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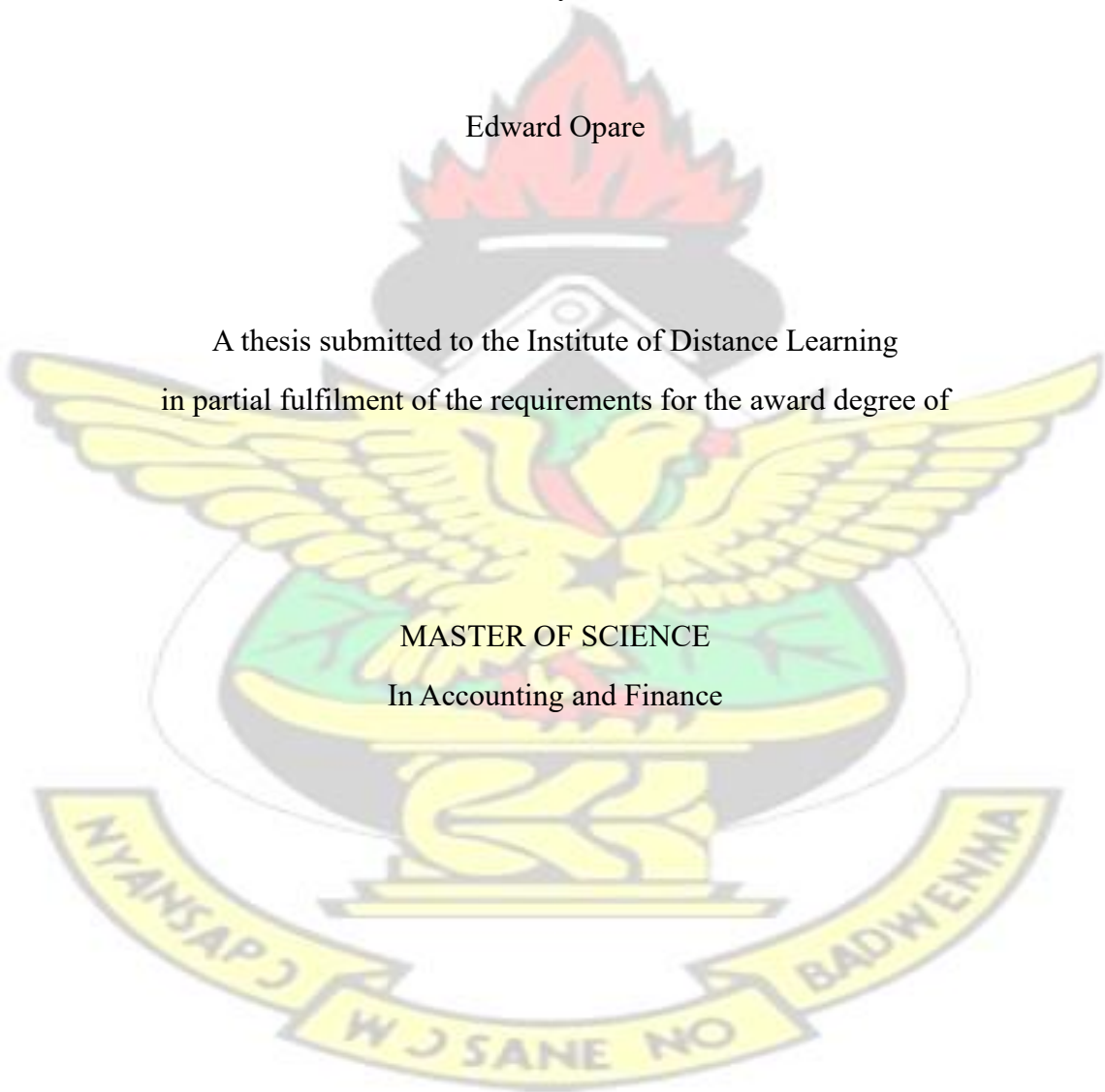
Macro and Micro Determinants Banks' Profitability in Ghana

By

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A thesis submitted to the Institute of Distance Learning  
in partial fulfilment of the requirements for the award degree of

MASTER OF SCIENCE  
In Accounting and Finance



**November, 2023**



## DEDICATION

I wish to dedicate this effort to my close friends, beloved family members, and dear ones whose constant support has been a wellspring of strength during difficult times. May the abundant blessings of the Almighty God keep pouring down upon all of you.

