

UNIVERSITY OF CAPE COAST

CAPITAL STRUCTURE AND DIVIDEND PAYOUT OF BANKS IN  
GHANA

BY

FLORENCE NARKIE LAWEH

Thesis Submitted to the Department of Accounting and Finance, School of  
Business, University of Cape Coast, in partial fulfillment of the requirement  
for the award of master of Commerce Degree in Finance.

2015

## DECLARATION

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

Candidate's Name: Florence Narkie Laweh

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

Supervisor's Declaration

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

Name: Dr. Emmanuel Ekow Asmah

Principal supervisor's Signature ..... Date .....

Name: Mr Abraham Ansong

Co- Supervisor's Signature:..... Date.....

## ABSTRACT

The study investigated the effect of Capital structure on dividend payout of banks in Ghana. The main objective of the study was to measure the directional relationship between three capital structure variables. The Capital structure variables used were short-term financial leverages, total financial leverage, equity risk exposure and dividend pay-out was measured using the dividend payout ratio. The study design was casual and panel data. Annual data for all the capital structure variables and dividend payout ratio were collected from 2002-2012 and the panel ordinary least square estimator was used to establish the relationship between capital structure and dividend payout. The results revealed that among the three capital structure variables used in the study, the short term financial leverage have a positive effect on dividend pay-out, the total financial leverage has a negative effect on dividend pay-out and the equity risk exposure had a negative effect on dividend pay-out too. Among the control variables used, age of the bank had a positive effect on dividend payout; profitability had a positive effect on dividend payout, bank size had a positive effect on dividend payout but bank growth has a negative effect on dividend payout. It is therefore conclude that banks in Ghana rely heavily on short term financial leverage to finance their operations and dividend hence it is recommended that the bank of Ghana should reduce the lending rate to the banks to reduce the current over reliance on short term debts.

## ACKNOWLEDGEMENTS

I wish to thank Dr. Emmanuel Ekow Asmah and Mr. Abraham Ansong; my Supervisors for effectively supervising this work and making fruitful suggestions towards its completion.

I am equally grateful to Mr. Isaac Clifford Queku and my all my mates for their countless and valuable contribution to this work.

All staff of the Student Record Management Unit at the College of Distance Education, University of Cape Coast who helped in diverse ways to the completion of this work are also worth mentioning.

## DEDICATION

This work is dedicated to Mr. Martin Kingsley Laweh my father, Mr. Michael Awuku Danful my husband and Michael Otubuah Danful my son.

## TABLE OF CONTENT

CONTENT	PAGE
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
DEDICATION	v
TABLE OF CONTENT	vi
CHAPTER ONE: INTRODUCTION	1
Background to the Study	1
Statement of the problem	6
Objectives of the study	7
Hypotheses	8
Significance of the study	9
Organization of the study	10
CHAPTER TWO: LITERATURE REVIEW	11
Introduction	11
Overview of the banking industry	11
Banking regulations and dividend payout in Ghana	13
Theoretical Literature Review	14

Theories of Capital structure and dividend payout	14
Trade-off theory	14
The pecking order theory	16
Agency theory	19
Signalling hypothesis	24
Tax hypothesis	26
Empirical literature review	28
Relationship between short term leverages and dividend payout	29
Relationship between total financial leverage and dividend payout	30
Equity risk exposure and dividend payout	34
Definition of variables	39
Dividend payout	39
Short term financial leverages	40
Total financial leverage	41
Equity risk exposure	43
Control variables and dividend pay-out	44
CHAPTER THREE: METHODOLOGY	47
Introduction	47
The study area	47

Study population	49
Sampling and sampling technique	49
Data collection	51
Measurement of variables	52
Dependent variables	52
Independent variables	53
Short term financial leverages	53
Total financial leverage	53
Equity risk exposure	54
Control variables	54
Model specification	54
Estimation method	55
Data preparation and analysis plan	56
Summary	58
<b>CHAPTER FOUR: RESULTS AND DISCUSSION</b>	<b>59</b>
Introduction	59
Normality test and descriptive statistics	59
Unit root test	60
Dividend payout ratio test	69



Short term debt to total asset test	72
Total debts to total assets test	75
Long term debt to equity	79
Ordinary least square regression results	81
Result of capital structure and dividend pay-out	83
Residual analysis	84
Analysis of the study objectives	85
Conclusion	92
CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATIONS	93
Introduction	93
Summary	94
Conclusion	99
Recommendation	100
Limitation of the study	103
Direction for further studies	104
References	105
APPENDICES	
A	120
B	121
C	123

## CHAPTER ONE

### INTRODUCTION

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

The rising importance of the banking sector making it the most lucrative industry in Ghana despite increasing competition (Ghana Banking Survey, 2009) have generated a growing research interest in its capital and investment decision making. The banking sector is an integral part of the economic development and enhances economic wellbeing translating mobilized savings into investment known as financial intermediation. Though other financial institutions exist to engage in the intermediation process banks are considered the most important financial intermediaries (Gatsi & Akoto 2010).

However, due to the current trend of economic development, individuals are seeking ways to invest in upstream organisations in order to reap the most of their investment. People evaluate investment vehicles and their expected returns before making investment choices. Among the most profitable investment choices available, investing in a bank seems lucrative in emerging economies (Zeng, 2012). Besides, people invest with the expectation of reaping benefits in the form dividend payment for holding shares or interest in the company. Sometimes, it is either little or none yet these banks will have an increasing retained earnings sitting in their book. What actually account for such unexpected non-payment of

dividend, which is highly expected by shareholders as a sign of growth and performance of banks?

The banking sector remains one of the very high risky areas; banks are exposed to various forms of risk as indicated earlier including credit, market, and operational risks (Gatsi & Akoto, 2010). Hence, banks must find better ways of determining the amount of capital that can be set aside to absorb unexpected losses emanating from their risk exposures (Amidu, 2007). The determination of capital that can absorb risk and also make banks remain competitive has led to the recognition of the important role capital structure plays in the profitability and hence dividend payout of banks. Therefore, the determination of appropriate choice and mix of debt and equity that would maximise the market value of banks is crucial. This is because a weak banking sector does not only undermines the long term sustainability of an economy, it can also trigger a financial crisis which can lead to economic crises (Valverde, Paso & Fernandez, as cited in Ansong, 2009)

Capital structure is one of the most puzzling issues in corporate finance literature (Brounen & Eichholtz, 2001). Capital structure attempts to explain the mix of funds from various sources used to finance firms. The pivot of the subject matter is the strategic role it plays in sustaining the firm in the foreseeable future; therefore if capital structure decision is taken without due diligence and care, the consequences may be devastating. Such devastating outcomes may include financial distress, bankruptcy and liquidation. The capital structure might comprise a mixture of more equity than debt, and vice versa. Therefore, it should be planned and budgeted for future operations of the firm. If the firm incurs higher debt in the

present, it will have a burden to pay higher interest in the future even though certain tax shielding can be beneficial to the firm. On the other hand, if the firm issues more equity, the increasing amount of outstanding shares imposes the pressure on the firm to pay higher dividends in the future. As a result, the firm will experience less available cash flows for maintaining its sustainable growth. This has resulted in development of theories trying to establish a comprehensive form of capital structure for firms.

According to Gatsi and Akoto (2010), the principal theoretical models of capital structure center on the idea that firms have information that investors do not have, and that the interests of managers, equity-holders and debt-holders may not coincide and these have led to the outcome of different theories, which sought to explain how best a company can combine equity funds and debt capital in the utmost benefit of all stakeholders of the company as well as increasing the wealth of shareholders (Ansong & Asmah, 2013). Among these are the agency theory, trade-off theory, the pecking order model and the tax hypotheses, which form the bedrock of some other theories. These theories are geared towards finding the best capital structure methods that can reduce existing conflicts and increase firm's value.

There are several sources of funds for firms and one way of classifying these sources is into internal source of funds and external source of funds (Bystrom, 2007). Internal financing is where the company ploughs back its profit to undertake expansion of its operations, funding its assets, embark on research and product development and any other activity that the firm seeks to perform and this is known as the dividend choice (Manos, 2002). External financing, on the

other hand, is divided into debt financing and equity financing (Bystrom, 2007). To raise funds therefore, a firm can issue more shares in its own name; that is equity financing. Alternatively, the firm can issue preference shares and borrow long-term bank loans or lease equipment for their operations.

Where a firm issue new shares in its own name, it adds on to its existing members or owners and hence dilutes ownership. These owners will be paid dividend if the company decides to pay but this can be done only when profit is made and all preferential creditors have been paid. The earning distributed to shareholders is the dividend (Ross, Westerfield & Jaffe, 2010 and Abu, 2010).

However, where a firm issues bonds or borrow long - term bank loans or issue preference shares, it will have to pay interest and preference dividend when they are due and also pay the amount borrowed on maturity. According to Bystrom (2007), leasing can be seen as an alternative to debt financing. This is where a firm decides to lease a piece of machinery instead of buying it with borrowed funds. It is therefore imperative that caution is taken when the capital structure decision is made. When capital structure is un - planned, companies may fail to economise the use of their funds and this is important because it enables companies to maximize the use of their funds to be able to adapt more easily to the changing conditions (Pandy, 2009).

Firms are generally free to select the level of dividend they wish to pay to holders of ordinary shares and the board of directors decides how much should be paid as dividend to the shareholders of a firm (Ross et al, 2010) although factors such as legal requirements, debt covenants and the availability of cash resources impose some limitations on this decision. Manos (2002) indicate that, dividend

policy remains another controversial issue in finance. It generally deals with the decision by board of directors to either retain, pay out earnings and if so, how much earnings to pay to equity shareholders which according to Black (1976) is the dividend puzzle.

Issues that arise in the distribution of earnings to shareholders include the proportion to be distributed to shareholders and the proportion to be retained; whether the distribution should be as cash dividends, or the cash be passed on to shareholders by buying back some shares; and how stable the distribution should be (Abor, 2008). This has led to variations in dividend behavior across firms, countries. In general, firms now growing and firms with unstable earnings retains their earnings for their internal financing of projects and hence pay lesser dividends. Therefore, it becomes an essential issue of interest in financial literatures to determine how much to pay to the stockholders either in cash or in stock (Abu, 2012). Cash dividends are paid out in currency and are usually taxable to the recipient in the year they are paid. The stock dividends are stock dividends are issued in proportion to shares owned. Those paid out in the form of additional stocks of the issuing firm. Generally,

Eventually, the available literatures do confuse what constitute capital structure and determinants and thus provide mix results while addressing capital structure issues. For instance, bank size, profitability, turnover, liquidity among others are all determinants of capital structure and sometimes used as control variables (Morellec, 2001; Ronald, 2002; Bevan & Danbolt, 2002; AL-Shubiri, 2010 and Ebru, 2011). With respect to the real capital structure of a firm, we are considering for instance, the capital intensity, asset growth, equity capital risk

exposures, assets financed by long term debt, total financial leverage among others (Watson, 2010). By examining the relationship between these variables and level of dividend payout, then we can determine whether capital structure indeed have effect on dividend. This study seeks to establish the relationship.

### **Problem statement**

The banking industry is considered as one of the most promising industries in the world and the Ghanaian banking sector is of no exception to such assertions (Ghana Banking Survey, 2009). It is not surprising to see the influx of microfinance businesses, all striving to enjoy returns from the industry. Notwithstanding the earnings power of the industry, the earnings residuals attributable to the equity participants are often doubtful and disappointing. The investors often receive bad news from annual general meetings when the meetings end without dividend declaration (Lasher, 2000). This makes the minority shareholders whose primary focus of investment is dividend in state of despair (ICAG, 2012).

Researchers have strived to provide for reasons to the non-proportionate declaration of residual incomes as dividend. Almost all the findings have yielded mixed results and contradictions (Foong, Zakaria & Tan, 2007). The existing studies have often generalised their scopes to determinant of dividend policy and this generalisation has failed to resolve the dividend puzzle (Basiddiq & Hussainey, 2012). The few ones which have tried to narrow the study to specific relationships have their roots from the advanced economies (Bayeh, 2011).

Furthermore, although there are theoretical reasons to believe that financing decisions of the banks affect the dividend pay-out, it is far under investigated in the Ghanaian industry. The few studies are often tailored to performance in general which is often measured by profitability (Gatsi & Akoto, 2010; Awunyo-Vitor & Badu, 2012). Profitability rather than dividend favours only the decisions of institutional and majority shareholders at the detriment of minority shareholders who do not have control over profit and only rely on dividend (ICAG, 2012).

The investors in our sub-region often rely on the studies inclined to the advanced economies in making investment decisions about their hard-earned income (Yesegat, 2009). However, it has been argued that a design which is suitable in a particular area may not fit well in another area (Yesegat, 2009). Hence those who rely on the evidences in the advanced economies may just rely on the game of chance with their investment.

Drawing from gaps in the above discussions coupled with theoretical underpinnings, the present study seeks to examine the relationship between capital structure and dividend pay-out by Ghanaian banks. This study contributes to the existing knowledge by reclassifying capital structure into short term leverage, total leverage and equity risk exposure. This direct specification would inform decisions as to which category of capital structure is beneficial to dividend pay-out.



### **Objectives of the study**

The general objective of the study is to examine the capital structure and its effects on the dividend payout of banks in Ghana from the periods 2002-2012.

### **The following specific objectives guided the study:**

1. Determine the relationship between short term financial leverage and dividend payout
2. Assess the relationship between total financial leverage and dividend payout
3. Examine the relationship between equity capital risk exposure and dividend payout

### **Hypotheses**

H1<sub>0</sub>: There is no significant relationship between short term financial leverage and dividend payout

H1<sub>1</sub>: There is a significant relationship between short term financial leverage and dividend payout

H2<sub>0</sub>: Total financial leverage has no significant relationship with dividend payout

H2<sub>1</sub>: Total financial leverage has significant relationship with dividend payout

H3<sub>0</sub>: There is a no significant relationship between equity capital risk exposure and dividend payout

H3<sub>1</sub>: There is a significant relationship between equity capital risk exposure and dividend payout.

### **Significance of the study**

The rising importance of the banking sector in modern economies as well as their dividend payout has generated a research interest in the determinants of dividend payout of banks in Ghana. Indeed there are contemporary theories and literature on dividend payout (Zeng, 2012; Mitton, 2004; Amidu & Abor 2006). The findings of the study contribute to clearer understanding of the existing theories. Due to the consideration of the regional characteristics and industrial specifics, the findings would open up when to relax some of the assumptions of the theories (Harris & Raviv, 1991).

This study presents a more comprehensive analysis of capital structure into short term financial leverage, long term financial leverage and equity risk exposure. The empirical investigation of these classes of leverage would reveal which classes of capital structure decisions has the most significant influence and at which direction (i.e. positive and negative). Identifying these would help the bankers and their management as well as the general investors to know which of these capital structure classes should they lean against.

This study would contribute to knowledge by unearthing new evidences on the subject matter and which may be used as a valuable reference material in the academic research. Being a regional based study and industrial specific, future researchers may borrow its findings in trying to trim some of the existing theories which do not have these considerations.

### **Organization of the study**

The Thesis will be organized into five chapters. The first chapter highlights the background to the research problem, the statement of the problem, the purpose of the study, objectives, and hypotheses tested by the researcher, the significance of the study and organization of the study. Relevant literature related to the study is reviewed in the second chapter. The review considers empirical studies, surveys and views of other authors. The panel data methodology and procedure that will be adopted in carrying out the study will be discussed in chapter three. Chapter four will present the findings and discussion of the data. The secondary data are analyzed, discussed and fully presented. The final chapter recapitulates the results and draw conclusions. Recommendations are made for efficient and effective financing decisions. Further research is then recommended.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### Introduction

It is noted in many finance literatures that capital structure is one of the most controversial topic to be discussed. There are available theories that try to establish a link between a firm's choice of capital structure and overall performance, level of dividend declared, and other constituents of a company such as company attributes. There is also available evidence trying to measure the theories against what is actually happening in industries. It is for this reason that this study intends to examine the effect of capital structure on level of dividend payout in Ghanaian banks between the periods 2002 to 2012. In this chapter, the researcher discusses the overview of the banking industry in Ghana, theoretical underpinnings and available empirical literature that highlights the objectives of this study. Some of the theories that will be reviewed include: trade-off theory, perking order theory, agency theory, signaling theory and the tax hypotheses.

