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DEGREE OF FINANCIAL AND OPERATING LEVERAGE AND PROFITABILITY OF COMMERCIAL BANKS IN GHANA

RICHARD ADDEY

2024

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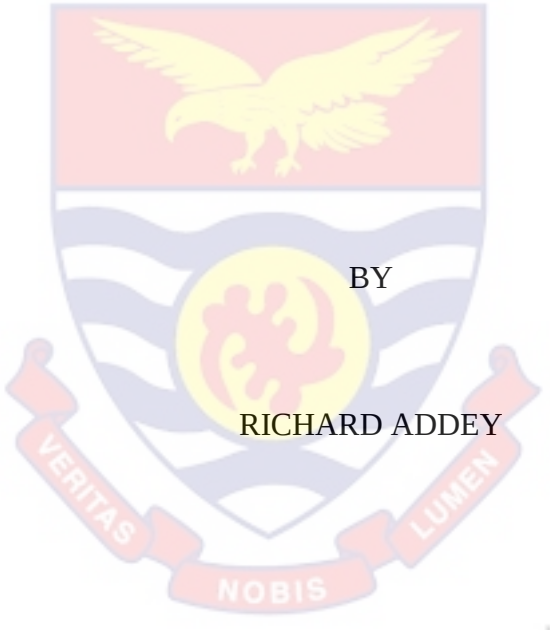

BY

RICHARD ADDEY

Dissertation submitted to the Department of Business Programmes College of Distance Education, University of Cape Coast in partial fulfilment of the requirements for the award of Master of Business Administration degree in Finance

MARCH 2024

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DECLARATION

Candidate's Declaration

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

Candidate' Signature: ……..... Date: ……

Name: Richard Addey

Supervisor's Declaration

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

Supervisor's Signature: ……. Date: ……

Name: Mr. Patrick K. Akorsu

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ABSTRACT

The profitability and operational and financial leverage of Ghana's commercial banks were examined in the study. Four goals were outlined in order to fulfil the study's primary goal. The initial goal was to examine how Ghanaian commercial banks' profitability was impacted by their level of financial leverage. Analysing the effect of operating leverage level on commercial banks' profitability in Ghana was the study's second goal. Analysing the impact of liquidity on Ghanaian commercial banks' profitability was the third goal of the research. Analysing the impact of macroeconomic variables on the profitability of Ghanaian commercial banks was the study's fourth goal. The explanatory research design was used in the investigation. Annual data from eight Ghanaian commercial banks were taken between 2013 and 2021. The study's goal was accomplished through the application of ordinary pool least squares. The fixed effect and random effect options were evaluated using the Hausman test. The quantitative method was applied. The study discovered a favourable correlation between commercial banks' profitability and their level of financial leverage. The level of operating leverage was negatively correlated with commercial banks' profitability. Additionally, there was a negative correlation between company profitability and liquidity. Ultimately, the research revealed that the lending and exchange rates had a detrimental impact on the profitability of Ghana's commercial banks. According to the report, banks should decrease their financial leverage and liquidity, create effective plans to raise their operating leverage, and capitalise on the GDP growth in their respective countries in order to boost profitability.

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KEYWORDS

Liquidity

Financial Leverage

Operating Leverage

Profitability

Commercial Banks

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DEDICATION

To my family

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CHAPTER ONE

INTRODUCTION

A notion that gauges how sensitive a company's profits are to shifts in sales or operating income is the degree of financial and operating leverage. It aids in evaluating the risk connected to a business's operating expenses and financial structure. These leverage ratios may have an impact on Ghanaian commercial banks' returns. The use of debt or borrowed money to finance a business's activities is referred to as financial leverage. While it raises the possibility of financial trouble, it also enhances the possible profits to stockholders. Conversely, operating leverage is associated with the percentage of fixed costs in a business's cost structure. Operating leverage rises with greater fixed costs. Commercial banks play a big part in Ghana's economy, but there hasn't been much thorough study done on how these banks' profitability and leverage metrics—both operating and financial—relate to one another. This knowledge gap is problematic because it makes it more difficult to grasp the variables affecting Ghana's commercial banks' financial health and profitability.

Background to the Study

It is essential for business managers and creditors to have a working capital management system that is efficient since it has an impact on the way in which the firm manages risk in order to avoid going bankrupt. In recent years, financial institutions have come to the realisation that it is necessary to have suitable strategies for the management of their working capital in order to retain their stability. This is especially true in light of the increased demand for the payment of deposits (Musah, 2018). According to Takyi (2020), the

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efficacy and efficiency of the banking sector are vitally necessary in order to maintain both growth and stability. This is due to the fact that the banking sector plays such a significant role in the processes of financial intermediation that are carried out by all economies. According to D'avino, Girardin, and Shabani (2022), banks engage in activities that are useful to the economy in order to ensure that they will continue to exist and continue to generate profits. A consistent flow of cash can be assured on the asset side of a bank's balance sheet by lending to deficit spending units. This ensures that the bank will always have funds available. Savers, on the other hand, are provided with liquidity on the liabilities side of the balance sheet at various times.

As a result of their role in facilitating trade through the delivery of payment and settlement systems, as well as protecting the prolific investment of wealth and the profitability of other diverse purposes, banks are susceptible to a wide variety of risks, as stated by Dell'Ariccia, Ferreira, Jenkinson, Laeven, Martin, Minoiu, and Popov (2018). This has made banks vulnerable to a wide range of risks. Human resource risk, interest rate risk, foreign exchange risk, market risk, credit risk, regulatory risk, and liquidity risk are some of the concerns that are included in this category. In addition, given that they are financial institutions, banks are exposed to hazards. According to Naveed et al. (2010), it is prudent to pay attention to the financial health of these organisations by placing an emphasis on good working capital management. This is because it is good for the companies' bottom lines. Due to the fact that there has been a substantial rise in the level of operating risk all over the world, as well as the fact that financial institutions are coming under an increasing amount of pressure.

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To properly manage liquidity and solvency, the management of corporate institutions would need to make a decision regarding the ideal level of both current assets and current liabilities that should be maintained by management at a specific point in time. This decision would affect both the current assets and current liabilities of the institution. The choice regarding this matter would have to be taken simultaneously. Because it is a complete ratio that captures the relationship between the level of current assets and current liabilities, the current study made use of the liquidity, capital structure, macroeconomic indicators, and other company specific features of commercial banks. This was done in order to ensure that the ratio accurately reflects the relationship involved. This was done due to the fact that the current ratio is a representation of the relationship between the level of current assets and the level of current liabilities (Zubairi, 2013). In most cases, this statistic is referred to as the current ratio, and it can be calculated by dividing the current assets by the current liabilities. Gadzo, Gatsi, and Akoto (2013) state that the degree of operating leverage offers a clear explanation of the amount to which an organisation relies on fixed expenses in its quest of increasing its operating profit. This is the conclusion that can be drawn from the findings of the aforementioned authors. To put it another way, the degree of operating leverage indicates the degree to which an organisation is dependent on its fixed costs. It is essential to emphasise that the company's fixed cost components have been brought under control, which has resulted in an increase in profits. This is the reason why the company enjoys a growth in profits. In order to achieve this goal, it is possible to make certain that the entire income includes a margin that is greater than the fixed cost of the

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product. That is to say, when the degree of operating leverage continues to expand, there is a possibility that the company's fixed operating costs would increase proportionally in a manner that is similar to the initial increase. Over the course of time, this has the potential to bring about a reduction in the margin of the organization's operational profit.

If the variable cost component accounts for the majority of the organization's operating costs, then there is a possibility that the operating leverage of the company will diminish. This is because the variable cost component also makes up the bulk of the operating costs. In the case of a business that is highly leveraged financially, it is possible to imagine that a comparable effect would have an influence on the net profit of the business. According to Zubairi (2013), this makes these sorts of enterprises more risky since, in the event that the amount of income is not sufficiently high, the fixed operating costs would not be fully covered, which would result in either an operating loss or a low operational profit. In light of this, Zubairi (2013) pointed out that both of these outcomes would be undesirable. Therefore, a high degree of operating leverage may increase financial performance during periods of rising sales or a rise in the flow of revenue; however, operating profits will rapidly diminish during periods in which sales are displaying a pattern of declining. This is because, during periods in which sales are falling, operating leverage will boost financial performance.

A commercial bank that has high fixed costs as a percentage of its total costs and that also has a high financial leverage will put policyholders at danger of not being able to be compensated in the event that the terrible event takes place. This is because the commercial bank has both of these

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characteristics. Because of this, it is absolutely necessary to carry out estimates that are grounded in reality with regard to the future interest income in order to maintain control over the risk. The amount of money earned from operations may not be sufficient to meet the fixed interest costs if the amount of money received from interest income is not sufficient to appropriately pay fixed costs (Ahmad, Naveed, Ahmad, & Butt, 2020). This is because the amount of money obtained from interest income is not sufficient to pay fixed expenses.

The fixed cost in the case of financial leverage, as opposed to operating leverage, is the financial charges, and the impact of this cost may be seen in earnings before taxes. Because Naveed, Ali, Hongxing, Altaf, and Sohu (2020) demonstrated that commercial banks are highly leveraged, the degree of financial leverage is higher in those organisations that operate with a considerable amount of loan capital. This is because commercial banks are strongly leveraged. It is envisaged that commercial banks in Ghana would be able to achieve a higher degree of financial leverage with the assistance of this research being conducted. If corporations make the decision to operate with a lower level of borrowed capital, this indicates that the degree to which commercial banks utilise financial leverage will diminish. This is because the corporations will be able to run with less borrowed capital. As a consequence of this, it is virtually likely that no equity firms will under any circumstances make use of leverage.

The results of an empirical study suggest that the financial performance, capital structure, and degree of leverage of commercial banks may be influenced by firm-level characteristics such as firm size, interest

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income growth age of the firm, riskiness of the firm, and macroeconomic variables such as lending rate, exchange rate, and GDP. These factors are all considered to be at the firm level. According to Andros, Akimova, and Butkevich (2020) and Sinaga (2016), the features of a firm include its size, the rate of interest income growth, the age of the firm, and the amount of riskiness of the firm. In contrast, these empirical connections were not established in the absence of a theoretical basis for the investigation. As a result of this, the current research takes into consideration the pecking order theory, the static trade off theory, and the signalling theory in order to arrive at the conclusions that the study has to offer.

Statement of the Problem

Researchers continue to be interested in determining whether or not there is an optimal equity and debt balance, as well as how operating leverage should be. The number of studies that have been conducted on financial leverage and operating leverage has gradually increased over the course of study. According to Alarussi and Alhaderi (2018), the optimal form of financial leverage is a combination of equity and debt capital that both lowers the cost of capital for a company while simultaneously enhancing its valuation. The process by which businesses determine the ratios of debt to equity in their financial leverage mix is still a secret, which is ironic given the state of affairs.