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## ACKNOWLEDGEMENT

I want to express my deep gratitude to my friends and family for their unwavering support and invaluable guidance throughout the duration of this project. I would also like to acknowledge and appreciate all those who have made significant contributions to the content of this research study. Additionally, I extend my heartfelt thanks to my supervisor for their dedicated and friendly guidance, providing invaluable insights, motivation, and constructive feedback throughout this endeavour.



## ABSTRACT

This study aimed to examine the macro and micro determinants of banks' profitability in Ghana. The study utilised secondary data of the individual banks and other economic data gathered from the period beginning from 2017 to 2022. Eight (8) banks who had operated in the Ghanaian banking sector as at 2017 to 2022 were examined. These banks include Access Bank, Agricultural Development Bank of Ghana (ADB), CAL Bank, Ecobank Ghana, Ghana Commercial Bank (GCB), Société Générale Bank, Republic Bank and Standard Chartered Bank. In the study, the Fixed Effect panel data model was employed. The study adopted Return on Assets (ROA) and Return on Equity (ROE) as dependent variables, and Efficiency ratio (EOI), Size, Capital adequacy ratio (CAR), Asset quality (AQ), Net interest income to total assets (NIITA), Gross domestic product (GDP), Inflation (INF) and Money supply (MS) as the independent variables. It was evident that factors such as Efficiency Ratio (EOI), Bank Size, Capital Adequacy Ratio (CAR), Asset Quality (AQ), Net Interest Income to Total Assets (NIITA), Gross Domestic Product (GDP), Inflation (INF), and Money Supply (MS) all play significant impact on Return on Assets (ROA) are key predictors of the profitability of banks. For Return on Equity (ROE), the findings are consistent with many of the ROA determinants. Efficiency Ratio (EOI), Bank Size, CAR, AQ, NIITA, GDP, INF, and MS all demonstrate significant associations with ROE. The study concluded factors such as efficiency, size, capital adequacy, asset quality, net interest income, economic conditions, inflation, liquidity, competition, and regulation are important in shaping the profitability of banks. The study recommended that banks should focus on improving their operational efficiency.

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## LIST OF ABBREVIATIONS

IFRS = International Financial Reporting norms

FIC = Financial Intelligence Centre

ROA = Return on Assets

EOI = Efficiency ratio

Size = Bank's Size

CAR = Capital Adequacy Ratio

AQ = Asset Quality

NIITA = Net Interest Income to Total Assets

GDP = Gross Domestic Product

INF = Inflation

MS = Money Supply

FINSAP = Financial Sector Adjustment effort

NPLs = Non-performing Loans

INFLR = Inflation Rate

INTR = Interest Rate



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the study

For an economy to thrive and grow, a stable financial system is essential. The banking industry is a critical part of every economy's monetary system (Rahmah and Armina, 2020). The banking industry is crucial because it facilitates the transfer of money from savers to those in need of credit. For a country to expand and diversify, the health of the financial system of that country is crucial. In Ghana, the financial sector is dominated by banks. Seventy percent of Ghana's financial industry was handled by banks as of 2008 (Owusu-Antwi, Banerjee and Antwi, 2017). Since a decline in commercial banking would have widespread negative effects on the economy, it is essential to its growth. Many internal and foreign economic events and shocks have led to changes and reorganisation in the banking system in Ghana throughout the years (Ünvan and Yakubu, 2020). The Bank of Ghana has recently taken steps to reduce systemic risk in the banking industry. One of such steps the Bank of Ghana has taken is by adopting International Financial Reporting norms (IFRS) in accordance with international norms (Laryea, Ntow-Gyamfi & Alu, 2016).

