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EFFECT OF CAPITAL STRUCTURE ON PROFITABILITY OF LISTED FRIMS IN GHANA

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other educational institution, except where due acknowledgment is made in the thesis.

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DEDICATION

This work is dedicated to my children.

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ABSTRACT

The study aimed to investigate the impact of different types of capital structures on firm profitability, employing a positivist paradigm and explanatory research methodology. Utilising secondary data from financial reports, a purposive sampling technique was used to select a sample of 15 firms from Ghana. The study used panel data techniques and conducted fixed-effect panel regressions to examine the association between capital structure and profitability. The results of different capital structure ratios' impact on profitability reveals varying relationships. For Total Debt-to-Assets Ratio (TDAR), both Model 1 and Model 2 indicate a positive relationship with profitability (ROA and ROE). Higher TDAR is associated with improved profitability, attributed to tax shield benefits, leveraging assets for growth, and positive creditor confidence. The Total Debt-to-Equity Ratio (TDER) in Model 1 shows a positive association with ROA, while in Model 2, it has a negative link with ROE. Increased TDER can enhance ROA through magnified returns, but also elevate financial risk. Short-Term Debt-to-Assets Ratio (STDAR) in both models demonstrates a positive connection with both ROA and ROE, signifying short-term debt's role in enhancing liquidity, seizing opportunities, and optimizing capital structure. Long-Term Debt-to-Assets Ratio (LTDAR) exhibits a positive link with ROA in Model 1, while Model 2 displays a negative association with ROE. Long-term debt's impact on asset expansion and stability aligns with profitability, but higher leverage can reduce ROE due to interest costs and risk. These findings underscore the intricate interplay between debt ratios and profitability, shaped by financial theories and considerations of risk and growth. These findings underscore the importance of balancing debt levels to optimise profitability while managing financial risks. It is crucial for companies to carefully consider their capital structure and leverage ratios to effectively leverage debt for enhanced profitability without exposing themselves to excessive financial risk. Maintaining an optimal mix of debt and equity enables companies to maximise returns on assets and generate higher profitability.

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

The basic objective of a company entity is to generate financial gains. The profitability of a corporation and subsequently the value of its shareholders may be influenced by the manner in which it manages its capital structure. When making economic choices, maximising shareholder value is priority number one (Barzuza, Curtis and Webber, 2019), this is because one of the most significant issues which surround the financing of corporate entities and hence affecting the performance of the firm in terms of profitability has been based on the theory of capital structure (Opoku-Asante et al, 2022; Jensen and Meckling, 2019). Capital structure choice is the method by which a company decides how to fund its operations by combining different forms of claim to ownership (debt and equity) (Alan and Gaur, 2018). Batchimeg (2017) states that the ratio of debt to equity is critical for a company's survival, development, and performance measurement and some research has found this to be true (Putri and Rahyuda, 2020; Valaskova Kliestik and Gajdosikova, 2021).

Due to the near impossibility of finding a corporation that is financed only by debt or solely by equity, the notion of capital structure has become more of a phenomenon (Dzelu, 2019). Interest on debt is tax deductible, making it a more cost-effective form of financing than stock (Jiang, 2021), which in turn increases profits and satisfies the goal of maximising shareholder value. Additionally, debt financing prevents the current power of stock owners from becoming diminished (Tarighi et al, 2022). However, bankruptcy fees and economic hardship are the repercussions of relying too much on debt. Even if a company is not making a profit, the debt holders still have the right to be repaid in full, including all accrued interest and principal.

External and internal financial sources are integral to the survival or bankruptcy of a business. According to Gapenski and Brigham (1996), this choice is significant and may impact the entity's capacity to contend productively in its natural setting. If a company depends only on stock capital and internal finance, it may have difficulty growing and taking advantage of market possibilities (Vismara, 2016). Therefore, businesses may acquire borrowed financing to develop and boost their profit potential. The subject that remains unsolved is the impact of capital structure on business profitability. Conflicting findings have emerged from extensive empirical investigations carried out by Ceballos-Mina and Santiago-Ayala (2019) and Le and Phan (2017). Positive and negative findings have emerged from these investigations (Anarfo and Appiahene, 2017) and negative relationships (Le and Phan, 2017) between financial performance and capital structure.

Some theories of capital Structure have developed in recent decades, with the static trade-off (Litzenberger and Kraus 1973; Kim 1978) and the theory of pecking order being the most well-known examples (Myers 1984). According to the static trade-off hypothesis, businesses should strive for the optimal level of debt that maximises tax benefits from deductible interest on debt while simultaneously minimising the risk of financial disaster and insolvency. Capital is essential for businesses to function, hence the pecking order hypothesis, this follows from the principle of asymmetric information and indicates that organisations must adhere to a tight financing structure (Hoang et al. 2021). It advises businesses to utilise retained earnings and other internal sources of funding before turning to debt or outside investors for capital.

There has been much debate about the impact of capital structure on business profitability, both in practical and theoretical contexts. This argument mostly revolves around the preference of enterprises to adopt capital structure measures that might

potentially provide benefits for their decision-making processes. Several capital structure theories have been suggested in the theoretical literature, each of which takes into account the relative costs and advantages of available financing choices (Bajaj, Kashiramka and Singh,2021; Alnori and Alqahtani, 2019). The optimal debt and equity combination are emphasised differently by the various theories. Capital structure choices revolve around finding the optimal capital structure, or the ideal amount of capital that maximises profits and returns for shareholders. According to Satrio (2022), the optimum capital structure refers to the ideal ratio of debt to equity that maximises a company's profitability and market value, while simultaneously minimising its cost of capital.

Capital structures and the subsequent effect on a company's profitability will vary between businesses that raise funds from various sources. Research into the link between capital structure and corporate earnings has been conducted thus far. Companies' profitability will react differently to changes in capital structure because of the economy and the industries in which they operate. Conducting research on the subject matter has the potential to provide significant information into the patterns and magnitude of the influence of capital structure on profitability.

Several researchers in Ghana have examined the firm’s capital structure looking at both its causes and its effects on business output (Samadji, 2018; Anarfo and Appiahene, 2017). Others have also put their attention on financial organisations like banks (Musah, 2017; Anarfo, 2015; Samadji, 2018). All of these analyses share the conclusion that debt finance is essential to the success of Ghanaian businesses. This study will use this information to analyse the capitalization and profitability of Ghana's publicly traded companies.

1.1 Statement of the Problem

In the decades following Jensen and Meckling's (1976) foundational work, several empirical research has been undertaken on the issue of capital structure and business performance, with conflicting claims of outcomes. Capital structure has been linked to improving firm performance by several studies (Anarfo and Appiahene, 2017; Javeed and Lefen, 2019; Wang et al, 2020). Others have found an adverse correlation (Le and Phan, 2017); and yet others have found no correlation at all. The current challenge faced by managers is the selection of an optimum capital structure that minimises the firm's cost of capital and maximises returns to company owners (Ray, 2022; Almajali and Shamsuddin, 2019). The optimum capital structure refers to the strategic distribution of a firm's debt and equity in a manner that maximises profitability while simultaneously minimising interest expenses. When determining the optimal capital structure, finance managers lack a definitive reference point. In reality, the best capital structure combination is determined by availability and cost.

Capital structures and the subsequent effect on a company's profitability will vary between businesses that raise funds from various sources. Companies' profitability will react differently to changes in capital structure because of the economy and the industries in which they operate. For example, financial organisations exhibit a higher degree of financial leverage as compared to non-financial enterprises (Mohamed, 2016), and the financial industry is closely regulated by the central bank in terms of assets, liquidity, provision for bad loans, capital holding and other aspects. (Nwajuo, 2022). The research on capital structure in Ghana can be divided into certain categories; its effects on business output (Arthur, 2019; Anarfo and Appiahene, 2017; Dzelu, 2019), the capital structure at listed firms in Ghana (Musah and Kong, 2019; Hongli, Ajorsu and Bakpa, 2019; Akomeah, Bentil

and Musah, 2018) with a chunk of the studies on banks (Musah, 2018; Yakubu et al 2017; Obuobi et al, 2020).

To bridge the gap in the inconsistencies of findings based on empirical study and coupled with the fact that a significant number of studies on capital structure and profitability in Ghana has been banks and other financial entities as the primary target. The objective of this research is to examine the impact of capital structure on the profitability of firms listed on the Ghana Stock Exchange. It will consider multiple sectors, rather than solely focusing on the financial sector, as different industries may yield diverse outcomes compared to the banking sector.

Furthermore, the study considers data periods spanning the year 2010 to 2021. Studies such as Arthur (2019) focused on the period (2005 to 2012) and Yakubu et al (2017) data points between the time frame of 2010 to 2015. Whereas Obuobi et al (2020) were on a seven-year period from 2008 to 2014. This study is significant in the sense that by using data points from 2010 to 2021, it captures both prior and post-banking sector crises the capital structure of companies has affected their performance.

1.2 Objectives of the Study

The primary goal of this research is to analyse how different types of capital structures affect the profitability of Ghana Stock Exchange-traded companies. With the following specific objectives:

1. To determine the influence of the total debt-to-assets ratio (TDAR) on profitability.
2. To examine the influence of the total debt-to-equity ratio (TDER) on profitability.

3. To analyse the effect of the Short-term debt-to-assets ratio (STDAR) on profitability.
4. To investigate the effect of the Long-term Debt-to-assets ratio (LTDAR) on profitability.

1.3 Research Questions

1. What is the influence of the Total debt-to-assets ratio (TDAR) on profitability?
2. What is the influence of the total debt-to-equity ratio (TDER) on profitability?
3. What is the effect of the Short-term debt-to-assets ratio (STDAR) on profitability?
4. What is the effect of the Long-term Debt-to-assets ratio (LTDAR) on profitability?

1.4 Significance of the Study

The study is on how capital structure contributes towards businesses' capacity to turn a profit that the Ghana Stock Exchange (GSE) has listed and further shows the optimum capital structure that is necessary for corporations in Ghana. The study will be germane to academia, and policy and also have managerial implications for business entities regarding their capital structure decisions. In analysing the impact of capital structure on the profitability of listed firms in Ghana this research contributes to a little amount of literature that has targeted this sector and provides a current perspective on the issue which will act as a point of reference for future research. Policy-wise, government and relevant agencies will find this study useful in setting regulations on certain aspects of debt financing for certain sectors of industry to keep businesses afloat and managers of corporations will find this study useful in terms of

strategising in attaining the optimum capital expenditure for their respective businesses.

1.5 Scope of the Study

This research aims to evaluate the influence of capital structure on the profitability of firms listed on the Ghana Stock Exchange (GSE). The profitability of listed firms is limited to the Return on Equity and Return on Assets variables from 2010 to 2021.

1.6 Summary of Methodology

Given the study's focus on exploring the association between capital structure and firm profitability, the use of an explanatory or causal research methodology was considered suitable for this examination. Considering the inherent characteristics of this research, it is recommended to scrutinise the hypotheses via the utilisation of secondary data. Secondary data was extracted from the financial reports. The research focused on enterprises with available data spanning from 2010 to 2021 since its major aim was to study the impact of capital structure on profitability. A sample size of 15 organisations was selected due to constraints on resources and time. The sample for the inquiry was determined using purposive sampling methodology. The researcher employs a fixed effect panel regression model to examine the impact of capital structure on corporate performance.

1.7 Organisation of the Study

There will be five main sections to the research. The first chapter presents the whole study, including the background of the research, problem statement, importance, major aim and goals. The second chapter begins with a survey of relevant literature and moves on to the theoretical foundation. The objective of this chapter is to conduct an empirical analysis of the current body of research pertaining to the concepts of

capital structure and profitability, as well as the interplay between capital structure and profitability in publicly traded companies. The third portion of the research included an elaborate exposition of the methodology used for the gathering and analysis of data. The aforementioned aspects addressed in the study include the research design, the target population, the sample size and sampling tactics, as well as the instruments and processes used for data collecting. The present chapter also elucidated the data analysis approach used in the investigation. The fourth chapter will concentrate on a discussion of results, analysis and presentation of data based on major research factors, with references to relevant empirical evidence. To conclude the study report, key research results will be summarised in Chapter Five, where conclusions and suggestions will be provided for stakeholders' consideration.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter analyses how different types of capital structures affect the profitability of Ghana Stock Exchange-traded companies. This chapter provides a review of previous research that is relevant to the current topic. The chapter is divided into Five sections, which begin with concepts under conceptual review, followed by the theoretical review, then empirical studies and conceptual framework. Lastly, the summary chapter.