The financial leverage of a company, which is a term that relates to the structure of its financing, is a subject that continues to spark the interest of scholars in the fields of accounting and finance (Noreen, 2019). The literature on corporate finance has a number of themes, but this one is among the most

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confusing. Because of the inextricable connection that exists between financial leverage and an organization's capacity to fulfil the requirements of its stakeholders, its significance arises from this inherent relationship. The term "operating leverage" refers to the situation in which a corporation meets its fixed costs regardless of the volume of revenue it generates.

According to Fredrick (2018), financial leverage is the distinctive blend of debt and equity that a firm employs in order to finance its activities. There are many different types of financial leverage, including publicly traded shares, private placements, trade debt, bank loans, lease arrangements, pension liabilities, tax liabilities, outstanding pay to workers and management, performance promises, contingent liabilities, and other commodities warranties.

Morri and Jostov (2018) and Mutumira (2019) are two examples of different research that have been undertaken on the topic of financial leverage and financial performance. The purpose of these studies is to determine whether or not there is a correlation between greater debt usage in financial leverage and financial performance. The findings of several of these studies indicate that the relationship between the leverage of a company and its financial success is either weak or nonexistent (Xiao & Zhang, 2018). According to the findings of other researchers, like Nguyen (2020) and Alhababsah (2019), financial leverage has a minimal or nonexistent impact on the performance of a company. Furthermore, financial leverage is not the only metric that can be used to measure financial performance and make financial decisions.

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An extensive amount of research has been conducted on the subject of financial leverage, with a significant portion of it concentrating on the factors that determine financial leverage (Antwi, Mills, and Zhao, 2012; Akeem, Terer, Kiyanjui, and Kayode, 2014). However, there has been a relatively small amount of research conducted on the relationship between financial leverage and operating leverage in relation to the profitability of commercial banks. According to Akintoye (2009), a company that receives more investment from debt than equity should be concerned about gearing-related issues, and as a result, the company should perform poorly.

Research such as that conducted by Cassar and Holmes (2003), which established a connection between financial leverage and the performance of financial institutions in Australia, has not been as well accepted in Ghana. The few studies that are currently available have not been exhaustive in terms of empirical analysis to determine the significant impact that each type of capital (debt or equity) has on the firm value (EPS) and management efficiency (ROA) as performance measures, and therefore which one exerts greater pressure on the firms' finances (Abor, 2005). While this quantitative research focused on financial leverage and profitability, it only looked at non-financial enterprises that were listed on the Ghana Stock Exchange. On the other hand, the current study looks at commercial banks that are listed on the Ghana Stock Exchange Market.Nevertheless, the problem of businesses failing in Ghana, particularly among financial institutions, as a result of financial difficulty is a real one. As a result, there is a need for scientific research into the relationship between corporate capital and operating efficiency. As a consequence of this, the purpose of the present research is to attempt to develop the relationship

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between financial leverage and the profitability of listed commercial banks in Ghana. This is done in an effort to fill a gap in the existing body of literature. Panel data of commercial banks with their complete sets of accounts for the years 2014 to 2022 were used to determine the empirical findings of the study. These findings were based on the findings of the study.

Purpose of the Study

The main purpose of the study is to analyse how the degree of financial and operating leverage affects the profitability of listed commercial banks in Ghana.

Research Objectives

Specifically, the study sought to;

1. analyse the effect of the degree of financial leverage on profitability of commercial banks in Ghana.
2. investigate the effect of the degree of operating leverage on profitability of commercial banks in Ghana.
3. evaluate the effect of liquidity on profitability of commercial banks in Ghana.
4. analyse the effect of macroeconomic factors on profitability of commercial banks in Ghana.

Research Questions

1. What is the effect of the degree of financial leverage on profitability of commercial banks in Ghana?
2. What is the effect of the degree of operating leverage on profitability of commercial banks in Ghana?

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3. What is the effect of liquidity on profitability of commercial banks in Ghana?
4. What is the effect of macroeconomic factors on profitability of commercial banks in Ghana?

Significance of the Study

The findings of the study will make a contribution to the growing body of knowledge that is devoted to bringing to the forefront all of the relevant issues that are associated with the management of the financial and operational activities of commercial banks. The findings of the current study could be of great use to those who are responsible for formulating public policy, those who manage banks, those who serve on boards of directors, those who engage in financial markets, those who work in commercial banking, and the various regulators, such as the Central Bank of Ghana.

It is possible for the managers and board members of the bank to depend on the findings of the study in order to put appropriate measures into place in order to reduce the risk that commercial banks face in terms of their financial and operating activities and that will ultimately result in increased performance. Policymakers also have the ability to put appropriate regulations or frameworks into place in order to protect the performance of the banking industry and ensure its continued existence. In addition, the findings will contribute to the pool of resources that will be available for future research in the areas of financial leverage and operating leverage with regard to businesses.

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Delimitation of the Study

The research was carried out on commercial banks that were listed on the Ghana Stock Exchange Market based on their geographical location. To be more specific, the commercial banks that serve as the focus of this study are all commercial banks that have been operational since the year 2014. In this context, however, the study evaluated the financial leverage and operating leverage of profitability of commercial banks, as well as the ways in which macroeconomic factors influence the profitability of commercial banks in Ghana.

Limitations of the study

The study relied on a sample of commercial banks that does not represent the entire banking sector in Ghana. Small sample sizes or non-random selection methods could limit the ability to generalize findings to all banks.

Since the study covered a limited time period, it failed to capture long-term trends or the effects of cyclical economic changes. A short study period might overlook significant events that could impact leverage and profitability.

Definition of Terms

Financial Leverage: Financial leverage is the use of debt to buy more assets. Leverage is employed to increase the return on equity. However, an excessive amount of financial leverage increases the risk of failure, since it becomes more difficult to repay debt.

Operating Leverage: Operating leverage is a cost-accounting formula that measures the degree to which a firm or project can increase operating income

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by increasing revenue. A business that generates sales with a high gross margin and low variable costs has high operating leverage.

Profitability: Profitability is a measure of an organization's profit relative to its expenses. Organizations that are more efficient will realize more profit as a percentage of its expenses than a less-efficient organization, which must spend more to generate the same profit.

Organisation of the Study

The study was organized into five chapters. Chapter one consists of the background of the study, the statement of the problem, objectives of the study, significance of the study and limitation of the study. Chapter two was on a review of related literature. This chapter provides the fundamentals of the study and therefore help to shape the nature and direction of the study. Chapter three was on the research methods of the study. It covers the research design, the population and sampling procedures, data and data collection procedure, research instruments, as well as method of data processing and analysis. Chapter four was on results and discussion of the study whiles Chapter five was on the summary of the findings, conclusions and recommendations for the study.

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CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents a review of related studies on the topic "Degree of financial and operating leverage and profitability of commercial banks in Ghana." The chapter is organized in various sections. First section presents a review of the theoretical review. The second section analysed conceptual review. The third section of this chapter was on the empirical review. Finally, the last section analysed the conceptual framework.

Theoretical Review

The study is centered on two basic theories. These includes the Miller and Modigliani, Agency theory, and trade off.

Miller and Modigliani Theory

An idea that came to be known as "Capital Structure Irrelevance" was initially presented by Modigliani and Miller in the year 1958. In addition to that, this hypothesis is also known as MM I. In the event that the market is perfectly competitive, they contended that the manner in which a company organises its accounting is of no consequence whatsoever. Therefore, the capital structure of a company does not have any effect on the performance of the company. In contrast, the primary premise of this theory does not take into account the impact of taxes, the cost of transactions, inflation, or the danger of bankruptcy. In addition, this theory takes into account other assumptions that are not realistic, such as the fact that there is no information asymmetry and that the information that is disclosed is credible (Hamada, 1969; Hatfield, Cheng, & Davidson, 1994; Stiglitz, 1974).

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MM with taxes was developed by M & M in response to a number of critiques. In this project, the company incorporated the advantages of taxes and then demonstrated that the firm value may be increased through debt financing because the interest on debt financing is deducted from taxes. The weighted average cost of capital (WACC) will decrease as a result of an increase in leverage ratio in the event of a mix capital structure. This is because the level of debt is less expensive than the level of equity due to the tax shield. Because of this, the company is in a stronger position with debt. Miller (1977) demonstrated that in the example of competitive financial markets, if both investors and corporations are subject to taxation, the equilibrium value of firms that are leveraged will be equivalent to the value of enterprises that are not leveraged. So, the decision about the capital structure is immaterial. However, De Angelo and Masulis (1980) demonstrated that the availability of non-debt tax shields, such as depreciation, depletion allowances, and investment tax credit, is sufficient to overcome the leverage irrelevancy theorem. Furthermore, they demonstrated that a distinct interior optimum capital structure exists for each and every company. On the other hand, the M&M theory is still considered to be a foundational component of capital structure studies. As a result of this, the researcher provides an explanation for the connection between leverage and the success of businesses.

Agency Theory

A corporation is made up of various groups, each of which has a distinct set of principal interests. According to Brealey, Myers, and Allen (2017), these kinds of groupings might include shareholders and management,

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who are referred to as the agents, as well as external actors such as creditors and potential investors or investors in the future. According to Yazdanfar and Öhman (2014), the theory that pertains to these many interests is typically referred to as the agency theory. For instance, shareholders seek to maximise their return on capital invested, while management wants to produce outcomes that are satisfactory in order to receive better wages or incentives. The shareholders frequently make decisions on the compensation practices of the management. These shareholders frequently exert pressure on the management by attaching the management's wages and bonuses to the growth of the company's market value or profitability. The shareholders exert this kind of pressure on the management of the company because they stand to benefit from an increase in the market value of the company. According to Brealey, Myers, and Allen (2017), creditors have the objective of recouping their money with the least amount of risk feasible while simultaneously generating the highest amount of interest revenue possible while doing so.

In order to provide an explanation for why the relationship between financial leverage and financial performance could exhibit both good and negative aspects, the thesis makes use of the agency theory. According to Yazdanfar and Öhman (2014), the agency theory has the potential to be utilised in order to provide an explanation for the variations in the relationship between financial leverage and financial performance, which vary depending on the size of the organisation. One of the reasons why the authors of the thesis believe that it is appropriate to employ the agency theory in this thesis is because of this.

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In accordance with the agency theory, the beneficial impact on the relationship may be able to be attributed to the management's desire to run the business in an efficient manner (Gonzalez, 2013). This is due to the fact that the management has their own personal interests tied to the success of the organisation. Increasing the amount of financial leverage in a firm raises the danger of the company going out of business, which may have an impact on the management personally. According to Berger and Bonaccorsi di Patti (2004), if a company has a high level of financial leverage but a low level of financial performance, there is a possibility that the management department will suffer a negative reputation, have their salaries reduced, or even lose their jobs. According to Yazdanfar and Öhman (2014), the pressure exerted by shareholders to maintain the profitability of the firm, so resulting in a growth in the market value of the company, can also serve to enhance the incentives for management to perform more effectively.