Other changes include the Bank of Ghana's mandate that banks recapitalize themselves; the formation of a Financial Intelligence Centre (FIC) to combat illicit financial transactions and prevent the financing of terrorism; and the creation of a Collateral Registry and Credit Reference Bureaus to promote transparency and ease credit accessibility (Laryea et al., 2016). The Bank of Ghana is taking all of these precautions ostensibly to make the financial system safer and more secure. To guarantee the safety and security of every financial system, similar changes are encouraged by more stringent supervisory control (Bunyaminu et al., 2021). The prognosis for Ghana's banking sector

has shifted as a result of recent reforms in the sector. The effectiveness of Ghana's commercial banks is likely to have improved as a result of the aforementioned changes. There is significant pressure on the profitability of banks globally, emphasizing a key performance determinant because of current financial climate. Commercial banks cannot thrive unless they generate a profit (Lyimo and Hussein, 2022).

First, dividends are distributed from earnings (monetary profits), and second, retained earnings are largely derived from dividends. Profits remaining after paying dividends are referred to as retained earnings (Gyimah et al., 2021). These profits form a critical part of a bank's capitalization. This research is important since the banking business accounts for the bulk of the whole financial industry. This may deduce that the whole economy might be severely impacted by problems within the banking sector. Second, the efficiency and effectiveness of banks may change as a result of the reforms Bank of Ghana. Banks' capacity of generating profits is crucial since retained earnings are a major part of bank capitalization, giving them a cushion to weather economic downturns and making them more resistant to outside shocks (Samanyanga, 2018).

Although deposits and branch numbers have increased over the past several years, the banking industry's earnings have been on the decline, as reported by in 2020 (conducted by Price water house Coopers in partnership along with the Ghana Association of Bankers) (Price water house Coopers, 2020). With more money in the bank, they may make more loans, yielding more interest profits. However, industrial loss charge for loan has been rising as asset quality has declined. Some efficiencies, notably economies of scale, are likely to result from the expanded branch network. Because of the inherent danger in this line of work, new entrants may be discouraged from trying their luck (Price water house Coopers, 2020). On the other hand, competition is increasing and earnings are falling. The complexity, increased competition, and increased managerial challenges in the banking

business are all obvious. Managers now face a more complicated, competitive, and difficult environment as they aim at assuring profits growth and achieving efficiency in the context of rapid domestic economic and financial sector changes need up-to-date understanding of all those aspects that impact banking profitability (Price water house Coopers, 2020).

## **1.2 Problem Statement**

Derbali (2019) discovered that as a result of the expanding financial sector, banks in Tunisia are facing stiff competition. It seems that the current performance administration framework is inadequate to fulfil the requirements of financial institutions engaged in strategic development. Commercial bank managers in Ghana need to be familiar with the factors that impact on their profitability because of the industry's diminishing profit, as found by Cheng et al. (2020). Understanding the importance of banks to the growth of any economy is essential. Multiple factors, as noted by Singh (2018), have an impact on the banks' profitability. There multiple factors that influence a bank's profitability and its rate of change in profitability. The administration of the bank has an effect on the internal variables, which are those directly connected to the institution itself. Meanwhile, banks operate in a macro environment, which produces external factors that affects profits.

None of the evaluated studies (see Derbali, 2019; Cheng et al., 2020; Singh,2018) examine thoroughly the macro and micro determinants of banks' profits in Ghana, but they do give a broad overview of the variables impacting bank profitability. It is vital to perform a targeted study that looks at the factors that have an impact on the profitability of commercial banks in the context of Ghana because the economic, regulatory, and competitive landscape can differ greatly from nation to country (Okyerere and Mensah, 2022). There is therefore a need for research that takes into account this unique environment and offers insights useful for the Ghanaian banking industry because of this

gap existing in literature. Therefore, the research seeks to examine the factors that contribute to, or detract from, profitability in Ghana's banking industry.

### **1.3 Objectives of the Study**

The mandate of this study is to examine the macro-economic and micro-economic determinants of commercial bank profitability in Ghana. It outlines certain objectives to be addressed:

1. To examine the trends in profitability of Ghanaian banks.
2. To identify the macro-economic determinants of bank's profitability.
3. To identify the micro-economic determinants of bank's profitability.

### **1.4 Research Questions**

1. What are the trends in profitability of Ghanaian banks?
2. What are the macro-economic determinants of bank's profitability?
3. What are the micro-economic determinants of bank's profitability?