#### Overview of the banking industry in Ghana

The Ghanaian banking sector has drawn attention of many investors and therefore the returns of these investors require careful investigation. According to the Ghana Banking Survey (2009), the attractiveness of the sector can be traced to the industrial lucrativeness and the increasing open competition. It is therefore not

surprising to attest that the financial sector in Africa including Ghana is largely dominated by the banking sector (Ncube, as cited in Ansong 2009).

The banking industry in Ghana has gone through restructuring and policy implementation over the years to make the operations of the sector competitive. The forces of globalization and liberalization have contributed greatly to operation and competitive reforms in Ghana. According to Obuobi (2012) these reforms have necessitated financial sector deregulation and have deepened the level of competition in the banking industry. Prior to the assertion from Obuobi (2012), Hinson, Mohammed & Mensah, (2006) also explained that the reforms have led improved changes in banking operations, intermediary role and shareholder value.

Drawing from Hinson, et al (2006), it is evident that shareholders value enhancement is a product of the banking reforms; one of the key indicators of the shareholders' value is the dividend pay-out. Therefore examining the structures which influence this policy is considered as feedback measure. What makes the shareholders' value evaluation a necessary commodity now, is the openness of the investment boundaries of the players in the Banking sector through the removal of the operational restructure. This may require a drop in shareholders distribution through the reinvestment of shareholders' earnings in investment opportunities as one argument and increase in shareholders' distribution through the increase in investment returns from those opportunities as another argument.

One of the breakthrough restrictive removals is the introduction of the universal banking. According to Bank of Ghana (2004), the Universal Banking aims at providing the opportunity to all banks with the needed capital outlay to open up the operational boundaries without restrictions. With the coming into

effect of the Universal Banking Law, all banks in Ghana which meet the specified requirements can operate different classes of banking activities under one banking entity.

It is believed that these reforms have enhanced the performance and growth of the industry. According to Bawumia (2007), the industrial growth of the bank is characterised by asset growth, profitability, liquidity and capital structure. The consequence of these growth structures such as capital structure on the returns attributable to shareholders should be investigated. Standing on this, the present study examines the relationship between capital structure and dividend pay-out in Ghana.

### **Banking regulations and dividend payout in Ghana**

Regulations and laws surrounding the banking operations have an association with the level of dividend payment. The banking Act for instance states that a bank shall not declare or pay dividend on its shares to shareholders unless it has among other things, made the required provisions for nonperforming loans and other erosions in assets value (Section 30(1) of Banking Act, 2004). A critical evaluation of this provision reveals that, although other factors including capital structure may favour the payment of dividend, however, actual dividends may not be declared as per the legal requirements.

Similarly, the regulations on the operation of the reserve fund also impose challenges on the declaration and payment of dividends by banks in Ghana. The banking Act requires banks to maintain reserve fund account into which transfers out of the net profits be made each year prior to declaring dividend (Banking Act,

2004). This provision affects the payment of dividend negative especially in the early years of banks operation. The Act provides that the 50%, 25% and 12.5% of net profits be provided when the balance in the reserve fund account is less than 50%, more than 50% but less than 100% and 100% or more of the paid up capital respectively. It is undeniably clear that the ratio of this statutory reserve to paid-up capital is low at the early stage of the banking operation, hence expected low dividend.

Besides the above regulatory review or provisions, the Act requires the recovery of accumulated losses from current profits prior to declaration and payment of dividend (Abelley, 2009). Dividend is therefore determined from a residual of current profits after the prior accumulated losses have been duly recovered. The consequences of breach of this and other provisions provided above include summary convictions of directors. This makes the provisions worsening referencing payment of dividend. The directors may therefore strive to protect themselves from these legal consequences by complying adequately with these provisions.

## **Theoretical literature review**

### **Trade-off theory**

One of the theories of capital structure that received attention for research is the trade-off theory (TOT). According to Myers (1984), the firm's optimal balance of leverage is established by balancing the advantages of debt (represented by interest tax shields) against the cost of debt (represented by bankruptcy costs). The trade-off theory suggests that firm should have optimal capital structure based

on balancing between the benefits of debt and costs of debt. The theory also suggests that a target leverage of a firm is determined by available taxes and costs of financial distress. It is further explained under the TOT that, interest payments in respect of debt financing tend to be tax deductible and this makes debt financing less expensive than the use of equity financing.

The trade-off theory implies that each firm sets its optimal target leverage ratio and accordingly moves towards this target. The sum of the present value of benefits from the interest tax shield and the present value of costs from bankruptcy determine the optimal leverage ratio for the firm. Hence, firms would choose debt finance over equity finance until the point where the possibility of financial distress starts to be significant. The resultant effect is the signal of bankruptcy. These bankruptcy costs occur when the firm fails to meet its obligations to creditors (Haugen & Senbet, 1978). Bankruptcy costs include direct and indirect costs: the direct costs include legal, court fees, and lost management time; indirect costs occur before the bankruptcy of the firm, and include costs resulting from disruption of firm business, such as disruption of firm-customer relationships, disruption of the firm-supplier relationship, and lost investment opportunities. The justification is that when a firm raises more debt to finance its operational activities and investment prospect, it is likely that the firm in question will default on this debt and thus be exposed to bankruptcy costs.

From the above, the trade-off theory, therefore, implies that the tax benefit from debt is obviously only important to firms that are in a tax paying position which are the profit making firms. This is because firms with substantial accumulated losses will get little value from the interest tax shield. Furthermore,



firms that have substantial tax shields from other sources, such as depreciation, will get less benefit from leverage (Ross et al, 2010). It can be assume that by the argument of TOT i.e. more debt financing, more taxable income to shield will actually lead to increased cost that can also lead to bankruptcy to finance those debts. By implication of TOT assumptions in practice, it is unusual for firms to use 100% debt financing because of the likely exposure to bankruptcy. Therefore, a theory that define a particular financing choices and assumptions as what defines the categorization is needed for better understanding of capital structure decisions of firms and its effect on dividend payout.

This theory is relevant to the study in that one of the objectives of this study is to determine the relationship between total financial leverage of an assets growth and dividend payout. According to the TOT, more debt (financial leverage) will results in the assets growth hence increase in performance. According to the trade-off theory, higher profitability lowers the expected costs of distress; however, firms increase their leverage to take advantage from tax benefits. There should be a relationship between total financial leverage and level of dividend payout.

### **The pecking order theory**

The theory explains how firms use internally generated funds to initially finance their operations instead of external borrowings. The pecking order theory (POT), hypothesised by Myers (1984) and Myers and Majluf (1984), predicts that asymmetry of information between managers and investors results in firms establishing a specific preference order for financing sources of businesses. The

preference ranking begins with internal funds, followed by debt, and then equity. By following this simple funding procedure, firms work their way up the pecking order to finance investment in an effort to minimise adverse selection costs. However, POT assumes that due to the problem of information asymmetry, firms will choose retained earnings over debt and debt over equity. Besides, if firms issue no new security but only use its retained earnings to fund any investment opportunities, the problem of asymmetry of information will be resolved (because there will be increase in assets).

The order of preferences reflects the relative costs of various financing options. The option of debt over equity does not also dilute control. Clearly, firms would prefer internal sources to costly external finance (Myers & Majluf, 1984). Thus, according to the pecking order hypothesis, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those that do not generate high earnings. Firms are thus face with adverse selection problem between internal and external financing because the order of preferences reflects the relative costs of different financing choices.

According to this theory, the firm's managers know the true value of the firm's assets, whilst external investors can only guess at the true value. However, the firm's managers act in the interests of the existing shareholders. If the firm finances a new project by selling equity, external investors will undervalue the new issuance because they expect it will be in favour of existing shareholders. Myers and Majluf (1984) and Myers (1984) show that firms will prefer internal cash flow to finance their investment for two reasons: First, the cost of using external sources of funds, such as issuance costs and administrative costs, and

under pricing the new securities; second, the cost of passing up a positive net present value project owing to asymmetric information cost prevents the firm from relying on external funds. Hence, the firm will build up reserves from internal cash flow to avoid passing up positive NPV projects.

The study by Myers (1984) further argues that the firm must reduce the difference between the true and market value of assets. The true value is the value of new shares when investors acquire inside information released from the firm's managers to the market. Myers proposes that firm managers must issue the safest possible securities; strictly speaking, securities whose future value will change least when the manager's inside information are revealed to the market. Building on this argument, Myers further indicates that the debt has the minimum differences between the true and market value compared with equity. As a result, the firm will prefer debt to equity if external funds are required. Pecking order theory predicts that leverage and profitability are negatively related since a more profitable firm will have access to internal cash flow. Also, based on this theory, a positive relationship between dividend payout and debt ratio is expected. Furthermore, more profitable firms are expected to depend heavily on retained earnings, thus meaning that a positive relationship between dividend policy and profitability is expected.

Thus from the point of view of outside investors, equity is riskier than debt and therefore demand a higher risk premium for equity than for debt. Thus, insiders perceive debt to be a better source of funding than equity, and internal funding is even better. Equity capital would be resorted to only as a last resort. The pecking order theory does not propose an optimal capital structure that maximises

firms' value as a starting point for project financing, but instead stresses the fact that managers will choose internal finance (as retained earnings or excess liquid assets) over external finance. This decision usually brings about the conflicts between managers/shareholders and debt holders that needs to resolved.

Eventually, POT does not propose an optimal capital structure yet it is significant to this study. Some of the objectives of the study focus on establishing the relationship between capital intensity and level of dividend payout. This is in line with POT hat assumes that large companies with greater amount of profits will prefer internal source funding to external funding. The internal funding will increase the total assets of the company and hence performance. Besides, POT assumes a positive relationship between profitability and leverage which presupposes that dividend will be affected in either way. Therefore, this study intends to establish the relationship.

### **Agency theory**

According to Jensen and Meckling (1976), agency costs are the main determinants of firm capital structure. The agency cost theory implies that the separation of firm ownership from management could create problems owing to the differences between the priorities of the managers and shareholders. Where the principals hire and delegate the agents with a certain power to maximize the wealth of the principals. Thus, an agency relationship exists because the firm owners delegate corporate decisions to the managers (the agent). If the firm's agent is a utility maximiser, that is if they use the firm's resources in their own interests, the firm's owners will expect the agent will make decisions that could

harm the owners and the company.

Further, Jensen and Meckling (1976) emphasise the impact of external equity financing on agency costs, highlighting that, as the firm uses more external equity, new equity holders will spend more money to monitor agent behaviour. The costs associated with external equity financing are referred to as agency costs of equity. If the firm utilises debt financing, the agency costs related to debt also increases since the shareholders will pay some costs to prevent the managers from making decisions which are not in the interests of the owners. According to this theory, some of the cost associated with external funding include: Monitoring costs, bankruptcy costs and bonding expenditure. With regards to monitoring cost, the theory argues that they are the costs incurred by owners to monitor managers decisions in addition to the incentives paid to the agent. This also includes the provisions that bondholders may use to constrain some of the firm management's decisions, such as paying dividends and issuing new debt. Bondholders impose these provisions to protect themselves from the reallocation of money from bondholders to equity holders.

However, Easterbrook (1984) presented another study regarding agency costs and his result supports the findings made by Rozeff (1982) and Jensen (1976). Easterbrook (1984) conducted an investigation of whether dividend payments can be used in order to minimize the agency costs between managers and investors. Easterbrook states that two factors affect the agency costs in a company, monitoring costs and the risk aversion preferences of managers. The monitoring cost refers to the costs incurred by the shareholders in order to supervise the managers and prevent them from following their own personal

agendas instead of maximizing the value of the shareholders equity. The second source of agency costs is the risk aversion preferences of managers. The problem arises because most shareholders have diversified portfolios and they are therefore only interested in systematic risk, which cannot be eliminated through diversification. In contrast to shareholders, managers usually have a large amount of their personal wealth connected to the company. Therefore if the company is unprofitable or even goes bankrupt, the manager's personal wealth becomes heavily affected. The managers will as a result be more risk averse compared to the shareholders and they may reject potential high value project due to their risk aversion preference.

According to this theory, the inefficiency that results due to the conflict between managers and shareholders can also be effectively resolved by making corporate managers own substantial amount of their company's equity. This action would make managers more loyal and execute more responsible and prudent investment decisions, which are necessary for increasing shareholders wealth. Agency costs can also arise due to conflicts between debt-holders and equity holders (Jensen & Meckling, 1976). These conflicts are deeply embedded within the concept of moral hazard and risk-taking between the parties and the associated costs they add to firm financing.

The conflicts can be explained in three distinct ways and are discussed in turn. Primarily, it is generally known that firms are not obligated to pay dividends to equity holders. Rather, they are entitled to residual claims of the firm after debt-holders have been paid. However, debt-holders receive fixed income on their investments whether the firm performs creditably or not else it is forced in

bankruptcy. Consequently, debt-holders care about the level of risk that firms take which should be minimal so as to protect their investments. Nonetheless, equity holders would prefer management to take relatively excessive risk in order to maximise their value (the value of shareholders). This thinking is based on the concept of risk-return trade-off. Debt-holders being aware that shareholders through management would increase the risk of their investments would thus factor this 'risk increase' into their expected returns to compensate thus increasing the cost of debt. Thus, astute managers in situations like this would resort to more equity use relative to debt in financing their operations although they would forgo the benefits of debt use.

Myers (1977) posits that the agency costs that arise between debt-holders and shareholders can be enormous as it could create serious 'underinvestment problems'. For example, consider a high-growth company that is having problem in honouring its debt obligations. Since the value of such a firm will depend heavily on its ability to carry out its long-term investment plan, what this company needs is an introduction of more equity capital. This capital is needed to protect the firm against the costs of financial distress. However, the acquisition of this type of capital becomes rather expensive since the providers (shareholders) think it would go to better debt-holders position.

Consequently, managers may rationally go without both the capital and the investment opportunity, which is detrimental to the survival of the firm. From the foregoing analysis, Myers (1977) contends that companies whose value consists primarily of intangible investment opportunities or "growth options," as he called them should avoid debt to limit their greater potential loss in value from

underinvestment. However, mature companies with few profitable investment opportunities (firms with most of their value reflecting cash flows from tangible assets) would have lower expected financial distress costs. Hence, mature firms should have significantly higher leverage ratios relative to high-growth firms. The implication of the argument from Myers (1977) therefore is that shareholders' funds should be used to finance profitable investment opportunities whilst debt should be used to finance less profitable investment opportunities.

Even so, what is contradictory in Myers (1977) argument to modern corporate financing is the use of rather more debt in the operations of high-growth firms. Generally, high-growth firms have relatively more profitable investment opportunities than their mature counterparts. The evidence therefore is that managers of high-growth firms believe their investment projects are so viable so much so that it can pay-off the higher debt levels and consequently enjoy the concomitant benefits of debt financing.

Lastly, the conflicts between debt-holders and equity holders may occur because debt contracts give equity holders a motivation to invest sub-optimally (Jensen & Meckling, 1976). Basically, debt contracts provide that if an investment yields large returns, well above the face value of the debt, most of the profits should go to shareholders who are residual claimants of the firm's cash-flows while debt-holders receive fixed agreed payments.

The core of issue of the conflict is that, debt-holders bear all the consequences if the investment fails, since shareholders are under the veil of limited liability. As debt-holders are not unaware of this development, debt



financing becomes expensive, as they would factor it into their required returns to compensate.

From the above discussion, one can conclude that firms with higher agency costs due to conflict between the firm and the debt-holders should have lower levels of debt in their capital structure to maximise value. Eventually, dividend is considered as one of the solutions in managing the conflicts that usually exist between managers/shareholders and debt holders. However, increase in debt also reduces the returns accrued by the company due to the high finance costs and other agency costs. This could also affect the dividend payout decision of the company. Besides, to minimise the conflicts between managers or shareholders and debt holders, a good signal about the firm's performance needs to be sent out to boost the confidence of debt holders in the company capacity to repay its debts. This theory is also relevant to the study in that a capital structure choice that maximises the wealth of the company has some consequence either positively or negatively on the firms' returns.

### **Signaling hypothesis**

The signaling theory of dividends has its origins in Lintner's (1956) studies, which showed that the price of a company's stocks usually changes when the dividend payments change), because in comparison with investors, managers have superior information about their firm's value. Hence, investors carefully review changes in dividend policy as signals for management's valuation of the firm's future performance (Li & Zhao, 2008 and Miller & Rock (1985). Even though Modigliani and Miller (1963) argued in favor of the dividend irrelevance

they also stated that in the real world disregarding the perfect capital markets, dividend provides an “information content” which may affect the market price of the stock. This implies that the firm’s management with superior information uses dividends to communicate a good signal/impression to market participants concerning the current and future earnings of the firm.

