

KWAME NKURMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

**THE EFFECT OF BANK-SPECIFIC CHARACTERISTICS AND
MACROECONOMIC FACTORS ON BANK PROFITABILITY IN GHANA**

By

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A thesis submitted to the Department of Accounting and Finance, Kwame Nkrumah University of Science and Technology, Kumasi in partial fulfilment of the requirements for the award degree of

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of

any other degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other educational institution, except where due acknowledgement is made in the thesis.

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DEDICATION

I dedicate this project to Our Almighty God for his guidance and directions towards this work.

To my family, Kenneth, Naa Akuyea, Nii Antiaye, Nii Obuamah and Naa Kordai Addy who have given their utmost support in all my endeavours.

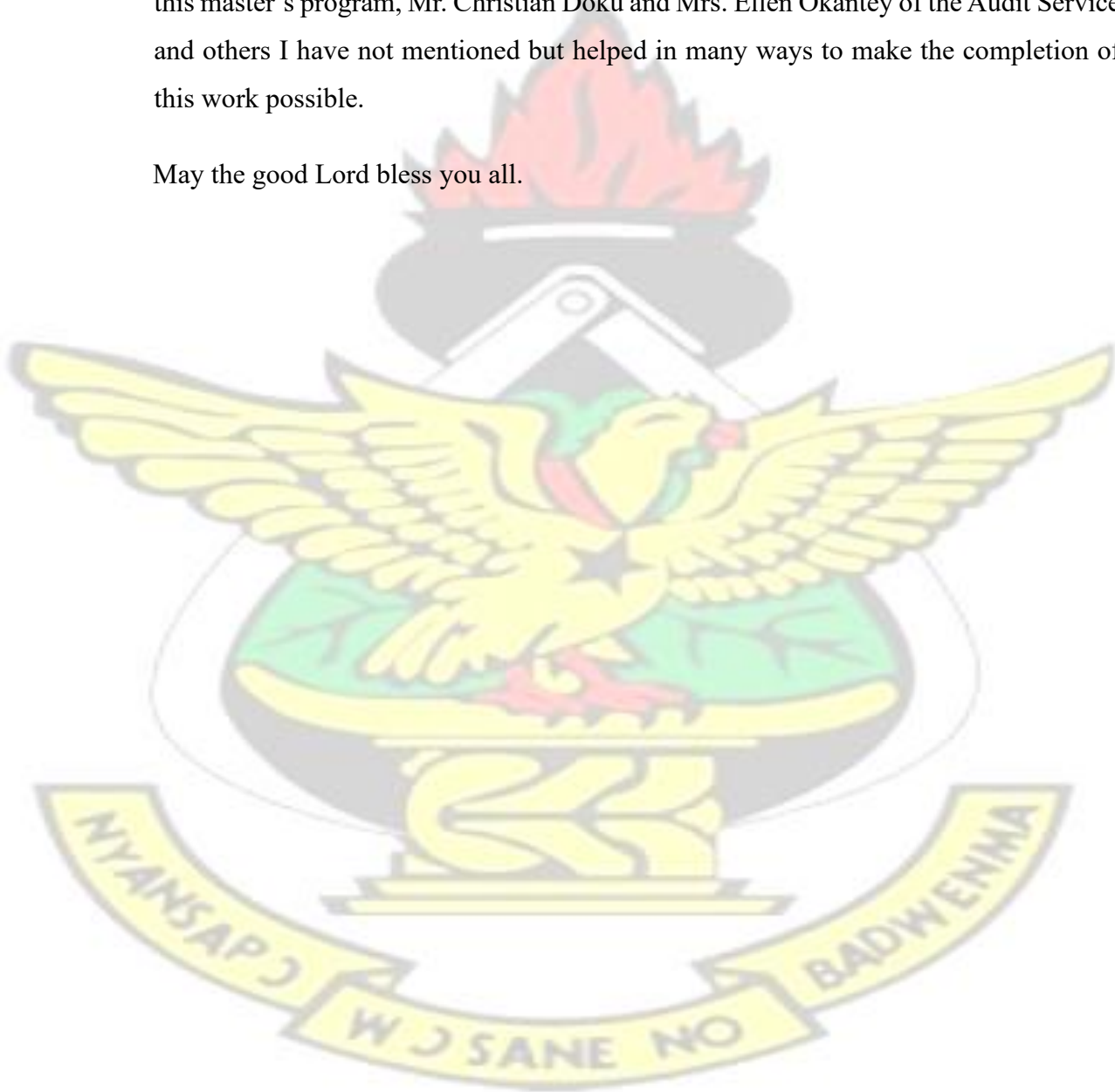
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ABSTRACT

This research examines how bank-specific features and macroeconomic variables affect Ghanaian banking profitability. A panel research approach is used to analyse nine Ghana Stock Exchange banks. Secondary data from 2000–2021 yearly reports is evaluated using random effect estimate and GMM. The data show numerous key bank profitability determinants. Higher asset quality increases profitability, whereas loan expansion increases return on equity but decreases return on assets. Capital sufficiency usually boosts profitability, although liquidity and profitability are complicated and context dependent. Bank size and efficient expenditure control are also seen as positive contributors to profitability, with bigger banks reaping the benefits of economies of scale and better cost management due to their size. A better financing structure and larger deposit ratio boost profitability. Furthermore, macroeconomic factors play a role, with higher inflation reducing loan demand, a higher growth rate of real GDP boosting interest income, and changes in interest rates impacting net interest margin. Based on these findings, it is recommended that banks in Ghana prioritise maintaining high asset quality to enhance profitability. They should carefully manage loan growth to balance risk and returns, while also ensuring adequate capital levels and optimising liquidity management. Furthermore, banks should focus on efficient expense control measures and consider the benefits of scaling up their operations.

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LIST OF ABBREVIATIONS

AQ	Asset Quality
BLR	Base Lending Rate
BoG	Bank of Ghana
BS	Bank Size
CAR	Capital Adequacy Ratio
CPI	Consumer Price Index
DR	Deposits Ratio
EC	Expense Control
GDP	Gross Domestic Products
GMM	Generalised Method of Moments
GSE	Ghana Stock Exchange
INF	Inflation
INR	Interest Rate
LG	Loan Growth
LQR	Liquidity Ratio
LV	Leverage Ratio
OS	Ownership Structure
ROA	Return on Assets
ROE	Return on Equity
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A bank's primary function is to facilitate the flow of funds between savers and spenders by gathering deposits from depositors and then lending those funds to borrowers at a profit, utilising the interest rate differential. According to proponents, this improves resource allocation by redistributing money from those with a surplus to those with a deficit. The value of the asset is reflected in the number of bank loans recorded in the financial accounts, which also serve to measure the number of financial resources moved from banks to consumers. In an efficient market, as argued by Binz (2022), asset prices reliably represent underlying values. Banks will have a hard time determining the true worth of an asset if its price does not reflect its underlying value and is not inflated or depressed. Because of its emphasis on profit, the banking industry requires meticulous tracking of all resources used and money made. As a result, the value of a bank's assets may be used as a proxy for the institution's ability to generate future cash flow. The ratio of nonperforming or impaired loans to total loans is a common indicator of asset quality that is below par. It is up to the bank's discretion how much it lends to creditworthy customers, but management has no say over the proportion of loans that will be repaid (Bitar et al., 2018). Loans that can be recouped are also conditional on the financial stability of the borrowers.

As the economy weakens, the customer's capacity to pay back the principal and interest decreases and the asset's pricing mechanism becomes less effective. In this case, the market value of the asset does not fairly reflect its intrinsic worth. As a result, there is a lot of focus in the academic community on understanding the internal issues and external factors that impact the banking industry's profitability. Additionally,

governments have been reviewing banking laws since the GFC of 2007-2009 and the most recent COVID-19. As a result of the financial crisis revealing flaws in financial regulation, the Basel Accord was updated, resulting in Basel III. With higher global capital and liquidity regulations in place, the banking industry will be better able to weather sudden changes in the market. It also seeks to enhance banks' transparency and openness by enhancing risk management (Cant, Claessens, and Gambacorta, 2020). Consequently, it instituted stringent regulations concerning capital and liquidity requirements. For instance, banks are now required to keep a capital conservation buffer of 2.5% and a leverage ratio of more than 3%, with the minimum capital requirement rising to 4.50% of risk-weighted assets and Tier 1 capital to 6%. The net stable funding ratio was also introduced, and the minimum criterion for the liquidity coverage ratio was increased to 100%. Worries have since been raised about how these regulations will affect banks' lending habits and financial performance.

It is widely acknowledged that banks play a significant role in fostering monetary growth and prosperity by distributing funds across the economy systematically and deliberately (Cantu Garcia and Gambacorta, 2019). For developing countries with weak financial systems, this role is vital (Kanella, Kargidis, Mocanu, and Spyridis, 2021). By making the economy more resistant to negative and external shocks, a healthy and profitable banking system is better able to boost financial system stability and economic development (Kohlscheen, Murcia Pabón, and Contreras, 2018). However, a banking system collapse leads to an economic crisis (Clark, 2022). In addition, a profitable banking industry is considered essential to fostering innovation, productivity, and efficiency (Kanella et al., 2021). Therefore, studying what makes businesses successful is crucial for the growth and security of the economy as a whole. Numerous single-country and cross-country studies, such as Yüksel et al (2018) research of 21 developing

nations with Islamic banking, have been conducted due to the importance of banking profitability (see Dang and Yang, 2018; Dremptic, Klein, and Zwergel, 2020; Nagaraju and Boateng; 2018) for Sub-Saharan Africa. The profitability of a country's banking system is shown to be highly impacted by both bank-specific characteristics and macroeconomic factors.

Ebenezer et al. (2019), Ehrenberg, Smith, and Hallock (2021), and Boateng (2018) are only a few of the research on banking profitability that employ a linear model to analyse the effect of several factors on profitability. At a certain level, the research does explain relevant analyses; nonetheless, several issues are not well addressed. For example, the literature focuses more on the external determinants of banking profitability and less on the effect of internal concerns on profitability. Second, most studies do not adequately explain econometric methodologies and fail to account for some properties of the banking profit, such as endogeneity and heteroscedasticity, leading to inconsistent and biased findings. Third, the type of bank matters, and some types of banks may be more profitable than others, but this is not taken into account in the existing literature. In addition, previous studies have only used panel data covering 5–6 years, leading to less robust results. To address this knowledge gap, researchers need to re-evaluate the bank-specific characteristics and macroeconomic factors that affect bank profitability by expanding their scope to include more internal and external variables, more influential bank-specific characteristics and macroeconomic factors, a more nuanced econometric approach, more types of banks, and a larger data panel.

This is an ideal setting for re-examining the factors that contribute to banks' profitability. The banking industry's efforts to expand into rural areas in Ghana have been crucial to the country's continued economic growth, which has averaged over 6% annually over the past decade. The number, quality, and spread of banking in the

country have all increased in recent years of liberalisation and globalisation. As a result of these adjustments, the financial system will perform better. However, no previous research has analysed the profitability of the banking sector in Ghana after COVID-19, to the best of the researchers' knowledge. It is the goal of this study to evaluate the factors that contributed to the success of Ghana's banking sector between 2000 and 2021. The study delves even further, determining if bank-specific characteristics and macroeconomic factors have an impact on bank profitability in Ghana.

1.2 Problem Statement

It is generally agreed that robust banking is essential for the economy to run and develop steadily. The banking industry plays a crucial economic function by mediating financial transactions and boosting the economy through the investment of depositors' funds (Ebenezer et al., 2019). Because of their importance to the financial system, banks must be very stable institutions. Profitability, the flow of funds from savers to borrowers, and satisfaction ratings are all indicators of an effective financial system. Bank-specific characteristics and macroeconomic factors both provide useful frameworks for assessing the relevance of bank profitability to the economy. Smaller financial institutions must prioritise profit above everything else to remain competitive. It's not only a necessary condition for survival in today's cutthroat business environment but an inevitable result of the rising levels of competitiveness in the global financial markets (Fahlenbrach et al., 2018; Farooq et al., 2021). Therefore, the primary goal of a bank's management is to maximise profits, as this is the lifeblood of any business. A company's capacity to turn a profit is crucial to its continued existence, growth, and survival. Financial system stability is enhanced when the banking sector is robust and able to weather adverse events. It is of utmost relevance for developing countries like Ghana to analyse banking sector performance because of the link between banking

sector performance and economic growth (Yahaya and Awen, 2020; Eshun and Denton, 2022). Due to the importance of the banking industry to the economy as a whole, understanding the factors that contribute to bank profitability is essential.

The banking industry's operating environment has changed significantly during the past two decades. Both internal and external factors affected its structure and functionality. New challenges have arisen for market participants in the financial sector as a result of recent advances in financial deregulation, technological and financial innovation, and globalisation, and this has increased the importance of efficiency for financial institutions and banks (Yahaya and Awen, 2020). Banks' financial performance would surely be impacted by all of these modifications to the industry standard operating environment. When describing a business, the term "profitability" describes its capacity to sustain profit levels across the years. They looked at what factors contribute to banks' performance worldwide. The ability of bank management to function, even in times of crisis, and the confidence of present and potential national and international investors hinge on the ability to identify such issues. It's generally known that growing profits is a major driver of wealth creation for stockholders. Most studies' fundamental conclusion is that a bank's performance is heavily influenced by factors within the bank's control. In contrast to the extensive literature on the financial sector's profitability in advanced economies, empirical research on the factors that affect financial institutions' performance in Ghana's economy is few.

There has been academic research on the Ghanaian banking industry despite the financial deregulation agenda undertaken by successive Ghanaian administrations in the 1990s to internationalise local financial markets (Musah, Anokye, and Gakpetor, 2018). Though studies on Ghanaian banks have mostly focused on other aspects of bank performance, these studies highlight several studies addressing the drivers of bank

profitability in Ghana. For instance, Kaur and Kaur (2020) analyse the effect of IT spending on the profits of the top Ghanaian commercial banks. The efficiency of the Ghana banking industry is studied by Musah (2020) and Alfadli and Rjoub (2020); this concept is separate from the basic elements of bank profitability. Farooq et al. (2021) and Mireku, Sakyi, and Agana (2018) examined the determinants of profitability for domestic Ghanaian commercial banks, using various performance measures to distinguish between the profits of Ghana's foreign and domestic banks. While the Ghanaian banking sector has been studied in several global pooled samples, Mireku et al. (2018) specifically analysed data from 1995 to 2014.

New studies of the Ghanaian banking industry are presented by Adedeji (2021). From 2007 to 2018, the author analysed data from a cross-section of Ghana commercial banks to determine how various internal (bank-specific) and external macroeconomic characteristics affected their businesses. This study believes there is a need for a more in-depth examination of the industry-specific indicators, such as concentration, as well as bank-specific characteristics and macroeconomic factors that drive the Ghana banking sector over a long period in the existing research.

