

**CAPITAL STRUCTURE AND THE PERFORMANCE OF LIFE
INSURANCE COMPANIES IN GHANA: MEDIATING ROLE OF
INTEREST RATE**

KNUST

BY

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DECLARATION

This is to certify that this thesis is the result of the research work carried out by Hilda Adjei in fulfilment of the award of MBA FINANCE at the Department of Accounting and Finance, at Kwame Nkrumah University of Science and Technology School of Business, under the supervision of Dr. Nicholas Boamah.

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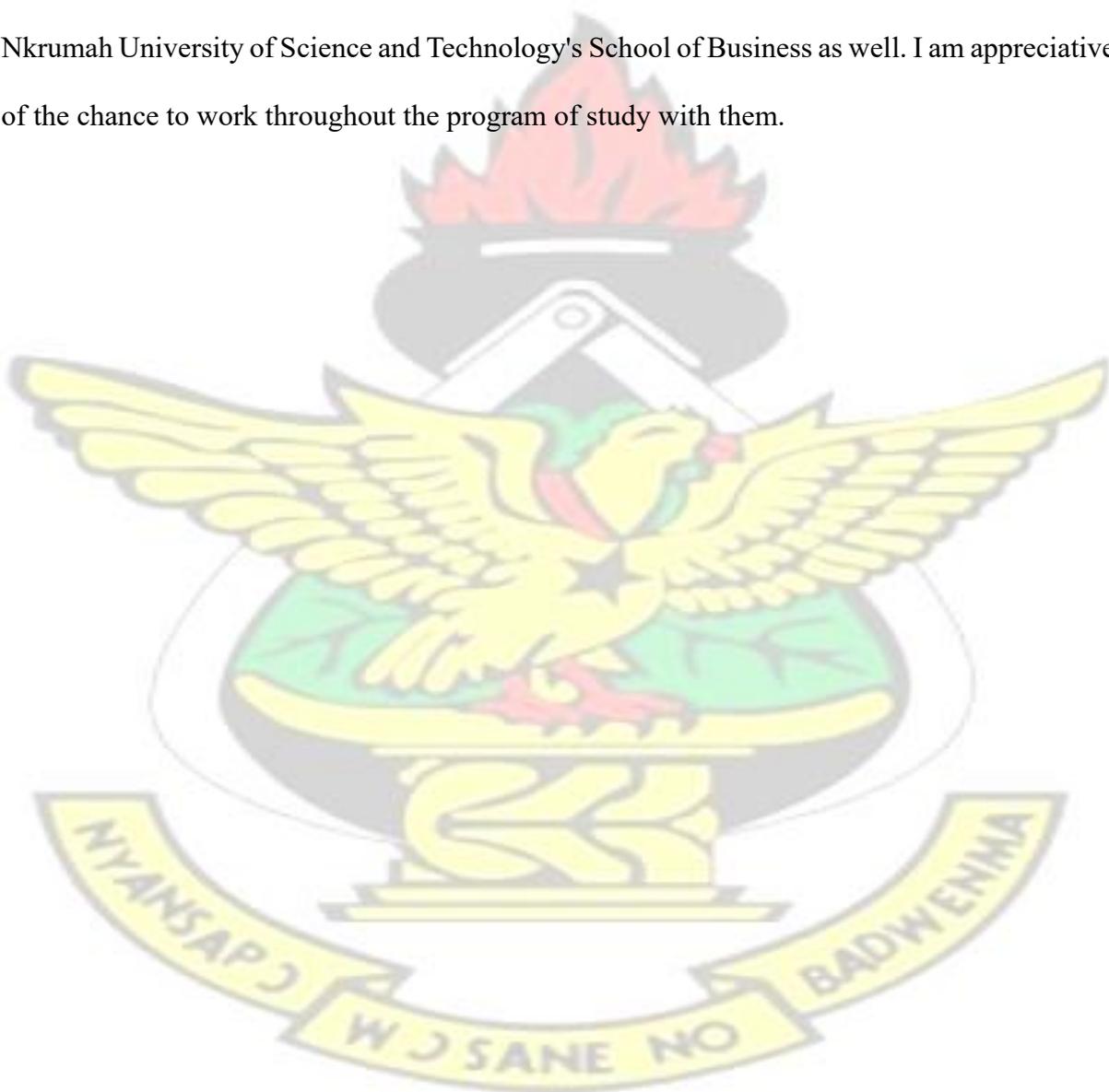
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DEDICATION

I dedicate this thesis to my father, Charles Adjei Baffour for his immense support during this academic program.

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ABSTRACT

In Ghana, strategic decisions on the right mix of capital structure are absent among life insurance firms, enabling many life insurance companies to fall entirely into debt, adversely affecting the performance and, eventually, the survival of life insurance companies within the Ghanaian insurance market. The main objective of this study is to examine the impact of capital structure on the performance of life insurance companies in Ghana. To achieve this, the study employs the dynamic panel data model of analysis on 25 life insurance firms and time series ranging from 2015 to 2020. The study reports that the debt-to-equity ratio has a significant negative impact on the performance of life insurance firms, whereas the debt-to-asset ratio shows an insignificant negative impact on the performance of the LICs. In appendage, the interest rate is reported to have an insignificant negative impact on the performance of LICs. Finally, regarding the mediating role of interest rate, debt-to-equity has a significant positive impact on the performance of LICs whereas debt-to-asset ratio has an insignificant positive impact on the performance of the LICs in Ghana. The study, therefore, recommends that LICs should consider more leverage in their capital structure decisions for improved performance.

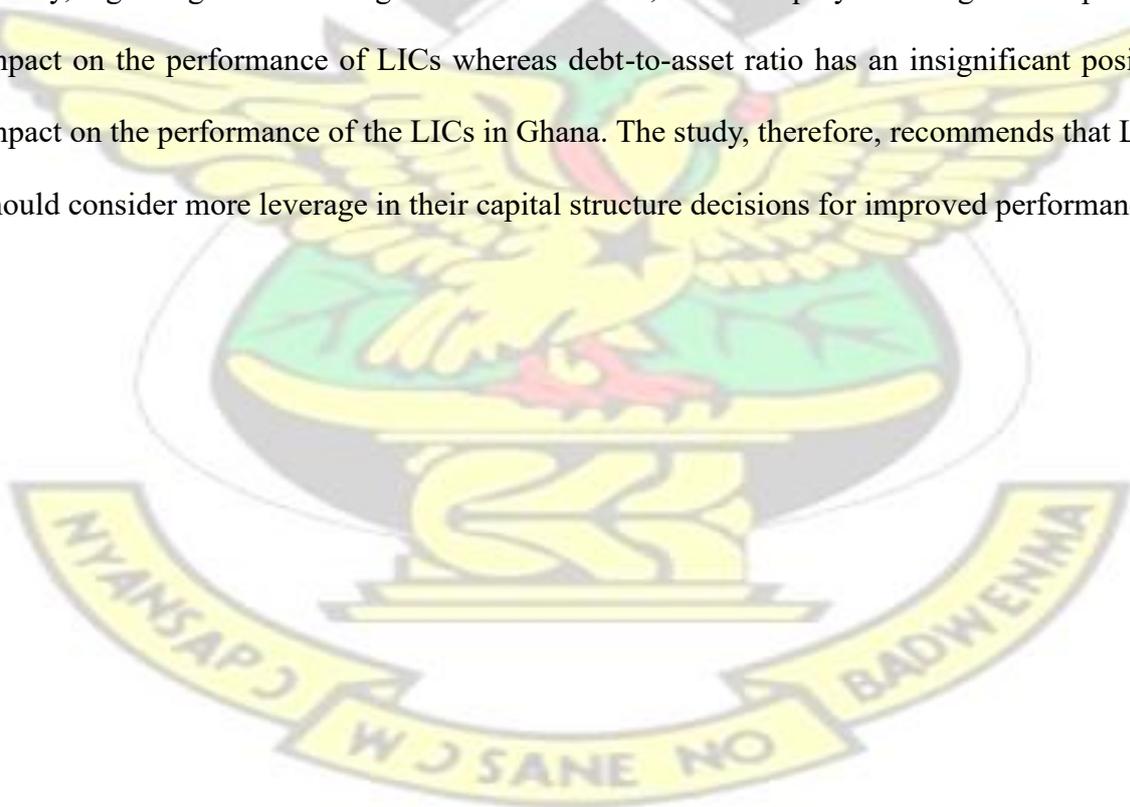


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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This thesis delves into the relationship between Ghanaian life insurance companies' capital structure and profitability. Theoretically, access to sufficient, accessible, and sustainable financing is crucial for business success. The choice of financing is one of a company's most crucial considerations. If businesses want to maximize shareholder wealth and reduce cost of capital, they must be financially capable to meet their obligations and expansion (Goyal, 2013). Corporate finance decisions are determined by many factors, some of which are linked to the firm's characteristics and others to its institutional setting (Abor, 2005).

A debt is an amount due for money borrowed from a third party that must be repaid and comes with a fee. The cost could be immediate, in the form of interest payment, or indirect, like agency costs. It could also be long-term or immediate. A financial institution's credit facility is one of the many types of debt that may be utilized to finance a business. Awuah-Agyeman (2016). Businesses can use warrants, arrange rent financing, trade bond swaps enter forward contracts or issue convertible bonds (Abor, 2005).

Equity financing is described in many ways as the process of issuing shares of a company to raise money. Essentially, it makes a reference to the offer of ownership stake to raise funds for organizational needs. Equity denotes a shareholder's claim over a company's assets. Since creditors have more control over the organization's investment than shareholders have in the event of liquidation, its commitment to the cost of capital is higher than that of debt financing

(Muzir, 2011).

The combination of equity and debt used to support its investments and assets is what is termed as capital structure. Companies can finance their assets with either equity or debt. The greatest choice is to combine debt and equity. The amount of tax savings a company earns from payments of interest improves the company's worth (Azhagaiah and Gavoury, 2011).

Chechet and Olayiwola (2014) define CS as the combination of equity and debt used in business financing, where debt and equity in corporate firms' funds are linked in a proportionate manner. A company's financial profitability can be measured subjectively as a measure of how effectively it can use its resources to generate revenue. Among other things, profitability and liquidity provide a useful instrument that enables stakeholders to assess the previous financial success and present condition of a business.

