples will be drawn.

3.5 Sample Size and Sampling Technique

There are 40 listed companies on the Ghana Stock Exchange. This study however selected only companies dealing in fast moving consumer goods. There is a total of thirteen (13) fast moving consumer goods companies on the GSE. However, nine (9) companies satisfy the the requirements for the purposes of this study. That is, a duration of ten (10) years between 2005-2014. This was

done in order to concentrate a specific industry to bring out appropriate results in as much as avoiding a generalized result. According to Vatavu (2015), putting all companies together may not produce accurate result since economic risks vary across corporate domains.

The study targeted companies dealing in fast moving consumer goods. As a result a purposive sampling technique was adopted. According to Saunders et al. (2009) a purposive or judgmental sampling is non-probability sampling technique that enables a researcher to select cases that will enable him/her meet stated research objectives. These companies are captured in Table 3.2.

Table 3.2: List of sampled companies

No.	Name
1	PZ Cussons Ghana Limited
2	Fan Milk Ghana Limited
3	Benso Oil Palm
4	African Champion Industries Limited
5	Guinness Ghana Limited
6	Unilever Ghana Limited
7	Pioneer Kitchenware Limited
8	Produce Buying Limited
9	Cocoa Processing Limited

Source: Researcher's own construct 2016

3.6. Sources of Data

In conducting a research, data may be collected either from primary or secondary sources. These sources re described as follows;

3.6.1 Primary Data Sources

According to Saunders et al. (2009), primary data is a new data collected by a researcher specifically for the intended research. This type of data is collected through interviews, questionnaires, and observations.

3.6.2 Secondary Data

Secondary data is described as data that has been collected previously for another purpose but may be relevant for a given research (Saunders et al., 2009). This data could be annual reports, financial records, and other archival information that may be considered relevant to the research. As far as this study is concerned, secondary sources of data was used. The secondary data was in the form of financial records of the selected companies. This data was gathered from the annual report of the companies from 2005 to 2014. The data was collected and manipulated to suit the objectives of the study.

3.8 Data Analysis Technique

The main estimation techniques adopted in this study are correlation analysis and panel regression analysis. The correlation analysis will be used to find the association between the variables while

the regression analysis will determine the effect of the independent variable on the dependent variable.

3.8.1 Correlation analysis

Pearson's moment correlation analysis will be conducted to examine the relationship among the variables. The correlation coefficient (r) is the covariance of two variables (say, x and y) divided by the product of sample standard deviation. The results of a correlation analysis usually yield a value between $-1 \leq r \leq 1$. The value $r = 1$ means that there is a perfect positive correlation whiles $r = -1$ means that there is a perfect negative correlation. If $r = 0$, then there is no relationship among the variables. The hypotheses are given as follows

H_0: The correlation coefficient is equal to 0 ($r = 0$)

H_1: The correlation coefficient is not equal to 0 ($r \neq 0$)

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter provides the analysis and discussion of the results. The analysis is structured into various sections based on the objectives of the study. First, descriptive statistics of both dependent and independent variables are examined. Second, the correlation among the variables are also presented and discussed. The regression models examined in chapter three are estimated and discussed according to the objectives set.

4.2 Descriptive Statistics

4.1 This gives the estimation of means, standard deviations, minimum and maximum of these variables. Two profitability indicators, namely Return on Assets (ROA) and Return on Equity (ROE) are employed in the model as dependent variables. Four main capital structure measure, long term debt to total assets (LDTA), short term debt to total assets (SDTA), debt to equity ratio (DER) and debt to total assets ratio (DAR) are also used. Other variables such as growth opportunity (GRWOP), assets tangibility (TANG), size (SIZE), and taxes (TAXS) are used as determinants of capital structure of the companies. The descriptive statistics of these variables are summarized in Table 4.1.

Table 4.1 Descriptive statistics of study variables

Variables	Mean	Maximum	Minimum	Std. Dev.	No. of observations
DAR	0.844392	21.12634	6.25E-06	2.375895	90
DER	1.963898	15.36948	-14.0734	3.331804	90
GRWOP	4.043807	190.3087	-1	25.33353	90
LDTA	0.125042	0.747530	0.002410	0.172626	90
ROA	-0.03845	0.309887	-5.64869	0.652308	90
ROE	0.100250	0.837796	-1.72952	0.410296	90
SIZE	14.41968	20.98700	9.113719	3.145790	90
STDA	0.456632	1.078977	6.25E-06	0.295979	90
TANG	0.773518	8.550504	-0.12359	1.197186	90
TAXS	0.079811	4.673526	-0.82843	0.687795	90

ROA (return on assets); ROE (return on equity); DAR (debt to assets ratio); DER(Debt to equity ratio); GRWOP (growth opportunity); LDTA (long term debt to total assets); SDTA (short term debt to total assets); SIZE (logarithm of total assets); TAXS (total taxes to profit before interest and taxes). ***Source; output of data analysis, June 2016***