### **1.5 Significance of the Study**

Since the health of the banking industry is directly tied to economic expansion, it is crucial that not only bank executives but also central banks, banker organisations, governments, and other authorities understand the determinants that affect the financial sector's profitability. If regulators and bank executives in Ghana had a better understanding of these issues, they might craft more effective regulations to boost the sector's profitability. The study will not only add to current literature of information on banking, but it will also point researchers in the direction of other areas that require additional research so that more comprehensive studies may be conducted.

## **1.6 Scope of the Study**

Only the key elements that influences commercial banks' profitability of will be evaluated. These include expenditure management, capital sufficiency, liquidity, the condition of assets, size, inflation, GDP, money supply, and banking sector concentration. The profitability of banks is subject to a variety of factors, some of which are beyond the purview of this study. The investigation relied heavily on data from a small number of banks. So, we choose our sample banks based on the information we had handy. Financial data from 2017-2022 that has been made public would be used for the study. There was no favouritism towards any one local or foreign bank over another. The study's operational year was disregarded in the research.

## **1.7 Research Methodology**

This research employed time series, utilizing quantitative methods for data collection. Using such data, trends can be seen at seasonal timeframes which allows the researcher to have a greater comprehension of what happened and what caused these trends. To achieve the research objectives, purposive and convenience sampling techniques will be utilized. Specifically, a sample of eight banks who had operated since 2017 to 2018 in Ghana will serve as the unit of analysis. The study was conducted secondary data gathered and the outcomes are presented using appropriate tables and diagrams, subsequently discussed in conjunction with pertinent academic sources.

## **1.8 Limitation of the study**

Secondary data as yearly reports, was used for analysis. The fact that this information was shared for reasons other than fixing the issue at hand is a drawback, since it means that it does not conform to certain requirements.



## 1.9 Organization of the Study

This study comprises five distinct chapters, each serving a crucial purpose in elucidating its objectives and findings. The inaugural chapter delves into a comprehensive examination of the existing body of literature, identifying gaps and articulating the study's goals. Furthermore, it elucidates the significance and breadth of the research, while also offering precise definitions of key terminology. This chapter culminates with a detailed overview of the proposed thesis structure. The subsequent chapter undertakes a thorough review of pertinent literature, drawing from prior research endeavors. It delves into the theoretical underpinnings that undergird this study and dissects the foundational concepts employed. Moreover, it scrutinizes previous empirical studies in tandem with providing a succinct synthesis that underscores areas where the literature is lacking. In essence, this chapter serves to expound upon the theoretical framework of the study, elucidating how it evolved from antecedent research endeavors. Chapter three is dedicated to explicating the research methodology. Additionally, it also presents the tools deployed for scrutinizing the amassed data. Chapter four presents in-depth examination of the results and analyses gleaned from the compiled data. Lastly, chapter five serves as a forum for deliberating upon the research findings, as well as the study's contributions, limitations, implications, and ultimate conclusions.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter presents the comprehensive review of the literature on the micro and macro determinants that affects the profitability of banks. The review is presented in different sections. The first section comprises of the gist of the banking sector in Ghana whilst in the second section, the theoretical frame. The third and last section comprises the discussion of prior empirical studies and their findings.

#### 2.1 Conceptual Review

This section defines variables and how they have been used in the study. The study consists of three variables. However, the variables have been operationalized in the subsequent sections below.

##### 2.1.1 Overview of banking in Ghana

Traditional banking services were first provided in Ghana in 1896 after the British Bank of West Africa opened an office in Accra. Only 24 banks operated in Ghana in 2011. This is a rather modest number (Amo-Mensah, 2016). There are 14 banks that are majority owned by a foreign entity, and 13 banks that are majority owned by a domestic entity. In a universal banking system, financial institutions provide customers with access to a full range of banking products and services. In the past, there have been instances of niche financial institutions that later transformed into more generalised "universal" banks (Rathore, 2018). Many changes have occurred in the banking industry. After gaining independence, the government has intervened heavily in several areas previously to the reforms. The financial systems were characterised by public ownership. From the early

1950s until the late 1980s, the government owned or controlled all new banks (Ofori-Abebrese et al., 2016).