Berger and Bonaccorsi di Patti (2004) state that it is feasible for a negative relationship between financial leverage and financial performance to be explained by the possibility of interest conflicts across various components of the organisation. There is a possibility that the shareholders and the management represent distinct interests, which may have an impact on the effectiveness of the firm as well as the decisions that are made. One example of this would be if the corporation were to engage in investment activities. In the short term, investments have a negative impact on the financial performance of the firm; however, in the long term, they may have a positive impact on the company's financial performance. Considering that shareholders often have a long-term perspective, an investment is considered to be a

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positive thing because it has the potential to raise the projected return in the future. With a remuneration that is related to the development in the market value of the firm, the management of the company, on the other hand, frequently considers the current financial performance of the company and prefers a return that is satisfying in the short-term perspective. According to Brealey, Myers, and Allen (2017), this kind of investment dispute has a tendency to bring about a decline in the financial performance of the company. This is because the shareholders and management do not work together in an effective manner.

As stated by Yazdanfar and Öhman (2014), the manner in which the relationship between financial leverage and financial performance is influenced is contingent upon the size of the given organisation. Specifically, they assert that a positive relation exists between huge corporations that frequently have stockholders who do not have a direct connection to the management of the company. There is a positive correlation between the fact that the management of the firm needs to run the business effectively in order to fulfil the expectations of the shareholders. On the other hand, small businesses, in which the shareholders typically serve as the management, may have a negative relation. This is due to the fact that small businesses typically have lower free cash flows, which is connected with less business opportunities. As a result of the fact that they are frequently also the shareholders, the management of small businesses does not experience the same level of pressure to run the business in an efficient manner.

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Trade-off theory

By recognising the existence of both costs and benefits associated with a company's usage of debt financing, the Trade-off theory was developed. According to the theory, businesses that finance their capital with debt have the advantage of benefiting from a tax shield; nevertheless, they also bear the cost of bankruptcy and the cost of financial anguish associated with the situation. Taani (2013) made the observation that the marginal tax benefit decreases when enterprises expand their debt financing, while the marginal cost grows. This is in agreement with the previous observation. In summary, the researcher hypothesised that the ideal capital structure of a company is achieved by attempting to strike a balance between the corporation tax benefit on the one hand and the agency bankruptcy cost on the other at the same time.

According to Mwangi and Murigu (2015), financial institutions are required to use the cost and benefit balancing wheel in order to accurately determine the proportion of debt or equity financing that should be included in their capital structure. In an ideal scenario, businesses should strive to get a level of debt that strikes a balance between the tax advantages that come with greater debt and the potential costs of financial difficulties that could result in bankruptcy. According to the trade-off theory, the optimal capital structure of a company is the combination of business financing that is equivalent to the marginal cost and benefits of debt (Mwangi & Murigu).

The three theoretical views are pertinent to the current research of capital structure since they all touch on the utilisation of debt and equity financing. In conclusion, this is the reason why they are significant. The stewardship idea encourages the integration of the interests of managers and

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shareholders, and it provides direction for the efficient management of corporate resources (which in this case include money) in order to preserve trust. It is also proven that the importance of Agency theory is established in its application, which is that financial institutions could use debt financing to address agency conflict that arises from principal-agent relationships to settle agency conflicts. Because it reduces the flow of free cash for investments that are not advantageous to shareholders, the use of debt financing makes it more difficult for managers to engage in opportunistic behaviour in their capacity as agents.

The Trade-off theory asks organisations, especially financial institutions, to consider the costs and advantages of providing debt financing in order to achieve the optimal capital structure that results in improved financial performance. This theory also provides recommendations to these organisations. The authors Mireku, Mensah, and Ogoe (2014) reaffirmed that high organisational performance is at risk regardless of whether of these premises is taken into consideration.

Conceptual Review

The current study builds its conceptual base from the review of literature on the overview of capital structure and the components of capital structure. Also covered included the concept of financial performance and its measures, as well as the relationship between capital structure and financial performance of financial institutions.

Overview of Financial leverage

There are a few various methods that one might measure the concept of financial leverage. As was the case in previous studies (Abor, 2005; Ebaid,

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2009), the thesis makes use of three distinct viewpoints in order to evaluate financial leverage. These perspectives are short-term, long-term, and overall debt measurements. One of the advantages of utilising these viewpoints is that the individual who is applying the information will be able to comprehend how the various kinds of debt influence the operation of the financial system. When it comes to the costs that are linked with debt, such as interest costs, the authors of previous research (Abor, 2005; Holy and Van der Wijst 2008) assert that there is a distinction between short-term debt and long-term debt from the perspective of the expenses that are associated with it. In contrast to long-term debt, such as a bank loan, which often does not incur interest payments, short-term debt does not typically have interest payments attached to it. According to Myers (1984), there is a distinction between the ways in which short-term debt and long-term debt are utilised, as well as the reasons for having each type of debt. When it comes to financing the company's operations, short-term debt is utilised, whereas long-term debt is utilised for the purpose of financing investments.

Those debts that have a maturity date that is less than one year away are considered to be short-term, whilst those debts that have a maturity date that is more than one year away are considered to be long-term. When calculating total debt, it is important to take into account both short-term and long-term debt, as this reflects the total amount of debt that the organisation possesses (Brealey, Myers, and Allen, 2017). After that, the three distinct definitions are divided by the entire assets in order to determine the ratio of the debt to the total assets that belong to the company.

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Financial leverage is used with the intention of achieving the goal of increasing the expected financial performance, which is quantified as Return on Equity. If the company were to receive funds, for instance in the form of a bank loan, it would be able to expand its business opportunities and possibly afford to make new investments. According to Brealey, Myers, and Allen (2017), this circumstance may result in improved financial performance. In their 1995 article, Rajan and Zingales argue that businesses with lower debt levels typically have superior financial performance. This line of reasoning is in direct opposition to the aforementioned argument. According to Rajan and Zingales (1995), businesses would only use debt to finance their operations when it was absolutely necessary to do so; they would not do so in order to boost their general financial performance.

The amount of financial leverage that is utilised varies not just from one industry to another but also from one company to another within the same industry. Industry to industry. Companies tend to use more financial leverage when the economy as a whole appears to be doing well, and they make an effort to use less financial leverage when the economy is experiencing a recession. This is a tendency that has been seen historically. It is challenging to determine the appropriate level of debt, and it is essential for every business to effectively manage their financial leverage in order to ensure that it is tailored to their specific requirements and circumstances (Brealey, Myers, and Allen, 2017).

Debt financing source of firms' capital

According to Onuonga (2014), debt financing is the process by which companies borrow money for an extended period of time. However, it is

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mostly used by large, well-established businesses, such as financial institutions, to get long-term capital. It is necessary to obtain debt financing at a rate of interest along with agreed-upon fixed interest repayments within a predetermined amount of time. Onuonga, in his analysis of the benefits and drawbacks of debt financing, found that the positive aspect of it is that it allows businesses to receive the most possible tax benefit, which in turn favours higher profitability. On the other hand, Ebaid (2009) also indicated that large levels of debt financing can lead to the possibility of bankruptcy. Therefore, in order to provide support for the Pecking Order hypothesis, Ebaid proposed that financial institutions should only use debt financing as a final option after they have exhausted all of their internal funding options (equity and debt) and demonstrate that they are unable to meet their needs.

Loan-term debt financing

The acceptance of debt as a component of the capital structure of financial organisations According to Amidu (2007), long-term debt is defined as money that has been borrowed for institutional expenditures and is owed to lenders for a length of time that is greater than one fiscal year from the date of acquisition or the current balance sheet date. This definition is similar to that of many other companies. The literature (Amidu) makes it abundantly clear that long-term financing does not have a substantial link with returns on assets; yet, it is the most preferred method of financing among well-established corporate institutions due to the asset base that they possess.

It is interesting to note that financial institutions, which are primarily banks, provide long-term business financing to other businesses and also have access to long-term funding from additional lenders. According to a report that

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was published by the European Commission in 2008 (Economic, 2008), large financial institutions significantly restrict the amount of money that they lend to small and medium-sized businesses. As a consequence, the potential for growth and financial performance of these businesses is diminished. Therefore, Amidu (2007) came to the conclusion that there is a direct and positive relationship between long-term indebtedness and the financial success of firms, regardless of their size, in terms of growth, sales effectiveness, and gross profit.

According to the findings of Weinraub and Visscher's (1998) investigation into debt financing, aggressive liquidity strategies involve the combination of larger levels of short-term debt, which often have lower costs, with fewer resources that are available for the long term. Additionally, the danger of short-term liquidity is enhanced, despite the fact that capital expenses are decreased. A company's profitability, which may be the most important element in securing outside finance in nations with lenient collateral regulations, was found to have a positive correlation with both total and short-term debt, according to the findings of the researchers. As a consequence of their investigation, they found that there is a negative connection between tangibility and short-term debt, while there is a positive connection between tangibility and long-term debt. These findings are consistent with other assumptions regarding capital structure, which come to the conclusion that companies that do not possess fixed assets that can be used as leverage are unable to acquire credit for an extended period of time. According to Garca-Teruel and Martinez-Solano (2007), there is a favourable correlation between a company's presence of short-term debt and its possibilities for future

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expansion. It has been demonstrated through anecdotal evidence that there is a beneficial association between short-term debt funding and financial results.

Equity financing source of firm's capital

It is clear from the literature that practically all businesses, particularly financial institutions and other publicly traded enterprises, make use of equity financing. According to Ang et al. (2000), equity finance is the component of firms' capital that is acquired from business owners. This component represents the owners' contribution to the firm's capital, which is typically visible in the form of ordinary shares issued and the undistributed portion of profit held by the organisation.

Ebaid (2009) advanced the argument for the employment of equity and claims that employing equity in their capital structure allows enterprises to perform better because equity holders directly control management of operations. This is because equity holders have direct influence over the management of operations. As a result of the fact that stock holders have rights on the profits of the company, they make certain that resources are appropriately allocated in order to maximise the wealth of shareholders. Providing evidence in support of Ebaid's contention, Mujahid and Akhtar (2014) demonstrated that there is a positive correlation between equity capital and the financial success of companies.

Nimalathasan and Valeriu (2010) conducted a study on the equity-debt options made by businesses. They found that businesses that had strong profit performance utilised larger levels of equity than debt throughout their operations. Giorgis Sahile, Tarus, and Cheruiyot (2015) discovered in a research on "debt capacity and capital structure" that the fear of bankruptcy

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and agency fees led enterprises to prefer equity financing over debt financing. This finding lends credence to the proposition that is contained within the Trade-off theory. Invariably, the Trade-off theory endorses the utilisation of debt by businesses following the completion of a cost and benefit study.

Performance measurement

Each and every company, by virtue of the reason for which it was founded, have a goal to attain, and the degree to which it is successful in accomplishing that goal or goals is indicative of the level of performance that it possesses. As a result, performance is a complicated word since it can be interpreted in a variety of ways, taking into account the many diverse perspectives from which it might be viewed. Akintoye (2008) was of the opinion that the performance of an entity could be evaluated based on the factors of growth, increased productivity, and the level of happiness experienced by customers. Fama and French (2002) provided support for the Trade-off theory after conducting an examination of the performance of a company. According to this theory, the capital structure of a company should always have a favourable trade-off between the financial risk and the expected returns. Consequently, Fama and French regard the risk of the business, taxes, and the conduct of management to be essential components in the process of finding the optimal capital mix for improved firm performance.