Many researchers have thereafter been developing the signaling theory and today it is seen as one of the most influential dividend theories (Bhattacharya, 1979; Miller & Rock, 1985; Ambarish & Williams, 1987; 1985). According to them, private information is revealed to the market when the firm pays regular dividends, or imposes a cut in dividends (an indicator that future earnings are declining); hence firms will try to avoid a cut in dividend. An increase in the dividends indicates that the managers expect higher cash flows in the future. The research is based on the assumptions that outside investors have imperfect information regarding the company’s future cash flows and capital gains. Another important assumption is that dividends are taxed at a higher rate compared to capital gains. Bhattacharya (1979) argues that under these circumstances even though there is a tax disadvantage for dividends, companies would choose to pay dividends in order to send positive signals to shareholders and outside investors.

Investors are interested in the performance level of the company. They open their goggles to examine whatever activity that occur within the company with the aim of not losing their invested money. This theory assumes that a firm will be able to minimise the conflict that exist among the shareholders/managers and debt holders by sending a good signal about the company. This signal will also attract other investors. Borrowing from the trade-off theory, it is assumed that

more debt results in asset growth thus a firm's performance will be boosted. The best way to send a good signal to investors is by paying dividend to existing shareholders though it is tax deductible. Eventually, increase in debt as a result of this signal has its consequence of increase in higher cost debt financing which can also affect the firm's future cash flow.

### **Tax hypothesis**

A tax can generally be defined as the quantum of money that firms and individuals pay to a state for doing business within the territorial boundaries of that State. Every major business decision is affected in some way or other by taxes. Green, Murinde and Suppakitjarak (2002) observe that tax policy has an important effect on the capital structure decisions of firms. Basically, in making corporate business decisions, managers try to avoid taxes thus they use the loop holes in the tax laws to minimize their tax burden. While tax evasion is a crime, tax avoidance is good management (Brownlee, Ferris & Haskins, 2001). Managers therefore try to take advantage of the tax shield that debt provides to increase their debt in financing instead of what perking order suggests.

Normally, the corporate tax law allows interest payments but dividends are not tax allowable. Brownlee et al, (2001) also state that every major business decision is affected in one way or other by taxes. They are of the view that when managers are tasked to make corporate business decisions, they try to minimize taxes within the confines of the tax laws of that country. Thus introducing debt into a firm's capital structure can lower its expected tax burden and thereby increase its after-tax cash flow (Modigliani & Miller, 1963). If there were

corporate profits tax only and no individual taxes on the returns from corporate securities, the value of a debt-financed company would equal that of an identical all-equity firm plus the present value of its interest tax shields (Miller, 1977).

The present value represents the contribution of debt financing to the market value of the firm. This could be estimated basically by multiplying the tax rate by the principal amount of outstanding debt (provided the firm expects to maintain its current debt level). The above illustration emphasizes the benefits of debt usage over equity can certainly not be true. This is because holders of debt and equity must pay taxes on the interest income and the dividend/capital gain that they receive respectively. Abor (2008) further mentioned that while there is corporate tax advantage resulting from deductibility of interest payments on debt, investors receive this interest as income. He also indicated that the interest income received by the investors is also taxable on their personal accounts, and the percentage income tax effect is negative.

However, debt-holders do know that they pay higher taxes than equity holders. Thus debt-holders being rational will therefore demand higher returns on their investments relative to equity holders to compensate. In this vein, it is the equity holders that bear all the tax costs of the firms operations, whether the company pays the taxes directly in the form of corporate income tax or it pays it indirectly in the form of required returns on the debt it sells (Barclay & Smith, 2005). The tax benefit emanating from more debt usage may be eroded by a high tax on interest income. However, it is important to note that it is the trade-off between debt and equity that determines the net effect of taxes on debt usage (Miller, 1977; Myers, 2001). Thus tax policy has a significant effect on the capital

structure decisions of firms (Green et al, 2002). The implication of the tax theory on capital structure therefore suggests that, firms must use more debt to create value (Miller & Modigliani, 1963).

However, this proposition must not deceive managers into introducing very high levels of debt into their operations because of the associated benefits. This is because the tax advantage has an eminent possibility of being dashed away by the higher tax that debt-holders pay on their interest income compared to what equity-holders pay on their dividends and capital gains. We must realize that investors in general, and debt-holders in particular being interested in their after tax profits would incorporate this loss value in their expected returns to pay off thus making the ultimate cost of debt higher than equity. Thus, firms that can derive maximum benefit from debt usage are those whose managers can accurately determine the point where the advantages of interest tax shield ends and where the costs of financial distress start.

### **Empirical literature review**

The empirical evidence section of this study discusses various literatures that have taken on capital structure basics as core study elements and the results reached out by these studies that could throw more light on the work at hand. The empirical literatures will cover the objectives this study intends to achieve. The main purpose of this section is to review studies for comparative analysis. It is discussed as: short term financial leverage and dividend payout; total financial leverage and dividend payout and equity risk exposure and dividend payout.

### **Short term financial leverage and dividend payout**

The study of Tian and Zeitun (2007) employs both accounting and market measurements to investigate the effect of capital structure on corporate performance of corporations in Jordan using a panel data sample representing 167 companies during the period 1989 to 2003. The study used panel data models to estimate different measures of corporate performance such as the return on assets (ROA), return on equity (ROE), earnings before interest and tax plus depreciation to total assets (PROF) as accounting performance's measurements and Tobin's Q, market value of equity to book value of equity (MBVR), price/earnings (P/E) ratio and market value of equity plus book value of liabilities divided by book value of equity (MBVE) as market performance's measurements.

The empirical results show that a firm's capital structure has a significant negative impact on the firms' performance using both the accounting and market measurements employed. The study also finds that the short term debt to total assets (STD/TA) as a leverage measure has a significantly positive effect on the market performance measure (Tobin's Q) thus having a positive influence on the level of dividend payout. The later results is contrary to other measures of leverage such as the total debt to assets and long term debt to total assets which showed a negative relationship in this study.

On the other hand, the debate on capital structure and firms performance shifted towards a different direction by the study of Amidu (2007). The results of the study produce a negative relationship between firms' short term debt and profitability. Fundamentally, the implication of the above empirical results is that,

profitable firms use less debt in funding their operations thus these firms rely mostly of returns generated by the company. Eventually, financing with internal funds reduce the amount available to be allocated for dividend payment.

In addition, the study conducted in Egypt by Ebaid (2009) focuses on examining the effect of capital structure on firms' listed on Egyptian stock exchange and found that short term debt to total assets, otherwise called short term leverage does not have significant influence on performance.

### **Total financial leverage and dividend payout**

Rozeff (1982) conducted a study and found a support for the negative relationship between dividend and total financial leverage. The researcher assumed that with other things being equal, if a firm has higher financial leverage, the firm will select paying low dividend to lower its costs of external financing. The results of his study was based on the assumption that dividend payout is negatively related to a financial leverage of a firm.

The mix results from combination of both short term and long term debt in funding and their relationship with firms' financial performance has the study of Hutchinson (1995) providing a strong input. The study shows that there exists a positive association between debt and return on equity of firms provided that, the earnings power of the firm's assets outweighs the average interest cost of the debt. Thus, when there is an increase in firms returns which outweighs the amount needed to finance its cost of debt, then we establish a positive relationship else a negative relationship will results.

The study of Zhengfei Lu and Yu Xin (1998) focus on the machinery and transportation equipment industry in Shanghai. The study compared 35 companies listed on the Shanghai Stock Market to establish the relationship between their capital structure (specifically long term debt) and other variables as profitability, firm size, and firms' growth. The results of the study concluded that the firms' profitability has negative relationship with long term debt. When firms increase in long term debt, the earnings capacity of the firms reduces due to the cost of debt that needs to be financed overtime hence affecting the level of dividend payout of the firms. Further, the study did not find sufficient evidence to explain the relationship between capital structure (long term debt) and firm size and growth

In the context of firms in Egypt, Aivazian, Maksimovic, Demirguc and Booth (2001) employ the market to book value, i.e. q-ratio to assess the effect of asset growth on dividend payout. The study find that unlike the results from studies conducted on US firms which shows significant relationship, emerging market firms do not exhibit the expected sign in their regressions. Besides, in addition to the q-ratio, the researchers include asset growth which brought to the fore some discovery that enlightened them with respect to the dividend payout ratio of Egyptian firms. The study assumed that in real situation, asset growth requires financing and thus puts pressure on dividend payments. The results of the study shows are negative relationship between assets growth and dividend payout ratio for the non-actively traded firms.

However, Fenn and Liang (2001) results study also indicate that firm financial leverage (debt to assets ratio) is inversely related to firm's payout ratio. However, Mollah, Keasey, and Short (2001) examined an emerging market and



found a direct relationship between financial leverage and debt-burden level that increases transaction costs. Thus, firms with high leverage ratios have high transaction costs, and are in a weak position to pay higher dividends to avoid the cost of external financing.

Furthermore, Zeng (2012) postulated that if financial leverage is used as one indicator of the future default and positively related to the cost of financial costs, paying dividends may increase the financial distress for firm with high leverage ratio. His study results showed that the firm leverage (short term plus long term debt/total assets) is inversely related to dividend payout. However, the study of Dessi and Robertson (2003) examine the effect of financial leverage on firms' performance in terms of their expected growth. The results of the study reveal that financial leverage has positive relationship with expected performance. The study further explains that firms that show low growth usually depend on borrowing and invest the borrowed money for profitable ventures or projects. This in effect increases the firm's performance. From this result, we could add that if a firm use debt to increase performance, financing those debts will minimize the level of dividend payout. Thus, financial leverage has negative relationship with dividend payout.

The study of Abor (2005) focuses on listed firms on Ghana Stock Exchanges to determine the relationship between capital structure and financial performance of firms. The study employs total debt to total assets (TD/TA), short term debt to total assets (SD/TA) and long term debt to total assets (LD/TA) to measure the impact on firms' performance. The results of the study established that total debt to total assets and short term debt to total assets affects the firms'

profitability (ROE) positively whereas long term debt to total assets affects firms' profitability (ROE) negatively. Other researchers also establish the relationships established by Abor's study (Cassa & Holmes, 2003; Hall et. al, 2004). Besides, the results of this study (TD/TA; SD/TA) reveal that profitable firms use less debt in financing their investment projects and operations whereas the other results (LD/TA) reveals that firms use more debt in financing their investment projects. The former will support funding with internal source hence reducing funds for dividend payments (showing a negative relationship) whereas the latter will expect higher future returns from the investments.

The study conducted by Ebaid (2009) in Egypt on firms listed on Egyptian stock exchange for the period of 1997 to 2005. The study also employs debt level (total debt, short term and long term debts) as independent variables. The results from the study show total debt (TD) does not influence the level of dividend payout of firms which employs more long term debt.

In the face of conflict between managers/shareholders and creditors, it is assumed that asset growth of a firm can minimise such conflict. The results from the study conducted by Scott (1977) provide some level of support. The study stated that, companies with higher levels of collateral find it easier to access debt, given the level of companies' fixed assets contribute to reduced information asymmetry between managers/shareholders and creditors, as a consequence of the latter being able to recuperate the capital owed in the form of collateral in the case of company failure. Consequently, as it is assumed from the theoretical point of view, that tangible assets can be used as collateral. The study added that because

the firm will have to finance its costs of debt, the level of dividend payout will be reduced.

The study of Kowalewski, Stetsyuk and Talavera (2007) investigated the determinants of dividend policy in Poland. The empirical results indicated a negative association between dividend policy and debt level. Moreover, Al-Najjar and Hussainey (2009) observed an insignificant negative relationship between UK dividend policy and borrowing ratio. Kuwari (2009) confirms that dividend policy is negatively related to leverage ratio. John and Muthusay (2010) studied leverage, growth and profitability as determinants of dividend payout of firms in the paper industry in India. The result of this study suggests that the leverage is negatively associated with dividend payout ratio.

### **Equity risk exposure and dividend payout**

Patterson (1984) focused on the relationship that exist between financial leverage and that of the firm's value using 114 utilities as sample for the period 1975 to 1979. His study employed a quadratic function for the value/leverage relationship. The results from the study reveal certain level of effect of leverage on equity costs. He also reached the conclusion that the relationship between leverage which is measured by the market value debt/equity ratio and equity costs is a nonlinear function whose slope rises as leverage increases. In a sense, this result establishes a positive relationship although the researcher did not attempt to ascribe numerical significance to the relationship. From his results, the relationship that could arise from the increase in firms' value as a result of increase in equity and dividend payout could not be significantly established.

Some researchers have established a relationship between financial leverage and other factors that can be found in corporate setting. The study of Harris and Raviv (1991) summarises a number of empirical studies from US firms to find support for this assertion. Their result of their study conclude that leverage is positively related to fixed assets, firm size, non-debt tax shields and firm value, whereas negative relationship is establish for factors such as volatility, advertising expenditures, and profitability. Drawing from this study, we can conclude that when leverage increases fixed assets, profitability or earnings capacity of firms' decreases. This could affect the level of dividend payout in a negative relationship.

The empirical findings by Ervin, Legoria and Keith (2000) show that, the stimulation of corporate capital investment in both Australia and New Zealand is as a result of dividend imputation. Besides, there is positive effect of dividend imputation on equity capital investment and this trend overlook the effect of the new capital gains tax which is negatively related. The negative relationship that exists between equity capital investments can be found in high-dividend-paying firms. Eventually, the results of the study supported their argument that dividend has positive relationship with equity capital.

However, Ervin, Legoria and Keith (2000) elaborated the findings to cover the role tax play in the dividend payout and corporate finance. The researchers commented that, when dividend is distributed, the recipient is taxed on the "grossed-up" dividend, which includes the dividend itself plus any income taxes paid by the corporation on the income from which the dividend is derived. The shareholder then receives a credit for the amount of corporate-level tax that was used to gross up the dividend. If corporate and shareholder tax rates are the same,

the net effect is that the corporation pays tax on the income while the shareholder pays none. The credit will perfectly match the tax on the grossed-up dividend. If individual rates exceed corporate rates, the individual-level taxes will not be completely eliminated. If corporate rates exceed individual rates, a dividend may actually result in a net tax reduction for the shareholder (Ervin, Legoria & Keith, 2000, p. 41).

The study conducted by DeAngelo et al. (2004) provided further insight into the capital structure and its effects on dividend payout level. The study observed significant correlation between the dividend payment decision and among other variables the total controlling capital, profitability of the company, leverage, growth rate and previous dividend payment history of the understudied firms. With respect to the manner of cash flow, the study argues that leverage (Lev) impacts the dividend behaviour of companies only when the level of the leverage is high, which therefore means that investment in the firm is relatively riskier. The study argues that dividend payment has an opportunity that is concealed with management such as the retention of the company's earnings. This retention increases the money managers' control upon which they may be applied for better investment opportunities on one hand and or may also be spent without any appropriate monitoring.

Some studies focus on specific characteristics of an economy either developed or developing to investigate the impact of their transitions in their capital structure choices. For instance, the study by Huang and Song (2006) examine the determinants of capital structure in Chinese listed companies in order to investigate whether firms in the largest developing and transition economy of

the world entertain any unique characteristics in their capital structure choice. The study employs a new database containing both market and accounting data of 1216 Chinese quoted companies from 1994 to 2003. The study employ six (6) measures of leverage are used in the study such as book long term debt (LD) ratio, book total debt (TD) ratio, book total liabilities (TL) ratio, market long term debt (MLD) ratio, market total debt (MTD) ratio and market total liabilities (MTL) ratio together with expressed capital structure determinants such as ROA, Size, tangibility, tax, growth, ownership structure and volatility. The data are analyzed using the Ordinary Least Square (OLS) regression method and the Tobit model. The results of the study shows that leverage of Chinese listed have a positive relationship with determinants of capital structure used. However, Chinese firms tend to have much lower long-term debt as compared to those in developed economies. The study did not establish a strong relationship between firms' returns and level of dividend payout.

In another study on banks concerning the effects of capital structure and firms' profitability, Gatsi and Akoto (2010) employs panel data methodology and use return on equity (ROE), a measure of profitability, as dependent variable and also use short term debt to total asset, long term debt to total assets and total debt to total assets as independent variable. They argue in their study that debt does not influence returns on equity significantly in the banking sector of Ghana as dividend payout ratios are small or in most cases nil in the sector.