The Bank of Ghana, as the country's monetary authority, set interest rates and imposed regulations on how credit might be distributed across different industries. Brownbridge and Gockel (2017) state that the banking sector was subject to significant financial repressions, with real interest rates being sharply negative and the majority of credit going to the government. This set off a chain reaction of changes, including new approaches to prudential regulation and supervision and the liberalisation of allocative constraints on banks. Reforms in the Ghanaian financial sector began as early in 1990, after auspices of the Financial Sector Adjustment effort was made, which was part of a larger macroeconomic adjustment effort (Derbali and Lamouchi, 2021). The goal of reforming the financial sector was to create a more decentralised and market-based financial system, and this goal was achieved. Correcting pricing and launching structural changes were among the goals of the project (Derbali and Lamouchi, 2021).

The banking industry is now being more closely monitored and regulated. The project also helped troubled banks reorganise and clean up their non-performing loans on their balance sheets. The post-reform era is characterised by profound changes to the monetary system. The financial system's institutional framework has matured and expanded (Muraina, 2019). Private banks (including foreign banks) have increased their penetration of the market, and both established and upstart financial institutions have increased their reliance on branch locations. Some banks from sub-region and Asia have entered the market in the past five years, despite the high obstacles to entry that may exist as a result of stringent regulatory, risk, and capital requirements (Domeher et al., 2017).

That's responsible for 42% of the industry's bank expansion over that time. The insurance industry is active, the stock market is thriving, and the number of non-bank financial intermediaries continues to grow (Domeher et al., 2017). The financial system is likewise subject to rules and regulations. The legal and regulatory frameworks provide the parameters within which banks can function. Although we will not be delving into the specifics of financial regulation in Ghana, it is important to note that the finance industry is governed by the Constitution of the Republic of Ghana and other Acts (Samanyanga, 2018). which include; The Companies Act, 1963 (Act 179), The Constitution of Ghana 1992, The Securities Industry Act 1993 (Act 333), The Bank of Ghana Act, 2002 (Act 612).

High interest rates have not been lowered despite the industry's meteoric development, branch network expansion, and widespread capital injections. Notwithstanding, the Bank of Ghana's efforts to lower interest rate which have been fixed, the industry continues to function in a high interest rate environment (Ünvan and Yakubu, 2020). When the responsible parties of the Bank of Ghana adjust the policy rate, it is expected that commercial banks would also adjust their lending rates. Commercial and financial risk, market dominance, or ineffective management might all contribute to the industry's high interest rate. These problems may be aided by an empirical investigation. It's possible that the re-injection of money will increase the safety buffer for risk taking (Laryea et al., 2016). However, further legislation would further complicate the landscape for doing business. The most major reform to banking supervision will be the implementation of the new Basel Capital Accord (Basel II) in 2011. A bank's capital requirement under the Basel II Accord will be determined by the level of risk it faces (Owusu-Antwim et al., 2017).

PricewaterhouseCoopers' (2010) and the Ghana Association of Bankers' Ghana Banking Survey (2010) notes that Barclays Bank Ghana Ltd. overtook Ghana Commercial Bank

Ltd. in 2007 due to the latter's larger total assets and wider branch presence. It follows that the market is extremely consolidated. The most successful financial institutions are not always the largest ones (PricewaterhouseCoopers, 2010).

Return on shareholders' funds may have been strong, but overall industry earnings have been on the decline. Standard Chartered Bank Ltd. tends to consistently deliver strong returns to shareholders, as at 2010 Banking Survey. According to the Ghana Banking Survey of 2010, the financial sector had a return on equity fallen in 2008 to just 12.1% in 2009 (PricewaterhouseCoopers, 2010). The need for recapitalization and a general drop in profitability may be to blame. Internet banking, SMS banking, and other novel electronic based services have proliferated in recent years, making it easier to do financial business and get banking questions answered online. Some banks and telecommunications companies have teamed together to provide goods for consumers (Price water house Coopers, 2010). Even though these platforms have useful tools, they also represent a danger of fraud if they are not properly protected. Whether a breakdown effects the industry generally, would depend on the total number of online transactions. If the banking public in Ghana is to be kept safe, the Bank of Ghana will need to promote information security policies and best practises. Increased FDI, the discovery of a new oil field, and a reduced budget deficit are all reasons to be optimistic about the sector despite all the challenges it faces (PricewaterhouseCoopers, 2010).