The Return on equity (ROE) of the companies is 0.10 or 10%, meaning that the companies on the average return 10% on every cedi of equity invested. Also, the average ROA (return on assets) is -0.04 or -4% indicating average negative return on asset. This negative value of ROA indicates that on average the companies make a loss of 4% on every cedi of asset invested. The short term

debt to total assets (SDTA) and long term debt to total assets (LDTA) of the selected companies is 0.456 and 0.125 respectively. Comparing short term debts to long term debts, it can be deduced that FMCG companies use more short term debt than long term debt. That is approximately 46% use short term debt and 12.5% use long term debt. Asset tangibility (TANG), measured by fixed assets to total assets, is 0.773 or 77.3% indicating that over 77% of the total assets of the companies are invested in physical assets and infrastructure. The descriptive statistics of all the variables are summarized in Table 4.1.

From the descriptive statistics presented in Table 4.1, it can be observed that the average Debt to equity ratio (DER) of the selected companies is shown as 1.96 which indicates that the selected companies on average use more debt than equity. Put differently, the companies use 96% more debt than equity. The result further indicates that long term debt to total assets (LDTA) is 0.125 or 12.5%. This result means that the 12.5% of the total assets of the companies are represented by long-term debt. In the same way, average short term debt to total asset (SDTA) is 0.457 or 45.7% indicating that the 45.7% of the total assets of the companies are financed by short-term debt. The result indicates the companies on average prefer short-term debt to long term debt. However, it must be emphasized that the result here does not represent the performance or capital structure of individual companies but the average capital structure position of the companies.

4.3 Correlation Analysis

To examine the relationship between the study variables, correlations analysis was performed. The model for estimating the correlation between the variables is given as:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\left[n\sum x^2 - \left(\sum x\right)^2\right]\left[n\sum y^2 - \left(\sum y\right)^2\right]}}$$

The result of the correlation among the various variables is shown in Table 4.2

Table 4.2 Correlation among the variables

Correlation	DAR	DER	LDTA	ROA	ROE	SIZE	STDA
DAR	1.000000						
DER	-0.032802	1.000000					
LDTA	0.115241	0.214113	1.000000				
ROA	-0.952362	0.101015	-0.061197	1.000000			
ROE	-0.001864	-0.281235	-0.311781	0.070252	1.000000		
SIZE	0.060849	0.326339	0.201216	-0.077308	-0.155679	1.000000	
STDA	0.298967	0.177297	0.155694	-0.231804	-0.201498	0.254973	1.000000

Source; output of data analysis, June 2016

Table 4.2 shows the correlation between capital structure components and profitability. Correlation analysis is conducted to achieve two main purposes.

The first is to determine whether there is multicollinearity among the independent variables (Mela & Kopalle, 2002). Whiles the second is to find association among variables.

According to Mela & Kopalle (2002), the presence of multicollinearity in a regression model does not only affect the various estimates but also the coefficient of determination (R^2). To determine whether there is multicollinearity among independent variables, Green et al. (1988) and Lehmann et al. (1998) provides a clue. Green et al. (1988) suggest that if the correlation coefficient among independent variables exceeds 0.9, then multicollinearity is present. The opposite is also true. Also according to Lehmann et al. (1998), a correlation coefficient of 0.7 or more suggests the presence of multicollinearity. From the result in Table 4.2, it can be observed that none of the correlation coefficient among the independent variables exceeds the threshold of 0.7 or 0.9. Thus, it can be concluded that there is no problem of multicollinearity among the variables. The correlation analysis shows a negative relationship between profitability (measured by return on assets) and long term debt of the selected organizations.

The correlation coefficient provides evidence to understand the association (both direction and magnitude) among the study variables. The sign of the coefficient shows the direction of the relationship. A negative sign shows a negative relationship whiles a positive sign indicates a positive relationship among the variables. For the purpose of this study, correlation coefficients were generated mainly to determine the presence or absence of multicollinearity among the independent variables. The results reveal that there is significant negative relationship between debt to total assets (DAR) and return on assets (ROA). This implies that the increase in one of the variables will lead to a decrease in the other. However, since correlation analysis only depicts the relationship that is either positive or negative, it is only through the regression analysis which will be able to determine which of the variable has a negative effect on the other.

4.4 Hausman Test

Panel data is usually analyzed using two main estimation models. These are fixed effect model and the random effect model. The fixed effect is deemed the appropriate model when the error term of the regression model is correlated with the regressors (i.e., *ui* is correlated with Xi). On the other hand, the random effect model is deemed appropriate for a given sample when the error terms are not correlated with the regressors (i.e. *ui* is not correlated with Xi). To determine the appropriate model to use, Hausman test is conducted. This test determines whether the error terms are correlated with the regressors or not. The null hypothesis is that random effect model is appropriate while the alternative hypothesis supports the appropriateness of the fixed effect model. The result of the Hausman's test is presented in Table 4.3.