According to the findings of Ayele's (2012) research on the subjective measures of firm performance, Ayele identified organisational performance as the primary outcome variable of interest that lies at the core of survival. After that, the author went on to explain that organisational performance is comprised of a collection of financial and non-financial indicators that are able

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to evaluate the degree to which the accomplishment of organisational goals and objectives is accomplished. An integrated literature review conducted by Dumont and Svensson (2014) led to the utilisation of a multidimensional construct that was able to capture market share, sales revenue, innovation, and profitability performance measurement factors. From the perspective of revenue, Dumont and Svensson argue that performance is a demonstration of the maximisation of shareholders' interests and a measurement of how much better off shareholders are at the conclusion of the period compared to how they were at the beginning of the period. Additionally, Lemma and Negash (2014) provided an explanation that complemented the assumption made by Dumont and Svensson. They stated that the primary objective of shareholders who engage in enterprises is to enhance their wealth.

Liquidity as a performance measure

When it comes to the measuring of financial performance, liquidity performance is one of the management tools that is regarded to be among the most extensively used and among the most conventional. The current ratio, the quick ratio, and the cash ratio are the three ratios that are most commonly used by researchers, academicians, and professionals to determine the liquidity of a company (Akbarpour & Aghabeygzadeh, 2011). A company's liquidity can be defined as the extent to which it is able to meet its current financial commitments with the existing assets that it possesses when they become due in the short term without causing any disruptions to the operations of the organisation.

When depositors place an order for or demand a withdrawal, banks and other financial institutions are required to be able to fulfil their obligations

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because the primary responsibility of these organisations is to accept deposits. As a result of the fact that financial institutions receive deposits and other cash, which enables them to expand their loan and investment options beyond the use of equity alone, Taani (2013) argued that these institutions are required to maintain enough liquidity. In addition, Taani mentioned that in order to determine the liquidity position of businesses, necessary computations are performed in the form of ratios. These ratios include the ratio of liquid assets to total assets, the ratio of liquid assets to deposits, and the ratio of loans to deposits.

According to Adewale and Ajibola (2013), the liquid asset to total ratio is considered by the majority of research to be a straightforward approach of evaluating a company's liquidity. This ratio is used to reflect, in general, the degree to which a company's liquid assets are related to its overall assets. It is generally accepted that increasing the ratio will result in an increase in the proportion of liquid assets relative to the total assets, and the opposite is also true. To indicate the proportion of short-term liabilities that can be serviced with the firm's liquid assets in the event that there are any unplanned or unexpected demands for such liabilities, the liquid asset to deposit ratio is another direct method of assessing a company's liquidity, particularly for financial institutions (Adewale & Ajibola, 2013). This ratio is one of the direct methods that can be used to evaluate a company's liquidity. In addition to this, Umar et al. (2012) presented the net loan to deposit ratio as well as the short-term borrowing ratio as an additional method of determining solvency. This ratio represents the proportion of total deposits that are locked up in non-liquid assets; hence, a larger result suggests that the company is more likely to have

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to declare bankruptcy.

Umar et al. (2012) provided more explanation by stating that an analysis of a company's liquidity, which is also referred to as solvency, assists an investor in determining the creditworthiness of the company and the potential of investment. The measure or analysis of solvency is classified as an external financial analysis since it makes use of financial records that are made available to the public for the purpose of being evaluated by external analysts. These reports include income statements and cash flow statements.

Operating Leverage

Discovering ways to increase the value or influence of a resource is what is meant by the term "leveraging." Financial leverage, in which equity funds (net worth) are supplemented with borrowed funds in order to enhance the size of a corporation, is the primary topic of discussion in traditional conversations around leverage. When the conditions are favourable, the use of financial leverage can boost the returns that are received by restricted equity funds. For the purpose of determining the degree to which the company is financially leveraged, financial indicators such as the debt-to-asset ratio are utilised.

In addition, firms make great use of the concept of operating leverage. Through the utilisation of the funds to "control" assets rather than "own" them, operating leverage is able to boost the profits that restricted equity funds generate. It is possible to exercise control over assets via renting or leasing the assets, or by using specialised services. Because renting acres requires a lesser expenditure of cash, a farmer can create a larger firm with the same amount of equity. This is because renting acres requires.

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Profitability as a performance measure

The outcome-based financial indicators have been widely used to measure business profitability performance among financial institutions which assume the fulfilment of the economic goals of the firm. A number of literatures assert profitability as the ultimate performance results that indicate the effects of firm policies by board of directors and management activities with the financial year (Shubita & Alsawalhah, 2012). Researchers mostly assess profitability performance based on return on equity (ROE) framework and span through other components such as return on assets (ROA), net profit margin (NIM), return on deposits (ROD), and assets utilization (AU) to identify strengths, weaknesses and the reasons for those.

Return on Equity– Return on equity shows the ability of a firm's management to utilize the shareholders' equity whether to improve the retained earnings or to keep the firm in good position. As a major bank profitability measure, ROE predicts how much the bank's earnings after tax covers its equity capital invested (Vong & Chan, 2009). Though high rate of ROE predicts management efficiency and profitability, find such performance as attributable to financial leverage (debt). ROE is ascertained by dividing net profit by shareholders' equity.

Return on Assets (ROA) – Return on assets indicates the profitability on the assets of the firm after all expenses and taxes (Vong & Chan, 2009). Return on assets estimates the ratio of current income (interest income, fees and other incomes) to net assets of firms. Agu and Okoli (2013) realised possible decomposition of ROA into ratio of net interest income to total assets (NI/TA); non-interest income to total assets (NII/TA); non-interest overheads

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to total assets (OV/TA) as well as loan loss provisioning to total assets (LLP/TA). Impliedly, net interest margin (NI/TA) helps ascertain the returns to savers and investors, and also reflects the efficiency level of management's loan functioning (Agu & Okoli, 2013).

Net Interest Margin (NIM): Net Interest income is the difference between interest income and interest expenses. Net interest margin is calculated as the difference between interest income and interest expense. Therefore, Bourke (1989) indicated that NIM shows the gross margin on the banks loans and other investment activities. The higher the ratio the cheaper the funding or the higher the margin the bank is earning (Bourke, 1989). Net interest margin (NIM) is calculated as Interest income less interest expense divided by Total assets.

Return on Deposit (ROD) - Return on deposits is a measure of bank profitability performance. According to Alkassim (2005) the ratio reflects the bank management's ability to make use of customers' deposits for generating profit. Return on deposits (ROD) is calculated by: ROD = Net profit after tax / Total deposit.

Empirical Review

Leverage and Profitability

In the majority of the empirical research, the relationship between a company's capital structure and its profitability was investigated in both developed and developing countries, and the researchers produced contradictory findings. For instance, Roden and Lewellen (1995) conducted an investigation into the impact of capital structure on profitability in the United States of America. They used a sample of forty-eight companies from the

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United States over the years 1981-1990. They discovered that there was a positive correlation between profitability and total debt expressed as a percentage of the entire buyout financing package.

Margaritis and Psillaki (2010) conducted a study in which they used both high and low growth French companies to investigate the considerable positive link that exists between company performance and leverage. On the other side, Rajan and Zingales (1995) conducted a study on G-7 countries for the period of 1987-1990 and discovered that there is a reciprocal correlation between leverage change and return on stock. Furthermore, they discovered that the relationship will become more apparent as the size of the firm increases. A further conclusion that they reached was that leverage will have a negative relationship with profitability. According to Fama and French (2002), the findings of this study lend support to the pecking order theory. Highly profitable businesses that are at a low risk of going bankrupt tend to have a lower level of debt. When Phillips and Sipahioglu (2004) conducted their research on publicly traded accommodation companies in the United Kingdom, they found that there was no substantial connection between leverage and profitability.

However, there are also empirical evidences from countries that are still developing. As an illustration, Khalid Ali, Baloch, and Ali (2014) conducted a study on the Karachi Stock Exchange and discovered that the leverage of Pakistani companies has a strong and positive relationship with their performance. To evaluate the effect that financial liberalisation had on payout policy, they employed the generalised method of moments (GMM)

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technique, using a sample of 374 publicly traded companies from 1988 to 2008.

Singapourwoko and El-Wahid (2011) did a study on 48 firms that were listed on the Indonesian Stock exchange between the years 2003 and 2008. They discovered that there is a substantial positive association between leverage and profitability. When Siahaan, Ragil, and Solimon (2014) conducted a study on sixty companies that were listed on the same stock exchange, they discovered that they obtained varied outcomes. There were thirty small enterprises and thirty large firms in the sample, which they categorised into two clusters. The findings indicated that there was a substantial negative association between leverage and the value of the firm for the lower cluster, whereas the higher cluster (big firms) appeared to have a negligible relationship between the two.

In a recent study, Fosu (2013) used the GMM regression approach and discovered that financial leverage has a considerable beneficial impact on the performance of enterprises in the setting of Africa. On the other hand, IDIALU (2013) and Umer (2013) discovered that leverage has a negative impact on the profitability of firms. A study conducted by Mohamad and Abdullah (2012) discovered a strong negative association between capital structure and performance. On the other hand, Salim and Yadav (2012) discovered that leverage had a negative impact on earnings per share, return on assets, and return on equity, but in a significant favourable way on Tobin's Q.

The use of leverage has been found to have a detrimental impact on the performance of Bangladeshi companies in recent studies that are similar to

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these. In their attempt to understand the relationship between capital structure and business value in Bangladesh, Chowdhury and Chowdhury (2010) came to the conclusion that an optimal balance of debt and equity can maximise the demands of wealth that shareholders have. Additionally, they came to the conclusion that the cost of capital has to be kept as low as possible because it has a detrimental impact on the selection of the capital structure.

Based on the findings of the Hasan et al. (2014) study, which was conducted on 36 Bangladeshi companies that were listed between 2007 and 2012, it was discovered that financial leverage had a negative impact on profitability.

According to the findings of a study conducted by Safiuddin et al. (2015), shareholders of financial organisations enjoy a high degree of profitability as a result of financial leverage and spread (the difference between ROCE and Net Borrowing Rate). On the other hand, the operating leverage of non-financial firms is quite high, but they experience low profitability. Ebaid (2009), on the other hand, used a sample of non-financial companies in Egypt over a period of nine years to investigate the relationship between profitability and choice of capital structure profitability. He discovered that the relationship was weak to non-significant.

This study has only attempted to determine whether a different conclusion can be formed by utilising some advanced econometrics tools. This is due to the fact that the link between financial leverage and enterprises' profitability has been the subject of substantial debate, and Bangladesh has also made a small contribution to this field.