From 2000 to 2021, the study analyses what influences Ghana's domestic commercial banks' profitability. According to Mireku et al. (2018), the banking industry in Ghana experienced more merger and acquisition activity (in terms of value) between 2000 and 2018 than in its South Sub-Saharan countries. This is an appropriate starting point. The study examines how bank and industry factors all interact within the framework of a single equation to determine bank profitability. Athanasoglou (2018) was the first to propose this equation structure. The operating expenses, financial risk, capital holdings, and size of a bank all fall under this category of bank-specific profitability variables. The second group of factors examines non-controllable aspects of industry structure,

such as industry concentration, that affect bank profitability. The third set of considerations is the broader macroeconomic setting in which financial institutions operate (such as; inflation, interest rate, and Growth rate of real GDP). There are three main ways in which these studies diverge from the ones introduced before. To begin, much of the existing literature on the investigation of the factors that affect financial institution profits relies on very brief panels, which may lead to considerable variation in findings from study to study (De Haan and Poghosyan, 2012; Kanella et al., 2021). Since this study's variables change over time, the study needs to look at a big window of time to be confident of the accuracy of the study results. Second, some multi-bank studies use the same set of factors for each bank regardless of their relevance, suggesting that the current selection of variables may lack internal consistency since they measure similar identities (Kanella et al., 2021). Finally, research on the factors that affect bank profitability is seldom conducted with respect to industry-specific variables and macroeconomic issues. Many studies of bank profitability use an econometric technique that, according to Richard, Michael, and Samuel (2019), may lead to estimates with some bias and inconsistency because it fails to appropriately account for various features of bank earnings (such as persistence). The primary goal of this research is, therefore, to use both dynamic and static models of estimate to examine the effect of bank-specific features and macroeconomic variables on the profitability of the banking industry in Ghana.

1.3 Objectives of the Study

The overarching goal of this research is to investigate how various macroeconomic and bank-specific variables affect the financial health of Ghana's banking industry.

1. To examine the effect of asset quality and Loan growth on bank profitability
2. To investigate the effect of Capital adequacy and Liquidity ratio on bank profitability.

3. To determine the effect of bank size, Expense control, and Deposit ratio on bank profitability.
4. To investigate the effect of the inflation rate, the Growth rate of real GDP, and interest rate on bank profitability.

1.4 Research Question

1. What is the effect of Asset quality and Loan growth on bank profitability?
2. Do Capital adequacy and Liquidity ratios affect bank profitability?
3. Does bank size, Expense control, and Deposits ratio affect bank profitability?
4. What is the effect of the inflation rate, the growth rate of real GDP, and the interest rate on bank profitability?

1.5 Significance of the Study

The primary goal of this research is to examine how various macroeconomic and bank-specific variables affect the financial health of Ghana's banking industry. Management at the organisations under investigation may use this research to confirm or disprove their hypotheses about the effects of bank-specific features and macroeconomic variables on financial performance. Management may use the results of this research to design and tweak company models for peak financial performance. The research will aid government policymakers by providing vital information that can be used to draft laws, rules, and policies involving Ghana Stock Exchange-listed institutions (GSE). The research results may be used to improve the banking sector's financial performance through more well-informed policies and processes.

1.6 Scope of the Study

The primary goal of this research is to use both dynamic and static methods of estimate to the question of how bank-specific features and macroeconomic variables affect the profitability of Ghana's banking system. All commercial banks listed on GSE are used

for the study. Secondary data is used and acquired from the annual financial report of commercial banks and the Bank of Ghana (BoG) database from the period of 2000-2021. The study applies partial frontier approaches to detect and remove outliers. Finally, selected firms with missing data for some of the study variables of interest are removed from the study sample.

1.7 Summary of Methodology

Quantitative with panel research design is employed. For this study, all the variables are sourced from the Bank of Ghana database and the financial reports of commercial banks in Ghana. This research employs a panel data approach using a pool of data spanning the years 2000 to 2021 from nine (9) listed banks on GSE. Macroeconomic factors (interest rate, Growth rate of real GDP, and inflation) are extracted from the bank of Ghana database and the various bank-specific characteristics (Asset quality, Loan growth, Capital adequacy, liquidity ratio, firm size, Expense control, and Deposits ratio) are sourced from the annual report of commercial banks in Ghana listed on GSE, finally, the control variables (liquidity ratio, ownership structure, and leverage ratio) were all extracted from the annual report of commercial banks in Ghana. This study uses static and dynamic panel estimation techniques to examine bank characteristics and macroeconomic determinants of profitability, building on the work of (Trinugroho et al., 2014; Ahmad et al., 2015; and Ashraf et al., 2015).

1.8 The Organisation of the Study

The study is divided into five chapters. The first chapter introduces the background of the research under investigation. In this chapter, the statement of the problem, as well as the objectives and research questions, are provided. Furthermore, the significance, scope, limitations, and a summary of the methodology are captured in chapter one. Chapter two is the literature review section of the study. The review of concepts,

theories, empirical studies, and conceptual framework is presented in the second chapter. The third chapter is made up of the methodological techniques that were utilised in the study; sampling techniques, data collection, data analysis, and a host of others are outlined in chapter three. The fourth chapter of the study presents the analysis of the findings of the study in conjunction with relevant literature and the final chapter concludes the study by providing the summary, conclusion, and avenues for further research.



CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Review

Definitions, operationalisations, and an explanation of how the constructs were applied in this study are provided in this section. There are two main constructions in the model. They are bank-Specific Characteristics asset quality, Loan growth, Capital adequacy, Liquidity ratio, Bank Size Expense control, and Deposits ratio), and bank Profitability. The following sections made these constructions operational.

2.1.1 Bank-Specific Characteristics

Banks play an important role in an economy. Both the micro- and macro-levels of the business are considered when determining the significance of bank profitability (Kassem and Sakr, 2018). Since it is essential for a profitable enterprise in an era of escalating financial sector rivalry, profit is the key micro-level need of a competing lending institution (Cantú et al., 2020). The impact of bank attributes on its profitability has been the focus of numerous studies across many different nations. Recently, Numerous recent research studies have looked at the key variables influencing banks' profitability and profitability in numerous nations throughout the world, building on the early work edited by Suppia and Arshad (2019). The following criteria are referred to as "bank-specific features" by Isik and Uygur (2021): capitalisation, non-traditional operations, liquidity, management caliber, and size of the bank. These qualities are distinctive to banks and have a substantial influence on profitability. Banks with strong balance sheets (large, liquid, and adequately capitalised), low-risk indicators, dependable financing sources, and commercial business strategies give out more credit and are more insulated from monetary and global shocks (Ramlall and Mamode, 2017).

In addition, among the six characteristics of service marketing that are unique to the banking sector are intangibility, inseparability, variability, and perishability. The fact that services are performances and do not involve the transfer of ownership is one of their additional qualities (Kiemo et al., 2019). Additionally, some characteristics unique to the banking industry include planning quality, risk management (including credit, interest rate, and currency risks), liquidity management, human resource management, the development of control systems, including audit and internal audit, monitoring of profitability and risk liquidity, and a unified information technology system with integrated automation of work (Adedeji, 2021). Additionally, according to Cantu Garcia and Gambacorta (2019), the ability to manage money, make deposits and withdrawals possible, deal with credit, have a commercial mindset, and communicate with customers are all regarded to be traits unique to the banking industry. For this study, the definition of bank-specific characteristics by Isik and Uygur (2021) will be adopted by the study. It states that Bank-specific characteristics refer to factors that are unique to banks and have a significant impact on profitability.

2.1.1.1 Asset quality

Asset quality sometimes refers to loan performance and is typically reflected by non-performing debts or deteriorated credit which is a crucial factor to take into account while managing assets and a sign of the prospective financial performance of banks (Ahmad-Zaluki and Badru, 2022). Banks can choose how much money they provide suitable debtors in the form of loans, but they have no control over how much of those loans are recovered. Additionally, the recovering loans are reliant on the customers' capacity to pay back the principal and interest (Ngari, 2021). The capacity of the customers to pay back the principal and interest increases throughout downturns, and the distribution of money for an asset performs poorly. In this case, the asset price

cannot fairly represent capital adequacy (Eshun and Denton, 2022). Consequently, evaluating the role of asset quality involves evaluating the role of asset values, the role of capital adequacy, and the function of resources. When contrasted with assets that have high ratings, investments with asset quality ratings have lower rates of return and high liquidity risks (Bholat et al., 2018)

2.1.1.2 Loan Growth

Loan Growth is the aggregate of the development in the Firm's outstanding debt minus the reimbursement for loan losses after the Business's four financial months as shown in the balance sheets contained in the Corporation's yearly and quarterly reports on forms (Fahlenbrach et al., 2018). Increasing bank lending is a significant factor in both growth and inflation (Bloomberg, 2022). It would appear doubtful that the significant inflationary rise without substantial financial institution loan growth since lending, rather than the Fed's income statement, has a greater influence on widely used measures of the monetary policy. This has significant implications for borrowing costs since bank credit is a key driver of economic expansion and inflationary (two factors that will be important if and when the Fed decides to raise the Federal Fund rate) (Vithessonthi, 2022).

2.1.1.3 Capital Adequacy

A business's financial health is assessed by the capital to uncertainty return on assets, which is known as capital adequacy. Besides evaluating a bank's capital to its liabilities, capital adequacy assesses the bank's capacity to fulfil its commitments (Gallati, 2022). The proportion of a credit portfolio to its liability is defined as the capital adequacy or investment (weighted) investments ratio (Ambarawati and Abundanti, 2018). The funds needed by a risk financing instrument, such as a captive insurance business to cover assets is referred to as capital adequacy. As many banks may attempt to use some of

their Tier 1 or Tier 2 assets to maintain their financial and operational continuity, the capital adequacy of banks may also deteriorate (Damayanti and Savitri, 2018). Regulatory authorities stressed the concept that banks should have sizeable reserves to endure severe economic crises after the 2008–2009 worldwide financial crisis. The Commission released the BASEL-III improved capital adequacy pact to make it viable, which would increase the banking sector's capacity to withstand shocks brought on by monetary and economic stress (Ichsan, 2021).

2.1.1.4 Liquidity Ratio

Liquidity ratios are a gauge of a consumer's intention to settle its short-term obligations (Husna and Satria, 2019). A business that has the potential to swiftly transform its resources and utilise them to pay its liabilities is determined by its liquidity ratios (Arsyad et al., 2021). A financial statistic called a liquidity ratio is used to assess a firm's capacity to settle its short-term loan commitments. The liquidity ratio measures how readily current operations may be used to meet its commitments (Kadim et al., 2020). To satisfy current obligations or other responsibilities, a company must be able to transform its assets into cash (Banerjee and Mio, 2018). This suggests that corporations with higher revenue accessibility often pay more substantial payments than businesses that have low levels of financial liquidity, according to the premium signalling hypothesis (Bitar et al., 2018).

2.1.1.5 Firm Size

The term "firm size" refers to the size of an organisation as measured by its total net sales or total assets (Drempetic et al., 2020). Also, the firm's size is determined by its size. The scale of the company in terms of its industry. Moreover, total sales, total assets, and average sales rate can be used to estimate the firm's substantial share (Dang et al., 2018). In addition, a firm's size can be categorised on a scale based on factors

like total assets, log size, stock market prices, etc. Furthermore, the number of sales, average sales, the market value of the company's shares, and other factors can also be used to determine a company's size. Concisely, the size of a company increases as its assets and revenues increase. The amount of capital spent increases with asset size, whereas sales volume increases the firm's cash flow velocity. Accordingly, the size of the business is the size or quantity of assets possessed by the business (Hart, 2021). Furthermore, large businesses are less risky than small ones. Larger businesses can deal with these challenges because they have a stronger influence over market circumstances and economic competition. Additionally, because they have better access to outside information sources than smaller businesses, huge organisations have more resources to Increase Company value (Nguyen, 2020).

2.1.1.6 Expense Control

Controlling expenses entails making immediate adjustments to expenses. Preferably, cost containment data is used to guide these modifications (Railis et al., 2022). Expense controls, in the simplest terms, are actions taken by organisations to monitor and regulate individual expenses. Organisations can prevent overpaying and protect against fraud by imposing spending caps on workers and demanding receipts or permissions for all transactions (Mey et al., 2020). Financial planning is the first step in expense control, which is the activity of recognising and lowering corporate expenditures to boost profitability (Wang et al., 2022). When a business person compared the corporation's real economic outcomes to its budgeted expectations, leadership has the data it needs to make decisions if real expenses are greater than anticipated. For instance, a business might compare quotes from other suppliers who offer the same good or service to cut prices. Maintaining and increasing profitability depends on sustaining and reducing costs (West, 2020).

2.1.1.7 Deposits Ratio

The ratio of total deposits of an institution is known as the deposit ratio (Rifansa and Pulungan, 2022). Typically, the ratio is stated as a proportion. If the ratio is less than that, the bank did not acquire from outside sources to provide lending to its clients; instead, it relied only on its savings (Pudyastuti, 2018). Once determining the value of government money, financial assets held by the state comparing clearinghouse banking institutions and money received by the government financial operative financial institutions in its capacity as the state's fiscal agent bank are excluded. Instead, the term "deposit ratio" refers to the value of state money on the down payment or committed with a commercial bank total market value of deposit accounts at the commercial bank (Martanorika and Mustikawati, 2018).

2.1.2 Bank Profitability

The ratio of Bank earnings to its costs is known as firm profitability. A more effective business will make more money relative to its costs compared to a less efficient one, which would have to spend more to make the same amount of money (Restianti and Agustina, 2018). According to Lahti et al. (2018) definition of "bank profitability," a company's profitability indicator ultimately determines whether it succeeds or fails. Another meaning of profitability is a company's ability to provide a return on investment based on its resources as opposed to an alternative investment. Additionally, profit and bank profitability are quite similar, but there is one key difference. Profitability is an absolute idea as opposed to profit, which is a relative one. It is a statistic used to determine how much a firm makes concerning its market share (Kinasih Yekti Nastiti et al., 2019). Additionally, costs and income are utilised to determine a company's profitability. Income is the money generated by the business's activities. For instance, raising and selling livestock and crops generate revenue.

