

**THE INFLUENCE OF CAPITAL STRUCTURE ON THE FINANCIAL
PERFORMANCE OF THE INSURANCE INDUSTRY OF GHANA**

By

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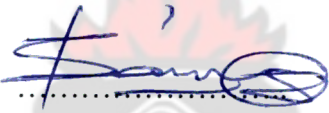

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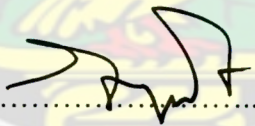

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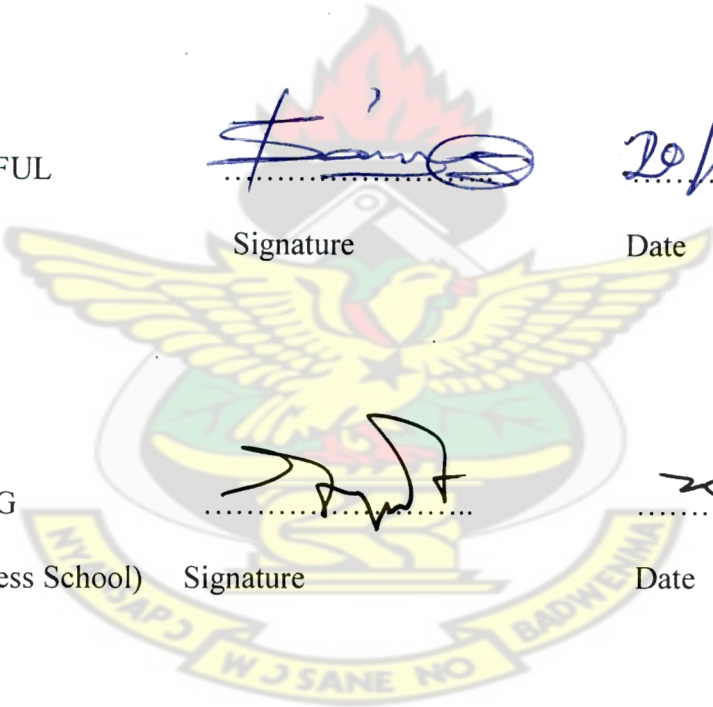
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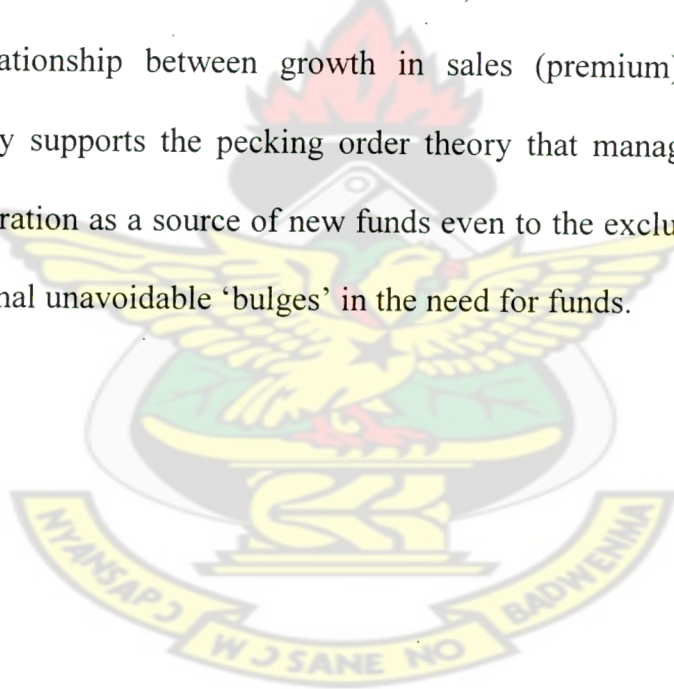

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ABSTRACT

The main objective of the study is to examine the relationship between capital structure and financial performance of insurance industries in Ghana using panel data methodology. The analyses are performed using data derived from the financial statements contain in the annual reports of the three insurance companies from 2004 to 2008. Ordinary Least Squares (Prais-Winsten regression, correlated panels corrected standard errors) model is used to estimate the regression equation. The results show negative relationship but statistically insignificant between financial performance and capital structure. The result also shows positive but statistically insignificant relationship between financial performance and firm size. However, the result shows statistically significant positive relationship between growth in sales (premium) and financial performance. Thus study supports the pecking order theory that management strongly favoured internally generation as a source of new funds even to the exclusion of external funds except for occasional unavoidable 'bulges' in the need for funds.



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DEDICATION

To God be the Glory, Great things He has done. To my mum Mary Aboagyewaa I say
God bless you for all your encouragement and support. To members of my family, I say I
love you all. God richly bless you.



ACKNOWLEDGEMENTS

This work will not have seen the light of day without the invaluable help, guidance and support of my supervisor, Mr. Gabriel Sam Ahinful who has directed and guided me throughout this study.

To all lecturers of the KNUST School of Business who have taught, encouraged and guided me during my tenure in the school, I say I am greatly indebted.

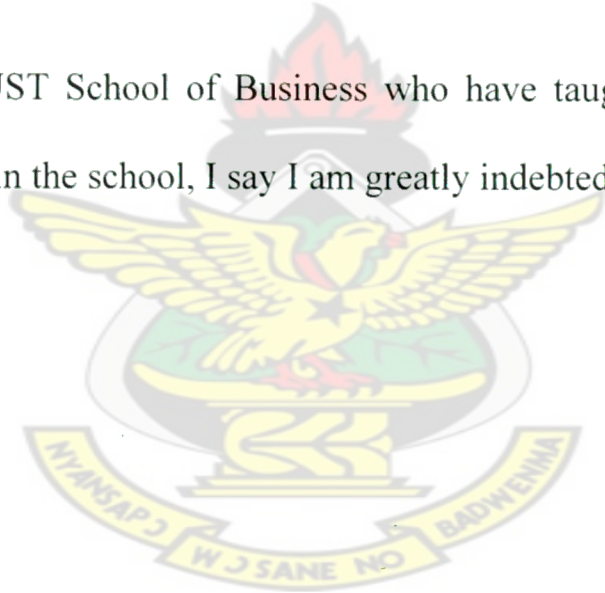


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CHAPTER ONE

1.0 GENERAL INTRODUCTION

1.1 Background

The capital structure decision is crucial for any business organization. The decision is important because of the need to maximize returns to various organizational constituencies, and also because of the impact such a decision has on a firm's ability to deal with its competitive environment. The capital structure of a firm is actually a mix of different securities. In general, a firm can choose among many alternative capital structures. It can issue a large amount of debt or very little debt. It can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. It can issue dozens of distinct securities in countless combinations; however, it attempts to find the particular combination that maximizes its overall market value.

Financial theories have been developed to explain capital structure, with empirical evidence based upon large listed firms tending to support these theories (Cassar and Holmes, 2003). The applicability of these financial theories or their relative effects can be questioned when considering the influence of various institutional settings and scale effects upon the cost or even availability of financing alternatives.

Institutional differences in the types of financial organizations, their predominance and the traditional markets they serve, vary the way investment and capital is allocated. For

example, different investor groups may use different criteria for evaluating financing decisions. Even across settings where similar investor groups exist, the allocation decisions may differ due to regulatory requirements on lending or equity funding, and the institutional flexibility of capital providers to finance certain firm types. Thus the cost of particular financing or even its availability may vary across settings (Cassar and Holmes, 2003).

Scale effects may also influence the presence or degree of influence of particular financial theories upon capital structure. For example, scale effects relating to size may only be applicable (or linear) across particular sized firms. Does the role of asset structure increase in influence for smaller firms due to the perceived increased risk, or variations in agency costs such as monitoring? Additionally, the influence of growth opportunities for smaller scale firms could be questioned, as many of these firms may have strong growth opportunities.

To understand how firms in developing countries finance their operations, it is necessary to examine the return of their financing or capital structure decisions. Company financing decisions involve a wide range of policy issues. At the macro level, they have implications for capital market development, interest rate and security price determination, and regulation. At the micro level, such decisions affect capital structure, corporate governance and company development (Green, Murinde and Suppakitjarak, 2002). Knowledge about capital structures has mostly been derived from data from developed economies that have many institutional similarities (Booth et al., 2001). It is

important to note that different countries have different institutional arrangements, mainly with respect to their tax and bankruptcy codes, the existing market for corporate control, and the roles banks and securities markets play. There are also differences in social and cultural issues and even the levels of economic development. These differences actually warrant taking a thorough look at the issue from the perspective of developing economies, especially within the context of sub-Saharan Africa.

The few studies on developing countries have not even agreed on the basic facts. Singh and Hamid (1992) and Singh (1995) used data on the largest companies in selected developing countries. They found that firms in developing countries made significantly more use of external finance to finance their growth than is typically the case in the industrialized countries. They also found that firms in developing countries rely more on equity finance than debt finance. These findings seem surprising given that stock markets in developing countries are invariably less well developed than those in the industrial countries, especially for equities. However, in an Indian study, Cobham and Subramaniam (1998) used a sample of larger firms and found that Indian firms use substantially lower external and equity financing. In a study of large companies in ten developing countries, Booth et al. (2001) also found that debt ratios varied substantially across developing countries, but overall were not out of line with comparable data for industrial countries.

This current study attempts to contribute to the few empirical studies and to the debate on capital structure and financial performance from a developing country perspective.

However, this study seek to contribute to ongoing capital structure debate by analyzing capital structures of companies in the insurance industry of Ghana as well as studying the kind of relationship that exists between their leverage levels and financial performance.

1.2 Problem Statement

A number of theories have been advanced in explaining the capital structure of firms. Despite the theoretical appeal of capital structure, researchers in financial management have not found the optimal capital structure. The best that academics and practitioners have been able to achieve are prescriptions that satisfy short-term goals (Abor, 2008). For example, the lack of a consensus about what would qualify as optimal capital structure has necessitated the need for this research. Few studies have attempted to analyze capital structure from Ghanaian firms' perspective. Abor (2005) reported on the effect of capital structure on profitability an empirical analysis of listed firms in Ghana; Amidu (2007) reported on capital structure of banks in Ghana. However, little research has been done to explore the relationship between capital structure and financial performance of insurance industries in Ghana.

1.3 Objectives

The major aim of this study is to examine the effect of capital structure on financial performance of insurance industries in Ghana. The specific objectives for the study are as follows:

- To establish the relationship between leverage and financial performance

- To establish the effect of firm size on firm performance
- To establish the effect of sales growth on firm profitability

1.4 Research questions

The question therefore to be asked are: what is the relationship between leverage and financial performance of insurance industries? What is the relationship between firm size and return on equity; and sales growth and return on equity? To answer these questions this study examines the relationship between capital structure and financial performance of insurance industries in Ghana using firm size and sales growth as control variables.

1.5 Justification of the study

Cassar and Holmes (2003) noted that capital structure influence profitability of a firm in Australia. Therefore optimal capital structure is crucial. A better understanding of the optimal capital structure requires a look at the concept of capital structure and its effect on firm profitability.

By evaluating the relationship between capital structure and financial performance of insurance industries in Ghana, information would be available to such firms to make inform choice with regard to their financing decision. This study would be relevant in the Ghanaian context given the important role the private sector is expected to play as the engine of growth. Ghana is viewed as one of the rising economies in Africa. It is expected that the findings of this study will have important policy implications for Ghanaian insurance firms.

1.6 Scope of the study

The study covers the influence of capital structure on the financial performance of the companies in the insurance industry of Ghana from 2004 – 2008. Also the effect of firm and sales growth (used as control variables) on financial performance would also be ascertain. The analysis was based on the published financial statements in the companies annual report from 2004 – 2008.

1.7 Limitations of the study

The study would be based on published annual accounts information, which is a secondary data. The justification for this is the limitations in both time and resources available for this study. The demerit in this instance is that this data had been published for some purposes other than to solve the problem at hand; the implications are that this data does not meet certain specific needs.

Secondly, the three sampled selected to represented the insurance industry of Ghana is seen as major challenge. However, because of the availability of data the researcher has to make a general case out of the only three selected firms.

Another limitation is that the variables for the study are not exhaustive, it only consider some key financial ratios and excludes non-financial data. Also the variables adopted for the study suffers from changes in accounting policies and are based on historical data.

1.8 Organization of the study

The thesis is organized as follows. Chapter one which is introduction of the work presents the background of the study, the research question, and objectives of the study, justification, scope and limitation of the study. Chapter two which is the literature review of the work review the various literatures on capital structure that are relevant for the study. The literature reviewed include: Modigliani and Miller (M&M) theory of capital structure, the trade off theory of capital structure, the pecking order theory of capital structure, determinants of capital structure, agency theory and asymmetric information. Chapter three looks at the research methodology and the organizational profile. Key variables of the study are also defined. Chapter four presents results, analyzes and discusses the results. Analysis of capital structure and the determination of the relationship between leverage and financial performance for our case studies have been presented and the final chapter which is chapter five concludes the study with summary of findings, recommendation and conclusion.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Background

Capital structure attempts to explain the mix of securities and financing sources used by corporations to finance real investment. Most of the research on capital structure has focused on the proportions of debt versus equity observed on the right-hand sides of corporations' balance sheets (Myers, 2001). There is no universal theory of the debt-equity choice, and no reason to expect one. There are several useful conditional theories, however. For example, the tradeoff theory says that firms seek debt levels that balance the tax advantages of additional debt against the costs of possible financial distress. The tradeoff theory predicts moderate borrowing by tax-paying firms. The pecking order theory says that the firm will borrow, rather than issuing equity, when internal cash flow is not sufficient to fund capital expenditures. Thus the amount of debt will reflect the firm's cumulative need for external funds. The free cash flow theory says that dangerously high debt levels will increase value, despite the threat of financial distress, when a firm's operating cash flow significantly exceeds its profitable investment opportunities. The free cash flow theory is designed for mature firms that are prone to overinvest (Myers, 2001).

