UNIVERSITY OF GHANA

THE EFFECT OF CAPITAL STRUCTURE ON THE FINANCIAL PERFORMANCE OF LISTED PHARMACEUTICAL, FOOD AND BEVERAGE COMPANIES ON THE GHANA STOCK EXCHANGE

BY

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CANDIDATE'S DECLARATION

I, the undersigned do hereby declare that this Thesis is the result of my own original research and that no part of it has been presented for another Degree in any University. However, all sources of borrowed materials have been duly acknowledged.

Name	Sign	Date
.....	.....	.....

SUPERVISOR'S DECLARATION

I declare that the preparation and the presentation of this Thesis were in accordance with the guidelines on supervision of Thesis laid down by the University of Ghana.

Sign.....

Name……

Date.....

DEDICATION

This Thesis is dedicated to Hon. Abu-Bakar Saddique Boniface (Member of Parliament for Madina Constituency and Minister of State at the Office of the Vice President).

ACKNOWLEDGEMENT

I first and foremost express my deepest appreciation to God the Almighty for His Grace and for seeing me through this academic exercise.

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ABSTRACT

The study examined the effect of capital structure on the financial performance of pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange from 2007 to 2016. The performance indicators included Return on Equity (ROE), Return on Asset (ROA), Return on Capital (ROC) and Earnings per Share (EPS) while capital structure proxies were Long-term Debt to Capital Ratio and Short-Term Debt to Capital Ratio controlling for total asset.

The study used panel data analysis as the method of analysis and found that Long-Term Debt to Capital Ratio negatively impacted all performance indicators while Short-Term Debt to Capital Ratio was insignificant on all performance indicators except ROA which was negative as well. In summary, the relationship between capital structure and performance proved negative. Further, the larger the size of the company, the higher its profitability. The study recommended that for policy purpose, Ghana Revenue Authority should accelerate the collection of corporate taxes as over 40% of the debt portfolio of sampled companies was tax in arrears. Also, the companies are advised to reduced debt and use more equity as well as increasing their total assets.

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LISTS OF ACRONYMS

ANOVA	Analysis of Variance
EPS	Earnings Per Share
GHS	Ghana Cedis
GSE	Ghana Stock Exchange
LTDC	Long-Term Debt to Capital
M&M	Modigliani and Miller
POT	Pecking Order Theory
ROA	Return on Asset
ROC	Return on Capital
ROE	Return on Equity
STDC	Short-Term Debt to Capital
STDEV	Standard Deviation
WACC	Weighted Average Cost of Capital

CHAPTER ONE

INTRODUCTION

1.1 Study Background

Company funding or financing strategies and resolutions include a spectrum of policies and considerations critically applied to ensure survival and growth of the company and this is dependent on the circumstances at hand at that material moment. The corporate finance trend and architecture is of great significance to the financial health of the company. Due to this, the corporate finance decisions affect directly and indirectly at various levels the series of decisions taken by corporate management and it greatly impacts on the creation of value for investors or shareholders. Various studies point to the fact that for a company to survive mostly in very economically challenging moments, the balance between debt and equity is key to ensuring survival, driving growth and the measuring performance as Voulgaris, Asteriou & Agiomirgianakis in 2004 stipulate. This implies that capital structure cannot be overlooked and stands tall among the strategic decisions taken by the board of the company.

It is therefore prudent to allude to the fact that capital structure decision is key component of board resolutions and it is ranked as being at the heart of those entrusted to take strategic decisions on behalf of the company. It therefore serves as the foundation for all other financial related decisions in relation to the company in question. The corporate finance decisions include project finance, dividend policy, sourcing of debt and equity, funding of mergers and acquisitions, management buy-out and other related decisions. There is an overriding objective of the corporate finance role to acquire or raise finance or capital at lowest realistic cost to be able to maximize the shareholder value since shareholder value is the trade-off between cost and return. Capital structure is therefore a key tool used by executive management to manage the cost of capital upon considering the various factors available. It is therefore prudent to evaluate the funding

composition of listed pharmaceutical, food and beverage firms sampled from the GSE then link that to their performance for the years under review to be able to conclude whether or not the capital structure decisions have played any role in the value creation chain in the wake of challenging business shocks being experienced worldwide.

Puwanenthiren (2011) explains capital structure mainly as the composition of various firm sources of funding being long-term financial obligations and equity shares or hybrid of them not forgetting retained earnings and other equity gains by the entity. The percentage or share of an entity's common stock and long-term financial obligations on the balance sheet definitely can be described as tactical choice decision made by finance managers depending on the various factors and policy objectives at hand. Saad (2010) also asserts to the fact that capital structure can also be seen to mean how company assets are funded through a mix of long-term obligations, equity and hybrid instruments. Also, Storey (1994) clearly defines the same term (Capital structure) as combination of financial obligations, equity stock and preference shares. Thus, it could be observed that the various authoritative definitions point to the same thing which centred around the mix of sources of finance for a company and usually long-term. It is generally opined that ideal composition of owners' equity (common stock) and financial obligation (debt) is attained where the average cost of finance is lowest or minimal, thus, yielding maximum returns holding other factors constant. The capital structure concept has become more phenomenon as a result of the fact that it is almost impossible to find a company being financed by either only debt or only equity. So far as a mix of these two or more sources of finance exist, capital structure will remain an important concept worth studying. As a result of the above assertion, it will therefore be tacit to determine the specific components of the sources of finance and evaluate if there is any link between them and financial performance to enable financial decision makers to integrate this into the corporate finance decisions and policies.

Tian & Zeitun (2007) indicate that capital structure is very much connected to how firm performs. Company or project finance can therefore easily be assessed using key indicators which include productivity, profitability, growth, market indicators such as share price among others. However, the most widely used indicators are a mix of accounting profitability and market ratios and the measurements can include investment return (ROI), excess income (RI), the popular EPS, "dividend yield" (DY), P/E Ratio, market capitalization and revenue growth as put forward by Barbosa & Louri in 2005. Capital structure concept was born during a presentation of paper by Modigliani & Miller (1958) and since then capital structure has attracted tremendous studies.

1.2 Problem Statement

There are conflicting and contrasting arguments whether Capital structure positively or negatively impacts financial performance or whether there is no relationship at all. This is because several theories and empirical studies continue to have different views making it difficult to state with accuracy the type of the relationship. For example, Kyereboah-Coleman (2007), Margaritis & Psillaki (2010), Gill et al (2011), Nawaz, Ali, & Naseem (2011), Saeed, Gull, & Rasheed (2013) and Anarfo & Appiahene, (2017) upon their research on same topic though focusing on different industries and jurisdictions, their studies reveal direct association between the variables. However, works by Tian & Zeitun (2007), Chakraborty (2010), and Abbadi & Abu-Rub (2012), as well as Le & Phan (2017) indicate negative relationship between capital structure and firm performance while that of Ebaid (2009) and Lin & Chang (2011) indicate a neutral relationship (no relationship) among variables confirming that the choice of a particular composition of common stock and debt instrument is irrelevant for company value creation. This inconsistency creates a research gap or research problem to be filled then.

In addition to the above research gap, as far as I am concerned, there exists no published studies on this topic pertaining to the Pharmaceutical, Food and Beverage Companies and particularly those listed on the Ghana Stock Exchange from 2007 to 2016. This presents another research gap as the above industry is under researched. The study therefore intends to address the two identified research gaps to reveal the real situation.

1.3 Research Purpose

The overriding drive behind the research is to investigate the relationship between capital structure and performance of listed Pharmaceutical, Food & Beverage entities on GSE from 2007 to 2016.

1.4 Study Objectives

Pursuant to achieving the purpose of the study, the below bulleted objectives being examined:

a. To relate the capital structure to the financial performance of Pharmaceutical, Food and Beverage entities trading on the Ghana Stock Exchange from 2007 to 2016.

1.5 Research Hypothesis/Questions

To be able to achieve the above research objectives, the under-listed research questions have been put forward:

a. What effect does capital structure have on financial performance of Ghana Stock Exchange trading Pharmaceutical, Food and Beverage Entities from 2007-2016?

1.6 Study Significance

The research work is an expansion of the previous capital structure and performance studies focusing on Ghana Stock Exchange listed Pharmaceutical, Food and Beverage Entities for the period 2007-2016. Due to the fact that data is gathered from an emerging and developing economy like Ghana and also under-researched industry, this study contributes to literature in this regard and add to the body of knowledge. The study further serves as reference document and source of evaluation for further investigation into liability and equity mix and entity performance. The results from this research will be a useful material in subsequent works concerning liability and owners' fund and performance into the pharmaceutical, food and beverage entities based on other research gaps such as methodology, scope of data, level of analysis, context and etcetera.

This research also contributes to corporate knowledge of managers to better understand the capital structure phenomenon and be useful to them in their professional practice. This means the corporate world will benefit tremendously from the result from the study.

Finally, this study goes a long way to help in contributing to policy on Capital structure especially considering the liberalization of the financial markets and other informal sources of financial intermediation as well as development of other finance related policies.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Overview

This chapter reviews theories and concepts and previous studies called empirical review. Literature review is meant to give the study strong theoretical and empirical support. It helps to understand what has been said about the key terms in the study and methodologies, samples, context and results of previous related studies to help serve as guidance to the researcher. The literature review helps to identify possible research gaps. The theoretical review will focus on concept of capital structure, theories and determinants which give a better explanation of the topic under review. The empirical review will explain several previous studies same topic pertaining different industries, geographical, level of analysis as well as methodologies. The empirical review will present studies with different results to support the fact that results have been conflicting or inconsistent.

2.2 Capital structure Concept

capital structure means mixture of non-current monetary obligations or commitments and owner's equity employed in funding the activities or projects of the entity as Kyereboah-Coleman (2007) indicates. Boateng (2004) in his work also defines it to mean the proportion of total long-term financial obligations employed to finance its entire asset per purchase cost (book value) or capital employed. Boateng (2004) rejects M&M's declaration of choice of finance being worthless by strongly suggesting it is a decider of entity value particularly when the instance where a firm has to fund project using some level of liability instrument which can be seen as the norm and inevitable. Correia, et all (2006) also summarize ideal finance mix to mean liability to common

stock proportion that provides the company or project with the lowest overall entity or project finance cost (WACC) being key objective in corporate finance.

Capital structure is simplified by Lambrechts (1990) to mean the financing aspect of an entity's financial standing consisting of owners' funds and debt instrument in relative terms. Lambrechts (1990) interestingly further uses the terminology financing structure in place of capital structure by stating that the sources structure of corporate finance in relation to ideal and expected proportions of liability and owners' funds could be agreed that capital structure seeks to explain what percentage or ratio of the total financial resources is debt and equity. The same author further argued to suggest that when financing policy guidelines are formulated, there must be distinction between owners' equity and financial liability as funding avenues, non-current tangible, intangible assets and current or liquid assets as well as other key issues necessary for management's understanding of flexibility in finance and assets. This is crucial for better capital structure analysis.

Capital structure policy is basically summarized to concern the under-listed points:

a. The proportion or mix of financial liability or debt instrument and owners' equity employed to fund the activities or projects of the entity.
b. Structure of liabilities that mature within one year and others that go beyond one year.
c. For common stock issue, the decision or policy on whether to go for right or primary issue.
d. The extent to which internal funds be used before considering external sources as "pecking order theory" suggests.