Operating Leverage and Profitability

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The so-called ordinary least squares and generalised least squares methods have been utilised in every previous study, with the exception of a few writers who have utilised the generalised method of moments (GMM). In the case of dynamic panel data estimation, the generalised method of moments (GMM) is utilised to mitigate the issues of heteroscedasticity, endogeneity, and autocorrelation. As a result, the generalised method of moments (GMM) has been utilised in conjunction with the conventional econometrics technique in order to ascertain the connection between financial leverage and the profitability of businesses operating in the textile industry.

Mseddi and Abid (2004) utilised the panel data methodology in order to compute the degree of operating leverage and the degree of financial leverage for firms in the United States of America over a period of five years. Additionally, they investigated the relationship between the risky character of the enterprises and the relative worth of the firms. According to the findings of the study, both operating and financial leverage have a good impact on the value of a company. This indicates that as the variety of degrees of leverage that companies in the United States of America have increased, the value of the company has also increased. This is evident due to the fact that debt is a capital that is beneficial. Also, the researchers demonstrated that the excess return is a positive and growing function of operating leverage, degree of financial leverage, and systematic risk for sample companies that exhibit a positive correlation of sales changes with market portfolio returns. This was demonstrated by the fact that the researchers conducted their research.

In a study that is related to this one, Eljelly and Abuzar (2004) took a sample of Saudi Arabian companies that are operating in the major business

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sectors. They investigated the relationship between profitability and liquidity over a period of five years and discovered that there is a significant negative association between firm profitability and liquidity. On the other hand, they discovered that there is a positive strong relationship between company size and profitability. It was discovered that liquidity and company size, which were the controlling factors in the study, had a greater impact on the profitability of capital-intensive industrial sector enterprises than they did on service sector organisations. This was demonstrated by the fact that the former had a greater influence on the latter. In spite of the fact that they took into account the service sector in their work, there was a lack of financial institutions as well.

Zubairi (2010) conducted research to determine the extent to which the management of working capital and the capital structure of organisations have an impact on the profitability of businesses operating in the automobile industry in Pakistan. For the purpose of this study, the current ratio was utilised as a representative of the outcome of the working capital management policy, and financial leverage was utilised as the benchmark for capital structure. An additional analysis was also carried out in order to evaluate the influence that operating leverage and firm size have on profitability. However, the researchers' study did not take into account the impact of a particular macroeconomic variable, which is something that is taken into consideration by the current study. There is insufficient evidence using the panel data methodology from the perspective of financial institutions, which is the reason for the current study. This is despite the fact that the study utilised pooled data analysis to determine whether or not the profitability of automobile companies

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is related to selected indicators in accordance with the generally accepted finance theory.

This is despite the fact that "there are numerous explanatory characteristics of growth as a determinant of leverage," according to Cassar and Holmes (2003), it is common knowledge that the utilisation of short-term debt is increased more than the utilisation of long-term debt in organisations that are growing. According to Saeedi and Mahmoodi (2011), strong growth rates among small and medium-sized enterprises (SMEs) are indicative of higher leverage. This is because firms have a requirement for external capital and choose to borrow money from banks. Zeitun and Gang Tian (2007), on the other hand, found that young companies with strong growth rates had greater levels of long-term debt. Furthermore, they found that growth rates appear to only effect the leverage of small and medium-sized enterprises (SMEs) that have exhausted their internal finances and are forced to rely on debt in order to finance their operations.

Liquidity and Profitability

In spite of this, the empirical evidence about the direction of the association between the growth of small and medium-sized enterprises (SMEs) and the debt-equity ratio appears to be contradictory and contradictory. A positive but insignificant connection was established between debt financing and the expansion of small and medium-sized enterprises (SMEs) by Cassar and Holmes (2003). On the other hand, Huyghebaert et al. (2007) discovered a positive and significant connection between debt financing and corporation expansion. The nature of the relationship appears to change depending on the size of the organisation. According to the findings of

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Acedo-Ramirez et al. (2017), there is a positive correlation between growth and debt in medium-sized enterprises that are experiencing rapid growth, but there is a negative correlation in small businesses. Despite the fact that Moritz, Block, and Heinz (2016) found a good association between the two, they cautioned that the findings could be skewed due to the fact that varying degrees of profitability and innovation activity could have influenced the findings.

Analysis of the suitability of the normative model of working capital management in terms of profitability, liquidity, and solvency was the primary topic of the research that Guimaraes and Nossa (2010) conducted on the Brazilian health industry. However, the study utilised the analysis of variance (ANOVA) to establish the association. Considering that previous studies have demonstrated that correlation and regression analysis are more effective in establishing a relationship and effect between two variables, the current study aims to accomplish this and further analyse the results by utilising macroeconomics factors as well as established capital structure theories rather than the normative theory.

Many research have been conducted to investigate the connection between a company's leverage and its level of success; nevertheless, the findings have been inconsistent. As an illustration, Bagram and Khan (2012) investigated the connection between the decisions made regarding the capital structure of Pakistani engineering companies that were listed on the Stock Exchange and the outcomes of those companies. According to the findings, there was a significant inverse association between financial leverage and company output, which was measured by several different metrics, including

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Return on Assets, Gross Profit Margin, and Tobin's Q. An further study that is worthy of notice is Cheng and Tzeng's (2011) investigation, which discovered that companies with higher leverage had higher valuations than companies with lower leverage. However, this was determined by the characteristics of the company's financial situation.

Chapter Summary

In this chapter, the theoretical foundation of the research was investigated. Other researchers shared their thoughts on the concept behind the study. Analyses were also performed on the outcomes of empirical reviews conducted by multiple academics.

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CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter concentrated on the methodology used to study financial and operating leverage and profitability of listed banks in Ghana. The following were included in this section: research design, area of study, population and sample, sampling procedure, data collection tool, methods of data analysis, and ethical considerations.

Research paradigm

The positivist research paradigm was utilised for this investigation. It is the belief of positivism that the scientific method is the sole means by which truth or reality can be established. Therefore, from the perspective of positivists, each and every research endeavour ought to be scientific. According to Bogdan and Biklen (2003), the positivist research paradigm is an excellent choice for determining the factors that contribute to a phenomenon or for putting a theory to the test.

Research Design

According to Saunders et al. (2012), the nature of the research design might be either exploratory, descriptive, or explanatory. Specifically, the explanatory research design was utilised for the investigation. Researchers Saunders et al. (2012) state that the term "explanatory" can be applied to empirical research that aim to determine the cause-and-effect linkages that exist between different variables. Research designs that are based on explanations lay an emphasis on analysing a scenario in order to explain the links that exist between variables. In order to provide an explanation for the

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connection that exists between financial leverage, operating leverage, and the performance of commercial banks in Ghana, this study made use of studies that explained the relationship.

Research Approach

According to Saunders et al. (2012), the research approach is comprised of both quantitative and qualitative research approaches. The technique of qualitative research involves the collection of data through the use of either spoken or written procedures. It is not common practice in qualitative research to employ numerical representations of the data (Polkinghorne, 2005). The collection of such data can therefore be accomplished through the use of interviews with participants and observations. As a result, it is not suitable for the investigation at hand.

The hypothesis is tested in the quantitative research approach by comparing the data collected with what is expected to occur theoretically. This is done in order to determine whether or not the hypothesis is correct. An approach to research that is quantitative has the potential to increase the rate at which the research is conducted. As an additional benefit, it provides a substantial amount of exposure to a sequence of events, which makes it possible to combine statistics in a substantial sample size (Amarantunga & Baldry, 2002). To add insult to injury, quantitative methodologies make it possible to apply statistical methods, which in turn makes it simpler to generalise the findings of the research. Furthermore, the quantitative approach brings the process of guesswork to a conclusion that is more definite. This is due to the fact that the findings are typically derived from quantitative

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measurements rather than relying solely on interpretation, which results in the ability to make future applications and comparisons with other studies.

Data Collection Procedures

The research sought to provide light on the connections that exist between financial leverage, operating leverage, and the overall performance of commercial banks in Ghana. From the financial accounts of these institutions, secondary annual data on financial leverage and operating leverage and performance were derived. This was done on the basis of the assumption that described the situation. For the period of time spanning from 2014 to 2022, the statistics were compiled from eight different banks that were listed on the market. For the purpose of computing the variables that underpinned the investigation, accounting ratios were utilised.

Model Specification

The study employed the following econometric models to text the hypothesis formulated.

Model 1: operating leverage and financial leverage and performance

$$PF_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 FS_{it} + \beta_3 LQ_{it} + \beta_4 DOL_{it} + \beta_5 DFL_{it} + \beta_6 RG_{it} + \beta_7 LR_{it} + \beta_8 EX_{it} + \beta_9 STD_{it} + \beta_{10} LTD_{it} + \beta_{11} TD_{it} + \varepsilon_{it}$$

PF = Profitability

LR = Lending rate

GDP = Gross Domestic Product

EX = Exchange rate

FS = Firm size

STD = Short term debt ratio

DOL = Degree of Operating Leverage

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LTD = Long term debt ratio

DFL = Degree of Financial Leverage

TD = Total term debt ratio

RG = Revenue Growth

LQ = Liquidity measured by Current Ratio

ε = the error term with zero mean and constant variance

The possible expected effects of the said variables on firm's profitability are reported in Table 1.

Table 1: Expected Relationship

Variable	Measure	Expected sign
GDP	Log GDP	+
Firm Size	Log of Sale	+
Degree of Operating leverage	%change in EBIT / %change in sales	-
Degree of Financial Leverage	EBT/EBIT	+
Interest income Growth	$\frac{(Int.Inc2 - int.inc1)}{int.inc1}$	-/+
Liquidity	$\frac{Curr.Asset}{Curr.Liabilities}$	-
Lending Rate	Raw percentage	-
Exchange rate	Ghana cedi to US Dollar	-
Short term debt ratio	$\frac{Total\ Short\ term\ debt}{Total\ Capital}$	-
Long term debt ratio	$\frac{Total\ Long\ term\ debt}{Total\ Capital}$	-
Total debt ratio	$\frac{Total\ debt}{Total\ Capital}$	-

Source: Authors Construct (2022)

Measurement of Variables

This study used eleven main constructs, namely, profitability, liquidity, degree of operating leverage, degree of financial leverage, revenue growth,

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GDP, Exchange rate, lending rate, short term debt ratio long term debt and total debt ratio.

Profitability

Profitability is a relative measure of the financial efficiency of the business. For the purpose of the current study profitability is taken as the return on equity (ROE) which is measured as earnings before interest and taxes (EBIT) divided by total equity of the commercial banks and used it as a dependent variable in the panel regression analysis to investigate the relationship of the other variables in the study.

Liquidity

Liquidity is essential for commercial banks as insufficient liquidity means delays in honouring obligations with regards to the settlement of deposits by commercial banks (Naveed *et al.*, 2011). For the purpose of the current study, the researchers measured liquidity as the proportion of current asset as a ratio to the current liabilities of the commercial banks. But since banks are into repayment of deposits and receipt of loans, their current liabilities are made up of unpaid deposits which are due whilst the current assets comprises short term loans. This in the view of the researchers will provide an over view of the working capital management of the banks hence liquidity is used in this research as a proxy for working capital management.