There is another possibility: perhaps financing doesn't matter. Modigliani and Miller (1958) proved that the choice between debt and equity financing has no material effects on the value of the firm or on the cost or availability of capital. They assumed perfect and

frictionless capital markets, in which financial innovation would quickly extinguish any deviation from their predicted equilibrium. The logic of the Modigliani and Miller (1958) results is now widely accepted. Nevertheless, financing clearly can matter. The chief reasons why it matters include taxes, differences in information and agency costs. Theories of optimal capital structure differ in their relative emphases on, or interpretations of, these factors. The tradeoff theory emphasizes taxes, the pecking order theory emphasizes differences in information, and the free cash flow theory emphasizes agency costs.

2.2 Theories on capital structure

Capital structure is defined as the specific mix of debt and equity a firm uses to finance its operations (Abor, 2008). Five important theories are used to explain the capital structure decisions. These are Modigliani and Miller theory, Trade-off theory, Pecking order theory, Agency theory and Asymmetric theorem. These theories are discussed in turn.

2.2.1 Modigliani and Miller Theory

The theory of capital structure was pioneered by Modigliani and Miller (M&M) in their paper in 1958 "*The Cost of Capital, Corporation Finance and the Theory of Investment*". According to them, in a perfect world – a world without taxes, perfect and credible disclosure of all information and no transaction and bankruptcy cost, the extent of debt in

a company's capital structure does not affect the firm's value (Philips and Simhioglu, 2004). Thus they argue, in their conclusion, "The market value of any firm is independent of its capital structure and is given by capitalizing its expected returns at the rate appropriate to its class".

M&M (1958) argue that a firm cannot change the total value of its outstanding securities by changing the proportions of debt and equity in its capital structure. They implicitly or explicitly assumed that:

- Capital markets are frictionless, which means that securities can be purchased and sold costless and instantaneously.
- Individuals can borrow and lend at the risk free rate.
- There are no bankruptcy costs.
- Corporations can only issue two types of securities, equity and risk free debt.
- All corporations are assumed to be in the same risk class.
- There are no corporate or personal income taxes.
- There is no growth, all cash flow streams are perpetuities.
- Corporate insiders and the public have the same information, no signalling opportunities.
- There is no agency cost and managers always maximise shareholders wealth.
- There are no transaction costs.
- Contracts are complete and can always be enforced. (Erickson and Hede, 2000; Xiangyu and Linlin 2005).

M&M (1958) realised that the assumptions were made unrealistically and called for them to be relaxed. *“These and other simplifications have been necessary in order to come to grips with the problem at all. Having served their purpose they can now be relaxed in the direction of greater realism and relevance, a task in which we hope others interested in this area will wish to share”*. Relaxing the unrealistic tax assumptions made in 1958 in their 1963 paper *“Corporate Income Taxes and the Cost of Capital: A correction”*, they demonstrated that in a world with corporate taxes but no bankruptcy cost, firm’s value is an increasing function of leverage.

Since the M&M theories of capital structure hinge on unrealistic assumptions as enumerated above, they remain theoretical constructs and do not have practical relevance. Many theories have emerged to explain capital structure by introducing frictions omitted in the M&M original framework. In the Static Trade-off Model, Myers (1977) identified that the costs of financial distress and tax-deductibility of debt finance generate optimal capital structure. An alternative model developed by Myers and Majluf (1984) emphasises on asymmetric information between managers and outsiders as a friction in the M&M original framework. The pecking order model by Donaldson (1961) emphasises that financing hierarchy descends from internally generated funds, to debt financing and finally to equity financing if financing needs are insufficient. Those models that seek to explain capital structure are presented next in this chapter.

2.2.2 The trade-off theory

The static trade –off hypothesis states that a firm’s optimal debt ratio is viewed as the trade –off of the cost and benefit of borrowing, holding the firm’s assets and investment plans constant. The firm is portrayed as balancing the value of the interest tax shield against various bankruptcy costs or financial embarrassment. It is supposed to substitute debt for equity or equity for debt until the value of the firm is maximised. The debt – equity trade-off is illustrated with the *figure 3.1* below. Provided there are no adjustment costs and the static trade off theory is correct, then each firm’s observed debt – to-value ratio should be its optimal ratio (Myers, 1984)

Unlike the M&M (1963) theory, which tends to say that firms should take as much debt as possible, the trade - off theory avoids extreme predictions and rationalise reasonable target leverage ratios (Brealey and Myers, 2003). A target optimal leverage ratio is reached when the marginal benefit of debt equals the marginal cost of debt (Ross *et al*, 2002). The trade off theory of capital structure however recognises that targeted leverage ratios vary from firm to firm. Firms with safe, tangible assets and huge taxable income must usually have high target leverage ratios whilst less profitable firms with risky intangible assets usually rely on equity financing (Brealey and Myers, 2003).

The debt – equity trade-off

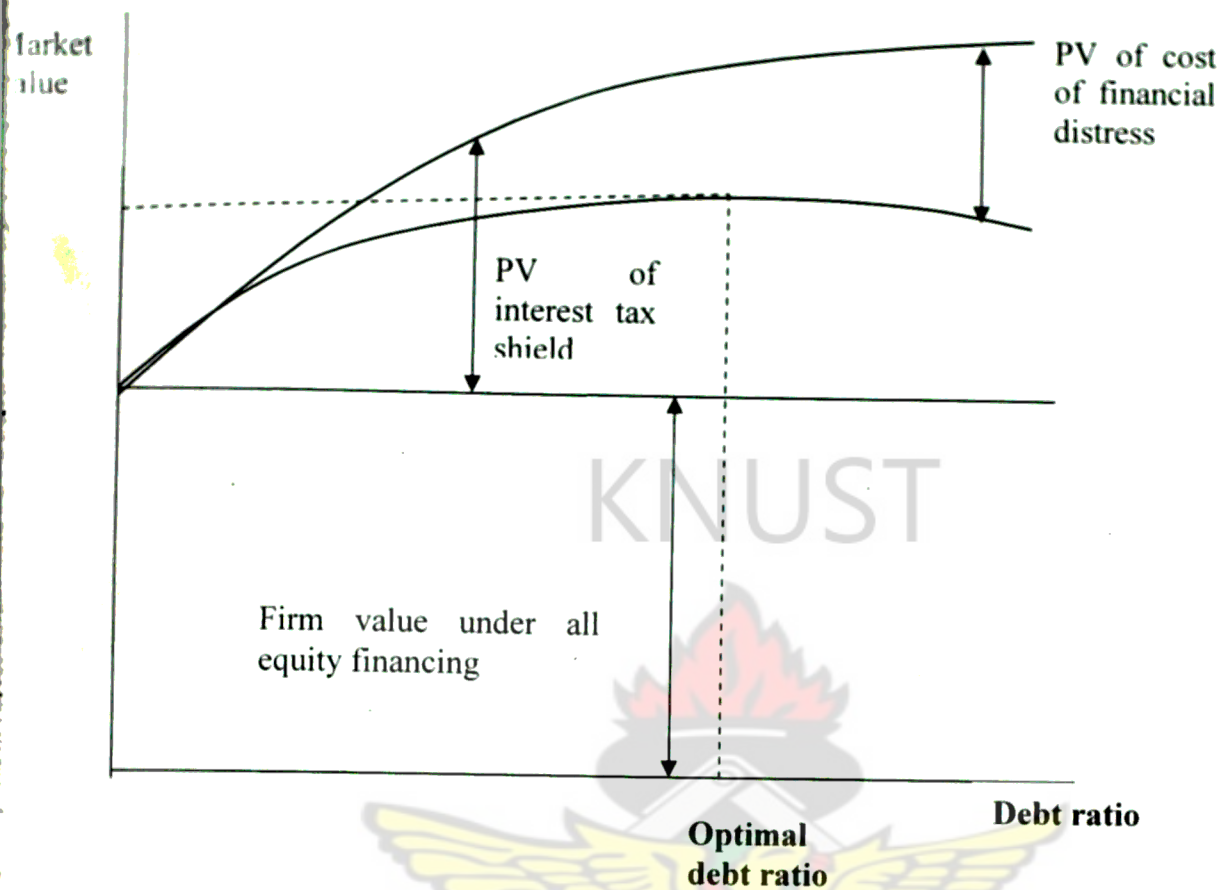


Figure 3.1 (source: Brealey and Myers, 2003)

The value of a firm can be broken down into three parts:

$$\text{Value of firm} = \text{value of all equity financed firm} + \text{PV (tax shield)} - \text{PV (financial distress cost)}$$

The figure above shows how the trade-off between the tax benefit and the cost of financial distress determine optimal capital structure. The present value (PV) of the tax shield initially increases as the firm's debt increases. At a moderate debt level, the probability of financial distress is trivial so the PV of financial distress cost is small and the tax advantage dominates. But as the firm's debt keeps increasing, the probability of

financial distress rises rapidly; the cost of distress then begins to take away a substantial proportion of the firm's value. The tax advantage from additional debt then starts to dwindle and eventually disappears. Theoretically, an optimal debt level is reached when the present value of financial distress cost due to further borrowings just offsets the increase in the present value of tax savings (Brealey and Myers, 2003).

2.2.3 Pecking order theory

The pecking order theory of capital structure has been credited to Donaldson (1961). In his study of *corporate debt policies*, he observed that, "Management strongly favoured internal generation as a source of new funds even to the exclusion of external funds except for occasional unavoidable 'bulges' in the need for funds.

This theory was given elaborate attention by Myers (1984) who stated that:

1. *Firms prefer internal finance to external finance. The rationale behind this strategy is for manager to avoid being subjected to the disciplines of the capital market. Also financial managers want to avoid the cost associated with issue of securities. Even though the cost associated with security issues are not significant enough to override the benefit associated with leverage.*
2. *They adapt their target dividend payout ratios to their investment opportunities, although dividends are sticky and target payout ratios are only gradually adjusted to shifts in the extent of valuable investment opportunities*

3. *Sticky dividend policies together with unpredictable fluctuations in profitability and investment opportunities imply that cash flow generated internally may be more or less than investment outlays. If it is less, the firm first draws down its cash balance or marketable securities portfolio.*
4. *If external finance is needed, firms issue the safest security first by starting with debt, possibly hybrid securities such as convertible bonds and finally equity.*

Brealey and Myers (2003) hold a similar opinion to Donaldson (1961) and Myers (1984). On their side of the issue, investment is first financed with internal funds (retained earnings); then by new issues of debt; and finally with the issue of equity. The basis of this theory is an assumption of information asymmetry, which means that managers know more about the company's prospects, risks and values than outsiders. They emphasised however that, new equity issues are considered as a last resort and are used only when the company runs out of debt capacity.

Kingsman and Newman (1998) identified a negative correlation between debt and corporate performance. The result of their study is consistent with Donaldson's (1961) pecking order description of how companies make their financing choices. According to their description, companies silently accumulate retained earnings, becoming less leveraged when they are profitable, and accumulate debt, becoming leveraged when they are unprofitable.

Myers (1984) pointed out that firms holding tangible assets-in-place and having active second markets will borrow less than firms holding specialised intangible assets or valuable growth opportunities. This assertion fits nicely into the pecking order theory. This is because where there are growth opportunities there is the possibility for firms to generate funds internally to finance new investments than to rely on external financing such as securities.

2.2.4 Agency Theory

Jensen and Meckling (1976); Harris and Raviv (1990); Rajan and Zingales(1995) have argue that agency costs are important determinant of firms' capital structure. Jensen and Meckling (1976) points out that the agency costs arise out of the existence of contractual agreement between two parties referred to as the Principal and agent. They identify two types of conflicts: one lies between the shareholder and the manager and the second between the debt holder and the shareholder. Conflict between shareholders and managers arise because managers do not hold 100% of the residual claim. Because managers do not capture the entire gain from their profit enhancement activities, they may transfer firm's resources to their personal benefits. Thus, consuming perquisites such as corporate jet, plush offices and building empires etc. They argue that the manager overindulge in these pursuits relative to the level that would maximise firm's value. Jensen (1986) argues that debt commits the firm to pay out cash in the form of principal and interest thereby reducing the amount of free cash flow available to managers to

engage in the type of pursuits mentioned above. The implication of Jensen's argument is that the use of debt mitigates manager inefficient operations as well as reducing the level of conflict between managers and equity holders.