They study above made reference to the Ghana Banking survey (2007) to back their claims which state that the levels of retained earnings continue to soar on the books of most banks thus depriving shareholders of dividends at least in the

short-run. The results of their study show that a greater percentage of financing in Ghanaian banks is made up of short term debt although the effect of short term, long term and total debts on return on equity were found to be insignificant. The study also reveals that profitable banks in Ghana use less debt and depend more on internally generated funds as the main source of financing option. In this case, funds available for distribution as dividend will be reduced thus total debt are negatively related to dividend payout.

In addition, evidence from Margaritis and Psillaki (2010) study provided support for the conclusion that financial leverage (debt ratio) has positive and significant association with firms performance (firm increase in value, labour, and capital) although has negative correlation with dividend payout.

An extensive study on capital structure is one conducted in Malaysia by San and Heng (2011). Their study focuses on examining the relationship that exists between capital structure and corporate performance of firms before and during 2007 financial crisis. The study selected the construction industry and thus all 49 Malaysian construction companies selected were listed on the Main board of Bursa Malaysia from 2005 to 2008. These companies were categorized into three units like small, medium and large or big size. This study employs fundamental capital structure elements as independent variables such as Long term debt to capital (LDC), debt to capital (DC), debt to asset (DA), debt to equity market value (DEMV), debt to common equity (DCE), long term debt to common equity (LDCE).

Basically, the results of the above study (San & Heng, 2011) show that debt equity to market value (DEMV), long term debt to capital (LDC) and debt to

capital (DC) have positive relationship with return on equity (ROE), a measure of corporate performance of the large companies. Eventually, the study did not establish a strong evidence to support the influence of capital structure on level of dividend payout.

### **Definition of variables**

This section explains the concepts and key study variables and their operational definitions. Like all quantitative studies, the key variables should be empirically measured in numerical terms to provide the basis for assessing the relationship between the study variables. Measuring the variables from empirical perspectives provide enough justifications to compare the findings with existing results. Basically, the key concepts here include dividend payout, short term financial leverage, total financial leverage and equity risk exposure.

### **Dividend payout**

Dividend payout is a key indicator for investors especially the minority equity participants. It is empirically calculated as the ratio of total dividend to net profit attributable to equity holders (Travlos, 2002). The total dividend here include paid and payables. Similarly, the profit here is net profit after tax and preference dividends. The usual empirical procedures are duly followed in computing the dividend payout.

In literature, studies have often calculated net profit and dividends of each company within the sample individually for every relevant year in order to control the problem of extreme values in individual year that lead the results to low or negative net income. Although there are other proxies for estimating dividend



returns, the present study favours dividend payout ratio. The other relevant indicators include dividend per share and dividend yield.

The choice of the dividend payout ratio over the other proxies is an empirical question. Most of the previous studies employed dividend payout ratios as a determinant of dividend in lieu of dividend per share and dividend yield (Rozeff, 1982; Jensen et al., 1992; Mollah et al., 2002; Manos, 2002 and Travlos, 2002). In line with the study of Mahira (2012), instead of employing dividend per share and dividend yield, this study employs dividend payout ratio (DPO) for the reason that the dividend payout ratio takes into consideration both dividend payout and dividend retention.

### **Short term financial leverage**

Short term financial leverage in this context measures the mixture of short term debts and equity or the relevant financing assets the debt represents. Although often used unconsciously in most study, this is the first time this concept has been used in literature. It sought to find the extent to which listed banks in Ghana use short term debts to finance their operational activities and how this sort of debt finance relates or associates with the level of dividend payout. The study of Tian and Zeitun (2007) established that debt level (total debt, short term debt and long term debt) to total assets have positive significant relationship with level of dividend payout.

On the other hand, the study of Ebaid (2009) also established that short term debt to total assets have no significant influence on determining the level of dividend payout of firms. In the study of Gatsi and Akoto (2010), they contended

that, finance researchers have shown empirically that firms use a significant amount of short term debt to finance their activities relative to long term debts yet they quoted Ghana banking survey (2007) to affirm that short term debt do not significantly influence the level of dividend payout of banks in Ghana.

However, theoretically it is expected that short term leverage should have positive effect on dividend. This is because the interest rate is often low and hence the tax shield would provide enough benefits in short term debt financing. Moreover, in the Ghanaian economy the interest rate spread is very wide. Thus, customers' deposits often receive little or no interest but loan these mobilized deposits at high interest rate. It is against this backdrop, that this study expects a positive relationship between short term financial leverage and dividend payout.

The short term leverage is measured as the ratio of total short term debts to total assets of the individual banks. It is calculated at each bank level. Mathematically, it is presented as follows:

Measurement:

$$\text{Short term debt to total assets (SD/TA)} = \frac{\text{Short term debt or current liabilities}}{\text{Total Assets}}$$

### **Total financial leverage**

Besides the short term financial leverage is total financial leverage. Total financial leverage is an element of capital financing decision that measures how entities finance their assets or operational capacity by total debt (Abor, 2005). Drawing from Abor (2005), the total financial leverage of Ghanaian banks looks at the extent to which the banks employ short and long term debt to finance their

operations and other investment outlays. As presented in the theoretical and the empirical review, the dynamism of dividend payout is also partly influenced by the level of total financial leverage. The study of Tian and Zeitun (2007) established that debt level (total debt, short term debt and long term debt) to total assets have positive significant relationship with level of dividend payout.

However, these studies have also yielded mixed results (Dessi & Robertson 2003, Ebaid, 2009; Zhengfei & Yu Xin, 1998). Amid the empirical contradiction, the study relies on theoretical evidences to set its a priori. Referencing the theoretical evidences under the theoretical framework section, long term leverage may have positive or negative effect depending on the extent of tax shield and finance cost. However, the bankruptcy theory takes a strong stand to provide a negative relationship. The bankruptcy theory is relied on here because of the risky nature of the industry in question. It is therefore prudent to assume more negative than positive. Moreover, because there is no developed bond market in Ghana, the risk level on long term lending to banks is expected to be high (Awunyo-Vitor & Badu, 2012). Therefore the lenders are expected to be compensated by the higher risk through high interest and ultimate less residual for dividends.

In this regards, the study expects negative relationship between total financial leverage and dividend pay-out. The ratio is estimated mathematically as follows:

Measurement:

$$\text{Total debt to total assets (TD/TA)} = \frac{\text{Total debt}}{\text{Total assets}}$$

### **Equity risk exposure**

Equity risk exposure measures the level of risk to equity participants as results of employing additional debts. It is also a component of capital structure. In a strict sense, this is the true definition or measure of capital structure (Bayeh 2011).

Like other components of capital structure, this capital structure has not received conclusive findings. For instance, Mollah et al. (2001) as explained under the empirical review section examined an emerging market and found a direct relationship between financial leverage and debt-burden level that increases transaction costs. Thus, firms with high leverage ratios have high transaction costs, and are in a weak position to pay higher dividends to avoid the cost of external financing.

However, the study of San and Heng (2011) in Malaysia used a pooled regression model to investigate the relationship between long term debt to equity capital and hence their impact on return on equity (ROE). The results of the study proof that long term debt to equity have positive and significant relationship with return on equity of the understudied firms.

Drawing on theoretical reviews, the higher the equity risk exposure, the higher expected returns in a form of dividend. Therefore the study predicts a positive relationship between equity risk exposure and level of dividend payout. The risk exposure is measured as the ratio of long term debt to equity. The model is presented as:

Measurement:

$$\text{Long term debt to equity capital} = \frac{\text{Long term debt}}{\text{Equity Capital}}$$

### **Control variables and dividend pay-out**

Drawing from the theoretical review and other empirical reviews above, it is evident that firm- specific characteristics influence the dividend pay-out of firms. Some of these specific characteristics are: growth, age, profitability and size of the firm.

Firm's growth and profitability are among firm-specific characteristics which were analysed in the study conducted by Amidu and Abor (2006) in Ghana about the determinants of dividend payout ratios of listed companies in Ghana. Their findings showed a positive relationship between profitability and dividend payout. In addition, they found a negative relationship between growth and dividend payout. John and Muthusay (2010) also showed that growth is a determinant of dividend pay-out of firms. Other empirical evidences that support these firm-specific characteristics are Jensen et al. (1992), Aivazian et al. (2003) and Al-Najjar and Hussainey (2009). These studies also found that profitable firms are more likely to pay dividends than non- profitable firms.

On the other hand, the study by Badu (2013) on the determinants of dividend payout policy by financial institutions listed on the Ghana stock exchange, revealed that there is no significant relationship between profitability,

and dividend payment instead he concluded that age of a firm is a major determinant of dividend policy of financial institutions in Ghana. In the same vein, Osegbue, Ifurueze, and Ifurueze (2014) also found that there is no significant relationship between profitability and dividend payout. According to Ramachandran and Packkirisamy (2010), firm size also influences dividend payout. These authors concluded in their study that firm size has positive influence on the dividend behavior of corporate firms across Industries in India. However, Grodas and Sorensen (2010) found a negative relationship between size and dividend payout.

There are different measures for the above specific firm characteristics. However, the empirical measures which the study relies on are presented in table 1 below.

**Table 2.1: Empirical measurements**

<b>Variables</b>	<b>Empirical evidence</b>
<b>Dependent Variable</b>	
Dividend payout	Trade-off theory; Perking order theory; Agency theory; Signaling model
<b>Independent Variables</b>	
Short term debt to Assets (SDA)	Scott (1977); Aivazian, Maksimovic, Demirguc and Booth (2001); Fenn and Liang (2001); Dessi and Robertson (2003); Zeng (2012); John and Muthusay (2010)

Long term debt to Asset Zhengfei Lu and Yu Xin (1998); Jordan, Lowe  
(LDA) and Taylor (1998); Ervin, Legoria and Keith,  
(2000); Abor (2005); Amidu (2007); Tian and  
Zeitun (2007)

Long term debt to equity Abor (2005); Gatsi & Akoto (2010); Margrates  
(LDE) & Psillaki (2010); Mollah et al. (2001); Reeve  
& Fess (2002); San and Heng (2011)

### Control variables

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Asset growth, log of Age, log  
of profitability and log of  
sales as size Amidu & Abor (2007), Badu (2013), John &  
Muthusay (2010), Osegbue, et al (2014),  
Ramachandran & Packkirisamy (2010)

---

Source: Author's construct for literatures

### Conclusions:

This chapter has discussed the theories in relation to dividend payout and capital structure and reviewed literature on them. The findings have been discussed and it has become the bases of the study.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **Introduction**

The chapter discusses the research design, the population, the sample and the sampling procedure. It presents and justifies the various approaches and methods used. It also discusses the justifications of the sources of data collected, variables used, the panel regression model and the data analyses plan.

#### **The Study area**

The research covers the entire Banks in Ghana. Thus, it includes listed, unlisted, foreign or domestic banks licensed to operate banking activities in Ghana. Banking industry is considered as one of the riskiest industries in the world (Tanko, 2012). It is therefore much concern to managers unearth all possible risks for control purposes. Therefore assessment of how the level of capital structure affects this industry meets the purpose for revealing possible risks.

#### **Research design**

Research design is the strategy and a guide for framework in developing and implementing structures among the study variables so as to address the study



objectives (Kothari, 2004). The author explained that in order to generate maximal information in assessing the research objective, choice and effectiveness of the research design are keys. Thus, the research design provides for the basis for collecting relevant data with minimal cost and effort. Research design is the general strategy develops in order to address the research problem. It can be categorised into exploratory, descriptive and causal (Bui, 2009). The exploratory research is conducted to obtain a better understanding on issues that the research problem revolve around, while descriptive research tries to describe the features of a phenomenon. Causal research is used to identify the causes and effect relationships between the main variable under study.

Based on this explanation, this study can be classified as causal in nature as it sought to explain the cause - and - effect relationships between capital structure variables and dividend payout variables. Also the method is compatible with the study because it allows the research problem to be conducted in a very specific and set terms. But because the current data set is in a panel form, the panel model is used. According to Park (2009), panel data models examine group and individual-specific effects, time effects, or both. He further added that, effects are either fixed effect or random effect. A fixed effect model examines if intercepts vary across groups or time periods, whereas a random effect model explores differences in error variances.

In addition panel data involves the pooling of observations on cross-section of units over several time periods (Akoto & Gatsi, 2010). Therefore, since this study involve the pooling of observation on cross-section of units over a period of twelve years; it lends its self to panel data form. Besides, the model

effectively addresses the objectives of the study. From this backdrop, almost all data used in this study are quantitative hence it becomes appropriate to classify the study as a quantitative approach with causality design.

### **Study population**

A population has been defined as a complete group of entities sharing some common set of characteristics (Zikmund, 1997). Drawing from this definition, the population for the current study could be defined as all banks listed, unlisted, foreign or domestic licensed by Bank of Ghana. It should however be noted here that these banks in this context are limited to commercial banks only. Therefore the population for this study is made up of 26 banks (PWC, 2013). Despite the full concentration on the whole 26 banks, those operating after 2002 are excluded.

### **Sampling and sampling technique**

The term sampling is a popular concept in research. Sampling techniques are often employed when the study cannot cover the whole study population and sample can be taken to represent the entire population. When sampling is used a sampling frame is constructed to define the focus area of the population (Cohen, Manion & Morrison, 2005). The authors explained that cost and time constraints often make sampling unavoidable in most research.

Similar to most studies in literature, the present study employs sampling other than census. In a pure quantitative study, sampling study can be generalised and possibly replicated by future researchers. To be able to replicate and generalise sampling results, the sampling size and techniques should not be

arbitrarily determined. To avoid the arbitrariness, the study relies on scientific means to estimate the sampling size. One of the most popular means of determining the sampling size is the Yamane formula (Yamane, 1973). The formula is presented as:

$$S = \frac{P}{1 + Pe^2} \quad (1)$$

Where, S is the sample size,

P represents the total population

e denotes the probability of error

By substituting the population (P) of 26 into the equation (1) and with probability of error level of confidence of 5 percent, the formula can be presented as:

$$S = \frac{26}{1 + 26(0.05)^2} \quad (2)$$

$$S = 24$$

Hence, from Yamane model the ideal sample size is 24 out of 26. This means that 24 banks out of the 26 banks in the population are considered. Although this is considered as a good representation of the target population, the study sampled only 12 banks because only these banks operate within the study periods and also have the relevant data.

The purposive sampling technique is used to choose those banks in the industry for the study. According to Bui (2009), purposive sampling refers to the process through which a group of representative individuals is selected from a population to meet the purpose of the study. This technique was appropriate because not all banks have operated from 2002 to 2012. Therefore the study searches and selects only those which meet the section criteria for the purpose of meeting the study objectives.

### **Data collection**

This study involved only secondary data; specifically the annual audited financial statement of banks between the periods of 2002 to 2012. The secondary data according to Saunders, Lewis, and Thornhill (2007) are made of three groups, which are survey-based data, documentary data, and those compiled from multiple sources. The survey-based data describes data, which has been collected through survey strategies, such as the use of questionnaires. Therefore, survey-based secondary data is useful for studies that require data that has already been collected for similar studies. Documentary data comprises memos, news, reports and administrative correspondence that hold information that is critical for the study.

On the other hand, Cheng, Chien and Liu (2010), said that, multiple-source secondary data relates to data collected through the combination of survey-based data and documentary data. Three reasons informed the choice for secondary data for the study. Firstly the data required for the study could not be procured through primary source as the secondary data are independently reviewed by accounting

experts such as auditors. Secondly, the financial performance data of most companies can be obtained from either their published or unpublished financial statements, which offered a basis for their analysis. Finally, an authentic overview of the capital structure of a given company emanates from the appropriate capital structure ratios and dividend payout ratios, which can only be computed from the financial statement for a given period. The data set for the study is a financial data from the Bank of Ghana and individual banks website.

### **Measurement of variables**

Quantitative studies seek to give a precise and objective report about a phenomenon; and as such the need to measure the attributes of the phenomenon in quantitative studies (Bui, 2009). As described in the study design, this study is quantitative and for that matter, it is important to specify how both the dependent (Dividend payout ratio) and the independent variables (short term debt to total assets ratio, long term debt to total assets ratio, total debt to total assets ratio, long term debts to equity ratio).

### **Dependent variables**

The dependent variable for the study is dividend payout ratio (DPO). These ratios according to Huang and Song (2006) and Ramachandra (2010) are computed from dividend and earnings. It is the dividend divided by the net income or the profit after tax and preference dividend. It shows the percentage of earnings declared as dividends.