2.3 Capital Structure Theories

After publication by M&M (1958) on their seminar paper on capital structure irrelevance, capital structure has and continue to generate much interest among finance and even non-finance researchers which has seen lots of studies in this regard producing varying results. This suggests the fact that capital structure is an interesting concept and supported by lots of theories. Modigliani & Miller in their seminar paper contend that when a market is efficient, proportion of liability to owners' equity choice to finance a company's operation is irrelevant as far as shareholder value creation is concerned. This means no link between liability and owners' equity choice and value of the firm in question as they made this known by arguing that advantages of employing liability are offset by reducing common equity benefits which meant that there is a trade-off between liability and equity usage. The theory is subject to some conventions such as market efficiency, no tax allowance, etc. Prior to Modigliani & Miller capital structure theory, conventional viewpoints hold that debt usage or financial leverage increases company's value due to interest deductibility before tax. To this effect, expected ideal liability and common stock composition creates minimal finance cost resulting in superior value clearly indicating sharp contrast per M&M theory.

Modigliani & Miller (1963) after the 1958 seminar paper, after relaxing the earlier conditions including the fact that there is market imperfection, different cost on funds, tax allowance on use of debt indicate that entity value increases as a result of using more liability or debt. Boateng (2004) work also supports this stance indicating that market imperfection and tax deductibility of interest expense result in higher value of geared entities. In conclusion, profitable firms having positive net present value projects will improve in company value by acquiring more liability to fund the project. The caveat issued is that liability is good enough when firm is in a profit making position, eligible to carry forwarded losses and has positive net present value

projects to undertake.

2.3.1 Theory of Static Trade-Off

In 1976, Jensen & Meckling make a revelation that the best or ideal equity to debt ratio will be a balance of the impact of taxes paid by the entity (low due to interest expense tax deductibility) and persons related, cost of possible financial distress (financial risk), cost of monitoring executive management (agents) and the paybacks as well as otherwise of using equity. Cost of monitoring executive management (agency cost) emanates due to separation of equity holders from executive management. In the absence of this monitoring, executive management will pursue their interest at the expense of equity holders due to conflicts of interest. It was identified that the presence of excess or ideal cash which gives room to executive management to develop schemes to use them for their own interest at the expense of equity holders. As a result, Jensen (1976) describe liability as restrictive mechanism as it puts pressure on executive management to invest surplus cash wisely to enable them fulfil debt servicing and when they mature. Clearly, company in profit making position with positive net present value projects is encouraged to use more debt if free cashflow does not exist. Again, this explains that waste is eliminated as free cashflow is reasonably invested instead of executive management abusing it. The key notion here is that with more debt, management is keen on meeting financial obligation and will avoid abusing the resources due to fear of takeover.

However, the use of more debt means that executive management will not benefit from the additional value being created for the company. This is truly the case if they have minimal shareholding in the entity. This means management could undertake activities to create short term value for the company and also meet financial obligations to debt holders but the ideal way to ensure genuine and long-term lasting value is to increase the shareholding of executive

management. Huang & Song (2005) assert this notion and note that executive management must be issued with equity to ensure they see the need to genuinely increase the share value as they will be directly impacted. Jensen (1976) and Stulz (1990) share same stance that honouring financial obligations reduces internal surplus funds left for investment in financially viable projects.

Therefore, the conclusion drawn here is that firms with less liabilities are better positioned to have more free cash flow as they commit little into debt servicing and can invest in potential profitable ventures. This also meant that additional cost of monitoring executive management is saved while cost of running into bankruptcy is also eliminated. In summary, using debt comes with cost likewise owner's equity which is seen as opportunity cost. As a result of these prepositions, definitely ideal combination of liability and owners' funds to use to ensure that the additional benefit of using one offsets the cost of using the other.

2.3.2 "Theory of Pecking Order"

Meyers (1984), Myers & Majluf (1984) and Fama & French (2002) consider "Pecking order theory" (P.O.T.) as substitute model debating and explaining that an entity's liability position is the accumulated results from previous project investments as well as the long-term financing decisions. The theory assumes that when an entity identifies financially viable investment opportunity, firm finances the operation with free cash flow until exhausted, liability considered and in the absence of debt, equity finance will then be considered. New equity issuance is therefore the last resort after considering debt. The understanding from this theory is the cheapest source of finance is internal funds or free cash flow for four reasons which are the fact that it does not come with compulsory obligation to make interest and principal regular payments, no collateral security required, no dilution of shareholding and it presents flexibility. This therefore explains why free cash flow usage to finance project is appropriate. Secondly, when internal surplus fund is

exhausted, debt is considered as the next option. The advantages of debt over equity are based on the fact that debt issuance does not dilute shareholding, interest expense is tax deductible and cost of issuing debt is lower than equity issuance.

Corporate executive management members have sufficient and better information about the entity and its operations than equity holders who are separated from the management of the firm. This situation is described as information asymmetry. In view of this, Myers & Majluf (1984) rant that information asymmetry results in inaccurate share price since the real value and conditions of operations or projects are only known to executive management. Consequently, asymmetric information is the main reason behind the "picking order theory". Myers & Majluf (1984) in their conclusion emphasize the position that there is always a preferred hierarchy of usage of capital in funding business operations which are internal surplus fund, liability and shareholders' funds.

Subsequently, Dimitrov & Jain (2003) having studied the operations of some entities, put forward extra theory arguing that when executive management has insider information about the entity's operations deteriorating, they will issue more liability or debt. Hence, issuing more debt instrument gives a negative signal or indication to the public and this is termed as "signaling effect". In addition, Rajan & Zingales (1995) reveal that smaller entities have more information asymmetry than larger institutions due to absence of corporate governance best practices.

2.3.3 Asymmetric Information Theory

Ross (1977) propounded this theory seeking to eliminate the key condition under which M&M (1958) theory survived of "value invariance theory". This was subsequently built upon by Cassar and Holmes (2003) for better analysis. The preposition is that by default, shareholders do not have better and much information about the entity's operations as agents or executive management do however, equity holders or investors can possibly have that information by a

careful evaluation of the mix of the capital structure over time. In simple terms, prospect about the entity is revealed in the capital structure and by careful analysis of capital structure and its trend, owners can have the very information that executive management is having though they have not publicly stated it. Ross (1977) goes ahead to explain that when more liability instrument is issued, it signals promising future prospects because firm is managed efficiently and hence value will go up and operational stability. This seems to contrast the opinion of Dimitrov & Jain (2003) stating that more debt signals worsening future prospects.

Again, in contrast to Ross (1977) conclusion, Fama & French (2002), as well as Myers (1984) studies, hold that debt issuance gives worsening operations signal. The reason they gave for their stance is that more debt issuance places limitations on cash flow for future investment opportunity which indicates poor future prospects for the company. Voulgaris *et al*. (2004) quote the notion of Binks & Ennew (1996) explaining that asymmetry of information suggests that there is a direct link between structure of the entity's fixed asset and long-term liability. This meant that the presence of more fixed asset creates an incentive for more borrowing as the fixed assets serves as collateral security. In concluding, Voulgaris *et al*. (2004) suggest that there is likelihood of more debt issuance as direct response to higher size per fixed asset. Ross (1977) in his conclusion states that more liability issuance signals improved future prospects and helps counter asymmetry of information due to the positive relationship he claimed exists between debt and future prospect or value while Fama & French state the opposite showing a clear disagreement.

Prasad *et al*. (2001) in his work observe the order that companies fund fixed assets expansion by employing free cash flow, debt and equity known as the pecking order theory. Voulgaris *et al*. (2004) explain in supporting Prasad (2004) stance that free cash flow provides lowest cost seen as the opportunity cost of funds based on four reasons given to mean the following; it does not come with compulsory obligation to make interest and principal regular

payments, no collateral security required, no dilution of shareholding and it presents flexibility which Chen (2004) strongly supports. Clearly, it could be deduced that the authors have different opinions on why a firm will use a particular mix of sources of finance.

2.3.4 Agency cost theory

Kyereboah-Coleman (2007) in his work tried to explore and determine the ideal liability and equity mix as well as the factors causing that mix. He questions the factors that inspire the use of particular ratio of capital structure or mix. Due to this investigation, "agency cost theory" received much attention and explained to mean that if executive management possess valuable information in respect of company's future performance, it is used in the interest of agents at expense of company holders who do not have the information**.** However, their interests contrast with that of equity holders hence promoting agents' interest at the expense of the interest of equity holders.

Kyereboah-Coleman (2007) explains that companies employ more liability in their capital mix especially when there is a need to manage the company efficiently as required by equity holders. This becomes inevitable as company must be run efficiently enough to be able to meet financial obligations to debt holders. Also, Barclay & Smith (2005) describe this as signaling and subsequently, the term signaling effect of capital structure through debt issuance. This means signaling a company's capacity or inability to honour financial commitments or liability deduced from debt to equity composition. Barclay & Smith (2005) support stance taken by Jensen in 1986 saying that due to the cost involved in monitoring executive management over conflict of interest, it is better to employ more liability in the company's capital mix. They all agreed that issuing more liability gives better signal to the market of corporate efficiency. This results in reducing cost of monitoring agents and restricts them from abusing surplus cash flow. However, it is believed that

liability issuance comes with limitations for growing firms due to financial risks and inadequate collaterals as a result of low asset base.

2.4 Capital Mix Determinants

Having evaluated the viewpoints of most of the capital structure theories and many other empirical studies on same issue, it is established that certain factors influence the liability and shareholders' funds mix in financing operations of an entity. Factors among other things include but not limited to the size of entity, structure of the company's assets, company growth potential, taxation purposes, profitability, risk associated with firm and structure of the ownership.

2.4.1 "Size of Firm"

This is valued using its asset base, annual revenue, number of employees and any other relevant benchmark. Larger firms are comparatively more diversified with varying asset portfolios with relatively more stable earnings and this can have effect on its capital mix. This means the standard deviation (variance) of their earnings is lower and as a result they can bear more liability as they have relatively stable earnings to meet financial obligations. This was the viewpoint of Castanias (1983), Titman & Wessels (1988), and Wald (1999). However, Castanias (1983) indicates the presence of information asymmetry in smaller entities means they are likely not to succeed in obtaining sufficient liability as they are not attractive to lenders and as a result of this smaller entities will have lower debt to equity ratio by default. Larger firms with lower information asymmetry, relative stable earnings and large asset base serving as collaterals are more likely to repay liability and hence are likely to be attractive to lenders which sees their debt to equity mix being high.

Titman & Wessels (1988) explain that smaller entities face high risks of bankruptcy and their

situation is worse off as a result of lower asset base. They also state that higher firms enjoy economies of scale which increases value creation while smaller entities do not enjoy same. In conclusion it was indicated entity size directly impacts on liability tolerance of the debt equity mix. Castanias (1983) also concludes with larger non-current asset base, the cost of default per asset is lower and marginal default per asset increases at a reducing rate for larger companies but the opposite is true for smaller entities. In supporting these opinions, Kim & Sorensen (1986) state that larger companies are less risky compared to smaller entities. Cosh & Hughes (1994) state same thing differently indicating that company operational risk inversely relates to its size and based on these smaller entities are likely to tolerate less debt compared to larger firms that can tolerate high debt.

Some notable previous studies that have also indicate entity size directly impacting debt tolerance are Barclay & Smith (1996), Friend & Lang, (1988) and Barton *et al*. (1989). In the Ghanaian perspective, Aryeetey *et al*. (1994) identify that smaller businesses faces higher challenges in obtaining credit than bigger companies which supports the above studies. The Authors explaine that the likelihood of bigger companies qualifying for bank loans they apply for was higher compared to smaller entities. Furthermore, Bigsten *et al*. (2000) sampled entities from Africa focusing on six countries and revealed that 64% of micro entities, 42% of small entities as well as 21% of medium-sized entities sampled were debt restricted, however, only 10% of larger companies faced such restriction or constraint.