Conflict between debtors and equity holders arises because the debt contract gives equity holders an incentive to invest sub-optimally i.e. investing in high risky projects. If such investment becomes successful, the equity holder captures the gain. If the investment fails, debt holders bear the consequence because of the limited liability enjoyed by the equity holders. Such investments result in a decrease in the value of the debt. As a result, equity holders may benefit from "going broke" i.e. investing in risky projects even if they are value decreasing. However, the conflict of interest could be reduced by debt holders charging higher prices for the debt capital in order to discourage the shareholders from investing in high-risk projects that may cause losses to the debt holders (Harris and Raviv, 1991).

2.2.5 Asymmetric Theorem

Information asymmetry is said to exist when insiders (managers) possess information about the characteristics of a firm's return stream or investment opportunities that outsiders do not (Harris and Raviv, 1990). As a result of the information differences that usually exist between outsiders and insiders, a firm's capital structure choice sometimes serves as a signal to the market (outsiders) on the firm's prospect or level of certainty of the future cash flow (Leyland and Pyle, 1977).

According to Ross (1977), investors interpret higher leverage as a signal of higher quality. This is because debt is a contractual obligation and managers are obliged to pay back interest and principal when due. Failure to meet this obligation can lead to bankruptcy. On the other hand, the declaration and payment of dividend to common stock holders is relatively flexible i.e. managers can use their discretion to cut down dividend in times of financial distress. Consequently, managers will only opt for debt financing when they are confident and certain about the firm's future cash flow. Another way of explaining Ross's conclusion is that management is more likely to issue stock when they believe that the firm's stock is overvalued. As a result, issuance of debt signals favourable information about the firm's future prospects than equity.

2.3 Determinants of capital structure

Since the seminal work of Modigliani and Miller in 1958, much subsequent research has been devoted to the task of finding a coherent explanation for what influences the choice of capital structure. Traditional corporate finance models such as the trade-off theory of capital structure suggest that firms choose optimal debt ratio by balancing the value of the interest tax shield against bankruptcy cost or the cost of financial distress (Myers, 1984). While there is support for this trade-off model in the empirical literature, other studies indicate that a firm's capital structure decisions are affected by several firm related

characteristics such as future growth opportunities, earnings volatility, profitability, control etc. (Titman and Wessels, 1988).

Authors such as Williamson (1988); Harris and Raviv (1990); Rajan and Zingales (1995) have explained a number of factors influencing capital structure from the perspective of asymmetry information and agency theory.

In the international context, type and size of industry, country norms and host government controls could play a significant role in determining the capital structure. For example, it has been argued that tax differentials between countries influence the way the firm is financed (Booth *et al.*, 2001). Discussed below are some of the determinants of capital structure extracted from the various literature in the finance discipline.

2.3.1 Size of the firm

Size has been viewed as a determinant of a firm's capital structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999). Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders, thus, may present lower debt ratios (Castanias, 1983). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt. Therefore, larger firms will have higher debts. Another

explanation for smaller firms having lower debt ratios is if the relative bankruptcy costs are an inverse function of firm size (Titman and Wessels, 1988). It is generally believed that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms, as shown in Prasad *et al.* (2001). Castanias (1983) also states that if the fixed portion of default costs tends to be large, then marginal default cost per dollar of debt may be lower and increase more slowly for larger firms.

Facts about larger firms may be taken as evidence that these firms are less risky (Kim and Sorensen, 1986). Cosh and Hughes (1994) add that if operational risk is inversely related to firm size, this should rather predispose smaller firms to use relatively less debt.

Empirical evidence on the relationship between size and capital structure supports a positive relationship. Several works show a positive relationship between firm size and leverage (Barclay and Smith, 1996; Friend and Lang, 1988; Barton *et al.*, 1989; MacKie-Mason, 1990; Kim *et al.*, 1998; Al-Sakran, 2001; Hovakimian *et al.*, 2004). Their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. In a Ghanaian study, Aryeetey *et al.* (1994) found that smaller enterprises have greater problems with credit than larger firms. Their results showed that the success rate for large firms applying for bank loans was higher than that of smaller firms. In a study of six African countries, Bigsten *et al.* (2000) also showed that about 64% of micro firms, 42% of small firms and 21% of medium firms appear constrained, while this is only 10% for the large firms. Cassar and Holmes (2003), Esperança *et al.* (2003), and Hall *et al.* (2004) found a positive association between firm size and long-term debt ratio, but a negative relationship between size and short-term

debt ratio. Some studies also support a negative relationship between firm size and short-term debt ratio (Chittenden et al., 1996; Michaelas et al., 1999). According to Titman and Wessels (1988), small firms seem to use more short-term finance than their larger counterparts because smaller firms have higher transaction costs when they issue long-term debt or equity. They further add that such behaviour may cause a “small firm risk effect”, by borrowing more short term. These types of firms will be more sensitive to temporary economic downturns than larger, longer-gearred firms.

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2.3.2 Non- debt tax Shields

M&M (1958) and Champion (1999) advocate that a positive relationship exists between profitability and borrowing. They argue that the primary incentive associated with borrowing is to take advantage of the interest tax shield.

However, DeAngelo and Masulis (1980) make it clear that tax deductions for depreciation and investment tax credits are substitutes for the tax benefit of debt financing. In this case, firms having large non-debt tax shields relative to their expected cash flows have less debt in their capital structures (Titman and Wessels, 1988)

Explaining the effects of non-debt tax shield on capital structure, DeAngelo and Masulis (1980) demonstrate that Miller’s irrelevance theory is sensitive to realistic situations such as modification of tax codes. They show particularly that the existence of depreciation as non-debt related tax shield is sufficient to overturn the leverage irrelevance theory of

Miller. They state however that optimal capital structure is feasible at individual firm's level.

Ross (1985) in a similar opinion argue that firms with non-debt tax shields such as depreciation deductions will have less need to exploit the tax shield associated with debt finance. He states that if firms in this position issue excessive debt, they might become "tax exhausted" in the sense that they are unable to use all their potential tax shields. In other words, debt is "crowded out" and the incentive to use debt financing diminishes as non-tax shields increase.

In a similar vein, DeAngelo and Masulis (1980) argue that the marginal corporate savings from an additional unit of debt decreases with increasing non-debt tax shields. This is because of the likelihood of bankruptcy increasing with leverage.

In contrast, Scott (1977) argue that firms having large amount of non-debt tax shields should also have considerable collateral assets that can be used to secure debt.

2.3.3 Tangibility of Assets

Rajan and Zingales (1995), Fama and French (2000) and Titman and Wessels (1988) all argue that the ratio of fixed to total assets (Tangibility) should be an important factor in the use of leverage in a firm's capital structure. According to them, tangibility represents the collateral value of the firm's gearing level. Thus tangible assets are easy to collateralise; they reduce the agency cost of debt. The implication here is that firms with

large amounts of tangible assets are expected to be highly geared. An alternative perspective taken by Berger and Udell (1998) suggests that tangibility as collateral value is not necessary important for firms that have close relationship with creditors. They argue that the relationship and more informed monitoring by creditors might substitute for physical collateral.

2.3.4 Profitability

The relationship between firm profitability and capital structure can be explained by the pecking order theory discussed above, which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less well-informed market participants (Myers, 1984). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). Murinde *et al.* (2004) observe that retentions are the principal source of finance. Titman and Wessels (1988) and Barton *et al.* (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt ratios since they are able to generate such funds from internal sources.

However, the tax trade-off model predicts that profitable firms will employ more debt since they are more likely to have a high tax burden and low bankruptcy risk. Also, profitable firms are more capable of tolerating more debt since they may be in a position

to service their debt easily and on time. Profitable firms are more attractive to financial institutions as lending prospects; therefore they can always take on more debt capital (Ooi, 1999). Scherr et al. (1993) found that start-up firms with higher anticipated profitability have higher debt to equity ratios.

Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure (Friend and Lang, 1988; Barton et al., 1989; Van der Wijst and Thurik, 1993; Chittenden et al., 1996; Jordan et al., 1998; Shyam-Sunder and Myers, 1999; Mishra and McConaughy, 1999; Michaelas et al., 1999). Cassar and Holmes (2003), Esperança et al. (2003), and Hall et al. (2004) also suggest negative relationships between profitability and both long-term debt and short-term debt ratios. Petersen and Rajan (1994), however, found a significantly positive association between profitability and debt ratio.

This study support pecking order theory. The expectation is that capital structure and profitability will relate negatively.

2.3.5 Income volatility

Researchers (DeAngelo and Masulis, (1980); Titman and Wessels, (1988) are of the view that a firm's leverage is a decreasing function of the volatility of its earning. In other words, leverage is negatively related to volatility of earnings. There are two reasons for this finding. First, investors find it very difficult to accurately forecast future earnings of firms with variable earnings; second, variability also increases the probability of default.

Both these rationales force creditors to call for premium on debt, which subsequently drives up the cost of debt and serves as disincentive for such firms to raise such funds.

2.3.6 Industry classification and product uniqueness

A number of researchers Titman (1984); Titman and Wessels (1988); Harris and Raviv (1991) have found that a firm's capital structure is affected by the uniqueness of its product. Titman (1984) articulates that, suppliers and workers of firms that produce specialised or unique products suffer relatively high cost in the event liquidation. He shows that the cost that firms can impose on their suppliers and workers in the event of liquidation are relevant when taking capital structure decisions. He concludes that for these reasons, uniqueness is expected to be negatively related to debt ratios.

Whilst Remmers et al (1974) is of the view that industry classification is not an important consideration for taking capital structure decisions, Harris and Raviv (1991), Titman and Wessels (1988) reject their claim. They argue that liquidation is costly for firms that make products requiring the availability of specialised servicing and spare parts. This indicates that firms found in this category should be financed with relatively less debt.

According to Boateng (2004) the differences between the capital structure and different industries may occur not only because of the industry but the desire to conform to local financial norms.

2.3.7 Growth Opportunities

Titman and Wessels (1988) and Jensen's (1986) argue for a negative relationship between growth opportunities and leverage. The free cash flow theory of Jensen predicts that firms with more investment opportunities have less need for the disciplining effect of debt payments to control free cash flow. Titman and Wessels state that equity controlled firms have a tendency to invest sub-optimally to expropriate wealth from the firm's bondholders to shareholders. The cost associated with this agency relationship is likely to be higher for firms in growing industries, which have more flexibility in their choice of future investments.

In contrast, Rajan and Zigales (1995) and Harris and Raviv (1991) argued for a positive relationship. Their argument was based on the pecking order theory, which indicates that debt typically grows when investments exceeds retained earnings and falls when it is less than retained earnings. Thus given a profitability level, leverage is expected to be higher for firms with more investment opportunities.

2.3.8 Age of the firm

Age refers to the numbers of years the firm has been in existence from the year of establishment. Holding other factors constant, the longer a firm stays in business, the more it is able to accumulate internally generated funds. This makes it possible for such a firm to reduce its reliance on external financing including debt. On the other hand, a

longer period of existence increases reputation and reduces the probability of bankruptcy. This therefore provides incentive to creditors to grant more loans. Leverage can, therefore, either relate negatively or positively to the age of a firm (Heshmati, 2001)

This chapter was devoted to review the views of various authors on some of the key theories on capital structure. It was revealed from the review that:

MM preposition I with taxes, pecking order theory, information asymmetry and agency theory are all in favour of debt financing as compared to equity because of its ability to create wealth. Based on this a hypothesis was formulated in favour of debt as “*the financial performance of a company is positively related to leverage*”, which will be tested empirically in the subsequent chapters.

2.4 Capital structure and firm's profitability

The relationship between capital structure and firm value has been the subject of considerable debate. Throughout the literature, debate has centered on whether there is an optimal capital structure for an individual firm or whether the proportion of debt usage is irrelevant to the individual firm's value. The capital structure of a firm concerns the mix of debt and equity the firm uses in its operation. Brealey and Myers (2003) contend that the choice of capital structure is fundamentally a marketing problem. They state that the firm can issue dozens of distinct securities in countless combinations, but it attempts to find the particular combination that maximizes market value. According to Weston and Brigham (1992), the optimal capital structure is the one that maximizes the market value of the firm's outstanding shares.

Several researchers have tested the effects of profitability on firm leverage. Friend and Lang (1988) and Kester (1986) find a significantly negative relation between profitability and debt/asset ratios. Rajan and Zingales (1995) and Wald (1999) also confirm a significantly negative correlation between profitability and leverage.

Fama and French (1998), analyzing the relationship among taxes, financing decisions, and the firm's value, concluded that the debt does not concede tax benefits. Besides, the high leverage degree generates agency problems among shareholders and creditors that predict negative relationships between leverage and profitability. Therefore, negative information relating debt and profitability obscures the tax benefit of the debt. Booth *et al.* (2001) developed a study attempting to relate the capital structure of several companies in countries with extremely different financial markets. They concluded that the variables that affect the choice of the capital structure of the companies are similar, in spite of the great differences presented by the financial markets. Besides, they concluded that profitability has an inverse relationship with debt level and size of the firm. Graham (2000) concluded in his work that big and profitable companies present a low debt rate. Mesquita and Lara (2003) found in their study that the relationship between rates of return and debt indicates a negative relationship for long-term financing. However, they found a positive relationship for short-term financing and equity.