Table 4.3 Hausman test results

	Coefficients		b-B Difference	Probability
	Fixed (b)	Random		
DAR	-0.262058	-0.263396	0.000002	0.3042
DER	0.009031	0.008991	0.000003	0.9813
LDTA	0.277979	0.225382	0.002970	0.3344
STDA	0.213450	0.181058	0.000577	0.1775

H_0: difference in coefficients not systematic

Chi^2 (4) = 3.169

Prob > Chi^2 = 0.529

Dependent Variable: ROA

Source: output of data analysis, June 2016

The p-value is greater than 5% and therefore the null hypothesis cannot be rejected. This indicates that, according to the Hausman's test, random effect model is appropriate for the selected sample. Therefore, random effect model is used throughout this study to examine the regression models.

4.4 Analysis of Regression Results

The following are results of the analysis for the three models of this study

4.4.1 Regression Model 1

Regression Model 1 uses ROA as the dependent variable. The independent variables included in the model are debt to equity ratio (DER), debt to assets ratio (DAR) long term debt (LDTA) and short term debt (STDA).

Table 4.4 Regression Model 1 results with ROA as dependent variable

Variable	Coefficient	Std. error	t-statistic	Prob
Constant	0.055314	0.056617	0.976990	0.3313
DAR	-0.263396	0.008137	-32.37099***	0.0000
DER	0.008991	0.006304	1.426268	0.1575
LDTA	0.225382	0.131682	1.711570	0.0906
STDA	0.181058	0.074121	2.442751**	0.0166

R-square	0.928
Adj: R-square	0.924
F-statistic	274.13
Prob (f-statistic) .	0.000
Durbin Watson stat	2.127

****, ** denotes 1% and 5% levels of significance,* ***Source: output of data analysis, June 2016***

When ROA is used as the dependent variable, debt to asset ratio (DAR) has a significant negative effect on profitability (β = -0.263, t-stat = -32.370, p-value = 0.000). In the same model, short term debt to total asset (STDA) has a significant positive effect on profitability (β = 0.181, t-stat = 2.442, p-value = 0.016). It can be observed that both LTDA and DER have positive effect on profitability of the selected companies, however, the positive effect of DER is not statistically significant. LTDA is significant but the level of significance is weak.

The overall model is significant at 1% level (F-statistic = 274.13, p-value = 0.000.), indicating that the variables together significantly explain profitability of the selected companies. In other words, capital structure (measured by debt to equity ratio, debt to assets ratio, long term debt, and short term debt) has significant effect on a firm's profitability. The R-square value of 0.928 or 92.8% indicates that the independent variables together explain 92.8% of the variations in profitability of the selected companies. This clearly shows that capital structure components have significant impact on the profitability of FMCG companies.

4.4.2 Regression Model 2

Regression Model 2 uses ROE as the dependent variable. The independent variables included in the model are debt to equity ratio (DER), debt to assets ratio (DAR) long term debt (LDTA) and short term debt (STDA).

Table 4.5 Regression model 2 result with ROE as dependent variable

Variable	Coefficient	Std. error	t-statistic	Prob
Constant	0.314157	0.089495	3.510333	0.0007
DAR	0.014355	0.017806	0.806167	0.4224
DER	-0.032367	0.013150	-2.46132**	0.0159
LDTA	-0.493326	0.258361	-1.909439	0.0596
STDA	-0.227613	0.151003	-1.507338	0.1354
R-square	=0.153			
Adj: R-square	=0.114			
F-statistic	=3.865			
Prob (f-statistic)	0.01			
Durbin Watson stat	=1.53			

****, ** denotes 1% and 5% levels of significance,* ***Source: output of data analysis, June 2016***

In the second model (depicted in Table 4.5), where ROE is used as the dependent variable, it can be observed that debt to equity ratio (DER) has significant negative effect on the profitability of the selected firms (β = -0.032, t-stat = -2.461, p-value = 0.016). Short-term debt to total assets and long term debt to total asset show a negative effect with respect to profitability; however, the effects are not statistically significant. Debt to assets ratio (DAR) shows a positive relationship with profitability but the relationship is not statistically significant. The result obtained from each model suggests that capital structure has an impact on profitability of the selected companies. This result is in agreement with the finding of Vatavu (2015) who found that capital structure has significant effect on the profitability of Romanian companies.

4.4.3 Regression Model 3

One objective of the study was to examine the main determinants of capital structure of the FMCG companies in Ghana. To achieve this objective, a regression analysis was employed. The regression model and its variables were chosen based on the study conducted by Vergas, Cerqueira & Brandao (2015). The dependent variable (DAR) is given as debt to total assets. The independent variables include profitability (measured by return on assets and return on equity), size (measured by the logarithm of total assets), tangibility (measured by fixed asset to total assets) and Taxes (measured taxes over profit before interest and taxes).