### **2.1.2 The role of banks**

A banking system's primary function is to smooth out the kinks in the machinery of the economy. Transferring money from saving to investment is a key function of the banking system (Hoffmann, 2011). As a result, a financial intermediary is operating between for borrowers and lenders. The function of financial intermediaries includes increasing market transparency. These middlemen facilitate risk transmission and are equipped to tackle

associated issues that arise with financial instruments and the markets. Controlling risks is an important thing that facilitators do is. However, Rahmah and Armina (2020) stated that intermediaries offer no justification as to why institutions should engage in risk management. On the other hand, financial intermediaries cut down on the time and money needed to learn how to use markets and to actively take part in them. Obviously, this is crucial to understanding the shifts that have occurred. According to Heffernan (2018), banks serve as a "special financial intermediary" between the economy's customers and borrowers. Banks are unique among financial institutions since they offer both deposit and lending services to their customers.

In line with this concept, Ali et al. (2018) who emphasized that banks should be given special acknowledgement as for their efforts in funding production through their operations. Banks make use currency and therefore, do not only handle obligations, but also make loans, which results in bank assets. Banks often assist individuals in the case of payment services due to their role of being intermediaries. By taking use of economies of scale in handling the data generated by monitoring and enforcing contracts with borrowers, banks provide a net societal benefit. By maintaining a diversified loan portfolio, banks can lower their delegation costs. The special value that banks bring to the economy, according to Vera-Gilces et al. (2020), comes from the fact that they combine the supply of credit and liquidity. Borrowers' deposits allow banks to track their customers' cash flow and collect personal data that may be used in underwriting future loans.

Banks, according to Rahman et al. (2019), have two primary functions: (a) to pump money into the economy by lending out claims on their own debt, and (b) to issue debt claims on themselves that are acknowledged as money by the public. To reduce their reliance on costly external funding, banks issue new "money" and pump it in the economy by way of lending. According to Olalere et al. (2017), banks offer a wide variety of services despite

their high overhead due to the large number of local branches they maintain. A bank, for instance, circulates funds it gets from the central bank by giving it to clients, extending loans, selling financial instruments, and paying interests on savings accounts. According to Yüksel et al. (2018), banks stand apart from other intermediary's due to their ability to seamlessly combine information-intensive loans and payment processing.

In a nutshell, banks' primary function is risk management; their job is to analyse, take on, and control uncertainty. Credit risk is only one of the threats to banks. Camino-Mogro and Bermúdez-Barrezueta (2019) notes that historically, banks have separated the management of credit. In most countries, banks serve an essential role beyond their traditional financial intermediary duties. The results of a survey done by Onuorah (2023) showed that the efficiency of financial intermediation has an effect on economic expansion. The net return on savings and the gross return on investment are both significantly impacted by financial intermediaries (Al-Homaidi et al., 2018). Bank insolvencies can lead to systemic crises, which have negative effects on the economy as a whole, with losses arising in many cases of 10-20% of GDP and occasionally as high as 40-55% of GDP (Muhović and Subić, 2019). This is despite the fact that the efficiency of financial intermediation affects economic growth in a country (Soekapdjo et al., 2018). Based to a 2012 World Bank study, Ghana's domestic credit granted by the banking industry (as a percentage of GDP) was 27.74 in 2011 (Owusu-Antwi et al., 2017).

### **2.1.3 Bank regulation**

Regulations, not market forces, determine what a bank may and cannot do. The unique characteristics of banks are often cited as justification for stricter regulation (Mateev and Bachvarov, 2021). The instability of the financial sector may be felt in the actual economy as a result of banks being unable to meet customer demands for funds. Due to information asymmetry, certain systems are also intrinsically unstable and prone to contagion runs

(Djalilov and Piesse, 2019). Some have argued that banks deserve special treatment because they are the only institutions able to offer certain types of credit to businesses, most notably short-term liquidity, and because they can do so at a lower cost than other institutions by, for example, offering deposit-taking services in addition to committed lending (like lines of credit) in order to conserve cash and safe-securities holdings (Polyzos et al., 2021). Further, it has been argued that banks are disciplined to adequately oversee firm's due to their relatively weak capital structures.