2.1 Conceptual Review

The conceptual review section contains the definitions, operationalisation, and how the variables have been used in this study. These concepts include capital structure and its determinants, debt financing, and the concept of profitability and profitability as a measure of performance. These concepts are defined operationalised and discussed below.

2.1.1 Capital Structure

Capital structure is the mix of long-term funding of enterprises, preferred stock and represented by debt and common stock (Purnamawati and Ayu, 2016). On the other hand, according to (Pratiwi, 2020), "capital structure is corporate finance that represents the equality between long-term debt and equity." Capital structure refers to the long-term funding of organisations, which includes debt, common stock, preferred stock and equity. However, a comparison of total debt to total equity can show whether or not the capital structure is well maintained. Hence, the studies conducted by Rahaman, Hasan, Ahsan, and Alam (2014) and Hamid et al. (2015) use the ratios of short-term debt to total assets, total debt to total assets, and long-term debt to total

assets as indicators of capital structure. The study conducted by Amin and Jamil (2015) used two indicators as proxies for capital structure, namely the proportion of short-term debt to total assets and the proportion of long-term debt to total assets. Hence, the existing corpus of research demonstrates a diverse range of measures used to assess capital structure. This research employs two proxy indicators of capital structure—the ratio of short-term debt to total assets and the ratio of long-term debt to total assets—to examine the connection between capital structure and profitability, following the method outlined by Amin and Jamil (2015).

2.1.2 Determinants of Capital Structure

The capital structure of the company is a result of internal and external variables, as noted by Adu (2016). Capital structure is impacted by both internal (bank-specific) and external (macroeconomic) characteristics. Internal variables include profitability, growth rate, business size, type, financing duration, and taxes. Firms with a high rate of return on investment employ internal sources of funding, but developing businesses sometimes have to resort to external loans since their resources are not sufficient to cover their expanding needs (Adeniyi, Marsidi, and Babatunji, 2020). A company's size is a key factor in determining its amount of diversification, as well as its ability to issue debt cheaply through the stock market and maintain a low cost of debt capital.

The timing of the financing plays a vital function in deciding the best capital structure. Short-term funding will likely come from debts or fixed deposits, but long-term funding will more likely come from equity. Interest on debt is paid before the corporate income tax is calculated, whereas dividends are declared afterwards, as argued by Kareem (2019), hence the corporation tax has an indirect effect on capital structure decisions. There is an inverse relationship between the likelihood that a company would use debt financing and the firm's effective tax rate. This is because a

company with a lower tax yield is more inclined to employ equity financing, and tax shelters can reduce the effective marginal tax rate on the deduction of interest.

2.1.3 Debt Financing

Debt financing refers to the practice whereby a corporation procures funds from investors by means of borrowing, often at a predetermined interest rate, with the understanding that the borrowed amount would be reimbursed at a future point in time (Badoer and James, 2016). The main feature of debt financing is the obligatory repayment of both the principal amount and the accrued interest to the lenders within a certain duration. Currently, there are two discernible categories of debt financing, namely short-term and long-term debt financing (Allen, Chakrabarti, De and Qian, 2012). Short-term debt financing refers to a method of securing funds for a limited duration, often with a repayment period of less than one year. This sort of financing is typically related to the operation of the business, such as payroll, inventory, purchasing, and supply. On the other hand, long-term debt financing involves a payment schedule that is extended for more than a year. Some examples of this type of financing include land and buildings, equipment, and heavy machinery. When a company sells bonds, mortgages, or loans to investors, the proceeds are referred to as debt financing. Large companies often resort to these instruments when they need to finance operations or special initiatives. Debenture financing allows businesses to acquire funds without selling off assets or issuing shares of stock. Debt financing also has the additional benefit of freeing up the company's other assets for use in revenue-generating operations.

The concept of a debt overhang, often known as an underinvestment issue, was initially proposed by (Myklebust, 2012). To paraphrase Admati (2014) "debt overhang" occurs when a firm's existing debt load is so high that it is unable to raise

new loans to fund investment. Because the new project's revenues may boost the value of an existing loan rather than equity, it will be exceedingly difficult for the firm to borrow finance for the new project.

2.1.4 Equity Financing

The majority of affluent people's assets are typically invested in equities. According to the requirements of either the buyer or the seller, the ownership percentage of a firm can be decreased or increased by a fixed amount as a result of equity finance obtained through the sale or acquisition of common stock. The total amount of money that a corporation's common shareholders have contributed to the business is referred to as the common equity. This price considers the value of the common shares in and of themselves. According to Abdul Malik et al. (2014), other factors include earnings kept and higher paid-in capital.

2.1.5 Concept of Profitability

Several terms can be used to characterise the profitability of a business. Profitability may be measured in two ways, according to Xaba, Marwa and Mathur-Helm (2018): accounting losses (net income) and economic profits. Whereas economic losses provide a more long-term perspective on a company's revenue, accounting profits only provide a snapshot of the company's financial health in the near term. Profitability is frequently estimated using various income-to-expense ratios (Yussof et al., 2019). According to Pooser and Browne (2018), profitability is a statistical assessment of how much money a firm produces concerning its size. Also, profitability is the criterion by which any endeavour's efficacy may be measured. A company is said to be profitable if it generates a greater return on investment (ROI) from its current endeavour than it would have received from any other investment strategy it might have pursued with the same amount of resources (Ahmed, et al.,

2020). They pointed out that simply having a favourable performance does not imply a firm is successful. There are techniques to boost profitability and drive growth if a firm is regarded as profitable but yet loses money (Yüksel et al., 2018).

A company's performance can be increased by taking advantage of the law of declining marginal returns (Pham et al., 2020). According to Eling and Jia (2019), one of the first actions a firm takes to increase profitability is to increase sales and hence output. According to the marginal return theory, also known as the marginal product theory, employing more people enhances capital efficiency up to a point, but hiring beyond that point results in decreasing returns and, eventually, decreased earnings (Jael, 2019). To succeed, a company must implement this approach inside its industry, and it must do so while boosting output efficiently and cost-effectively. According to Ahmed et al. (2020), profitability is the percentage of an investment's cost that is recouped by the business after subtracting all other expenditures. The capital structure of an organisation is mostly determined by how well corporations execute their strategies. Organisations are more likely to put faith in internal sources of information than external ones, as the hierarchy theory puts it. Differences in opinion between company insiders and less informed market members give rise to a scale from the least sensitive to the most delicate issues (Yapa Abeywardhana, 2015). Companies with high-profit rates can generate such assets internally, hence Ahmad, Salman and Shamsi (2015) and Suhartono (2022) agree that such companies would maintain a significantly reduced obligation share. An overwhelming majority of studies revealed a negative association between productivity and debt finance (Muthama, Mbaluka and Kalunda, 2013; Khan, F. and Nouman, M., 2017; Ahmadimousaabad, Anuar, Sofian and Jahanzeb, 2013; Sivathaasan et al., 2013). The pecking order theory is a conceptual framework used to elucidate the relationship

between a firm's capital structure and its profitability. Companies, according to this theory, would rather use money from within the company, known as internally generated funds (IGF), than seek investment elsewhere.

As Myers (1984) puts it, there is "data awry" between the inside directors who are partners and the less informed outside directors who are not partners, so the organisation will use the wellspring of assets that is least risky before the one that is generally unsafe. This is because administrators of a firm are very much more educated on the (financial) issues of the firm than other partners outside. From this point of view, it is sufficient to establish that companies that are growing advantageous and can easily access the IGF would rely upon them, as opposed to corporations that hold revenues that are severely confined and need to rely on external sources (obligation). Therefore, rental revenue is the principal source of funds since it is the most reliable and the cheapest. Thus, both Kaźmierska-Jóźwiak (2015) and Bassey, Arene and Okpukpara (2014) agreed that, under normal circumstances, profitable businesses will maintain a reasonable debt-to-equity ratio because they had access to the resources they need within the company.

2.1.6 Profitability as a Measure of Performance

Financial institutions have increasingly relied on outcome-based financial indicators, which base their assessments of businesses' profitability on the assumption that the company will achieve its economic goals. Profitability, according to several works, is the final performance outcome that reveals the consequences of the board of directors' policies and management's actions throughout the fiscal year (Shubita and Alsawalhah, 2012). The evaluation of a company's profitability is predominantly conducted by academics through the utilisation of the return on equity (ROE) framework. Subsequently, these academics may extend their analysis to encompass

additional metrics such as return on assets (ROA), net profit margin (NIM), return on deposits (ROD), and assets utilisation (AU). This comprehensive assessment allows for the identification of areas in which the company demonstrates strength as well as areas that could benefit from enhancement. Measures of profitability used in this analysis include return on equity (ROE) and return on assets (ROA).

2.1.6.1 Return on Equity (ROE)

The capacity to increase retained earnings and maintain financial stability is reflected in a company's return on equity. Return on Equity (ROE) is a key indicator of a bank's profitability since it estimates the rate at which the institution's taxable profit returns its stockholders their initial investment (Ozili, 2017). Finding such performance as related to financial leverage is surprising given that a high rate of ROE is a predictor of managerial efficiency and profitability (debt). The return on equity (ROE) is calculated by dividing net income by stockholders' equity.

2.1.6. 2 Return on Assets (ROA)

Profitability on the firm's assets after accounting for all costs and taxes is represented by the return on assets (Ozili, 2017). Companies' net assets may be evaluated concerning their current revenue (interest income, fees, and other earnings) using a metric called return on assets. The non-interest income to total assets (NII/TA), the ratio of net interest income to total assets (NI/TA), loan loss provisioning to total assets (LLP/TA) and non-interest overheads to total assets (OV/TA), are all potential components of ROA, as realised by Agu and Okoli (2013). Net interest margin (NI/TA) is a measure of a bank's profitability relative to its cost of funds and a proxy for the effectiveness of its lending policies and procedures (Agu and Okoli, 2013).

2.2 Theoretical Review

2.2.1 The Pecking Order Theory

The hypothesis put out by Myers and Majluf (1984) seeks to explain the tendency of managers to prefer using internal resources for financing and promoting their enterprises, as well as the absence of an optimum capital structure. The pecking order theory of capital structure posits different levels of finance are prioritised differently by different types of businesses. When a company lacks the cash on hand to pay for capital expenditures out of earnings, it will turn to debt financing rather than issuing new shares. Whenever possible, it is preferred to employ money from within the company rather than seek funding elsewhere. There are no fees associated with floating when using internal money, and no need to disclose financial data that might cause a loss of competitive advantage. Myers (1984) suggests that if a company has to raise money from outside sources, it should do it in the following order: debt, convertible securities, preferred stock, and common stock. The finance manager's objectives for this order are apparent: they are concerned with maintaining company control, minimising agency costs associated with equity, and shielding the market from a potential unfavourable reaction to the announcement of a fresh stock offering. Companies' aggregate demand for external funding is reflected in their debt levels.

The concept relies on two basic suppositions regarding financial managers. The first is the possibility that internal corporate executives are more informed than external investors about the state of the business and its prospects for growth. The need to protect such information as confidential is high. When companies use their own money to invest, their executives do not have to tell the public about the options available to them or the possible returns they may earn. The second premise is that management will prioritise the needs of current owners. Management may even

decide against pursuing a project with a positive NPV if doing so would necessitate issuing additional shares, as doing so would benefit the company's new shareholders at the expense of its existing ones (Myers and Majluf, 1984).

However, there are gaps in the theory that prevent it from fully explaining how factors such as taxation, financial hardship, agency costs, security issuance costs and the availability of investment opportunities all contribute to the determination of a firm's capital structure. It does not take into account the issues that may occur when the management of a company builds up so much have so much financial slack that they have grown resistant to market discipline.