Profit and profitability are synonymous terms. Profit is a tool used to manage a company enterprise's operations. Profitability is the capacity of a particular investment to produce revenue from company activities through its application (Olalekan and Adeyinka, 2013). By utilizing all the resources that are available inside a corporation to their fullest potential, it also indicates management's effectiveness and efficiency. From the perspective of management, it demonstrates how skilfully and effectively management has utilized the money provided by shareholders and creditors.

According to Olalekan and Adeyinka (2013), no company can survive, expand, or attract outside money or finances to reach its investment target in a competitive environment; therefore, profitability is essential in persuading investors to supply capital. The profitability

and CS nexus is crucial since a company's increased profit margin is mostly essential to its long-term viability. The inclusion of debt to the current capital financing will increase the firm's profitability because interest payments on debt are tax deductible (Erdoan, 2015).

Azhagaiah and Gavoury (2011) further supported their argument by stating that, in the absence of interest being tax deductible, owners would not have been motivated to fully use debt financing possible to develop and increase the value of their firms. Numerous papers have conducted to examine profitability and capital structure nexus. According to Salawu and Agboola's (2008) research, overall debt and long-term debt are directly correlated with profitability and firm size. The findings of Zeitun and Tian (2014) showed that the capital structure of a business has a considerable detrimental impact on its profitability. The researcher will investigate how Ghanaian life insurance company profitability is affected by capital structure.

1.2 Problem Statement

In Ghana, strategic decisions on the right mix of capital structure are absent among life insurance firms, enabling many life insurance companies to fall entirely into debt, causing many life insurance companies to collapse within the Ghanaian insurance market (NIC, 2019). Furthermore, various research has found that most enterprises in Ghana are unable to make the best CS management decisions (Abor and Biekpe, (2014); Amidu, (2014); Salim and Yadav (2012); Abor (2014); Kusi et al., 2016).

The findings from empirical studies serve as the foundation for later research in the disciplines of CS and company performance because most of their conclusions disagree with one another.

For instance, Salim and Yadav (2012) investigated the connection between CS and firm performance and discovered that CS (particularly long-term debt (LTD) and short-term debt (STD)) reduces output when measured by return on equity, which is consistent with Ebaid (2014)'s findings. These findings support those of Rajan and Singales (2014), Seitun and Tian (2014), and Abor (2014), who also found that CS reduces company performance. Once more, CS has a negative, sizable impact on return on asset performance.

The empirical study's findings, however, disagree with the results published by Champions (2014), Ghosh, Nag, and Sirmans (2014), Hadlock and James (2014), Frank and Gayol (2014), and Berger and Patti (2014), all discovered a favorable association between corporate performance and CS. The short-term debt ratio and ROE of listed companies on the GSE also showed a strong correlation, according to Abor (2019). ROE and the ratio of long-term debt were found to be negatively correlated, nevertheless. Shubita and Alsawalhah (2012) also found a strong negative link between profitability and debt, demonstrating that as debt rises, a company's profitability drops. This association suggests a link between growing debt levels and diminishing profitability.

Additionally, the preceding studies provided mixed results in the banking industry, highlighting the inconclusiveness of the subject area. Furthermore, because capital structure differs by industry, this study is unique in that it uses asymmetry theory to analyze the CS and performance of firms' nexus among life insurance companies.

1.3 Research Objective

1.3.1 General Objective

The focus of the study is to delve into how capital structure influences life insurance company performance, with Ghana's interest rate acting as a mediating factor.

1.3.2 Specific Objectives

This study is solely aimed to:

1. examine the impact of capital structure on the performance of life insurance companies
2. examine the impact of interest rates on the performance of life insurance firms.
3. Examine the mediating role of interest rate in the relationship between life insurance capital structure and performance.

1.4 Research Questions

To accomplish its goals, the study examined for responses to the following questions.

1. How does the capital structure of life insurance businesses in Ghana affect their performance?
2. How does the performance of life insurance firms respond to changes in interest rates?
3. How does the relationship between CS and the performance of life insurance firms interact with interest rates as a mediating factor?

1.5 Overview of Methodology

The study will adopt explanatory research design. I use explanatory research design because it establishes a causal relationship between two or more variables it was useful in explaining how capital structure influence firms' profitability under the mediating role of interest rate. (Saunders, 2011). Population will comprise 22 life insurance companies in Ghana. Purposive sampling technique was used to sample Quantitative approach will be used for the data analysis. Quantified data will be collected to meet the appropriate conclusions at the end of study. Using quantitative approach, panel regression analysis and structural equation modeling will be used to establish the CS and performance nexus of life insurance firms in Ghana under the mediating role of interest rate.

1.6 Relevance of the study

In the finance literature, there is a long-standing debate about the possible impact of an optimal mixture of capital structure on the overall performance of firms. The reason for the unceasing debate has been the absence of any practical model on optimal capital structure. This study contributes to knowledge by improving the understanding of the dynamic relationship between capital structure decisions and the performance of firms in Ghana.

This study will enhance the understanding of the effect of CS decisions on profitability in Ghana. The findings and recommendations of the study will aid financial managers of firms in Ghana in making strategic decisions on the appropriate equity and debt mix to improve

profitability. The way a company structures its capital can influence various aspects of its operations, financial health, and strategic decision-making.

The study will also serve as literature on capital structure for other researchers who want to conduct further research on this topic. That is, the contribution made by this study to literature would serve as a guide for other authors for a research in this area. The contribution to literature would further add to academic knowledge and improve people's knowledge and understanding in LICs capital structure operations and performance.

The study will further serves as a guide to shareholders of these LICs. The capital structure impacts the risk and return profile of a firm. Using more debt increases financial leverage, which can magnify returns for shareholders but also amplifies the risk. Striking the right balance is essential to optimize risk-adjusted returns

1.7 Limitation of the study

Due to time and resource limitations, the researcher narrowed the scope of the study to 22 LICs under the National Insurance Commission (NIC), as comprehensive examination of all insurance firms in Ghana is not feasible. The researcher focused on these organizations' six-year audited financial accounts from 2015 to 2020. Data on the debt-to-equity ratio, the debt-to-total asset ratio, and the profit before interest and taxes were gathered using audited financial accounts. Using correlation and regression research, ROE as a gauge of profitability to the firms' equity and debt was created.

The researcher concentrated on the six-year audited financial statements of these companies from 2015-2020. Audited financial statements were used to collect data on current liabilities, long-term liabilities, sales turnover, and profit before interest and taxation. Return on Equity

(ROE) as measure of profitability to the companies' equity and debt was established using correlation and regression analysis.

1.8 Organization of the study

There are five chapters in the research. The overall overview and introduction to the study were covered in the first chapter. The chapter two examined the theoretical and empirical analysis of earlier research on this topic carried out by other academics. The research technique is covered in the next chapter, chapter 3, where methodologies and processes are presented in a sequential and methodical fashion. The findings from the study and the analysis of the data are presented in chapter four in relation to the study's goals. The overview of the findings, the conclusion, and the recommendations that were also derived from the findings are covered in Chapter 5.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter examines the studies and theories conducted in the areas of capital structure and profitability over decades. This chapter covers topics treated by scholars and researchers. Since CS is one of the crucial financing decisions of a firm to managers, it has generated a lot of diverse views drawn from the conclusions made by these scholars. In this chapter, the researchers discussed theories on capital structure, determinants of capital structure and empirical literature.

2.1. Conceptual review

2.1.1 The Concept of Capital Structure (CS)

Any commercial corporation must typically make a basic choice about CS. The choice is not crucial because of the necessity to maximize shareholder value, but rather because of how it will affect a company's capacity to compete (Boodhoo, 2009). Chechet and Olayiwola (2014) defined CS as an entity's equity-debt combination. Equity and debt are components of the capital structure since they both help to create a company's capital.

2.1.1.1 Equity Finance

Equity is raised through the offer of shares to investors (Watson and Head 2010). Mallor, Barnes, Bowers & Langvandt (1989) asserted that, stocks take different forms such as common

shares, preference share, withhold income and surplus benefits, options, and the right to buy stock. They further characterize treasury shares as shares that can be rebought but cannot be restored nor canceled to unissued status. Those shares are non-outstanding but issued and authorized. Forfeited shares are shares that the company reclaims from an investor because he or she fails to fulfil certain requirements.

2.1.1.2 Debt financing

Debt financing is the acquisition of credit facilities from financial institutions or firms to stimulate operations of businesses. Debt includes bonds, and short-term or long-term loan notes. The principal is reimbursed in the future, including payment for interest expenses prior to the loan's maturity.

Accounts payable and bank overdrafts are two instances of short-term debt that is used to fund current assets that may be quickly converted into cash and cash equivalents without suffering a large value loss. Long-term assets, including the acquisition of land and the development of a structure, are financed by non-current liabilities in the form of loans or long-term debt. Due to the benefit of tax deductions, which lowers the cost of debt financing, the majority of businesses choose debt in their CS (Fosberg, 2004; Abbasi, Mir and Khan, 2016).

2.1.2 Determinants of Capital Structure

Literature have clearly demonstrated that profitability, firm size, asset's structure, growth, and tangibility have effects on capital structure (Acaravci, 2015; Kodongo and MokoaleliMokoteli, 2015; Shah and Khan, 2017; Iswarini and Ardiansari, 2018; Karacaer and Temz et. al., 2019). For instance, Iswarini and Ardiansari (2018) argue that there are three independent variables

that affect CS in Indonesia Also, the authors argue that liquidity and profitability variables have negative impacts on gearing. Moreover, tangibility and growth have significant impacts on leverage. Finally, earnings volatility has an insignificant impact on the leverage of manufacturing companies in Turkey. After taking into consideration the various capital theories stipulated above, the following shows how each determinant affect capital structure.

2.1.2.1 Profitability

Profitability is the degree to which resources are used effectively to provide fair returns. CS and information asymmetry are used to link a company's profitability to the pecking order hypothesis. According to this pecking order idea, firms should initially rely on retained earnings, then turn to leverage if more money is needed, and last, issue stock to satisfy the remaining capital needs if there is no knowledge asymmetry (Khemiri and Noubbigh, 2018).

The company would adopt this theory, because it emphasizes on companies choosing the least risky source of funds. This decision is made by management, therefore making them well abreast with this financial decision than other stakeholders or investors thereby leading to information asymmetry. Since shareholders and debt holders would be expecting higher returns on their investment but some of the earnings would be retained and ploughed back into the company instead of distributed (Ofori-Sasu and Abor et. al., 2017). Abbasi, Mir and Khan, (2016) stated that companies that make high earnings have consistent cash flows from business with minimum risk of default. From this assertion, it is evident to say that companies that are more profitable get easily access to internally generated funds thereby making the income surplus or retaining their main source of funds. Thus, a firm with a higher level of profitability offsets the need for external source of finance (Soares and Duarte et. al., 2018).