Again, Cassar & Holmes (2003), Esperança *et al*. (2003), and Hall *et al*. (2004) carried out similar studies and concluded that direct link existed between entity size and non-current liability, however, inverse for entity size and current liability. In support of the above stance, Chittenden *et al.* (1996) and Michaelas *et al*. (1999) also indicate entity size directly impacted non-current liability, but inverse impacted short-term debt. Titman & Wessels (1988) explaine that small scale

enterprises employ short-term liability finance more than larger companies as smaller entities will incur high transaction costs on issuing debt instruments and or equity.

2.4.2 Asset Structure

Closely linked to above point size is asset structure in determining capital mix. The nature of assets the company owns greatly influences the debt to equity mix. "Titman & Wessels (1988), Harris & Raviv (1991), Bradley et al. (1984)" all conclude that extent to which a company owns high base non-current asset offer it the opportunity to acquire more debt. They claimed that with high non-current tangible asset base, the company is likely to attract debt at lower interest rate as assets are used as collateral security and Wedig *et al*. (1988) also support this assertion. This helps to reduce toxic assets on the books of lenders, reducing moral hazard and adverse selection which impacts on lending rate.

With the opportunity for debt at lower rate due to structure of asset, it is likely the company will go for more debt which subsequently will impact on the debt to equity mix. This explains why firms with higher non-current tangible asset base will be highly geared. However, firms with less non-current tangible asset base are likely to fail in obtaining more debt as they may not have adequate assets to serve as security and explains why such companies will carry relatively less debt to equity mix (Storey, 1994; Berger & Udell, 1998).

It is quite clear that many studies have also confirmed the theoretical position of direct relationship existing between structure of asset (more non-current tangible asset) and debt levels indicated by Shyam-Sunder & Myers (1999), and Hovakimian *et al*. (2004). However, Kim & Sorensen (1986) upon their research come to the realization that expense on accounting depreciation inversely impacted proportion of non-current tangible asset and amount of debt that can be sourced. This is because depreciation reduces the net book value of the asset finance

providers (debt) focus on fair worth or price of asset as that will be the market and tradable value which they are inheriting.

Marsh (1982) indicate that companies with insufficient non-current tangible assets will go for equity instruments as they might not be able to attract sufficient debt. Subsequently, MacKie-Mason (1990) conclude upon the study that companies with high proportion of their total assets being non-current tangible will definitely resort to debt instruments to raise finance. Booth et al. (2001) make a brilliant argument suggesting that the positive relationship that exists between non-current tangible asset and debt is as a result of the debt maturity nature of structure.

2.4.3 Profitability

After Myers (1984) explains thoroughly the order in which firms will finance their businesses operations using "pecking order theory", effect of capital mix on company's performance got clearer. It has been concluded when profitable entity has surplus internal earnings, it will first rely on this internal source until it is exhausted before considering debt. It is partly because executive management holds superior information about the entity than equity holders. Secondly, it is also a risk management tool to ensure that the bankruptcy risk of the entity is under control. Murinde *et al.* (2004) argue that free cash flows in a form of reserves are the main financial source for the entity. Titman & Wessels (1988) and Barton *et al*. (1989) also note in their studies that profit recording institutions employ less liability relative to equity because they employ surplus internal earnings especially as they do not come with mandatory financial commitments which increase bankruptcy risk.

Two notable studies revealed that small and medium scaled enterprises normally encounter the pecking order of financing due to their inability to easily source funding from external sources. Holmes & Kent (1991) was the first to justify this saying small entities are "constrained" while

Ang (1991) support this by saying smaller entities are "modified" as far as pecking order is concerned. They attributed their pronouncements to micro entities not having what it takes to source outside funds. This implied that so far as an entity is profitable with free cash flow, it will always have less debt to equity ratio as it will only go for debt instrument if it exhausts the internal fund. In conclusion, profitability inversely impacted debt issuance and underlining condition says profit must be quality enough to increase free cash flow. This because if profitability does not increase free cash flow, then there will be no internal funds to rely on and the conclusion above will not stand.

However, Ooi (1999) note that since finance cost payable is tax allowable, companies with profit potentials will rather employ more liability to take advantage of the tax allowance. Another argument made from that study is that entities in profit making positions can sustain and manage more liability as they can easily attract liability instruments and the probability of paying is high and due to this assertion, it was concluded that profit making institutions are rather likely to use more liability than equity. To further this stance, Scherr *et al*. (1993) studied and reveal that start-ups with promising future prospects have more liability to equity share on their books.

In summary, some results from previous studies supported the "pecking order theory" while other works also indicated an inverse link between profitability and capital mix and some of these are the studies of Mishra & McConaughy (1999) and Michaelas *et al*. (1999). Again, Cassar & Holmes (2003), Esperança *et al*. (2003) and Hall *et al*. (2004) support the stance of Cassar & Holmes (2003) saying profitability indirectly impacts gearing but Petersen & Rajan (1994) did settle on a strong direct association.

2.4.4 Entity Growth

Hall *et al*. (2004) state that a growing entity is likely to exhaust its free cash flow and hence

inevitably seek external source of funding in a form of debt as its appetite for growth is high. Again, Marsh (1982) suggest entities demonstrating growing potentials will likely attract extra liability consequently increasing their gearing percentage. Also, Heshmati (2001) argue that for privately owned small entities, liability is likely to be higher because they avoid issuing equity in attempt to protect the ownership concentration as they will not like to dilute shareholding. Again, Aryeetey *et al*. (1994) stress that smaller entities with growth potential will employ liability instruments to sponsor expansion even though it is not strongly established whether funding results in growth or growth rather results in increased finance. He adds that when entities go through their life cycles, the likelihood of changing from one source of finance to another is very high. The Author explained that these entities are expected to practice "pecking order" by shifting from surplus internal earnings to outside finance. He notes that past growth performance and anticipated forecasts are key determinants in the capital choice.

Michaelas *et al*. (1999) agree that firm's expansion directly impacted liability issuance and clarify that it impacted only current liability instead. The argument put forward to support this stance is that due to cost of monitoring executive management and cost of liability, it is wise and financially better to deal in short-term liability. In sharp contrast, Boateng (2001) rejects the stance taken by others and concluded that growing entities employ less liability in their financial mix. In his defence, he states that there exist conflicting motives between lenders and company owners because lenders place some form of limitations on the company in order to protect their interest in the worst-case scenarios and these limitations restricts the company to aggressively pursue growth. Boateng (2001) further adds that the aggressive attitude of smaller entities to pursue growth creates "moral hazard" and if the growth rewards are achieved, debt holders will not be reward extra for that which clearly indicates agency problem because in the case that the entity fails, the debt holder may not be able to recoup the entire amount.

It is fair to state empirical works determining impact of growth on gearing remains unsettled. This because number of studies by Titman & Wessels (1988) and Barton *et al*. (1989) attribute direct link between growth in margin and gearing while other studies by Roden & Lewellen (1995) and Al-Sakran (2001) indicate a negative relationship. Furthermore, Michaelas *et al*. (1999) establish expansion potential directly impact leverage. Also, Cassar & Holmes (2003) as well as Hall *et al*. (2004), reveal expansion directly impacts overall gearing made up of current and non-current liabilities. However, Chittenden *et al*. (1996), Jordan *et al*. (1998), and Esperança *et al*. (2003) obtain inconsistent research outcomes indicating that the relationship is inconclusive.

2.4.5 Operational Risk of Entity

Kale, Thomas & Ramirez (1991) state that presence of risk in the entity informs what form of capital to employ which affects the capital mix. Castanias (1983) notes that the "tax shelter-bankruptcy cost theory" of financial mix informs the ideal mix of equity and liability the firm should employ. Due to the presence of financial risk of inability to meet mandated financial commitments and agency cost**,** the entity is therefore demotivated to use debt to the fullest. This implies that when risk is high entities are likely to avoid using much debt which will result in a lower gearing.

The risk can be identified from the volatility of the entity's returns or cashflows measured by the standard deviation to mean variance. When this operational risk is high, the entity is unable to honour mandatory commitments to debt holders when they fall due and this could crease serious repercussions for the entity including winding up. Interestingly, Kim & Sorensen (1986) also explain that the presence of operational and business risks poses risk of inability to sustain debt and the risk that comes with it.

Notwithstanding the numerous theories and studies pointing to one conclusion saying entity

risk negatively impact leverage, there are also other studies that have stated otherwise. Studies by MacKie-Mason (1990), Kale *et al*. (1991) and Kim *et al*. (1998) suggest that entity risk positively impacted liability usage. This is to say that as risk increases, the appetite to use more liability is very high. Surprisingly, direct link existed between risk and debt usage as Jordan, Lowe, & Taylor (1998); Michaelas, Chittenden, & Poutziouris (1999) and Esperança, Ana & Mohamed all find in the research works

2.4.6 Taxation

Quite a number of theories and previous research works have concluded that the taxation effect on firm profitability is very significant due to the finance interest tax deductibility. Due to this, taxation is a key factor considered when deciding to use a particular combination of debt and equity. Most organizations consider the tax policy. For instance, MacKie-Mason (1990) and Graham (1999) strong argue this in their studies explaining how tax policies and rates affect use of debt or otherwise. MacKie-Mason (1990) investigated "the tax effect on corporate financing decisions" and concludes that tax had significant impact on the choice of finance. He indicates that any change in marginal tax rate will impact decisions on financing.

Firms eligible to carry forward losses will use more debt if there is a possibility of making profit within the illegible period. The reason is that tax shields lower the effective marginal tax rate on interest deduction. Graham (1999) indicates that generally, taxes influence firm financial decisions, but the extent of the impact is mostly not too much.

Also, DeAngelo & Masulis (1980) explain that there are other tax shields such as capital allowance, research and development expenditures, investment deductions, etc. which can replace the fiscal role of leverage. Practically, this impact is not easy to value because determining appropriate indicator for tax reduction that discounts the effect of economic depreciation and

expenses is monotonous (Titman & Wessels, 1998).

Dammon & Senbet (1988) contend that there is also an income effect when investment decisions are made simultaneously with financing decisions. The researchers indicate that increases in allowable investment related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in debt at the individual firm level when investment is allowed to adjust optimally. It is explained that the impact of such an increase depends critically on the trade-off between the "substitution effect" advanced by DeAngelo & Masulis (1980) and the "income effect" associated with an increase in optimal investment.

2.5 Capital structure Components

Atrill (2009) states that the elements of capital mix are to some extent interconnected and forms part of short-term cycle. This indication means size and structure of capital mix will not be same across different sectors or industries. A typical example is that banks employ much short-term liability in a form of deposits accounting for over 60% of the banks' total assets. But a typical manufacturing company may have long-term debt instead of short-term and its long-term debt may not be as high as 60%. According to Atrill et al (2009), sources of finance can be generally categorized into two forms which are shareholders' equity and liability. But debt can be broken down to short and long term and also there are others that possess the characteristics of debt and equity which are referred to as hybrid. On the basis of the preamble, the below capital structure ratios will be relevant though not exhaustive.

***Long-term debt to capital ratio*:** It is the proportion of all long-term financial obligations (debt) relative to the capital base of the entity. It explains how geared a company is.

***Short-term debt to capital ratio*:** This measures the proportion of all current or short-term financial obligations relative to the capital base of the entity. The short-term debts are to be settled within one accounting year and any debt outside this is considered as long term.

2.6 Financial Performance ratios (Profitability ratios)

It is fundamental for shareholders, potential investors and other stakeholders to have understanding of the financial performance of a company. Various indicators of profitability in form of ratios measure how profitable a company has been over the previous period called trend analysis. These ratios basically measure book or accounting and market performances. Shareholders and potential investors ideally prefer market performance ratios as they accurately measure real value created which is intrinsically communicated in share prices. They are the means by which entity's profit or value creation is measured and are concerned with assessing the profit performance and other key performance indicated which are financially related. Kishore (2007) states financial performance ratios assist in assessing whether company is making adequate profit and also performing trend and peer analysis to determine improvement or decline in performance. Below are the relevant financial performance ratios in respect of this study though not exhaustive.