However, money that comes into the business through activities like borrowing money does not result in profitability (Restianti & Agustina, 2018). The determinants of corporate profitability, according to various theoretical perspectives, may be categorised into three groups: purposeful firm variables, industry variables, and economic environment variables (Nguyen & Nguyen, 2020). Simply, a company's profitability is assessed by comparing its total revenue for a given period to its total expenses. According to Ahmed et al. (2020), net profit or net income are common terms for the accounting notion of profitability. According to Lahti et al. (2018) definition of "firm profitability," a company's profitability indicator ultimately determines whether it succeeds or fails. Another meaning of profitability is a company's ability to provide a return on investment based on its resources as opposed to an alternative investment. For this study, the definition of bank profitability by Restianti and Agustina (2018) will be adopted by the study. It states that the ratio of an institution's earnings to its costs is known as firm profitability. A more effective business will make more money relative to its costs compared to a less efficient one, which would have to spend more to make the same amount of money.

2.2 Theoretical Literature Review

It is becoming more complex, time-consuming, and difficult to do research in the field of innovation due to the sheer volume of available literature and data (Clark, 2022; Haddad and Lotfaliei, 2019; Simatupang et al., 2019). Thus, three underlying hypotheses were employed as a research foundation in supporting and resolving the gap, and as a guide to orient this study into a suitable path. In this section, the researcher delves into the rationale for the study and the impact of institutional factors on bank profitability, focusing on financial institutions traded on the Ghana Stock Exchange. The inquiry builds on the theoretical pillars of economic theory, trade-off theory, and

the derived pecking order theory. Theoretical frameworks serve as a lens through which a topic may be examined more thoroughly; they provide light on the subject's background and the relationships between its many aspects.

2.2.1 Economic Theory

Economic theory's fundamental tenet is that all businesses' cashflows ought to be comparable in an environment of competitive equilibrium (Clark, 2022). Nevertheless, when inefficient economies are taken into account, a firm's size starts to play a significant role in making revenue. As a result, theories and models of economics and finance acknowledged the significance of scaling economies as well as other technological and economic efficiencies related to bigger commercial enterprises (Cohn and Hira, 2020). For instance, Ehrenberg et al. (2021) proposed that company size and business success had a positive connection in their landmark study. According to Ehrenberg et al. (2021), additional revenue capital will, "at least up to a point, not only significantly raise the firm's overall profits, and it also elevates the firm to a higher echelon of imperfectly competitive financial groups, it may very well also increase its profitability per dollar of investment even in the long run." In light of this, Ehrenberg et al. (2021) argued that whereas bigger organisations can enhance investment possibilities that result in higher profitability, business owners are unable to do so due to financial constraints. Additionally, larger companies have an edge over smaller ones since they may penetrate a wider range of product categories, giving them the advantages of scale and size (Saviotti and Metcalfe, 2018). Large companies may so fully benefit from technological and financial economies of scale in production, advertising, management, and capital raising. The large business may often achieve profits that are at least as great, and likely bigger, than the smaller organisation,

according to Offe and Keane (2018) assumption on the relationship between firm size and financial performance.

2.2.2 Trade-Off Theory

According to the trade-off principle, businesses should utilise a fair mix of debt and equity to increase their firm's worth (Haddad and Lotfaliei, 2019). In light of the increasing interest costs of extra borrowed capital, using debt allows businesses to save taxes (Abel, 2018). To counterbalance the advantages and disadvantages of adding borrowed funds, Haddad and Lotfaliei (2019) recommended that businesses maintain a capital structure. Each company should thus continue to use the capital structure that maximises its profitability and reduces its investment risk (Simatupang et al., 2019).

2.2.3 Pecking Order Theory

According to the pecking order hypothesis, management always behaves in the best interests of the shareholders of the company since they have access to more knowledge about the future of the company than stockholders do (Martinez et al., 2018). In contrast to the trade-off hypothesis, this idea contends that businesses favour internally generated funds (such as retained profits) over external funding (Frank et al., 2020). Debt funding is only chosen, though, if equity investments are insufficient to support the firm's expansion (Ahmad and Atniesha, 2018). Pecking order theory contends that a company's business financial leverage is dependent on its sources of finance over time, not on an ideal debt ratio as in the trade-off theory. As a result, the idea of an ideal capital structure does not exist (Simatupang et al., 2019). The factors that influence the financial performance of business banks in various nations have been the subject of extensive research. Rahman (2019) explicitly looked into and proved that the risks, deposit accounts, efficiency, and growth potential of the assets had a substantial effect on the capital structure of North American banking firms. According to studies by

Zeidan et al. (2018), the capital requirements of financial institutions with capital above the Basel mandatory standard are less risky because of factors like size, revenue growth, growth, consumer lending, dividend payments, and investment risks. Nevertheless, the results of Kadek and Bagus's (2019) investigation, are more intriguing. They discovered that financial leverage is significantly influenced by the expansion phase, leverage, and profitability, resulting in a discrepancy among the investment strategies of banks in developing and industrialised countries.

2.3 Empirical Literature Review

This section assesses the research on prior studies that addressed the study's objective. These include the effect of bank-specific characteristics and bank profitability; in the case of listed banks on the Ghana stock exchange. Literature related to the study's goal of the effect of bank-specific characteristics and bank profitability; in the case of listed banks on the Ghana stock exchange in previous and ongoing research projects was evaluated.

O'Connell (2022) performed a study to investigate how market indicators, financial sector factors, and bank-specific factors affect banking performance amongst domestic UK financial institutions. The research implemented a single equation paradigm that is experimentally informed and combines the organisation, behaviour, and effectiveness assumptions. To compensate for revenue tenacity, a panel of UK banks covering the years 1998–2018 were subjected to a generalised method of the situation mechanism. The estimated outcomes demonstrate that, with the possible exception of creditworthiness, all bank-specific characteristics strongly impact banking performance expectedly. When other factors are taken into account, the economic cycle has a relatively negligible impact on bank performance. This is particularly true of longer-term lending rates and the rate of increase. Inside the UK financial sector, profitability

is steady to a little extent, suggesting a break from a monopolistic competition market structure. Based on the findings and limitations of the study, there were no future studies or recommendations made.

Samo and Murad (2019) conducted research to ascertain the effects of liquidity and financial strength on bank performance with the use of a sample of 40 carefully chosen publicly traded textile firms from the Pakistani economy. To determine the effect of credit risk management on the competitiveness of Pakistan's leather sector, a quantitative technique and an interpretative strategy were used in the study. The quantitative component is completed by gathering statistical information and profitability statements using an impartial and statistical methodology. To study the data of 32 textile companies spanning the years 2006 to 2016, panel least squares approximation and multiple regressions were both employed (11 years). Model estimates causality tests and descriptive and inferential statistical models are used to examine the yearly data of Pakistan's textile industries from 2006 to 2016 using a quantitative methodology. Tertiary data was acquired from the companies' financial accounts using the EViews program and a panel. According to the findings, there is a significant correlation between bank performance and liquidity and an inverse association between performance with financial resources. The permeability measure's findings show that the economic leverage metric and liquidity showed a robust and favourable relationship. The asset return has negatively impacted by the leverage ratio, although not significantly. The other portion of the finding said that leverage has an adverse effect on returns on assets while liquidity has a large favourable influence on asset returns as well. The researcher acknowledges that future studies can determine the important elements and causes depending on the study's results and shortcomings. It is

recommended that the same factors be examined in other industries as this research is centered on the textile industry.

Ali and Puah (2018) researched to investigate the fundamental factors that affect bank stability and performance in Pakistan's banking industry. Utilising cluster sampling techniques from 24 financial institutions for the sample period of 2007-2015, a multiple regression analysis is constructed. Separate analyses of bank performance and sustainability were conducted by the researchers. Both designs are made utilising a wide range of internal bank characteristics. The findings of the bank performance model revealed that while financial distress has a numerically minor contribution to performance, factors such as board size, creditworthiness, financing risk, and stabilisation have substantial effects. Institutional ownership, financial risk, financing risk, and revenue have a substantial effect on stability, but credit risk has a negligible impact, according to regression analysis from the includes confirming. The financial meltdown' impact, meanwhile, was comparable and economically negligible in both categories. The proponent recommended that future studies examine how socioeconomic or situational factors and environment affect bank financial viability and stability in light of the research outcome and shortcomings.

Rakshit (2022) carried out a study to explore how cost, income, and earnings efficiencies affect banking performance from 1997 to 2017 in an expanding market like India. Utilising vector autoregressive analysis, it was estimated the cost, income, and profitability efficiency ratings for the studied time in the first process. The next stage of this study examines the effects of various performance metrics on banks' performance using the two-step modified technique of moment's stochastic frontier methodology. Findings computed using the comprehensive modelling and simulation of moments show that India's bank performance is greatly increased by greater levels

of cost, earnings, and effectiveness. The government-owned banks are the most economically efficient management group, according to this analysis, when contrasted with private and international banks. In establishing banking performance, other organisational, socioeconomic, and bank-specific factors have been crucial. The study argued that one of the key challenges for this research was gathering data on financial regulation for each bank across each time frame. This assertion is founded on the study's results and shortcomings. Consequently, examining the link between a company's accountability and the financial performance of commercial banks in one of the banking markets with the quickest rate of growth may be regarded as a possible area of study.

Yadav et al. (2021) conducted a study that aims to investigate the relationship among company size, growth, and income in addition to other firm-specific factors like leveraging competitiveness, capital adequacy, inflation rate, and interest rates like productivity growth and the real economy, and financial development factors (like MCR). The study utilised a panelist dynamically fixed effects model for almost 12,001 distinct non-financial registered and active enterprises from 1995 to 2016 for 12 industrialised and developing Asia-Pacific economic systems using the COMPUSTAT Worldwide system. For small, medium, and big-scale businesses that were categorised according to three alternative variables including asset value, net sales, and MCR of enterprises, this correlation was also looked at. The research confirms that a moderate but significant durability of profit parameter was identified. Research on size-profitability link and a strong growth connection indicates that, initially, profitability rises with business expansion, but that, over time, improvements in profit levels fall as the size grows, showing that inefficiency is bred by a high size. Revenue is discovered to have a negative association with a firm's total debt and its capital adequacy. The real economy and stock market growth factors point to a strong correlation between

company performance and both of these characteristics. Nevertheless, the magnitude of the computed coefficients varied and was inconsistent among the several Asia-Pacific economic systems that were chosen. Based on the findings and limitations of the study the author did not state future references.

According to research by Kassem & Sakr (2018), it would be useful to know how the profitability of Egyptian banks and their unique qualities are related. Profitability may grow if you can identify the essential internal characteristics. In this work, OLS regression analysis is used to examine the relationship between the profitability of a sample of 19 Egyptian banks from 2007 to 2016. The findings show a strong link between all profitability metrics, proving that loan loss provision ratio and bank size are the two main factors influencing bank profitability. The capital ratio and ROA, NIM, and ROE have significant but not extremely strong relationships. The loan ratio and deposit ratio, however, have little influence on the bank's profitability. As a result, the study advances our knowledge of several important aspects of bank profitability in Egypt. Future studies may thus examine additional internal and/or external elements that may affect a bank's profitability. To improve the validity of the study's results, more work may also be done by increasing the sample size of the institutions analysed and focusing on banks from different regions.

Cant et al. (2020) conducted a study to investigate the effects of bank-specific characteristics on the extension of credit in five Latin American nations (Brazil, Chile, Colombia, Mexico, and Peru). We use extensive credit registry data and a consistent empirical approach to compare the pre-and post-crisis periods. The study shows that large, well-capitalised banks with commercial business plans, reliable sources of funding, and low-risk indicators frequently offer more loans. Additionally, these institutions are more resilient to financial and global shocks, with certain characteristics

being more or less important depending on the kind of shock. Banking systems are changing in response to post-crisis regulation, a new economic environment, and the outcomes of financial innovation. These changes affect the funding and management of banks. Numerous studies have examined the effects of changing bank business strategies in developed countries after the crisis. However, little study has been done on how the banking systems of developing market countries are impacted.

Chee et al. (2018) conducted a study to better understand the macroeconomic and bank-specific factors that affect the performance of commercial banks in Malaysia before and after the crisis. In this study, secondary data from monthly financial reports of Malaysian commercial banks from the pre-crisis (years 2005 to 2007) and post-crisis eras are used (years 2009 to 2011). Macroeconomic and bank-specific factors make up the explanatory variables. The base lending rate (BLR), the consumer price index (CPI), and the money supply are macroeconomic factors. Bank-specific considerations include bank capital and liquidity. The resulting conclusion is that neither the consumer price index (CPI) nor the base lending rate (BLR) had a significant impact on the pre-crisis performance of commercial banks. However, both of these have a considerable impact on how commercial banks behave after a crisis. This is solely the outcome of the economy's robust growth prior to the financial crisis. Malaysians can afford the interest rates linked with loans and are not interested in borrowing money from banks. Additionally, neither before nor after the crisis, did bank liquidity have a minimal effect on the performance of commercial banks. Finally, yet importantly, the results show that Malaysia's commercial banks performed both before and after the crisis in large part because of the money supply and bank capital.

2.4 Conceptual Model/ Framework

The three major pillars of the theoretical model are the Economic Theory, Trade-Off Theory, and its extension to the Pecking Order Theory (see Figure 2.1). According to the aforementioned theories and models, much research has added some helpful components to the financial firms' financial performance functionality to throw light on the crucial elements that affect the financial performance of banks (Saha and Neogy, 2021). Such studies may not always have clear-cut conclusions, particularly when it comes to how the variables are measured and the outcomes that follow. Nevertheless, there is broad consensus that both internal and external variables play a part in the financial success of banks. According to Zulkhibri (2018), the effectiveness discrepancies across banks reveal variations in schools of thought as well as variations in the markets they service. Independent (Bank-Specific Characteristic), and variables are all included in the overall idea of dependent (Bank Profitability). It is anticipated that the effect of bank-specific characteristics and Bank profitability; in the case of listed banks on the Ghana stock exchange are seen.