2.1.2.2 Size of a Firm

Using the logarithm of a company's total sales revenue over a certain time period, one may calculate the size of a company (Abbasi, and Mir et. al., 2016). CS is impacted by a company's size (Iswarini and Ardiansari, 2018; Karacaer and Temz et. al. 2019). The size of the business has a favorable effect on the financial leverage of manufacturing enterprises in Turkey, according to Karacaer and Temz et al (2019) .'s argument. In a similar vein, Al Morais (2014) said that large companies have a more diverse portfolio than small companies and, as a result, have a high debt ratio due to high earnings. Marsh, (1982) also proposed that, long-term debt is preferred by large firms while smaller firms prefer otherwise.

Bankruptcy is adversely correlated with organization size. Accordingly, the cost and danger of financial difficulty are lower the larger a firm is (Titman and Wessels, 1988). According to Rajan and Zingales (1995), information asymmetry is more common in smaller organizations than in larger ones, therefore larger firms are more likely to share important information with external stakeholders. With the information provided above, firm size and economic leverage have a favorable relationship.

2.1.2.3 Growth Opportunities

In deciding the CS of a firm, growth plays a significant role. Growth arises whenever firms expand in their operations or increase in size. With pecking order theory, growing firms use retained earnings to finance their activities in the short term (Acaravci, 2015). However, retained earnings might not be sufficient and for that matter, firms would have to go in for external funds (Ross and Westerfield et. al., 2008). The theory of trade-off also explains that organizations with opportunities to grow in the form of intangible assets go for less debt than an organization with tangible assets because it cannot be used as collateral (Ahmed-Sheikh and Wang 2011). Fatmasari (2011) stated that, the debt amount being issued by a firm is

negatively related to growth opportunities which consist of investment opportunities in the future. Hallajian and Hashemi (2016) also supported that firms are less likely to utilize debt finance in periods of rapid growth.

2.1.2.4 Non-Debt Tax Shield

Taxation affects the decision of CS from the conclusions drawn by many researchers and scholars. Bauer, (2004) stated that, items other than interest expenses contribute to the reduction in payments of tax. Deduction of tax for investment tax credits, depreciation, corporate taxes and personal taxes are labelled as tax shields for non-debt (Madugba and Lawal et. al., 2020). When a company reports on income that is consistently low, the tax shield benefit from using debt financing may be lowered to the minimal minimum or perhaps eliminated (Sheikh and Wang 2011). a CS model where the interest costs that are deducted from corporate taxes are replaced with non-debt tax shelters (Ramli and Latan et.al., 2019). According to several studies by academics and researchers, leverage and non-debt tax shelters are indirectly related (Hossain and Hossain, 2018; Hour and Dinçergök, 2021; Gevheroglu-Acar, 2018). For instance, Hour and Dinçergök (2021) contend that the debt ratio of listed companies in Turkey is significantly adversely affected by non-debt tax shelters. Like this, Hossain and Hossain (2018) contend that non-debt tax shelters affect Bangladeshi businesses' cash flow statements (CS).

2.1.2.5 Volatility

Firms' volatility is the probability of its bankruptcy and a proxy for risk (Bauer, 2004). Such risk can be business risk and default risk. A firm with higher volatility of earnings experiences these risks whereby the earnings levels fall below the level of their commitment to debt servicing thereby results in the usage of fund at a higher cost to offset the debt or rather face the risk of bankruptcy (Antoniou, Guney and Paudyal, 2002). The researchers further stated

that firms that uses equity finance may not pay dividends to shareholders but rather retain earnings in times of difficulty and in this case, the adoption of debt finance is reduced thereby firms with higher volatile earnings prefer equity to debt.

Firms' level of optimal debt is a reducing function of its earnings volatility thus the higher the volatility of earnings, the greater the financial risk which makes firms unable to meet their contractual obligation due leading to lower debt capacity of firms (Ahmed Sheikh and Wang 2011).

2.1.3 Firm Performance

Performance variables are variables that measure the profitability of firms. The most notable performance variables include the ROE, ROA, TQ, Return on Capital Employed, among others. In appendage, the variables used to measure these performance indicators are readily available in the firms' financial statements. Furthermore, these performance indicators measure the value of the firms (ROA), value of shareholder wealth (ROE) and the market value of the firm (TQ). For insurance firms, market value and value of shareholder wealth are of more interest to the public. Hence, these three performance indicators employed would better inform the public about the viability and financial capacity and strength of these insurance companies to meet claim settlements.

2.1.3.1 Return-On-Equity (ROE)

The term "ROE" stands for "earnings prior to interest and taxes divided by the firm's total equity for the fiscal year." According to Johnson et al. (1999), shareholders believe that ROE is an accurate way to gauge a company's performance. Additionally, for investors, it is suitable for both short- and long-term strategies (Brealey et al., 2000). Briefly stated, according to Epps et al. (2008), ROE is a metric that reveals how much profit a company generates from the money acquired through the issuance of shares.

2.2 Theoretical Review

2.2.1 Modigliani and Miller (M&M) Hypothesis

Due to the wide range of beliefs, determining between capital and companies' performance relationship is still a subject for empirical research (Berger et al., 2013; Oyetade et al., 2021). In corporate finance, the theoretical principles that underpin the concept of CS or a combination of debt-equity mix finance of a firm was established by Modigliani and Miller (M&M) (1958). Their theoretical principles formed the basis for the emergence of future theories. M&M (1958) initially viewed CS as an irrelevant theory. In this case, they proposed that cost of capital and market value depend on its expected profitability and commercial risk and not its capital structure (Berk & Demarzo, 2007). They based their theory on some assumptions like living in a world without taxation, no bankruptcy cost, perfect capital markets, and no risk, which cannot be true in the real world.

The CS irrelevance theory of M&M (1958) is regarded as the foundation of the modern theories of CS (Abeywardhana, 2017). Securities are traded in a perfect capital market, devoid of transaction cost, bankruptcy cost, and taxation providing all relevant information for investors, both insiders and outsiders, to make the right decisions. The lending rate is the same for both firms and individual investors permitting homemade leverage for firms operating in a similar risk class and having similar operating leverage. In the seminal paper of MM (1958), they argue that the values of the levered and unlevered firms are the same. Hence, firms should freely choose the composition of debt-to-equity and should not worry about capital structure.

Hirshleifer (1966) and Stiglitz (1969) made important contributions to the MM approach. They argue that the risk of a firm is directly related to leverage which, as a result, increases equity cost. However, the firm's WACC remains constant.

The irrelevance theory of CS was theoretically relevant, but the assumptions were unrealistic. Hence, the capital structure received a vast amount of research. To make the theory relevant, MM (1963) introduced the effect of tax on the capital cost and value of firms. Debt capital is associated with the reduction of payment of taxes due to acceptance of interest as deduction from the income of the firms. The shortcomings of the MM theory encouraged multiple studies to prove the theoretical and empirical irrelevance of the theory.

2.2.2 Trade-off Theory

When Modigliani and Miller (1963) changed their original proposed capital structure irrelevance hypothesis to include a corporate tax, they created the theory as a result. According to the theory, a company's cash flow (CS) can be maximized by balancing the pros and cons of leverage or debt financing, which results in the interest tax shield and financial distress (Brigham and Houston, 2012). As more debt financing is likely to increase the value of the interest tax shield, it is implied that companies, especially profitable ones, may choose financial leverage (Myers, 1984).

To achieve an objective ratio of leverage to total capital that is always consistent with tradeoff theories between the cost and benefits of debt, businesses, however, alter their equity-debt ratio or CS. The aim ratio that is set may change over time as profitable firms and stock shift, and they may encounter difficulties as they approach the target ratio, according to research by

(Hovakimian et al. 2001). The trade-off theory has two subcategories: dynamic trade-off and static trade-off.

Debt financing is as risky as equity financing in finance theory. The theory argues that target financial ratio can be optimal at the instance where firm could maximize its value. Static tradeoff theory could not explain the negative or inverse correlation between financial profitability and leverage which is seen as a major shortfall of the theory.

This model further explains that the firm's decision in achieving CS optimization is typically concerned with the trade-off between the benefits of leverage when it comes to tax and other leverage related costs (Bradley et al. 1984). Bankruptcy cost forms an important aspect of these leverage related costs, which has become a subject of concern to many managers. This theory assumes that firms with a greater risk of experiencing bankruptcy cost will surely go for less debt as compared to firm having lower financial distress risk. Miglo, (2010) later argue that the static trade-of theory does not point out as to whether firms' debt is too low and the rate at which firms achieve their target ratio.

The dynamic trade-off model proposed by Fischer et al. (1989) suggests that firms take recapitalization actions only when the benefits from recapitalization exceed the costs. This theory estimates the adjustment speed for the firm to achieve its target ratio, which is the objective of the CS. It takes into consideration the role time plays in identifying the optimal CS. Several studies indicate that the presence of adjustment costs have crucial effects on finding out dynamic trade-off theory. A case for instance, is taken into consideration a sample of companies that have received a persistent positive shock to profit margin and witnessed an increase in the fair value of their assets as (Strebulaev 2007).

The trade-off theory is of the view that, when there are no costs of adjustment, these firms increase their leverage ratios to take the advantages tax relief brings when financing a firm with debt, bringing about positive relation between debt and profitability. However, considering the adjustment costs, some firms will find it optimal to remain inactive in the external financial markets because raising capital may sometimes be too costly for them resulting in a debt ratio that deviate from what it would have been without an adjustment cost.

Hennessey and Whited, (2005) and Strebulaev (2007) focus on this significant aspect of a dynamic trade-off model, the presence of costs of adjustment, to analyse the observed market leverage ratios and profitability indirect relationship. The static model is better at overcoming challenges associated with other empirical studies. Concerning a reliable contribution to the trade-off model dynamic model is most likely to be ahead of static model (Yan, 2009). This theory further proposed that there are other determinants of a firm's optimal CS. Among them are the tax shield advantages that debt financing comes with, bankruptcy cost, information asymmetry, agency cost, and transaction cost.