## **Independent Variables**

The main independent variables were considered for the study. They are; short- term financial leverage, total financial leverage and equity risk exposure.

### **Short term financial leverage**

This ratio is defined as the ratio of short-term debt to total assets. It is considered to measure the extent to which the banks under study use short –term debt to finance their operations and how this category of debt associates with the firm’s dividend payout for the chosen period of the study.

Research works in Ghana have established that firms use a significant amount of short-term debt to finance their activities relative to long term debts (Abor, 2005; Amidu, 2007). According to Abor (2008) there exist a significantly positive association between company profitability and short-term debt to total capital ratio. Amidu (2007) however observed an inverse relationship between short-term debt to capital and firm profitability.

### **Total financial leverage**

This is the ratio of total debt to total assets. It measures the extent to which banks use total debt (i.e. short term debts and long term debts) to finance their operations and how this category of debts associates with the firm’s dividend payout for the chosen period of the study. Abor (2008) and Amidu (2007) established that firms use a relatively lesser amount of long-term debt to time their activities relative to short-term debt. Abor (2008) indicated that there is an inverse relationship between company profitability and long term debt to capital ratio. It

should however be noted that Amidu (2007) observed a positive association between long-term debt and a firm's profitability. A debt obligation implies that a firm is planning either retention of earnings to pay off the debt or new external financing in the future. Myers and Bacon (2001) argued that the debt to equity ratio was positively correlated to the dividend yield, and was significant at the 95% level. Firms with relatively few investment opportunities and low growth would tend to be more geared and vice versa (Ross et al, 2010). Debt to equity ratio should have a negative impact on dividend payout ratio.

### **Equity risk exposure**

This is the ratio of long term debts to total capital. Basically it is the ratio of long term debt of the firms to their total capital. This ratio measures the extent to which the operations of the firms have been funded with long term debt relative to equity and also to see how leverage associates with Ghanaian banks dividends. Many studies have been conducted to determine the relationships between leverage and profitability showed a positive association. (Graham & Leary, 2011)

### **Control variables**

As discussed in chapter two, the control variables are measured as follows: Firm's growth is measured by asset growth (ASG); age of firm is also measured by the log of the actual age (logAGE) of operation; profitability measured by log of earnings after tax (logEAT) and firm's size is measured by log of sales.

### Model specification

The theoretical and empirical literature on capital structure in finance has identified a number of variables that influence firm financial performance including dividend. The theoretical review establishes a link between capital structure and dividend pay-out. Mention can be made of the pecking order theory and the trade off theory. The capital structure is often disintegrated into short-term debts to total assets, long term debts and total assets and long term debts and equity. Therefore, the general model for the present study follows the existing literature and is presented as follow:

$$Y_{it} = \alpha_1 + \beta_1 X_{it} + e_{it} \quad (1)$$

The ‘i’ denotes the cross-sectional dimension

The ‘t’ also represents the time-series dimension

‘Y’ is the dependent variable

‘X’ denotes the independent variable

‘ $\beta_1$ ’ is the constant of the model

‘e’ represents the error term.

Substituting the study variables into the general theoretical model, the study’s empirical model specification is spelt as:

$$DPO_{it} = \alpha_1 + \beta_1 SDA_{it} + \beta_2 TDA_{it} + \beta_3 LDE_{it} + \beta_4 ASG_{it} + \beta_5 \text{LogAGE}_{it} + \beta_6 \text{LogEAT}_{it} + \beta_7 \text{LogSAL}_{it} + e_{it} \quad (2)$$

DPO represents the dividend payout ratio

SDA represents the short term debts to total assets

TDA represents the total debts to total assets

LDE represents the long term debt to total assets



### **Estimation method**

The panel regression model used by Abor (2008), Akoto and Gatsi (2010) and Ahmad, Naveed and Zulfquar (2011) was adopted for this study. Abor (2008) indicated that panel data provides results that are simply not detectable in pure cross-sections or pure time-series studies. Abor (2008) further argued that the panel data is more useful than either cross-section or time series data alone as used by Fu (2007) due to the following reasons;

Firstly, panel data model provides more edifying data, more unpredictability, less co linearity among variables, more degrees of freedom and more effectiveness. Also, the model provides controls for individual's heterogeneity due to hidden factors. The panel data model again provides better ability to study dynamics of adjustments. Furthermore, the model generates better ability to identify effects that are simply not detectable in pure cross –section or pure time- series data and finally panel data model enable the researcher to construct and test more complicated behavioural models than cross-section or time-section data.

It has been argued in the literature that estimation of panel data models using pooled ordinary least squares yields inconsistent estimators and heteroskedasticity errors (Park, 2009). The researcher further stated that if the parameters to be estimated vary across firms the pooled regression is not appropriate because of the heterogeneity in the parameter as an estimate is not well dealt with. From a theoretical perspective, overlooking such structure heterogeneity among cross – sectional and time series could lead to inconsistency estimates of interesting

parameters (Baltagi, 2005). Baltagi (2005) enhanced his argument by stating that, to correct this problem, it is suitable to use panel data model.

Panel estimation methods are either fixed effect or random effect methods. Park (2009) further stated the basic differences between the fixed effect and random effect estimation technique is the assumption about the relationship between the error term and the covariates. The choice of the panel estimation process is informed by the deficiencies with pooled ordinary least squares. Using panel data to estimate models requires the determination of whether there is a relationship between the unobservable heterogeneity in each firm and the explanatory variables of the model. If the final outcome results a correlation which is fixed effect, consistent estimation would be obtained by means of the group estimation. Otherwise, random effects are more appropriate estimator that can be achieved by estimating the equation by cross section generalized least squares (Park, 2009).

The usual econometrics strategy to determine whether the effects are fixed or random is to use the Hausman (1978) test under the null hypothesis that the pooled regression for the estimated equations is significant. If the null hypothesis is rejected, the effects are measured to be fixed, and the model is then estimated by OLS. If the null hypothesis is accepted, we would have random effects, and the model is then estimated by GLS. In this way we achieve a more efficient estimator of  $\beta$  and the estimated model can be said to be robust, all else equal. But because some of the independent variables might have multi collonarity, the ordinary ridge regression is used in the study.

### **Data preparation and analysis plan**

The quantitative data from the financial statements of the banks from 2002 to 2012 was used for the study. Two main issues measured are dividend pay-out and the capital structure indicators. These variables were computed using the raw data from the financial statements in accordance with the formulae provided under measurement of variables section. The capital structure ratios computed were short-term debt to total assets, total debt to total assets, and long term debt to equity.

Since the study is quantitative in nature, four main sections were considered for discussion under the analysis column. First, the descriptive statistics of the variables, the unit root tests to determine the possibility of using OLS, the results of the panel regression estimate, and discussions of the specific objectives.

### **Conclusion**

This section of the study described how the research was undertaken, it stated with the research design of which the casual design was settled for the study. The population and its respective sampling size were also described after which how the variables were measured also followed suit. The section ended with the measurement and estimation models used for the study.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### **Introduction**

The main focus of this chapter is to present the results of the study and discuss the findings in relation to theoretical and empirical evidences. The results and discussions are limited to the effects of capital structure on dividend pay-out of banks in Ghana. The implications of the findings are also presented in this chapter. The chapter is specifically presented in the following order: the general data characteristics and discussions of the specific objectives.

#### **Normality test and descriptive statistics**

To analyse the data collected on the study variable, the study first examines descriptive characteristics of the data. The normality test and the descriptive statistics are used to analyse the statistical consistency or inconsistency of the variables (Sulaiman, Adnan, Anwar, & Adnan, 2009). According to them, this analysis enhances the confidence in the study. Table 4.00 presents the results of the normality test and descriptive statistics. Table 4.00 below provides the summary of the descriptive statistics of the study variables. The table indicates the descriptive statistics of the variables over the period from 2002 to 2012 in

Ghanaian Banking industry. The descriptive statistics are drawn from indicators of variables computed from the financial statements.

**Table 4.00: Results of normality test and descriptive statistics on variables**  
(2002 – December, 2012)

	DPO	SDA	TDA	LDE
Mean	0.3652	6.4210	6.7453	0.7785
Median	0.3855	0.8343	0.8823	0.6271
Maximum	1.1110	742.9988	775.1837	3.3527
Minimum	0.0060	0.2574	0.7833	0.0048
Std. Dev.	0.1963	64.6004	67.3946	0.6970
Skewness	0.3685	11.3581	11.3582	1.4733
Kurtosis	3.5417	130.0069	130.0075	5.3541
Jarque-Bera	4.6017	91557.33	91558.20	78.2373
Probability	0.1002	0.000000	0.000000	0.000000
Sum	48.1999	847.5693	890.3809	102.7640
Sum Sq. Dev.	5.0457	546689.9	595005.4	63.6462
Observations	132	132	132	132

**Source: Generated from Eviews 7.0 package**

It can be seen from table 4.00 that all the study variables have positive mean (median) values. As it is shown in table 4.00 above, the dividend pay-out of the banks has a mean (median) value of 0.365151 (0.3855). This show that large number of banks in Ghana distributes 38.54% of their earnings attributable to the shareholders is paid out as dividend. This means that greater proportion of the banks' earnings (61.46%) is undistributed to the ordinary shareholders and is therefore retained as retained earnings. Banks require huge capital and operational liquidity to meet the needs of their customers. Therefore it is not surprising when they retain much of their earnings in the business for such purposes. The deviation of individual observations of the study variables from the mean is depicted by the standard deviation. The deviation of the observations from the mean is 19.63%. The high standard deviation might be due to the inclusion of the oldest and foreign banks in the sample and because retained earnings could be invested into noncurrent assets.

Besides, the reported mean, these banks have the dividend pay-out ratio of 1.1119 maximum values and minimum values of 0.0070. Dividend pay-out ratio is skewed and this means it is asymmetrical. This is because dividend pay-out ratio (DPO) has a coefficient of skewness that deviates from zero. Specifically the coefficient of skewness for DPO is 0.3685. From table 4.00, it is observed that dividend pay-out is positively skewed and this proves that it is asymmetrical. DPO therefore has long right tail. Kurtosis value for the DPO is 3.5417. This value is closer to 3 and therefore shows that the data for the variable is normally distributed. Similarly, the probability value for Jarque – Bera of 4.6017 is greater

than 5%. Therefore it meets the normality test. It can be concluded that dividend pay-out ratio as the dependent variable is normally distributed.

The descriptive analysis of short term debt to total assets (SDA) in table 4.00 shows can a positive mean (median) values. The mean value of the SDA is 6.4210. This indicates that banks in Ghana are able to finance their entire total assets through short term debts and hence bank risk exposure is very high. The greater mean value can be attributed to the big banks with nationwide outreach. The short term debts such as customers' deposits are often the main stay of banks. This also supports the empirical evidences. It has been explained in literature that in the developing countries especially the banking sector, short term debts dominate (Bayeh, 2011). The standard deviation for the mean of SDA is 64.60035. The rate of deviation of the individual observations is very high. This is because some few banks dominate in terms of higher customers' deposit, hence increasing mean with high deviation. The accuracy of this explanation is evident by the minimum and the maximum values. The SDA has the minimum value of 0.2574 and maximum value of 742.9988. From the maximum and minimum values, it is evident that the maximum value can cover the minimum more than 740 times, hence expected higher standard deviation.

Aside the mean, minimum and maximum values depicted by table 4.00, other statistics such as Skewness, Kurtosis and Jarque – Bera. A short term debts to total assets are skewed, showing asymmetric feature. The skewness is tested at zero coefficients. Therefore any coefficient other than zero means the variable in question is skewed. Moreover, since the skewness coefficient of the variable is positive, it implies that SDA is positively skewed. It can therefore be stated that

SDA has a long tail. Similarly, short term debts to total assets have a Kurtosis value of 130.0069. The Kurtosis value of SDA deviates from 3 and therefore proves non normality of the distribution. Consistent with the normality test by Kurtosis, the Jarque – Bera also indicates that the data is not normality distributed. Thus, the Jarque – Bera of 91557.33 with probability of less than 5% is evident of non-normality. It can therefore be concluded that the ratio of short term debts to total debts of the Ghanaian banks are not normally distributed.

In the descriptive statistics table, the statistical characteristics of the ratio of total debts to total assets have also been displayed. Table 4.00 depicts that the mean value of the ratio of total debts to total assets (TDA) is 6.7453. It means that total debts of Ghanaian banks finance 674.53% of the assets. This is not surprising as total debts are the composite of short term debts and total debts. With strong short term debt to total assets (SDA) values, the TDA is equally expected to be greater. Like the SDA, the mean value of the TDA is also positive. The mean of TDA has a standard deviation of 67.3946. This standard is higher because of the influence of both short term debts and total debts. The range of the observations is (775.1837- 0.7833) 774.4004. The higher value for the range is evident in the standard deviation over the mean by the individual observations. The accuracy of how the observations deviate from the mean of the data is also proved by the minimum and the maximum values. The minimum and the maximum value TDA are 0.7833 and 775.1837 respectively. These values (I.e., minimum and maximum) indicate that the total debts to assets ratio of one bank can be distributed over 774 banks in Ghana.



The normality distribution is tested by coefficients of skewness, Kurtosis and Jarque-Bera. The ratio of total debts to total assets has a positive coefficient. This implies that it is positively skewed. It therefore suggests that the distribution is asymmetric. Since the coefficient is 11.3582 which is farther away from zero, it is not a normal distribution. Simply put, it has a right long tail. Besides, the skewness proves of non-normality, Kurtosis statistics also supports the evidence that the data is not normally distributed. For a distribution to be normal the Kurtosis statistics should be closer to 3. However, the ratio of total debts to total assets has Kurtosis value of 130.0075 similar to the Kurtosis value of SDA. This value is far away from 3. Hence, it is evident that the distribution is not normally distributed. The third evidence of non-normality is proven by the Jarque – Bera statistics. When the Jarque – Bera statistics has probability less than 5%, it is evidence of non-normality. TDA has Jarque – Bera statistics of 91558.20 with probability value of 0.000. This means that the distribution is not a normal distribution. All evidences pointed to the fact that TDA is not normally distributed.

From table 4.00, it can be observed that the ratio of total debts to total assets (LDE) has a positive mean value. The mean value for LDE is 0.7785. This indicates that Ghanaian banks finance more of their operation from equity than total debts. This can be attributed to the minimum capital requirement by Bank of Ghana from all banks in Ghana. This requirement implies that banks should favour equity to debts and this proven by the mean value. The standard deviation measures how the individual observations differ from the mean value. The standard deviation for LDE is 0.6971. This standard deviation of the observations from the mean is high. The high standard deviation can be explained by the range

between the minimum and the maximum values. The range for the distribution is 3.3480 (3.3528 - 0.0048), which is very wide and hence higher deviation. Thus, the minimum and maximum values are 0.0048 and 3.3528 respectively.

Aside the reported mean, standard deviation, range, minimum and maximum values, other descriptive statistics also measure the normality distribution status of LDE. LDE is skewed and this shows that the distribution is asymmetrical. Specifically, it is positively skewed and hence right long tail. With the skewness when the statistics is zero, then it is considered as not skewed or normal. The skewness statistics of LDE has coefficient other than zero and hence skewed. The coefficient of skewness for LDE is 1.4734. Moreover, from table 4.00, it is seen that LDE has a Kurtosis value 5.3541. This value deviates from 3 and therefore shows that the data for the variable is not normally distributed. In addition, the Jarque – Bera value of 78.2373 has probability value less than 5%. Therefore it does not meet the normality test. It can therefore be concluded that total debts to equity ratio is not normally distributed.

**Table 4.10: Results of normality test and descriptive statistics on control variables**

(2002 – December, 2012)

	ASG	LAGE	LEAT	LSAL
Mean	9.618045	3.267464	16.11973	17.53148
Median	0.294511	3.496508	16.02717	17.55159
Maximum	1209.833	4.753590	18.77954	19.77518
Minimum	-0.998818	0.000000	13.40030	11.33423
Std. Dev.	106.0821	1.000325	1.133422	1.126974
Skewness	11.26968	-0.526474	0.083446	-1.215968
Kurtosis	128.0064	2.868718	2.869260	8.681141
Jarque-Bera	87395.93	6.098818	0.243458	206.8607
Probability	0.000000	0.047387	0.885388	0.000000
Sum	1250.346	424.7703	2095.565	2279.093
Sum Sq. Dev.	1451691.	129.0838	165.7192	163.8391
Observations	132	132	132	132

From the table 4.10 above all the control variables have positive mean (median) values. As shown in table 4.10, the asset growth of the banks has a mean (median) figure of 9.618045 (0.294511) respectively. This implies that the banks have relatively high growth rate in assets and this may compete with the funds available for dividend payment. In addition, the rate of deviation by the individual observations from the mean value is measured by the standard deviation which has the value of 106.0821. This figure is very high. The range for the observation of ASG is 1210.83 (maximum is 1209.833 and minimum -0.9988). The normality statistics include skewness, Kurtosis and Jarque Bera. From the table their figures are 11.26968, 128.0064 and 87395.93 respectively. This means that ASG failed the normality test.