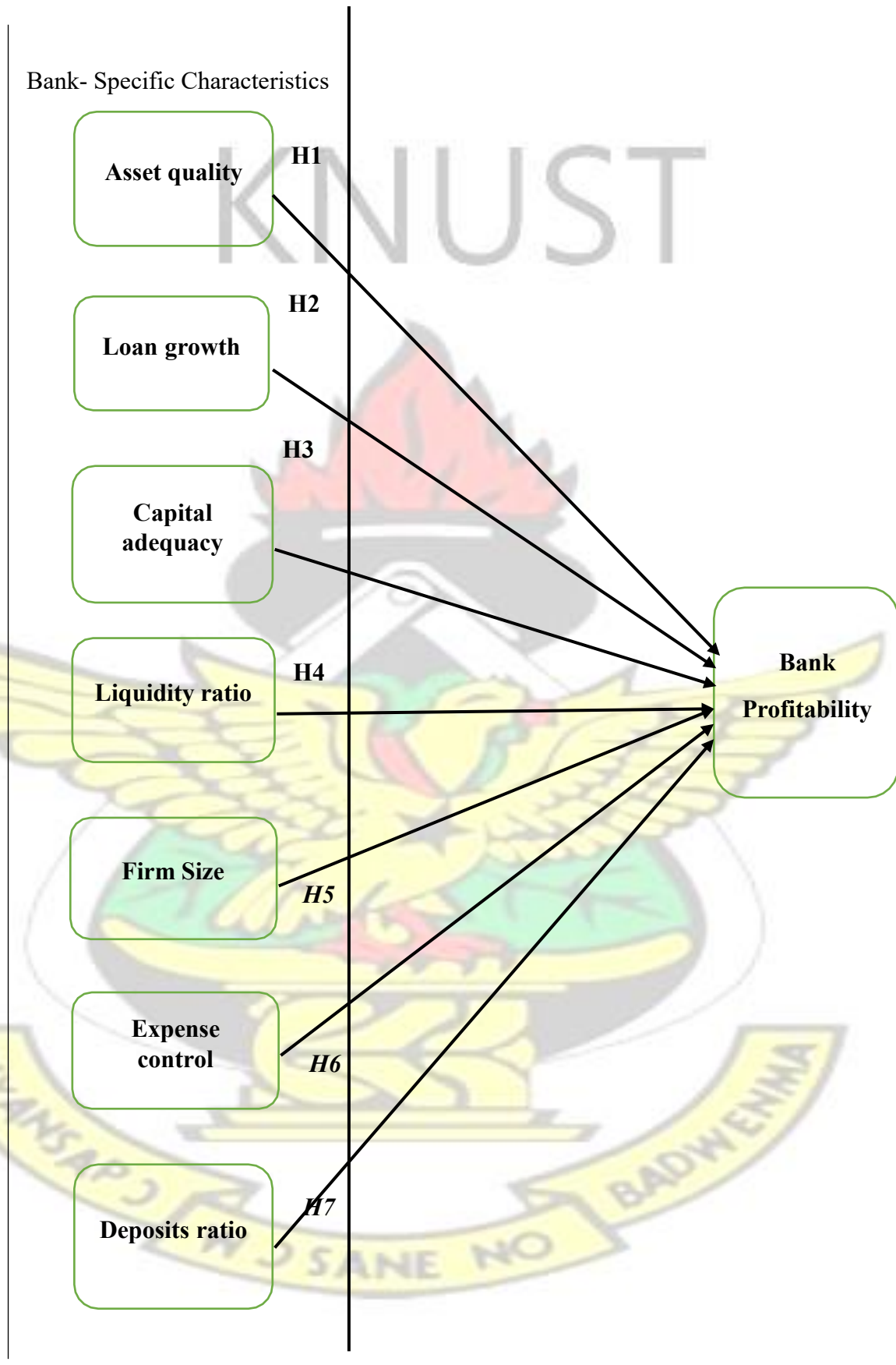


Figure 2. 1 Conceptual Framework

- H₁. Asset quality has a positive and significant effect on Bank Profitability.*
- H₂. Loan growth has a positive and significant effect on Bank Profitability.*
- H₃. Capital adequacy has a positive and significant effect on Bank Profitability.*
- H₄. Liquidity ratio has a positive and significant effect on Bank Profitability.*
- H₅. Firm Size has a positive and significant effect on Bank Profitability.*
- H₆. Expense control has a positive and significant effect on Bank Profitability.*
- H₇. Deposit ratio has a positive and significant effect on Bank Profitability.*

2.5 Hypotheses Development

This segment discusses the seven key hypotheses as shown in Figure 2.1 above. Subsections have been created and discussed for each of the hypotheses as illustrated by the research model.

2.5.1 Hypothesis 1: Asset Quality on Bank Profitability

Another element that influences a bank's health is credit risk. The calibre of the commodities that a certain bank has determined the amount of the creditworthiness (Hasanov et al., 2018). A bank's holdings of assets are influenced by its susceptibility to certain liabilities, patterns in non-performing mortgages, and the viability and profitability of its customers (Aktan et al., 2018). According to Altavilla et al. (2018), a bank's financial performance is based on its capacity to identify, manage, and potentially compensate for risks as they arise. Consequently, a bank must consider the amount of risk attached to asset deals when deciding how to allocate funds to portfolio transactions. The two main reasons for banking crises are asset quality and inadequate liquidity levels. In Kenya in the early 1980s, several banks failed as a result of asset quality (Alzoubi, 2018). Hence, it is anticipated that a positive influence of asset quality on Bank Profitability:

- H₁. Asset quality has a positive and significant effect on Bank Profitability.*

2.5.2 Hypothesis 2: Loan Growth on Bank Profitability

Numerous research studies have found that increasing bank-specific lending has a positive impact on firm profitability. The fact that institutions with faster rates of loan growth are consistently more profitable, as discovered by Le (2020), raises the possibility that the credit cycle may be a significant factor in bank profitability. The study quantifies this critically valuable driver of business using the population increase in gross loans. Hence, it is anticipated that a positive influence of Loan growth on Bank Profitability:

H₂. Loan growth has a positive and significant effect on Bank Profitability.

2.5.3 Hypothesis 3: Capital Adequacy on Bank Profitability

A ratio of both the outstanding debt and capital adequacy at the bank is the greater reverse mortgage ratio (Anton and Afloarei Nucu, 2020). Typically, the ratio is defined as a percentage. If the ratio is less than the bank made loans to its clients entirely from the funds in its deposits (Olaoye et al., 2019). Due to an increase in the overall quantity of cash needed to provide credit, more profit in some institutions would lead to decreased liquidity, and vice versa, greater profit in certain banks would result in higher liquidity. According to Fekadu Agmas's (2020) research findings, capital sufficiency has a positive and substantial impact on a company's profitability. Hence, it is anticipated that a positive influence of Capital adequacy on Bank Profitability:

H₃. Capital adequacy has a positive and significant effect on Bank Profitability.

2.5.4 Hypothesis 4: Liquidity Ratio on Bank Profitability

The proportion of short-term demands that might be satisfied if money were taken right away is shown by the ratio of liquidity and other cash reserves to net capital (Madushanka and Jathurika, 2018). Comparable to capitalisation, more liquid banks tend to have larger amounts of short-term assets, which makes them less likely to

collapse since they have more short-term money available to satisfy responsibilities. Ningsih and Sari (2019) demonstrate how trying to hold some marketable securities improves a firm's financial performance; nevertheless, there is a limit beyond which holding more liquid assets enhances a financial performance of the bank because the cost of maintaining lower-yielding liquid assets may influence a bank's capacity to generate revenue through lending activities (Yameen et al., 2019). Hence, it is anticipated that a positive influence of the Liquidity ratio on Bank Profitability:

H4. Liquidity ratio has a positive and significant effect on Bank Profitability.

2.5.5 Hypothesis 5: Firm Size on Bank Profitability

Following several previous research, the study uses the bank's total assets as a stand-in for the business size (Abeyrathna and Priyadarshana, 2019). In summary, a higher size may produce cost advantages that may lower the expense of data gathering and processing (Hirdinis, 2019). Growing in scale, however, could bring up efficiency or management capacity that might impact bank profitability. Consequently, the research attempts to reflect this possible linear link between firm size and bank profitability by using the logarithm of banks' property wealth and their actual number (Sondakh, 2019). Hence, it is anticipated that a positive influence of Firm Size on bank Profitability.

H5. Firm Size has a positive and significant effect on Bank Profitability.

2.5.6 Hypothesis 6: Expense control on Bank Profitability

A cost-to-income ratio is frequently used in investigations as a stand-in for spending control (Binz, 2022). Operational expenses and operating costs can be separated from a bank's overall costs. Nevertheless, only business expenditures, which are the study's primary emphasis, may be viewed as a result of decisions that are made by banking institutions (Mun and Jang, 2018). Productivity should rise as a result of better performance and subordinates' operating costs. As a result, the profitability of the

institution should be positively correlated with the ratio of these costs to total assets (Pooser and Browne, 2018). Hence, it is anticipated that a positive influence of Expense control on Bank Profitability:

H₆. Expense control has a positive and significant effect on Bank Profitability.

2.5.7 Hypothesis 7: Deposits Ratio on Bank Profitability

One proxy measure of financing stability is the ratio of deposits to capital (Farooq et al., 2021) discovered that deposit ratios considerably reduce the return on assets or overall profitability. Before 2008, the liabilities side of financial institutions was not seen as a worry or a factor in determining bank performance, comparable to the capital component (Imtiaz et al., 2019). Since then, the size of the short-term cash retained by banks to finance their borrowing activities that produce profits has come to light. Because of this, characteristics designed to indicate bank financing systems have frequently been ignored in earlier research (Ebenezer et al., 2019). It is well recognised that the cost of retaining deposits as opposed to short-term bank financing affects the overall profitability of the business (Hasan et al., 2020). Hence, it is anticipated that a positive influence of the Deposits ratio on Bank Profitability:

H₇. Deposit ratio has a positive and significant effect on Bank Profitability.

2.6 Chapter Summary

The present study is designed to explore the effect of bank-specific characteristics and bank profitability; in the case of listed banks on the Ghana stock exchange. The literature review was broken down into five main sections (Conceptual Literature Review, Theoretical Literature Review, Empirical Review, Conceptual Framework, and Hypothesis Formulation). The conceptual review, which was a component of the first section, provided detailed definitions for the research variables and explained how they were used in the study. Bank-Specific Characteristics (asset quality, Loan growth,

Capital adequacy, Liquidity ratio, Firm Size Expense control, and Deposits ratio), and bank Profitability make up the study's variables. The second part was the theoretical review, which identified the theory presented in the study. An empirical review, the third element, turned up prior studies on the objectives of the research. The conceptual framework, which illustrates the relationship between the variables, is the fifth and final component. In the fifth step, which involved developing hypotheses, the literature on the connections between the research variables was examined. The study's methodology is presented in the next chapter, which is chapter three (3).

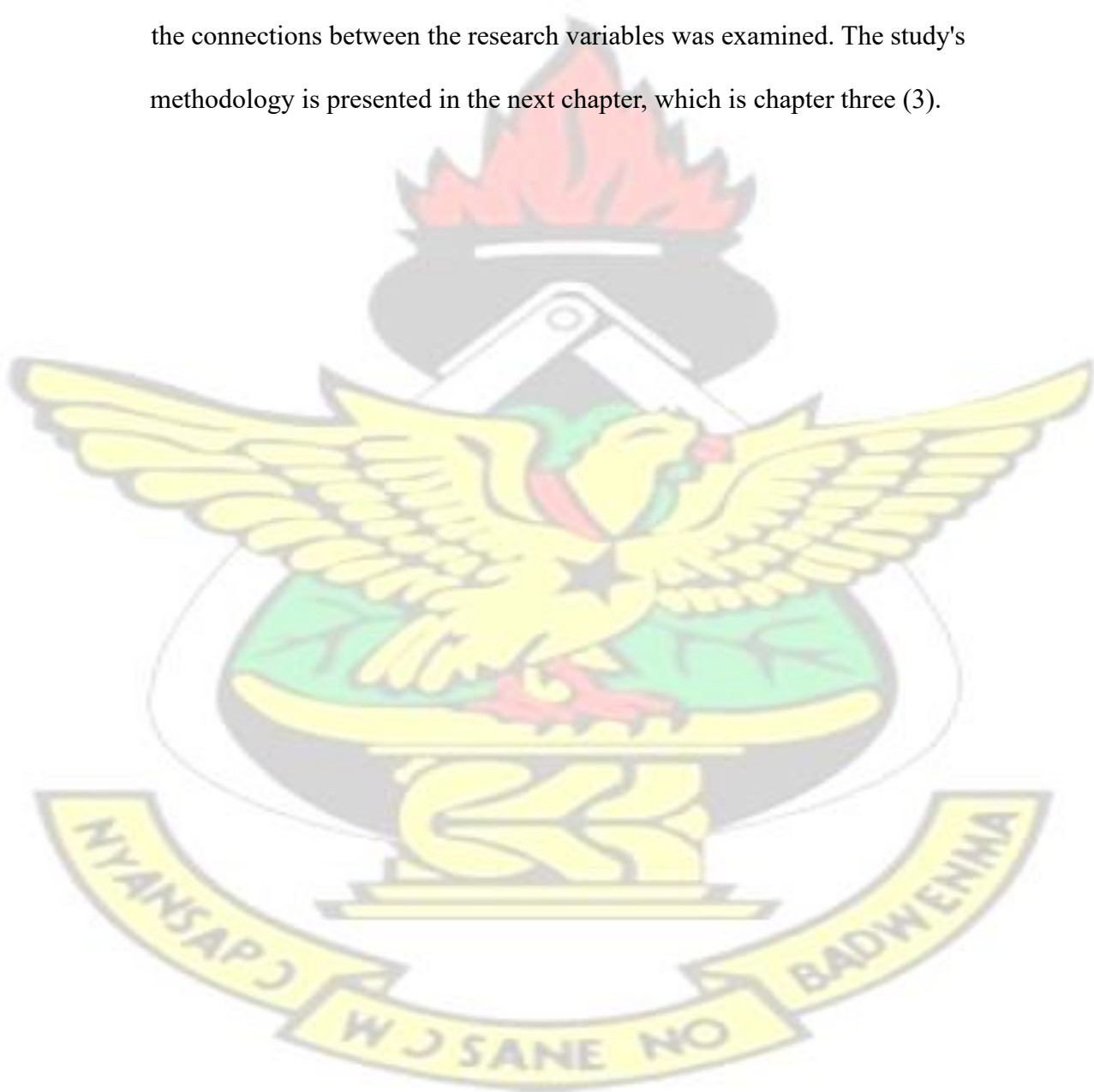


Table 2. 1 Literature Table

Author/Year	Country	Purpose	Theory	Method	Findings	Future studies
O'Connell (2022)	UK	The objective of this research is to investigate how market indicators, financial sector factors, and bank-specific factors affect banking performance amongst domestic UK financial institutions.	Finance theory	Quantitative	The estimated outcomes demonstrate that, with the possible exception of creditworthiness, all bank-specific characteristics strongly impact banking performance in an expected manner. When other factors are taken into account, the economic cycle has a relatively negligible impact on bank performance. This is particularly true of longer-term lending rates and the rate of increase. Inside the UK financial sector, profitability is steady to a small extent, suggesting a break from a monopolistic competition market structure	Based on the findings and limitations of the study, there were no future studies or recommendations made.