Table 4.6 Regression result of the determinants of capital structure of FMCG

Variable	Coefficient	Std. error	t-statistic	p-value
C	0.579933	0.740881	0.782762	0.4362
ROA	-3.405843	0.103656	-32.85702***	0.0000
TANG	0.294955	0.057483	5.131124***	0.0000
GRWOP	-0.000324	0.002834	-0.114456	0.9092
SIZE	-0.006542	0.049846	-0.131248	0.8959
TAX	0.012589	0.095420	0.131929	0.8954
R-square		0.943		
Adj: R-square		0.939		
F-statistic		250.99		
Prob (f-statistic)		0.000		
Durbin Watson stat		1.78		

*** and *** indicate statistical significance at 5% and 1% respectively*

The result, as presented in Table 4.6 show that there is a significant negative relationship between profitability (measured by return on assets) and the capital structure of the selected companies (β = -3.40, t-stat = -32.85; p = 0.00). The result indicates that capital structure of the selected companies is significantly determined by profitability**.** The result also shows that an increase in the profitability of the companies lead to a reduction in its borrowing (or debt). For instance, 1 unit increase in profitability (ROA) leads to a 3.4 units decrease in the firms' borrowing. This results exhibits an agreement with the findings of Jin Xu (2012), Nakamura et al. (2007) and Rajan & Zingales (1995) who found a significant negative relationship between profitability and a firm's indebtedness. The authors argue that lower levels of indebtedness of most profitable companies stems from the fact that such firms will be in the position to use internally generated funds and therefore will not rely heavily on debt. The result is however in sharp contrast with the findings of Fama & French (2002) and Gaud et al. (2005) who found a significant positive relationship between profitability and indebtedness. These authors found evidence to the effect that profitable companies can increase access to finance due to positive expectation in fulfillment of their debt. The result also shows that tangibility (TANG) has a significant positive relationship with the capital structure of the selected companies (β = 0.294, t-stat = 5.13; p = 0.00). This result means that tangibility significantly determines the capital structure of the selected companies. Tangible assets of companies are considered as one of the main factors considered by creditors when granting loans. Thus, companies with high levels of fixed assets are likely to have high indebtedness. This result is also in agreement with the findings of Rajan & Zingales (1995) who found that tangible assets also have a positive effect on corporate indebtedness.

The results further show that though taxes has a negative effect on capital structure, the result is not significant. In addition, growth potential (GRWOP) and size (SIZE) were found to have a

negative relationship with capital structure of the companies selected. However, it was found that their relationship is not significant. Put differently, growth opportunity and size are not significant determinants of the capital structure of FMCG companies. This result is in contrast with the findings of Graham et al. (1999) who found that larger firms obtained finance more easily and therefore should have high levels of debt compared to their smaller counterparts.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a brief summary of the key findings of the study. In addition, conclusions and recommendations are made in accordance with the study result.

5.2 Summary of Major Findings

The study was conducted with the aim of achieving three main specific objectives. The first was to examine the capital structure of the selected FMCG companies. The second objective examines the determinants of capital structure of the selected companies, while the third examined the effect of capital structure on the profitability of the selected companies. A total of nine FMCG companies were selected from the Ghana Stock Exchange and examined over a period of 10 years (from 2005 to 2014). This puts the number of observations at ninety (90). Panel regression analysis techniques were employed to examine the relationship among the variables.

The descriptive statistics of the study variables indicates that debt to equity ratio of the selected FMCG companies is 1.96 indicating that the companies use 96% more debt than equity. The result further indicates that long term debt to total assets (LDTA) is 0.125 or 12.5% which means that the 12.5% of the total assets of the companies are represented by long-term debt. The result of short term debt to total asset (SDTA) is 0.462 or 46.2% indicating that the 46.2% of the total assets of the companies are financed short-term debt. This do not represent the performance or capital structure of individual companies but the average capital structure position of the companies.

Preliminary analysis of the data indicates that all the variables are stationary at their level forms, meaning that there is no unit root among the study variables. In other words, the variables exhibit

stationary trend. This makes it possible to obtain clean estimates without producing spurious regression. To determine the appropriate panel regression model to use, Hausman's test of fixed and random effect models were conducted. The result of the Hausman's test indicates that the random effect model is appropriate for the sampled companies.

The regression result show that capital structure (represented by debt to equity ratio, long term debt to total assets, short term debt to total assets, and debt to total asset) has significant effect on the profitability of the selected FMCG companies. This is because the overall model is significant at 1% level (F-statistic = 274.13, p-value = 0.000.), indicating that the variables together significantly explain profitability of the selected companies. The R-square value of 0.928 or 92.8% indicates that the independent variables together explain 92.8% of the variations in profitability of the selected companies. This clearly shows that capital structure components have significant impact on the profitability of FMCG companies.

Specifically, when ROA is used as the measure of profitability, the result shows that debt to asset ratio (DAR) has a significant negative effect on profitability (β = -0.263, t-stat = -32.370, p-value = 0.000). In the same model, STDA has a significant positive effect on profitability (β = 0.181, t-stat = 2.442, p-value = 0.016). When ROE is used as a measure of profitability, the result shows that debt to equity ratio has significant negative effect on profitability of the selected FMCG companies. These results also indicate that increase in total debt leads to a significant reduction in the profitability of the companies.