2.2.2 Modigliani and Miller (MM) Theorem

The argument of capital structure irrelevance, as formulated by Modigliani and Miller (1958), has emerged as a fundamental pillar in current corporate finance theory. Prior to the release of this book by the two writers, there was a lack of a universally recognised theory of capital structure. The notion of capital structure was first presented by Modigliani and Miller, who formulated a set of assumptions on the projected cash flows of a company. The researchers postulated that when a corporation makes decisions on the allocation of debt and equity for financing its assets, it is essentially distributing the cash flows among its stockholders. As a result of this phenomenon, it is anticipated that both investors and enterprises would possess equitable opportunities to engage in financial markets, hence facilitating the potential for homegrown leverage. Any kind of leverage that was sought but not made available may be fabricated by the investor, and any form of leverage that was accepted but not desired can be released. Therefore, business leverage has no bearing on the firm's market value (Luigi and Sorin, 2009). The MM theorem is predicated on three basic statements that appear in the works of Modigliani and Miller (1958, 1961, and 1963).

Specifically, these are (i) The capitalisation of a company has no bearing on its entire market value. Second Proposition: A higher debt-to-equity ratio results in a higher cost of equity. Proposition III posits that the dividend policy of a corporation is not correlated with its overall market value.

Modigliani and Miller (1958) state that, businesses may anticipate a fixed number of cash inflows and outflows. If a company has decided that it wants to use a certain mix of debt and equity financing, it needs just split the profits between the two types of investors. This presupposes that both individual investors and businesses enjoy equal opportunities to participate in the global capital markets. According to this concept, the valuation of a firm in the market is contingent upon the prospective profitability and associated risks associated with its core assets. Moreover, the valuation of the corporation remains unaffected by its dividend policy or its utilisation of debt for investment purposes.

2.2.3 Agency Theory

Conflicts between shareholders, management, and debt holders are the focus of the agency theory developed by Jensen (1986), and Hart and Moore (1994). The proposition posits that by optimising the stock and debt composition, a corporation may enhance its value while minimising agency expenses. Jensen and Meckling (1976) identified two unique sorts of agency costs. The agency cost associated with equity is a result of the fundamental conflict between management and shareholders, which emerges due to the disparity between ownership and control. On the other hand, the agency cost of debt arises due to the inherent tension between shareholders and debtholders.

The free cash flow theory proposed by Jensen (1986) elucidates the concept of the agency cost of equity. Managers will behave in their self-interest, as Jensen and Meckling (1976) previously indicated; while share-ownership and pay systems might assist managers and shareholders match their interests, such alignment will always be imperfect. Managers can divert free cash flow from initiatives that add value to the company and boost shareholders' return and put it instead towards pet projects that do not generate a profit. According to the free cash flow hypothesis (Jensen, 1986), a company's high level of debt might serve as a kind of corporate governance by requiring the company's management to allocate capital toward more lucrative initiatives to generate the funds required to make interest payments on that debt. Accordingly, rising debt can decrease agency costs and raise a company's worth for businesses with a lot of cash coming in. The majority of scholars, as well as Berger and Bonaccorsi di Patti (2006), Kebewar (2013) and Gill et al. (2011), believe that an increase in debt can assist in lower agency costs by forcing managers to act more in the interest of equity holders.

In addition, Akintoye (2008) suggested that serving the interests of the company's stock investors would cut down on waste and boost productivity. However, Stulz (1990) warned that a drop in cash flow might mean fewer lucrative investment options relative to firms in the same industry that had more liquidity. In line with Myers' (1977) findings, it can be seen that the likelihood of liquidation and underinvestment is positively associated with debt. Consequently, while debt might mitigate conflicts and agency costs between shareholders and managers, it simultaneously exacerbates conflicts and agency costs between shareholders and debtholders. Borrowers may anticipate higher interest rates as loan providers adjust their rates in order to counterbalance the heightened level of risk.

2.3 Empirical Review

2.3.1 Effect of Capital Structure on Return on Equity

Jajang (2019) examined the influence of capital structure on return on equity; the survey was conducted on JII70 issuers with a sample size of 32 issuers from 2016 and 2017 financial reports. According to the findings obtained by processing the data with SPSS version 25, capital structure has an influence that is both positive and substantial on the return on equity. Using debt wisely has been shown to have a favourable effect on ROE as shown by this correlation. Yet the development of debt has led to this rise in capital structure. As a result, it is important to monitor and assess debt levels and levels of debt utilisation to maximise return on equity.

Hasan, Ali, Kumar and Sovaniski (2020) determined the effects that different capital structures have on the performance of manufacturing companies in Kurdistan from a financial. Equity return was one of several independent factors in a multiple linear regression model that also included capital structure, liquidity, size, and growth. These factors were used to test the hypothesis that manufacturing companies in Kurdistan's capital structure harm their performance as a result of their decision-making. The regression analysis reveals a significant negative correlation between total debt, firm size, and financial performance, indicating that an increase in either debt or assets is linked to a decline in financial stability. Liquidity and sales growth were also shown to be positively correlated with financial performance in the study.

In a study conducted by Pham (2020), the objective was to investigate the influence of capital structure on the financial performance of a selected group of 30 pharmaceutical businesses that are publicly listed on the Vietnam Stock Exchange. The study focused on the period spanning from 2015 to 2019. To determine whether or not capital structure has an impact on a company's performance, analysts employ

the least squares regression (OLS) method. Long-term asset ratio (LAR), Financial leverage ratio (LR) and debt-to-assets ratio (DR) have a favourable association with business performance, but self-financing (E/C) effects detrimentally to the return on equity (ROE), according to the analysis results (ROE). Based on the research, the Vietnamese government should work toward establishing a more stable macro environment to foster a prosperous business sector.

In their study, Nwude and Anyalechi (2018) examined the correlation between the debt-equity ratio and the influence exerted by the composition of various financing methods on the overall performance of commercial banks. Various statistical analyses were used to assess the assembled data, including correlation analysis, pooled ordinary least squares (OLS) regression analysis, post-estimation tests such as the restricted F-test of heterogeneity and Hausman test and random effect panel analysis. The results of the research indicate a strong and positive correlation between the debt-equity ratio and return on equity. In contrast, it has been seen that debt financing has a negative and statistically significant impact on asset return.

Bhatt and Jain (2020) analysed how different types of capitalisation affect the profitability of Nepalese commercial banks. Specifically, for this purpose, financial data from the NRB BI Statistics and Bank Supervision Report for the period of 2010-2019 was collected and then analysed using a convenience sample of 18 Nepalese commercial banks. The rise in bank size and total assets served as the study's control variables. Return on equity was used as a metric of profitability. Capital structure was approximated using the debt-to-assets ratio, the debt-to-equity ratio, the debt-to-short-term debt ratio, and the debt-to-long-term debt ratio. The research found that measures of the capital structure of banks might predict over 40% of their performance as measured by return on equity. The data shows that long-term debt and

deposits are positively related to return on equity, but short-term debt and overall debt are negatively related.

The researchers, Javed et al. (2019), did a study on 63 non-financial firms in Karachi, Pakistan from 2007 to 2011. Their findings revealed a statistically significant negative impact of long-term debt (LTD) on return on equity (ROE).

2.3.2 Effect of Capital Structure on Return on Asset

Noreen (2019) conducted a study to determine if the capital structures of Islamic and mainstream banks are comparable. Furthermore, the study sought to investigate the influence of capital structure on the financial performance of Islamic and conventional banks. A systematic selection procedure was utilised to choose ten financial institutions from a population of financial institutions that operated between 2006 and 2016. Except for variations in institutional size, the research results show that the capital structures of the two kinds of banks are quite comparable. Furthermore, there is an inverse link between conventional and Islamic banks' capital structures and their return on assets (ROA). In contrast, the Return on Equity (ROE) showed a positive association with both conventional and Islamic bank capital structures.

In their study, Qayyum and Noreen (2019) undertook a comparative examination of the capital structure of Islamic and conventional banks with the aim of evaluating if there is a statistically significant difference in their profitability levels. A random selection of ten financial firms was made between the years 2006 and 2016. The findings of the research indicated that there were parallels in the capital structure of the two banking groups, except for variations in institutional size. Moreover, it has been empirically shown that there exists a negative correlation between the return on assets (ROA) and the capital structure of both conventional and Islamic financial

institutions. On the other hand, prior studies have shown a favourable correlation between the return on equity and the capital structure of both conventional and Islamic financial institutions.

Gichuru, Kung'u and Gakobo (2019) analyse how capital structure affects the profitability of Kenyan savings and credit cooperatives that accept deposits from the government.

During the course of the study, the researchers conducted an analysis of data extracted from the Annual Reports and Financial Statements of a total of 19 government-licensed Savings and Credit Cooperative Organisations (Saccos). The dataset included a continuous span of five years, namely ranging from 2013 to 2017. As a result, data was collected, resulting in a dataset consisting of 95 observations. The assessment of Sacco's profitability was conducted by using the Return on Assets metric, while the estimation of its capital structure was accomplished via the use of the Debt-to-Equity Ratio and the Debt to Assets Ratio. The hypotheses were assessed using a descriptive research methodology. The research conducted revealed that the return on assets (ROA) of Savings and Credit Cooperative Organisations (Saccos) was adversely affected by the capital structure, as shown by the Debt/Equity Ratio and the Debt/Assets Ratio.

Further, Endri, Ridho, Marlapa and Susanto (2021) analysed how capital structure affects a company's profitability. The study, which covers the years 2014-2018 and uses a panel data approach, looks at a subset of 42 Indonesian businesses in the mining sector that are traded on the Indonesian stock exchange. Three performance metrics ROA, ROE and EPS are used as dependent variables in the analysis. Capital structure metrics include debt to assets, debt to equity, long-term equity, long-term

debt to total capital, and growth as an independent variable. Based on the data, we can conclude that LDTE has a positive significant link to ROE but no relationship to ROA or EPS and that DER has no relationship to ROA or EPS but has a negative significant relationship to ROE. A negative and statistically significant association was observed between long-term debt-to-capital ratio (LDTC) and return on assets (ROA), but no significant relationship was established between return on equity (ROE) and earnings per share (EPS).

The study conducted by Abdul Aziz (2019) aimed to assess the relationship between firm performance and capital structure using a sample of low-tech and high-tech enterprises from the United States and all of the nations that make up the European Union from 2010 to 2017. Results reveal a negative and substantial link between total debt and ROA, ROE, and Tobin's Q, all metrics of business performance, in both sets of industries. This finding lends credence to the pecking order idea, which states that businesses should prioritise revenue from internal sources above that from outside sources. While a positive connection exists between long-term debt and ROA for low-tech enterprises, a positive correlation exists between long-term debt and ROA and ROE for high-tech firms.

The effects of high levels of long-term debt on the profitability of Brazilian and Latin American businesses were studied by Junior et al. (2017) before, during, and after the 2008 financial crisis. This study analysed financial data from 2007 to 2015 for publicly listed companies in Brazil, Chile, Argentina, Colombia, Mexico, and Peru. Based on the research already done in the field, a multiple linear regression model using panel data was developed. Data were analysed using Stata. A negative correlation between long-term debt and performance was found for corporations operating in Latin America, except for those based in Brazil.

Uremadu and Onyekachi (2018) conducted research to investigate the influence of capital structure on the profitability of Nigerian firms, with a special emphasis on those involved in the manufacturing of consumer products. The data was subjected to analysis using the Ordinary Least Squares (OLS) approach with multiple regression. Based on the data, it seems that capital structure has a negative and negligible effect on the corporate performance of consumer products firms in Nigeria. Returns on assets were negatively impacted by the long-term debt ratio but not significantly so, and the same was true of the overall debt ratio relative to equity. As a result, the research indicated that capital structure does not significantly affect business performance.

Further, Ikapel and Kajirwa (2017) determined how long-term financing affects the financial performance of publicly-held sugar businesses. Four companies participated in the panel study, and the data spans a decade (2004-2014). Long-term debt was found to have a statistically significant negative influence on financial performance as assessed by return on assets using a simple regression model. Those publicly traded corporations that get government handouts were the focus of the research. Findings that may be applied to other situations would have been obtained by analysing a representative sample of businesses from a variety of industries.