Samo and Murad (2019)	Pakistan	The study seeks to ascertain the effects of liquidity and financial strength on bank performance with the use of a sample of 40 carefully chosen publicly traded textile firms from the Pakistani economy.	Agency theory	Quantitative	According to the findings, there is a significant correlation between bank performance and liquidity and an inverse association between performance with financial resources. The permeability measure's findings show that the economic leverage metric and liquidity showed a robust and favourable relationship.	The researcher acknowledges that future studies can determine the important elements and causes depending on the study's results and shortcomings. It is recommended that the same factors be examined in other industries as this rese
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					The asset return has negatively impacted the leverage ratio, although not significantly. The other portion of the finding said that leverage has an adverse effect on returns on assets while liquidity has a large favourable influence on asset returns as well.	arch is centered on the textile industry.
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Ali and Puah (2018)	Pakistan	The study's goal is to investigate the fundamental factors that affect bank stability and performance in Pakistan's banking industry.	Agency theory and stewardship theory	Quantitative	According to the findings, there is a significant correlation between bank performance and liquidity and an inverse association between performance with financial resources. The permeability measure's findings show that the economic leverage metric and liquidity showed a robust and favourable relationship. The asset return has negatively impacted the leverage ratio, although not significantly. The other portion of the finding said that leverage has an adverse effect on returns on assets while liquidity has a large favourable influence on asset returns as well.	The proponent recommended that future studies examine how socioeconomic or situational factors and environment affect bank financial viability and stability in light of the research outcome and shortcomings.
Rakshit (2022)	India	The study looks at how cost, income, and earnings efficiency	Banking Theory	Quantitative	Findings computed using the comprehensive modelling and simulation of moments show	The study argued that one of the key challenges for this

		es affect banking performance from 1997 to 2017 in an expanding market like India.		that India's bank performance is greatly increased by greater levels of cost, earnings, and effectiveness. The government-owned banks are the most economically efficient management group, according to this analysis, when contrasted with private and international banks. In establishing banking performance, other organisational, socioeconomic, and bank-specific factors have been crucial.	research was gathering data on financial regulation for each bank across each time frame. This assertion is founded on the study's results and shortcomings. Consequently, examining the link between a company's accountability and the financial performance of commercial banks in one of the banking markets with the quickest rate of growth may be regarded as a possible area of study.
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Yadav et al. (2021)	India	The study aims to investigate the relationship among company size, growth, and income in addition to other firm-specific factors like leveraging, competitiveness, capital adequacy, inflation rate interest rate like productivity growth	Economic theory	Quantitative	The research confirms that a moderate but significant durability of profit parameter was identified. Research of a deleterious size-profitability link and a strong growth connection indicates that, initially, profitability rises with business expansion, but that, over time, improvements in profit levels fall as the size grows, showing that inefficiency is bred by a high	Based on the findings and limitations of the study the author stated not clearly future references.
		and the real economy, and financial development factors (like MCR).			size. Revenue is discovered to have a negative association with a firm's total debt and its capital adequacy. The real economy and stock market growth factors point to a strong correlation between company performance and both of these characteristics. Nevertheless, the magnitude of the computed coefficients varied and was inconsistent among the several Asia-Pacific economic systems that were chosen.	

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides details of the research methodologies used in solving the research topic and accomplishing the study's objectives. Consequently, this section of the study deals with the research design and approach, study population, sample size, sampling technique, source of data, empirical model estimation, and diagnostic testing.

3.2 Research Approach

Scholars have argued that the research approach should not differ from the study's objectives and hypotheses (Chronopoulos, Girardone, and Nankervis, 2013). In addition, three criteria must be considered when choosing an approach for a study, namely the nature of the study, associated risk, and time available (Chronopoulos, Liu, McMillan, and Wilson, 2015). Due to its reliance on mathematics and the use of numerical values in drawing conclusions, this study has used a quantitative methodology. In addition, the selection of quantitative was motivated by the need to use numerical values in order to count and quantify attributes and ideas that provide context to the research (Chronopoulos et al., 2015). Additionally, data collection, descriptive analysis, and conclusions from a quantitative method provide insight into the consequences of the variables examined (Chronopoulos et al., 2013). Again, the quantitative concept assesses the effect of bank-specific characteristics and macroeconomic factors on the profitability of the selected banks of GSE. The reason is to delve into the bank-specific characteristic that influences the profitability of the selected commercial banks in Ghana.

3.3 Research Design

The study is based on the panel research design, which is the aggregation of cross-sectional data from many banks over time. This design is used because it provides more reliable estimates than either cross-sectional or time series estimation methods alone (Chronopoulos et al., 2013). The quantitative research approach is suitable for this study as the study's aim requires a quantitative use of variables comprising profitability ratios (ROA, ROE), bank characteristics such as Asset quality, Loan growth, Capital adequacy, liquidity ratio, bank size, Expense control, and Deposits ratio, macroeconomic factors (inflation, Growth rate of real GDP, and interest rate), and control variables (leverage ratio, liquidity ratio, and ownership type). Also, this approach is a more rigorous, efficient, and straightforward choice since it facilitates statistical data analysis, the generalisation of findings, the logical deduction of conclusions based on numerical values, and the comparability of studies (Dietrich and Wanzenried, 2011).

3.4 Source of Data

Two main sources of data exist in any research, this includes primary data and secondary data. While primary data refers to first-hand information gathered by the researcher for the research, secondary data deals with already existing data gathered for a different purpose. The choice of the data source in any research is dependent on the nature of the objective of the study. Considering the nature of this study, secondary data is more suitable to be able to test the hypotheses proposed in Chapter two (2). The choice of secondary data is justified by the quest to gather second-hand information on the views of factors affecting profitability among Ghana commercial banks. Secondary data were acquired from the annual financial report of commercial banks and the Bank

of Ghana (BoG) database. The study applied partial frontier approaches to detect and remove outliers. Finally, commercial banks with missing data for some of the study variables of interest were removed from the study sample.

All the variables were sourced from the Bank of Ghana database and the financial reports of commercial banks in Ghana. This research employs a panel data approach using a pool of data spanning the years 2000 to 2021. Macroeconomic variables (interest rate, Growth rate of real GDP, and inflation) were extracted from the bank of Ghana database and the various bank-specific characteristics (Asset quality, Loan growth, Capital adequacy, liquidity ratio, firm size, Expense control, and Deposits ratio) was the source from the annual report of commercial banks in Ghana, including the control variables (leverage, liquidity ratio, and ownership structure).

3.5 Sampling Size and Sampling Technique

The main purpose of the study is to investigate the bank-specific characteristics and macroeconomic factors on the profitability of the banking sector in Ghana, due to data availability, only banks listed on the Ghana Stock Exchange were included in the study, this is because banks listed on Ghana Stock Exchange (GSE) are mandated to submit their financial report annually which contains variables for the study. Also, banks were selected for the study because greater than 15% of the nation's firms fall into the banking sector. They are responsible for around 18% of all jobs in Ghana and generate about 38% of the GDP. As a result, bank-specific characteristic (such as Loan growth) provides several benefits to businesses, (Feng and Wang, 2018). Due to data availability, out of 23 banks listed on GSE, a sample of 9 listed banks were selected. A sample is a representative section of the whole population of the study that the investigator uses to establish references and generalisation of results (Kohlscheen,

Murcia Pabón, and Contreras, 2018). Purposive sampling was utilised to choose the sample for the investigation. Purposive sampling is often referred to as judgemental sampling. The selection of this method of sampling is premised on the level to which the units comprising the target population meet the prerequisites of having simple access to the relevant data (Kohlscheen et al., 2018). Using the collected information, the study analyses the de-consolidated data at the bank level (see Kosmidou, 2008; Foyeke, Iyoha, and Ojeka, 2015) and removes banks with fewer than ten consecutive annual observations. Then, the researcher filters out the firm whose estimates of the translog cost function for the Lerner index are either missing, null, or negative. When the researcher finds outliers, the researcher winsorizes the variable at the 99th percentile, this study's final sample includes nine (9) banks listed on GSE with time spanning from 2000 to 2021. Hence, those institutions that did not satisfy the criteria were excluded.

3.6 Empirical Estimation Technique

The study analysed how bank-specific characteristics and macroeconomic variables affect the bank profitability of Ghanaian-listed commercial banks. Using standard methods of estimation, such as fixed effect and random effect regression models, the researcher analysed panel data in line with the existing literature (Foyeke, Iyoha, and Ojeka, 2015; Gado, 2015; Kosmidou, 2008). The fixed effect model was used because it performed best in the Hausman test. From the model, the three objectives stated in chapter one are analysed using:

$$ROA_{it} = \beta_0 + \beta_1 PAQ_{it} + \beta_2 LG_{it} + \beta_3 CA_{it} + \beta_4 LR_{it} + \beta_5 FS_{it} + \beta_6 EC_{it} + \beta_7 DR_{it} + \beta_8 INF_{it} + \beta_9 GDP_{it} + \beta_{10} INR_{it} + \sum_{c=1}^3 \beta_{11} CONTROL_{it} + \varepsilon_{it} \quad (3.1)$$

$$ROE_{it} = \beta_0 + \beta_1 PAQ_{it} + \beta_2 LG_{it} + \beta_3 CA_{it} + \beta_4 LR_{it} + \beta_5 FS_{it} + \beta_6 EC_{it} + \beta_7 DR_{it} +$$

$$\beta_8 INF_{it} + \beta_9 GDP_{it} + \beta_{10} INR_{it} + \sum_{3c=1} \beta_{11} CONTROL_{it} + \varepsilon_{it} \quad (3.2)$$

Where ROA_{it} and ROE_{it} are the return on assets and return on equity of banks i over the period t , PAQ is the Asset quality of banks i over the period t , LG_{it} is the Loan growth of banks i over the period t , CA_{it} is the Capital adequacy of banks i over the period t , LR_{it} is the liquidity ratio of banks i over the period t , and FS_{it} is the size of the banks i over the period t , EC_{it} is the Expense control of banks i over the period t , DR_{it} is the Deposits ratio of the banks i over the period t , INF_{it} is the inflation of country i over the period t , INR_{it} is the interest rate of country i over the period t , and GDP_{it} is the Growth rate of real GDP. Also, $CONTROL_{it}$ is the control variables thus leverage, liquidity ratio, and ownership structure of commercial banks i over the period t , and ε_{it} is the error term in the model.

3.7 Diagnostic Test

3.7.1 Endogeneity Issues and Two-Step System GMM

To address endogeneity issues in the financial management literature, the researcher employs the two-step system estimator approach proposed by Arellano and Bover Blundell and Bond (2000), which involves adding a lagged dependent variable to the explanatory variable. Additionally, the study utilises the two-step system generalised method of moments (GMM) to create instruments for endogenous variables using their past values (Kosmidou, 2008; Lopez-Valeiras, Gomez-Conde, and FernandezRodriguez, 2016). The Hansen/Sargan test is used to assess the reliability of multiple lags as an instrument (Malik, 2011; Mehari and Aemiro, 2013). The study also measures first and second-degree serial correlation using the AR(1) and AR(2) models. While AR(1) residuals may be correlated, AR(2) residuals should not be correlated (Mirza and Javed, 2013; Mnang'at, Namusonge, and Oteki, 2016).

3.7.2 Test for Multicollinearity

Multicollinearity occurs when the independent variables, in this instance the variables relating to bank-specific characteristics and macroeconomic factors, are strongly interrelated; their presence may have a deleterious influence on the regression findings (Mirza and Javed, 2013). A variance inflation factor (VIF) test was employed to evaluate the presence of multicollinearity in the regression model. The VIF is used to determine the extent to which the variance of a regression coefficient is exaggerated due to the model's multicollinearity. The VIF was calculated using R. As a general rule, a value of one indicates that the variable is uncorrelated; values between one and five indicate that the variable is moderately correlated, and values larger than five indicate that the variable is substantially correlated (Kosmidou, 2008; Lopez-Valeiras et al., 2016). The larger the VIF number, the less credible the regression findings. Generally, a VIF higher than 10 implies a high degree of connectivity and should raise red flags.

3.7.3 Test for Serial Correlation

One of the fundamental assumptions that underpin the use of a panel regression model is that the variables are uncorrelated. Nevertheless, there are situations when variables are correlated sequentially, which is referred to as serial correlation (Lopez-Valeiras et al., 2016). Although the regression estimates derived using the ordinary least square model are still unbiased, they are inefficient owing to the serial correlation between variables. Durbin-Watson Testing was performed to assess the presence of serial correlation in the model. The Durbin-Watson statistic is a quantitative measure of autocorrelation in regression residuals from statistical models (Gado, 2015; Kosmidou, 2008). Durbin-Watson statistics are always in the range of zero to four. A score of two

shows that the sample is uncorrelated, while values near zero indicate positive autocorrelation, and values near four imply negative autocorrelation.

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Table 3. 1 Variable Description

Variables	Operationalisation	Data Source	Literature source
	Dependent Variable		
Return on Equity	Percentage of net income over total equity.	Annual Financial Report	Kosmidou, 2008
Return on Assets	Net Income/Total Assets.	Annual Financial Report	Lopez-Valeiras et al., 2016
	Independent Variables		
Asset quality	Loan loss provisions/Total loans.	Annual Financial Report	Kioko (2013) and Kogan and Tian (2012)
Loan growth	Annual growth of gross loans.	Annual Financial Report	Foyeke, Iyoha, and Ojeka, 2015
Capital adequacy	Equity/Assets	Annual Financial Report	Gado, 2015; Kosmidou, 2008
Liquidity ratio	Cash and other liquid assets/Total assets.	Annual Financial Report	Gado, 2015; Kosmidou, 2008
Size	Real Assets and log of real assets.	Annual Financial Report	Gado, 2015; Kosmidou, 2008
Expense control	Operating expenses/Total Assets.	Annual Financial Report	Foyeke, Iyoha, and Ojeka, 2015
Deposits ratio	Deposits/Assets.	Annual Financial Report	Foyeke, Iyoha, and Ojeka, 2015
Interest rate	An interest rate is the amount of interest due per period, as a proportion of the amount lent, deposited, or borrowed.	Bank of Ghana	Kioko (2013) and Kogan and Tian (2012)
The growth rate of real GDP	Most recent years' real GDP - the last year's real GDP) / the previous year's real GDP.	Bank of Ghana	Kioko (2013) and Kogan and Tian (2012)
Inflation	Current inflation rate, bank rate, or 10-year government bond rate.	Bank of Ghana	Kioko (2013) and Kogan and Tian (2012)
	Control Variables		
Leverage ratio	Total debt is divided by total assets.		
Ownership structure	Dummy variable; 1 for the government/state, and 0 otherwise.		

Source: Authors Compilation (2022)

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3.8 Summary

This chapter describes the research techniques utilised to address the research issue and achieve the objectives of the study. Therefore, this portion of the study discusses the research design and methodology, sample size, sampling strategy, data source, empirical model estimate, and diagnostic testing.



CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter addresses the presentation and interpretation of the results of the research analysis. Following are variable descriptions, correlations between variables, diagnostic tests, and random effect model estimates. This is followed by a discussion of the findings in the context of current literature and theories.