As far as the determinants of capital structure of the companies are concerned, it was found that two variables, profitability (ROA) and asset tangibility (TANG) both significantly determine the

capital structure of the selected companies. Specifically, profitability (ROA) has a significant negative relationship with capital structure whiles asset tangibility has a significant positive relationship with capital structure.

5.3 Conclusion

The study was conducted in order to examine the effect of capital structure on the profitability of selected fast moving consumer goods companies on the Ghana stock exchange over a period of 10 years. In addition, the factors that determine the capital structure of these companies were examined using panel data. A comprehensive literature review (both theoretical and empirical review) was conducted TO ascertain the relevant variables to be used. Through the literature review the major capital structure variables indicators identified include debt to equity ratio, long term debt to total assets ratio, short term debt to total assets ratio, and debt to total assets ratio. The factors expected to determine capital structure include growth opportunity, taxes, profitability, and assets tangibility. The result of the study shows that capital structure significantly affects the profitability of the selected companies. Again, it was found that the main factors that significantly determine capital structure of the selected companies are profitability and asset tangibility. The findings of the study is expected to help FMCG companies and other companies to develop optimal capital structure policy that will improve their profitability in the short and long run.

5.4 Recommendations

With regards to the literature review on capital decisions, it is obvious that the ultimate capital structure for any company is the optimal capital structure. This is the stage where debt to equity maximizes the value of the firm.

Based on the findings of the study, it is recommended that companies with high asset worth is likely to get funding both short and long term from financing companies as tangible assets of companies are considered as one of the main factors considered by creditors when granting loans. However, companies should do so with caution by not relying so much on debt as the use of too much debt is will cause financial distress.

To better appreciate how capital structure and financing decision affect the profitability of Ghanaian companies, it is recommended that other performance indicators apart from ROA and ROE should be explored. That is, other variables that are likely to measure capital structure should also be considered.

It is also recommended that, there should be an immense contribution to Ghana's capital market both by companies and government especially with the issuance of long term bonds so as to encourage the use of long term bonds by FMCG companies.

Again, the study established that capital structure significantly affect the profitability of the selected companies. The result means that these firms should work to determine their optimal capital structure (a mix of debt and equity) which maximizes their profitability and the firm's worth.

The study mainly concentrated on fast moving consumer goods companies in Ghana. Future studies should focus on other sectors within the Ghana stock exchange to determine whether variations exist in the findings. Also, future studies should focus on unlisted companies to determine their capital structure and its determinants.

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APPENDIX

Table 1. Synthesized Financial Statement of FMCG Companies on the GSE.

ID	Year	ROA	ROE	STDA	LTDA	DAR	Sales	Total Equity	DER	Total Assets	Fixed Assets
1	2005	0.048	0.055	0.065	0.000	0.065	-	31,144,309.00	0.074	35,464,111.00	18,698,651.00
1	2006	0.126	0.148	0.069	0.082	0.151	-	36,548,070.00	0.178	43,042,894.00	16,336,899.00
1	2007	0.116	0.190	0.339	0.050	0.389	29,129,721.00	17,756,742.00	0.637	29,070,499.00	10,533,509.00
1	2008	0.091	0.167	0.413	0.040	0.453	42,775,342.00	20,970,926.00	0.829	38,360,544.00	11,315,095.00
1	2009	0.022	0.039	0.400	0.042	0.442	44,643,160.00	21,444,040.00	0.792	38,426,283.00	11,758,396.00
1	2010	0.091	0.151	0.358	0.040	0.397	54,806,798.00	25,263,490.00	0.659	41,917,077.00	11,612,234.00
1	2011	0.111	0.202	0.419	0.003	0.422	66,184,295.00	31,196,881.00	0.771	56,945,744.00	11,908,406.00
1	2012	0.012	0.024	0.486	0.011	0.497	82,322,463.00	31,327,691.00	0.988	62,278,366.00	12,476,353.00
1	2013	0.108	0.201	0.439	0.024	0.462	95,742,084.00	39,188,851.00	0.860	72,906,717.00	12,044,373.00
1	2014	0.016	0.037	0.554	0.015	0.569	107,150,197.00	36,712,571.00	1.322	85,260,946.00	13,033,653.00
2	2005	0.193	0.408	0.365	0.027	0.392	312,464.00	86,244.00	0.832	182,970.00	96,016.00
2	2006	0.207	0.298	0.405	0.058	0.463	323,747.00	109,890.00	0.665	157,983.00	108,158.00
2	2007	0.184	0.281	0.318	0.029	0.346	41,068.00	15,494.00	0.530	23,707.00	11,481.00