Hadlock and James (2002) concluded that companies prefer loan (debt) financing because they anticipate a higher return. Taub (1975) also found significant positive

coefficients for four measures of profitability in a regression of these measures against debt ratio. Petersen and Rajan (1994) identified the same association, but for industries. Baker (1973), who worked with a simultaneous equations model, and Nerlove (1968) also found the same type of association for industries. Roden and Lewellen (1995) found a significant positive association between profitability and total debt as a percentage of the total buyout-financing package in their study on leveraged buyouts. Champion (1999) suggested that the use of leverage was one way to improve the performance of an organization.

2.4.1 Influence of capital structure on financial performance of insurance industry

Modigliani and Miller (1958, 1963) indicated that firm value is unrelated to capital structure and stimulated considerable discussion of this subject. Several studies found a close correlation among capital structure, operational risk and profitability. In Taiwan, Chen et al. (2004) provided evidences that capital structure and risk influence profitability for property-liability industry using by structural equation model (SEM). Chen *et al.* (2009) reported that recent research has found that there were both positive and negative effects of capital structure on the profitability of the insurance companies. Chen *et al.* (2009) however, found that capital structure exerts a significantly negative effect on profitability life insurance industry in Taiwan.

The expectation of this study therefore was that capital structure relate negatively to financial performance on the insurance industry in Ghana.

2.5 Challenges of insurance industry

Insurance is an important and growing part of the financial sector in almost all developed and some developing economies. The insurance industry primarily provides indemnification of risks faced by both individuals and companies, strengthens the linkages with other sectors of the economy in promoting growth and stability, and creates a sizeable impact on the national income of a country (Simpson and Damoah, 2009).

Insurance companies face financial crises when the underwriting capacity is reduced and the interest risk increases. The solvency of insurance companies is closely related to policyholders, and consequently policyholders should become the focus of considerable attention by regulators (Chen *et al.*, 2009).

Simpson and Damoah (2009) identified a number of challenges insurance industries in Ghana are confronted with. First, it appears that insurers in Ghana depend too much on reinsurance. The consequences may be ruinous when, for instance, the reinsurer fails. Moreover, they are exposed to underwriting, investment and liquidity risks. This is evidenced first by the non-commensurate increase in capital and net premium income. Secondly, the low returns on investments suggest investment risks. Additionally, the insurers mostly show favourable net commission balance, indicating that they pay less to their agents and brokers. This has a high likelihood of influencing especially brokers, to keep premiums collected for investments before it is paid to the insurers. This consequently affects the liquidity position of the insurers.

CHAPTER THREE

3.0 METHODOLOGY AND THE ORGANIZATIONAL PROFILES

3.1 Introduction

To examine the relationship between capital structure and the financial performance of insurance industries in Ghana, an Ordinary Least Square (Prais-Winsten regression, correlated panels corrected standard errors) regression model is use for the estimation. Return on Equity (RoE) and Return on Asset (RoA) are used as proxies for financial performance, the dependent variable are regress with leverage ratio.

Other independent variables included in the model are firm size and sales growth and they are also included as control variables.

3.2 Research data

This study sampled three firms from National Insurance Commission directory. They are State Insurance Company, Enterprise Insurance Company and Metropolitan Insurance Company. The selection of these firms was mainly based on firms for which we were able to obtain financial statements quickly and easily looking at the limited time available to complete this study. The data for the empirical analysis were derived from the financial statements of these firms during the period 2004–2008. The data consist of Balance Sheet, Income Statements, Financial ratios and other relevant information for

insurance companies. The data are available on their annual report from the year 2004 to 2008.

3.3 Research variable definition

The study uses accounting measure of performance such as Return on Assets (ROA) and Return on Equity (ROE) to operationalized financial performance. ROA and ROE are used as the dependent variables. ROA is the ratio of pre-tax profits to total assets of the firm and ROE is the ratio of post-tax profits to equity of the firm.

The explanatory variable is firm's leverage (LEV) which is measured as the ratio of total debt divided by the book value of equity. Jensen and Meckling (1976) argue that debt is a disciplining mechanism that alleviates agency problems between management and other shareholders. Included in the study are other control variables that might affect the value of firm not captured by the firm's leverage. Firm size and sales growth are included as control variables. A proxy for firm size (SIZE) is the logarithm of total assets to control for size differences across the sample firms. The firm's future investment opportunities can also affect the firm value. Growth in sales (GROWTH) is used as proxies for investment opportunities.

3.4 Data analysis model

To examine the relationship between capital structure and the financial performance of insurance industries in Ghana, panel data methodology is used. The panel character of the data allows for the use of this methodology. Panel data involve the pooling of

observations on a cross-section of units over several time periods and facilitate identification of effects that are simply not detectable in pure cross-sections or pure time-series studies. The panel regression equation differs from a regular time-series or cross section regression by the double subscript attached to each variable. The general form of the panel data model can be specified more compactly as:

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it} \quad (1)$$

The subscript i representing the cross-sectional dimension and t denoting the time-series dimension. The left-hand variable Y_{it} , represents the dependent variable in the model, which is the firm's value. X_{it} contains the set of independent variables in the estimation model, α is taken to be constant over time t and specific to the individual cross-sectional unit i . If α is taken to be the same across units, Ordinary Least Squares (OLS) provides a consistent and efficient estimate of α and β . The model takes the following form:

$$ROA_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 SG_{i,t} + e_{it}; \quad (2)$$

$$ROE_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 SG_{i,t} + e_{it}; \quad (3)$$

where:

ROA_{it} = ratio of pre-tax profits to total assets for firm i in period t ;

ROE_{it} = ratio of post-tax profits to equity for firm i in period t ;

LEV_{it} , = ratio of total debt to total capital for firm i in period t ;

$SIZE_{it}$ = log of total assets for firm i in period t ;

SG_{it} , = growth in sales for firm i in period t ;

ϵ_{it} = the error term.

The effect of firm's size and sales growth on financial performance of the insurance industries would also be established through the analysis of the outcome of regression (OLS) result. Statistical tables and graph were also used to facilitate these analyses.

Panel data methodology has been used by previous researchers (Abor, 2005; Amidu, 2007). A general model for panel data that allows the researcher to estimate panel data with great flexibility and formulate the differences in the behavior of the cross-section elements is adopted.

3.5 Organizational profile

State Insurance Company

SIC was incorporated as State Insurance Corporation by Executive Instrument in 1962 (E.I. 17). It continued in existence by the State Insurance Corporation Instrument, 1965 (LI 424), made under section 5 of the Statutory Corporations Act, 1964.

The name of the company was changed to State Insurance Corporation of Ghana by virtue of the State Insurance Corporation (Amendment) Instrument, 1969 (LI 635).

The Statutory Corporations (Conversion to Companies) Act, 1993 (Act 461) provided for a number of statutory corporations, including SIC, to be converted into companies limited by shares under the Companies Code, 1963 (Act 179) (the “Code”). SIC was duly incorporated as a public limited liability company on August 28, 1995.

SIC Insurance Company Limited is one of the oldest non-life insurance companies in Ghana. It traces its roots to the year 1955, when the Gold Coast Insurance Company was established. It was renamed Ghana Insurance Company in 1957, when Ghana attained independence.

SIC is a leading provider of general or non-life insurance products in Ghana. Its business operations cover fire, motor, marine and aviation, and accident insurance. SIC also provides specialty insurance products such as hoteliers and leisure policy, a policy for the hospitality industry. With roots dating back to 1955, the Company has been operating for more than 52 years and has developed long-standing relationships with insurance brokerage firms and some independent agents, who constitute some of its primary distribution channels.

SIC’s business is national in scope with a visible presence in all ten regions of Ghana. The Company has consistently, over the span of its business life, maintained steady market leadership. In 2006, SIC had approximately 40% of the insurance industry’s total market share.

Enterprise Insurance Company

Enterprise Insurance Company Limited (EIC) is the pioneer in the insurance industry in Ghana having been in operation since 1924. It takes its roots from the Royal Exchange Assurance Corporation of the United Kingdom, which commenced business in the Gold Coast in 1924, then became Guardian Royal Exchange Assurance Ghana Limited, (GREG) and subsequently, Enterprise Insurance Company Limited. Enterprise Insurance is a leading corporate Insurer in Fire, Marine, Motor and General Accident.

In 1972, changes were to occur in the Insurance Industry with the promulgation of the Insurance (Amendment) Decree NRCD. 95. The GREG was required to and successfully sold 40% of its equity holding to the Ghanaian public in 1973. The Guardian Royal Exchange Assurance Group, therefore, sold a further 20 percent of its shareholding to the Government of Ghana, thus reducing the GREG's shareholding to 40 per cent. Consequently the Guardian Royal Exchange Assurance (Ghana) Limited lost its subsidiary status and had its name changed to Enterprise Insurance Company Limited.

In 1990 when the Ghana Stock Exchange was established, the government released its shareholding to the public through share offering on the Exchange thus making EIC a pioneering company on the GSE and becoming the first insurance company in Ghana to be listed on the Exchange.

Metropolitan Insurance Company

Metropolitan Insurance Company Limited (MET) is wholly a Ghanaian owned insurance company operating in Ghana. The Company was incorporated in October 10, 1993 as a Composite Insurer under the name Madison Insurance Company Limited. In 1997, the company was recapitalized and its Vision and Mission redefined under a new Management Team. To reflect this new focus and aggressive outlook, the Company's name was changed from Madison to METROPOLITAN Insurance Company from 1st January 1997. MET is rated the third largest share of the insurance market in Ghana by gross premium income.



CHAPTER FOUR

4.0 DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

The purpose of this chapter was to outline and analyze the findings of the research by the use of the Prais-Winsten regression; correlated panels corrected standard errors (PCSEs). After analyzing the result findings, appropriate graphical representations with their corresponding useful comments were made.

4.2 Descriptive statistics of the industries

Table 4.1 provides a summary of the descriptive statistics of the dependent and explanatory variables. This shows the average indicators of variables computed from the financial statements. The mean Return on Assets (measured by firm pre-tax profit divided by total assets) of sampled firms was 4.839%. However, the average Return on Equity (measured by firm post-tax profit divided by equity) is 9.344%. This representation suggests a relatively low performance during the period under review. ROA is net earnings per unit of a given asset. It shows how the firms can convert its asset into net earnings. The higher ratio indicates higher ability and therefore is an indicator of better performance. Thus GH¢100 of asset the firms employed generated an average net earnings of GH¢4.80 for the three insurance companies. This figure at first sight seems low however, at a glance ROE seem to be a little improved. The ROE measures the contribution of net income per cedi (local currency) invested by the firms' stockholders; a

measure of the efficiency of the owners' invested capital. Thus for every GH¢100 of owners' capital invested generated an average of GH¢9.30 for the shareholders of the three insurance companies. These figures need to be compared to that of other developing economy.

The variable leverage (LEV) measures the ratio of debt to book value of equity. This indicates the firms' level of debt in relation to their owners' equity. The average value of this variable is 0.1483. The value 0.1483 indicates that approximately 15 percent of insurance firms' capital is financed by debts, indicating that the sampled insurance firms depend less on debt to finance its operations. This seems to be consistence with standard practice as insurance industries depend on premiums collected from clients. The firm size (SIZE), determined as the natural logarithm of total assets has a mean of 7.452. The average growth rate in sales (SG) is 19.825%. Using sales growth as proxies for future investment opportunities, one can deduce that there was 20% average growth in investment of the insurance companies during the period under review.

Table 4.1: Descriptive statistics of the insurance companies

Variables	observation	Mean	Std. Dev.	Min	Max
ROA	15	4.838667	5.032354	-9.4	14.7
ROE	15	9.344	19.92028	-57.5	33.9
LEV	15	.1482667	.1008078	.02	.327
SIZE	15	7.452088	.4812496	6.774822	8.325461
GROWTH	15	19.82533	14.1233	0	44.94

Source: Calculated from SIC, EIC and MET financial statements, 2004 – 2008

4.3 Profitability and leverage of the individual firms

State Insurance Company

Table 4.2 below shows the return on asset, return on equity and leverage ratios of the State Insurance Company for the five-year period being studied. Return on asset and return on equity as used in this study is expressed as firm pre-tax profit divided by total assets and firm post-tax profit divided by equity respectively. Also the company leverage as used in this analysis is defined as the ratio of debt to book value of equity. In 2004, the return on asset was 3.08% and it rose to 4.2% in 2008. The return on equity in 2004 was 6.44% and it rose to 13.39%. SIC leverage position saw a downward trend. In 2004, the company leverage position was 16.8%. This decrease to 5.4% in 2008 and this may seem a healthy sign based on pecking order theory which indicates that firms need to rely first on internally generated fund for investment. Gordon growth model [$S_n = S_0(1 + g)^t$] was used to established the annual growth rate. The annual growth rate for return on asset is 6% and that of return on equity is 15.8%. The annual growth for the profitability figures for the period under reviewed saw an upward trend. However, the leverage position saw a negative annual growth rate of -20.3%. The negative growth of the leverage position shows that the company has been reducing its debt finance relative to its shareholders' equity.