3.2.3 Perking Order Theory

Myers and Majluf (1984) present this hypothesis in accordance with the findings of Donaldson (1961), with the same premise of a perfect capital market as MM (1958). Donaldson claims that management prefers internal funds over outside ones (1961). The pecking order theory states that companies should use internal resources first, then debt finance, and last stock offerings. Al-Tally (2014) claims that companies first look internally for funding new investment projects before turning to debt issue and, as a last resort, equity issuance. According to Myers (2001), a firm's debt ratio shows the total amount of external finance received, and businesses with lower debt ratios generate greater profits. Firms without investment prospects

save their earnings to avoid requiring further finance in the future. The pecking order theory proposes that firms with higher returns, having good cash flows may have low debt ratios. This is because, they do not need external sources of finance because they have satisfactory retained earnings to rely on for their investments. Myers (1984) did an extended work of Donaldson, (1961) which is described as modified pecking order theory, assumed that firms should stop selling risky assets to finance projects. Myers stated that firms set out target dividend pay-out ratio which can be met by internally generated funds.

According to Brealy, Myers, and Marcus (2008), management is often inclined to use internally produced money rather than externally generated funds when implementing the pecking order theory. In accordance to the pecking order idea, businesses must adhere to specific rules while securing cash to fund their operations. 1984 (Myers and Majluf). They argued that the knowledge asymmetry might be eliminated if businesses instead used their retained revenues to support investment opportunities rather than issuing new securities. This shows that when asymmetric knowledge between insiders and outsiders increases, issuing new securities quickly becomes more expensive.

Companies may possess inside knowledge that is hidden from prospective investors and the market at large. Inside investors typically have access to more information about the firm's return distribution than outside investors do. To maintain control of the company, inside investors frequently refrain from utilizing shares and instead rely on equity (Hutchinson, 1995). According to Myers and Majluf (1984), investors are forced to rely on muddled signals like the level of a firm's CS to gauge their investment risk and the possibility that a firm's market value would decline.

In accord with the pecking order idea, a corporation would only issue debt if all available internal financing had been used up. The final alternative will then be the sale of fresh shares. Debt and profitability have an adverse relationship, according to Myers (1984). There is a chance that businesses with high returns will have higher retained earnings. Most profitable businesses do not rely heavily on outside funding. Empirical evidence supporting the pecking order theory is shown by studies by Kayo and Kimura (2010) and Al-Sakran (2001). Most past studies opined that debt financing and profitability are adversely related. A few instances include Daskalakis and Psillaki (2008), Myers et al. (1984), Vasiliou, Eriotis, and Daskalakis (2009).

2.3 Empirical Review

2.3.1 Relationship between CS and performance of LICs

There are lots of empirical studies that have examined CS and the performance of LICs nexus. Review of the CS and LIC performance literature is presented in this section of the paper. Fudianti and Wijayanto (2019) evaluate the factors influencing the CS and company performance of manufacturing companies listed on the Indonesian Stock Exchange from 2013 to 2017 using a multiple regression approach. The financial and non-financial elements that affect business performance account for 92% of the determinants and include things like sales growth, firm size, gender diversity on the board, and capital structure. This study discovered that increasing sales had a favorable impact on how well a corporation functioned. The success of a company is influenced by factors including the size of the firm and the gender diversity of the board.

Hour and Dinçergök (2021) investigate how business strategies effect financial leverage among companies listed on the Borsa Istanbul Stock Exchange between 2003 and 2018. Globalization and diversification, according to the authors' FE panel data model, increase the debt loads of Turkish listed companies. Liquidity, profitability, and non-debt tax shelters are other factors that help Turkish listed corporations reduce their debt ratios. The authors also show that elements including size, development potential, and ownership concentration affect the debt ratio of Turkish listed companies.

To explore the causes of CS and the pace at which CS decisions are adjusted in Nigeria, Bolarinwa and Adegboye (2021) use the difference GMM, system GMM, and stochastic frontier analysis. According to the author, the efficiency of the firm has an impact on the CS decisions made by firms in Nigeria. The authors also point out that the adjustment speed of short-term debt is higher.

To determine the variables influencing the CS of non-financial enterprises in Turkey, Gevheroglu-Acar (2018) applies the panel model to a dataset spanning from 2009 to 2016. In relation to this there was evidence that the non-financial enterprise in Turkey is highly impacted by non-debt tax shield, liquidity, tangibility, size, and profitability. On the other hand, it is said that growth and volatility have little effect on leverage.

According to the authors Li and Islam (2019), characteristics that are particular to a sector have an impact on how Australian companies' capital structures are formed. In the appendix, the authors make the case that firm-specific characteristics differ amongst industries.

Goh and Tai et al. (2018) investigate the variables affecting CS for Malaysian manufacturing companies. The authors demonstrate that business leverage is decreased by profitability and non-debt tax shelter using a dataset of 174 firms from 2011 to 2014. However, according to the authors, firm leverage in Malaysia is not significantly impacted by ownership concentration, board independence, or the separation of CEO and chair positions.

To study the relationship between CG factors and the CS nexus in Egypt, El-Habashy (2018) used a sample of 240 observations of non-financial enterprises from 2009 to 2014. The author uses a multiple regression model on the dataset to support his claim that CG features help listed Egyptian companies' CS selections. Additionally, considerations unique to each company affect the choice of CS in Egypt.

To investigate the variables influencing CS in small and medium manufacturing enterprises in Russia, Panova (2020) uses a fixed effects regression model. The authors demonstrate that current asset turnover and liquidity have a considerable detrimental influence on the financial leverage of Russian manufacturing companies.

Between 2006 and 2016, Khemiri and Noubbigh (2018) look at the elements affecting corporate leverage in five SSA countries. By utilizing the quadratic technique and GMM estimate system, the authors support the pecking order theory and the trade-off theory. The performance of the firm and its leverage, according to the authors' argument in the appendix, are significantly inversely correlated. Leverage lags and macroeconomic variables are further significant predictors of debt level.

To determine the factors that affect the CS of listed firms in Ghana, Nyaedi and Banyen et al. (2017) apply a dynamic panel GMM system on 28 listed firms from 2007 to 2014. The authors discovered that the CS had a higher percentage of equity and short-term indebtedness. The authors also demonstrate that business size, tangibility, managerial ownership, and liquidity significantly improve the long-term debt ratio of Ghanaian listed companies.

The authors Enos and Yensu et al. (2020), discovered that in the typical period, profitability, business size, growth potential, tangibility, and real GDP growth all had a big impact on how much leverage a firm uses. Furthermore, the authors contend that throughout the global financial crisis, real GDP growth and inflation had less of an impact on the financing decisions made by sample enterprises. The authors also discuss the potential contributions of agency cost, pecking order, and trade-off theories to the CS of Ghanaian businesses during the financial crisis.

To determine how ownership structure, company size, profitability, and tangibility affect the CS of companies listed on the Indonesian Stock Exchange, Iswarini and Ardiansari (2018) use

multiple regression analysis. The authors discovered three independent variables that have an impact on CS in Indonesia using a dataset that covered 38 organizations from 2012 to 2016. The authors also contend that institutional ownership and profitability have a negligible adverse impact on manufacturing enterprises' CS from 2012 to 2016. Additionally, CS is positively and significantly impacted by firm size, managerial ownership, and tangibility.

2.3.2 Mediating Role in CS and LICs' performance nexus

Ebonyi-Amoah, (2017) employs a pooled OLS method on 25 banks spanning from 2006 to 2015 in Ghana to examine the effect of changes in interest rate on performance of banks in Ghana. The authors reveal that changes in interest rate positively and significantly affect performance of banks in Ghana. The authors further revealed that interest margin positively and significantly affect performance of banks in Ghana.

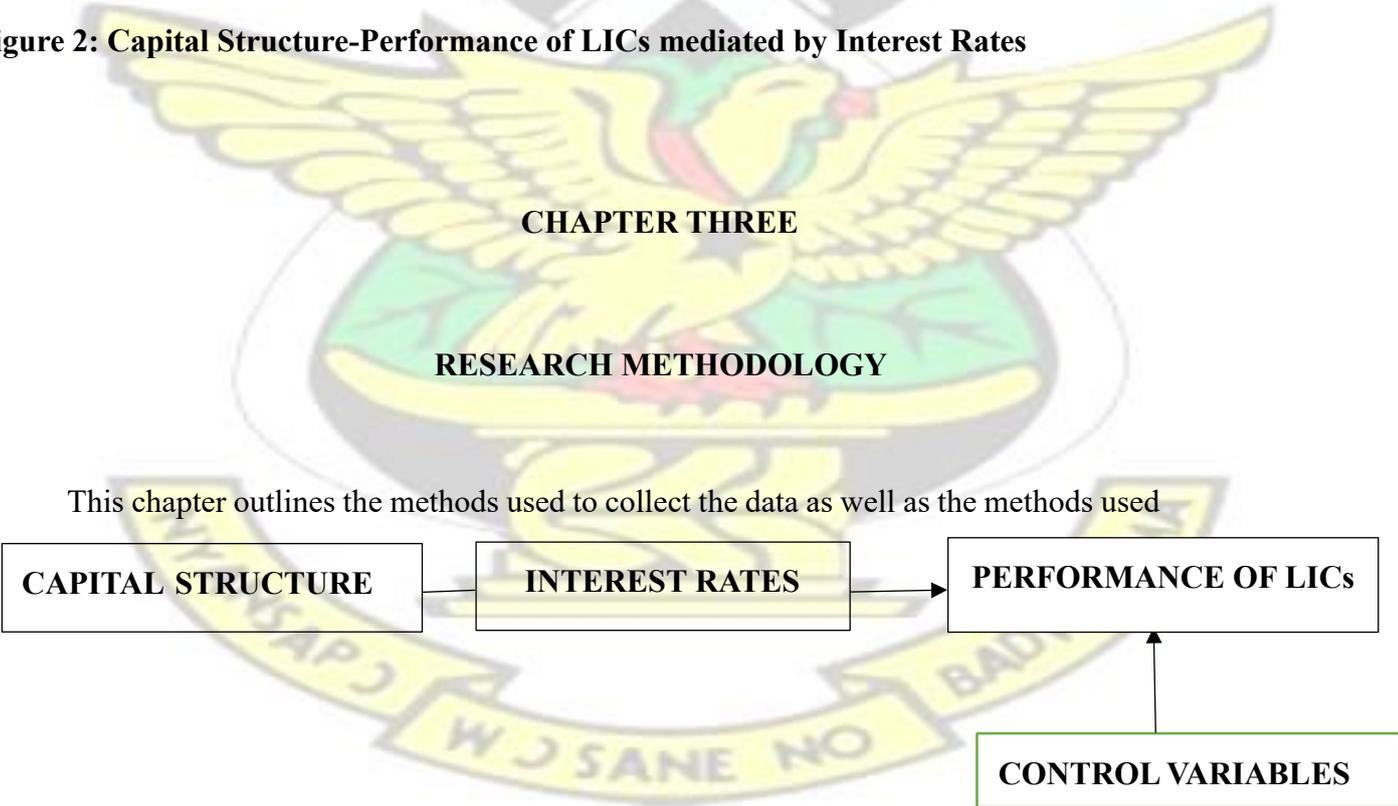
McNamara et al., (1995) examines the relationship between macroeconomic factors and performance of firms. the study reported that interest rate significantly affect performance of firms. Similarly, three of the macroeconomic indicators employed by the authors were also revealed to significantly affect firm performance.