2	2008	0.215	0.329	0.324	0.025	0.348	55,041.00	21,410.00	0.535	32,858.00	15,084.00
2	2009	0.297	0.432	0.288	0.026	0.314	82,471.00	35,082.00	0.457	51,114.00	27,845.00
2	2010	0.283	0.372	0.212	0.025	0.238	103,775.00	52,126.00	0.312	68,391.00	38,861.00
2	2011	0.227	0.302	0.215	0.034	0.249	109,280.00	62,372.00	0.332	83,081.00	43,771.00
2	2012	0.282	0.441	0.323	0.038	0.361	147,212.00	61,681.00	0.565	96,553.00	51,904.00
2	2013	0.215	0.284	0.196	0.049	0.245	138,969.00	76,431.00	0.325	101,247.00	62,304.00
2	2014	0.121	0.186	0.297	0.049	0.346	177,492.00	81,021.00	0.529	123,913.00	61,072.00
3	2005	0.001	0.001	0.927	0	0.927	73,227,497.00	111,594,829.00	1.000	120,412,532.00	95,608,966.00
3	2006	0.043	0.047	0.000	-	0.000	9,079.00	110,966,511.00	0.000	122,237,752.00	94,889,131.00
3	2007	0.042	0.045	0.061	0	0.061	13,115.00	16,703.00	0.065	17,794.00	14,476.00
3	2008	0.225	0.247	0.087	0	0.087	20,589.00	19,984.00	0.096	21,898.00	14,525.00
3	2009	0.075	0.081	0.084	0	0.084	15,603.00	20,300.00	0.092	22,160.00	15,695.00
3	2010	0.112	0.219	0.011	0	0.011	19,366.00	12,184.00	0.021	23,884.00	16,351.00
3	2011	0.304	0.482	0.011	0	0.011	34,797.00	19,901.00	0.018	31,513.00	18,302.00
3	2012	0.310	0.331	0.063	0	0.063	40,839.00	40,535.00	0.067	43,261.00	22,312.00

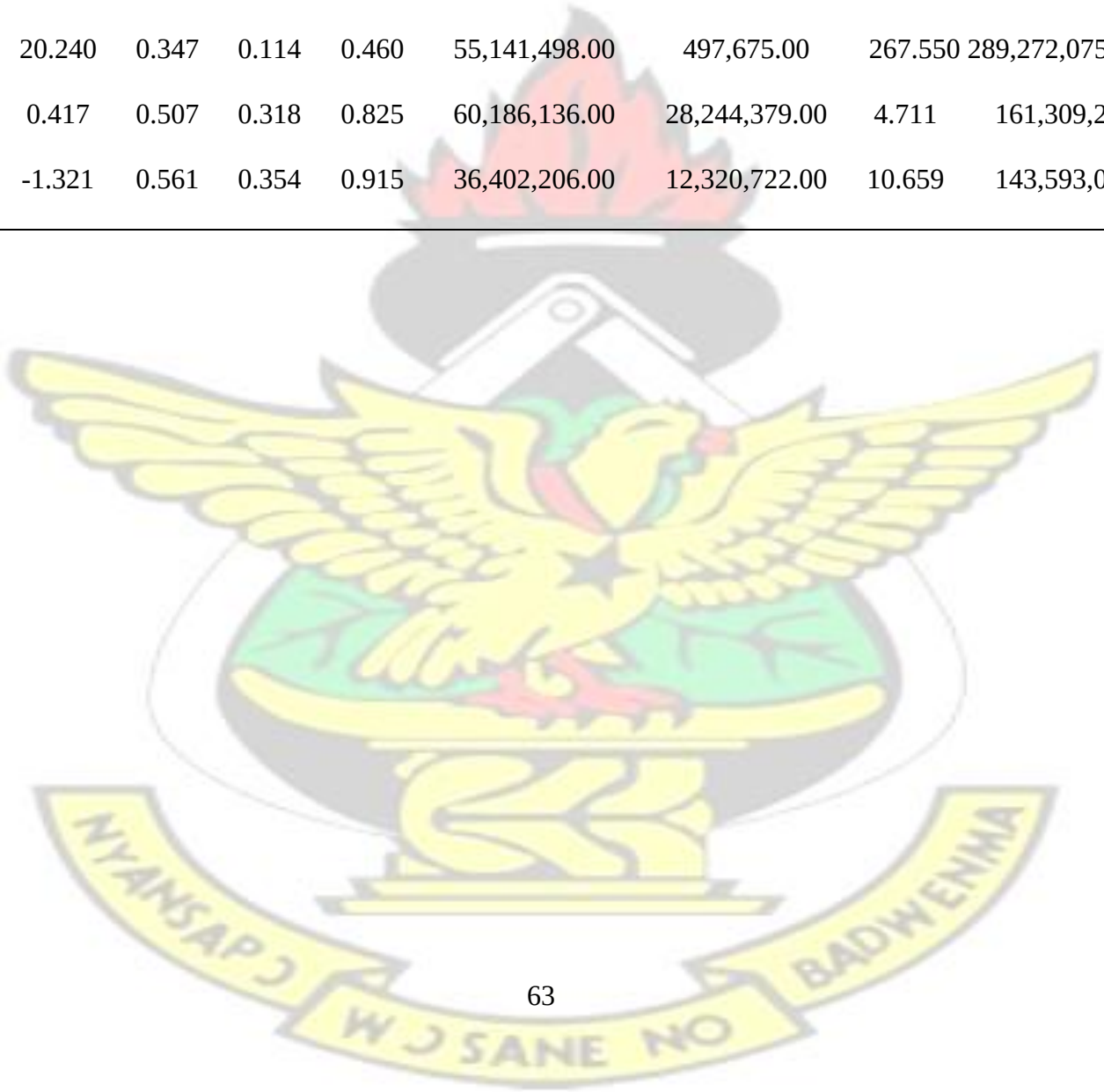
3	2013	0.126	0.133	0.049	0	0.049	35,438.00	43,660.00	0.052	45,924.00	30,507.00
3	2014	0.125	0.149	0.044	0	0.044	57,663.00	54,789.00	0.052	65,389.00	38,956.00
4	2005	-0.116	-0.182	0.816	0.816	0.067	24,189,489.00	24,472,838.00	0.573	38,494,562.00	30,240,526.00
4	2006	-0.163	-0.297	0.835	0.835	0.748	27,448,262.00	1,886,163.00	8.301	3,451,915.00	29,515,612.00
4	2007	0.018	0.033	1.000	1.000	0.000	3,096,382.00	1,950,925.00	1.857	3,622,755.00	2,931,094.00
4	2008	-0.079	-0.113	1.000	1.000	0.000	3,008,861.00	5,971,491.00	0.426	8,518,250.00	7,104,180.00
4	2009	-0.052	-0.083	1.000	1.000	0.000	3,948,012.00	5,513,133.00	0.594	8,787,805.00	6,974,408.00
4	2010	0.031	0.054	1.000	1.000	0.000	4,465,663.00	5,236,083.00	0.735	9,084,347.00	6,923,192.00
4	2011	-0.123	-0.230	1.000	1.000	0.000	3,752,563.00	5,295,165.00	1.003	9,907,289.00	7,489,887.00
4	2012	-0.347	-1.113	0.965	0.965	0.023	2,957,728.00	2,679,973.00	2.055	8,605,693.00	7,324,162.00
4	2013	-0.359	0.147	1.000	1.000	0.000	455,186.00	(3,209,905.00)	-1.656	1,314,378.00	1,124,346.00
4	2014	-5.649	0.281	1.000	1.000	0.000	2,559,628.00	(6,501,574.00)	-1.050	323,038.00	1,217,200.00
5	2005	0.098	0.205	0.405	0.114	0.519	632,981.00	415,144.00	1.080	863,501.00	343,454.00