***Earnings per share (EPS)*:** It is the average net profit after interest and tax attributable to a single share of the company. The formula is **(Net profit after tax – Preference dividend)/ Total number of shares issued or trading.**

***Return on Capital (ROC)*:** This ratio measures the net profit made on employing one unit of capital. This measures how efficient capital is being utilized. The formula is **(Net Profit after tax)/ Capital Base of company** where capital base is equity and long-term debt.

***Return on assets (ROA)*:** This ratio measures the net profit made on employing one unit of asset of the company. This measures how efficient asset is being utilized. The formula is **(Net Profit after tax)/ Total Assets of company.**

Return on equity (ROE): This ratio measures the net profit made on employing one unit of equity capital. It is also called return on net worth where net worth is actual equity capital plus reserves and any other surplus. This measures how efficient shareholders fund is being utilized. The formula is **(Net Profit after interest and tax)/ Net Worth of company.**

2.7 Review of Empirical Literature

A study was conducted by Abor, (2005) on same topic by sampling every Ghana Stock Exchange listed entity for the period 1998-2002. The total number of companies used for the study is twenty-two. The study employed "Regression Analysis" to approximate effect of capital structure components on return on equity. Study reveals that current liability to total asset positively impacted return on owners' fund or equity of the firm. But, leverage as ratio of total asset inversely impacted return to equity holders. Finally, results also indicates total liability as proportion of total asset directly impacted return on equity holders fund. In summary, it is concluded that debt finance is the ideal form of finance for profit making entities. It is identified that eighty-five percentage of companies sampled debts were short-term. Researcher depended heavily on ROE as a measure of firm performance. Also, Abor (2005) sampled all firms listed on the GSE which means that result of study is diluted as industry or sector realities could not be revealed by the way data was gathered and sampled only five years.

Berger & Bonaccorsi (2006) researched same topic sampling companies from the United States banking sector. "Profit Efficiency" was used as proxy for firm performance. It is argued that

using “profit efficiency” to measure performance is ideal as it directly mirrors the effectiveness of executive management or agents to produce returns above associated costs. The study indicate that relatively high gearing ratios produce greater entity results as proxied by “profit efficiency”. This clearly suggestes that high liability positively impacted entity performance. Specifically, the study identifies that every 0.01 rise in leverage results in 0.06 rise in firm performance as measured by “profit efficiency”. It is also noted that irrespective of how high debt was, it did not have any inverse effect on firm profitability. Clearly, the conclusion is that choice of particular capital composition has the ability to create value of otherwise and debt is recommended per the data sampled and industry. The use of profit efficiency to measure performance is weakness as it did not take account of market performance indicators like P/E Ratio which rather translate into real shareholder value.

Kyereboah-Coleman (2007) investigated “The impact of capital structure on the performance of microfinance institutions" using multiple regression model. He did so by gathering a panel data on fifty-two Ghanaian Micro Finance Entities covering ten years from 1995 to 2004. “Outreach” and “Default Rate” were used as proxies for performance (dependent variable) and current liability, non-current liability and total leverage as proportion of total assets as proxies for capital structure (independent variable) while controlling for firm size, risk level, and firm age. The summary result from the regression model indicates that the effect of the capital mix variables on the performance indicators proved positive. Reason given is geared MFIs management run their companies efficiently to enable them meet their obligations to debt holders. Hence, there is no room for mismanaging free cash free and it was identified that as debt increases, outreach to more clientele and default rates improve significantly. This supports the stance of Ross (1977) in explaining information asymmetry. Outreach and default rates as proxies for firm performance (dependent variable) which the study employed cannot be associated with other industries as this

is more suitable to lending institutions. The study is also limited to MFIs and cannot be generalized for other sectors.

Tian & Zeitun (2007) conducted similar study in a different jurisdiction titled "the effect of capital structure on financial performance of Jordanian companies" by employing "Random Effect Model". Their study made use of unbalanced panel data sampling one hundred and sixty-seven (167) firms in Jordan for the period 1989-2003. The study perfectly measured financial performance by both market and accounting indicators. Performance was proxied by Price Earnings ratio (P/E), Market Capitalization ratio over Book Value, Return on Equity, Return on Asset and Ratio of Gross Earnings over total assets. Long-term debt and short-term debt as fraction of capital was used as capital structure indicators. The study concludes that leverage inversely impacted both market and accounting performance indicators. Both accounting and market performance indicators were used. The study sampled companies from different sectors hence diluting industry specific impact of capital choice on profitability and also the study may only be applicable to Jordanian situation and may not apply to other countries as the fundamentals may be different.

Ebaid (2009) researched "The impact of capital structure choice on firm performance: empirical evidence from Egypt" using regression model. The study sampled every company listed on Egyptian Stock Exchange from 1997 to 2005. In all, sixty-four companies were sampled for the study. The study basically tried to establish the link existing between capital structure variables measured by current debt to total assets ratio, non-current debt to total assets ratio and total liability to total assets ratio while performance was measured by accounting indicators including return on equity, return on assets and gross margin. The study finds that two of the capital structure indicators (short-term debt to total assets and total debt to total assets) inversely impacted only one performance indicator (the ratio of return to total assets). However, all three capital structure

indicators had no effect on two performance indicators (return on equity and gross margin). Based on these results, the study concluded that capital structure has no significant impact on firm performance. However, it could be argued that since only accounting book performance indicators were considered without including market performance indicators which are best measure of shareholder value creation the study creates a gap. Study is also limited to Egyptian listed companies and included all industries.

Margaritis & Psillaki (2010) researched same topic sampling French manufacturing firms using "quadratic functional form". The study made use of "Xinefficiency" as performance proxy. It also made use of gearing ratio as well as squaring the ratio to ensure the link existing between capital structure and profit efficiency is not "monotonic" and also, "reverse signs" when gearing is high. The study concludes that debt usage impacted positively on firm performance. Study used quadratic functional form with no market performance indicator and this study is using multiple linear regression. Margaritis and Psillaki (2010) focused on French manufacturing firms which is not same for this study.

Gatsi & Akoto (2010) studied the "effect of capital structure on profitability of Ghanaian banks". The study used regression model employing panel data and sampled fourteen banks in Ghana. Data collected covered ten-year period from 1997 to 2006. Their study reveals that 87% of banks assets were financed from debt and 65% of this remains current liability and the rest being long-term. It is concluded that debt positively impacted performance of banks and emphasized that significant portion of their liability remains short-term. In summary the relationship is positive. The study focused on Ghanaian banks which is by default highly geared and did not present anything new.

Lin & Chang (2011) also studied the impact of capital mix on firm performance employing advanced panel threshold regression model. The study sampled one hundred and ninety-six Taiwanese companies listed on the Stock Exchange from 2003 to 2005. Tobin's Q was used to measure firm performance while long-term and short-term debt as ratios of capital were proxied as capital structure indicators. and obtained that there are two threshold effects between debt ratio and firm performance. It is concluded that capital structure did not have any significant impact on firm performance. The study in support explaines that when gearing below 9.86%, additional 1% increase in gearing results in 0.0546% increase in firm value measured by Tobin's Q. In addition, when gearing ratio is between 9.86% and 33.33%, a 1% increase in debt ratio resulted in 0.0057% increase in performance measured by Tobin's Q. Gearing ratios above 33.33% produced recorded no impact on performance. Their study is limited to only 3 years' data which looks inadequate and also, limited to Taiwan and not industry specific.

Gill et al (2011) studied same topic and sampled 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005-2007 using correlations and regression analyses to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure and establishes that a significant positive association exists between capital structure measured by total debt to total assets, short-term debt to total assets and long-term debt to total assets and firm performance.

Puwanenthiren (2011) researched to "determine the correlation between capital structure and financial performance". The study sampled companies from the Colombo Stock Exchange (Sri Lanka) for the period 2005 to 2009. The study proxied capital financial performance with net profit, return on investment and return on asset which capital structure was debt to equity ratio. The conclusion from the study is that debt ratio negatively impacted company performance.

Abbadi & Abu-Rub (2012) investigated "the effect of capital structure on financial performance of Financial Institutions". The study sampled eight (8) Banks listed on the Palestinian Securities Exchange for the period 2007 to 2010. The study employed Multiple Linear Regression to find the effect between the dependent and independent variables. The study concludes that debt negatively impacted firm performance.

Cole, Yan & Hamley (2015) researched on "Does Capital structure Impact Firm Performance: An Empirical Study of Three U.S. Sectors". The study used simple regression sampling 300 observations from 2004 to 2013 and the result indicated that debt to equity choice had impact on performance and explained that debt negatively impacted performance as there is inverse relationship between debt and return on assets and operating return in all the three sectors sampled.

Vatavu (2015) studied "The impact of capital structure on financial performance in Romanian listed companies". The study used Multiple Regression model to establish the relationship between capital mix indicators and performance indicators. "Time series cross sectional" data was gathered from 2003 to 2010 sampling one hundred and ninety-six (196) Romanian firms listed firms. The indicators used for the study are Return on Asset and Return on Equity to represent firm performance while capital structure indicators included ratios of total debt, current debt and non-current debt all to total asset as well as ratio of equity to total capital. The general conclusion from the study is that debt negatively impacted performance.

Anarfo & Appiahene, (2017) investigated "Impact of Capital structure on Banks' Profitability in Africa". A "dynamic panel regression robust analysis" methodology was used and gathered data from thirty-seven (37) from Sub Saharan Africa. Gearing ratio represented capital mix profitability was measured by "Risk Adjusted Return on Asset", "Risk Adjusted Return on Equity" and "Net Interest Margin". Study results indicated that there was a strong relationship

between choice of capital and profitability. The study concludes that gearing or debt usage impacted profitability positively.

Le & Phan (2017) investigated on same topic using Non-Financial Institutions listed on the Exchange in Vietnam using unbalanced panel data from 2007 to 2012 and indicate that gearing negatively impacted performance.

2.8 Operational Definitions of Terms and Constructs

The key terms and construct used in this study include capital structure, "financial performance", "listed pharmaceutical, food and beverage companies" and "Ghana Stock Exchange".

- In respect of this study, capital structure means the use of leverage and owners' capital or hybrid of them to form the capital base of the companies being studied. This take the following forms;
  a. Only Debt: This is the state where the entire assets base (current and non-current) of the company is financed through loans and credit facilities. This means the owners of the company have not injected any personal funds into the entity.
  b. Only Equity: This implies that the entire assets of the company are solely by the funds of the owners of the entity.
  c. Debt and Equity: This means the assets of the company are financed from owner's capital, other forms of loans and credit facility.
- "Financial performance" in this context is defined as the maximization of shareholder wealth which is measured by certain indicators which are ROA, ROE, ROC and Earnings Per Share.

- Listed pharmaceutical, food and beverage companies in Ghana are pharmaceutical, food and beverage companies that have gone to sought funding from the public by listing on the Ghana Stock. They are Ayton Drugs, Starwin Limited, Cocoa Processing Limited, Fan Milk Ghana Limited, Guinness Ghana Limited and Unilever Ghana Limited.
- Ghana Stock Exchange is the institution mandated to oversee the allocation of long-term funds termed as equity through the purchase of a share of a company listed on that exchange or market which in tend provides primary and secondary market for trading long term funds.

CHAPTER THREE

METHODOLOGY

3.1 Overview

The researcher explains method as well as tools adopted and used that would enable effective and efficient gathering of raw facts and subsequently analysing the data. This section includes how the research work is designed, study population, sample method, how and where data were gathered, how data were analyzed and the tools used in the analysis.