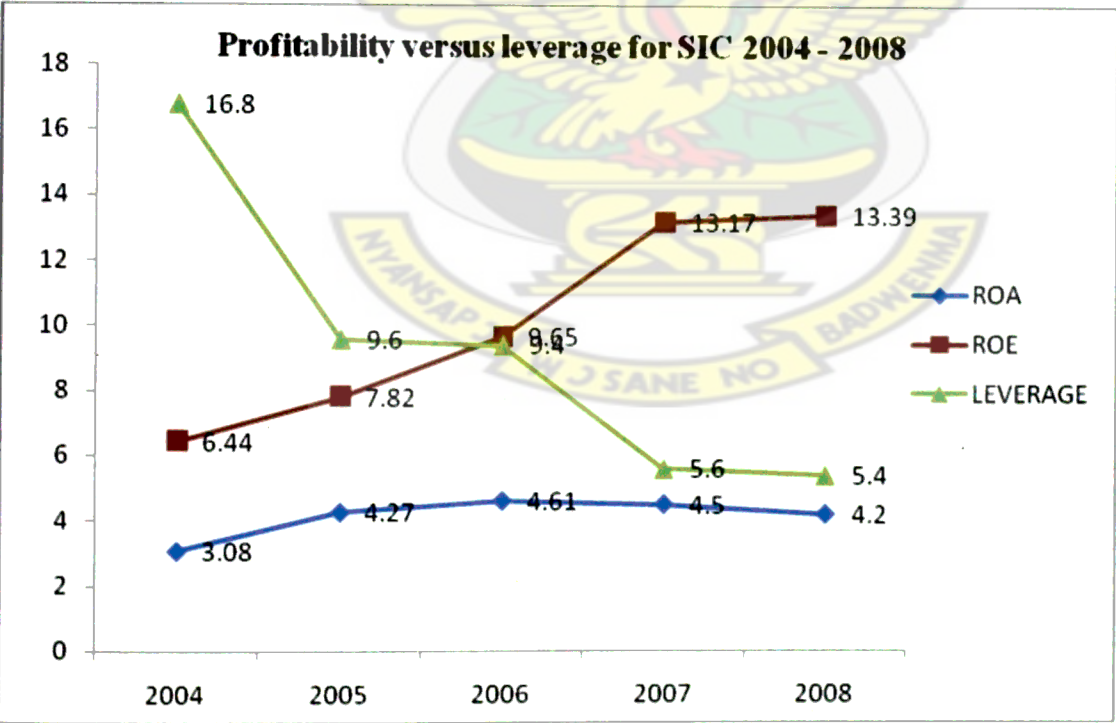
Table 4.2 Annual profitability and leverage figures (%) for SIC

YEAR	ROA	ROE	LEVERAGE
2004	3.08	6.44	16.8
2005	4.27	7.82	9.6
2006	4.61	9.65	9.4
2007	4.5	13.17	5.6
2008	4.2	13.39	5.4

Source: Calculated from SIC financial statements, 2004 – 2008

Figure 4.1 shows a line graph interaction of return on asset, return on equity and leverage SIC.

Figure 4.1 Line graph of profitability and leverage of SIC



Source: Constructed from table 4.2

Enterprise Insurance Company

Table 4.3 below shows the return on asset, return on equity and leverage ratios of the Enterprise Insurance Company for the five-year period being studied. In 2004, the return on asset was 4.65% and it rose to 7.35% in 2008. The return on equity in 2004 was 8.09% and it rose to 16.42%. Using Gordon growth model, the annual growth rate for return on asset is 9.58% and that of return on equity is 15.2%. The company's leverage position saw a downward movement. In 2004, the company's leverage position was 23% and it decreases to 19.4%. The leverage annual growth rate was -3.3%.

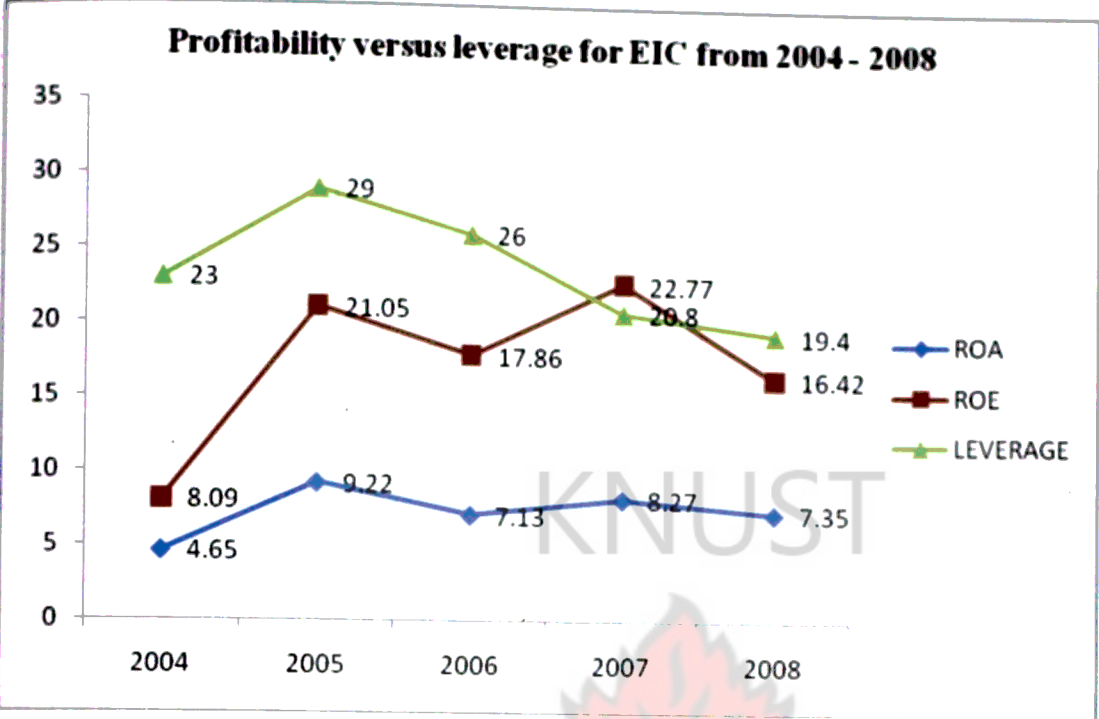
Table 4.3 Annual profitability and leverage figures (%) for EIC

YEAR	ROA	ROE	LEV
2004	4.65	8.09	23
2005	9.22	21.05	29
2006	7.13	17.86	26
2007	8.27	22.77	20.8
2008	7.35	16.42	19.4

Source: Calculated from EIC financial statements, 2004 – 2008

Figure 4.2 shows a line graph interaction of return on asset, return on equity and leverage of EIC.

Figure 4.2 Line graph of profitability and leverage of EIC



Source: Constructed from table 4.3

Metropolitan Insurance Company (MET)

Table 4.4 below shows the return on asset, return on equity and leverage ratios of the Metropolitan Insurance Company for the five-year period being studied. In 2004, the return on asset was 2.7% and it rose to 14.7% in 2008. The return on equity in 2004 was 8.4% and it rose to 33.9%. The annual growth rate for return on asset is 40.3% and that of return on equity is 32.2%. This shows an upward trend of the company's profitability. The company's leverage position saw a downward movement. In 2004, the company's leverage position was 2.5% and it decreases to 2%. The leverage annual growth rate was -4.4%.

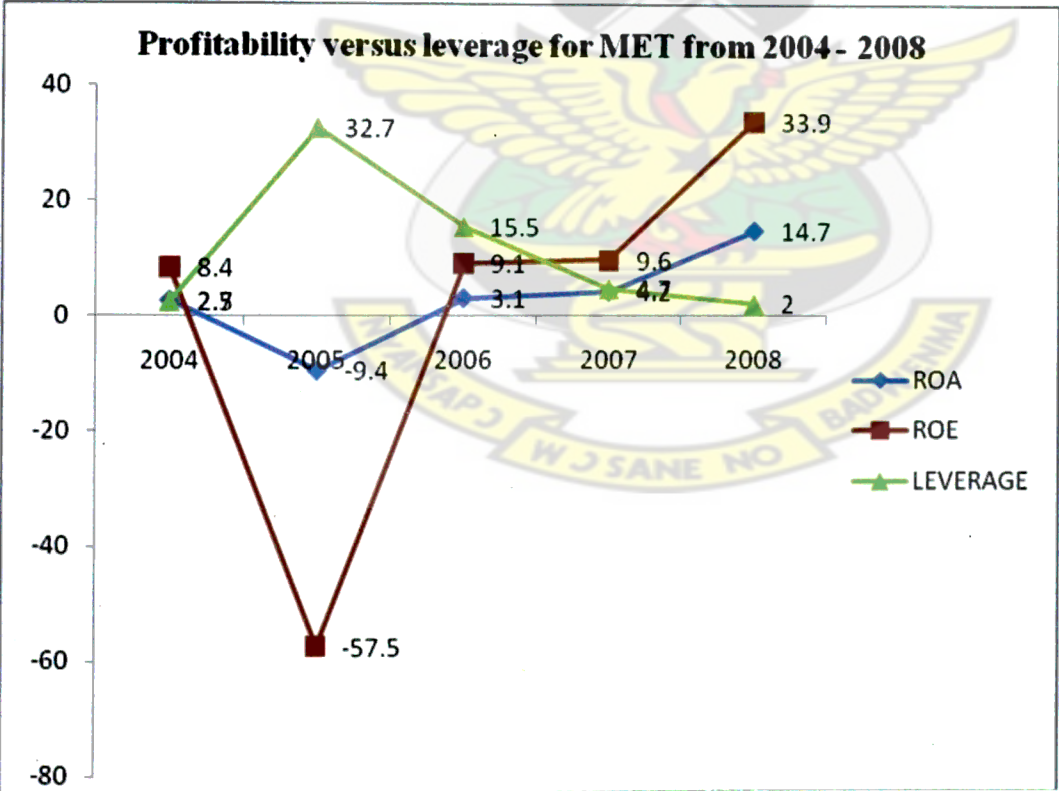
Table 4.4 Annual profitability and leverage figures (%) for MET

YEAR	ROA	ROE	LEVERAGE
2004	2.7	8.4	2.5
2005	-9.4	-57.5	32.7
2006	3.1	9.1	15.5
2007	4.2	9.6	4.7
2008	14.7	33.9	2

Source: Calculated from MET financial statements, 2004 – 2008

Figure 4.3 shows a line graph interaction of return on asset, return on equity and leverage.

Figure 4.3 Line graph of profitability and leverage of MET



Source: Constructed from table 4.4

4.3 Correlation Analysis

To fulfil the assumptions underlying the usage of regression (linear model) in analyzing the data, ROA and ROE (dependent variables) was transformed by using the logarithm and square root transformation respectively and this ensured the normal distribution of residues. The test for normality was conducted using the kernel density graph and the resulted graph shown in appendix 2 figure 1 and 2. The linearity of dependent and independent variables was checked using correlaton matrix. The regression model used , Comtemporaneous correlation (Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)) took care of Constant variances of residuals (homoscedecity). Finally Variance Inflation Factor (VIF) values (and $1/VIF$ values, also called tolerances) was used in this analysis to test for multicollinearity.

Table 4.5a and 4.5b are the tables of correlations. From the tables it can be observed that there is a positive correlation between the dependent variables (ROA and ROE) and the three covariates: leverage, size and sales growth. There is a negative correlation between leverage and size of the firm. This outcome is inconsistence with literature. The leverage however, has a positive correlation with sales growth. This finding is contrary to Titman and Wessels (1988) and Jensen's (1986) which argue for a negative relationship between growth opportunities and leverage. Rather this outcome support findings of Rajan and Zigales (1995) and Harris and Raviv (1991). They argued for a positive relationship. Their argument was based on the pecking order theory, which indicates that debt typically grows when investments exceeds retained earnings and falls when it is less than

retained earnings. Thus given a profitability level, leverage is expected to be higher for firms with more investment opportunities (Drobetz and Fix, 2003).

The low magnitude of the correlation coefficients among the covariates may indicate the absence of multi-collinearity. However, as a robustness check, the test for multi-collinearity using Variance Inflation Factor (VIF) values (and 1/VIF values, also called tolerances) was conducted. A general rule of thumb is that a VIF in excess of 20, or a tolerance of 0.05 or less may be worthy of further investigation. Considering table 4.6, it is not worth investigating this because the VIF and Tolerance are neither in excess of 20 nor less than 0.05. Hence the covariates assumed to be non – multicollinear.