5	2006	0.134	0.288	0.497	0.039	0.536	755,445.00	486,616.00	1.153	1,047,711.00	433,864.00
5	2007	0.114	2.180	0.100	0.025	0.125	919,936.00	60,015.00	2.397	1,150,135.00	80,727.00
5	2008	0.085	0.220	0.969	0.170	1.139	135,810.00	62,165.00	2.938	160,321.00	116,599.00
5	2009	0.054	0.212	0.657	0.027	0.684	200,968.00	54,065.00	2.688	212,323.00	134,497.00
5	2010	(0.025)	(0.103)	0.527	0.277	0.804	206,499.00	45,163.00	3.364	189,046.00	150,934.00
5	2011	0.003	0.012	0.635	0.142	0.776	244,293.00	45,696.00	3.468	204,188.00	162,038.00
5	2012	0.102	0.180	0.329	0.101	0.431	292,318.00	138,957.00	0.757	244,099.00	164,944.00
5	2013	0.061	0.120	0.413	0.074	0.487	321,017.00	152,802.00	0.950	297,991.00	229,054.00
5	2014	(0.021)	(0.061)	0.665	0.421	1.086	330,645.00	140,619.00	3.238	419,378.00	294,707.00
6	2005	0.185	0.364	0.459	0.000	0.459	525,138.00	266,778.00	0.904	525,138.00	223,085.00
6	2006	0.150	0.231	0.463	0.000	4.196	555,326.00	39,679.00	6.483	61,304.00	225,251.00
6	2007	0.145	0.240	0.335	0.062	0.397	72,087.00	43,431.00	0.660	72,187.00	34,245.00
6	2008	0.190	0.417	0.498	0.047	0.545	101,751.00	46,254.00	1.200	101,751.00	36,731.00
6	2009	0.002	0.005	0.545	0.035	0.581	84,682.00	38,503.00	1.277	84,682.00	35,531.00
6	2010	0.177	0.434	0.540	0.052	0.593	94,259.00	41,340.00	1.454	101,464.00	42,044.00