3.2 Design of the Study

Creswell (2009) explains that designing a research plan means formulating detailed steps for the study stating clearly pertaining assumptions, models to be used, how data will be collected and analyzed to achieve research objectives.

This research adopts panel data analysis because the primary objective is to determine relationships existing between debt ratios and performance of pharmaceutical, food and beverage entities trading on the GSE to their performance from 2007 to 2016. The study is purely quantitative in nature. The methodology employed for this research is Multiple Linear Regression to establish the relationships existing between independent variables (LTDC and STDC) and each of the profitability indicators (ROE, ROA, ROC, EPS) and the total size of each company measured by total asset was controlled for in the equation (lnTotal Asset). It is relevant to note that Abor (2005), Chatterjee (2010) and Gill et al (2010) used same model making use of short-term debt to total capital, long-term debt to total capital as well as total capital being capital structure proxies while controlling for the firm size and sales (log of size and sales) and return on equity as performance indicator. This model is therefore appropriate for the study.

3.3 Model Specification

The study is designed to develop a model and test the hypotheses of link existing among capital mix and entity financial performance and also providing for control variable. The model adopted was used by Miller & Modigliani (1958), Abor (2005), Chatterjee (2010) and Dong & Su (2010). In general, a model is a representation of real-world phenomena as they exist (Pattillo, 1980). The study used four multiple linear regressions in establishing the relationships between the capital structure and financial performance. Multiple regression analysis is an analysis that simultaneously examines the effect of more than one independent variables on a single dependent variable at a time.

Therefore, the following four equations were obtained:

$$\boldsymbol{ROE = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 1}$$

$$\boldsymbol{ROA = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 2}$$

$$\boldsymbol{ROC = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 3}$$

$$\boldsymbol{EPS = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 4}$$

Where:

ROE is Return on equity

ROA is Return on asset

ROC is Return on capital (equity and long term debt only)

EPS is Earnings per share

β_0 is the intercept which is Constant (Value of dependent variable if all independent variables are zero)

β_1 is slope of short-term debt to capital ratio

β_2 is slope of long-term debt to capital ratio

β_3 is slope of the natural log of the total asset of sampled companies

α is error term

STDC is short-term debt to capital employed ratio

LTDC is long-term debt to capital ratio (equity and long-term debt only)

SIZE is the natural log of the various total asset figures of sampled companies

The coefficients (X) were generated with the help of running a regression function in Minitab version 18 software. Analysis of variance (ANOVA) is carried out to explain the individual impact of the independent and control variables on the dependent variable for each of the equations. The trends of debt/equity being long and short-term of the sampled entities are analysed via line Charts. The test is conducted at 95% confidence level.

3.4 Study Populace

Huysamen (1994) explained population to mean all constituents, elements, persons, institutes with common features or category that the study wishes to observe and draw inferences which all the elements will be associated with. The population for the study is all pharmaceutical, food and beverage companies in Ghana. This study focused on pharmaceutical, food and beverage companies in order to create a niche. For example, Abor (2005) and Ebaid (2009) studied all companies listed on the GSE and Egyptian Stock Exchange respectively, Berger & Bonaccorsi (2006) sampled on companies in the US Banking sector, Kyereboah-Coleman (2007) studied only Ghanaian Microfinance Institutions while Gatsi & Akoto (2010) studied only Banks in Ghana. This study focused on pharmaceutical, food and beverage companies because they command like demand (stable) as they are technically seen as necessities. Also, they command same level of hygienic attention in terms of preparation, distribution and storage as they directly enter the human system. They receive equal attention from the Foods and Drugs Authority to protect human lives. The study could have focused on only food and beverage companies but due to the fact that only

two pharmaceutical companies are listed on the GSE, its inclusion could add more insight into the study.

It is practically unknown how many of these companies operate in Ghana because a search from the Registrar General indicates there are over thousands of such companies registered but it is not clear how many are operating. The problem is compounded particularly because some businesses are registered for the purpose of securing that business name.

3.5 Sampling and Sampling procedure

In all, six Pharmaceutical, Food and Beverage companies were selected. The six firms therefore represent the sample for the study with two coming from pharmaceutical and four from food and beverage industry. The reason for choosing listed firms is for convenience as it allowed for easy access to data. The study covered the period from 2007 to 2016 (10 years). The selected firms included in the study are; Ayton Drugs, Starwin Limited, Cocoa Processing Limited, Fan Milk Ghana Limited, Guinness Ghana Limited and Unilever Ghana Limited. The study therefore uses convenience type of data to ensure the researcher easily gets data on the selected companies since data were readily available at the library of the Ghana Stock Exchange. However, Cocoa Processing Company Limited was excluded from the study sample at a later stage due to unique features of the company which produced lots of outliers in the data set. Going ahead to include it in the study will distort the average indicators.

Sekaran (2003) is of the view that sampling process involves choosing adequate and enough elements from the population so that when observed or studied the sample will be representative of the population. In return, the conclusions drawn from studying the selected sample must be fit to apply to the population.

3.6 Data Sources

Study employs panel data making use of only secondary data for firm performance indicators and finance mix for purpose of processing and analysing to be able to draw adequate conclusion. Secondary data refer to data and facts that have already been gathered for a different purpose that the study under consideration. The library of Ghana Stock Exchange (Cedi House) and www.annualreportsghana.com provided secondary data for this study in a form of audited financial statements on the selected companies.

3.7 Study Instrument

The study instrument is purely secondary data gathered from the library of the Ghana Stock Exchange. The study makes use of calculated debt ratios, performance ratios and taking the natural log of the asset size of the various companies. The various ratios are calculated using Microsoft Spreadsheet based on figures picked from the audited financial statements for the various years for all the selected companies.

3.8 Analytical Techniques

The raw data (total assets, net profit, total equity, short-term debt, long-term debt and earnings per share) gathered from audited annual reports of sampled companies are converted into more meaningful data (return on asset, return on equity, return on capital, short-term debt to capital, long-term debt to capital and natural log of size) Microsoft Excel as well as running regressions utilising Minitab version 18. Statistical techniques used in this study included descriptive and inferential statistics. Various measures of central tendencies are explored to complement the results.

3.9 Analysis of Data

There are four (4) regression models which seek to determine the relationship between the various the two finance mix indicators, controlling the selected entities' size and the four dependent or performance indicators. After the data were processed, they were analyzed to explain how each of the variables affect the other indicating the direction and how significant the capital mix indicators caused variations in the performance variables. Multiple Linear regression was developed and tested in explaining the relationships existing between the debt ratios and performance indicated of listed pharmaceutical, food and beverage companies on the Ghana stock exchange.

3.10 Variables

It is feature of a selected element that can be identified and measured which is of interest to the study (Creswell in Creswell, 2009). Normally, selecting a particular depends on the relevance of that variable in explaining the objectives of the study and also partly depends on earlier studies. There are two types of variables which are dependent and independent. Also, there are control variables which affect the dependent variables and therefore affect the outcome.

3.10.1 The Dependent Variables

It is an indicator whose outcome or performance depends on another feature or indicator called independent variable. A dependent variable is influenced by an independent variable. In this context, financial performance represents the dependent variable because financial performance in this context varies in respect of finance mix proxies. However, "financial performance" is an abstract concept because it cannot be measured directly especially because it is a broad term and can mean different things depending on the objectives. To overcome this

difficulty, Return on Equity (ROE), Return on Asset (ROA), Earnings per Share (EPS) as well as Return on Capital (ROC) are proxied to measure firm performance. However, Karaduman, Akbas, Ozsozgun & Durer (2010) used return on assets, while Abor (2005) used return on equity.

3.10.1.1 Return on Equity

It (ROE) is profit left for equity holders after making provision for all debt holders including preference shareholders. It is thus, the profit made on employing equity holders' fund. It is the return equity holders are getting in return for the risk assumed in investing their funds. However, this is strictly an accounting measure and it is also not what equity holders will receive as dividends as dividends are paid at the discretion of the board. Even if dividends will be paid, it is normally a fraction of ROE as some will be retained called retention ratio. The ROA is hence, profit after tax and dividing result by the total equity shares in monetary terms and multiplying by 100 to derive the percentage.

3.10.1.2 Return on Asset

It expresses net profit in terms of total asset being employed by the company This indicator measures asset efficiency. It therefore, evaluates how much profit is attributed to every unit of asset being employed. To Kishore (2007), a company must establish a link between profit after tax and total assets and ideally a threshold set.

3.10.1.3 Return on Capital Ratio

It (ROC) is profit attributable to all capital holders. It is thus, the profit made on employing debt and equity. It is the return equity holders and debt holders are getting in return for the risk assumed in investing their funds. However, this is strictly an accounting measure and averages

what belongs to equity and debt holders though equity holders may never get any based on availability of profitable projects.

3.10.10.1.4 Earnings Per Share

Earnings per share, Kishore (2007) sees this ratio to have a practical importance than theory. Earnings per share is closely linked to Return-On-Equity just that the earlier expresses profit after preference shares interest on total number of shares to ascertain the return per share while ROE expresses the same return over the total equity fund.

3.10.2 The Independent Variables

It is the indicator of measure that explains another variable called the dependent variable. Per this study, it is proxied by the capital structure indicators as it causes the performance indicators to vary or fluctuate as a result of a specific mix or variation in the explanatory variable. Below are the independent variables used for this study.

3.10.2.1 Long-Term debt to Capital Ratio

It is the proportion of all long-term financial obligations (debt) relative to the capital base talking of equity and long-term debt of the entity. It explains how geared a company is.

3.10.2.2 Short-Term debt to Capital Ratio

This measures the proportion of all current or short-term financial obligations relative to the capital base of the entity. The short-term debts are to be settled within one accounting year and any debt outside this is considered as long term.

3.10.3 Control Variables

According to Creswell (2009) control variable is a special type of independent variable that a researcher measures because it potentially influences the dependent variable. In order to cater for the firms' size and other controllable variables that is likely to impact the firms' dependent variables. Researchers such as Chatterjee (2010) and Gill, Biger & Mathur (2010) used firm size and debt ratio with Karaduman, Akbas, Ozsozgun & Durer (2010) adding gross domestic product. Also, Dong & Su 2010 added fixed financial assets to total assets ratio. This research uses total asset as its control variable.

Table 3.1*: *Variables and Predicted Relationships

DEPENDENT VARIABLE	**INDEPENDENT VARIABLE**		**CONTROL VARIABLE**
	STDC	LTDC	LN(TOTAL ASSET)
ROA	+	+	+
ROE	+	+	+
ROC	+	+	+
EPS	+	+	+

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This section explains the results of the research conducted in reference to the objectives put forward in chapter one (section 1.4). Section 4.2 examines the pattern of capital structure and financial performance of pharmaceutical, food and beverage entities trading on the Ghana Stock Exchange from 2007 to 2016. Section 4.3 emphatically analyses and explains the effect of capital structure on financial performance of the sample, section 4.4 tries to explain the profitable component of capital structure and section 4.5 discusses the outcomes of the research.

4.2 Descriptive Statistics

The first step in the analysis of multivariate data is a table of means and standard deviations. The essence of descriptive statistics is to describe the basic features of the sample data set. It helps to give an idea of the average of each indicator and how dispersed the data is giving the lower and upper range. Descriptive analysis shows the average, standard deviation, minimum and maximum values of the different measurement indicators employed in the research.