The descriptive study analysis of AGE in table 4.10 above also shows a positive mean (median) values. The mean value of the AGE is 3.267464 shows that all the Ghanaian banks have operated for more than 3 years. The standard deviation for the mean of AGE is 1.000325 The AGE has the minimum value of 0.000000 and maximum value of 4.753590. From the maximum 4.753590 and minimum values 0.000000, it is evident that the maximum value can cover the minimum more than 4 times, hence expected bigger standard deviation. Other statistics such as Skewness and Jarque – Bera also show a value of -0.526474 and 6.098818 (0.047387) respectively, showing asymmetric distribution. However, the Kurtosis value of 2.868718 approximates 3 and therefore the variable is normally distributed per this test.

From the table 4.10, it can be observed that earnings after tax (EAT) have a positive mean value. The mean value for EAT is 16.11973. The standard

deviation of the observations or data from the mean is 1.133422. This standard deviation of the observations from the mean is high. The high standard deviation can be explained by the range between the minimum and the maximum value. The range for the distribution is 5.374 (13.40030- 18.77954) which is very huge and hence higher deviation. Thus, the minimum and maximum values are 13.40030 and 18.77954 respectively. The skewness statistics is closer to zero and hence normally distributed. Specifically, the coefficient is 0.0834 which approximate zero and hence symmetrical. Similarly, from table 4.10, it is seen that EAT has a Kurtosis value 2.869260. This value is closer to 3 and therefore shows that the data for the variable is normally distributed. In addition, the Jarque – Bera value of 0.243458 has probability value of 0.885388 which is greater than 5%. It is therefore concluded that EAT is normally distributed.

The table 4.10 above indicates that the mean value for log of sales of all the banks is 17.53148 which is positive. It can be observed that standard deviation value is 1.126974. The value of the standard deviation from the observation of the mean is high. This is explained by the range of minimum and maximum standard deviation which is 8.44095 (11.33423-19.77518) which is very high. The minimum and maximum value is 11.33423 and 19.77518 respectively. The sale skewness statistics is -1.215968 which deviates from zero meaning it is asymmetrical. That is it is not normally distributed. The kurtosis value is 8.681141 which also deviates from 3 confirms non normality. Furthermore the Jarque Bera value of 206.8607 has probability of 0.00000 which is less than 5%. It show that it is not normally distributed.

### **Unit root test**

It is believed that time series data often have stationarity. It is therefore important to test this assertion so as to decide appropriate econometric model to use. The test which is usually conducted to verify the stationarity status of the data is the unit root test. Greene (2002) similarly stated that because time series data are not static, it should be assumed that the series have unit roots and therefore should be verified through the unit root test.

The study therefore employs the Augmented Dickey Fuller (ADF) and the Phillips and Perron (PP) test to test for the unit root of the study variables. The null hypothesis for this test is that each variable has a unit root. The alternative hypothesis is that the variable has no unit root. The study used Eview 7 package to carry out the unit root tests so as to determine the stationarity of the study variables. The summary of the unit root test results are presented below.

### **Dividend pay-out ratio test**

The null hypothesis that the dividend pay-out ratio (DPO) has unit root is tested for the study data series. The unit root test in this study considers both intercept and trend and intercept. The basis of unit root under the ADF and the PP is that when the P-value is less than the confidence interval of 5%, then the study rejects the null hypothesis of the unit root. The results of the unit root test are presented on table 4.2.0 and table 4.30. The table 4.20 displaces the results at intercept whiles table 4.30 presents the results of intercept and trend.

The statistics on table 4.20 indicates that the P-value of the ADF under intercept at level is less than the confidence interval. Thus, the P-Value of the ADF- fisher chi-square at level of 47.4138 is 0.0030 which is less than the 5% confidence level. This means that the study rejects the null hypothesis. Based on the ADF-fisher chi-square test, it can be concluded that the order of integration of dividend pay-out ratio for the Ghanaian banks is zero (i.e. I (0)). Since DPO is already stationary at level, the study does not precede to the test of the 1<sup>st</sup> difference, hence the dash (-). Similarly, on the table 4.1, the test of unit root using PP approach is also used. This is considered as a control test. At level, the test statistics of PP – fisher chi-square is 140.701 (0.000). With confidence level of 5%, it is evident that the P-value of the PP test statistics is completely less than the confident interval. This means the study rejects the null hypothesis of stationarity problem. It is worthy to note here too that the test for the difference is not performed because the variable is stationary at level. Thus, the PP test confirms the results from the ADF. It is therefore concluded that DPO has no unit root. In summary, it can be stated with evident that dividend pay-out is stationary at level under the intercept. Based on the level test, the study indicates that the DPO does not have unit root and therefore follows a random walk pattern. The summary is presented in table 4.2 below:

**Table 4.20: Unit root test results on dividend pay-out ratio at intercept**

Confidence Interval	Intercept			
	ADF	P- Values	PP	P-Values
Order				
	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff
5%	0.0030	-	0.0000	-
I (0)				
Method: Fisher Chi-square, ADF value 47.4138 (0.0030) and PP value 140.701 (0.0000)				

**Source: Generated from Eviews 7 package.**

The statistical details on table 4.30 also display the unit root test results under trend and intercept. The test is first performed at level and when the variable is non-stationary at level then the differences are also tested. The test statistics and P- values under both ADF and PP are presented. It can be seen from the table that the ADF test statistics at level is 38.6485 (0.0297). The P-value of the test statistics is in the parenthesis. The P-value is less than the confidence level of 5%. This means ADF-fisher test rejects the null hypothesis of unit root at intercept and trend. This is consistent with the rejection at intercept. It can be concluded on the basis of the ADF test that DPO is stationary at level under intercept and trend. Therefore the dividend pay-out of banks in Ghana has no unit root. Due to the zero order of integration at level under ADF approach, the study fails to further test for stationarity at difference.



Besides the ADF test, the PP test is also conducted as a control test to enhance the validity and reliability of the results from the ADF test. The test statistics of PP – fisher chi-square at level is 124.215 (0.000). Similar to the finding at intercept, the P-value in the parenthesis is 0.000. Since the confidence level is 5%, it is evident that the PP test rejects the null hypothesis of unit root. Thus, there is no unit root in the variable. The test at difference is also not conducted because the variable is stationary at level. Thus, the PP test confirms the results from the ADF. The data is therefore I (0). Based on the test at level, the study indicates that dividend pay-out does not have unit root and hence follows a random walk pattern. The table 4.30 is displayed below:

**Table 4.30: Unit root test results on dividend pay-out ratio at intercept and trend**

Intercept and trend					
Confidence Interval	ADF P- Values		PP P-Values		Order
	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.0297	-	0.0000	-	I (0)

Method: Fisher Chi-square, ADF value 38.6485 (0.0297) and PP value 124.215 (0.0000)

**Source: Generated from Eviews 7 package.**

### **Short term debt to total assets test**

Similar to the test under DPO, the study test the stationarity level of the short term debt to total asset. The null hypothesis is that the short term debt to total asset (SDA) has unit root. The test of the stationarity status considers both intercept and trend and intercept. The methods used in testing the orders of

integration or the unit root are ADF and PP. The PP is expected to supplement the ADF to add confidence to the conclusion drawn from the ADF study. The test norm is that if the P-value of the test statistics of the ADF and the PP is less than the confidence interval, which in this case it is 5%, then the study, rejects the null hypothesis of the unit root. The unit root test results are presented on table 4.40 and table 4.50. The results under the intercept are displayed on table 4.40 while the results of the intercept and trend are also presented on table 4.50.

From the table 4.40, the P-value of the ADF test statistics under the intercept at level is less than the confidence interval. Specifically, the P-Value of the ADF- fisher chi-square at level of 35.3258 is 0.0637 which is a bit higher than the 5% confidence level. This means that the study fails to reject the null hypothesis. Therefore based on the ADF test at level under intercept short term debt to total assets has unit root. Thus has order of integration of one. Since the variable is not stationary at levels, the study therefore proceeds to test for the unit at the first difference. The P-value of the ADF test statistics at first difference is 0.000. This is less than the 5% confidence level. This means that SDA is stationary at first difference. As a control test, the study again conducted the PP test for unit root. The results as displayed on table 6 show that the P-value of the PP test statistics at level of 50.2703 is 0.0013. This means that SDA is stationary at levels.

There is therefore contradiction in results between ADF and PP. To reconcile the discrepancy, the study performed third test using the Levin, Lin and Chu (LLC). The result of the LLC confirms the stationarity results from the PP. The P-value of the LLC test statistics is 0.0034. Therefore the study concludes that

SDA has no unit root. Thus, it is stationary at level. The results of the PP and LLC override the unit root test of the ADF and therefore the study concludes that the SDA does not have unit root under intercept and therefore follows a random walk pattern. The summary of the findings are presented on table 4.40

**Table 4.40: Unit root test results on short term debts to total assets ratio at intercept**

(2002 – 2012)

Confidence Interval	Intercept					
	ADF	P- Values	PP	P-Values	LLC	
Order	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff
5%	0.0637	0.0000	0.0013	-	0.0034	-

I (0)  
 Method: Fisher Chi-square: at level ADF value 35.3258 (0.0637); at 1<sup>st</sup> difference 63.3330 (0.000) at level PP value 50.2703 (0.0013) Levin, Lin & Chu: 2.70266 (0.0034)

**Source: Generated from Eviews 7 package.**

In addition the table 4.50 also presents the unit root findings under intercept and trend. At level the P-value of the ADF test statistic of 26.9335 is 0.3076. The P-value is greater than the 5% confidence interval and therefore ADF fails to reject the unit root at level under intercept and trend. This is consistent with the ADF result at level under intercept. Since it has unit root at level, the study

tests the first difference for unit root. The results show that ADF test statistics of 43.3994 has a p-value of 0.0090 which is less than the confidence interval of 5%. This implies that SDA is stationary at first difference under the ADF. The table 4.50 also displays the test results of PP approach. At level, the test statistics of PP is 70.4010 with P-value of 0.0000. This means the variable is stationary at level under intercept and trend. This result confirms the result displayed by PP under intercept.

However, the PP test result contradicts the findings of the ADF. To reconcile, the study again conducted the LLC test of unit root. The results of LLC show a test statistics of 3.1244 with P-Value of 0.0009. This means that LLC rejects the null hypothesis of unit root. This confirms the stationarity status of the ratio of short term debts to total assets of banks in Ghana. Based on the level test under PP confirms by the LLC, the study indicates that the SDA does not have unit root and therefore follows a random walk pattern.

**Table 4.5: Unit root test results on short term debts to total assets ratio at intercept and trend**

(2002 – 2012)

Intercept and trend							
Confidence Interval	ADF P- Values		PP P-Values		LLC		
Order	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.3076	0.0090	0.0000	-	0.0034	-	

I (0)

Method: Fisher Chi-square: at level ADF value 26.9335 (0.3076); at 1<sup>st</sup> difference 43.3994 (0.0090) at level PP value 70.4010 (0.0000) Levin, Lin & Chu: 3.12442 (0.0009)

**Source: Generated from Eviews 7 package.**

**Total debts to total assets test**

The ratio of total debts to total assets (TDA) is also tested for unit root. Like the other variables, the test of the unit root is based on the null hypothesis that there is unit root. Thus, the null hypothesis states that TDA has unit root. The study tests the unit root under intercept and trend. The study mainly employs the ADF and PP. However, where there is contradiction between the results of the ADF and PP, a third method LLC is employed to reconcile the discrepancy to help take the decision on which conclusion to reach. The rejection or fail to reject the null hypothesis of the unit root is determined by the P-values of the test statistics.

If the p-value is less than the confidence interval of 5%, then the study rejects the null hypothesis, otherwise the variable is said to have unit root. The findings of the unit root tests produced by the various methods are presented on table 4.60 and table 4.70. The two tables separately display the results under intercept and the intercept and trend. Thus, table 4.6 discloses the results of intercept and the results of intercept and trend is displayed on table 4.7.

The statistics on table 4.60 depict the unit root results under intercept. The tests under levels are first conducted and where the results at level prove that the data has unit root, then the differences are tested in order. Thus, first difference is tested followed by the second difference. Table 4.6 shows the ADF test statistics at level of 24.8652 (0.4131). The P-value of the test statistics in the parenthesis is greater than the confidence interval of 5%. This means that at level under intercept, ADF test fails to reject the null hypothesis of unit root. Since there is unit root at level, the study tests for the difference. The results show that under intercept TDA is stationary at first difference. The table 4.60 displays ADF test statistics of 71.0889 with P-value of 0.000. The P-value is far lower than the 5% confidence interval and hence stationarity. It can be concluded that under intercept TDA is I (1) under the ADF test.

The result of the PP is also depicted on the table 4.60. This result contradicts the result of ADF. The PP shows a test statistics of 45.2293 with P-value of 0.0053. Since the P-value is less than 5%, it implies that PP rejects the null hypothesis at level which is contrary to the result of ADF. To either reject or fail to reject the null hypothesis of the unit root at levels, the study tests unit root again under the LLC approach. The LLC result also rejects unit root at levels. The

test statistics of the LLC is 3.05866 with p-value of 0.0011. Since both PP test and LLC have rejected the null hypothesis, the study therefore concludes that there is no unit root. Hence TDA is I (0). The summary of the statistics is presented on the table 4.60 below.

**Table 4.60: Unit root test results on total debts to total assets ratio at intercept (2002 – 2012)**

Confidence Interval Order	Intercept						LLC
	ADF P- Values		PP P-Values				
	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.4131	0.0000	0.0053	-	0.0011	-	
I (0)							
Method: Fisher Chi-square: at level ADF value 24.8652 (0.4131); at 1 <sup>st</sup> difference 71.0889 (0.0000) at level PP value 45.2293 (0.0053)							
Levin, Lin & Chu: 3.05866 (0.0011)							

**Source: Generated from Eviews 7 package.**

The unit root test results under intercept and trend are depicted on table 4.7. The unit root is first tested at levels and subsequently at difference when the levels prove non stationary. From the table 4.7, the ADF test statistics is 45.4249 (0.0052). The P-value of 0.0052 is less than the 5% confidence interval. Since the P-value is less than the confidence interval, the study rejects the null hypothesis of unit root. This result from the ADF test contradicts the finding of the same ADF under intercept. Thus, whiles the ADF fails to reject the null hypothesis under

intercept, it rejects the null hypothesis under intercept and trend. It is therefore concluded that the ratio of total debts to total assets has no unit root under intercept and trend.

Similarly, the PP test results show that LDA has no unit root. The PP has 61.7434 test statistics with P-value of 0.0000. The P-value is less than the confident interval of 5%. This proves that indeed TDA is stationary. This is consistent with the ADF test result. Although these tests (i.e. ADF and PP) contradicted at levels under intercept, they are consistent under intercept and trend. Base on the various test, the study concludes that ratio of total debts to total assets of Ghanaian banks is stationarity. Thus, it has order of integration zero (i.e. I (0)). The summary is displayed on table 4.7.

**Table 4.70: Unit root test results on total debts to total assets ratio at intercept and trend.**

(2002 – 2012)

Intercept and trend							
Confidence Interval	ADF	P- Values	PP	P-Values	LLC		
Order	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.0052	0.0000	0.0000	-	-	-	
I (0)							
Method: Fisher Chi-square: at level ADF value			45.4249 (0.0052) at level PP				
value 61.7434 (0.0000)							

**Source: Generated from Eviews 7 package.**



### **Long term debts to equity**

The study tests the stationarity of the ratio of long term debts to equity (LDE). The study employs ADF and PP mainly. However where the results from these two methods contradict, LLC method is also used to determine the bases for the stationarity decision. All these methods have the same null hypothesis. The null hypothesis is there is unit root. To be confident on the actual unit root or stationarity level, the study tests the unit root under both intercept as well as intercept and trend. The study rejects the null hypothesis of the unit root when the P-values are less than the confidence interval of 5%. When the P-value is greater than the 5% confidence level, the study fails to reject the null hypothesis. The results of these tests are presented on table 4.80 and 4.90 for intercept and intercept and trend respectively.