The effect of capital structure on financial performance was analysed by Iqbal, Farooq, Sandhu, and Abbas (2018), who compared the net profit margin ratio (NPM), return on assets (ROA), return on equity (ROE), and total assets (TA) to three measures of capital structure: short-term debts (STD), total equity (TE), and the debt/equity ratio. From 2012 to 2014, 61 companies of varying sizes and sectors were analysed using a regression model. The study's findings demonstrate that a company's capital structure significantly affects its financial success, particularly in commercial

division enterprises. The financial stability of a business depends on a number of factors, including its total equity, its short-term debt, and its debt-to-equity ratio.

In their study, Rahman et al. (2019) undertook research with the aim of examining the impact of capital structure on the financial performance of a sample of 10 manufacturing businesses in Bangladesh. The study spanned a period of five years. The findings of the study indicate that both debt and equity have a substantial influence on the profitability of businesses. However, it is essential to recognise that the debt-to-equity ratio has a substantial negative impact on the performance of the selected industrial enterprises listed on the Dhaka Stock Exchange in Bangladesh.

Domnick (2018) looked at how German publicly traded companies' financial structures affect their performance. A fixed effect regression model was used to evaluate unbalanced panel data including all non-financial and non-governmental enterprises over the period of 2012-2017. The assessment of the capital structure was conducted using the book values of present, future, and total debt. The assessment of a company's performance may be carried out by analysing crucial metrics such as return on equity, return on assets, and Tobin's Q. The results of this research suggest that there exists a positive and significant correlation between the capital structure of companies and their performance, specifically in regard to the metrics of return on equity (ROE) and return on assets (ROA) at a national scale. However, it seems that the association is not acknowledged by the market. Moreover, this study investigated the impact of capital structure on firm performance across many industries and identified significant disparities depending on the unique characteristics of the organisation.

The purpose of the research undertaken by Vătavu (2015) was to investigate the possible correlation between capital structure and financial performance in a sample of 196 publicly listed Romanian industrial businesses on the Bucharest Stock Exchange. The investigation had a duration of eight years, commencing in 2003 and concluding in 2010. The research is grounded on cross-sectional regressions. Capital structure indicators include several financial metrics such as long-term debt, total debt, short-term debt, and total equity. On the other hand, performance proxies are represented by indicators like return on equity and return on assets. Given that these aspects are anticipated to have an effect on performance, they will be taken into account in the research as long as they have a substantial influence on funding choices. According to the findings, it is more profitable for Romanian businesses to forego debt in favour of operating only based on equity. The manufacturing industry looks to suffer from a shortage of internal capital, which prevents companies from making profitable investments and optimising their resources.

Musah (2018) performed research that examined the relationship between the capital structure of commercial banks in Ghana and the comparison of their Return on Invested Equity (ROIE) and Return on Assets (ROA). The evaluation of the capital structure included the assessment of many ratios, including the short-term debt ratio, long-term debt ratio, and total debt ratio. The data used in this study was obtained from the annual reports of 23 financial institutions over a six-year timeframe, namely from 2010 to 2015. Notwithstanding the implementation of heightened minimum equity capital prerequisites, empirical evidence suggests that banks in Ghana exhibit a substantial degree of leverage, as debt financing constitutes 84% of their overall capital, with 77% of this being comprised of short-term loans. The study revealed that both the short-term debt ratio and the long-term debt ratio had an adverse effect on the

profitability of banks in Ghana. The profitability of banks in Ghana was, nevertheless, correlated favourably with their overall debt ratio. Bank profitability was shown to be favourably linked with firm size, foreign ownership, and bank age, while it was inversely associated with an increase in customers' deposits among the control variables. The findings indicate that for commercial banks in Ghana, focusing on deposits as a primary source of short-term funding diminishes profitability. Based on the findings, businesses need to determine how much short-term and long-term debt to take on to optimise the banks' profits.

In their study, Uremadu and Onyekachi (2018) examine the impact of capital structure on the profitability of enterprises in Nigeria, specifically focusing on those engaged in the production of consumer goods. The data was subjected to analysis using the Ordinary Least Squares (OLS) approach, specifically using multiple regression. Based on the available data, it seems that the capital structure of consumer goods businesses in Nigeria has a limited and adverse impact on their overall corporate performance. The influence of the long-term debt ratio on returns on assets was shown to be somewhat negative, but the statistical insignificance of the overall debt ratio non-respect to equity was also observed. Therefore, the results of the research indicate that the influence of capital structure on firm performance is not significant.

Kerim, Alaji and Innocent (2019) looked at how different capital structures affected the profits of publicly traded insurance companies in Nigeria between 2013 and 2017. To compile their findings, the researchers looked to the publicly available annual financial records of studied, publicly traded insurance companies in Nigeria. There were 28 different insurance companies included in the study's population. Fifteen (15) different Nigerian insurance companies were used as the sample. The OLS multiple regression method was used to examine the data. The study used a

sample of 75 publicly listed Nigerian insurance businesses over a one-year period. Through the application of ordinary least square regression analysis, it was shown that there exists a substantial and negative relationship between short-term debt and the profitability of these companies. Moreover, the use of long-term debt may have a substantial and positive impact on a company's overall profitability. Lastly, it should be noted that a rise in premiums significantly benefits the financial performance of insurance firms that are publicly listed.

Co, Uong and Nguyen (2021) analyse and quantify the effect of capital structure on the financial performance of developing market businesses. From 2015-2019, eighteen rubber businesses traded on the Vietnam Stock Exchange served as the study's sample. The study model's criteria were computed by importing the collected data into Excel. The study used Stata 16 to assess the reliability of the regression analysis model and to pick a data processing strategy. The data suggests that for listed rubber enterprises in Vietnam, lower debt-to-asset ratios are associated with higher profits, whereas higher ratios of long-term debt-to-assets are associated with lower profits. Growth in both revenue and firm size is shown to have a positive impact on profitability, but liquidity and the proportion of tangible fixed assets to total assets have negligible effects.

Ngo et al. (2020) looked into how debt affected Vietnamese businesses' profitability. In order to assess the profitability of a corporation, the present research used the EBIT return on total assets ratio. The debt ratio is a financial metric that quantifies the proportion of a corporation's total assets that are financed by debt. Variables such as business size, physical assets, growth rate, and taxes are included as control variables in this study. The analysis of empirical evidence has shown that the presence of debt

has a substantial negative impact on the financial performance of companies, leading to a large reduction in earnings.

2.3.3 Determinants of Capital Structure

In their study, Khémiri and Noubbigh (2018) examined the determinants of the growth and decline of leveraged firms in five African countries, namely Kenya, Ghana, Zimbabwe, South Africa, and Nigeria, over the period from 2006 to 2016. The findings obtained by the System GMM estimate and quadratic techniques were found to be in line with the assumptions proposed by the trade-off theory and the pecking order theory. Empirical findings indicate the presence of a noteworthy curvilinear association, namely an inverted U-shaped pattern, between a company's success and its level of leverage. Furthermore, the level of indebtedness is significantly impacted by both past levels of borrowing and current macroeconomic conditions.

Between the years 2004 and 2013, the study conducted by M'ng, Rahman, and Sannacy (2017) aimed to assess the many determinants influencing the capital structures of firms listed on the Bursa Malaysia, Singapore Stock Exchange, and Thailand Stock Exchange. In addition, our research examines the impact of macroeconomic variables such as inflation on the capital structure choices made by publicly listed corporations. Furthermore, we investigate the influence of company-specific attributes such as profitability, firm size, asset tangibility, and total asset degradation. The study reveals that the examined features have a notable influence on elucidating the decisions regarding capital structure made by the chosen publicly listed firms, including all three countries. In the context of Malaysia and Singapore, it has been observed that profitability has a significant adverse influence on capital structure. However, in the case of Thailand, this impact is shown to be

inconsequential. On the contrary, the scale of a corporation has a uniformly positive impact on its capital structure.

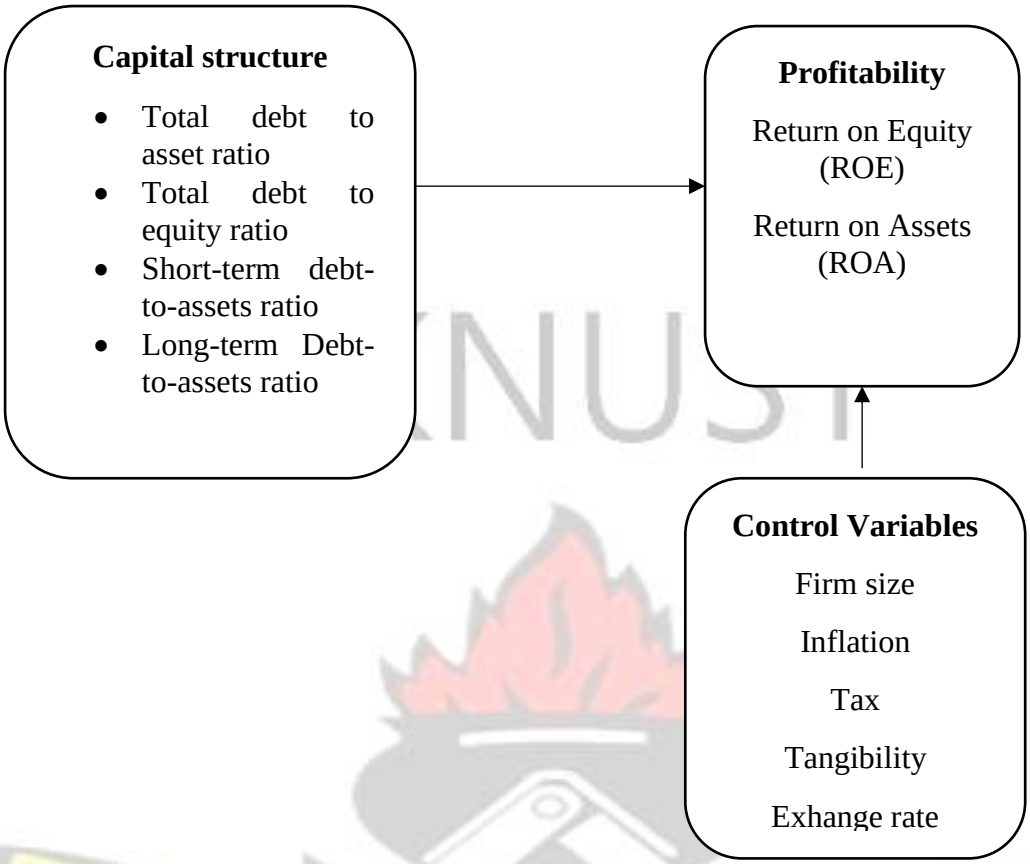
Ramli, Latan, and Solovida (2019) conducted a study that examined the impact of capital structure factors on the financial performance of businesses in Malaysia and Indonesia. The analysis used data spanning from 1990 to 2010 and also took into account the potential mediating influence of firm leverage. The research results demonstrate that some elements that affect the capital structure of organisations have a discernible influence on their profitability. A positive and statistically significant connection was identified primarily in the Malaysian sample between corporate leverage and firm financial performance. When it comes to improving productivity, Malaysian businesses turn to outside investors. Based on their results firm leverage is a moderator in the Malaysian sample but not in the Indonesian sample.

In a research undertaken by Munisi (2017), an analysis was performed on the factors that had an impact on the capital structure of non-financial enterprises listed on the stock exchanges of twelve distinct countries in Sub-Saharan Africa over the period spanning from 2005 to 2009. Both the pecking order theory and the trade-off theory provide empirical support for the assertion that capital structure has a detrimental influence on both profitability and physical assets. The provided data substantiates the assertion that capital structure has a detrimental impact on both profitability and tangible assets. Empirical evidence demonstrates a strong correlation between capital structure and the presence of free cash flow as well as the growth of enterprises. The aforementioned link finds validity in the theoretical frameworks of agency theory and the pecking order theory.

Mohammadi, Dalwai, Najaf and Al-Yaarubi (2020) evaluated the factors that determine the capital structures of Oman's tourism enterprises. This research makes predictions about the factors that determine capital structure by drawing on the pecking order theory and the trade-off theory. Capital structure is determined by size, liquidity, tangibility, growth potential, and risk, in conformity with the existing literature. This analysis uses data from nine publicly traded tourism companies from the years 2007 to 2016 (a total of 90 firm-year observations). The findings indicate that factors such as size, growth, and risk all have a role in the capital structure of tourism businesses. The leverage choices made by Oman's tourism enterprises can be somewhat understood via the lenses of the trade-off theory and the pecking order theory.