Degree of operational leverage

Degree of operating leverage according Zubairi (2010), point out that the degree to which a company's operating costs are fixed. A higher proportion of fixed costs imply a higher operating leverage and a lower proportion of fixed cost indicates a lower operating leverage. The degree of

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operating leverage (DOL) is measured as the ratio of contribution margin to earnings before interest (EBI). Another measure of degree of operating leverage according to Guimarães and Nossa (2010) is the ratio of percentage change in earnings before interest and tax (EBIT) to percentage change in the interest income received. For this study the measurement by Guimarães and Nossa (2010) is adopted because it is more direct to the nature of the study.

Degree of Financial Leverage

A company is described as leveraged if it is financed partly through debt simply because of the tax shield element of debt. But debt carries a fixed cost, which means that if the company increases its debt the degree of financial leverage also increases. Based on previous literature, financial leverage of a company may be computed in different ways but for the purpose of the current studies used the ratio of earnings before taxes (EBT) to earnings before interest and taxes (EBIT) for calculating degree of financial leverage (DFL). This mode of computation has been adopted because it focuses directly on the impact of interest on income before taxes.

GDP

Gross domestic product is the total value of goods and service produced by an economy by its nationals for a given period of time. For that matter, it's relevant when establishing a relationship which factors in the performance. For the purpose of the study, since a relationship is to be established the logarithms of the raw figures were found to make it linear.

Revenue Growth

The relationship between interest income growth and profitability can also be explained by pecking order hypothesis. Growing firms place a greater

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demand on the internally generated funds of the firm (Abor, 2005). Myers (1984) argues that firms with high growth will capture relatively higher debt ratios. He further stated that, there is also a relationship between the degree of previous growth and future growth. Interest income growth is estimated as Current interest income – Previous interest income.

Lending Rate

Lending rate is a term applied in many countries to reference an interest rate used by banks. The term originally indicated the rate of interest at which banks lent to favoured customers, those with good credit, though this is no longer always the case. Some variable interest rates may be expressed as a percentage above or below prime rate.

Exchange Rate

An exchange rate between two currencies is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another currency. Therefore, since exchange rate has impact on the performance of financial institutions, it is relevant to use it as a dependent variable. For that matter, the current researcher used the Ghana cedis to United State Dollar because it is an international currency used in Ghana.

Short Term Debt Ratio

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

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Long Term Debt Ratio

This is the ratio of long-term debt to total capital. It measures the extent to which commercial banks use long-term debt to finance their operations and how this category of debts associates with the firm's profitability for the chosen period of the study.

Total Term Debt Ratio

This is the ratio of total liabilities to total capital. Basically, it is the summation of short-term debt and long-term debt of the firms to their total capital. This ratio measures the extent to which the operations of the firms have been funded with total debt relative to equity and also to see how leverage associates with commercial banks' financial performance in Ghana. Many studies have been conducted to determine the relationships between leverage and profitability showed a positive association.

Data Analysis

Kothari (2004), proposed that research data have to be processed and analyzed in accordance with the objectives of the research. All data obtained from the two banks were analyzed to assess their adequacy, suitability, accuracy and reliability. Descriptive and econometric models were employed on the panel data obtained from the years 2014-2022 to determine how operational and financial leverage affects firm's performance.

The data taken from the companies listed on GSE were keyed into Microsoft Excel to prepare the data obtained for analysis. After that, STATA version 15 software package and Statistical Package for Social Science (SPSS) were employed for analyzing the data. Tools such as, mean, maximum and

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minimum values were employed to present and provide description about the characteristics of the study variables.

To meet the expectations of the classical linear regression model, multicollinearity and heteroscedasticity test were employed as diagnostic tests on the data to determine their robustness. In determining the collinearity among the variables, correlation analysis and variance inflation factor (VIF) were employed. In tabular form, the results from the regression analysis were presented and explanation on each parameter were provided in accordance with the findings from previous studies.

The study employed the random and fixed effect to analysing the objectives of the study. The fixed effects model provides the opportunity to have varied intercept for different cross-sectional unit and it is also time invariant, implying that it doesn't alternate over time. Random effect model on the other hand, employs varied intercepts for different cross-sectional unit and invariant to time. This makes it look like fixed effects model. But Brooks (2014), differentiated fixed effect model from random effect model by indicating that there is a common mean for random effect model for the different units of the intercepts that they arise from.

The Hausman-Test was employed for determining whether to adopt the fixed effect model or the random effect model. According to Brooks (2014), the Hausman- Test, is considered in order to determine the effectiveness of the random effects model, hence indicating whether embarking on the fixed effects model instead of the random effect model is the best choice. If the p-value for the Hausman- Test is significant, then the fixed effects model would be employed, if not then the random- effects model would be adopted.

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Diagnostic Tests

Diagnostic tests such as multicollinearity, and heteroscedasticity tests were performed on the variables. Multicollinearity which indicates the strength of the association between the explanatory/independent variables was performed using both correlation and variance inflation factor (VIF). When variables are highly collinear by having correlation coefficient of 0.8, then one of such variables is removed from the regression analysis. After using correlation for testing multicolliniariy, VIF was used to confirm collinearity in the variables. Variables with VIF of 10 and above are removed from the analysis.

Heteroscedasticity test was employed to test if the disturbance terms don't have the equal variance. Breusch-Pagan test was utilized to determine the existence of heteroscedasticity. According to this test if the p-value is significant (p-value below 0.05) at 95% confidence level, then there is the problem of heteroscedasticity among the data set, however if the p-value is insignificant then there is no problem of heteroscedasticity.

Chapter Summary

The chapter analysed the methodology to be employed in the study. The study employed the explanatory research design. Data for 8 commercial banks were used. The Annual report of banks from 2014 to 2022 were extracted. The POLS, FE an RE were used for the analysis of the objectives of the study.

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CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter is written with the aim of presenting the findings of the research. This chapter is followed by discussions of the findings from the research in the light of comments made on degree of financial and operating leverage and profitability of Commercial Banks in Ghana. The main purpose of the study was to the analyse the effect of financial and operating leverage on banks' profitability. This chapter is organized into different sections for easy organization of the analysis of the results. Basically, descriptive statistics, data validity test and regression analysis were used to analyse the objectives of the study. The analysis, interpretation and discussion of the results were in line with analyzing the relationship between financial leverage, operating leverage, liquidity and macroeconomic factors on profitability of commercial banks in Ghana.

Descriptive Statistics

This section analysed the observation, mean, median, standard deviation and the minimum and maximum values of the variables underpinning the study. The descriptive statistics describes the characteristics of the variables used in the study. The result of the descriptive statistics has been presented in Table 2.

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Table 2: Descriptive Statistics of the Study Variables

	N	Mean	Maximum	Minimum	Std. Dev.
ROE	72	0.128121	0.611643	0.009580	0.103320
Firm Size	72	19.21937	20.73490	16.91555	1.276837
Degree of Oper. Lev.	72	0.10	0.28118	0.0136	0.007501
Degree. Of fin. Lev.	72	10.53321	10.64664	10.39642	0.085277
Interest income growth	72	15.66290	22.80333	12.77333	3.266481
Liquidity	72	11.59731	18.90000	7.800000	3.242974
Lending Rate	72	15.12121	27.00000	3.000000	7.821051
Exchange rate	72	1.4832	7.8721	3.8766	0.482
Short term debt ratio	72	2.50	2.50	1.4312	8.29
Long term debt ratio	72	3.721	7.923	0.702	1.344
Total debt ratio	72	6.893	19.671	1.934	0.932

Source: Field Survey (2023)

Table 2 shows the mean, standard deviation and the range of the variables underpinning the study. The data had a balanced data of 72 observations since 9years period data were extracted from 8 banks. The Return on Equity which measures the performance recorded an average of 0.128121 with a corresponding standard deviation of 0.10332. From this, the ROE recorded a minimum value of 0.009580 with a corresponding maximum value of 0.611643. This posits that, in Ghana, most banks make more profits as compared to others. Firm size recorded an average of 19.21937 with a corresponding standard deviation of 1.276837. The minimum firm size was 16,9155 with a maximum of 20.73490.

This indicates that, most of the banks considered in the study had a huge total asset which explains how large they are. Degree of operating leverage recorded an average of 0.10 with a corresponding standard deviation of 0.007501. The minimum value of degree of operation leverage was 0.0136

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with a corresponding maximum value of 0.28118. Degree of financial leverage recorded the average of 10.53321 with a corresponding standard deviation of 0.085277. The maximum value for degree of financial leverage of 10.64664 with a corresponding minimum of 10.39642. Interest income growth recorded an average of 15.66290 with a corresponding standard deviation of 3.266481.

The maximum value of 22.8033 with minimum value of 12.77333. Liquidity also recorded an average of 11.59731 with a corresponding standard deviation of 3.242974. The maximum value of liquidity was 18.9 with a minimum value of 7.8. Lending rate recorded an average of 15.12121 with a corresponding standard deviation of 7.821051. This recorded maximum value of 27.00 with a corresponding minimum value 3.00. Exchange rate recorded an average of 1.4832 with a corresponding standard deviation of 0.482. The maximum and minimum values were 7.8721 and 3.8766. Short term debt ratio recorded an average of 2.50 with a corresponding standard deviation of 8.29.

The maximum value was 28.832 with a minimum 1.4312. Long term debt ratio recorded a mean of 3.721 with a corresponding standard deviation of 1.344. Maximum value of long term debt ratio was 7.923 with a corresponding minimum value of 0.702. Total debt ratio recorded an average of 6.893 with a corresponding standard deviation of 0.932. The minimum value of total debt ratio was 1.934 with a corresponding maximum value of 19.671.

Correlation

This section also analysed the correlation between the variables underpinning the study.

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Table 3: Correlation

	ROE	GDP	Firm size	DOL	DOF	Int. Inc	Liqui	Lend. Rate	Exchan R	ST.	LT. debt	TD rat
ROE	1											
GDP	-0.0963	1										
Firm Size	-0.0216	-0.0479	1									
DOL	0.0045	-0.0728	0.4293*	1								
DOF	-0.2513*	-0.0842	0.1567*	0.0636	1							
Int. Inc	0.0012	0.0363	0.4679*	0.5787*	0.1499*	1						
Liqui	-0.0728	-0.1353*	0.6364*	0.592*	0.0158	0.3752*	1					
Lend. Rate	-0.078	-0.0035	0.6477*	0.4252*	0.0993	0.5179*	0.5242*	1				
Exchange R.	-0.0342	-0.0602	0.1464*	0.3811*	0.0117	0.1915*	0.2918*	0.1875*	1			
ST-debt	0.0149	-0.1757*	0.2523*	0.1723*	0.021	0.183*	0.0899	0.1043*	0.1296*	1		
LT-debt	0.051009	-0.19961	-0.29809	-0.17671	0.291088	-0.02636	-0.1711	-0.2515	-0.68668	0.353428	1	
Total. Debt. r	0.160705	0.24255	0.150217	0.196417	-0.14342	-0.11405	0.229494	0.177404	-0.09478	0.222649		1

Source: Field survey (2023)

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Table 3 presents the pairwise correlation matrix for all the variables employed in the empirical analysis. A close examination of the correlation matrix reveals that there are no issues of multicollinearity in the empirical specification because all the independent variables do not exhibit correlation coefficients of more than 0.80 (Adam, 2015).