Table 4.5a: Correlation of Covariates

	ROA	LEV	SIZE	GROWTH
ROA	1.0000			
LEV	0.2761	1.0000		
SIZE	0.0428	-0.0688	1.0000	
GROWTH	0.5218	0.2806	0.1515	1.0000

Table 4.5b: Correlation of Covariates

	ROE	LEV	SIZE	GROWTH
ROE	1.0000			
LEV	0.1210	1.0000		
SIZE	0.0126	-0.0688	1.0000	
GROWTH	0.4155	0.2806	0.1515	1.0000

Table 4.6: Table of Variance Inflation Factor

Variable	VIF	1/VIF
size	4.35	0.230062
lev	3.59	0.278569
growth	3.22	0.310592
Mean VIF	3.72	

4.4 Regression results

Table 4.7 report regressions results between the dependent variable and explanatory variables. The R^2 in the regression model (2) indicates that 68.73 percent of the firms' return on assets is explained by the variables in the model. The F-statistics (prob > chi 2) in both model prove the efficiency of the estimated models.

Table 4.7: Result of regression - $ROA_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 SG_{i,t} + e_{it}$

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

Group variable: index	Number of obs	=	14
Time variable: year	Number of groups	=	3
Panels: correlated (unbalanced)	Obs per group: min	=	4
Autocorrelation: panel-specific AR(1)	avg	=	4.666667
Sigma computed by casewise selection	max	=	5
Estimated covariances	=	6	R-squared = 0.6873
Estimated autocorrelations	=	3	Wald chi2(3) = 31.31
Estimated coefficients	=	4	Prob > chi2 = 0.0000

Panel-corrected						
roa	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lev	-1.223012	1.74083	-0.70	0.482	-4.634976	2.188952
size	.1614302	.2610411	0.62	0.536	-.3502009	.6730614
growth	.0131396	.0026001	5.05	0.000	.0080435	.0182356
_cons	.3106598	2.055508	0.15	0.880	-3.718062	4.339382
rhos = .559156 .7176333 -.1580503						

The result in regression (2) reveal a negative relationship and statistically insignificant between leverage and profitability (return on asset). The negative relationship confirms expectations of this study. This suggests that debt tends to be more expensive, and therefore firms employing high proportion of debt with a relatively high interest rate will lead to low profit levels. The results support earlier findings by Chen *et al.* (2009). They found that capital structure exerts a significantly negative effect on profitability life insurance industry in Taiwan which supports pecking order theory.

The control variables in the model exhibited positive relationship with profitability and this is in line with expectations. The results show that the coefficient of firm size is positive and statistically insignificant for the panel data estimations. The results seem to suggest that, insurance industries, size necessarily influence their return on assets. The positive association of firm's size and return on assets indicates that, increasing size is associated with increasing profitability. This position seems to support with literature.

Growth in sales (premiums) is used as proxy for the firm's future prospects and investment opportunities. The variable is found to have statistically significant positive associations with profitability. This is indicative of the fact that, growing insurance firms have a prospect of generating more returns for it owners. This is also consistent with findings by Amidu (2007).

Table 4.8: Result of regression - $ROE_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 SG_{i,t} + e_{it}$

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

Group variable: index		Number of obs	=	14
Time variable: year		Number of groups	=	3
Panels: correlated (unbalanced)		Obs per group: min	=	4
Autocorrelation: panel-specific AR(1)		avg	=	4.666667
Sigma computed by casewise selection		max	=	5
Estimated covariances	= 6	R-squared	=	0.9080
Estimated autocorrelations	= 3	Wald chi2(3)	=	14.65
Estimated coefficients	= 4	Prob > chi2	=	0.0021

	Panel-corrected					
ro	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lev	-3.312452	2.418394	-1.37	0.171	-8.052417	1.427512
size	.283557	.4177738	0.68	0.497	-.5352647	1.102379
growth	.0208237	.0061828	3.37	0.001	.0087057	.0329418
_cons	1.601167	3.206902	0.50	0.618	-4.684246	7.88658
rhos = .5880214 .5522283 -.9611628						

To check the robustness of the results in the model, regression equation 3 was constructed. The return on equity is regressed against the three explanatory variables. Table 4.8 shows result of regression model. The R² in the regression model indicates that 90.8 percent of the return on equity in the model is explained by the variables in the model. The result of regression (3) also indicates a negative association but statistically insignificant between leverage and profitability (return on equity). This finding is similar to earlier result. Again, this may suggests that profitable firms depend less on debt and more on equity finance or retained earnings as their main financing option. This may supports the theory of pecking order. The control variables (firm size and sale growth) in the model exhibited similar relationship with profitability as in model (2).

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

The last chapter outlined the research findings with their corresponding comments. In this chapter, the research findings are summarized after which appropriate recommendations are made.

5.2 Summary of findings

The mean Return on Assets (measured by firm pre-tax profit divided by total assets) of sampled firms was 4.839%. However, the average Return on Equity (measured by firm post-tax profit divided by equity) is 9.344%. ROA is net earnings per unit of a given asset. It shows how the firms can convert its asset into net earnings. The higher ratio indicates higher ability and therefore is an indicator of better performance. Thus GH¢100 of asset the firms employed generated an average net earnings of GH¢4.80 for the three insurance companies. The ROE measures the contribution of net income per cedi (local currency) invested by the firms' stockholders; a measure of the efficiency of the owners' invested capital. Thus for every GH¢100 of owners' capital invested generated an average of GH¢9.30 for the shareholders of the three insurance companies. These figures need to be compared to that of other developing economy. The variable leverage measures the ratio of debt to book value of equity. The average value of this variable is 0.1483. The value 0.1483 indicates that approximately 15 percent of insurance firms' capital is financed by debts, indicating that the sampled insurance firms depend less on

debt to finance its operations. The firm size, determined as the natural logarithm of total assets has a mean of 7.452. The average growth rate in sales is 19.825%. Using sales growth as proxies for future investment opportunities, one can deduce that there was 20% average growth in investment of the insurance companies during the period under review.

However, on the individual company basis the following profitability and leverage position trend were found:

State Insurance Company

The company profitability saw an upward movement. The return on asset in 2004 was 3.08% and it rose to 4.2% in 2008. The return on equity in 2004 was 6.44% and it rose to 13.39%. The company leverage position saw a downward trend. In 2004, the company leverage position was 16.8%. This decreases to 5.4% in 2008. The annual growth rate for return on asset is 6% and that of return on equity is 15.8%. However, the leverage position saw a negative annual growth rate of -20.3%. The negative growth of the leverage position shows that the company has been reducing its debt finance relative to its shareholders' equity.

Enterprise Insurance Company

The Company achieved an upward trend in profitability figures. In 2004, the return on asset was 4.65% and it rose to 7.35% in 2008. The return on equity in 2004 was 8.09% and it rose to 16.42%. The annual growth rate for return on asset is 9.58% and that of return on equity is 15.2%. The company's leverage position saw a downward movement.

In 2004, the company's leverage position was 23% and it decreases to 19.4%. The leverage annual growth rate was -3.3%.

Metropolitan Insurance Company

In 2004, the return on asset was 2.7% and it rose to 14.7% in 2008. The return on equity in 2004 was 8.4% and it rose to 33.9%. The annual growth rate for return on asset is 40.3% and that of return on equity is 32.2%. This shows an upward trend of the company's profitability. The company's leverage position saw a downward movement. In 2004, the company's leverage position was 2.5% and it decreases to 2%. The leverage annual growth rate was -4.4%.

To establish the relationship between leverage and financial performance of the insurance industry of Ghana regression model (2) and (3) were constructed. Prais-Winsten regression, correlated panels corrected standard errors (PCSEs) was therefore used to established the relationship. The F-statistics ($\text{prob} > \chi^2$) in both model prove the efficiency of the estimated models. The R^2 in the regression model (2) indicates that 68.73 percent of the firms' return on assets is explained by the variables in the model while R^2 in the regression model (3) indicates that 90.8 percent of the firms' return on equity is explained by the variables in the model.

Relationship between Leverage and Financial Performance

The analysis of the empirical data as carried out has revealed that there is a negative relationship between financial performance and leverage. This is because the regression analysis conducted on all the two performance indicators (return on asset and return on

equity) relate negatively with leverage. The magnitude of the coefficient of the leverage in both model suggest that leverage has a greater influence on profitability compared to other covariates. Leverage had a magnitude of -1.223012 in regression model (2). It implied that a unit increase in firms' leverage will reduce their financial performance by 1.223012 times. Also the -3.312452 magnitude of the coefficient of leverage in regression model (3) implied that a unit increase in firms' leverage will reduce their return on equity by 3.312452 times. However, the significance test at 0.05 indicated that statistically the leverage is insignificant in predicting the financial performance of the insurance firms sampled for the study. This observation conforms to the expectation of this study.

Effect of size of firms on profitability

The regression analysis outcome indicated positive relationship between the size of firm and financial performance in both model. This means that increase in size of the insurance firms will increase in their financial performance. In terms of the strength of the relationship, the magnitude of coefficient of the size exerts more influence than the growth. Looking at the regression model, a unit increase of firms' size will increase their return on asset by 0.1614302 times and that of return on equity will increase by 0.283557 times. However, the relationship is statistically insignificant.

Effect of sales growth on profitability

Growth in sales used as proxy for the firm's future prospects and investment opportunities was found to relate positively both with return on asset and return on

equity. It was also found that sales growth exerts least influence on the profitability in the firms among the covariates considered. It can deduce that a unit increase of sales growth will increase return on asset by 0.0131396 times and that of return on equity will increase by 0.0208237 times. Nonetheless, sales growth is only covariate that exhibited statistically significant in predicting the financial performance of the insurance firms sampled for the study.

5.3 Recommendations

The data analyzed in this study, were from the financial statements contain in the annual reports of the three insurance companies from 2004 to 2008.

The analysis has produced some interesting results and one avenue for future research is to extend the investigation to other emerging markets, especially those in the sub region. The incentives for further research on other emerging markets come from the limitation of the studies which currently exist. Further research that will replicate these studies using more comprehensive and representative samples of firms from Ghana would shed more light on issues raised in this study and other related studies. Also, research needs to be done to test the determinants of capital structure of the insurance industry in Ghana.

The insurance industry in Ghana is still in the growth stage as the industry is expanding at an increasing rate (growth of the size of individual firm confirm this). The intense competition is creating opportunities for growth. And competition will further heighten especially with the increasing presence of regional insurance firms. The industry focus

should be on promotion and education to collect more premiums which may translate to good financial performance.

Notwithstanding, the following are some suggested recommendations as a follow-up of the study:

1. The industry should use or rely on internally generated funds or retained earnings as a source of fund for expansion and future investment. Where external or additional fund is unavoidable the firms should employ or explore less debt finance with less interest rate since debt finance has a likelihood of impacting negatively on profitability.
2. The insurance firms Ghana should increase in size by acquiring more assets for its operation. This is imperative if the industry is to grow and perform well financially among the sub region.
3. The industry should embark on promotions, advertisement and educational campaigns to increase its premium collection. This may improve their financial performance.

5.4 Concluding Remarks

The study seeks to examine the relationship between capital structure and financial performance of insurance industries in Ghana. The results show negative relationship but statistically insignificant between financial performance and capital structure. The result also shows positive but statistically insignificant relationship between financial performance and firm size. However, the result shows statistically significant positive relationship between growth in sales (premium) and financial performance.

Moreover, on the individual firm basis, SIC annual growth rate for return on asset is 6% and that of return on equity is 15.8% during the period under review. However, its leverage position saw a negative annual growth rate of -20.3%. EIC annual growth rate for its return on asset is 9.58% and that of return on equity is 15.2%. The leverage annual growth rate was -3.3%. And finally, MET annual growth rate for return on asset is 40.3% and that of return on equity is 32.2%. The leverage annual growth rate was -4.4%.



REFERENCES

- Abor, J. (2005), "The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana". *The Journal of Risk Finance*, Vol. 6 No. 5, 2005 pp. 438-445
- Abor J. (2007), "Industry classification and the capital structure of Ghanaian SMEs" *Studies in Economics and Finance* Vol. 24 No. 3, pp. 207-219
- Abor J. (2008) *Determinants of the Capital Structure of Ghanaian Firms*: AERC Research Paper 176 African Economic Research Consortium, Nairobi
- Al-Sakran, S.A. 2001. "Leverage determinants in the absence of corporate tax system: The case of non-financial publicly traded corporations in Saudi Arabia". *Managerial Finance*, 27(10/11): 58–86.
- Amidu Mohammed. 2007. "Determinants of capital structure of banks in Ghana: an empirical approach" *Baltic Journal of Management* Vol. 2 No. 1, pp. 67-79
- Aryeetey, E., A. Baah-Nuakoh, T. Duggleby, H. Hettige and W.F. Steel. 1994. *Supply and Demand for Finance of Small-Scale Enterprises in Ghana*. World Bank Discussion Paper No. 251. The World Bank, Washington, D.C.
- Baker, S.H. (1973), "Risk, leverage and profitability: an industry analysis", *Review of Economics and Statistics*, Vol. 55, pp. 503-7.
- Barclay, Michael J. and Clifford W. Smith, Jr. 1996. "On financial architecture: Leverage, maturity and priority". *Journal of Applied Corporate Finance*, 8: 4–17.
- Barton, S.L., C.H. Ned and S. Sundaram. 1989. "An empirical test of stakeholder theory predictions of capital". *Financial Management*, 18(1): 36–44.

Berger, A.N. and G.F. Udell. 1998. "The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle". *Journal of Banking and Finance*, 22: 613–73.