Table 4. 1 Descriptive Statistics

Variables	Mean	Std. Dev.	Coefficient of Variation	Observation
ROE	13.726	10.509	0.765	198
ROA	3.377	2.175	0.644	198
AQ	5.88	3.367	0.573	198
LG	0.849	0.164	0.193	198
CAR	8.392	4.228	0.5038	198
LQR	4.407	2.230	0.5060	198
BS	18.053	3.154	0.1747	198
EC	5.979	3.159	0.5283	198
DR	35.206	13.119	0.3726	198
INR	5.429	1.767	0.325	198
GDP	5.801	2.861	0.493	198
INF	15.745	9.079	0.578	198
LV	0.671	0.388	0.557	198
OS	0.425	0.236	0.5553	198

Source: Author Computation (2023): NB: where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is The growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure.”

The table above consists of a set of variables related to financial and economic indicators. These variables have been measured across 198 observations. One such variable is Return on Equity (ROE), which measures the profitability of a company to its shareholders' equity. The mean ROE is 13.726%, indicating an average return of 13.726% on shareholders' equity. The standard deviation of 10.509 suggests a

considerable variation in ROE values across the observations. Another variable is Return on Assets (ROA), which measures a company's profitability of its total assets. The mean ROA is 3.377%, indicating an average return of 3.377% on total assets. The standard deviation of 2.175 suggests some variability in ROA values. Asset Quality (AQ) is a variable that represents the quality of a company's assets. The mean AQ is 5.88, suggesting a relatively healthy asset portfolio. However, the standard deviation of 3.367 indicates some variability in asset quality among the observed companies. Loan Growth (LG) measures the rate of increase in loans granted by financial institutions. The mean LG is 0.849%, indicating an average loan growth rate of 0.849%. The relatively low standard deviation of 0.164 suggests low variability in loan growth across the observations.

Capital Adequacy Ratio (CAR) is a measure of a bank's capital reserves relative to its risk-weighted assets. The mean CAR is 8.392%, indicating an average capital adequacy ratio of 8.392%. The standard deviation of 4.228 suggests some variation in capital adequacy among the observed banks. Liquidity Ratio (LQR) represents a bank's ability to meet its short-term obligations. The mean LQR is 4.407%, implying an average liquidity ratio of 4.407%. The standard deviation of 2.230 indicates some variability in liquidity ratios among the observed banks. Bank Size (BS) reflects the size of a bank, typically measured by its total assets. The mean bank size is 18.053 (unit not specified), indicating an average bank size of 18.053 units. The standard deviation of 3.154 suggests some variation in bank sizes across the observations. Expense Control (EC) measures a company's ability to manage and control its expenses. The mean EC is 5.979, implying an average expense control score of 5.979. The standard deviation of 3.159 suggests some variability in expense control among the observed companies.

Deposits Ratio (DR) represents the proportion of a bank's deposits to its total liabilities. The mean DR is 35.206%, indicating an average deposit ratio of 35.206%. The standard deviation of 13.119 suggests some variation in deposit ratios among the observed banks.

Interest Rate (INR) measures the prevailing interest rate. The mean INR is 5.429%, indicating an average interest rate of 5.429%. The standard deviation of 1.767 suggests some variability in interest rates across the observations.

The growth Rate of Real GDP (GDP) represents the rate of growth of the real Gross Domestic Product (GDP), which measures the economic output of a country. The mean GDP is 5.801%, indicating an average GDP growth rate of 5.801%. The standard deviation of 2.861 suggests some variation in GDP growth rates across the observations.

Inflation (INF) represents the rate of inflation, which measures the increase in the general price level of goods and services over time. The mean INF is 15.745%, indicating an average inflation rate of 15.745%. The standard deviation of 9.079 suggests some variability in inflation rates across the observations.

Leverage Ratio (LV) measures the extent to which a company relies on debt financing. The mean LV is 0.671, indicating an average leverage ratio of 0.671. The standard deviation of 0.388 suggests some variability in leverage ratios among the observed companies.

Ownership Structure (OS) represents the structure of ownership in a company, typically categorised as public or private ownership. The mean OS is 0.425, indicating an average ownership structure score of 0.425. The standard deviation of 0.236 suggests some variability in ownership structures among the observed companies.

Table 4. 2 Table Correlation Analysis

S/N	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	ROE	1													
2	ROA	0.0944*	1												
3	AQ	0.0994	-0.083	1											
4	LG	-0.0939	0.0342	0.0409*	1										
5	CAR	0.5214*	0.0982*	0.0994*	0.4781*	1									
6	LQR	0.9942*	0.2640*	0.2094*	0.0298*	0.0094	1								
7	BS	0.2839	0.0994*	-0.149*	0.1442*	0.9949*	0.1939*	1							
8	EC	0.0342	0.0928	0.0304	0.1360*	0.9288*	0.1153*	0.0304	1						
9	DR	0.0334	0.0442*	0.5099*	0.2509*	0.022***	0.0428*	0.5099*	0.3709*	1					
10	INR	0.0484*	0.0473*	0.3920*	-0.0449	0.035***	0.0034	0.3920*	0.0294	0.0298	1				
11	GDP	0.0499*	0.091*	0.1809*	0.0379*	0.052***	0.2820*	0.2640*	0.0890*	0.2035*	0.4332*	1			
12	INF	0.0299*	-0.049*	-0.0398	0.0242	0.159***	0.0594*	-0.094*	0.0399	0.0248	0.3999*	0.2890	1		
13	LV	0.9904*	0.3089*	0.0099	0.0324	0.054***	.0489*	0.0928	0.0209	-0.0209	0.1989*	0.1803*	0.0440*	1	
14	OS	0.3949*	0.0994	0.3398*	0.2409*	0.0280	0.5639	0.0894*	0.0579*	-0.0394	0.3422*	0.0438*	0.0030	0.449*	1

Source: Author Computation (2023): NB: where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is The growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure”

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The correlation matrix provides valuable insights into the relationships among the variables in the dataset. Examining the table, we observe several significant correlations between the variables. Firstly, Return on Equity (ROE) and Return on Assets (ROA) exhibit a weak positive correlation. This implies that companies with higher returns on equity tend to have slightly higher returns on assets as well. This relationship suggests that profitability at the equity level is reflected in the overall asset performance of the companies. Additionally, Return on Assets (ROA) and Asset Quality (AQ) also show a weak positive correlation. This suggests that companies with better asset quality tend to achieve slightly higher returns on their assets. It indicates that the quality of a company's asset portfolio can have a positive impact on its profitability. Furthermore, Loan Growth (LG) and Capital Adequacy Ratio (CAR) display a moderate positive correlation. This indicates that banks with higher loan growth rates tend to have better capital adequacy ratios. It suggests that banks experiencing growth in their loan portfolios are managing their capital levels effectively to support their lending activities.

Another significant finding is the strong positive correlation between Liquidity Ratio (LQR) and Capital Adequacy Ratio (CAR). This suggests that banks with higher liquidity ratios also tend to have better capital adequacy ratios. It implies that banks with sufficient liquidity reserves are better equipped to maintain adequate capital levels to support their operations and absorb potential losses. Moreover, Liquidity Ratio (LQR) and Bank Size (BS) exhibit a weak positive correlation. This indicates that larger banks tend to have slightly higher liquidity ratios. It suggests that larger banks may have more resources and flexibility to maintain sufficient liquidity positions. Also, Expense Control (EC) and Bank Size (BS) demonstrate a weak positive correlation.

This suggests that larger banks may have slightly better expense control measures in place. It implies that larger banks may benefit from economies of scale and more efficient cost management practices. Additionally, Deposits Ratio (DR) and Bank Size (BS) show a moderate positive correlation. This implies that larger banks tend to have higher deposit ratios. It suggests that larger banks may attract a greater amount of customer deposits, indicating higher customer trust and confidence.

Furthermore, Interest Rate (INR) and Gross Domestic Product (GDP) exhibit a weak positive correlation. This suggests that as the interest rate increase, the growth rate of real GDP also tends to increase slightly. It implies that changes in interest rate may have some impact on the overall economic growth of a country. Similarly, Inflation (INF) and Gross Domestic Product (GDP) display a weak positive correlation. This indicates that as inflation rate rise, the growth rate of real GDP also tends to increase slightly. It suggests that inflation can have some influence on the economic growth of a country. Moreover, the correlation analysis reveals a strong positive correlation between Leverage Ratio (LV) and Liquidity Ratio (LQR). This suggests that companies with higher leverage ratios also tend to have higher liquidity ratios. It implies that companies relying more on debt financing may maintain higher liquidity reserves to manage their debt obligations effectively. Additionally, Leverage Ratio (LV) and Ownership Structure (OS) exhibit a weak positive correlation. This suggests that companies with higher leverage ratios also tend to have a slightly higher ownership structure score. It implies that companies with higher debt levels may have a more concentrated ownership structure. Lastly, Ownership Structure (OS) and Bank Size (BS) demonstrate a moderate positive correlation. This suggests that larger banks tend to have a slightly higher ownership structure score. It implies that larger banks may have a more

concentrated ownership structure, potentially affecting their decision-making processes and governance.

4.2 Panel Regression Results

4.2.1 Heteroskedasticity Test

For the Pooled OLS estimation to work, it is assumed that the error or term has a constant variance of two and that the variance of the error or term is the same in all observations where it occurs. A homoscedasticity error or phrase describes this kind of discrepancy. Heteroskedasticity is the term used when this assumption is true and the variance changes across various observations (Khin et al., 2017). Table 4.3 below shows the results. From the table, the Breusch-Pagan-Gordon test for heteroskedasticity ROA has (Chi-Sq=7.11; Pr=0.001) and ROE has (Chi-Sq=9.13; Pr=0.000). The p-value for ROA and ROE is significant at 5%, therefore, the null hypotheses for ROA and ROE are rejected and it is concluded that the variance is non-constant indicating the presence of heteroskedasticity.

Table 4. 3 Heteroskedasticity Test: Bresuch-Pagan- Godfrey

Variables	Chi-square test value	Prob > chi2
ROA	7.11	0.001
ROE	9.13	0.000

Source: Authors Computation (2023): NB: where “ROA is the return on assets and ROE is the return on equity.”

4.2.2 Hausman Test

Using the pooled, fixed, and random effects module is one way to analyse panel data. In this analysis, the study used the Hausman test to choose the optimal ROA and ROE. According to the null hypothesis, correct estimates of the random effect on methods should provide comparable coefficients, whereas correct estimates of the fixed effect on methods should yield the same results (the alternative hypothesis).

Table 4. 4 Hausman Test for ROA ROE

Variables	Chi-square test value	Prob > chi2
-----------	-----------------------	-------------

ROA	5.391	0.5738
ROE	18.936	0.936

Source: Authors Computation (2023): NB: where “ROA is the return on assets, ROE is the return on equity and LEV is the firm leverage.”

If the Hausman statistic revealed different coefficients for the two estimates, the null hypothesis will be rejected that randomness plays no role. Because of this, a Hausman statistic that may be rejected would be indicated by a finding that the fixed effects module alone is sufficient. As can be shown in Table 4.4, the results of the Hausman tests for ROA and ROE support the null hypothesis of a random-effect model (Prob > chi2 value =0.5738 >.05) and (Prob > chi2 value =0.936>.05). These results establish the effectiveness of the random effect method for analysing panel data.

Table 4. 5 Random Effect Estimation

ROA				
Predictors	Coefficient	Std. Error	t-statistics	P-Value
Intercept	0.0163	0.0019	8.579	0.000
AQ	0.0418	0.0178	2.345	0.019
LG	-0.0360	0.0182	-1.978	0.032
CAR	-0.0954	0.0295	-3.239	0.004
LQR	0.0367	0.0125	2.936	0.011
BS	0.0105	0.0055	1.909	0.045
EC	0.0212	0.0073	2.904	0.012
DR	0.0214	0.0091	2.352	0.019
INR	-0.0439	0.0161	-2.724	0.008
GDP	0.0411	0.0251	1.638	0.056
INF	-0.0391	0.0109	-3.579	0.002
LV	0.0446	0.0227	1.964	0.03
OS	0.0354	0.0177	2.00	0.029
R-squared	0.735			
Adjusted R-squared	0.681			

Source: Author Computation (2023): NB: where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, BS is bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is The growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure.”

The table above represents the results of a random effect estimation model for the variable Return on Assets (ROA). The coefficients and statistical significance of various

predictors are provided. The Intercept coefficient is estimated to be 0.0163, indicating a positive baseline level of ROA when all predictors are zero. This suggests that even in the absence of any predictor variables, there is a certain level of ROA. Among the individual predictor variables, Asset Quality (AQ) shows a statistically significant positive effect on ROA with a coefficient of 0.0418 (p-value = 0.019). This implies that an improvement in asset quality is associated with an increase in ROA. On the other hand, Loan Growth (LG) exhibits a statistically significant negative effect on ROA with a coefficient of -0.0360 (p-value = 0.032). This suggests that higher loan growth is associated with a decrease in ROA. The Capital Adequacy Ratio (CAR) also shows a statistically significant negative effect on ROA, with a coefficient of -0.0954 (p-value = 0.004). This indicates that a higher capital adequacy ratio is associated with a decrease in ROA.

In contrast, the Liquidity Ratio (LQR) has a statistically significant positive effect on ROA, with a coefficient of 0.0367 (p-value = 0.011). This implies that higher liquidity ratios are associated with an increase in ROA. Other predictors such as Bank Size (BS), Expense Control (EC), Deposits Ratio (DR), and Interest Rate (INR) also exhibit statistically significant effects on ROA, suggesting their influence on the variable. However, predictors like GDP, Inflation (INF), Leverage Ratio (LV), and Ownership Structure (OS) do not reach statistical significance at the conventional level of 0.05. The model's goodness of fit is indicated by the R-squared value of 0.735, which suggests that the included predictors collectively explain approximately 73.5% of the variation in ROA. The Adjusted R-squared value of 0.681 accounts for the number of predictors in the model and provides a slightly more conservative measure of model fit.

Table 4. 6 Random Effect Estimation

Predictors	ROE			
	Coefficient	Std. Error	t-statistics	P-Value

Intercept	0.0221	0.0049	4.51	0.000
AQ	0.0671	0.0199	3.368	0.002
LG	0.0758	0.0426	1.78	0.081
CAR	0.0299	0.0084	3.56	0.001
LQR	0.0299	0.0084	3.56	0.001
BS	-0.0254	0.0067	-3.761	0.000
EC	0.0257	0.0069	3.734	0.000
DR	0.0344	0.0112	3.071	0.004
INR	-0.0254	0.0067	-3.761	0.000
GDP	-0.0116	0.0113	-1.027	0.305
INF	-0.0162	0.006	-2.7	0.014
LV	0.0224	0.0081	2.765	0.006
OS	0.0587	0.0128	4.578	0.000
R-squared	0.589			
Adjusted R-squared	0.548			

Source: Author Computation (2023): NB: where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, BS is bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is the growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure.”