Table 4.1: Descriptive Statistics (The 6 Listed Sample)

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROE	50	-47.737	51.67489	16.49147	20.93
ROA	50	-15.75	29.65	9.9733	10.81
ROC	50	-2.11473	2.99270	5.9854	4.23
EPS	50	-0.215	0.77	0.1296	0.20
LTDC	50	0	68.8570	14.8490	17.03
STDC	50	6.2924	82.3874	34.5174	18.38
LNTOTAL	50	15.0217	20.0864	17.7699	1.54

Source: Calculations Based on Annual Reports from 2007-2016

Table 4.1 gives descriptive statistics of all the sample for the period 2007 to 2016 for a total of 50 observations. From the table, the mean or average return on owners' capital or investment is 16.49% and a standard deviation of 20.93%. This implies that the return on equity can deviate from average return to both favourable and unfavourable by 20.93%. The minimum and maximum returns on equity shareholders fund are -47.74% and 51.67% respectively.

It can be observed that usual or average return on asset is 9.97% with a dispersion or standard deviation of 10.81%. This explains that the return derived per one unit of asset can deviate from average return to both sides by 10.81%. The minimum and maximum returns on asset are -15.75% and 29.65% respectively.

Also, the mean return on capital is 5.99% with standard deviation of 4.23%. This explains the fact that return on capital deviates from normal return favourable and unfavourable by 4.23%. The minimum and maximum returns on asset are -2.11% and 2.99% respectively. Return on capital is relatively due to assets increasing at increasing rate while return increasing at decreasing rate. Again, the average earnings per share is 0.13 with a standard deviation of 0.20%. explaining the level of dispersion. The minimum and maximum returns on asset are -0.215 and 0.77 respectively.

Furthermore, the mean long-term debt to capital is 14.85% and its standard deviation is 17.03%. This means long-term debt to capital varies from the average by either increasing or decreasing by 17.03. The minimum and maximum long-term debts to capital are 0% and 68.86% respectively. Then, the average short-term debt to capital is 34.52% with standard deviation of 18.34%. The minimum and maximum short-term debts to capital are 15.02% and 20.09% respectively. While the size (total assets) of each company averaged 17.77 (natural log) with standard deviation of 1.54. The minimum and maximum assets size figures are 15.02 and 20.09

respectively. On average, assets sizes continued to grow over the ten-year period. The absolute total asset size had a standard deviation of Ghs130,598,498.40.

4.3 Relationship between Capital structure and Financial Performance

The relationship between capital structure and financial performance of the selected pharmaceutical, food and beverage entities listed on the Ghana Stock Exchange from 2007 to 2016 was established using multiple linear regression. The following regression models were used;

$$ROE = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 1$$

$$ROA = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 2$$

$$ROC = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 3$$

$$EPS = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha \ldots\ldots\ldots\ldots 4$$

4.3.1 Relationship between Capital structure and ROE

Under this, the following hypothesis was tested at 5% significant level.

Objective 1a: The relationship between Long-Term Debt to capital ratio (LTDC) and Short-Term Debt to capital ratio (STDC) representing Capital structure on Return on Equity.

$$ROE = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha$$

Table 4.2 presents the coefficients of the regression model of the effect of capital structure on ROE.

Table 4.2: Coefficients of the regression model of ROE

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-93.4	27.8	-3.36	0.002	
LTDC	-0.966	0.142	-6.80	0.000	1.28
STDC	0.125	0.126	1.00	0.325	1.17
SIZE	6.75	1.68	4.02	0.000	1.46

***Statistically significant at 95% confidence level**

S = 14.9498 R-Sq = 52.11.0% R-Sq(adj) = 48.98%

The regression equation was found to be:

ROE% = -93.4 - 0.966 LTDC + 0.125 STDC + 6.75 SIZE

The output shows that the Long-Term Debt to Capital (LTDC) ratio had significantly negative effect on the return on equity (ROE) at 5% significant level (β= -0.966, *P-Value of 0.000* < 0.05). The implication is that as long-term debt to capital ratio increases as a result of employing more long-term debt without increasing equity, return on equity declines. Specifically, a 1% increase in long-term debt to capital ratio results in 0.966% decrease in return on equity. This also means that a 1% decrease in long-term debt to capital ratio results in 0.996% increase in return on equity.

The output also shows that the Short-Term Debt to Capital (STDC) ratio had insignificantly positive effect on the return on equity (ROE) at 5% significant level (β= 0.125, *P-Value of 0.325* > 0.05). This means the variable short-term debt to capital ratio in the regression model is not adequate enough to explain the relationship of capital structure on return on equity.

However, the output shows that SIZE had significantly positive effect on the return on equity (ROE) at 5% significant level (β= 6.75, *P-Value of 0.000* < 0.05). The implication is that as total assets of the sampled companies increases return on equity increases. Specifically, a 1%

increase in total asset results in 6.75% increase in return on equity. This also means that a 1% decrease in total asset results in 6.75% decrease in return on equity.

Analysis of variance was performed to determine the adequacy of the selected model in explaining the Capital structure and ROE relationship. The outcome (Table 4.3) shows that the model was adequate in explaining the relationship (F=16.68, P<0.05). However, the coefficient of determination, R-sq. is 52.11% and R-sq (adj) 48.98, indicating that the chosen factors (LTDC, STDC and SIZE) contributed in explaining 52.11% of the variation in ROE within the period under consideration. This implies that, other factors, not considered in this study (e.g. corporate governance, economic factors, taxation, size of working capital etc.) accounted for the remaining variability in ROE within the period.

Table 4.3: Analysis of Variance (ANOVA) for the proposed model (ROE)

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	11184.9	3728.3	16.68	0.000
LTDC	1	10327.5	10327.5	46.21	0.000
STDC	1	221.6	221.6	0.99	0.325
SIZE	1	3606.7	3606.7	16.14	0.000
Error	46	10280.9	223.5		
Total	49	21465.7			

4.3.2 Relationship between Capital structure and ROA

Under this, the following hypothesis was tested at 5% significant level.

Objective 1b: The relationship between Long-Term Debt to capital ratio (LTDC) and Short-Term Debt to capital ratio (STDC) representing Capital structure on Return on Asset.

$$\boldsymbol{ROA = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha}$$

Table 4.4 presents the coefficients of the regression model of the effect of capital structure on ROA.

Table 4.4: Coefficients of the regression model of ROA

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-45.1	13.9	-3.24	0.002	
LTDC	-0.5059	0.0711	-7.11	0.000	1.28
STDC	-0.1498	0.0630	-2.38	0.022	1.17
SIZE	3.811	0.841	4.53	0.000	1.46

***Statistically significant at 95% confidence level**

S = 7.48135 R-Sq = 55.06% R-Sq(adj) = 52.13%

The regression equation was found to be:

***ROA%* = -45.1 - 0.5059 LTDC - 0.1498 STDC + 3.811 SIZE**

The output shows that the Long-Term Debt to Capital (LTDC) ratio had significantly negative effect on the return on asset (ROA) at 5% significant level (β= -0.5059, *P-Value of 0.000* < 0.05). The implication is that as long-term debt to capital ratio increases as a result of employing more long-term debt without increasing equity, return on asset declines. Specifically, a 1% increase in long-term debt to capital ratio results in 0.0.5059% decrease in return on asset. This also means that a 1% decrease in long-term debt to capital ratio results in 0.5059% increase in return on asset.

The output also shows that the Short-Term Debt to Capital (STDC) ratio had significantly negative effect on the return on asset (ROA) at 5% significant level (β= -0.1498, *P-Value of 0.022* < 0.05). Specifically, a 1% increase in long-term debt to capital ratio results in 0.0.1498% decrease in return on asset. This also means that a 1% decrease in long-term debt to capital ratio results in 0.1498% increase in return on asset.

Also, the output shows that SIZE had significantly positive effect on the return on asset (ROA) at 5% significant level (β= 3.811, *P-Value of 0.000* < 0.05). The implication is that as total assets of the sampled companies increases return on asset increases. Specifically, a 1% increase in

total asset results in 3.811% increase in return on asset. This also means that a 1% decrease in total asset results in 3.811% decrease in return on equity.

Analysis of variance was performed to determine the adequacy of the selected model in explaining the Capital structure and ROA relationship. The outcome (Table 4.5) shows that the model was adequate in explaining the relationship (F=18.79, P<0.05). However, the coefficient of determination, R-sq. is 55.06% and R-sq (adj) 52.13, indicating that the chosen factors (LTDC, STDC and SIZE) contributed in explaining 55.06% of the variation in ROA within the period under consideration. This implies that, other factors, not considered in this study (e.g. corporate governance, economic factors, taxation, size of working capital etc.) accounted for the remaining variability in ROA within the period.

Table 4.5: Analysis of Variance (ANOVA) for the proposed model

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	3154.9	1051.65	18.79	0.000
LTDC	1	2829.7	2829.73	50.56	0.000
STDC	1	316.9	316.95	5.66	0.022
SIZE	1	1150.3	1150.33	20.55	0.000
Error	46	2574.6	55.97		
Total	49	5729.6			

4.3.3 Relationship between Capital structure and ROC

Under this, the following hypothesis was tested at 5% significant level.

Objective 1c: The relationship between Long-Term Debt to capital ratio (LTDC) and Short-Term Debt to capital ratio (STDC) representing Capital structure on Return on Capital.

$$ROC = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha$$

Table 4.6 presents the coefficients of the regression model of the effect of capital structure on ROC.

Table 4.6: Coefficients of the regression model of ROC

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-74.0	23.1	-3.20	0.002	
LTDC	-0.739	0.118	-6.25	0.000	1.28
STDC	0.055	0.105	0.52	0.605	1.17
SIZE	5.54	1.40	3.96	0.000	1.46

***Statistically significant at 95% confidence level**

S = 12.4453 R-Sq = 47.84% R-Sq(adj) = 44.43%

The regression equation was found to be:

ROC% = -74.0 - 0.739 LTDC + 0.055 STDC + 5.54 SIZE

The output shows that the Long-Term Debt to Capital (LTDC) ratio had significantly negative effect on the return on capital (ROC) at 5% significant level (β= -0.739, *P-Value of 0.000* < 0.05). The implication is that as long-term debt to capital ratio increases as a result of employing more long-term debt without increasing equity, return on capital declines. Specifically, a 1% increase in long-term debt to capital ratio results in 0.0.739%% decrease in return on capital. This also means that a 1% decrease in long-term debt to capital ratio results in 0.739% increase in return on capital.

The output also shows that the Short-Term Debt to Capital (STDC) ratio had insignificantly positive effect on the return on capital (ROC) at 5% significant level (β= -0.055, *P-Value of 0.605* >0.05). This explains the fact the short-term debt to capital ratio was not adequate in explaining the model.

Also, the output shows that SIZE had significantly positive effect on the return on capital (ROC) at 5% significant level (β= 5.54, *P-Value of 0.000* < 0.00). The implication is that as total assets of the sampled companies increases return on capital increases. Specifically, a 1% increase in total asset results in 5.54% increase in return on asset. This also means that a 1% decrease in total asset results in 5.54% decrease in return on capital.

Analysis of variance was performed to determine the adequacy of the selected model in explaining the Capital structure and ROC relationship. The outcome (Table 4.7) shows that the model was adequate in explaining the relationship (F=14.06, P<0.05). However, the coefficient of determination, R-sq. is 47.84% and R-sq (adj) 44.43%, indicating that the chosen factors (LTDC, STDC and SIZE) contributed in explaining 47.84% of the variation in ROC within the period under consideration. This implies that, other factors, not considered in this study (e.g. corporate governance, economic factors, taxation, size of working capital etc.) accounted for the remaining variability in ROC within the period.

Table 4.7: Analysis of Variance (ANOVA) for the proposed model

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	6533.5	2177.84	14.06	0.000
LTDC	1	6046.3	6046.29	39.04	0.000
STDC	1	42.0	41.97	0.27	0.605
SIZE	1	2433.1	2433.13	15.71	0.000
Error	46	7124.8	154.89		
Total	49	13658.3			

4.3.4 Relationship between Capital structure and EPS

Under this, the following hypothesis was tested at 5% significant level.