Bigsten A., P. Collier, S. Dercon, M. Fafchamps, B. Guthier, J.W. Gunning, M. Soderbom, A. Oduro, R. Oostendorp, C. Patillo, F. Teal and A. Zeufack. 2000. "Credit constraints in manufacturing enterprises in Africa". Working Paper WPS/2000. Centre for the Study of African Economies, University of Oxford, Oxford.

Boateng, A. (2004), "Determinants of capital structure. Evidence from international joint ventures in Ghana", *International Journal of Social Economics*, Vol. 31 Nos 1/2, pp. 56-66.

Brealey, R.A. and Myers, S.C. (2003), *Principles of Corporate Finance*, international ed., McGraw-Hill, Boston, MA.

Booth, L., V. Aivazian, A. Demirguc-Kunt and V. Maksimovic. 2001. "Capital structures in developing countries". *Journal of Finance*, 55(1): 87–130.

Cassar, G. and S. Holmes. 2003. "Capital structure and financing of SMEs: Australian evidence". *Journal of Accounting and Finance*, 43: 123–47.

Castanias, R. 1983. "Bankruptcy risk and optimal capital structure". *The Journal of Finance*, 38: 1617–35.

Champion, D. 1999. Finance: The joy of leverage. *Harvard Business Review*, July/August, 19-22

Chen, J. S., Chen, M. C., Chen, W. J. and Chen, T. H. (2009), "Influence of capital structure and operational risk on profitability of life insurance industry in Taiwan".

Journal of Modelling in Management, Vol. 4 No. 1, pp. 7-18

Chittenden, F., G. Hall and P. Hutchinson (1996), "Small firm growth, access to capital markets and financial structure: Review of issues and an empirical investigation". *Small Business Economics*, 8: 59–67.

Cobham, D. and R. Subramaniam. 1998. "Corporate finance in developing countries: New evidence for India". *World Development*, 26(6): 1033–47.

Cosh, A. and A. Hughes. 1994. "Size, financial structure and profitability: U.K. companies in the 1980s". In A. Hughes and D.J. Storey, eds., *Finance and the Small Firm*. London: Routledge.

DeAngelo, H. and R.W. Masulis. 1980. "Optimal capital structure under corporate and personal taxation". *Journal of Financial Economics*, 8: 3–29.

Donaldson Gordon, 1961, *A study of corporate debt policy and the determination of corporate debt capacity*, Harvard University Pg.67

Esperança, J.P., P.M.G. Ana and A.G. Mohamed. 2003. "Corporate debt policy of small firms: An empirical (re)examination". *Journal of Small Business and Enterprise Development*, 10(1): 62–80.

Eriksson and Hede, 1999, *Optimal capital structure*, Handelshögskolan vid Göteborgs University.

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

Fama, E. F. and K. R. French, 2000, Testing tradeoff and pecking order predictions about

dividends and debt, Working paper (University of Chicago, Chicago, Illinois).

Friend, I. and H.P. Lang. 1988. "An empirical test of the impact of managerial self-interest on corporate capital structure". *Journal of Finance*, 43: 271–81.

Graham, J.R. (2000), "How big are the tax benefits of debt?", *Journal of Finance*, Vol. 55, pp. 1901-41.

Green, C.J., P. Kimuyu, R. Manos and V. Murinde. 2002. *How Do Small Firms in Developing Countries Raise Capital? Evidence from a Large-Scale Survey of Kenyan Micro and Small Scale Enterprises*. Economic Research Paper No. 02/6. Centre for International, Financial and Economics Research, Department of Economics, Loughborough University.

Hadlock, C.J. and James, C.M. (2002), "Do banks provide financial slack?", *Journal of Finance*, Vol. 57, pp. 1383-420.

Hall, G.C., P.J. Hutchinson and N. Michaelas. 2004. "Determinants of the capital structures of European SMEs". *Journal of Business Finance and Accounting*, 31(5/6): 711–28.

Harris M. and Raviv A, 1990, Capital structure and the informational role of debt, *Journal of finance*, vol 45, 321 – 345

Harris M. and Raviv A., 1991, The theory of capital structure, *Journal of finance*, vol. 46, 297 – 355

Heshmati, A. 2001. "The dynamics of capital structure: Evidence from Swedish micro and small firms". *Research in Banking and Finance*, 2: 199–241.

Hovakimian, A., G. Hovakimian and H. Tehranian. 2004. "Determinants of target capital structure: The case of dual debt and equity issues". *Journal of Financial Economics*, 71: 517–40.

Jensen, Michael C, 1986, Agency cost of free cash flow, Corporate finance and take over, *American Economic Review* 76, 323 – 329

Jensen, M. and Meckling, W. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3, pp. 305-60.

Jordan, J., J. Lowe, and P. Taylor. 1998. "Strategy and financial policy in U.K. small firms". *Journal of Business Finance and Accounting*, 25(1): 1–27.

Kester, W.C. 1986. "Capital and ownership structure. A comparison of United States and Japanese manufacturing corporations". *Financial Management*, 15: 5–16.

Kim, W.S. and E.H. Sorensen. 1986. "Evidence on the impact of the agency costs of debt on corporate debt policy". *Journal of Financial and Quantitative Analysis*, 21: 131–43.

Kim, C., D.C. Mauer, and A.E. Sherman. 1998. "The determinants of corporate liquidity: Theory and evidence". *Journal of Financial and Quantitative Analysis*, 33: 335–59.

Kinsman .M and Newman.J, 1998 Debt tied to lower firm performance, *The Graziadio Business Report*, Pepperdine University.

Leland H. and Pyle D, 1977, Informational Asymmetries, financial structure and financial intermediation, *Journal of finance* Vol. 32, 371-387

MacKie-Mason, J.K. 1990. "Do taxes affect corporate financing decisions?" *The Journal of Finance*, 45: 1471–93.

Mesquita, J.M.C. and Lara, J.E. (2003), "Capital structure and profitability: the Brazilian case", Academy of Business and Administration Sciences Conference, Vancouver, July 11-13.

Michaelas, N., F. Chittenden and P. Poutziouris. 1999. "Financial policy and capital structure choice in UK SMEs: Empirical evidence from company panel data". *Small Business Economics*, 12: 113–30.

Mishra, C.S. and D.L. McConaughy. 1999. "Founding family control and capital structure: The risk of loss of control and the aversion to debt". *Entrepreneurial Theory and Practice*, 23: 53–64.

Modigliani, F. and Miller, M. (1958), "The cost of capital, corporate finance and the theory of investment", *American Economic Review*, Vol. 48, pp. 261-97.

Murinde, V., J. Agung and A.W. Mullineux. 2004. "Patterns of corporate financing and financial system convergence in Europe". *Review of International Economics*, 12(4): 693–705.

Myers, S.C. 1977. "Determinants of corporate borrowing". *Journal of Financial Economics*, 5(5): 147–75.

Myers, S.C. 2001. "Capital structure". *Journal of Economic Perspectives*, 15(2): 81–102.

Myers, S.C. and N.S. Majluf. 1984. "Corporate financing and investment decisions when firms have information that investors do not have". *Journal of Financial Economics*, 13: 187–221.

Nerlove, M. (1968), “Factors affecting differences among rates of return on investments in individual common stocks”, *Review of Economics and Statistics*, Vol. 50, pp. 312-31.

Ooi, J. 1999. “The determinant of capital structure: Evidence on UK property companies”. *Journal of Property Investment and Finance*, 17(5): 464–80.

Petersen, M.A. and R.G. Rajan. (1994). “The benefits of lending relationships: Evidence from small business data”. *The Journal of Finance*, 49(1): 3–38.

Philips A.P and Sipahioglu M.A, (2004) Performance implications of capital structure, *The Service Industry Journal*, Vol 24, 31 – 51

Prasad, S., C. Green and V. Murinde. (2001). “Corporate financial structures in developing economies: Evidence from a comparative analysis of Thai and Malay corporations”. Working Paper Series, Paper No 35. Finance and Development Research Programme, University of Manchester, Manchester.

Rajan, R and Zingales, L. (1995) What do we know about capital structure, *Journal of finance*, vol 50, 1421 – 1460

Roden, D.M. and Lewellen, W.G. (1995), “Corporate capital structure decisions: evidence from leveraged buyouts”, *Financial Management*, Vol. 24, pp. 76-87.

Ross S. A, (1977), The determination of financial structure: The incentive signalling approach, *The bell Journal of Economics* Vol. 8, 23-40

Ross S, (1985) Debt and Taxes and Uncertainty, *Journal of finance*, vol 40, 637 – 657

Ross, Westerfield and Jaffe, (2002) *Corporate Finance*, 6th ed. : McGraw- Hill

Remmers, L., Stonehill, A. and Wright, R. (1974), "Beekhuisen industry size as debt ratio determinants in manufacturing internationally", *Financial Management*, pp. 24-32, (summer).

Scherr, F.C., T.F. Sugrue and J.B. Ward. (1993). "Financing the small firm start-up: Determinants of debt use". *The Journal of Small Business Finance*, 1(1): 17-36.

Scott, J .H, (1977) Bankruptcy, secured debt and optimal capital structure, *Journal of finance*, vol, 32, 1 – 19

Simpson, S. N. Y. and Damoah, O. B. O. (2009). An Evaluation of Financial Health of Non-Life Insurance Companies of Developing Countries: The Case of Ghana. *The Icfai University Journal of Risk & Insurance*, Vol. VI, No. 1 page 30 – 49

Singh, A. (1995). *Corporate Financial Patterns in Industrializing Economies: A Comparative Study*. IFC Technical Paper No. 2. International Finance Corporation, Washington, D.C.

Singh, A. and J. Hamid, (1992). *Corporate Financial Structures in Developing Countries*. IFC Technical Paper No. 1. International Finance Corporation, Washington, D.C.

Taub, A.J. (1975), "Determinants of the firm's capital structure", *Review of Economics and Statistics*, Vol. 57, pp. 410-16.

Titman .S. and Wessels R, (1988) The determinants of capital structure choice, *Journal of finance* vol 43, 1-19

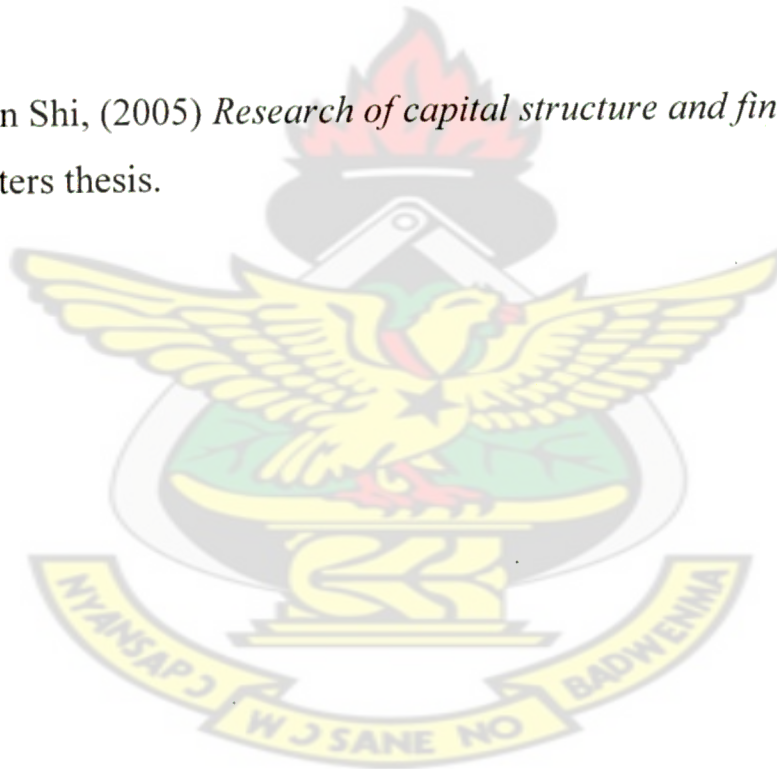
Van der Wijst, N. and R. Thurik. (1993). "Determinants of small firm debt ratios: An analysis of retail panel data". *Small Business Economics*, 5(1): 55-65

Wald, J.K. (1999). “How firm characteristics affect capital structure: An international comparison”. *Journal of Financial Research*, 22: 161–87

Weston, J.F. and Brigham, E.F. (1992), *Essentials of Managerial Finance*, The Dryden Press, Hinsdale, IL.