6	2011	0.237	0.616	0.563	0.052	0.615	87,972.00	48,893.00	1.596	126,946.00	38,974.00
6	2012	0.102	0.495	0.750	0.043	0.793	97,850.00	31,768.00	3.839	153,712.00	55,862.00
6	2013	0.073	0.431	0.786	0.045	0.830	121,446.00	32,629.00	4.888	192,123.00	70,677.00
6	2014	(0.003)	-0.022	0.824	-0.011	-0.273	225,208.00	31,593.00	6.128	(710,000.00)	87,746.00
7	2005	0.167	0.268	0.364	0.011	0.375	22,130,367.00	16,434,341.00	0.601	26,305,349.00	1,895,511.70
7	2006	-0.097	-0.023	0.573	0.009	5.821	2,323,776.00	12,554,870.00	1.393	3,004,166.00	18,170,778.00
7	2007	-0.086	-0.293	0.694	0.012	0.706	3,192,970.00	899,898.00	2.397	3,055,776.00	1,709,697.00
7	2008	-0.158	-0.290	0.449	0.006	0.455	2,876,993.00	1,317,726.00	0.835	2,418,618.00	1,592,440.00
7	2009	-0.154	-0.327	0.522	0.007	0.529	2,165,058.00	992,821.00	1.123	2,108,068.00	1,484,035.00
7	2010	-0.369	-1.730	0.779	0.008	0.787	1,720,985.00	363,735.00	3.684	1,703,841.00	1,376,517.00
7	2011	-0.315	3.713	1.079	0.113	1.192	1,582,868.00	(134,079.00)	-14.073	1,582,868.00	1,269,983.00
7	2012	-0.335	0.838	0.006	0.006	0.012	1,211,481.00	(830,490.00)	-0.030	2,075,562.00	1,160,095.00
7	2013	-0.634	0.579	0.016	0.016	0.033	1,813,306.00	(1,974,037.00)	-0.030	1,804,789.00	1,051,915.00
7	2014	-0.120	-0.201	0.398	0.002	0.400	1,214,818.31	7,368,237.60	0.667	12,283,872.84	11,764,386.00

8	2005	-0.103	-0.580	0.822	0.000	0.822	2,304,175.00	53,728.00	4.625	302,246.00	31,184.00	
8	2006	-0.058	-0.257	0.775	0.000	0.775	2,486,622.00	42,743.00	3.443	189,916.00	26,503.00	
8	2007	0.003	0.025	0.786	0.077	0.863	193,182,770.00	4,988,565.00	6.283	36,332,585.00	5,914,263.00	
8	2008	0.031	0.287	0.778	0.113	0.891	245,478,455.00	7,353,415.00	8.175	67,467,661.00	14,743,482.00	8
	2009	0.054	0.459	0.781	0.102	0.883	437,405,123.00	11,316,143.00	7.533	96,559,981.00	26,126,129.00	
8	2010	0.083	0.597	0.810	0.050	0.860	632,902,845.00	23,624,595.00	6.155	169,031,479.00	30,916,968.00	
8	2011	0.101	0.584	0.769	0.058	0.827	1,301,776,645.00	47,373,503.00	4.791	274,338,291.00	38,982,578.00	
8	2012	0.035	0.206	0.768	0.063	0.831	1,162,927,098.00	48,916,733.00	4.914	289,272,075.00	57,762,809.00	
8	2013	0.027	0.223	0.001	0.055	0.056	112,323,702.00	39,520,935.00	0.464	326,819,653.00	85,777,116.00	
9	2005	0.011	0.047	0.407	0.315	0.722	279,644.00	162,414.00	2.951	664,027.00	411,545.00	
9	2006	0.010	0.049	0.527	0.291	0.818	290,436.00	166,917.00	3.893	794,432.00	484,303.00	
9	2007	0.006	0.021	0.265	0.437	0.701	48,340,123.00	30,616,831.00	2.349	102,533,274.00	61,259,485.00	
9	2008	0.007	0.015	0.069	0.470	0.538	59,394,197.00	84,045,281.00	1.166	182,031,835.00	140,177,884.00	
9	2009	-0.093	-0.949	0.031	0.594	0.625	45,541,422.00	18,791,249.00	6.345	190,748,909.00	131,384,823.00	
9	2010	-0.067	-27.515	0.337	0.662	0.999	84,127,817.00	455,224.00	411.878	187,651,883.00	136,976,369.00	

9	2011	0.101	3.215	0.352	0.130	0.482	60,110,020.00	8,601,270.00	15.369	274,338,291.00	133,052,949.00
9	2012	0.035	20.240	0.347	0.114	0.460	55,141,498.00	497,675.00	267.550	289,272,075.00	91,423,883.00
9	2013	0.073	0.417	0.507	0.318	0.825	60,186,136.00	28,244,379.00	4.711	161,309,286.00	128,010,369.00
9	2014	-0.113	-1.321	0.561	0.354	0.915	36,402,206.00	12,320,722.00	10.659	143,593,099.00	123,280,715.00



Company ID (1 = PZ Cussons Ghana Limited; 2 = Fan Milk Ghana Limited; 3 = Benso Oil Palm; 4 = African Champion Industries Limited; 5 = Guinness Ghana Limited; 6 = Unilever Ghana Limited; 7 = Pioneer Kitchenware Limited; 8 = Produce Buying Limited; 9 = Cocoa Processing Limited), ROA (return on assets); ROE (return on equity); SDTA (short term debt to total assets); LDTA (long term debt to total assets); DAR (debt to assets ratio); DER (Debt to equity ratio).