Hussain et al., (2021) employed both static and dynamic panel analysis to investigate between working capital, macroeconomic determinants and firm performance. The authors further employed interest rate as a interaction variable to examine the relationship between average payable days and firm performance. The results indicate that average payable pays reduces firm perform as interest rate rises.

2.4 Conceptual Framework

Four goals are sought to be accomplished by this study. Examining the factors that affect the capital structure of life insurance companies (LICs) is the first goal. The second goal, shown in Figure 2, is to investigate how CS affects the effectiveness of LICs. Examining how interest rates affect how CS affects LICs' performance is the third objective, as seen in Figure 3. In order to further these goals, the study additionally included control variables including trade openness and inflation rate, which have been shown in the literature to have an impact on economic growth.

Figure 2: Capital Structure-Performance of LICs mediated by Interest Rates



This chapter outlines the methods used to collect the data as well as the methods used

to analyze it. The methodology used comprises sample size and approach, data collecting and analysis methods, statistical process, and an overview of Ghanaian life insurance companies.

3.1 Research Strategy and Design

The study adopts an explanatory research design. An explanatory research design was used because it establishes a causal relationship between two or more variables. It was useful in explaining how capital structure influences firms' profitability under the mediating role of interest rate (Saunders, 2011). To understand how the independent variable brings about changes in the dependent variable, explanatory research design helps to establish a more complete relationship between the variables. The study seeks to establish the cause-and-effect between the variables and, hence, an explanatory research design is the most appropriate approach. In addition, explanatory research design helps to formulate hypotheses based on either existing literature or the researcher's instincts to address the research questions.

The study also uses a quantitative research approach. Quantitative research is the best technique for examining how one variable (the independent variable) affects the dependent variable. With the help of this methodology, it is possible to examine both the magnitude and the direction of the influence of the independent factors on the dependent variables. The advantages of adopting a quantitative research method include that it is the most powerful tool for gathering empirical data for a study. Researchers can evaluate their hypothesis with a quantitative research design. However, results obtained from the quantitative research method are only numerical responses with little insight into the thoughts, emotions, motivations, and drivers of the group.

To conduct a thorough analysis of the performance of enterprises in the insurance market, I choose a case study approach in this study. The study specifically aims to examine the connection between Ghanaian life insurance companies' capital structure and performance. The study continues to investigate how the interest rate affects the link between the two factors. The comprehensive examination of the chosen few life insurance businesses is then utilized to draw conclusions about the entire life insurance market and, to a lesser extent, the insurance industry.

3.2 Data and Data Sources

The study covers life insurance companies in Ghana. These LICs are those registered with National Insurance Commission (NIC) in Ghana. The source of data collection comprises secondary sources from annual reports and National Insurance Commission records in Ghana.

For the study, the twenty-two life insurance firms registered with the NIC were chosen. The companies were picked based on the data's accessibility and availability. The gathered information was operationalized so that it could be utilized in the analysis in ratio form. From the 22 licensed firms' annual reports and websites over a seven-year period, the researcher gathered total debt, total equity, total assets, net income, and other financial data (2015-2021). Hence, the total number of observations is 154. The study period (2015-2021) chosen is due to the availability of data. In addition, the duration of the data chosen would help assess and understand the current dynamics in the life insurance industry in the wake of the recent financial sector crisis and the subsequent deregulations in the financial sector.

The selected firms were those with the required data over the study duration. Again, these businesses must have been operational for the previous ten years. Therefore, it's possible that a sizable credit that was obtained during the company's founding or purchase was repaid. None of the businesses have been set up for sale, which can affect the asset worth of those businesses. All financial statements must also be expressed in Ghana Cedis. The data are converted to Ghana Cedis using the World Bank's annual average exchange rate when a company's presentation currency is not in Ghana Cedis.

Table 1 presents the variables employed in the study and their respective measurements. The variables chosen for the study are due to both their theoretical and empirical relevance in analyzing the performance of firms, especially in the insurance industry.

Table 1: Summary of variable, expected relationship with the dependent variable(s), and data source.

Variable	Proxy/Measurement	Notation	Expected effect	Data Source
DEPENDENT VARIABLE				
Return on Equity	Profit after tax divided by total equity	ROE		NIC

INDEPENDENT VARIABLES				
Debt to Total Asset Ratio	Ratio of total debt to total asset	FDI	+	NIC
Debt to Equity Ratio	Ratio of total debt to total equity	QoG	+	NIC
Interest Rate	Monetary Policy Rate		-	International Financial Statistics (IFS)
CONTROL VARIABLES				
Premium Growth	Change (Increase/decrease) in gross written	TO	+	NIC
Gross Domestic Product	Growth rate of GDP	INF	-	WDI

3.3 Methodology

3.3.1 Econometric Specification

The focus of the research is to investigate how CS affects LICs' performance. Because of this, I utilize ROA and ROE as the dependent variables, while the independent variables are things like total debt, total equity, and debt-to-equity ratio. Additionally, I employ the interest rate as a further independent variable to investigate its effect on LIC performance as well as to evaluate the interest rate's mediating function in the link between CS and LIC performance. The study specifically aims to look at how CS affects LIC performance in Ghana. In appendage, the study seeks to assess the mediating role played by interest rate in the relationship between CS and the performance of LICs in Ghana. To achieve these objectives, I followed Nyedi and Banyen, (2017) and adopted a DPM method of analysis. Based on DPM method, I set up two model specifications as shown below:

$$ROE_{it} = \delta_1 + \delta_2 ROE_{it-1} + \delta_3 CS_{it} + \delta_4 IR_{it} + \delta_5 GDP_{it} + \delta_6 PG_{it} + \epsilon_{it} \quad (1)$$

$$ROE_{it} = \theta_1 + \theta_2 ROE_{it-1} + \theta_3 GDP_{it} + \theta_4 (CS * IR)_{it} + \theta_5 PG_{it} + \epsilon_{it} \quad (2)$$

Where ROE=.Return on equity (ROE)

LV= Capital structure TQ= Tobin's Q as a proxy for measuring firm performance

ROA = Return on Asset as a proxy for firm performance PG= Premium Growth IR=

Interest rate GDP= Gross domestic product

Where δ_{1i} and γ_{1i} are the intercepts for the respective equations. The intercepts or constants are assumed to vary among individual firms. These intercepts that are individual variant are included in the model to control for individual-specific and time invariant.

$\delta_2, \delta_3, \delta_4, \delta_5$ and δ_6 denote the coefficients of the independent variables in equation (2). Similarly, $\gamma_2, \gamma_3, \gamma_4$ and γ_5 denote the coefficients of the independent variables in equation (3). Unbalanced panel data (short and wide), like the dataset for this study, the fixed effects model is the most suitable for analysis. The dataset for this study includes a short (2015-2021) and wide (22 LICs) and, hence, a feature of an unbalanced short-wide panel.

3.3.1.1 Dynamic Panel Data Model

Many economic issues are dynamic by nature and use the panel data structure to understand adjustment. For example, Demand (i.e. present demand depends on past demand), Dynamic wage equation (The macroeconomic empirical wage equation implies that the expected log real wage depends on the lagged log real wage), and employment models (costs of hiring and firing), Investment of firms.

In the context of panel data, we usually deal with unobserved heterogeneity by applying the within (demeaning) transformation, as in one-way fixed effects models, or by taking first differences. The ability of first differencing to remove unobserved heterogeneity also underlies the family of estimators that have been developed for dynamic panel data (DPD) models. A dynamic panel data incorporates a lagged dependent variable (with or without other exogenous variables), allowing for the modelling of a partial adjustment mechanism.

The inclusion of exogenous variables only brings minor complications with respect to the estimation of the parameters. These complications pertain to the number of instruments (in instrumental variable estimation) or the number of moment conditions (in GMM estimation). There are also complications arising from the time dimensions of the panel datasets. Most of the panel estimation methods are designed for panel datasets with large N (the cross-section dimension) and large T (the time dimension). Panel datasets with small N and large T may require more specialized techniques (e.g. SUR) for estimation.

For simplicity, let us consider a one-way error component model:

$$y_{it} = \gamma y_{i,t-1} + \beta' x_{it} + \alpha_i + \varepsilon_{it} \quad (8)$$

for $i = 1, \dots, n$ and $t = 1, \dots, T$. α_i and λ_t are the (unobserved) individual and time-specific effects, and ε_{it} the error (idiosyncratic) term with $E(\varepsilon_{it}) = 0$, and $E(\varepsilon_{it} \varepsilon_{js}) = \sigma^2$ if $j = i$ and $t = s$, and $E(\varepsilon_{it} \varepsilon_{js}) = 0$ otherwise. In a dynamic panel model, the choice between a fixed-effects formulation

and a random-effects formulation has implications for estimation that are of a different nature than those associated with the static model.

The ability of first differencing to remove unobserved heterogeneity also underlies the family of estimators that have been developed for dynamic panel data (DPD) models. These models contain one or more lagged dependent variables, allowing for the modeling of a partial adjustment mechanism (Christopher, 2013). A serious difficulty arises with the one-way fixed effects model in the context of a dynamic panel data (DPD) model particularly in the “small T, large N” context. As Nickell (Econometrica, 1981) shows, this arises because the demeaning process which subtracts the individual’s mean value of y and each X from the respective variable creates a correlation between regressor and error.