Empirical Estimation and Discussion

Before the variables of interest were subjected to any estimation, a Variance Inflation Factor (VIF) was done to test for multicollinearity. The result of the VIF is presented in Table 4.

Table 4: Variance Inflation Factor

Variable	VIF	1/VIF
ROE	2.48	0.403581
GDP	2.39	0.418823
Firm Size	2.26	0.442712
DOL	2.02	0.496086
DOF	1.86	0.538398
Int. Inc	1.23	0.812992
Liqui	1.2	0.831935
Lend. Rate	1.2	0.8323
Exchange R.	1.16	0.859935
ST-debt	1.07	0.938598
LT-debt	1.81	0.552486
Total. Debt. R	2.32	0.431034
Mean VIF	1.75	

Source: Field survey (2023)

The multicollinearity test applied here was the VIF. The mean VIF was 1.75, which is not up to 10, hence, it is concluded that there is no multicollinearity amongst the variables.

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From the multicollinearity test, this section presents the estimation results of the explanatory variables using the Fixed Effects and Random Effect regression. Table 5 shows the random effect regression output and the fixed effect regression output. Gross Domestic Product, Firm Size, Degree of operating leverage, degree of financial leverage, interest income growth, liquidity, lending rate, exchange rate, short term debt ratio, long term debt ratio, total debt ratio were regressed on return on equity. Table 5 presents the analysis from OLS, FE and RE.

Table 5: Regression Results

Dependent Var=	(1)	(2)	(3)
Variables= ROE	OLS	Fixed	Random
DOL	-.0006679**	-0.0003421	-0.0006828
	(.0002924)	(.0002968)	(.0002938)**
DOF	.2267608*	0.2871124	0.245569
	(.1220339)	(.2503592)	(.1366223)*
Firm Size	.0616709	-0.2525756**	0.0288957
	(.0720685)	(.1126745)	(.0783402)
Gross Domestic Product	.0206347***	0.0217365***	0.0207231
	(.0040121)	(.0040731)	(.004006)***
Interest Income	.0031691	0.0012884	0.0040583
	(.0033879)	(.0041858)	(.0035984)
Liquidity	-.8068114**	-1.193289**	-0.7800468
	(.3607226)	(.5816368)	(.4035251)*
Lending Rate	-.0077345	-0.0311062***	-0.010777
	(.0054494)	(.0079202)	(.0059244)*
Short Term debt ratio	-.0163079	0.0023478	-0.0148491
	(.002058)***	(.002276)***	(.0021135)***
Long Term debt ratio	.0083568	-0.0000144	0.0067611
	(.001138)***	(.001132)**	(.0011479)***
Exchange Rate	-.0768019	-.070859	-.048716
	(.0299012)**	(0.0295625)**	(.0029581)***
Total debt Ratio	0.0014833	0.0015115	-.0011276
	(.0006129)**	(.0006742)**	(.0006446)**
Constant	.0863792	4.013849***	0.3579492
	(.3851178)	(1.113033)	(.0448578)***
R^2	0.10.84	0.1573	0.1092

Source: Field Survey (2023)

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Post Estimation Tests

Omitted Variable Test: F(3, 301) = 34.62 Prob > F = 0.000

An OLS was estimated because the data is a short panel (Small "N" with Large "t") and it tends to exhibit the pooled effect. Nonetheless, the results of the post-estimation tests, specifically the omitted variable test, saw the OLS as inappropriate for interpretation since it had omitted variables; hence, the need to estimate the static panel and specify which model under the static panel estimation to interpret by the help of the Hausman test.

Hausman test to choose between fixed and random effect

The Hausman specification test is performed under the null hypothesis that individual effects are uncorrelated to any model regressor. This means the null hypothesis is random effect model is preferred and the alternative hypothesis is fixed effect model is preferred over the random effect model.

Table 6: Hausman Test

Test summary	Chi-squared Stat.	Chi-Square d.f	Probability
Model 1	3.16	11	0.9774

Source: Field Survey (2023)

This test under the null hypothesis of orthogonality is Chi-Square distributed with degrees of freedom equal to the number of regressors in the model. A $p < 0.05$ is taken as a conventional level of significance. Table 8 indicates the Chi-Square probabilities for the regression. The p-values are 0.9774 for the regression results. Therefore, by the conventional significance level of $p > 0.05$, we fail to reject the null hypothesis for all model regressions. Hence, the random effect model is preferred over the fixed effect for all regressions. The full random effects table is presented in Table 7.

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Table 7: Random Effects Regression Results

	Coef.	Std. Err.	z	P>|z|
DOF	-0.06828	0.02938	-2.32	0.020
DOL	-0.245569	0.1366223	-1.80	0.072
Firm Size	0.0288957	0.0783402	0.37	0.712
Gross Domestic Product	0.0207231	0.0040062	5.17	0.000
Interest Income Growth	0.0040583	0.0035984	1.13	0.259
Liquidity	-0.7800468	0.4035251	-1.93	0.053
Lending Rate	-0.010777	0.0059244	-1.82	0.069
Short Term debt ratio	-0.0148491	0.0021135	-7.03	0.000
Long Term debt ratio	0.0067611	0.0011479	5.89	0.000
Exchange Rate	-0.048716	0.0029581	-16.47	0.000
Total debt Ratio	-0.0011276	0.0006446	-1.749	0.053
Constant	-0.3579492	0.0448578	-7.98	0.000

Source: Field Survey (2023)

The results from the random effect regression have been presented in Table 7.

Degree of financial leverage and profitability of commercial banks in Ghana

The primary purpose of the research was to investigate the impact that the level of financial leverage has on the profitability of commercial banks. In order to determine the level of financial leverage, the ratio of earnings before tax to earnings before interest tax was utilised. The data presented in Table 7 indicates that there exists a statistically significant positive correlation between financial leverage and the profitability of commercial banks (B= 0.06828; $p<0.05$). Increasing the amount of financial leverage by one unit would result in a 0.06828 percentage point improvement in the financial performance of commercial banks. To put it another way, whenever financial institutions make use of debt, also known as borrowed capital, in order to carry out an investment or project, their profitability grows. This is due to the

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fact that borrowed money are protected from taxation in the form of tax shields, which lower the amount of tax that is paid, which typically results in a rise in profit. With a leverage ratio of five percent, the impact of the financial leverage was enormous.

This lends credence to the research conducted by Iqbal and Usman (2018). Their research focused on the influence that financial leverage has on the performance of businesses, taking Pakistani textile composite enterprises as their subjects. According to the findings of their research, the interest that is charged on loans acts as a tax shield, thereby reducing the amount of tax that is paid. According to the findings of their research, there seems to be a negative relationship between financial leverage and profitability.

On the other hand, they contradict the findings of Gadzo et al (2013), who discovered a negative association between the degree of financial leverage and the profitability of insurance companies in Ghana. The findings of the current study contradict these findings. When compared to operating leverage, the degree of financial leverage has a lower mean value and is less erratic, according to the findings of the study these individuals conducted. Once more, the two leverage ratios differ in the degree of skewness, with the degree of financial leverage exhibiting a negative coefficient and the degree of operating leverage displaying a positive coefficient. The significance of this was that the median is the appropriate way to assess the average degree of financial leverage, whereas the mean is the appropriate way to measure the degree of leverage of the Department of Labour.

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Degree of operating leverage and profitability of commercial banks in Ghana

The second purpose of the study was to investigate the impact that operating leverage has on the profitability of commercial banks in Ghana. Taking into consideration Table 7, the degree of operating leverage was found to be significant at 5%. When it came to the profitability of commercial banks, there was a negative correlation between operating leverage and profitability. ($B = -0.245569$; $t(64) = -1.80$; $p < 0.010$) Any increase of one unit in the degree of operational leverage would result in a drop of 0.245569 in the amount of operating leverage. As the ratio of changes in sales to changes in earnings before interest and taxes continues to rise, the profit that banks make will continue to fall. When there is a change in the amount of sales, there is also a change in the EBIT, which stands for earnings before interest and taxes. Operating leverage is a cost-accounting formula that determines the extent to which a company or project can raise its operating income by raising its revenue for the purpose of accounting for costs.

According to the findings, if one were to forecast a greater level of revenue, it would result in a decrease in profitability. This is because earnings decrease when operating expenses are high. For financial institutions, an increase in income may also result in an increase in expenses, which may have an impact on the profitability of the institutions. When financial institutions hire additional employees to promote their products to the general public, they see an increase in sales. This results in increased costs for advertising as well as an increase in administrative expenses. The profits of businesses would suffer as a result of this. In line with the findings of Gadzo et al. (2013), who

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also discovered that there was a negative association between operating leverage and profitability, the results validate this finding. Their research was conducted in the insurance sector, which is a sector in which companies are planning to raise their premiums. Chen, Harfor, and Kamara (2019), who conducted research on operating leverage, profitability, and capital structure, reported a conclusion that was contradictory to how they had anticipated. Using operating leverage, they discovered, will invariably result in an increase in the profitability of businesses.

In addition, Hasanudin (2020) conducted research on the impact that ownership and financial performance have on the company value of oil and gas mining firms in Indonesia. A substantial effect between the factors that were used in the study was not found to exist, according to the findings of the study.

Liquidity and Profitability of Commercial Banks in Ghana

The third purpose of the study was to investigate the impact that liquidity has on the profitability of commercial banks. The capacity of a bank to raise cash when it is required was the criterion that was used to evaluate the liquidity of the bank. Additionally, financial institutions that are able to turn their present assets into cash in order to pay down their current liabilities are regarded as being more liquid and accessible. A regression analysis of the relationship between liquidity and profitability is presented in Table 9. A substantial and negative link was seen between the liquidity of commercial banks and their profitability, as indicated by the statistical analysis (B= -0.7800468; t(64)=-1.93 $p<0.10$). There would be a 0.010 percentage point drop in the

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profitability of businesses for every unit increase in liquidity. According to the percentage, this was considerable.