The details on table 4.80 depict the unit root results under intercept. The tests under levels are conducted first and where the results at level prove that the data has unit root, then the differences are tested in that order. Table 4.80 shows the ADF test statistics at level of 65.6148 (0.0000). The P-value of the test statistics in the parenthesis is less than the 5% confidence interval. This means that at level under intercept, ADF test rejects the null hypothesis of unit root. Since there is no unit root at level, the study fails to test the variable at difference. It is therefore concluded that LDE has no unit root and hence stationary at level under ADF method. From the table the result of the PP can also be seen. This result confirms the stationarity result of ADF. The PP shows a test statistics of 85.2800 with P-value of 0.0000. Since the P-value is less than 5%, it implies that PP rejects the null hypothesis at level which is consistent with ADF result. Overall the study

concludes that the ratio of total debts to equity is stationary at level under intercept.

**Table 4.80: Unit root test results of long term debts to equity ratio at intercept**

Intercept					
Confidence Interval	ADF	P- Values		PP	P-Values
Order	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.0000	-		0.0000	-

I (0)

Method: Fisher Chi-square, ADF value 65.6148 (0.0000) and PP value of 85.2800 (0.0000)

**Source: Generated from Eviews 7 package.**

Having tested unit root under intercept, the study proceeds to test the unit root under intercept and trend. At level under the intercept and trend, the P-value of the ADF test statistic of 50.2474 is 0.0013. The P-value is less than the 5% confidence interval and therefore ADF test rejects the null hypothesis of unit root at level under intercept and trend. This is consistent with the ADF result at level under intercept. Since it has no unit root at level, the study does not test for unit root at difference. The table 4.90 also displays the test results of PP approach. In addition to the ADF, the test statistics of PP at level is 66.7206 with P-value of 0.0000. This means the variable is stationary at level under intercept and trend. This result confirms the result displayed by ADF under intercept and trend. Based

on the level test under ADF and PP the study indicates that LDE does not have unit root and therefore follows a random walk pattern.

**Table 4.90: Unit root test results of long term debts to equity ratio at intercept and trend**

Intercept and trend					
Confidence Interval	ADF	P- Values	PP	P-Values	
Order					
	Level	1 <sup>st</sup> Diff	Level	1 <sup>st</sup> Diff	
5%	0.0013	-		0.0000	-
I (0)					
Method: Fisher Chi-square, ADF value 50.2474 (0.0013) and PP value of 66.7206 (0.0000)					

**Source: Generated from Eviews 7 package.**

Having established that all the study variables are I (0), the study subsequently employs ordinary least square (OLS) estimator to investigate the effect of capital structure on the dividend pay-out. OLS at levels is effective when the variables are stationary or have order of integration zero. Otherwise the differences of the data are used.

### **Ordinary least square regression results**

This section presents and interprets the results of OLS estimation. It estimates the effect of capital structure on dividend pay-out of Banks in Ghana using ordinary least square regression (OLS). Eviews 7.0package is used to

analyse the data. Table 4.91 depicts the results of the estimation. From the table, it can be seen that overall the model for the study is good. This is evident from the high R-square. This implies that the regression estimated is significant. The model has high R-square as well as adjusted R-square. The R-square and the adjusted R-square are 0.7833 and 0.7479 respectively. All the study variables have significant, influence on dividend pay-out of Banks. The R-square measures the goodness of the model used and the extent to which the explanatory variables jointly explain the behaviour of the response variable.

The R-square value from the table is 0.7833 and this means that 78.33 per cent of the change in dividend pay-out of banks in Ghana is explained by capital structure. The R-square value also shows that about 21.67 percent ( $100 - 78.33$ ) of change in dividend pay-out is explained by other variables other than capital structure indicators used here. The Durbin-Watson (DW) Statistics is also closer to 2. This means that there is no autocorrelation problem. The DW statistics closeness equation is  $2(1-p)$ , where  $p$  is the order of integration. Therefore where the data are  $I(1)$ , the DW should be closer to 2. Since the DW is closer to 2, it is another evident that the data are  $I(0)$  and hence the unit root results are factually accurate. The table again shows a significant F-statistic. The F statistic explains whether explanatory variables collectively affect dividend pay-out which is the dependent variable. The F -value of 22.09 is statistically significant at 1 per cent level. The P-value of F-statistic is 0.0000 which means that short term debts to total assets, total debts to assets and long term debts to equity as well as the control variables jointly influence dividend pay-out.

**Table 4.91 Results of the relationship between capital structure and dividend pay-out**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SDA	0.0439	0.0135	3.2573	0.0015
TDA	-1.6123	0.8695	-1.8543	0.0601
LDE	-0.2054	0.0744	-2.7617	0.0047
ASG	-0.0003	6.70E-05	-4.8563	0.0000
LAGE	0.2523	0.0357	7.0639	0.0000
LEAT	0.0682	0.0275	2.4831	0.0224
LSAL	0.0220	0.0150	1.4603	0.1645
C	0.6453	0.3269	1.9738	0.0315

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.7833	Mean dependent var	0.3617
Adjusted R-squared	0.7479	S.D. dependent var	0.1967
S.E. of regression	0.0988	Akaike info criterion	-1.6564
Sum squared resid	1.0735	Schwarz criterion	-1.2352
Log likelihood	125.8391	Hannan-Quinn criter.	-1.4853
F-statistic	22.0942	Durbin-Watson stat	2.3478
Prob(F-statistic)	0.000000		

**Source: Generated from Eviews 7.0 package**

### Residual analysis

The residual analysis is also used to test for co integration. The most popular approach to test for co integration is the Engle-Granger (1987) (Lung, 2008). EG approach uses ADF to check the unit root status of the residuals. According to this approach when the residuals are stationary, then there is the presence of co integration. Table 13 presents the co integration results.

From the table, it is evident that the null hypothesis of unit root is rejected. The residuals are therefore stationary and have no unit root. This means that there is co integration relationship between capital structure and dividend pay-out of Banks in Ghana. Thus, the short term debts to total assets, total debts to total assets and total debts to equity have long run effect on dividend pay-out.

**Table 4.92: Unit root test results of the residuals**

(2002 – 2012)

Confidence Level	Statistic	Prob.
5%	76.4723	0.0000

Method: ADF - Fisher Chi-square

**Source: Generated from Eviews 7 package.**

### Analysis of the study objectives

The specific objectives of this study have outlined in chapter one. This section discusses the results of each of the objective. The specific objectives are to:

1. Determine the relationship between short term financial leverage of Ghanaian banks and dividend pay-out.
2. Investigate the influence of total financial leverage of banks on dividend pay-out.
3. Determine the relationship between equity risk exposure and dividend pay-out of banks in Ghana.

Relationship between short term financial leverage of Ghanaian banks and dividend pay-out

Short term financial leverage is one of the most financing decisions in Banks worldwide. Without the short term financial leverage banks cease to exist. The short term financial leverage is the ratio of the short term debts to total assets. There is no bank in the world without this leverage. One crucial element of this leverage is customers' deposits. Therefore investigating its relationship with dividend pay-out is worthwhile.

The descriptive statistics of short term financial leverage (i.e. short term debts to total assets) and dividend pay-out have already been analysed in the previous section of this chapter. Moreover, the unit root test section also has thoroughly discussed the stationarity properties of these variables. Having determined the descriptive statistics and unit root level of these variables, the robust results of the relationship is presented as follows:

From Table 4.91, it can be seen that SDA is significant at 5 percent confident level. The coefficient value for the SDA is positive. This is consistent with the study expectation. The null hypothesis is rejected. The coefficient value of 0.043946 means that all other things being equal, 1 per cent increase in SDA will lead to 0.043946 increases in dividend pay-out of Banks in Ghana. This implies

that SDA and dividend pay-out of banks in Ghana moves in the same direction. The result confirms intuitive financial theory and trade off theory. For instance, according to the trade-off theory, so long as debts generate positive tax shield, it has positive effect on performance and shareholders' returns like dividend (Haugen & Senbet 1978). Therefore it is obvious that SDA has positive relationship with dividend pay-out. Short term debts of banks increase the banks income through increasing loanable funds and hence interest income.

This finding is also consistent with some previous studies reviewed. For instance, this result confirms the study in Egypt by Aivazian, et al (2001). According to Aivazian, et al (2001) assets growth has negative relationship with dividend pay-out. Therefore when a total asset which is the denominator falls the SDA obviously increase and the dividend pay-out as per the study of Aivazian, et al (2001) will increase. Hence the positive relationship is consistent with the Aivazian, et al (2001). Other studies that support these findings include Dessi & Robertson (2003) Contrary to this other studies are inconsistent with this finding. Fenn and Liang (2001) results indicate that firm financial leverage including short term leverage is inversely related to firms' pay-out ratio.

Aside some empirical consistency, one possible reason for the positive relationship between short term financial leverage and dividend pay-out is that banks depends heavily on the customers' deposits which increase short term leverage. The growth in customer deposits increase banks loan funds which eventually increase their interest income hence increasing the earnings available for dividends. Moreover, any expense from these customers' deposits is tax



deductible and this reduces the tax liability. This ultimately reserves funds for payment of dividends.

#### Relationship between total financial leverage and dividend pay-out

In chapter two, the study establishes a relationship between total financial leverage and dividend pay-out. As discussed in chapter two, banks sometimes borrow total debts to support their operational capacity. These total financing decisions often have consequences on the residual income available to the equity participants.

Prior to analysing the relationship between total financial leverage and dividend pay-out, the descriptive statistics and the unit root properties are to be examined. Detailed discussions of the statistical properties of total financial leverage measured by total debts to total assets and dividend pay-out have been presented under both the descriptive statistics and unit root test sections. The regression results of the panel data used in this study are depicted on table 12.

It can be seen from Table 4.91 that total financial leverage is insignificant at 5 percent confident level but significant at 10 percent. The coefficient value for the relationship is negative. This is consistent with expectation. The coefficient value of -1.612330 means that 1 per cent increase in total financial leverage leads to 1.612330 decrease in dividend pay-out of banks in Ghana. This means that there is an inverse relationship between total financial leverage and dividend pay-out of banks in Ghana. Thus, these variables move in the opposite direction.

This result confirms other prior studies. For instance, Zeng (2012) found that total financial leverage (total debt/total assets) is inversely related to dividend pay-out. Similarly, Fenn and Liang (2001) showed that firm's total financial

leverage (total debt to assets ratio) is inversely related to firm's pay-out ratio. A study conducted in Poland by Kowalewski et al. (2007) investigated dividend policy in Poland. The empirical results indicated a negative association between dividend policy and debt level. Other studies which confirm this study (including Al-Najjar & Hussainey, 2009; John & Muthusay, 2010; Kuwari, 2009).

There are also other empirical evidences which contradict the findings from this study. Dessi and Robertson (2003) examine the effect of total financial leverage on firms' performance and dividend prospects. The results of the study reveal that total financial leverage has positive relationship with expected performance and dividend.

One possible reason for the negative relationship between total financial leverage and dividend pay-out can be explained theoretically. The pecking order theory, hypothesised by Myers (1984) and Myers and Majluf (1984), postulates that information asymmetry between managers of businesses and investors results in firms establishing a specific preference order for financing sources of businesses. The preference ranking begins with internal funds, followed by debt, and then equity. POT assumes that due to the problem of information asymmetry, firms will choose retained earnings over other sources of finance. Therefore debts oriented businesses may service these debts or other obligation from earnings. This leaves little or no earnings to distribute as dividend and hence the negative relations.

Another possible reason for this negative relationship can be traced to future default forecast. If financial leverage is used as one indicator of the future default and positively related to the cost of financial costs, paying dividends may

increase the financial distress for firm with high leverage ratio and hence fails to pay dividend (Zeng, 2012). Similarly, there is a direct relationship between total financial leverage and debt-burden level that increases transaction costs (Mollah et al. 2001). Thus, firms with high total leverage ratios have high transaction costs, and are in a weak position to pay higher dividends to avoid the cost of external financing.

### **Relationship between debt-equity ratio and dividend pay-out**

In strict sense, capital structure is the ratio of long term debts to equity (Bayeh, 2011). Therefore one cannot said to have studied capital structure without analysing this. The literature review chapter has provided review on the subject matter. Examining the relationship between the debt-equity ratio and dividend pay-out of banks provides that basis for investors to analyse the consequence of choice of sources of finance. This will be helpful especially to minority shareholders who do not have much say and only rely on dividends to know where to invest. The regression results are discussed below:

The descriptive statistical analysis and the unit root properties have already been discussed in the preceding sections of this chapter. The descriptive statistics provided accounts of normality, mean values and standard deviations. All these have been discussed. The various stationarity decisions have also been dealt with in details. Having discussed those statistical properties, the panel regression results are discussed.

The regression results in table 4.91 provide statistical significant level of debt-equity ratio (LDE) to dividend pay-out. The results indicate that debt-equity

ratio significantly influence dividend pay-out of banks in Ghana. The explanatory variable is significant at 1 percent confident level. The coefficient value of the variable establishing the relationship is negative. This is inconsistent with the study expectation. The value of the coefficient value is -0.2054. This means that a per cent increase in debt-equity ratio leads to 0.2054 decrease in dividend pay-out of banks in Ghana, holding other factors constant. This suggests that debt –equity ratio is inversely related to dividend pay-out of banks in Ghana. Therefore both the explanatory and the response variables move in the opposite direction.

The regression findings of the panel data are consistent with prior empirical studies. Margraves and Psillaki (2010) study provided support for the conclusion that debt-equity ratio has positive and significant association with firms performance (firm increase in value, labour, and capital) although has negative correlation with dividend pay-out. Abor (2005) found a negative relationship between capital structure and general performance. The results of Kowalewski et al. (2007) in Poland empirically support the findings in this study. The empirical results indicated a negative association between dividend policy and debt level.

On the contrary, other studies have seen positive relationship (see Dessi & Robertson 2003; Zeng, 2012). Notwithstanding some contradictory results, the study has reasonable grounds to admit its findings as factually accurate. There is no such industry that needs much liquidity than banks in the world. They require funds to meet customers' demands. To escape the risk of losing their customers, they may be prepared to hold on to earnings to meet these obligations when they fall due. It would therefore be worst when such banks have higher debt-equity

ratio. This is because while projecting for short term massive withdrawals, they are also planning for debt servicing and interest payment.

Another consistent reason is the level of patronage and customers confidence in the banking system. In Ghana, people confidence in the banking sector is very low. The banks realising this, strive to boost their confidence and trust through timely response to customers' requests and these may mean sacrificing dividends to meet these demands.

Similarly, the pecking order theory also explains the negative relationship between debt-equity ratios and dividend pay-out. The pecking order theory explains that managers of businesses have specific preference for internal sources of finance. One of the popular internal sources of funding is the retained earnings. Therefore to meet the financing needs of existing viable business opportunities, much retained profits should be kept and hence lower level of dividends.

### **Relationship between control variables and dividend pay-out**

It has been argued in chapter two that firm's growth, size, age and profitability also influence dividend pay-out. The analysis in table 4.91 shows that with the exception of firm' size measured by log of sales, all the other control variables has significant influence on dividend payout. Firm's growth has significant negative influence on dividend pay-out; age of firms, profitability have significant positive influence.

The findings of the study in respect of growth are consistent with Amidu and Abor (2006). These authors showed negative associations between dividend payout and growth. John and Muthusay (2010) also showed that growth is a

determinant of dividend payout of firms. The findings on age of firm confirm the result of Badu (2013). Badu (2013) concluded that the major determinants of dividend policy of financial institutions in Ghana are age of the firm, collateral and liquidity.

The study is consistent with the findings of Jensen et al. (1992), Aivazian et al. (2003) and Al-Najjar and Hussainey (2009). These studies also found that profitable firms are more likely to pay dividends than non-profitable firms. Contrary to these, Osegbue, Francis and Ifeanyi (2014) found that there was no relationship between profitability and dividend payout.

The results on the firm size is consistent with Ramachandran and Packkirisamy (2010) who concluded that firm size has positive influence the dividend behavior of corporate firms across Industries in India. However, Grodas and Sorensen (2010) found a negative relationship between debt and dividend payout.