The mean of the lagged dependent variable contains observations 0 through $(T - 1)$ on y , and the mean error—which is being conceptually subtracted from each $[\epsilon]$ —it—contains contemporaneous values of ϵ for $t = 1 \dots T$. The resulting correlation creates a bias in the estimate of the coefficient of the lagged dependent variable which is not mitigated by increasing N , the number of individual units.

The demeaning operation creates a regressor which cannot be distributed independently of the error term. Nickell demonstrates that the inconsistency of $\hat{\rho}$ as $N \rightarrow \infty$ is of order $1/T$, which may be quite sizable in a “small T” context. If $\rho > 0$, the bias is invariably negative, so that the persistence of y will be underestimated.

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For reasonably large values of T , the limit of $(\hat{\rho} - \rho)$ as $N \rightarrow \infty$ will be approximately $-(1 + \rho)/(T - 1)$: a sizable value, even if $T = 10$. With $\rho = 0.5$, the bias will be -0.167 , or about $1/3$ of the true value. The inclusion of additional regressors does not remove this bias. Indeed, if the regressors are correlated with the lagged dependent variable to some degree, their coefficients may be seriously biased as well.

Note also that this bias is not caused by an autocorrelated error process, ϵ . The bias arises even if the error process is i.i.d. If the error process is autocorrelated, the problem is even more severe given the difficulty of deriving a consistent estimate of the AR parameters in that context. The same problem affects the one-way random effects model. The u_i error component enters every value of y_{it} by assumption, so that the lagged dependent variable cannot be independent of the composite error process.

One solution to this problem involves taking first differences of the original model. The first difference transformation removes both the constant term and the individual effect:

$$\Delta y_{it} = \rho \Delta y_{i,t-1} + \Delta X_{it} \beta_2 + \Delta [\epsilon]_{it} \quad (9)$$

There is still correlation between the differenced lagged dependent variable and the disturbance process (which is now a first-order moving average process, or MA(1)): the former contains $y_{i,t-1}$ and the latter contains $\varepsilon_{i,t-1}$.

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But with the individual fixed effects swept out, a straightforward instrumental variables estimator is available. We may construct instruments for the lagged dependent variable from the second and third lags of y , either in the form of differences or lagged levels. If ε is i.i.d., those lags of y will be highly correlated with the lagged dependent variable (and its difference) but uncorrelated with the composite error process. Even if we had reason to believe that ε might be following an AR(1) process, we could still follow this strategy, “backing off” one period and using the third and fourth lags of y (presuming that the timeseries for each unit is long enough to do so). This approach is the Anderson–Hsiao (AH) estimator.

The DPD (Dynamic Panel Data) approach is usually considered the work of Arellano and Bond (AB) (Rev. Ec. Stud., 1991), but they in fact popularized the work of Holtz-Eakin, Newey and Rosen (Econometrica, 1988). It is based on the notion that the instrumental variables approach noted above does not exploit all of the information available in the sample. By doing so in a Generalized Method of Moments (GMM) context, we may construct more efficient estimates of the dynamic panel data model.

Arellano and Bond argue that the Anderson–Hsiao estimator, while consistent, fails to take all of the potential orthogonality conditions into account. A key aspect of the AB strategy, echoing that of AH, is the assumption that the necessary instruments are ‘internal’: that is, based on lagged values of the instrumented variable(s). The estimators allow the inclusion of external instruments as well. Consider the equations

$$y_{it} = X_{it}\beta_1 + W_{it}\beta_2 + v_{it}$$

$$v_{it} = u_i + \epsilon_{it} \quad (10)$$

where X_{it} includes strictly exogenous regressors, W_{it} are predetermined regressors (which may include lags of y) and endogenous regressors, all of which may be correlated with u_i , the unobserved individual effect. First-differencing the equation removes the u_i and its associated omitted-variable bias.

The AB approach, and its extension to the ‘System GMM’ context, is an estimator designed for situations with: ‘small T, large N’ panel- few time periods and many individual units; a linear functional relationship; one left-hand variable that is dynamic, depending on its own past realisations; right-hand variables that are not strictly exogenous: correlated with past and possibly current realisations of the error; fixed individual effects, implying unobserved heterogeneity; and heteroskedasticity and autocorrelation within individual units’ errors, but not across them.

The Arellano–Bond estimator sets up a generalized method of moments (GMM) problem in which the model is specified as a system of equations, one per time period, where the instruments applicable to each equation differ (for instance, in later time periods, additional lagged values of the instruments are available). In this setup, we have different numbers of instruments available for each time period: one for $t = 2$, two for $t = 3$, and so on. As we move to the later time periods in each panel's time-series, additional orthogonality conditions become available, and taking these additional conditions into account improves the efficiency of the AB estimator. One disadvantage of this strategy should be apparent. The number of instruments produced will be quadratic in T , the length of the time-series available. If $T < 10$, that may be a manageable number, but for a longer time-series, it may be necessary to restrict the number of past lags used.

A potential weakness in the Arellano–Bond DPD estimator was revealed in later work by Arellano and Bover (1995) and Blundell and Bond (1998). The lagged levels are often rather poor instruments for first differenced variables, especially if the variables are close to a random walk. Their modification of the estimator includes lagged levels as well as lagged differences. The original estimator is often entitled difference GMM, while the expanded estimator is commonly termed System GMM. The cost of the System GMM estimator involves a set of additional restrictions on the initial conditions of the process generating y .

3.3.1.1.1 Diagnostic tests

As the DPD estimators are instrumental variables methods, it is particularly important to evaluate the Sargan–Hansen test results when they are applied. In his routine, instruments can be either “GMM-style” or “IV-style”. The former are constructed per the Arellano–Bond logic, making use of multiple lags; the latter are included as is in the instrument matrix. For the system

GMM estimator instruments may be specified as applying to the differenced equations, the level equations or both. Another important diagnostic in DPD estimation is the AR test for autocorrelation of the residuals. By construction, the residuals of the differenced equation should possess serial correlation, but if the assumption of serial independence in the original errors is warranted, the differenced residuals should not exhibit significant AR(2) behavior. If a significant AR (2) statistic is encountered, the second lags of endogenous variables will not be appropriate instruments for their current values. If T is fairly large an unrestricted set of lags will introduce a huge number of instruments, with a possible loss of efficiency. By using the lag limits options, you may specify, for instance, that only lags 2–5 are to be used in constructing the GMM instruments.

3.3.1.1.2 Unit Root Tests

It is basic that a data with features of time series follow a particular stochastic and stationarity process. This is because of the fact that time series data establish historical relationships by using past data. In panel data model analysis, there are various methods for unit root tests. These methods include Im, Pesaran and Shin (2003), Levin, Lin and Chu (2002), Breitung (2000), Augmented Dicky-Fuller Chi-Square and Philips-Perron Fisher Chi-Square unit root tests. All these tests are employed in determining the stationarity of the variables.

The hypotheses for the various unit root tests are stated as follows:

Null Hypothesis: Panel data has a unit root (non-stationary)

Alternate Hypothesis: Panel data has no unit root (stationary)

However, some selected methods can be used for the tests depending on their availability and their convenience. For all methods, the tests should be statistically significant at 1%, 5% or 10% for the null hypothesis to be rejected. Nevertheless, when the probability value of the tests

are greater than all the significance levels, then the null hypothesis cannot be rejected. Those methods with a greater number of statistical significance should be used to make the decision. For example, given that three methods were employed in the unit root tests and two methods proved that there is the statistical significance of the variable, then their results override the only one method that reports there is no statistical significance.

3.3.1.2 Variables Description and Justification

3.3.1.2.1 Dependent variables

Dependent variable is a variable that depends on other variables called independent variables or predictors. Again, the variations in the dependent variables depend on the variations of the independent variables. For this study the dependent variables chosen include Return on Equity.

Return-on-Equity (ROE)

ROE computes the proportion of earnings of the firm accruing to the shareholders. ROE is a relevant variable for shareholders in firms (Gupta and Sharma, 2014). In the terms of accounting, ROE is a basic performance measure of firms as it is beneficial to shareholders. The return on equity is the performance variable that shareholders are most interested in as that explains how much they earn from the profits of the companies. A good return on equity presents a good signal to prospective subscribers of shares of the companies and that the companies would be able to attract funds through the issuance of shares to the public. The capital structure decisions on the distribution of earnings to equity holders (ROE) is considered paramount. Shareholders are often more interested in how the capital structure decisions of firms affect their dividend payments.

profit after tax

$$ROE = \frac{\text{Net Income}}{\text{total equity}} \quad (3)$$

3.3.1.2.2 Independent variables

The fluctuations in the dependent variable are predicted by independent factors. The debt to asset ratio and the debt-to-equity ratio are the independent variables in this study (capital structure).

Debt to Asset Ratio

Debt to asset ratio, according to Herry (2016), quantifies the proportion of total debt to total assets. Thus, the ratio gauges how much of the company's debt is utilized to fund its assets. Sutrisno (2017) claims that the following formula may be used to calculate the debt to asset ratio:

$$DebtRatio = \frac{\text{Total Debt}}{\text{total assets}} * 100\% \quad (4)$$

Debt to Equity Ratio

According to Sawir, (2017), Debt to equity ratio measures the ratio of debt to equity of company funds, which indicates the ability of the company's funds to fulfil their obligations. According to Sutrisno, (2017), Debt to Equity Ratio can be formulated as follows:

$$\text{Total Debt}$$

$$\text{DebtRatio} = \frac{\text{Debt}}{\text{Total Equity}} * 100\% \quad (5)$$

3.3.1.23 Interest rate's mediating role in the relationship between CS and LICs' performance

According to the research, the interest rate has been extremely important to how well enterprises have performed throughout time. Only a few studies have claimed that interest rates directly affect how well business's function (Ebonyi-Amoah, 2017). To the best of my knowledge, no study has looked at the mediating effect of interest rates in the link between CS and the performance of LICs in Ghana, based on the empirical literature reviewed thus far. As a result, this study investigates how interest rates mediate the impact of CS on the performance of LICs in Ghana.