However, this finding appears to be the result of the peculiar circumstances that exist within the banking sector. The market for the banking sector has been dominant for a number of years. This is because banking companies routinely pay off their fixed deposits within the year before cash is advanced to them in the form of deposits collected from other customers, which results in a significant reduction in their liquidity. To put it another way, the credit rate has resulted in these financial institutions maintaining a minimum amount of funds in their accounts in order to satisfy their short-term obligations. This shows that in order to increase profitability, it is required to decrease the current assets in comparison to the current liabilities (because the ratio of current assets to current liabilities is used to determine liquidity). Increasing the degree of profitability is possible through the implementation of a strategy for managing liquidity that is both active and effective. Keeping assets in their present states typically prevents banks from receiving additional income that they would have received if they had invested those assets in non-current assets. This is the reason why there is a negative link between liquidity and the profitability of banks. Because of this, the level of profitability of a company would be affected if it had more liquid assets. The findings of Lamitiar et al (2021), who discovered that liquidity had a negative effect on profitability, were very similar to those of the previous study. When Arsyad, Haeruddin, Muslim, and Pelu (2021) investigated the relationship between liquidity and profitability, they discovered that it had a beneficial impact on profitability. It is their opinion that when a company's liquidity level is extremely low, the

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company will typically seek out loans in order to pay off short-term commitments. Due to the fact that this would necessitate more charges, their degree of profitability would decrease. When Ejike and Agha (2018) investigated the effects of operating liquidity on the profitability of pharmaceutical companies in Nigeria, they discovered that liquidity did not have a substantial impact on the profitability of companies.

Macroeconomic Factors and Profitability of Commercial Banks in Ghana

The fourth purpose of the study was to investigate the impact that macroeconomic conditions have on the profitability of commercial banks in Ghana. For the purpose of the study, the macroeconomic variables that were considered were the loan rate, the exchange rate, and the gross domestic product. An analysis of firm profitability was performed using these variables in conjunction with additional variables. Upon examination of Table 7, it was observed that there existed a noteworthy and negative correlation between the exchange rate and the profitability of commercial banks (B= -0.048716; $t(64)=-16.47$ $p<0.01$). There is a 0.048716 percent drop in the profitability of businesses for every unit increase in the exchange rate. It is possible to argue, in the process of analysing the impact of this variable, that an increase in the exchange rate would lead to the possibility of a gain in the foreign exchange market. This has resulted in a situation in which a portion of banking resources, in the form of loans and credit, have been directed to this market, which may lead to a reduction in the ratio of return on capital.

A conclusion that was quite similar to this was discovered by Keshtar, Pahlavani, and Mirjalili (2020), who indicated that the exchange rate has a considerable and negative impact on organisations' profitability. Within the

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scope of his research titled "Does exchange rate matter in profitability of listed companies in South Africa?" Yeboah (2019) discovered outcomes that were in direct opposition to one another. The researchers came to the conclusion that the exchange rate has a large and favourable impact on the profitability of commercial banks. When examining the relationship between gross domestic product and profitability of banks, it was found that there was a positive influence (B= 0.0207231; t(64)=5.17 p<0.01). It is possible that an increase of one unit in gross domestic product might result in an increase of 0.0207231 in profitability. More specifically, this means that anytime there is a rise in the overall economic growth of the Ghanaian economy, there is an increase in the profitability of banks. Additionally, Farooq, Khan, Siddiqui, Khan, and Khan (2021) reported findings that were comparable to these. In their research, they discovered that one of the important factors that determines profitability is the Gross Domestic Product. A negative and statistically significant link was found between the lending rate and the profitability of enterprises (B=-0.010777; t(64)=-1.82 p<0.10). This relationship was found to be with respect to the lending rate. This results in a drop of 0.010777 in the profitability of banks for every unit that the loan rate is increased. It may be deduced from this that in order for banks in Ghana to reap the benefits of these policies regarding lending rates, they would be required to engage in forward loans to their clients.

Control Variables

Again, one significant finding in the regression result is that the profitability of the commercial banks is positively but insignificantly related to the size of the firms (B= 0.0288957; t(64)=0.37 p>0.10). Large size companies

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are usually diversified and therefore less likely to go bankrupt it can be concluded that firm size is inversely related to bankruptcy and thus directly related to profitability. The outcome of this study is different. The study showed that there was no significant effect of firm size on profitability.

Interest Income Growth had no significant effect on profitability (B= 0.0040583; t(64)=1.13 p>0.10). Even though, the effect was positive but it was insignificant. This indicates that, irrespective of growth of interest income, profitability would be insignificant.

Short term debt ratio was significant at a percent (B= -0.0148491; t(64)=-7.03; p<0.010). A unit increase in short term debt would lead to a 0.0148491 decrease in profitability.

There was also a positive and significant relationship between long term debt and profitability of banks (B= 0.0067611; t(64)=5.89; p<0.01). A unit increase in long term debt leads to a 0.0067611 increase in profitability of banks.

Total debt had a negative and significant effect on profitability of banks. (B= -0.0011276; t(64)=-1.749; p<0.10). A unit increase in total debt would lead to a 0.0011276 decrease in banks profitability.

Heteroscedasticity Test

One of the key requirements of the CLRM is for the data passing the Homoskedasticity test. The assumption is that, the disturbance term (Ui) with its according probability distribution should be the same for all the study variables or observations. That is the independent variables should have equal variance for each disturbance term. According to Bedru and Seid (2005), heteroscedasticity exists between variables when there are varied values for

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Ui. To determine the problem of heteroscedasticity, the Breusch-Pagan test was applied in this research. A significant p-value (p-value below 0.05) at the 95% confidence level indicates the presence of heteroscedasticity problem, if not then otherwise.

Table 8: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Chi-Square	3.22
Prob.	0.073

Source: Field Survey (2023)

Per the presentation on Table 4, the p-value of 0.073 (7.3%) is more than 0.05 (5%), indicating the absence of heteroscedasticity problem in the variables of the study.

Autocorrelation test

The Woodridge test for serial correlation was run using STATA to check for autocorrelation and the results indicated that the presence of serial correlation is not innocuous and pernicious to reject the null hypothesis at p-value of 5 %(approximately). The result is shown below;

Wooldridge test for autocorrelation in panel data

H0: no first order autocorrelation

F = 0.892

Prob > F = 0.813

Model diagnostics

The R-square provides an estimate of the strength of relationship between the model and the response variables. It is seemingly an intuitive measure of how the linear model specified fits the sets of observations. The R-square provides a within mean percentage of 80 indicating that the co-efficient of determination for the overall model is highly significant in predicting the

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outcome. This notwithstanding, it does not provide any formal hypothesis test for the relationships. The F-Test of overall significance determines whether this relationship is statistically significant. F- Test of 0000 is far below 1% meaning that the variables have a greater chance of explaining the outcome of the model jointly.

Test of normality of residuals

The normality of the residuals is determined by the shapiro-wilk test for normal data. The table (3) for the test indicates that the null hypothesis stating that data is normal cannot be rejected as the probability is above 5% criterion level. This suggests therefore that the significance of regressors in the models used in this research is not biased as required for the purpose of hypothesis testing.

Table 9: Shapiro-Wilk W test for Normal Data

Variable	W	V	Z	Prob>z
R	0.83133	2.594	1.672	0.09732

Source: Field Survey (2023)

Chapter Summary

This chapter analysed the objectives of the study. The chapter started by analysing the descriptive statistics of the variables underpinning the study. The correlation coefficient was tested. Also, the study regression analysis between the variables to analyse the objectives were analysed using the Random Effect Model. The diagnosis tests for the model were also analysed.

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This happens to be the study's final chapter. The main purpose of the study was to the analyse the effect of financial and operating leverage on banks' profitability. The summary of the findings, conclusions and policy implications and recommendations are discussed in this chapter. For further study, the chapter also includes suggestions.

Summary of the Study

The research investigated the extent to which commercial banks in Ghana utilised financial and operating leverage, as well as the profitability of these institutions. The primary purpose of the study was declared to be accomplished through the accomplishment of four objectives. An investigation into the impact that the level of financial leverage has on the profitability of commercial banks in Ghana was the primary purpose of this study. The second purpose of the study was to investigate the influence that the level of operating leverage has on the profitability of commercial banks in Ghana using the data collected. The third purpose of the study was to investigate the impact that liquidity has on the profitability of commercial banks in Ghana. The fourth purpose of the study was to investigate the impact that macroeconomic conditions have on the profitability of commercial banks in Ghana.

The lending rate, gross domestic product, and currency rate were the macroeconomic parameters that were taken into consideration. In order to accomplish the goal of the study, the application of the ordinary pool least square was utilised. On the basis of the Hausman test, a decision was made

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between the fixed effect and the random effect. Tests were conducted to determine diagnostics such as multicollinearity, autocorrelation, and heteroscedasticity. Quantitative methodology was utilised in this method.

It was discovered that there was a positive association between the degree of financial leverage and the profitability of commercial banks, which was the first aim investigated. If the level of financial leverage were to grow by one unit, this would result in an increase in the proportion of commercial banks that are profitable.

With regard to the second aim, it was discovered that the degree of operational leverages had a negative association with the profitability of commercial banks. In the event that the degree of operating leverages were to increase by one unit, the profitability of banks would continue to decrease.

It was also found that there was a negative correlation between the liquidity of enterprises and their profitability. It is likely that commercial banks would see a decline in profitability if there was a unit rise in liquidity.

Both the exchange rate and the loan rate were shown to have a detrimental impact on the profitability of commercial banks in Ghana, according to the findings of the study. The overall profitability of commercial banks in Ghana was also found to be positively impacted by the country's gross domestic output.

Conclusions

According to the findings of the study, the use of operating leverage has a positive and statistically significant influence on profitability, whereas the use of financial leverage has a significant negative impact on the profitability of banking organisations. Profitability growth does not have a

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correlation with either the size of the company or the rise in interest income. When there is an increase in the liquidity of banking firms, the profitability of the company decreases. Furthermore, it has been found that the performance of Ghana's banking companies is negatively impacted by the currency rates and lending rates that are in place. Both the static trade-off theory and the pecking order hypothesis were supported by the data regarding the amount of financial and operational leverage. Their conclusions were consistent with each other.

Recommendations

Based on the findings and the conclusions herewith, the following recommendations could be stated:

1. The management of the banks should identify the elements that have the potential to have a significant impact on the performance of the firm and then focus their attention solely on those factors that have the potential to lead to higher performance.
2. As a result of the fact that excessive borrowing can result in financial difficulties and even bankruptcy, it is recommended that there should be a balance between the benefits and drawbacks of utilising a variety of sources of finance.
3. In spite of this, it is reasonable to presume that the use of financial leverage is necessary for the operations of every successful business. Therefore, the negative relationship serves as a warning to the administration and directorate of the banking industry to take into consideration the costs associated with commitments and the impacts those commitments have on the shareholders. The

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shareholders are the ones who are responsible for paying the remaining costs associated with lost benefits or bad luck. In addition, they should concentrate on raising money from within the organisation in order to fulfil their financing requirements.

4. As a consequence of this, financial institutions ought to devise efficient methods to enhance their operating leverage, firm size, and interest growth, as well as capitalise on the expansion of their economies' gross domestic product, in order to enhance their efficiency and profitability. Moreover, they ought to have a better understanding of the interest rate at which loans are secured.

Suggestions for Further Study

Through the course of the study, the impact of the level of financial and operating leverage on the banking sector was investigated. Those interested in the manufacturing industry might conduct additional research. It is also possible to prolong the duration of the study to a period that is longer than nine years.

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