## **Conclusion**

This chapter has discussed the statistical properties of the study variables including descriptive statistics and unit root analysis. The panel regression results have been interpreted and discussed. The Engle-Granger test of cointegration has also been explained in this chapter. Each of the study objectives have been analysed through the regressions and compared with other prior studies. Possible reasons have been assigned to specific relationship direction.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### **Introduction**

This chapter is the concluding chapter of the thesis. It has five main sections. The first section provides the summary of the results of the study. Specifically, this section presents the overview of the scope of the work performed, the methodology and the major empirical findings reported by the study. The second aspect is the conclusion. It attempts to relate the summarised findings to the general Banking sector in Ghana. This section provides detailed remarks as to whether or not the specific objectives outlined in chapter one are achieved and the implications of such results to players and stakeholders of the industry. The third part of this chapter presents the identified recommendations throughout the study with reference to the findings. The recommendations are presented to specific named stakeholders rather than a mere generalised recommendations. The recommendations encompass issues of interest to policy makers, bank of Ghana, bankers and further researchers. The fourth section presents the limitations of the study and finally the last section discusses the direction for future studies.

## Summary

This study examined the relationship between capital structure and dividend pay-out of Banks in Ghana from 2002 to 2012. Annual data were collected from the banks websites and Bank of Ghana. Annual audited financial statements were used mainly to obtain the data for measuring the study variables. The study estimated regression model using panel data. The dependent variable for the study was dividend pay-out and the independent variables are capital structure variables such as short term debts to total assets, total debts to total assets and debt-equity ratios.

The study used causal design as the study explained the cause - and - effect relationships between capital structure variables and dividend payout. The study mainly used the ADF and PP approach to assess the stationarity levels of the variables. However, where there is a conflicting result from these main approaches, LLC approach is used to determine the level of stationarity. Ordinary least square regression estimator was used to analyse the panel data to establish the relationship between the two sets of variables.

The first research objective examined the relationship between short term debts and total assets. The major findings in establishing such relationships are as follows:

1. The descriptive statistics showed that both dividend pay-out (DPO) and short term debts to total assets (SDA) have positive mean. Specifically, the mean values for DPO and SDA were 0.3652 and 6.4210 respectively. The variables of the individual observations from the mean as measured by the standard deviations



were 0.1963 and 64.6004 for DPO and SDA respectively. It also revealed the over dependence on short term debts in relation to long term debts.

2. Both the dividend pay-out (DPO) and the short term debts to total assets (SDA) are positively skewed. Similarly both variables had positive kurtosis indicated that they are heavily tailed.
3. The P-value for the Jarque- Bera statistics for dividend pay-out was greater than 0.05. The skewness, the peakness and Jarque- Bera all showed that dividend pay-out was not normally distributed. Similarly, the Jarque- Bera P.value for short term debts to total assets was less than 0.05. Based on the skewness and peakness, it was said that SDA was not normally distributed, although the Jarque-Bera proved contrary.
4. The fisher - augmented Dickey fuller test result indicated that dividend pay-out had order of integration zero under both intercept and intercept and trend. Similarly, the fisher- Philip and Perron test findings also supported the conclusions drawn by the ADF.
5. The unit root test results for the short term debts to total assets (SDA) showed that SDA is stationary under intercept as well as intercept and trend. The order of integration zero was determined by the fisher-PP test and LLC.
6. The panel estimation established a relationship between short term debts to total assets and dividend pay-out of banks in Ghana. At confidence interval of 5%, the results revealed a significant relationship between the two study variables. The results showed that the ratio of short term debts to total assets has positive relationship with dividend payout of Banks in Ghana. It was revealed that 1

percent increase in SDA, holding other factors constant lead to to 0.0935 increase in dividend pay-out of Banks in Ghana.

7. The residual test for cointegration also indicated that there is long run relationship between the variables.

The second specific objective of the study is to determine the relationship between total debts to total assets (TDA) and dividend pay-out of Banks in Ghana.

The results revealed the following key issues:

1. The results from the descriptive statistics provided that TDA has a positive mean of 6.7453. The degree of variation or deviation of the individual study observations from the mean was estimated by the standard deviation. The degree of the variation from the mean was 11.3582. The TDA was positively skewed with statistics of 11.3582. TDA had positive kurtosis and this indicated that TDA was heavily tailed.
2. The Jarque- Bera probability was 0.0000 which is less than 0.05. Therefore, the skewness, the peakness and Jarque- Bera all indicated that the ratio of total debts to total assets (TDA) too was not normally distributed.
3. The study employed Fisher - augmented Dickey fuller test and Philip and Perron as well as Levin, Lin and Chu where necessary. However, the study mainly used the ADF and the PP. The results provided by PP and LLC indicated that the ratio of total debts to total assets had no unit root under both intercept and intercept and trend. The study used LLC approach because there was conflicting result between ADF and PP.

4. The regression results from the panel data through the OLS estimator indicated that there is a relationship between total debts to total assets and dividend pay-out. The findings revealed that at confidence level of 5%, there is a significant negative relationship between TDA and DPO. The study showed that all other things being equal, a percentage increase in TDA lead to to 0.088788 decrease in dividend pay-out of Banks in Ghana.
5. The residual test also indicated that the ratio of total debts to total assets has long run relationship.

The third specific objective focused on the relationship between debt-equity (LDE) ratio and dividend pay-out of Ghanaian Banks. The key findings as follows:

1. The descriptive statistics indicated that debt –equity ratio has positive mean. The mean value for LDE was 0.7785. The extent of deviation by the individual observations of the study from the mean was 0.6970. This deviation was measured by the standard deviation. The debt-equity ratio was positively skewed. Kurtosis statistics of the debt-equity ratio indicated that it was heavily tailed.
2. The probability value for the Jarque- Bera statistics of debt-equity ratio was 0.0000 which is less than the 0.05 confidence interval. The skewness, the peakness and Jarque- Bera all revealed that debt-equity ratio was not normally distributed.
3. The unit root tests were performed using Fisher augmented Dickey fuller and Philip and Perron. The results under ADF showed that debt-equity ratio had order of integration zero (I(0)) under both intercept and trend. Similarly, the Philip and Perron test results also showed that debt-equity ratio has no unit root.

4. The panel data regression results using OLS estimator indicated that there is a relationship between debt-equity ratio and dividend pay-out. The results indicated that at 5% confidence level, there is a significant negative relationship between LDE and DPO. The study therefore revealed that all other things being equal, 1 percentage increase in LDE lead to to 0.0165 decrease in dividend pay-out of Banks in Ghana.
5. The residual test also showed that the ratio of debts-equity has long run relationship.

Finally the relationship between control variables and the dividend pay-out of Ghanaian Banks was examined. The key findings are as follows:

1. The descriptive statistics indicated that all the variables have positive mean. Thus, the mean values for asset growth, age, earnings after tax and sales are 9.6180, 3.2675, 16.1197 and 17.5516 respectively. The mean value for growth rate was 9.6180. Extent of deviation by the individual observations of this study from the mean is 106.0821. This deviation was measured by the standard deviation and the value is 106.0821. The growth rate was positively skewed. Kurtosis statistics of the scale ratio indicated that it was heavily tailed.
2. Probability value for the Jarque- Bera statistics was 0.0000 which is lesser than the 0.05 confidence interval. The skewness, the kurtosis and Jarque- Bera all revealed that sale ratio was not normally distributed per the data analysis of the table above.
3. Asset growth rate have a negative relationship with dividend payment with a coefficient of -0.0003 which is negative and a probability of 0.0000 which will significantly affect the dividend payment of the bank at 5%.

4. The age has positively relationship with the dividend payment with a coefficient of 0.2523, which is positive with probability of 0.0000 which will significantly affect the dividend payment positively by 5%.
5. The earnings after tax show relatively positive relationship with dividend payment of the bank with a coefficient of 0.0682, a probability 0.0224 respectively which will significantly affect the dividend payment positively by 10%.
6. The sales value has insignificant positive relationship with the payment of dividend by the bank. The coefficient of sales is 0.022 with P-value of 0.1645. The P-value greater than 10% indicates insignificant relationship.

### **Conclusions**

Based on the findings of the study and the analysis of the specific objectives of the research, conclusions are drawn. The conclusions are drawn with reference to the key findings of the study. It is presented in order of the substantive objectives of the study. The conclusions are as follows:

There is a positive relationship between short term debts ratio and dividend pay-out of banks. Therefore an increase in short term debts of Banks in Ghana will lead to an increase in the dividends available to equity participants. Hence the two variables move in the same direction. There is also co integration between short term debts to total assets and dividend pay-out. Overall, short term financial leverage enhances dividend pay-out in the Banking industry in Ghana. In a given year when the elements of short term debts such as customers' deposits increase, all other things being equal shareholders will receive an increase in dividend.

The study established a negative relation between total debts to total assets and dividend pay-out of banks in Ghana. An increase in the ratio of total debts to total assets depletes the dividend pay-out in the banking sector in Ghana. There is therefore an inverse relationship between these two variables. The residuals also showed co integration relationship between these variables. Employing more debts (short and long term), reduces the residual income available for distribution to shareholders. Hence, total financial leverage of Banks in Ghana moves in opposite direction of dividend pay-out. Thus, when total financial leverage ratio falls, the investors with interest in dividends gain and vice-versa.

Debt-equity ratio has negative relationship with dividend pay-out. When there is an increase in debt-equity ratio within a given year, holding other factors constant, will lead to a corresponding decrease in the dividend pay-out of Banks in Ghana. The relationship extends to long run as indicated by the co integration results through the residual test. Overall, there is an inverse relation between these two variables. In a strict sense debt-equity ratio measures the capital structure. Therefore, the financial leverage of banks has negative impact of earnings distributable.

### **Recommendations**

With reference to the major findings and the conclusions drawn in this study, recommendations are put forth. The recommendations are directed to specific stakeholders based on their interests. The recommendations are as follows:

The Bank of Ghana should:

1. Reduce the policy rate to the Banks to reduce the current over reliance on short term debts. The findings in objective one showed that Ghanaian banks rely heavily on short term debts.
2. Closely work with Government and other relevant institutions to develop the Ghanaian bond markets so that Banks can turn to such market for necessary funds for their operations. Because the short term debts have positive relationship with the dividend pay-out, it imposes threat to the banks hence any misinformation that cause the customers to rush to the banks for their deposits may bring banks survival in doubt.

The individual banks should:

1. Continuously search for low interest long term debts so as to enjoy tax shield higher than the associated distress of the debts. This is because although short term debts have positive relationship with dividend pay-out, total debts have negative relation. It therefore suggests that the long term debts contribute to this negative relation. Even this assertion is much clear because long term debts to equity also yielded negative relation. It means that long term debts erode benefits attributable to equity holders as dividend.
2. Intensify the expansion policy to increase their customer base. This may eventually increase customers' deposits with its associated high dividend pay-out to equity participants.
3. Establish appropriate schemes for financing decisions. This might assist the banks in setting their optimal capital structure. It is clear from the findings of the study that pecking –order theory exerts much influence on the Ghanaian Banking

industry. This is evident by the negative relations. Although the industry is profitable, the debts ratios cause decrease in dividend pay-out. This suggests that the Banks prefer to use the earnings to meet its debts obligations. Moreover, the Ghanaian banks should consider appreciating the trade-off theory since it is empirically believed to have strong practical appear. This theory may open up opportunities to pay appropriate dividends to equity holders and eventually sent good signals to minority investors who are interested in dividend.

4. Channel long term debts into financing assets, if the banks seek to have better dividend pay-out prospects. This is because since assets have denominator effects, reducing the negative consequences require that they are increased to reduce the gearing ratio.

Individual investors and shareholders should:

1. Supports the banks in their decisions to expand through opening of branches. This will help the bank mobilise enough deposits which have positive relationship with the shareholder's dividend prospects.
2. Respond positively to subscribe for new shares so as to close the need to seek long term debts to finance projects as the long term finance would decrease the earnings available for distribution.
3. Compare various capital structure indicators of banks prior to taking their investment decisions. Higher short term debt to total assets is good when the investor purpose of investment is regular dividends. However, where the total debts to total assets ratio or debt to equity ratio is high, that bank is not viable for dividend prospect.



### **Limitations of the study**

This study is not perfected. It is similar to any other studies. Therefore like other studies there are some limitations to the results of this study. The following are some of the limitations to this study:

1. The study considers only the banking sector in Ghana. Therefore the findings here cannot represent all banks in the sub-region especially the West African region. Even though banks in these sub-regions have similar characteristics, some of these countries and their banking industry have their own uniqueness and regulations. Therefore, the findings may not fully cover all these countries.
2. The study combined both listed and unlisted banks without any segregation. This combination does not show the true picture of these banks as the risk and marketability of listed banks are far different from non-listed. Differences in risk and marketability also influence dividend payout and hence they should have been analysed separately.
3. Another limitation of this study is the quantity of data. A more robust result may be ascertained if the data span increases.
4. The relationship between capital structure and dividend pay-out is not clear cut. Therefore the choice of the explanatory and response variables is selected arbitrary.

### **Directions for further studies**

The following suggestions are outlined for further consideration in future studies.

The relationship between capital structure and dividend pay-out of different sectors of the economy may also be researched and compared with one another.

1. Future studies should consider segregating banks into listed and unlisted and examine the individual characteristics in relation to dividends. Thereafter, the overall robust results are determined and the segregating results compared.
2. The study did not consider the ratio of long term debts and total assets. This is also a critical capital structure element. Therefore future studies should consider this indicator.

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**APPENDICES**

**APPENDIX A**

**Descriptive and normality results test**

	DPO	SDA	TDA	LDE
Mean	0.365151	6.420979	6.745310	0.778515
Median	0.385467	0.834347	0.882306	0.627116
Maximum	1.111910	742.9988	775.1837	3.352773
Minimum	0.006998	0.257428	0.783330	0.004809
Std. Dev.	0.196256	64.60035	67.39455	0.697028
Skewness	0.368510	11.35811	11.35815	1.473379
Kurtosis	3.541732	130.0069	130.0075	5.354056
Jarque-Bera	4.601704	91557.33	91558.20	78.23729
Probability	0.100173	0.000000	0.000000	0.000000
Sum	48.19991	847.5693	890.3809	102.7640
Sum Sq. Dev.	5.045654	546689.9	595005.4	63.64617
Observations	132	132	132	132

## APPENDIX B

### Residual analysis results

Null Hypothesis: Unit root (individual unit root process)

Series: RESID01

Date: 09/11/14 Time: 13:54

Sample: 2002 2012

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 1

Total number of observations: 114

Cross-sections included: 12

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Method	Statistic	Prob.**
ADF - Fisher Chi-square	76.4723	0.0000
ADF - Choi Z-stat	-5.13397	0.0000

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\*\* Probabilities for Fisher tests are computed using an asymptotic

Chi

-square distribution. All other tests assume asymptotic

normality.

Cont'

Intermediate ADF test results RESID01

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Cross

section	Prob.	Lag	Max Lag	Obs
1	0.0099	0	1	10
2	0.1339	0	0	6
3	0.0023	0	1	10
4	0.1598	0	1	10
5	0.0119	1	1	9
6	0.0058	0	1	10
7	0.0378	0	1	10
8	0.8459	1	1	9
9	0.0357	0	1	10
10	0.7231	0	1	10
11	0.0248	0	1	10
12	0.0357	0	1	10

## APPENDIX C

### Panel least square regression results

Dependent Variable: DPO

Method: Panel Least Squares

Date: 09/11/14 Time: 13:44

Sample: 2002 2012

Periods included: 11

Cross-sections included: 12

Total panel (unbalanced) observations: 129

White cross-section standard errors & covariance (d.f. corrected)

WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SDA	0.043946	0.013491	3.257322	0.0015
TDA	-1.612330	0.869521	-1.854275	0.0601
LDE	-0.205356	0.074359	-2.761681	0.0047
ASG	-0.000325	6.70E-05	-4.856348	0.0000
LAGE	0.252342	0.035723	7.063854	0.0000
LEAT	0.068167	0.027453	2.483059	0.0224
LSAL	0.021954	0.015034	1.460287	0.1645
C	0.645269	0.326914	1.97382	0.0315

#### Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.783335	Mean dependent var	0.361667
Adjusted R-squared	0.747881	S.D. dependent var	0.196746
S.E. of regression	0.098789	Akaike info criterion	-1.656420
Sum squared resid	1.073519	Schwarz criterion	-1.235207
Log likelihood	125.8391	Hannan-Quinn criter.	-1.485273
F-statistic	22.09424	Durbin-Watson stat	2.347779
Prob(F-statistic)	0.000000		