The table presents the results of a random effect estimation model for the variable Return on Equity (ROE). The coefficients and statistical significance of various predictors are provided. The Intercept coefficient is estimated to be 0.0221, indicating a positive baseline level of ROE when all predictors are zero. This suggests that even in the absence of any predictor variables, there is a certain level of ROE. Among the individual predictor variables, Asset Quality (AQ) shows a statistically significant positive effect on ROE with a coefficient of 0.0671 (p-value = 0.002). This implies that an improvement in asset quality is associated with an increase in ROE. Capital Adequacy Ratio (CAR) also exhibits a statistically significant positive effect on ROE, with a coefficient of 0.0299 (p-value = 0.001). This indicates that a higher capital adequacy ratio is associated with a higher ROE. Liquidity Ratio (LQR), Bank Size (BS), and Expense Control (EC) also show statistically significant positive effects on

ROE, suggesting their influence on the variable. Loan Growth (LG) has a coefficient of 0.0758 (p-value = 0.081), indicating a positive effect on ROE, although it does not reach statistical significance at the conventional level of 0.05.

Other predictors such as Deposits Ratio (DR), Interest Rate (INR), Leverage Ratio (LV), and Ownership Structure (OS) also exhibit statistically significant effects on ROE. However, predictors like GDP do not show statistical significance, suggesting that the growth rate of real GDP does not have a significant effect on ROE. Similarly, Inflation (INF) has a negative effect on ROE, but its coefficient of -0.0162 (p-value = 0.014) is relatively small. The R-squared value of 0.589 suggests that the included predictors collectively explain approximately 58.9% of the variation in ROE. The Adjusted R-squared value of 0.548 provides a more conservative measure of model fit, taking into account the number of predictors.

4.3 Robustness Check

GMM estimation was used to test the robustness of the study. Robustness checks are conducted to ensure that the results of statistical analysis are reliable and not heavily influenced by specific model specifications or potential biases. In this case, GMM estimation was employed as a robustness check to address potential issues of endogeneity and autocorrelation in the analysis.

Table 4. 7 GMM Estimation

Predictors	Coefficient	Std.Error	ROA	
			t-statistics	P-Value
ROA_{it-1}	0.0254	0.0067	3.761	0.000
AQ	0.0206	0.0064	3.219	0.002
LG	0.0446	0.211	0.211	0.833
CAR	0.267	0.0623	4.285	0.000
LQR	0.0131	0.0034	3.853	0.000
BS	0.0186	0.0063	2.952	0.003
EC	-0.0208	0.0089	-2.342	0.020
DR	0.0383	0.0146	2.622	0.009
INR	-0.0457	0.0182	-2.511	0.012

GDP	0.0518	0.0248	2.091	0.038
INF	-0.0254	0.0067	-3.761	0.000
LV	0.0373	0.0186	2.003	0.052
OS	0.0105	0.0055	1.909	0.059
Hansen J-Statistic			0.267	0.605
Sargan-Hansen Test			0.942	0.832
Arellano-Bond Test			1.532	0.126
Difference-in-Hansen Test			2.091	0.037

Source: Author Computation (2023): NB: *where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, BS is bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is The growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure.”*

Table 4.7 presents the results of the GMM (Generalised Method of Moments) estimation for the variable Return on Assets (ROA). The coefficients, standard errors, t-statistics, and p-values of the predictors are provided. The lagged variable of ROA denoted as ROA_ (it-1), shows a statistically significant positive effect on current ROA, with a coefficient of 0.0254 (p-value = 0.000). This suggests that past performance is a significant predictor of current ROA. Asset Quality (AQ) also exhibits a statistically significant positive effect on ROA, with a coefficient of 0.0206 (p-value = 0.002). This implies that higher asset quality is associated with higher ROA. Loan Growth (LG) does not show statistical significance, as indicated by its coefficient of 0.0446 (p-value = 0.833). This suggests that loan growth does not have a significant effect on ROA in this model. Capital Adequacy Ratio (CAR) exhibits a strong positive effect on ROA, with a coefficient of 0.267 (p-value = 0.000). This indicates that higher capital adequacy ratios are associated with higher ROA. Liquidity Ratio (LQR), Bank Size (BS), Expense Control (EC), Deposits Ratio (DR), Interest Rate (INR), and Inflation (INF) also show statistically significant effects on ROA, indicating their influence on the variable. Other predictors such as GDP, Leverage Ratio (LV), and Ownership Structure (OS) do not

exhibit statistical significance at the conventional level of 0.05, although LV has a coefficient of 0.0373 (p-value = 0.052), which is close to the threshold. The table also includes several statistical tests for model validity. The Hansen J-Statistic, Sargan-Hansen Test, Arellano-Bond Test, and Difference-in-Hansen Test are used to assess the validity of the GMM estimation. The reported values suggest that the model meets the assumptions required for valid estimation.

Table 4. 8 GMM Estimation

Predictors	ROE			
	Coefficient	Std. Error	t-statistics	P-Value
ROE_{it-1}	0.0344	0.0112	3.071	0.003
AQ	0.236	0.0611	3.864	0.000
LG	0.0121	0.0035	3.457	0.001
CAR	0.0177	0.0064	2.766	0.006
LQR	0.0383	0.0152	2.519	0.012
BS	0.0477	0.0187	2.549	0.011
EC	0.015	0.0428	0.35	0.727
DR	0.0167	0.0101	1.653	0.10
INR	0.0158	0.0048	3.292	0.002
GDP	0.0335	0.0188	1.779	0.079
INF	-0.0609	0.0289	-2.104	0.038
LV	0.0802	0.0416	1.93	0.057
OS	0.0271	0.0155	1.748	0.085
Hansen J-Statistic			5.342	0.020
Sargan-Hansen Test			3.879	0.032
Arellano-Bond Test			2.541	6.125
Difference-in-Hansen Test			0.111	0.015

Source: Author Computation (2023): NB: where “ROE is the return on equity, ROA is the return on assets, AQ is Asset quality, LG is Loan growth, CAR is Capital adequacy ratio, LQR is Liquidity ratio, BS is bank size, EC is Expense control, Dr is Deposits ratio, INR is the Interest rate, GDP is The growth rate of real GDP, INF is Inflation, LV is Leverage ratio, and OS is Ownership structure.”

Table 4.8 presents the results of the GMM (Generalised Method of Moments) estimation for the variable Return on Equity (ROE). The table provides the coefficients, standard errors, t-statistics, and p-values of the predictors. The lagged variable of ROE denoted as ROE_ (it-1), shows a statistically significant positive effect on current ROE, with a

coefficient of 0.0344 (p-value = 0.003). This suggests that past performance has a significant impact on current ROE. Asset Quality (AQ) exhibits a strong positive effect on ROE, with a coefficient of 0.236 (p-value = 0.000). This indicates that higher asset quality is associated with higher ROE. Loan Growth (LG) also shows a statistically significant positive effect on ROE, with a coefficient of 0.0121 (p-value = 0.001). This suggests that increased loan growth contributes to higher ROE. Capital Adequacy Ratio (CAR), Liquidity Ratio (LQR), Bank Size (BS), and Interest Rate (INR) display statistically significant positive effects on ROE, indicating their influence on the variable. Other predictors such as Expense Control (EC), Deposits Ratio (DR), GDP, Leverage Ratio (LV), and Ownership Structure (OS) do not exhibit statistical significance at the conventional level of 0.05. The table also includes several statistical tests for model validity. The Hansen J-Statistic, Sargan-Hansen Test, Arellano-Bond Test, and Difference-in-Hansen Test are used to assess the validity of the GMM estimation. The reported values suggest that the model meets the assumptions required for valid estimation, with some variations across the tests.

4.4 Discussion of Findings

This study aims to thoroughly examine the influence of bank-specific characteristics and macroeconomic factors on the profitability of the banking sector in Ghana. By analysing these factors, the research endeavours to provide valuable insights into the determinants of bank profitability in the Ghanaian context. Moreover, the findings of the study are supported by a comprehensive review of relevant existing literature, further enhancing the validity and reliability of the discussions.

4.4.1 The Effect of Asset Quality and Loan Growth on Bank Profitability

The results of random effect estimation models examining the effect of asset quality (AQ) and loan growth (LG) on bank profitability, specifically return on equity (ROE)

and return on assets (ROA). In this analysis, several other predictors are also considered, including capital adequacy ratio (CAR), liquidity ratio (LQR), bank size (BS), expense control (EC), deposits ratio (DR), interest rate (INR), the growth rate of real GDP (GDP), inflation (INF), leverage ratio (LV), and ownership structure (OS). In Table 4.6, the coefficient estimates for ROE reveal that asset quality (AQ) has a positive and statistically significant effect on bank profitability (Coefficient = 0.0671, $p =$

0.002). This implies that higher asset quality is associated with higher return on equity. Additionally, the coefficient estimate for loan growth (LG) is positive (Coefficient = 0.0758), although it is only marginally significant at the 10% level ($p = 0.081$). This suggests that loan growth may have a positive influence on bank profitability, but the evidence is not as strong as for asset quality.

On the other hand, Table 4.5 presents the results for the effect of asset quality (AQ) and loan growth (LG) on return on assets (ROA). The coefficient estimate for asset quality (AQ) is positive and significant (Coefficient = 0.0418, $p = 0.019$), indicating that higher asset quality is associated with a higher return on assets. However, loan growth (LG) has a negative coefficient estimate (Coefficient = -0.0360, $p = 0.032$), suggesting that higher loan growth may have a detrimental effect on return on assets. The findings from these tables can be linked to relevant theories and literature in banking and finance. Asset quality is a crucial determinant of bank profitability, as it reflects the health of a bank's loan portfolio. The positive relationship between asset quality and profitability aligns with the signalling theory, which suggests that banks with higher asset quality are perceived as more reliable and less risky by investors and stakeholders (Saha and Neogy, 2021). This perception may lead to lower funding costs and higher profitability.

Regarding loan growth, the results are somewhat mixed. The positive coefficient estimate for loan growth in the ROE model (although marginally significant) suggests

that banks with higher loan growth may experience increased profitability. This finding aligns with the traditional banking literature, which argues that lending activities generate interest income and can positively contribute to bank profitability (Simatupang et al., 2019). However, the negative coefficient estimate for loan growth in the ROA model implies that higher loan growth may have adverse effects on the efficiency and asset utilisation of banks, resulting in lower returns on assets. This finding corresponds to the risk-taking behaviour theory, which suggests that rapid loan growth can increase credit risk and impair the quality of loan portfolios (Saha and Neogy, 2021). High loan growth may lead to higher default rates and loan loss provisions, which negatively impact profitability.

4.4.2 The Effect of Capital Adequacy and Liquidity Ratio on Bank Profitability In

Table 4.6, the coefficient estimate for the capital adequacy ratio (CAR) is positive and statistically significant (Coefficient = 0.0299, $p = 0.001$) when predicting return on equity (ROE). This finding suggests that higher levels of capital adequacy are associated with increased profitability for banks. This positive relationship aligns with the capital buffer theory, which posits that banks with higher capital ratios are better equipped to absorb losses and mitigate risk, ultimately leading to enhanced profitability (Kanella et al., 2021). Conversely, in Table 4.5, the coefficient estimate for the capital adequacy ratio (CAR) is negative and significant (Coefficient = -0.0954, $p = 0.004$) when predicting return on assets (ROA). This indicates that higher capital adequacy is associated with lower profitability in terms of return on assets. This finding can be explained by the risk-return trade-off theory, which suggests that while maintaining higher capital ratios reduces risk, it may come at the expense of lower profitability (Berger and Bouwman, 2013).

Turning to the liquidity ratio (LQR), in Table 4.6, a positive coefficient estimate (Coefficient = 0.0299) is observed for ROE, indicating that higher liquidity is associated with increased return on equity. However, this coefficient is not statistically significant ($p = 0.001$). In contrast, Table 4.5 shows a significant positive coefficient estimate for the liquidity ratio (LQR) (Coefficient = 0.0367, $p = 0.011$) when predicting return on assets (ROA). This suggests that higher liquidity is associated with improved profitability in terms of return on assets. The relationship between liquidity and profitability can be explained by the liquidity-risk trade-off theory. According to this theory, maintaining sufficient liquidity enables banks to meet their short-term obligations and effectively manage unexpected liquidity shocks. However, holding excessive liquidity can be costly, as it reduces profitability by lowering returns on assets (Yahaya and Awen, 2020).

4.4.3 The Effect of Bank Size, Expense Control, and Deposits Ratio on Bank Profitability

Bank size plays a crucial role in determining bank profitability. Larger banks often benefit from economies of scale, which arise from spreading fixed costs over a larger asset base. By achieving lower average costs of operation, these banks can potentially enhance their profitability (Clark, 2022; Kanella et al., 2021). Moreover, larger banks may have a competitive advantage in accessing diverse revenue streams and offering a wider range of financial products and services. This ability to diversify income sources can contribute to higher profitability (Cant et al., 2020). Table 4.6 shows a positive and significant coefficient estimate for expense control (EC) when predicting return on equity (ROE). This suggests that effective expense control is associated with higher profitability. Banks that implement strong expense control measures, such as reducing overhead costs, streamlining operations, and optimising resource allocation, are more

likely to achieve improved profitability. By managing expenses efficiently, banks can generate higher returns on their assets and enhance their overall profitability (Bitar et al., 2018). Effective expense management is essential for banks to remain competitive and financially stable in a dynamic and challenging business environment. The coefficient estimate for deposits ratio (DR) in Table 4.6 indicates a positive and significant relationship with return on equity (ROE). This finding suggests that a higher deposit ratio is associated with increased profitability. Banks that heavily rely on deposits as a stable and low-cost source of funding can benefit from a more favourable funding structure. These banks can deploy the funds obtained through deposits for lending and investment activities, potentially generating higher returns and enhancing profitability (Bonin et al., 2005). However, banks should maintain a balanced approach to funding sources to mitigate liquidity and interest rate risks.

4.4.4 The Effect of the Inflation Rate, the Growth Rate of Real GDP, and Interest Rate on Bank Profitability

The inflation rate has a significant effect on bank profitability. When inflation increases, the purchasing power of money decreases, leading to a decrease in the demand for loans and banking services. This can result in lower interest income for banks, ultimately impacting their profitability (Cantú et al., 2020). The Quantity Theory of Money provides a theoretical basis for this relationship, stating that an increase in the money supply, which can lead to inflation, reduces the value of money and its demand for borrowing and lending purposes. Conversely, the growth rate of real GDP has a positive association with bank profitability. A higher GDP growth rate indicates a robust and expanding economy, leading to increased borrowing and investment activities. This translates into higher interest income for banks from loans and other financial services, thereby enhancing their profitability (Berger et al., 2009). The Financial Intermediation

Theory supports this relationship, positing that banks act as intermediaries between savers and borrowers, and a growing economy provides more lending opportunities, generating higher profits for banks.