Williamson Oliver E., (1988) Finance and Corporate Governance, *Journal of Finance*, vol. 43, 567 – 592

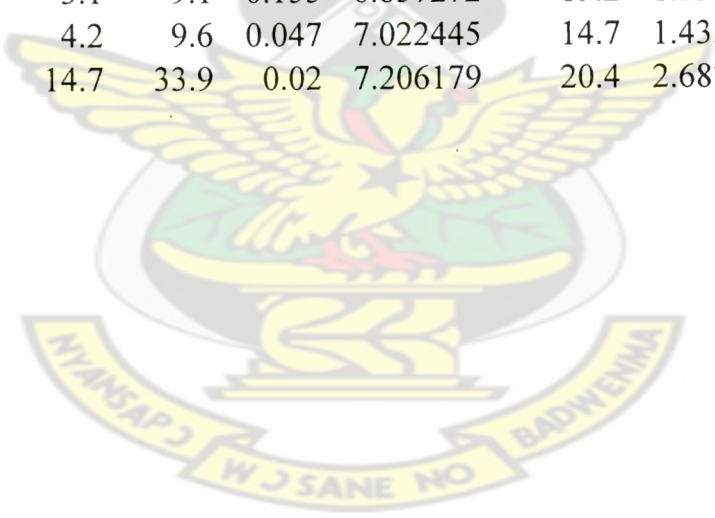
Xinghu Guo and Linlin Shi, (2005) *Research of capital structure and finance preference*, Umea University Masters thesis.



APPENDICES

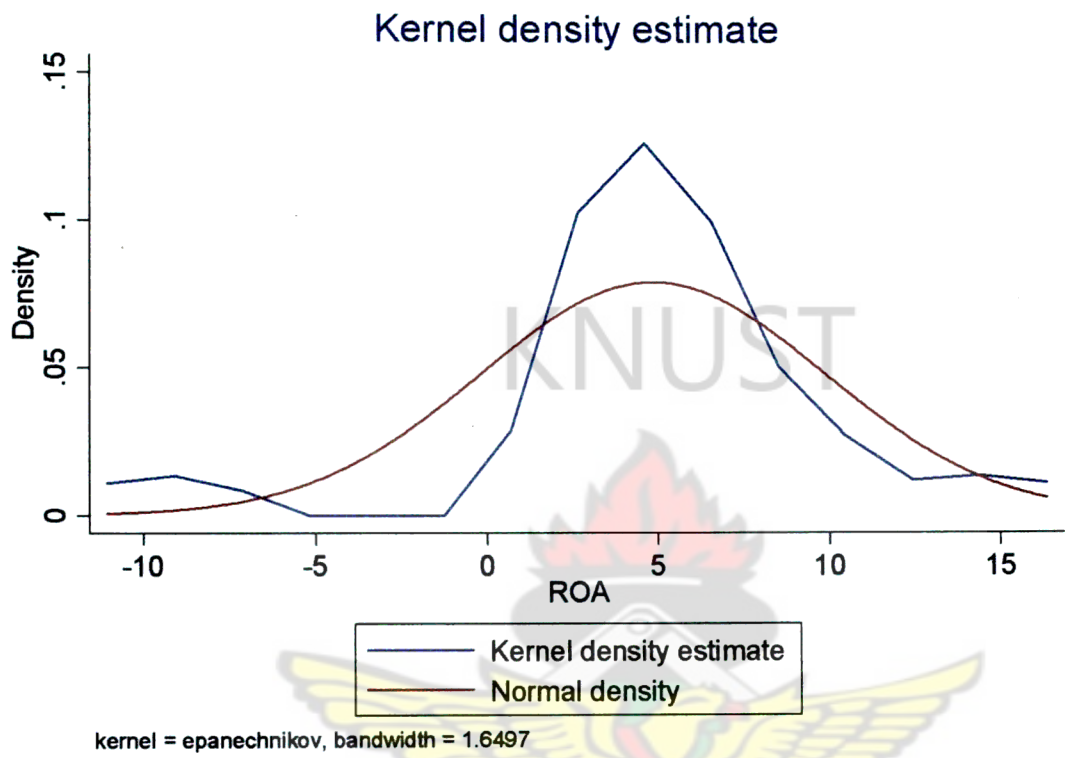
APPENDIX I – Financial ratios derived from the financial statement of the three insurance companies used for the analysis

firm	index	year	roa	roe	lev	size	growth	roa(log)	roe(sqrt)
SIC	1	2004	3.08	6.44	0.168	7.743731	0	1.12493	2.537715
SIC	1	2005	4.27	7.82	0.096	7.724627	43.03	1.451614	2.796426
SIC	1	2006	4.61	9.65	0.094	7.806801	22.52	1.528228	3.106445
SIC	1	2007	4.5	13.17	0.056	8.200427	18.45	1.504077	3.62905
SIC	1	2008	4.2	13.39	0.054	8.325461	9.9	1.435084	3.659235
EIC	2	2004	4.65	8.09	0.23	7.255152	0	1.536867	2.844293
EIC	2	2005	9.22	21.05	0.29	7.301225	44.94	2.221375	4.588028
EIC	2	2006	7.13	17.86	0.26	7.406881	16.17	1.964311	4.22611
EIC	2	2007	8.27	22.77	0.208	7.555711	30.12	2.112635	4.771792
EIC	2	2008	7.35	16.42	0.194	7.77805	32.35	1.9947	4.05216
MET	3	2004	2.7	8.4	0.025	6.774822	0	0.993252	2.898275
MET	3	2005	-9.4	-57.5	0.327	6.822538	25.6		
MET	3	2006	3.1	9.1	0.155	6.857272	19.2	1.131402	3.016621
MET	3	2007	4.2	9.6	0.047	7.022445	14.7	1.435084	3.098387
MET	3	2008	14.7	33.9	0.02	7.206179	20.4	2.687847	5.822371

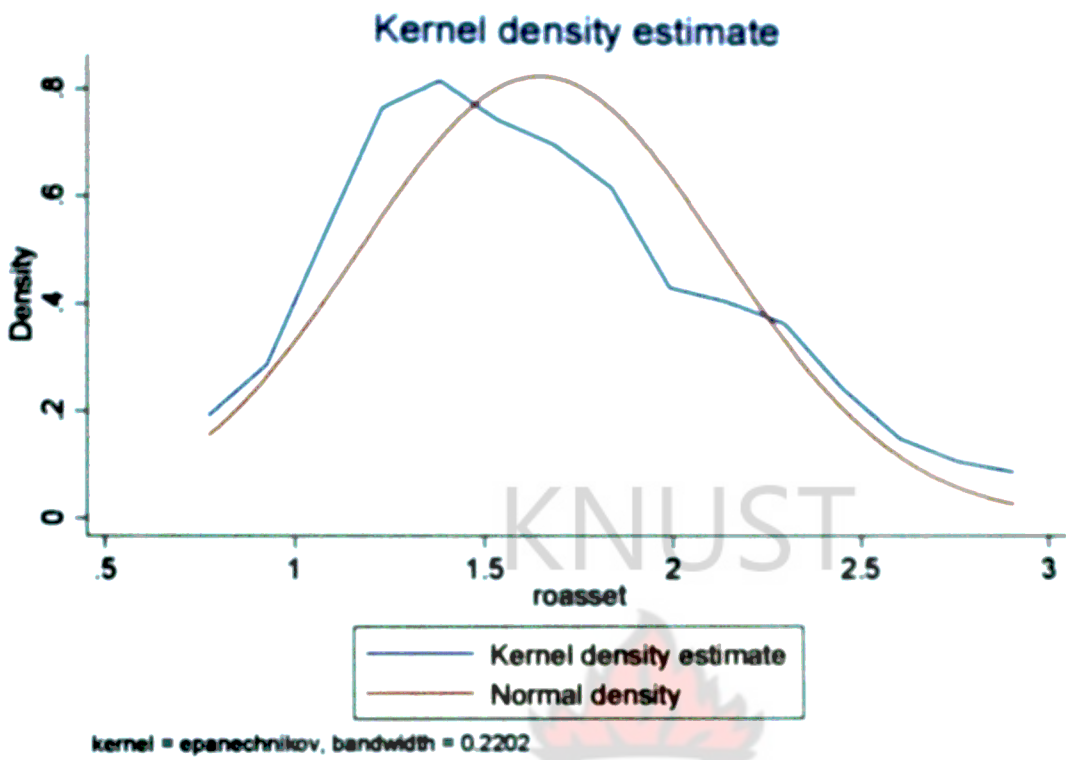


APPENDIX II

Test for normality using the kernel density graph

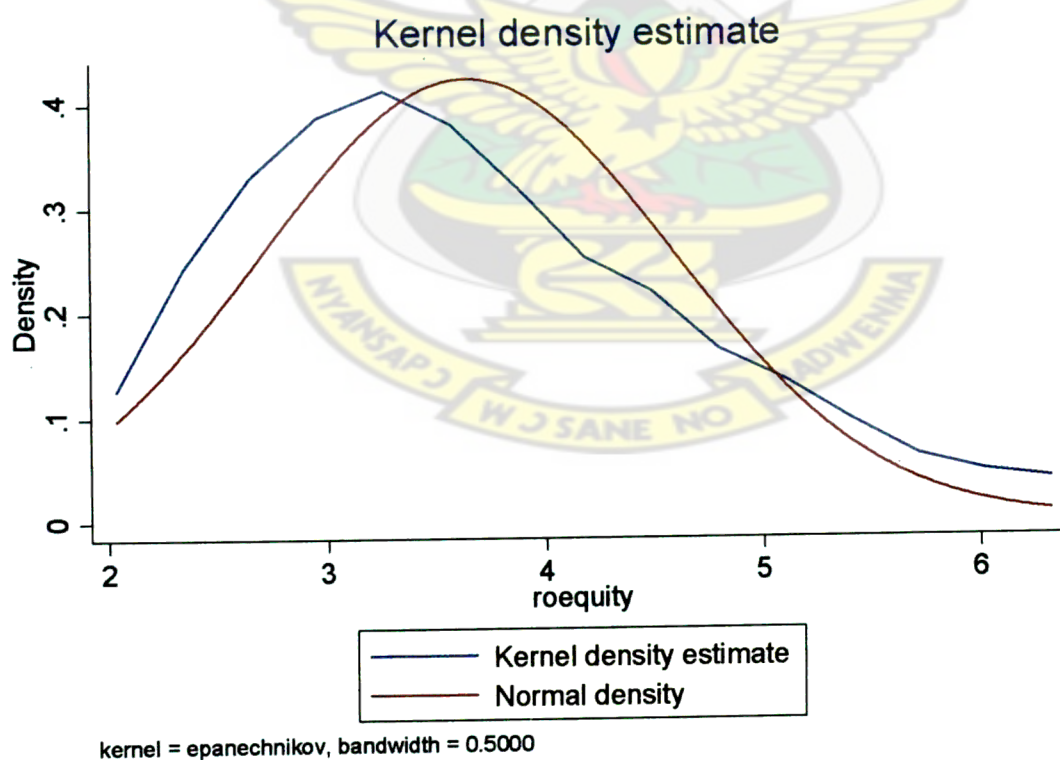
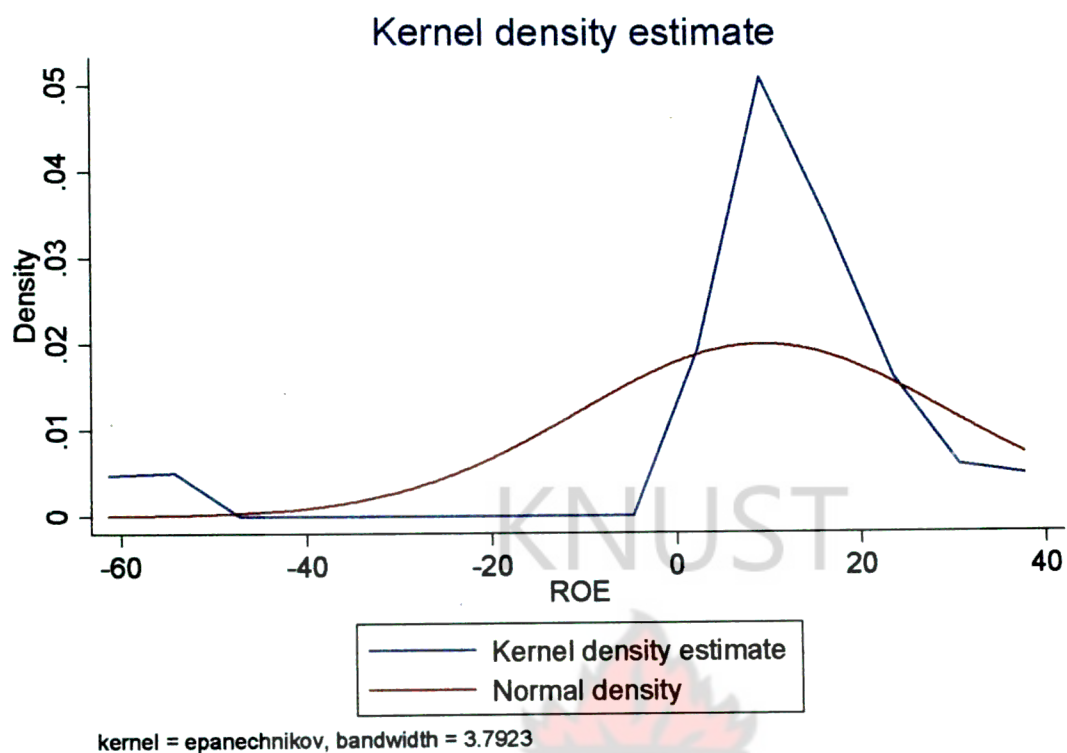


ROA – Return of asset



roasset – log transformation of return on asset





Roequity – square root transformation of return on equity