2.4 Conceptual Framework

The conceptual framework serves as a connection between ideas that are generated from a certain field of research and are used in the representation of connections within a study, aligning with its aims (Iqbal, Farooq, Sandhu, and Abbas, 2018). This research examines the impact of various capital arrangements on the profitability of firms listed on the Ghana Stock Exchange. This research investigates the influence of several financial parameters on the level of profitability. The independent variables in this study include the Total Debt-to-Equity Ratio, Total Debt to Asset Ratio, Long-term Debt-to-Assets Ratio, and Short-term Debt-to-Assets Ratio. The variable under investigation is profitability, whereas the variables controlled for in the study consist of business size, inflation, tax, tangibility, and exchange rate.



Source; Author's Construct (2023)

2.5 Summary

The study was underpinned by the pecking order theory and Modigliani and Miller's (MM) Theorem. The chapter examines how different types of capital structures affect profitability, which was sorted from both local and international studies. Furthermore, there exists a limited body of scholarship that has examined the impact of capital structure on publicly traded companies listed on the Ghana Stock Exchange. Studies which have highlighted publicly traded firms at the Ghana Stock Exchange are Addae, Nyarko-Baasi and Hughes (2013) and Appiadjei (2014). This study's focus shifts to the most recent period in the history of capital structure and profitability of listed firms was a span of five years from 2005 to 2009 by Addae et al (2013). Furthermore, the studies focused on different sectors without monitoring their

differences. This study fills this gap. Moreover, continuous financial and capital market development may impact businesses' capital structure decisions, affecting profitability and company value. The primary objective of this study is to assist firms in identifying the most advantageous capital structure, a topic that has not been well addressed in prior research on publicly traded companies in Ghana.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This part of the study describes the method as well as the instruments and strategies used to achieve the research goals. This chapter contains the research design, the data and data source, the research methodologies used, model formulation, diagnostic tests, robustness checks, and a table describing all variables analysed in the study. The chapter concludes with a summary, which is followed by the fourth chapter, which discusses the study's results.

3.1 Research Design

The study design of a study is its underlying methodological structure. Methods such as data collection, analysis, interpretation, and discussion, as well as the presentation and discussion of results, are detailed in the design (Abdallah and Ismail, 2017). The research paradigm and the research methodology are the two main components of a well-designed study (Aggarwal and Padhan, 2017). To discover answers, the study questions were evaluated using the positivist paradigm. The core principle of positivism is the conviction that scientific procedures, such as statistical analysis, may be utilised to determine what is true in an objective manner (Abdallah and Ismail, 2017). Therefore, it was determined that a quantitative approach would be most appropriate for this investigation. Ahmed and Hadi (2017) categorise experimental/exploratory, explanatory, and descriptive research methodologies as the three primary types. Consequently, an explanation-seeking methodology was chosen for this investigation. When understanding the causal relationship between the variables in question is vital to solving the research issues at hand, this method is useful (Detthamrong et al., 2017). Explanatory designs are useful when examining the

possibility of a relationship between two variables (Creswell and Creswell, 2017). Given the research's emphasis on investigating the connection between capital structure and business profitability, an appropriate research strategy for this analysis was an explanatory or causal methodology. The research design covers the overall research strategy and methodology. Methods including data collection, analysis, interpretation, and discussion, as well as the presentation and discussion of results, are described in depth (Javeed and Lefen, 2019). The chosen research design was appropriate for this study.

3.2 Data

Research often entails the use of two distinct types of data: primary data and secondary data. Primary data refers to information that is obtained firsthand by the researcher specifically for the goal of the study. On the other hand, secondary data refers to information that has been previously collected for a different reason and is used in the current research. The selection of the data source in research is contingent upon the study's aims. Considering the inherent characteristics of this research, it is recommended to analyse the proposed hypotheses using secondary data sources. The rationale for using secondary data is based on the need to get pre-existing information about the influence of capital structures on the financial performance of companies listed in Ghana. The financial reports were mined for secondary data. To detect and eliminate outliers, the study applied partial frontier techniques. Last but not least, listed firms in Ghana with missing data for any of the variables of interest were eliminated from the study sample.

The population of the study encompasses all firms listed on the Ghana Stock Exchange. Of this population, 15 firms were sampled. The selection of a sample of 15 firms for the study was driven by both data availability constraints and the study's

primary objective of exploring the effect of capital structure on profitability. Due to the focus on a specific time frame from 2010 to 2021, the inclusion of firms with relevant data within this period was essential to maintain the study's temporal consistency and relevance. A sample is a representative subset of the study's entire population that the researcher utilizes to establish norms and generalize results (Abdallah and Ismail, 2017). The sample for the inquiry was selected utilising purposive sampling. Oftentimes, purposive sampling is referred to as judgemental sampling. The selection of this sampling approach is determined by the degree to which the units that make up the target population meet the requirements for quick access to the relevant data (Khémiri and Noubbigh, 2018). Using the obtained data, the study analyses the de-consolidated firm-level data (see Kirui, 2015; Koju, Koju, and Wang, 2018) and excludes companies with fewer than ten consecutive yearly observations. The researcher then eliminates companies for whose estimations of the translog cost function for the Lerner index are absent, null, or negative. The variables used in this research were obtained from the financial records of the selected publicly traded company in Ghana. The present research employs a panel data approach, using a dataset that encompasses the period from 2010 to 2021. The control variables (Tangibility, tax, inflation rate, exchange rate, firm size) and both capital structure and profitability ratios were extracted from the financial reports of the listed firm and the Bank of Ghana database for the inflation and exchange rate data.

Table 3. 1 Variable Description and Measurement

Variables	**Description**	**Measurement or calculations**	**Reference**
	Dependent Variables		
Profitability	Return on Assets	$\frac{Net\ Profit}{Total\ Assets} \times 100$	Ahmed and Hadi (2017)
	Return on Equity	$\frac{Net\ Profit}{Shareholders\ Equity} \times 100$	

	Control Variables		
Firm Size	Natural log of total assets	Ln(Assets)	Khémiri and Noubbigh (2018)
Inflation	Inflation rate	Annual rate	
Tax	Income tax per profit before tax	$\frac{Total\ income\ tax}{PBT}$	
Tangibility	The ratio of net fixed assets to total assets	$\frac{Net\ fixed\ Asset}{Total\ Assets}$	
Exchange rate	Exchange rate	Annual rate	
	Independent Variables		
Capital Structure	Total debt-to-assets ratio (TDAR)	$\frac{Total\ Debt}{Total\ Assets}$	Abdallah and Ismail (2017)
	The total debt-to-equity ratio (TDER)	$\frac{Total\ Debt}{stakeholder\ equity}$	
	Short-term debt-to-assets ratio (STDAR)	$\frac{short-term\ Debt}{stakeholder\ assets}$	
	Long-term Debt-to-assets ratio (LTDAR)	$\frac{Long-term\ Debt}{stakeholder\ assets}$	

Source: Authors Compilation (2023)

3.3 Methods of Estimation

The study's overarching goal is to learn how capital structure affects a company's bottom line. The static model is expressed as Prof = f (capital structure and Control Variables). The researcher runs a panel regression (fixed effect) to investigate the effect of capital structure on firm profitability. From the static model, the objectives stated in chapter one are analysed using:

$$ROA_{it} = \beta_0 + \beta_1 \mathrm{TDAR}_{it} + \beta_2 \mathrm{TDER}_{it} + \beta_3 \mathrm{STDAR}_{it} + \beta_4 \mathrm{LTDAR}_{it} + \sum_{c=1}^{5} \beta_5 CONTROL_{it} + \varepsilon_{it} \quad (3.1)$$

$$ROE_{it} = \beta_0 + \beta_1 \text{TDAR}_{it} + \beta_2 \text{TDER}_{it} + \beta_3 \text{STDAR}_{it} + \beta_4 \text{LTDAR}_{it} + \sum_{c=1}^{5} \beta_5 CONTROL_{it} + \varepsilon_{it} \quad (3.2)$$

Where ROA_{it} and ROE_{it} is the return on equity and return on assets of firm i over the period t, TDAR_{it} is the total debt-to-assets ratio of firm i over the period t, TDER_{it} is the Total debt-to-equity ratio of firm i over the period t, STDAR_{it} is the short-term debt-to-assets ratio of firm i over the period t, and LTDAR_{it} is the Long-term Debt-to-assets ratio of firm i over the period t. Also, $CONTROL_{it}$ is the control variables (Tangibility, tax, inflation rate, exchange rate, firm size) of banks i over the period t, and ε_{it} is the error term in the model.

3.4 Diagnostic Test

One of the fundamental assumptions that underpin the use of a panel regression model is that the variables are uncorrelated. Nevertheless, there are situations when variables are correlated sequentially, which is referred to as serial correlation (Vu, Phan, and Le, 2018). Although the regression estimates derived using the ordinary least square model are still unbiased, they are inefficient owing to the serial correlation between variables. The Durbin-Watson test was used to assess the presence of serial correlation inside the model. The Durbin-Watson statistic is a quantitative measure of autocorrelation in regression residuals from statistical models (Wong and Hooy, 2018). Durbin-Watson statistics are always in the range of zero to four. A score of two shows that the sample is uncorrelated, while values near zero indicate positive autocorrelation and values near four imply negative autocorrelation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

The current chapter focuses on the exposition and analysis of the study results. The following outcome comprises variable descriptions and panel regression model estimations. This is followed by an interpretation and discussion of the results with existing literature and theories.

4.1 Descriptive Statistics

The Return on Assets (ROA) variable shows that, on average, the firms had a negative return of -0.523, indicating that they experienced losses. However, the maximum return was 1.431, suggesting that some firms were able to achieve positive returns. The standard deviation of 6.172 indicates relatively high variability in ROA among the firms. The Return on Equity (ROE) variable has a mean of 1.972, indicating a positive average return. The maximum ROE of 77.743 suggests that some firms had significantly higher returns on their equity. The standard deviation of 7.077 suggests that there is variation in ROE across the firms in the study.

Table 4. 1 Descriptive Statistics

Variable	Mean	Max	Min	Std. Dev	Observation
ROA	-0.523	1.431	-61.795	6.172	180
ROE	1.972	77.743	0.000	7.077	180
TDAR	0.147	1.331	0.000	0.228	180
TDER	1.535	127.313	-19.281	11.099	180
STDAR	0.134	1.585	0.000	0.234	180
LTDAR	0.091	1.350	0.000	0.203	180
FS	7.559	21.229	0.000	8.816	180
INF	11.633	17.455	7.144	3.298	180
TX	0.175	3.105	-3.432	0.492	180
TANG	0.382	4.910	0.000	0.430	180
EXGR	3.569	5.806	1.430	1.543	180

Source: Author Computation (2023) *"Where ROA is the return on assets, ROE is the return on equity, TDAR is the Total debt-to-assets ratio, TDER is the total debt-to-equity ratio, STDAR is the Short-term debt-to-assets ratio, LTDAR is the Long term*

Debt-to-assets ratio, FS is the firm size, INF is the Inflation, TX is the tax, TANG is the Tangibility, and EXGR is the Exchange rate"

The debt ratios, including the Total debt-to-assets ratio (TDAR), Total debt-to-equity ratio (TDER), Short-term debt-to-assets ratio (STDAR), and Long-term debt-to-assets ratio (LTDAR), provide insights into the leverage levels of the firms. On average, the firms had a TDAR of 0.147, suggesting that their total debt represented 14.7% of their total assets. The TDER of 1.535 indicates that, on average, the firm's total debt was 153.5% of its equity. The STDAR and LTDAR ratios were 0.134 and 0.091, respectively, showing the proportions of short-term and long-term debt to total assets. The standard deviations for these ratios suggest some variability in the debt structure of the firms. The descriptive statistics also include information about Firm Size (FS), Inflation (INF), Tax (TX), Tangibility (TANG), and Exchange Rate (EXGR). The mean firm size was 7.559, indicating an average size among the firms in the sample. The inflation rate had a mean of 11.633%, suggesting an average inflation level of 11.633%. The tax variable had a mean of 0.175, representing an average tax rate of 17.5%. The mean tangibility level was 0.382, indicating an average level of tangible assets representing 38.2% of total assets. The mean exchange rate was 3.569, but no further information was provided about it in the given table.