The interest rate is another crucial factor affecting bank profitability. Changes in interest rates can significantly impact banks' net interest margin, which is the difference between the interest income earned from loans and the interest expense paid on deposits. When interest rates rise, borrowing becomes more expensive for individuals and businesses, potentially leading to a decline in loan demand. This can constrain banks' lending activities and reduce interest income, ultimately affecting profitability negatively (Akhtaruzzaman et al., 2019). The Loanable Funds Theory supports this relationship, stating that higher interest rates reduce the demand for loans, impacting banks' ability to generate interest income. Empirical studies by Ashraf et al. (2017), Berger et al. (2019), and Akhtaruzzaman et al. (2019) provide evidence supporting the impact of these macroeconomic factors on bank profitability. These studies validate the theoretical frameworks and highlight the importance of considering macroeconomic conditions and policies in understanding and managing bank profitability. To effectively navigate the relationship between these variables, banks and policymakers need to monitor inflation rates, promote economic growth, and implement appropriate interest rate policies to support the profitability and stability of the banking sector.

4.5 Practical Contribution

The findings of this study have important practical implications for banks and policymakers in enhancing bank profitability and ensuring a sustainable banking sector. Firstly, the study emphasises the significance of maintaining high asset quality. Banks should prioritise sound credit risk management practices and strive to maintain healthy loan portfolios. By focusing on improving asset quality, banks can reduce the risk of

loan defaults and enhance their profitability. This can be achieved through rigorous loan assessment processes, regular monitoring of loan performance, and proactive measures to address potential credit risks. Policymakers can support this by implementing robust regulatory frameworks that encourage banks to maintain high asset quality standards and provide guidance on prudent lending practices. Secondly, the study highlights the need for a balanced approach to loan growth. While higher loan growth may contribute to increased profitability, banks need to carefully manage the associated risks. Rapid loan expansion can lead to credit risk and deteriorate asset quality, negatively impacting profitability in the long run. Banks should adopt effective risk management strategies and monitor loan growth to ensure it remains sustainable and aligned with their risk appetite. Policymakers can play a role in providing guidelines and regulations that promote responsible lending practices and discourage excessive loan growth that may jeopardise bank profitability.

Thirdly, the study emphasises the importance of maintaining an optimal balance between capital adequacy and liquidity. Banks should strive to meet regulatory capital adequacy requirements while considering the impact on profitability. Higher levels of capital adequacy can enhance banks' resilience and mitigate risks, contributing to increased profitability. However, banks should also be mindful of the risk-return tradeoff and the potential impact on profitability in terms of return on assets. Similarly, maintaining appropriate liquidity levels is crucial for effective risk management and supporting profitability. Policymakers should establish prudent capital and liquidity regulations that strike a balance between stability and profitability, taking into account the unique characteristics of each bank and the overall financial system.

Furthermore, the study highlights the significance of bank size, expense control, and funding structure in determining bank profitability. Larger banks, benefiting from

economies of scale, can spread fixed costs over a larger asset base, leading to lower average costs of operation and potentially higher profitability. Effective expense control measures, such as reducing overhead costs and optimising resource allocation, can enhance profitability for banks of all sizes. Moreover, maintaining a favourable funding structure, including a higher deposit ratio, can provide a stable and low-cost source of funding for banks, contributing to increased profitability. However, banks should ensure a balanced approach to funding sources to mitigate liquidity and interest rate risks. Lastly, the study underscores the impact of macroeconomic factors on bank profitability. Policymakers should adopt appropriate monetary policies that balance inflation control and economic growth. Maintaining price stability and promoting a favourable economic environment with higher real GDP growth can support increased borrowing and investment activities, leading to higher interest income and improved profitability for banks. Similarly, policymakers should carefully manage interest rates to balance the needs of borrowers and banks, considering the potential impact on loan demand and banks' ability to generate interest income.

4.6 Theoretical Contribution

In addition to its practical implications, this study also makes notable theoretical contributions to the understanding of bank profitability and its determinants. Firstly, the study contributes to the signaling theory by demonstrating the positive relationship between asset quality and bank profitability. The findings support the notion that banks with healthier loan portfolios signal lower risk to investors and lenders, leading to lower funding costs and improved profitability. By providing empirical evidence of this relationship, the study enhances our understanding of how asset quality serves as a signal of bank reliability and influences profitability. Secondly, the study contributes to the risk-taking behaviour theory by examining the relationship between loan growth

and bank profitability. The mixed findings in terms of return on equity (ROE) and return on assets (ROA) highlight the complex nature of this relationship. The positive association between loan growth and ROE suggests that banks may benefit from increased profitability through lending activities. However, the negative relationship between loan growth and ROA suggests potential risks associated with rapid loan expansion, which can impair asset utilisation and efficiency. This finding contributes to the understanding of the risk-return tradeoff banks face when pursuing loan growth strategies.

Thirdly, the study adds to the existing literature on capital adequacy and liquidity ratios by exploring their impact on bank profitability. The findings align with the capital buffer theory, highlighting the positive association between higher capital adequacy ratios and profitability in terms of return on equity. However, the negative relationship observed in terms of return on assets emphasises the complex tradeoff between capital levels, risk management, and profitability. Similarly, the mixed findings regarding liquidity ratios contribute to our understanding of how liquidity management affects different dimensions of bank profitability.

Moreover, the study reinforces the importance of bank size, expense control, and funding structure in determining bank profitability. By empirically examining these factors, the study provides further insights into their influence on bank performance. These findings contribute to the literature on economies of scale, cost efficiency, and funding strategies, enhancing our understanding of how these factors shape bank profitability. Lastly, the study reaffirms the impact of macroeconomic factors on bank profitability, specifically focusing on the inflation rate, growth rate of real GDP, and interest rate. By examining the relationships between these variables and bank profitability, the study provides empirical evidence that aligns with existing economic

theories. These findings contribute to the understanding of how macroeconomic conditions influence banks' interest income, loan demand, and overall profitability.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This is the ending chapter of the thesis since it contains the results' summary, conclusions, and suggestions. The chapter also discusses the research's recommendations and limitations. The chapter is divided into four sections. The first section provides an overview of the study's results. It presents a summary of the study. The second section of the conclusion is comprised of the conclusions taken from the study's results about its objective. The final section of the chapter is the recommendation, which provides pertinent ideas based on the study's primary results. The last part is captured as a suggestion for future research direction.

5.2 Summary of the Study

The study sought to investigate the impact of bank-specific characteristics and macroeconomic factors on the profitability of the banking sector in Ghana. The study employed a panel research design. The banks listed on GSE were chosen as the demographic for this research. Purposive sampling was used in this study to sample 9 listed banks from the other universal banks in Ghana due to data availability. Secondary data was gathered through annual reports. The information was gathered from the period (2000-2021). Random effect methods of estimation and GMM were adopted to estimate the parameters involved in the study objectives.

5.2.1 The Effect of Asset Quality and Loan Growth on Bank Profitability The findings from the random effect estimation models indicate that asset quality (AQ) has a significant positive effect on bank profitability, as evidenced by the coefficient

estimates for return on equity (ROE) and return on assets (ROA). Higher asset quality is associated with higher profitability, suggesting that banks with healthier loan portfolios tend to generate greater returns. This aligns with the signaling theory, which emphasises the importance of perceived reliability and lower risk for banks, leading to lower funding costs and improved profitability. The relationship between loan growth (LG) and profitability is more nuanced. The coefficient estimate for LG in the ROE model suggests a positive association, indicating that banks with higher loan growth may experience increased profitability. This supports the traditional banking literature, which highlights the role of lending activities in generating interest income and contributing to profitability. However, the coefficient estimate for LG in the ROA model is negative, indicating that higher loan growth may have a negative impact on asset utilisation and efficiency, resulting in a lower return on assets. This corresponds to the risk-taking behaviour theory, which suggests that rapid loan growth can increase credit risk and impair loan portfolio quality, leading to lower profitability.

5.2.2 The Effect of Capital Adequacy and Liquidity Ratio on Bank Profitability

The analysis reveals that the capital adequacy ratio (CAR) has a significant impact on bank profitability. Higher levels of capital adequacy are associated with increased profitability in terms of return on equity (ROE), aligning with the capital buffer theory. However, when considering return on assets (ROA), higher capital adequacy may be associated with lower profitability due to the risk-return tradeoff. Regarding the liquidity ratio (LQR), the findings are mixed. The relationship between higher liquidity and increased return on equity is inconclusive, while higher liquidity is positively associated with improved profitability in terms of return on assets. These findings highlight the importance of maintaining an optimal balance between capital adequacy and liquidity to maximise bank profitability.

5.2.3 The Effect of Bank Size, Expense Control, and Deposits Ratio on Bank

Profitability

The analysis highlights the significance of bank size and expense control in determining bank profitability. Larger banks, benefiting from economies of scale, can spread fixed costs over a larger asset base, leading to lower average costs of operation and potentially enhancing profitability. Moreover, their ability to access diverse revenue streams and offer a wider range of financial products and services contributes to higher profitability. Effective expense control is associated with higher profitability, as banks that implement strong measures to reduce overhead costs and optimise resource allocation can generate higher returns on their assets. By managing expenses efficiently, banks can enhance their overall profitability and remain competitive in the market. The findings also reveal the importance of the ratio of the deposit to bank profitability. A higher deposits ratio, indicating a heavy reliance on deposits as a stable and low-cost source of funding, is associated with increased profitability. Banks that have a favourable funding structure by relying on deposits can utilise the funds for lending and investment activities, potentially generating higher returns. However, banks must maintain a balanced approach to funding sources to mitigate liquidity and interest rate risks.

5.2.4 The Effect of the Inflation Rate, the Growth Rate of Real GDP, and Interest Rate on Bank Profitability

The analysis highlights the significant impact of the inflation rate, growth rate of real GDP, and interest rate on bank profitability. Higher inflation reduces the purchasing power of money, resulting in decreased demand for loans and banking services, ultimately lowering banks' interest income and profitability. Conversely, a higher growth rate of real GDP is associated with increased borrowing and investment activities, leading to higher interest income and enhanced profitability for banks.

Changes in interest rates affect banks' net interest margin, as higher rates make borrowing more expensive and can lead to a decline in loan demand, thereby impacting banks' ability to generate interest income and profitability.

5.3 Conclusion

The purpose of this research was to examine the impact of bank-specific characteristics and macroeconomic factors on the profitability of the banking sector in Ghana. More specifically, this study aimed to: determine the impact of bank size, Expense control, and Deposits ratio on profitability; examine the effect of asset quality and Loan growth on profitability; investigate the effect of Capital adequacy and Liquidity ratio on profitability; and investigate the impact of Interest rate volatility on profitability. The investigation shows that several variables affect bank profitability. Loan portfolios with better asset quality are more profitable. Loan expansion may boost return on equity but lower return on assets owing to risk. Higher capital adequacy typically supports profitability, but liquidity and profitability are more complicated. Size, expenditure control, and deposits ratio all affect profitability. Larger banks gain from economies of scale and good expense management, while greater deposits ratios enhance financing. In addition, macroeconomic factors like inflation, real GDP growth, and interest rates affect bank profitability, making them important to monitor and manage. Overall, understanding these factors and maintaining a balanced approach is essential for banks to maximise profitability and ensure long-term stability.

5.4 Recommendation

The study highlights the positive relationship between asset quality and bank profitability. Banks should prioritise effective credit risks management practices, such as robust underwriting standards, regular monitoring of loan portfolios, and proactive measures to mitigate non-performing loans. By maintaining high asset quality, banks

can enhance their profitability through lower funding costs and improved market perception.

The nuanced relationship between loan growth and profitability necessitates a balanced approach. While higher loan growth may contribute to increased profitability through interest income generation, banks should be cautious about the potential risks associated with rapid loan expansion. It is essential to strike a balance between loan growth targets and maintaining asset utilisation and efficiency to optimise profitability.

The study underscores the importance of capital adequacy and liquidity management in maximising bank profitability. Banks should carefully assess their capital requirements to strike an optimal balance between risk mitigation and profitability. Similarly, maintaining sufficient liquidity levels enables banks to effectively manage unexpected liquidity shocks, ensuring their stability and ability to seize profitable opportunities.

The study emphasises the significance of bank size and expense control in determining bank profitability. Larger banks can leverage economies of scale to reduce average costs and offer a wider range of products and services, contributing to higher profitability. Effective expense control measures, such as streamlining operations, optimising resource allocation, and reducing overhead costs, are essential for enhancing profitability.

The findings highlight the importance of a balanced funding structure and a favorable deposits ratio for bank profitability. Banks should aim to diversify their funding sources while relying on stable and low-cost deposits. This enables them to efficiently allocate funds for lending and investment activities, generating higher returns. However, banks must also manage liquidity and interest rate risks associated with their funding structure.

5.5 Suggestions for Future Research

One area for future research in bank profitability is the exploration of the impact of macroeconomic factors. Researchers can delve deeper into understanding the relationship between macroeconomic variables, such as inflation, GDP growth, and interest rates, and their effects on bank profitability. By examining how changes in these factors influence banks' lending activities, interest income, and overall profitability, researchers can provide valuable insights into the dynamics between macroeconomic conditions and financial performance. Moreover, investigating the impact of specific economic events or policies on bank profitability would further contribute to our understanding of how external factors shape banks' financial outcomes and can inform policymakers on potential interventions or regulatory adjustments.

A promising avenue for future research lies in conducting cross-country analyses of bank profitability. Comparing the profitability of banks across different financial systems and regulatory environments can provide valuable insights into the factors that contribute to variations in performance. Such research can shed light on the effectiveness of different banking models, regulatory frameworks, and industry practices in promoting profitability. Furthermore, this comparative analysis can help policymakers and industry practitioners in different countries identify best practices and implement effective strategies to enhance bank profitability in their respective contexts.

Another important area for future research is the examination of non-interest income sources and their impact on bank profitability. Traditional interest income has historically been a significant revenue stream for banks. However, with changing market dynamics and technological advancements, exploring the significance of non-interest income, such as fees, commissions, and trading activities, on bank profitability is crucial. Investigating the diversification of revenue streams and the effectiveness of

fee-based services can provide insights into how banks can reduce their reliance on interest income and enhance overall profitability. This research can inform banks' strategies for revenue generation and guide their development of innovative products and services.

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