Objective 1d: The relationship between Long-Term Debt to capital ratio (LTDC) and Short-Term Debt to capital ratio (STDC) representing Capital structure on Earnings per Share.

$$\boldsymbol{EPS = \beta_0 + \beta_1 STDC + \beta_2 LTDC + \beta_3 SIZE + \alpha}$$

Table 4.8 presents the coefficients of the regression model of the effect of capital structure on EPS.

Table 4.8: Coefficients of the regression model of EPS

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-1.159	0.295	-3.93	0.000	
LTDC	-0.00649	0.00151	-4.30	0.000	1.28
STDC	0.00064	0.00133	0.48	0.632	1.17
SIZE	0.0767	0.0178	4.31	0.000	1.46

***Statistically significant at 95% confidence level**

S = 0.1585 R-Sq = 38.22% R-Sq(adj) = 34.19%

The regression equation was found to be:

EPS (GHS) = **-1.159 - 0.00649 LTDC + 0.00064 STDC + 0.0767 SIZE**

The output shows that the Long-Term Debt to Capital (LTDC) ratio had significantly negative effect on the earnings per share (EPS) at 5% significant level (β= -0.00649, *P-Value of 0.000*<0.05). The implication is that as long-term debt to capital ratio increases as a result of employing more long-term debt without increasing equity, earnings per share declines. Specifically, a 1% increase in long-term debt to capital ratio results in 0.00649% decrease in earnings per share. This also means that a 1% decrease in long-term debt to capital ratio results in 0.00649% increase in earnings per share.

The output also shows that the Short-Term Debt to Capital (STDC) ratio had insignificantly positive effect on the earnings per share (EPS) at 5% significant level (β= 0.00064, *P-Value of 0.632* >0.05).

Furthermore, the output shows that SIZE had significantly positive effect on the earnings per share (EPS) at 5% significant level (β= 0.0767, *P-Value of 0.000*<0.05). The implication is that as total assets of the sampled companies increases earnings per share increases. Specifically,

a 1% increase in total asset results in 0.0767% increase in earnings per share. This also means that a 1% decrease in total asset results in 0.0767% decrease in earnings per share.

Analysis on variance was performed to determine the adequacy of the selected model in explaining the Capital structure and EPS relationship. The outcome (Table 4.9) shows that the model was adequate in explaining the relationship (F=9.49, P<0.05). However, the coefficient of determination, R-sq. is 38.22% and R-sq (adj) 34.19, indicating that the chosen factors (LTDC, STDC and SIZE) contributed in explaining 38.22% of the variation in EPS within the period under consideration. This implies that, other factors, not considered in this study (e.g. corporate governance, economic factors, taxation, size of working capital etc.) accounted for the remaining variability in EPS within the period.

Table 4.9: Analysis of Variance (ANOVA) for the proposed model

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0.71535	0.238450	9.49	0.000
LTDC	1	0.46516	0.465160	18.51	0.000
STDC	1	0.00584	0.005844	0.23	0.632
SIZE	1	0.46599	0.465990	18.54	0.000
Error	46	1.15619	0.025135		
Total	49	1.87154			

4.4 Discussion of Results

The findings of the current study somewhat contradict the study of listed firms in Ghana by Abor (2005) who found that Long-term and Short-Term Debt are positively related with firm's ROE. This study used only Long-Term Debt to Capital ratio (LTDC) and Short-term Debt to capital ratio (STDC) ratio and found that the Long-Term Debt negatively related to ROE, ROA, ROC and EPS while Short-Term Debt to Capital ratio also negatively related to ROA. The contradiction might have arisen because Abor considered all firms listed on the GSE while the

current study used only listed pharmaceutical, food and beverage companies from 2007 to 2016. Abor's study was conducted before 2005 while the current study was conducted to cover the period (2007-2016) where the fundamentals might have changed.

The outcome of the study is somewhat consistent with that of Gatsi & Akoto (2010) which employed a panel data methodology to study capital structure and profitability of Ghanaian Banks. A total of 14 banks were covered over the period of 1997-2006. It was observed that, 87% of capital of banks in Ghana is made up of debt, out of which 65% constitute short term debt and 22% long term debt. Their study found a negative relationship between capital structure and profitability indicators. The current study used inferential statistics (regression) to determine the effect of debt portfolio of the five pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange from 2007 to 2016 on their profitability which revealed a negative relationship. It must be noted that long-term debt to capital ratio was more significant in the study.

Puwanenthiren (2011), in determining the correlation between capital structure and financial performance with evidence from selected business companies in the Colombo stock Exchange Sri Lanka within the period 2005-2009, found that capital structure (debt/equity ratio) had negative correlation with the performance indicators (Net profit, r = - 0.110; Return on Investment, r= -0.104; and return on Asset, r= -0.196). The finding of the current study, however, supports the finding of the above researcher in terms of the negative gearing ratio relationship with ROA.

Table 4.10: Actual variables relationships from regression output

DEPENDENT VARIABLE	**INDEPENDENT VARIABLE**		**CONTROL VARIABLE**
	STDC	LTDC	LN(TOTAL ASSET)
ROA	-	-	+
ROE	+Insignificant	-	+
ROC	+Insignificant	-	+
EPS	+Insignificant	-	+

In summary, the current study identified a negative relationship between capital structure and financial performance based on the sampled data used.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The main aim of study was to examine the effect of capital structure on the financial performance of pharmaceutical, food and beverage companies listed on the Stock Exchange from 2007-2016. The study specifically evaluated the capital structure and profitability trends of all pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange (GSE) from 2007-2016 and also related the capital structure to the financial performance of the selected pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange from 2007-2016.

In terms of capital structure, the study considered the Long-Term to Capital ratio (LTDC) and Short-Term-Debt to Capital Ratio (STDC). The profitability indicators included Return on Equity (ROE), Return on Asset (ROA), Return on Capital (ROC) and Earnings per Share (EPS).

The data for the study was gathered from the library of the Ghana Stock Exchange and www.annualreports.com.

Based on the trend analysis, the study found that: the selected pharmaceutical, food and beverage companies listed on the GSE managed moderate debt portfolio for which the highest gearing was 68% talking of long-term debt to capital ratio. In terms of short-term debt to capital (total asset) ratio, the highest was 82%. The overall average long-term debt to capital ratio (LTDC) within the period under review was (Mean=14.85%, Stdev=17.03%). The average short-term debt to capital ratio (STDC) over the period was (Mean: 35.52%, Stdev=18.38%).

Over the period, the average return on equity stood at 16.49% with a standard deviation of 20.93%. Return on asset averaged at 9.97% with standard deviation of 10.81%. Furthermore, return on capital averaged at 5.99% with standard deviation of 4.23% and finally earnings per

share averaged Ghs0.12 with standard deviation of Ghs0.20. It must be noted that the total asset sizes of all the five companies on average grew year on year basis.

Regarding the relationship between capital structure and profitability of the sampled pharmaceutical, food and beverage companies, the study found that the Long-Term Debt to Capital Ratio had significantly negative effect on the ROE at 5% significant level (β= -0.966, P< 0.05), Short-Term Debt to Capital ratio (STDC) had positive but insignificant effect on ROE (β= 0.125, P>0.05), and the SIZE had positive and significant effect on ROE (β= 6.75, P<0.05).

Similarly, the Long-Term Debt to Capital Ratio had significantly negative effect on the ROA at 5% significant level (β= -0.5059, P< 0.05), Short-Term Debt to Capital ratio (STDC) had negative significant effect on ROA (β= -0.1498, P<0.05), and the SIZE had positive and significant effect on ROA (β= 3.811, P<0.05).

Furthermore, the Long-Term Debt to Capital Ratio had significantly negative effect on the ROC at 5% significant level (β= -0.739, P< 0.05), Short-Term Debt to Capital ratio (STDC) had positive insignificant effect on ROC (β= 0.055, P>0.05), and the SIZE had positive and significant effect on ROC (β= 5.54, P<0.05).

Finally, the Long-Term Debt to Capital Ratio had significantly negative effect on the EPS at 5% significant level (β= -0.00649, P< 0.05), Short-Term Debt to Capital ratio (STDC) had positive insignificant effect on EPS (β= 0.00064, P>0.05), and the SIZE had positive and significant effect on EPS (β= 0.0767, P<0.05).

The model relating long-term debt to capital ratio to ROE, ROA, ROC and EPS were adequate in explaining the relationships but the model relating short-term debt to capital ratio to ROE, ROC AND EPS was not adequate in explaining the relationship. Therefore, the Long-Term Debt to Capital Ratio had significantly negative relationship with ROE, ROA, ROC and EPS. Short-Term Debt to Capital Ratio (STDC) had insignificant positive relationship ROE, ROC and

EPS but negative insignificant relationship with ROA. The SIZE of the bank had negative and significant effect on ROE, ROA, ROC. It is interesting to note that the Size of the companies' assets had significant positive relationship with ROE, ROA, ROC and EPS.

5.2 Study Conclusions

Based on the findings of the study, the following conclusions are made:

- The Long-Term Debt to Capital Ratio (LTDC) had significantly negative relationship ROE, ROA, ROC and EPS while the Short-Term Debt to Capital Ratio (STDC) had insignificant positive relationship ROE, ROC and EPS but significant negative relationship with ROA.
- The bigger the size of the companies sampled, the higher profitability as Size had significant positive impact on all four performance indicators of ROE, ROA, ROC and EPS.
- Regarding the capital structure of the pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange from 2007 to 2016, the majority of the debt portfolio on average was tax in arrears.
- Concerning the profitability of the sampled firms have had ratchet pattern of returns except earnings per share. This means increased returns such as ROE, ROA and ROC follows with subsequent decrease in the return rates. Returns are not sustained for long and it is worse for Guinness Ghana Limited. Also, increasing asset size is important as size had positive impact on firm profitability but the source of finance for the assets is very key because using long-term debt to finance asset expansion negatively impacted profitability indicators.

5.3 Study Recommendations

Based on the conclusions of the study, the following recommendations are made.

- The long-term debt to capital ratio had negative impact on all profitability indicators which means that increasing long-term debt further without commensurate increase in equity will deepen the various returns rate. As a result of this, for practice purpose, it is recommended that the companies in the target industry should not take on further long-term debt without increasing equity.
- Furthermore, the companies are likely to improve upon the various performance indicators by employing more equity hence, it is recommended that companies source more equity funding to support operations.
- For the purpose of government policy, the Ghana Revenue Authority must accelerate the collection of corporate taxes. This is because the study revealed over 60% of long-term debt available to the sampled companies were tax in arrears. These tax arrears are technically government revenues locked up with these companies for which no interest will be paid on.
- The larger the size of the sampled companies the higher profitability. The companies are therefore encouraged to increase their assets base using equity form of finance since long-term debt had proved to be inadequate.

5.4 Study Limitations

The study is limited to five pharmaceutical, food and beverage companies listed on the Ghana Stock Exchange from 2007 to 2016. The study could have been extended to all pharmaceutical, food and beverage companies in Ghana but the limited time for the study constrained the efforts of the researcher. Data gathering was somewhat a challenge as library of

the Ghana Stock Exchange closed for renovation works and most of the financial statements on the website of various companies were unaudited. The study is also limited on the basis of methodology by using multiple linear regression on a panel data making use of specific variables.

5.5 Further Study

Future researchers should consider extending the scope of the study to include all pharmaceutical, food and beverage companies in Ghana employing different methodology as well as making use of more variables to take account of market and book performance indicators. However, future studies should segregate pharmaceutical, food and beverage companies to establish the industry specific trends outcomes. Other capital structure (long term- debt-to-capital ratio and taxation) components can be factored into the research models used above. The period under review could also be varied to take account of changes in fundamentals.