3.3.1.24 Control Variables

In order to have an accurate analysis of the impact of CS on the profitability of life insurance companies, there are some control variables that account for factors that influence the profitability of these companies. These are premium growth, and GDP

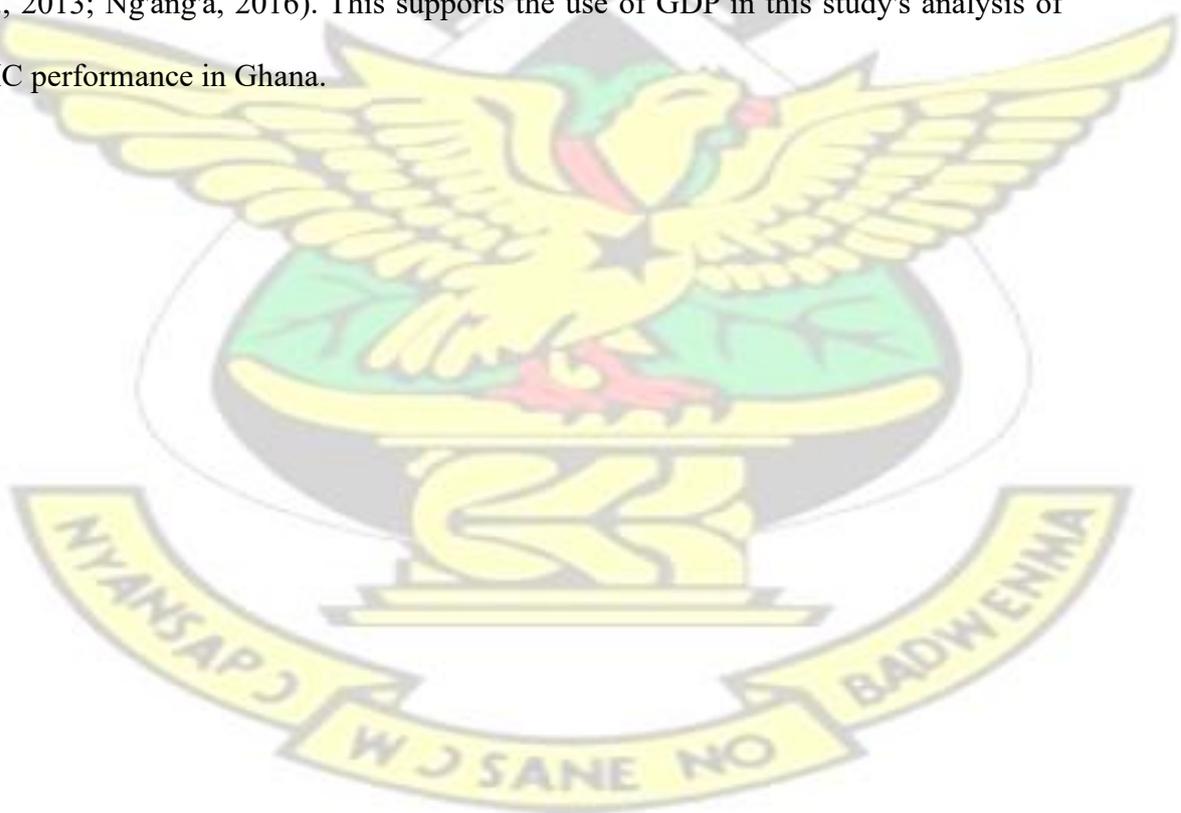
Premium Growth

Premium growth has been severally employed as a control variable in the literature premium (Kerim and Alaji et. al., 2019; Joseph and Sackey, et. al., 2013; Biener and Eling, et. al., 2016). The new premium compares the new premium of the current year to the first-year premium and single premium plans purchased in that year. The control variable in this study is premium growth, which is assessed as Change (Increase/Decrease) in Gross Written. Measures of LICs' profitability are significantly impacted by the quantity of gross premium written (Joseph and Sackey, et. al., 2013). The growth of premiums written in an insurance company is an indication of a source

of capital for the firm to expand operations and, hence, the profitability or performance of the company. Hence, this study follows the literature and adopts premium growth as a control variable in analyzing the performance of LICs.

Gross Domestic Product (GDP)

GDP measures the value of the products and services a nation generates over a certain amount of time (Mankiw, 2008). Thus, GDP accounts for both a nation's total outlays and its total receipts for goods and services. A country's GDP is a crucial gauge of its economic health (Ng'ang'a, 2016). The performance of insurance businesses has been examined in various studies using GDP as a control variable (Joseph and Sackey, et al., 2013; Ng'ang'a, 2016). This supports the use of GDP in this study's analysis of LIC performance in Ghana.



CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Descriptive and Statistical Summary

Table 1 presents the descriptive statistics of the variables. From Table 1, it is indicated that the retention ratio (RR) has the highest mean of 90.4000 whereas the D/E has the lowest mean of 0.1554. The most dispersed variable is premium growth of 107.3682 and the least dispersed variable is the debt-to-equity ratio of 0.2208. Moreover, PG has the highest maximum value of 520.0000 whereas the D/E ratio has the lowest maximum value of 0.5847. Furthermore, interest rate (IR) has the highest minimum value of 14.5000 and ROE has the lowest minimum value of -161.0000.

ROE, D/A, (D/A)*IR, D/E and (D/E) *IR variables have standard deviations greater than their means whereas GDP, IR, PG, and RR have standard deviations lower than their means. This is an indication that the observations of the former variables, which are the main variables, deviate much from their means whereas the observations of the latter variables, which are the control variables, deviate less from their means. For instance, ROE has a mean of -5.3867 and a standard deviation of 32.1852.

Table 2: Descriptive Statistics

	D/A	(D/A)*IR	(D/E)*IR	D/E	GDP	IR	PG	RR	
						<u>ROE</u>			
Mean	1.3456	28.625	3.2382	0.1554	4.8971	19.1714	71.5897	90.4000	-5.3867
Median	0.1793	3.5866	0.1578	0.0099	6.3000	17.0000	21.0000	95.0000	1.5000
Maximum	6.4042	144.0936	11.6934	0.5847	8.5000	26.0000	520.0000	100.0000	63.0000
Minimum	0.0000	0.0000	0.0000	0.0000	0.5000	14.5000	0.3943	42.0000	-161.0000
Std. Dev.	2.1918	48.8651	4.5564	0.2208	2.5876	3.9836	107.3682	11.4056	32.1852
Obs.	120	120	120	120	120	120	120	120	120

*Note: ROE stands for Return on Equity, and ROE (-1) represents its lag. D/A stands for debt to assets, D/E for debt to equity, (D/E) *IR for debt to equity and interest rate, IR for interest rate, GDP for gross domestic product, PG for*

premium growth, and RR for retention ratio. D/A stands for debt to assets, (D/A) *IR stands for debt to assets and interest rate, D/E stands for debt to equity, (D/E) *IR for debt to equity and interest rate.

4.2 Unit Root Tests

For econometric analysis of the variables, the variables' stationarity is very important to carry out reliable and consistent estimates. That is, stationary variables avoid spurious regression in estimation. The variables are therefore subjected to unit root tests to check for stationarity. Im, Pesaran and Shin W-Stat, Breitung t-stat, Levin, Lin and Chu t, ADF-Fisher Chi-square, and PP-Fisher Chi-square unit root tests were used for a panel data model. From table 2, it is evident that all variables except IR, PG and GDP, are stationary at the levels. Therefore, unit root tests were applied on the first difference of IR, PG and GDP and they turned out to be stationary.

Table 3: Panel Unit Root Tests

Variables	LEVELS				
	Levin, Lin &Chu t	Breitung t- stat	ADF-Fisher Chi-square	PP-Fisher Chisquare	Im, Pesaran and Shin W- Stat
D/A	-65.586***	-4.576***	257.004***	287.752***	-11.949***
(D/A)*IR	-42.827***	-5.170***	199.833***	317.952***	-7.232***
D/E	-12.061***	-2.465***	39.451	97.765***	0.282
(D/E)*IR	-13.024***	-2.493***	44.503	111.092***	0.118***
GDP	3.011	4.721	4.684	1.1476	2.392
PG	-0.653	5.895	37.825	66.620***	0.602
ROE	-74.551***	1.025	59.470***	103.347	-6.946***
RR	-46.328***	1.715	37.320	49.697**	-2.072**

IR	-3.554***	3.334	6.306	3.670	2.032
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FIRST DIFFERENCE

Variables	Levin, Lin & Chu t	Breitung t-stat	ADF-Fisher Chi-square	PP-Fisher Chi-square	Im, Pesaran and Shin W-Stat
IR	-29.046***	-20.312***	65.163**	134.610***	-2.390***
PG	-129.672***	1.454	51.686***	76.343***	-10.312***
GDP	-126.719***	-2.715***	229.555***	332.454***	-17.014***

Note: * $p < .05$, ** $p < .01$, and *** $p < .001$

4.3 Diagnostic Tests

Diagnostic tests for the study of the dynamic panel data model are reported in Table 3. All three performance factors' results for the AR (1) and AR (2) are given. The findings show that for all the performance variables, AR (1) and AR (2), respectively, have p-values greater than 0.05 and 0.1. This shows that residuals do not have serial correlation. This suggests that the dynamic panel data model's output is dependable and consistent in terms of its results.

Table 4: Diagnostic Tests

Return-On-Equity (ROE)				
Test Order	m-Statistic	Rho	SE(rho)	Prob.
AR(1)	-1.381	-21442.53	15528.43	0.167
AR(2)	-0.406	-866.957	2135.731	0.685

4.4 Presentation and discussion of results

The analysis's findings from Table 4's dynamic panel data model are summarized in Table 4.

Table 4 reports that the profitability of the current year is significantly negatively affected by the LICs' performance from the previous year by a factor of 1 percent. This might be because the life insurance companies did not reinvest most of the profits, they made the previous year because they were used to pay claims or to retain them.

At a 1% level of significance, only the D/E ratio is statistically significant. For example, if everything else remained the same, the profitability of the LICs would decrease by \$147.7785 for every \$1 that the debt (D/E) increased. This result corroborates the findings of Logavathani and Lingsiya (2018), Nguyen and Nguyen (2020a), and Nguyen and Nguyen (2020b). Nguyen and Nguyen (2020) evaluate how CS affects the productivity of Vietnamese businesses. The authors contend that CS significantly lowers the effectiveness of the enterprises in Vietnam. In a related study, Nguyen and Nguyen (2020) contend that CS lowers the profitability of listed non-financial enterprises in Vietnam. An increase in the amount of debt owed by the companies would result in a fall in the profitability of the companies. Also, Logavathani and Lingsiya (2018) argue that the D/A ratio reduces the profitability of firms in Sri Lanka. The increased repayment of debts owed by these companies affects their expenses to increase and, thereby, affects their profit margins to fall. This study, however, contradicts the findings of Detthamrong et. al., (2017) who argued that capital structure enhances the profitability of firms. However, interest rates have a side effect on how profitable LICs are. Although this effect is statistically insignificant, the interest rate has a negative effect on the ROE of life insurance companies of -7.1586. This finding is supported by study by Hussain et al. (2021), which asserts that interest rates have a negative but significant impact on the performance of businesses in emerging economies.