Table 4. 2 Correlation Matrix

S/N	Variable	1	2	3	4	5	6	7	8	9	10	11
1	ROA	1										
2	ROE	0.004	1									
3	TDAR	0.046	0.0893*	1								
4	TDER	-0.04449	-0.0639	0.4904*	1							
5	STDAR	0.0379*	0.0409*	0.5033*	-0.0366	1						
6	LTDAR	0.0242	0.0994*	-0.083	0.1248*	0.9942*	1					
7	FS	0.0324	0.2094*	0.0342	0.0929	0.2839	0.0594*	1				
8	INF	0.2409*	-0.148*	0.0499*	0.0309	0.0944*	.0489*	0.1803*	1			
9	TX	0.0094	0.0304	0.0299*	-0.004	0.0994	0.5639	0.0438*	0.0994	1		
10	TANG	0.9949*	0.5099*	0.9904*	0.0342	-0.0939	0.3709*	0.0440*	0.0813	0.049*		
11	EXGR	0.9288*	0.3949*	-0.222*	0.0334	0.5214*	0.0904	0.0030	0.00799	-0.1198	0.0499*	1

Source: Author Computation (2023) *"Where ROA is the return on assets, ROE is the return on equity, TDAR is the Total debt-to-assets ratio, TDER is the total debt-to-equity ratio, STDAR is the Short-term debt-to-assets ratio, LTDAR is the Long term Debt-to-assets ratio, FS is the firm size, INF is the Inflation, TX is the tax, TANG is the Tangibility, and EXGR is the Exchange rate"*

The Return on Assets (ROA) and Return on Equity (ROE) have a very small positive correlation of 0.004. This suggests a weak and almost negligible relationship between these two variables. On the debt-related variables, it observes that the Total debt-to-assets ratio (TDAR) and the Total debt-to-equity ratio (TDER) have a positive correlation of 0.0893. This indicates a slightly stronger relationship between these two variables, but still not very significant. The Short-term debt-to-assets ratio (STDAR) shows a small positive correlation with TDAR (0.5033) and TDER (0.0409). This suggests that short-term debt has some association with the overall debt structure of the firms. Next, it observes that the Long-term debt-to-assets ratio (LTDAR) has a positive correlation with TDAR (0.0994), TDER (0.1248), and STDAR (0.9942). This indicates a relatively stronger relationship between long-term debt and other debt-related variables.

On the firm size (FS), it observes a positive correlation with ROE (0.2094) and a smaller positive correlation with TDAR (0.0342). This suggests that larger firms tend to have higher returns on equity and a slightly higher total debt-to-assets ratio. The Inflation (INF) variable shows positive correlations with FS (0.0944) and TDAR (0.2409). This implies that inflation may have some influence on firm size and the total debt-to-assets ratio. The correlation between Tax (TX) and the other variables is generally small and positive, suggesting a weak association. The Tangibility (TANG) variable has a strong positive correlation with LTDAR (0.9904) and a moderate positive correlation with TDAR (0.9904) and STDAR (0.3709). This indicates a strong relationship between tangibility (physical assets) and the different debt-related ratios. Finally, the Exchange Rate (EXGR) variable shows a strong positive correlation with TANG (0.9288) and a moderate positive correlation with TDAR

(0.3949) and STDAR (0.5214). This suggests that exchange rate fluctuations may have some impact on tangibility and debt-related variables.

4.2 Panel Regression

Based on the findings, it can be shown that the Total debt-to-assets ratio (TDAR) has a positive coefficient of 0.0334. This implies that a one-unit rise in the TDAR is linked to a 0.0334 increase in ROA while keeping all other variables constant. The t-statistic of 4.841 indicates that this coefficient is statistically significant at a high level of confidence ($p < 0.001$), suggesting that the relationship between TDAR and ROA is not likely due to chance. Similarly, the Total debt-to-equity ratio (TDER) shows a positive coefficient of 0.0413 with a highly significant t-statistic of 14.732 ($p < 0.001$). This indicates that firms with higher TDER tend to have higher ROA. The Short-term debt-to-assets ratio (STDAR) also displays a positive coefficient of 0.0121 with a significant t-statistic of 3.559 ($p < 0.001$). This implies that a higher proportion of short-term debt is associated with higher profitability. On the other hand, the Long-term debt-to-assets ratio (LTDAR) exhibits a positive coefficient of 0.0177 with a moderately significant t-statistic of 2.81 ($p = 0.005$). This suggests that long-term debt might also have a positive impact on ROA, although the effect might be weaker compared to short-term debt. Firm size (FS) and inflation (INF) both have positive coefficients of 0.0177 and 0.0334, respectively, with high t-statistics ($p < 0.001$). This indicates that larger firms and firms operating in higher inflation environments tend to have higher profitability.

Table 4. 3 Fixed Effect Estimation (ROA)

Variables	Coefficient	Standard Error	T-statistics	P-value
TDAR	0.0334	0.0069	4.841	<0.001
TDER	0.0413	0.0028	14.732	<0.001
STDAR	0.0121	0.0034	3.559	<0.001
LTDAR	0.0177	0.0063	2.81	0.005
FS	0.0177	0.0063	2.81	0.005
INF	0.0334	0.0069	4.841	<0.001
TX	0.0413	0.0028	14.732	<0.001
TANG	0.0121	0.0034	3.559	<0.001
EXGR	0.0177	0.0063	2.81	0.005
R-squared	0.718			
Adjusted R-squared	0.583			
Durbin-Watson stat				0.846
Breusch-Pagan Test				0.529
Hausman Test				0.008

Source: Author Computation (2023) *"Where ROA is the return on assets, ROE is the return on equity, TDAR is the Total debt-to-assets ratio, TDER is the total debt-to-equity ratio, STDAR is the Short-term debt-to-assets ratio, LTDAR is the Long term Debt-to-assets ratio, FS is the firm size, INF is the Inflation, TX is the tax, TANG is the Tangibility, and EXGR is the Exchange rate."*

The tax variable (TX) shows a positive coefficient of 0.0413 with a highly significant t-statistic of 14.732 ($p < 0.001$). This implies that higher taxes might be associated with higher ROA. Tangibility (TANG) has a positive coefficient of 0.0121 with a significant t-statistic of 3.559 ($p < 0.001$), indicating that firms with higher tangible assets tend to have higher ROA. Finally, the exchange rate variable (EXGR) has a positive coefficient of 0.0177 with a moderately significant t-statistic of 2.81 ($p = 0.005$). This suggests that firms exposed to higher exchange rate risk might experience higher profitability. The R-squared coefficient of determination, with a value of 0.718, suggests that about 71.8% of the variability in the return on assets (ROA) can be accounted for by the independent variables included in the analysis. The adjusted R-squared value of 0.583 takes into consideration the number of independent variables included in the model, and it is marginally lower than the R-

squared value. The Durbin-Watson statistic of 0.846 is used to check for autocorrelation in the model. Values close to 2 suggest no significant autocorrelation, The obtained result suggests the absence of any statistically significant autocorrelation. The Breusch-Pagan test result of 0.529 is a test for heteroscedasticity, which checks if the variance of errors is constant across different levels of the independent variables. In this case, the test result suggests that there is no significant evidence of heteroscedasticity in the model. Lastly, the Hausman test result of 0.008 suggests that the fixed effect model is suitable for the data.

Table 4. 4 Fixed Effect Estimation (ROE)

Variables	Coefficient	Standard Error	T-statistics	P-value
TDAR	0.0167	0.0082	2.036	0.042
TDER	-0.0477	0.0132	-3.617	<0.001
STDAR	0.0609	0.0289	2.109	0.036
LTDAR	-0.0477	0.0187	-2.545	0.012
FS	0.0383	0.0152	2.519	0.014
INF	0.0248	0.0124	2.000	0.046
TX	0.739	0.345	2.141	0.033
TANG	0.009	0.0064	1.406	0.16
EXGR	-0.023	0.032	-0.719	0.473
R-squared	0.836			
Adjusted R-squared	0.717			
Durbin-Watson stat				0.539
Breusch-Pagan Test				0.352
Hausman Test				0.004

Source: Author Computation (2023) *"Where ROA is the return on assets, ROE is the return on equity, TDAR is the Total debt-to-assets ratio, TDER is the total debt-to-equity ratio, STDAR is the Short-term debt-to-assets ratio, LTDAR is the Long term Debt-to-assets ratio, FS is the firm size, INF is the Inflation, TX is the tax, TANG is the Tangibility, and EXGR is the Exchange rate."*

Based on the findings, it can be shown that the Total debt-to-assets ratio (TDAR) has a positive coefficient of 0.0167. This finding indicates that a marginal rise of one unit in the TDAR is linked to a corresponding increase of 0.0167 in the ROE, assuming that all other variables remain constant. However, this coefficient is only marginally

significant with a t-statistic of 2.036 (p = 0.042). Conversely, the Total debt-to-equity ratio (TDER) shows a negative coefficient of -0.0477 with a highly significant t-statistic of -3.617 (p < 0.001). This observation suggests that companies exhibiting a higher Total Debt to Equity Ratio (TDER) are likely to have a poorer Return on Equity (ROE), a potential source of apprehension for shareholders. The Short-term debt-to-assets ratio (STDAR) exhibits a positive coefficient of 0.0609 with a t-statistic of 2.109 (p = 0.036). This indicates that a higher proportion of short-term debt is associated with higher ROE for a firm. Contrarily, the Long-term debt-to-assets ratio (LTDAR) demonstrates a negative coefficient of -0.0477 with a t-statistic of -2.545 (p = 0.012). This suggests that long-term debt might have a detrimental impact on ROE, contributing to lower returns for shareholders. Firm size (FS) has a positive coefficient of 0.0383 with a t-statistic of 2.519 (p = 0.014). This indicates that larger firms tend to generate higher returns for their shareholders. Inflation (INF) exhibits a positive coefficient of 0.0248 with a t-statistic of 2.000 (p = 0.046). This suggests that firms operating in higher inflation environments tend to have higher ROE, which may be partly due to pricing power in such economic conditions.

The tax variable (TX) shows a positive coefficient of 0.739 with a t-statistic of 2.141 (p = 0.033). This implies that higher taxes might be associated with higher ROE, although the effect is not as strong as some other variables. Tangibility (TANG) has a positive coefficient of 0.009, but it is not statistically significant with a t-statistic of 1.406 (p = 0.16). This suggests that the level of tangible assets a firm holds may not have a significant impact on its ROE. Finally, the exchange rate variable (EXGR) exhibits a negative coefficient of -0.023, but it is not statistically significant with a t-statistic of -0.719 (p = 0.473). This suggests that variations in currency exchange rates may not have a substantial impact on a company's return on equity (ROE). The R-

squared coefficient, which stands at 0.836, suggests that about 83.6% of the variability seen in the return on equity (ROE) can be accounted for by the independent variables used in the analysis. The adjusted R-squared value of 0.717 incorporates the influence of the number of independent variables in the model, and it is marginally lower than the R-squared value. The Durbin-Watson statistic, with a value of 0.539, indicates the existence of a positive serial correlation in the error terms. This finding implies that more inquiry may be necessary to better understand this phenomenon. The obtained result of the Breusch-Pagan test, which is 0.352, suggests that there is no statistically significant evidence to support the presence of heteroscedasticity in the model. This implies that the variability of mistakes remains relatively consistent throughout the model. The Hausman test result of 0.004 indicates that the fixed effect model is appropriate for the dataset.