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APPENDIX I: RAW DATA

DEPENDENT VARIABLES

ROE%

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINNESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**18.873967**	**28.10120046**	**21.88713234**	**-1.62670744**	**18.89027242**
2008	**19.02940382**	32.94722092	26.81573233	-8.642377759	37.91504889
2009	**24.25168823**	43.20164187	17.93641084	-8.6718725	1.061236406
2010	**20.85319291**	37.15995856	-10.27389677	4.456190396	31.30847829
2011	**16.84300699**	30.17219265	1.166404062	20.38116429	40.49753707
2012	**12.88006388**	44.09461585	17.67453241	11.81512859	40.52820448
2013	**1.766221759**	28.42040533	12.38007356	21.33436268	51.67489043
2014	-11.92	18.57	-6.063903171	2.119853673	-3.279207419
2015	-37.41	41.33	-47.73696707	1.433478726	50.59579658
2016	16.78	37.92	-2.906261707	32.81641186	28.08598351

ROA%

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**16.7852503**	**18.36588349**	**10.62679545**	**-1.0049524**	**13.01486666**
2008	**16.98076677**	21.46813561	10.72694864	5.007684189	-22.55124581
2009	**22.37627016**	29.65136753	5.385662411	4.131750366	0.619651563
2010	**13.83618988**	28.32244009	-2.354361912	2.219947892	17.18329227
2011	**14.74103452**	22.6513884	0.261033949	12.79183406	19.64573574
2012	**11.44592504**	28.16898491	10.06149144	6.725886471	8.376108411
2013	**1.460224431**	21.45446285	6.348178301	12.43678884	8.776148613
2014	-7.33	12.14481128	-2.033249241	1.631585802	-0.460019182
2015	-15.75	23.20856713	-9.453161734	1.091765334	10.53051261
2016	9.53	26.98397153	-1.451998956	20.7933116	8.451328218

ROC%

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**18.873967**	**26.91475552**	**15.27308192**	**-1.43098348**	**17.7011298**
2008	**19.02940382**	31.74903232	18.64715818	-7.391713352	35.70747218
2009	**24.25168823**	41.62364056	15.75350958	-8.236748941	1.017281187
2010	**15.73332476**	35.96294165	-4.761904762	3.666322142	2.929461898
2011	**16.59707784**	28.86526781	0.715234632	20.08859191	37.29836774
2012	**12.83110285**	41.62215931	15.00397092	11.60585	33.54436976
2013	**1.746659048**	26.67403451	10.8222062	20.69514458	40.92177754
2014	-7.817618514	17.28359615	-2.687963585	2.104445765	-2.611874449
2015	-21.14726778	39.08951527	-14.86671749	-1.433478726	45.00876388
2016	11.73351879	36.32847694	-1.910333711	32.62566039	13.29412093

EPS (GH¢)

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**0.0069**	**0.22**	**0.0854**	**-0.0012**	**0.1774**
2008	**0.0083**	**0.36**	**0.083**	**-0.0018**	**0.3558**
2009	**0.0132**	**0.77**	**0.069**	**-0.0022**	**0.0202**
2010	**0.0108**	**0.16**	**-0.028**	**0.0012**	**0.3057**
2011	**0.0133**	**0.36**	**0.003**	**0.0067**	**0.4384**
2012	**0.0115**	**0.23**	**0.133**	**0.0042**	**0.2573**
2013	**0.0016**	**0.19**	**0.086**	**0.009**	**0.2252**
2014	-0.01	**0.13**	**-0.041**	**0.0022**	**-0.0114**
2015	-0.02	**0.43**	**-0.215**	**0.00004**	**0.5754**
2016	0.01	**0.57**	**0.036**	**0.0147**	**0.4261**

LONG-TERM-DEBT TO CAPITAL RATIO (LTDC)% C=LD+E

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**0**	**4.222043642**	**30.218899**	**12.03190892**	**6.294999858**
2008	**0**	3.636690971	30.46187232	14.47129993	5.822428764
2009	**0**	2.671541057	12.17022332	5.017642482	4.141887637
2010	**0**	3.221254711	53.65045156	17.72519089	6.432312971
2011	**14.05112384**	4.331554083	38.68037198	1.435503778	7.899663946
2012	**12.48206009**	5.607161986	15.1096585	1.771262303	17.23203585
2013	**1.107602195**	6.144778044	12.58366801	2.99619026	20.80916438
2014	34.43971883	6.948352494	55.67271592	0.726838292	20.35043489
2015	43.47118674	5.430671856	68.85701291	0	11.04248393
2016	29.35863508	4.202100776	34.26835214	0.581268518	52.66635074

SHORT-TERM DEBT TO CAPITAL RATIO C=LTD+STD+E

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**11.06665441**	**31.76277049**	**30.42140741**	**29.77190346**	**26.47437306**
2008	**10.76563965**	32.38176395	42.47408351	32.25272748	36.84446298
2009	**7.73314438**	28.76315687	65.81293595	49.8376071	39.08748423
2010	**12.05957219**	21.24548552	50.55839985	39.45027724	41.34317882
2011	**11.18295239**	21.52718431	63.50373185	36.32289351	47.32816224
2012	**10.79546957**	32.32214431	32.94114273	42.0474545	75.02976365
2013	**16.39899999**	19.5679872	41.34118145	39.90479851	78.55384311
2014	6.292403746	29.73215078	24.35726242	22.46957227	82.38739299
2015	25.49899857	40.62712988	36.41392769	23.83805117	76.60341741
2016	18.79137282	25.72226031	31.56577717	36.26700165	36.42807776

SIZE-TOTAL ASSETS (GH¢)

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**8791826**	**23707000**	**132627000**	**3347223**	**95583000**
2008	**10448845**	**32858000**	**155403000**	**3340626**	**129474000**
2009	**12725548**	**51114000**	**212323000**	**3738464**	**117324000**
2010	**22393000**	**68391000**	**197081000**	**3742250**	**139624000**
2011	**19442862**	**83081000**	**204188000**	**3730716**	**158187000**
2012	**21632380**	96553000	**244099000**	**4449525**	**153711000**
2013	**23339289**	101247000	**297991000**	**5195087**	**192123000**
2014	28830000	123913000	**419378000**	**10672010**	**225208000**

2015	30606300	214214000	**480654000**	**10612537**	**307250000**
2016	27267300	245064000	**528926000**	**18376890**	**331519566**

NATURAL LOG OF TOTAL ASSET (SIZE)

YEARS	AYRTON DRUG	FAN MILK GH LTD	GUINESS GH LTD	STARWIN GH LTD	UNILEVER GH LTD
2007	**15.989333**	**16.9812809**	**18.7030512**	**15.0236416**	**18.3755055**
2008	**16.162002**	17.3077058	18.8615323	15.0216688	18.6789906
2009	16.3591222	17.749569	19.1736193	15.1341854	18.5804499
2010	16.924259	18.0407518	19.0991254	15.1351976	18.7544637
2011	16.7829906	18.2353266	19.1345517	15.1321107	18.8792884
2012	16.8897018	18.3856026	19.3130844	15.3083079	18.8505848
2013	16.9656487	18.4330736	19.5125738	15.4632239	19.0736463
2014	17.1769271	18.6350903	19.8542832	16.183135	19.232535
2015	17.2367164	19.1824861	19.9906582	16.1775466	19.5431723
2016	17.1211987	19.31703	20.0863591	16.7266045	19.6191974

Regression Analysis: ROE versus LTDC, STDC, SIZE

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	11184.9	3728.3	16.68	0.000
LTDC	1	10327.5	10327.5	46.21	0.000
STDC	1	221.6	221.6	0.99	0.325
SIZE	1	3606.7	3606.7	16.14	0.000
Error	46	10280.9	223.5		
Total	49	21465.7			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
14.9498	52.11%	48.98%	40.32%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-93.4	27.8	-3.36	0.002	
LTDC	-0.966	0.142	-6.80	0.000	1.28
STDC	0.125	0.126	1.00	0.325	1.17
SIZE	6.75	1.68	4.02	0.000	1.46

Regression Equation

ROE = -93.4 - 0.966 LTDC + 0.125 STDC + 6.75 SIZE

Fits and Diagnostics for Unusual Observations

Obs	ROE	Fit	Resid	Std Resid	
29	-47.74	-20.48	-27.26	-2.08	R
43	1.06	32.88	-31.82	-2.18	R
48	-3.28	27.04	-30.32	-2.21	R
50	28.09	-7.34	35.42	2.53	R

R Large residual

Regression Analysis: ROA versus LTDC, STDC, SIZE

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	3154.9	1051.65	18.79	0.000
LTDC	1	2829.7	2829.73	50.56	0.000
STDC	1	316.9	316.95	5.66	0.022
SIZE	1	1150.3	1150.33	20.55	0.000
Error	46	2574.6	55.97		
Total	49	5729.6			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
7.48135	55.06%	52.13%	48.36%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-45.1	13.9	-3.24	0.002	
LTDC	-0.5059	0.0711	-7.11	0.000	1.28
STDC	-0.1498	0.0630	-2.38	0.022	1.17
SIZE	3.811	0.841	4.53	0.000	1.46

Regression Equation

ROA = -45.1 - 0.5059 LTDC - 0.1498 STDC + 3.811 SIZE

Fits and Diagnostics for Unusual Observations

Obs	ROA	Fit	Resid	Std Resid	
7	1.46	16.57	-15.11	-2.07	R
43	0.62	17.79	-17.17	-2.35	R

R Large residual

Regression Analysis: ROC versus LTDC, STDC, SIZE

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	6533.5	2177.84	14.06	0.000
LTDC	1	6046.3	6046.29	39.04	0.000
STDC	1	42.0	41.97	0.27	0.605
SIZE	1	2433.1	2433.13	15.71	0.000
Error	46	7124.8	154.89		
Total	49	13658.3			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
12.4453	47.84%	44.43%	38.22%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-74.0	23.1	-3.20	0.002	
LTDC	-0.739	0.118	-6.25	0.000	1.28
STDC	0.055	0.105	0.52	0.605	1.17
SIZE	5.54	1.40	3.96	0.000	1.46

Regression Equation

ROC = -74.0 - 0.739 LTDC + 0.055 STDC + 5.54 SIZE

Fits and Diagnostics for Unusual Observations

Obs	ROC	Fit	Resid	Std Resid	
43	1.02	28.00	-26.98	-2.22	R
44	2.93	27.39	-24.46	-2.01	R
48	-2.61	21.99	-24.60	-2.16	R

R Large residual

Regression Analysis: EPS versus LTDC, STDC, SIZE

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	0.71535	0.238450	9.49	0.000
LTDC	1	0.46516	0.465160	18.51	0.000
STDC	1	0.00584	0.005844	0.23	0.632
SIZE	1	0.46599	0.465990	18.54	0.000
Error	46	1.15619	0.025135		
Total	49	1.87154			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.158539	38.22%	34.19%	26.67%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-1.159	0.295	-3.93	0.000	
LTDC	-0.00649	0.00151	-4.30	0.000	1.28
STDC	0.00064	0.00133	0.48	0.632	1.17
SIZE	0.0767	0.0178	4.31	0.000	1.46

Regression Equation

EPS = -1.159 - 0.00649 LTDC + 0.00064 STDC + 0.0767 SIZE

Fits and Diagnostics for Unusual Observations

Obs	EPS	Fit	Resid	Std Resid	
13	0.7700	0.2033	0.5667	3.64	R
50	0.4261	0.0274	0.3987	2.69	R

R Large residual