Similar to how $(D/E) * IR$ and $(D/A) * IR$ capital structures affect interest rates, life insurance firms' profitability is positively impacted. At a 1% level of significance, only interest rate-induced debt-to-equity is statistically significant. This finding confirms the conclusions of Le and Phan (2017) who argued that there is a benefit to be derived from tax-deductible debt. Specifically, a GHc1 increase in interest rate-induced debt-t-o-equity causes firm performance to increase by GHc6.5574, all else equal. The consideration of interest rates in the debt structure has improved the profitability of LICs. This can be attributed to the tax-deductible advantages of interest expense on debt as that would serve as a shield on the amount of debt services, encouraging reinvestment and improving the firms' profitability.

Regarding the control variables, PG has a negative effect on the ROE of life insurance companies while GDP and RR have favorable effects on the ROE of LICs. The ROE of these LICs is not significantly impacted by any of the control factors, though. The findings of Rehman et al., (2021), who contend that GDP enhances performance of the Sugar industry listed on the Pakistan Stock Exchange, are in conflict with this study. The findings of Olalekan (2018), who contends that PG has a negligible positive impact on the profitability of LICs, are in direct opposition to this finding. In a similar vein, Markonah et al. (2019) contend that PG has negligible positive effects on Indonesian insurance companies' performance.

Table 5: DYNAMIC PANEL MODEL ESTIMATION

Variables	ROE	Std. Error	t-Statistic	P-Value
ROE(-1)	0.116	0.033	3.473	0.001
D/A	-31.047	28.309	-1.097	0.278
$(D/A) * IR$	1.279	1.165	1.097	0.277

D/E	-147.779	47.631	-2.998	0.004
(D/E)*IR	6.557	2.101	3.122	0.003
IR	-7.159	10.724	-0.668	0.507
GDP	0.252	1.052	0.240	0.712
PG	-0.021	0.038	-0.545	0.588
RR	0.111	0.172	0.646	0.521

*Note: Return on equity is referred to as ROE, and its lag is designated as ROE (-1). D/A stands for the debt-to-assets ratio. *IR stands for the ratio of debt to total assets multiplied by the interest rate. D/E stands for the ratio of debt to total equity. *IR stands for the interest rate. GDP stands for gross domestic product. PG stands for premium growth. RR stands for retention ratio.*



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CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The study looks at how CS affects Ghanaian life insurance businesses' performance. The study also looks at the interest rate's mediating function in Ghana's link between CS and LIC performance. The analysis covers the years 2015 through 2020 and is based on data extracted from the financial reports of 22 Ghanaian life insurance companies.

5.1 Summary of Findings 5.1.1 The relationship between capital structure and the performance of LICs in Ghana

The study's primary goal is to investigate how capital structure affects LICs' performance. To do this, I use the ROE as a performance indicator for the life insurance businesses and the D/E and D/A ratios as capital structure variables. Table 3's outcomes, which were obtained using the dynamic panel data model of the estimate, show that both the D/E and D/A ratios have a detrimental effect on the performance of the LICs in Ghana. However, only the D/E ratio affects how well the LICs perform in Ghana. The profitability of the companies would decrease if the amount of debt they owe increased. The increased repayment of debts owed by these companies affects their expenses to increase and, thereby, causes their profit margins to fall. Table 4 reports

that the profitability of the current year is significantly negatively affected by the LICs' performance from the previous year by a factor of 1 percent. This might be because the life insurance companies did not reinvest most of the profits, they made the previous year because they were used to pay claims or to retain them.

At a 1% level of significance, only the D/E ratio is statistically significant. For example, if everything else remained the same, the profitability of the LICs would decrease by \$147.7785 for every \$1 that the debt (D/E) increased. This result corroborates the findings of Logavathani and Lingesiya (2018), Nguyen and Nguyen (2020a), and Nguyen and Nguyen (2020b). Nguyen and Nguyen (2020) evaluate how CS affects the productivity of Vietnamese businesses. The authors contend that CS significantly lowers the effectiveness of the enterprises in Vietnam. In a related study, Nguyen and Nguyen (2020) contend that CS lowers the profitability of listed non-financial enterprises in Vietnam. An increase in the amount of debt owed by the companies would result in a fall in the profitability of the companies.

Also, Logavathani and Lingesiya (2018) argue that the D/A ratio reduces the profitability of firms in Sri Lanka. The increased repayment of debts owed by these companies affects their expenses to increase and, thereby, causes their profit margins to fall. This study, however, contradicts the findings of Detthamrong et. al., (2017) who argued that capital structure enhances the profitability of firms.

Regarding the control variables, PG has a negative effect on the ROE of life insurance companies while GDP and RR have favorable effects on the ROE of LICs. The ROE of these LICs is not significantly impacted by any of the control factors, though. The findings of

Rehman et al., (2021), who contend that GDP enhances the performance of the Sugar industry listed on the Pakistan Stock Exchange, are in conflict with this study. The findings of Olalekan (2018), who contends that PG has a negligible positive impact on the profitability of LICs, are in direct opposition to this finding. In a similar vein, Markonah et al. (2019) contend that PG has negligible positive effects on Indonesian insurance companies' performance.

5.1.2 The relationship between interest rate and the performance of LICs in Ghana The study's second goal is to ascertain how interest rates affect life insurance businesses' performance. According to Table 3's findings, interest rates in Ghana have a negligible negative impact on LICs' performance. The consideration of interest rates in the debt structure has improved the profitability of LICs. This can be attributed to the tax-deductible advantages of interest expense on debt as that would serve as a shield on the number of debt services, encouraging reinvestment and improving the firm's profitability.

However, interest rates have a side effect on how profitable LICs are. Although this effect is statistically insignificant, the interest rate has a negative effect on the ROE of life insurance companies of -7.1586. This finding is supported by a study by Hussain et al. (2021), which asserts that interest rates have a negative but significant impact on the performance of businesses in emerging economies.

5.1.3. Ghana's performance of LICs and the function of interest rates as a mediating factor

The study's third goal is to assess how interest rates affect the performance of LOCs and the link between CS. To achieve this, I interact the CS variables with the interest rate. The findings in table 3 report that both interest rate-induced capital structures $[(D/A) * IR$ and $(D/E) * IR]$ have

positive impacts on the profitability of LICs. However, only interest rate-induced debt-to-equity is statistically significant. The consideration of interest rates in the debt structure has improved the profitability of life insurance companies.

Similar to how $(D/E) * IR$ and $(D/A) * IR$ capital structures affect interest rates, life insurance firms' profitability is positively impacted. At a 1% level of significance, only interest rate-induced debt-to-equity is statistically significant. This finding confirms the conclusions of Le and Phan (2017) who argued that there is a benefit to be derived from tax-deductible debt. Specifically, a GHc1 increase in interest rate-induced debt-to-equity causes firm performance to increase by GHc6.5574, all else equal. The consideration of interest rates in the debt structure has improved the profitability of LICs. This can be attributed to the tax-deductible advantages of interest expense on debt as that would serve as a shield on the number of debt services, encouraging reinvestment and improving the firms' profitability.

5.2 Conclusion

For businesses' capital planning, the capital structure is an essential component of funding. These internally generated funds have always been said to be an insufficient amount of funds for the firms to undertake investment projects. Hence, firms often rely on external sources of funds to add up to the internally generated funds to engage in finances and investments. The main challenge that firms face is getting the right mix of capital structures to minimize the potential losses and minimize insolvency and subsequent liquidation of the firms.

According to certain theories, the ideal CS contains higher levels of debt than shares. Therefore, the less risk in the CS and, consequently, a spike in shareholder value of wealth, the more geared and levered the enterprises are. However, the interest rate applied to debts affects how much

money businesses can borrow. Additionally, because it increases the cost of running the businesses, the interest rate, which is the cost of debts, frequently affects the profit margin of firms.

The effect of CS on LIC performance in Ghana is being investigated in this study. The specific purpose of the study is to investigate the impact of debt-to-equity and debt-to-asset ratios on the profitability of LICs in Ghana. According to Table 3's findings, the D/E and D/A ratios have a detrimental effect on how well LICs work in Ghana. However, in Ghana, LICs' effectiveness is only increased by the D/E ratio. The study's appendix aims to investigate how interest rates affect LIC performance in Ghana. According to table 3's findings, interest rates in Ghana have a negligible negative impact on LICs' performance.

The study also aims to determine whether interest rates have a mediating role in the association between the D/E and D/A ratios and the performance of LICs in Ghana. The findings in table 3 report that both interest rate-induced capital structures $[(D/A) * IR]$ and $(D/E) * IR$ have positive impacts on the profitability of LICs. However, only interest rate-induced debt-to-equity is statistically significant.

5.3 Recommendations

Before making any changes to the capital structure, LICs should conduct a comprehensive analysis of the firm's financial position, risk tolerance, and strategic objectives. Consider factors such as

industry dynamics, market conditions, and the firm's growth prospects. Clearly understand the cost of capital associated with different sources of funding. Evaluate the trade-offs between debt and equity, considering factors such as interest rates, tax implications, and the impact on overall profitability.

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LICs should strive to find the optimal mix of debt and equity that aligns with the firm's risk profile and financial goals. Avoid extreme positions—too much debt can increase financial risk, while an overly equity-heavy structure may limit leverage benefits. LICs should be flexible and adapt the capital structure to changing market conditions. Periodically reassess the mix of debt and equity in response to shifts in interest rates, economic conditions, or industry trends.

LICs should diversify funding sources to reduce dependence on a single type of financing. Explore various debt instruments, equity financing, and alternative sources of capital to enhance flexibility and mitigate specific risks. Take into account both external and internal factors when determining the capital structure. External factors include market conditions and regulatory environments, while internal factors involve the firm's operational capabilities and strategic goals.

5.4 Recommendations for Future Studies

Future studies on the relationship between CS and business success ought to include all insurance service providers, or better still, all enterprises in Ghana. Future studies should extend the period beyond the purview of the current investigation. This will also provide further insight

into the CS dynamics of firms before, during, and after Ghana's recent financial crisis. Future research should consider both the short- and long-term dynamics of capital structure when analyzing the success of companies.

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