4.3 Discussion of the Findings

4.3.1 The Influence of Total Debt-to-Assets Ratio (TDAR) on Profitability

In Model 1, the coefficient indicates statistically significant at conventional levels of significance. This suggests that there is a positive relationship between TDAR and ROA. A higher TDAR value is associated with higher ROA, indicating that a larger proportion of debt about assets positively impacts a firm's profitability. In Model 2, the coefficient of TDAR indicates a marginally significant relationship between TDAR and ROE. While the relationship is not as strong as in Model 1, it still suggests a positive association between TDAR and ROE. A higher TDAR value is linked to higher ROE, indicating that a higher proportion of debt about equity has a positive influence on a firm's profitability. The coefficients in both models indicate that TDAR has substantial relevance as a factor of profitability. The presence of positive coefficients suggests that there is a positive relationship between an increase in TDAR

and greater levels of profitability, as shown by both ROA and ROE measurements. This implies that companies with a higher proportion of debt in relation to their assets or equity are more prone to achieving higher levels of profitability.

A higher TDAR signifies that a larger portion of a company's assets is financed through debt. Debt financing often comes with interest payments, which can be tax-deductible in many jurisdictions. As a result, higher debt levels can lead to a reduction in taxable income and ultimately lower tax obligations. This tax shield effect can enhance a firm's profitability, as more of the earnings are retained by the company rather than being paid as taxes (Samadji, 2018; Musah, 2017). Again, debt financing allows firms to leverage their assets and amplify their returns. By using debt to finance investments, companies can expand their operations, acquire new assets, and take advantage of growth opportunities. This can lead to increased revenues and ultimately higher profitability. However, companies need to strike a balance in their debt levels to avoid excessive financial risk and potential difficulties in meeting debt obligations.

Additionally, the positive relationship between TDAR and profitability can be attributed to the agency theory perspective. Debt holders, such as bondholders or lenders, have a vested interest in the financial performance of the company. They often monitor the firm's activities and impose certain restrictions and covenants to protect their interests. This external monitoring and discipline can incentivise management to improve efficiency, allocate resources effectively, and make value-enhancing decisions, all of which can contribute to higher profitability (Anarfo and Appiahene, 2017). Furthermore, the positive association between TDAR and profitability reflects the confidence that creditors and investors have in the company's ability to generate sufficient cash flows to service its debt obligations (Samadji,

2018). A higher TDAR signal financial stability and lower default risk, attracting favourable financing terms and potentially reducing borrowing costs. This improved financial position can positively impact profitability by freeing up resources for investment, reducing financial constraints, and enhancing the firm's overall competitiveness.

4.3.2 The Influence of the Total Debt-to-Equity Ratio (TDER) on Profitability

In Model 1, the coefficient of TDER is positive and statistically significant. The positive coefficient indicates that an increase in the total debt-to-equity ratio is associated with an increase in ROA. The positive coefficient implies that as a company takes on more debt relative to its equity, its profitability, as measured by ROA, tends to improve. When a company takes on debt, it can magnify its returns when the return on investment exceeds the cost of borrowing. Therefore, as the debt-to-equity ratio increases, the company may be able to generate higher returns on its assets, leading to improved ROA. However, a higher debt-to-equity ratio enhances ROA, it also increases financial risk. Excessive debt can make a company more vulnerable to economic downturns or changes in interest rates. Therefore, companies must strike a balance between leveraging their capital structure to improve profitability and maintaining a manageable level of risk. The pecking order hypothesis provides evidence for the association between the debt-to-equity ratio and profitability. Le and Phan (2017) argue that the pecking order hypothesis posits that corporations exhibit a preference for using internal funding, such as retained profits, as opposed to external financing options like debt or stock issuance. In situations when a company's internal finances prove to be inadequate, it may choose debt financing as an alternative, hence potentially leading to a rise in the debt-to-equity ratio. According to Ceballos-Mina and Santiago-Ayala (2019), there is an implication

in this hypothesis that increased levels of debt are correlated with enhanced profitability.

In Model 2, the coefficient associated with TDER has a negative sign. The presence of a negative coefficient suggests that there is an inverse relationship between the total debt-to-equity ratio and the return on equity (ROE), implying that a rise in the former is linked to a drop in the latter. The existence of a negative coefficient indicates an inverse correlation between the debt-to-equity ratio and a company's profitability, as quantified by the return on equity (ROE). The profitability of a corporation generally exhibits a negative correlation with the debt-to-equity ratio, wherein a rise in the ratio is associated with a reduction in profitability. This conclusion may seem counterintuitive since it contradicts the often-observed positive relationship between more leverage and higher returns. The financial measure referred to as Return on Assets (ROA) evaluates the profitability generated by a company's assets relative to its total asset base, irrespective of the particular capital structure used. Conversely, Return on Equity (ROE) is a quantitative measure that properly assesses the profitability attributable to the stock owned by shareholders. According to Vismara (2016), when a corporation grows its debt, there is a corresponding decline in the equity part, potentially leading to a reduction in return on equity (ROE), even if the return on assets (ROA) stays relatively consistent or experiences growth. Moreover, a rise in the debt-to-equity ratio has the potential to result in elevated interest costs, so diminishing the net income accessible to shareholders and eventually causing a decline in return on equity (ROE). The observed inverse correlation between the debt-to-equity ratio and profitability, as quantified by the return on equity (ROE), aligns with the principles of the agency cost theory. According to the agency cost hypothesis, the assumption is made that the

introduction of debt by a corporation might give rise to conflicts of interest between its owners and debtholders. According to Vismara (2016), an elevated risk level may prompt debtholders to demand higher interest rates as a form of compensation. Consequently, this might potentially diminish the profits that shareholders can access.

4.3.3 The Effect of Short-Term Debt-to-Assets Ratio (STDAR) on Profitability

In Model 1, the coefficient has a positive direction and demonstrates a positive statistical significance. The existence of a positive coefficient indicates a direct correlation between an increase in the short-term debt-to-assets ratio and a corresponding rise in return on assets (ROA). The existence of a positive coefficient suggests that an augmentation in the ratio of short-term debt to assets has a favourable influence on profitability, as evaluated by the return on assets (ROA) measure. One possible explanation for this relationship is that short-term debt can provide a company with additional liquidity to finance its operations and investments. By utilising short-term debt effectively, a company can generate higher returns on its assets, leading to improved ROA. Furthermore, short-term debt may be advantageous in certain business environments, where interest rates are relatively low and the cost of short-term borrowing is affordable (Ikapel and Kajirwa, 2017). This can contribute to increased profitability. The Modigliani and Miller (MM) Theory and the Pecking order theory support the positive relationship between short-term debt and profitability.

The Pecking Order Theory says that businesses should try to find the best capital arrangement that combines the benefits and costs of debt. Short-term debt can provide flexibility and allow companies to take advantage of profitable investment opportunities, thereby enhancing profitability (Badoer and James, 2016). The MM theory suggests that maintaining an appropriate level of liquidity is crucial for a

company's financial health. Short-term debt can be used to manage short-term funding needs and maintain liquidity, allowing companies to seize opportunities and meet obligations promptly. By effectively managing short-term debt, companies can enhance their profitability (Ikapel and Kajirwa, 2017).

In Model 2, the coefficient is positive and statistically significant. The positive coefficient indicates that an increase in the short-term debt-to-assets ratio is associated with an increase in ROE. The positive coefficient implies that higher levels of short-term debt relative to assets have a positive impact on profitability, as measured by ROE. This finding aligns with the concept that short-term debt can contribute to increased returns for shareholders. One possible explanation is that short-term debt can be used to finance revenue-generating activities or investments that yield higher returns compared to the cost of borrowing. This can result in increased profitability and higher returns available to shareholders, as measured by ROE. Furthermore, the use of short-term debt enables firms to effectively manipulate their capital structure, therefore maximising the combination of debt and equity in order to optimise returns for shareholders. The observed correlation between short-term debt and profitability, as quantified by the return on equity (ROE), aligns with the principles of the pecking order hypothesis. The pecking order hypothesis postulates that corporations exhibit a preference for using internal sources of funding, such as retained profits, as opposed to external sources of funding, such as debt or stock issues. In situations when a company's internal finances are inadequate, it may resort to short-term debt as a means to meet its financial requirements (Myklebust, 2012). According to this idea, there is a suggestion that increased levels of short-term debt are linked to enhanced profitability.

4.3.4 The Effect of Long-Term Debt-to-Assets Ratio (LTDAR) on Profitability

In Model 1, the coefficient is positive and statistically significant. The presence of a positive coefficient suggests that there is a positive relationship between the long-term debt-to-assets ratio and the return on assets (ROA), indicating that a rise in the former is connected with an increase in the latter. The presence of a positive coefficient indicates that an increase in the proportion of long-term debt in relation to assets is associated with a favourable effect on profitability, as assessed by the return on assets (ROA). One possible explanation for this relationship is that long-term debt can be used to finance investments in productive assets that generate higher returns. By utilising long-term debt effectively, a company can increase its asset base and generate higher profitability, leading to improved ROA. Additionally, long-term debt can provide companies with stability and consistency in funding, which allows them to undertake long-term projects with higher potential returns. This can contribute to enhanced profitability. The Pecking order hypothesis is supported by the observed positive correlation between long-term debt and profitability, as shown by the return on assets (ROA). The Pecking Order Theory posits the existence of an ideal capital structure that effectively manages the advantages and drawbacks associated with debt. Long-term debt can provide companies with lower interest rates and longer repayment periods, which can contribute to increased profitability (Obuobi et al., 2020). This theory implies that higher levels of long-term debt can positively influence profitability.

The coefficient in Model 2 has statistical significance. The existence of a negative coefficient implies an inverse correlation between the long-term debt-to-assets ratio and the return on equity (ROE). The presence of a negative coefficient indicates that an increase in the proportion of long-term debt in relation to assets has an adverse

effect on profitability, as assessed by the return on equity (ROE) metric. This finding may be counterintuitive, as higher leverage is typically associated with higher returns. Return on Assets (ROA) measures the profitability of a company's assets relative to its total assets, irrespective of the capital structure. On the other hand, Return on Equity (ROE) specifically measures the profitability attributable to the shareholders' equity. When a company takes on more long-term debt, the equity portion decreases, which can lower ROE even if ROA remains relatively stable or increases. Furthermore, an increase in the long-term debt-to-assets ratio can lead to higher interest expenses, reducing the net income available to shareholders and ultimately decreasing ROE (Yakubu et al 2017).

This aligns with the concept of financial risk associated with higher leverage, as mentioned earlier. The negative relationship between long-term debt and profitability, as measured by ROE, is consistent with the agency cost theory. The agency cost theory suggests that conflicts of interest between shareholders and debtholders can arise when a company takes on debt. Higher levels of long-term debt can increase the risk and cost of borrowing, which can negatively impact shareholder returns (Yakubu et al 2017). Moreover, the pecking order hypothesis postulates that organisations exhibit a preference for using internal sources of funding, such as retained profits, as opposed to external sources, such as debt or stock issues. When internal funds are insufficient, companies may resort to long-term debt (Ikapel and Kajirwa, 2017). This theory implies that higher long-term debt levels are associated with reduced profitability.

4.4 Theoretical Implication

The findings have important theoretical implications. First, the positive relationship between the total debt-to-assets ratio (TDAR) and profitability suggests the presence

of a tax shield effect. When companies have a higher proportion of debt relative to their assets, they can deduct interest expenses from their taxable income. This reduces their tax obligations and allows them to retain more earnings, which can enhance profitability (Samadji, 2018; Musah, 2017). This finding aligns with the notion that debt financing provides companies with a tax advantage and can positively impact their profitability. Second, the positive association between TDAR and profitability reflects the influence of agency theory. Debt holders, such as bondholders or lenders, have a vested interest in the financial performance of the company. They often monitor the company's activities and impose certain restrictions and covenants to protect their interests. This external monitoring and discipline can incentivise management to improve efficiency, allocate resources effectively, and make value-enhancing decisions, all of which can contribute to higher profitability (Anarfo and Appiahene, 2017). The finding suggests that the presence of debt holders and their influence on corporate decision-making can enhance a firm's profitability.

Moreover, the correlation between TDAR (Total Debt to Asset Ratio) and profitability serves as an indicator of the level of trust and assurance that creditors and investors possess about the company's capacity to create enough cash flows for meeting its debt-related commitments.

A higher TDAR signals financial stability and lower default risk, which can attract favourable financing terms and potentially reduce borrowing costs. This improved financial position can positively impact profitability by freeing up resources for investment, reducing financial constraints, and enhancing the firm's overall competitiveness (Samadji, 2018). Thus, the findings suggest that the confidence and support of creditors and investors can contribute to a company's profitability.

Again on to the theoretical implications of the total debt-to-equity ratio (TDER) on profitability, the findings suggest support for the pecking order theory. Based on this theoretical framework, it is posited that corporations exhibit a preference for using internal sources of funding, namely retained profits, as opposed to external sources such as debt or stock issuance. When internal funds are insufficient, companies may resort to debt financing, which can increase the debt-to-equity ratio. This theory implies that higher debt levels are associated with improved profitability (Ceballos-Mina and Santiago-Ayala, 2019). Therefore, the findings provide support for the idea that companies prioritise internal financing and turn to debt as a means to enhance their profitability. Furthermore, the negative relationship between TDER and profitability, as measured by return on equity (ROE) in Model 2, highlights the risk-return trade-off associated with higher leverage. While higher debt levels may enhance profitability as measured by return on assets (ROA), they can also increase the financial risk and reduce the returns available to shareholders. This finding suggests the importance of striking a balance between leveraging the capital structure to improve profitability and maintaining a manageable level of risk. It emphasises the need for companies to carefully consider the potential drawbacks and limitations of higher debt levels to safeguard the interests of shareholders (Vismara, 2016).

4.5 Managerial Implication

The findings have important managerial implications for firms. Firstly, the positive relationship between the total debt-to-assets ratio (TDAR) and profitability suggests that managers should consider utilising debt financing as a strategy to enhance profitability. By increasing the proportion of debt about assets, firms may benefit from the tax shield effect, which reduces taxable income and lowers tax obligations. This can result in higher retained earnings and improved profitability. Managers

should carefully evaluate their capital structure and leverage levels to strike a balance between debt and equity financing that maximises tax advantages and enhances profitability (Samadji, 2018; Musah, 2017). Secondly, the positive association between TDAR and profitability highlights the importance of maintaining a healthy relationship with debt holders. Managers should recognise that external monitoring and discipline imposed by debt holders can incentivise efficiency and value-enhancing decision-making. By meeting the expectations and requirements of debt holders, firms can improve their financial performance and profitability. This underscores the significance of effective communication and cooperation with creditors to maintain their confidence and support (Anarfo and Appiahene, 2017).

Thirdly, the findings suggest that firms with higher TDAR may enjoy favourable financing terms and reduced borrowing costs. Managers should leverage this advantage by actively managing their debt-to-assets ratio and maintaining a stable and reliable financial position. By demonstrating financial stability and lower default risk, firms can attract favourable financing options, freeing up resources for investment and enhancing their competitiveness. Managers should strive to establish a strong reputation and build trust with creditors and investors to take advantage of these benefits (Samadji, 2018).

Again on to the managerial implications of the total debt-to-equity ratio (TDER) on profitability, the findings indicate the importance of carefully managing the capital structure. While higher TDER may enhance profitability as measured by return on assets (ROA), it can also increase the financial risk and reduce returns available to shareholders, as reflected in the negative relationship with return on equity (ROE). Managers should consider the risk-return trade-off associated with leverage and aim to strike a balance between profitability and financial risk. They should assess the

optimal level of debt and equity financing that allows the company to generate satisfactory returns for shareholders while maintaining a manageable level of risk.

4.6 Chapter Summary

This chapter examines the impact of varying debt ratios on profitability, specifically focusing on the total debt-to-equity ratio (TDER), short-term debt-to-assets ratio (STDAR), and long-term debt-to-assets ratio (LTDAR). The study analysed the impact of these ratios on two profitability measures: Return on Assets (ROA) and Return on Equity (ROE). For the TDER, the study found that an increase in the ratio was associated with an improvement in ROA. This positive relationship can be explained by the concept of financial leverage, where taking on debt can amplify returns when the return on investment exceeds the cost of borrowing. However, the TDER had a negative effect on ROE, highlighting the potential risks and conflicts of interest between shareholders and debtholders when a company has higher debt levels. Again on to the STDAR, the study discovered that higher short-term debt relative to assets positively influenced both ROA and ROE. This outcome was supported by theories such as MM and the pecking order theory, emphasising the role of short-term debt in providing liquidity, flexibility, and the ability to seize profitable opportunities. Finally, for the LTDAR, the study observed mixed effects on profitability. While an increase in the ratio had a positive impact on ROA, indicating that long-term debt could be used to finance investments yielding higher returns, it had a negative effect on ROE. The reduction in equity due to higher long-term debt levels, along with increased interest expenses, contributed to lower returns available to shareholders. The agency cost theory and the pecking order theory offered explanations for these findings, highlighting the potential conflicts of interest and financial risks associated with long-term debt.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.0 Introduction

This chapter functions as the final segment of the thesis, including a concise overview of the study results, the derived conclusions, and suggestions for potential avenues of future research. The chapter also addresses the suggestions put forward by the study. The chapter has been partitioned into four distinct parts. The first part presents a comprehensive summary of the findings obtained from the investigation. The document provides a concise overview of the research. The second element of the conclusion consists of the deductions derived from the study's findings according to its stated purpose. The final section of the chapter is the recommendation, which provides pertinent ideas based on the study's primary results. The last part is captured as a suggestion for future research direction.

5.1 Summary of Findings

The study investigates how different types of capital structures affect profitability. The positivist paradigm and explanatory research methodology were employed to explore the causal relationship between capital structure and firm profitability. Secondary data from financial reports were used, and a sample of 15 firms from Ghana was selected through purposive sampling. The study applied panel data methodology and conducted fixed-effect panel regressions to analyse the impact of capital structure on profitability. The variables measured included profitability ratios (ROA, ROE), capital structure ratios (TDAR, TDER, STDAR, and LTDAR), and control variables (Tangibility, tax, inflation rate, exchange rate, firm size).

The results of the study provided significant insights into the correlation between capital structure ratios and profitability.

The Influence of Total Debt-to-Assets Ratio (TDAR) on Profitability

The relationship between Total Debt Ratio (TDAR) and Return on Assets (ROA) and Return on Equity (ROE) is significant, with a higher TDAR value associated with higher ROA. This suggests that a larger proportion of debt about assets positively impacts a firm's profitability. Higher TDAR indicates that a larger portion of a company's assets is financed through debt, which can lead to a reduction in taxable income and lower tax obligations. This tax shield effect can enhance a firm's profitability, as more earnings are retained by the company. However, companies need to strike a balance in their debt levels to avoid excessive financial risk. The positive relationship between TDAR and profitability can be attributed to the agency theory perspective, where debt holders have a vested interest in the company's financial performance. This can incentivize management to improve efficiency, allocate resources effectively, and make value-enhancing decisions, contributing to higher profitability.

The Influence of the Total Debt-to-Equity Ratio (TDER) on Profitability

The study examines the relationship between debt-to-equity ratio (TDER) and return on assets (ROA) in two models. In Model 1, a positive coefficient indicates that an increase in the total debt-to-equity ratio leads to an increase in ROA, indicating that a company's profitability tends to improve as it takes on more debt relative to its equity. However, this also increases financial risk, making a company more vulnerable to economic downturns or changes in interest rates. The pecking order hypothesis suggests that corporations prefer internal funding over external financing options,

leading to a rise in the debt-to-equity ratio. In Model 2, a negative coefficient suggests an inverse relationship between the total debt-to-equity ratio and return on equity (ROE), implying that a rise in the former is linked to a drop in the latter. This contradicts the positive relationship between more leverage and higher returns, as a rise in the debt-to-equity ratio may result in elevated interest costs, diminishing net income accessible to shareholders and potentially reducing return on equity.

The Effect of Short-Term Debt-to-Assets Ratio (STDAR) on Profitability

In Model 1, a positive correlation exists between an increase in the short-term debt-to-assets ratio and a rise in return on assets (ROA). This suggests that short-term debt can provide a company with additional liquidity to finance operations and investments, leading to improved ROA. Short-term debt can be advantageous in low interest rates and affordable borrowing costs, contributing to increased profitability. The Modigliani and Miller (MM) Theory and the Pecking order theory support this relationship. The Pecking Order Theory suggests that businesses should find the best capital arrangement that combines the benefits and costs of debt. Short-term debt can be used to finance revenue-generating activities or investments that yield higher returns compared to the cost of borrowing, resulting in increased profitability and higher returns available to shareholders. The observed correlation with short-term debt and profitability aligns with the principles of the pecking order hypothesis, suggesting that increased levels of short-term debt are linked to enhanced profitability.

5.2 Conclusion

The present research investigated the effects of different debt ratios on profitability measures, including the Total Debt-to-Assets Ratio (TDAR), Total Debt-to-Equity

Ratio (TDER), and Short-Term Debt-to-Assets Ratio (STDAR). The findings provided valuable insights into the relationship between these ratios and profitability. The results indicated that higher TDAR and STDAR were associated with increased profitability, as measured by both Return on Assets (ROA) and Return on Equity (ROE). This suggests that a larger proportion of debt about assets or equity positively influences a firm's profitability. On the other hand, the relationship between TDER and profitability was more complex. While TDER showed a positive association with ROA, it exhibited a negative association with ROE. This implies that as the debt-to-equity ratio increases, a company's profitability attributable to shareholders' equity tends to decrease. These findings emphasise the importance of striking a balance in debt levels to optimise profitability while managing financial risks. It is crucial for companies to carefully consider their capital structure and leverage ratios to ensure they can effectively leverage debt to enhance profitability without exposing themselves to excessive financial risk. By maintaining an optimal mix of debt and equity, companies can maximise returns on their assets and generate higher profitability.

5.3 Policy Implications and Recommendations

The study's results suggest that politicians, industry participants, and entrepreneurs should take into account many policy implications and suggestions.

Encourage balanced capital structures: Policymakers can promote awareness and provide guidelines to encourage companies to maintain balanced capital structures. This can help prevent excessive reliance on debt or equity and promote a more optimal mix that enhances profitability while managing financial risks. Providing educational resources and support programs for entrepreneurs and small businesses can also be beneficial in this regard. Foster a supportive business environment:

Creating a business environment that is conducive to sustainable profitability is essential. Policymakers can implement favourable tax policies that recognise the tax shield effect of debt financing, allowing companies to retain more earnings and invest in growth opportunities. Additionally, providing access to affordable financing options, especially for short-term debt, can help businesses effectively manage their liquidity needs and seize profitable investment opportunities.

Enhance financial literacy and risk management skills: Policymakers and industry players can collaborate to improve financial literacy and risk management skills among entrepreneurs and managers. This can be done through training programs, workshops, or educational campaigns that focus on understanding the implications of different debt ratios on profitability and providing tools for effective risk management. By equipping individuals with the necessary knowledge and skills, they can make informed decisions about their capital structure and financial strategy. Promote transparency and accountability: Policymakers can implement regulations and reporting requirements that promote transparency and accountability in financial reporting. This includes enforcing accurate and timely disclosure of debt-related information, such as debt levels, interest rates, and covenants. Transparent reporting enables stakeholders, including investors and creditors, to make informed decisions and assess the financial health and risk profile of companies accurately.

5.4 Suggestion for Future Research

Future studies in this domain may endeavour to investigate several routes in order to enhance our comprehension of the correlation between debt ratios and profitability. To begin with, conducting longitudinal studies in the Sub-Saharan region that investigate the dynamic nature of the association between debt ratios and profitability over an extended period might provide a full comprehension of the enduring

consequences. By tracking companies' financial performance and debt ratios over an extended period, researchers can observe how changes in debt levels impact profitability and vice versa, considering both short-term and long-term effects. Secondly, exploring the moderating effects of firm characteristics, such as firm size, age, and growth opportunities, can help to identify the contingencies that influence the relationship between debt ratios and profitability. Understanding how different firm characteristics interact with debt ratios can provide more nuanced insights and guide tailored strategies for companies based on their specific circumstances. Furthermore, investigating the mediating mechanisms through which debt ratios affect profitability can enhance our understanding of the underlying processes. For example, studies can explore the role of financial risk, operational efficiency, or managerial decision-making in mediating the relationship between debt ratios and profitability. Identifying these mechanisms can provide a more comprehensive understanding of how and why debt ratios influence profitability.

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