However, before the 20th century, many nations did not see banks as exceptional from a regulatory perspective. Governments have become more involved in banking regulation since the Great Depression (Laeven and Levine, 2009). As a result, the provision of safety nets has been supported with prudential regulation and oversight in an effort to eliminate moral hazard and to restrict banks' possibilities to take on further risk. Restrictions on the kinds of activities banks can engage in have been a crucial part of the regulatory structure (Barth et al., 2013; Noor et al., 2020). Many financial crises have occurred despite legislation, perhaps because regulators have failed to adequately monitor the market or intervene when necessary, in conditions with excessively large safety nets (Thamae and Odhiambo, 2022).

#### **2.1.4 Banking competition**

Banking industry competition has been investigated by different schools of thought. Changes and monetary sector liberalisation have increased competition in the banking industry in emerging as well as developed economies (Thamae and Odhiambo, 2022). "Facilitating the integration of credible foreign financial companies to the local market ought to be appreciated too: they bring competitors, increase productivity, and improve up the standard of the financial infrastructure," according to World Bank research from 2001. Chen et al. (2021) research is one example; they utilised bank-level data from fifty (50)



nations to assess how much shifts in input prices are reflected in revenues received. They argue that competition in the banking sector improves when there are fewer barriers to entry and less regulation of international banks.

Foreign bank entrance strengthens national banking sectors and drives local banks to be efficient, which has good welfare consequences for clients, according to research by Chen et al. (2021). According to Mohd Noor et al. (2020) listed three significant contributions made by international banks entering national banking markets. Competition is sparked and domestic financial services are enhanced by the arrival of international banks. Fosters the use of cutting-edge banking methods and techniques. Increases the availability of foreign aid to recipient countries. Additionally, Avezum et al. (2022) found a positive impact with regards to willingness for foreign entrants in their analysis of cross-country evidence from Asia. This finding suggests that openness helps makes banks profitable by increased dependence on fees as gains.

Domestic banking operations benefit from increased competition because waste is reduced and costs are capped. But unlike in other industries, banking is one where competition does not automatically lead to better performance (Mateev et al., 2023). Kladakis et al. (2022) also said that domestic banks shouldn't have to compete with international ones. Since local banks struggle competing along with bigger multinational banks for customers, and Kladakis et al. (2022) further said that government involvement in the financial markets of emerging nations are vital for the nascent sector. He said that social cohesiveness is more likely to exist between local banks and the government than between foreign banks and the government. Foreign-owned banks in Asia take fewer risks than other banks, according to research by Hoque and Liu (2023) comparing the actions of foreign and local banks in the region. The increasing number of foreign banks has been

claimed to be detrimental on the earnings and total costs of local banks (Hoque and Liu, 2023).

### **2.1.5 The concept of performance**

When the outcomes are compared to planned outputs (or targets and objectives), the difference between the two is organisational performance (Mariyanti et al., 2023). Ben Uche et al. (2022) defines performance as the extent to which the organization's goals are met. There is a wide range of opinions regarding performance among academics. Transactional efficiency as well as input and output efficiency have been variously measured, but the term performance has been most commonly used to convey the range of these metrics (Warrad and Khaddam, 2020). A company's success is reflected in an elevated return on equity, as indicated by Hilton et al. (2023), and this is made possible by the implementation of a good employee performance tracking system.

However, return on asset and ratio of sales to assets are used as indicators of companies' success in the and accounting information available, as stated by Prasetyo (2022). According to Dang et al. (2020) the ratios of profitability characterise the efficacy and performance of a business as a whole. It evaluates capability of firms to utilise their inputs and deal with costs in a way that yields a profitable rate of return. Karkowska, 2020 made a contribution to profitability ratio, in which he argued that profitability ratios help analyse a firm's performance, allowing investors to make efforts in their companies. The profitability of the firms was used as the financial and accounting effectiveness indicator.

### **2.1.6 The Determinants of Bank Profitability**

Ascertaining return on asset (ROA) and return on equity (ROE) are popular practise to gauge firm's success based on metrics like. How profitable a bank is as measured by its Return on Assets (ROA). The return on assets (ROA) measures how much money is made

off of each asset (Isa et al., 2023). The issue with ROA is that it underestimates the value of assets since it does not include off-balance-sheet things (such as leased assets) in the overall value of assets. Overestimating ROA as a measure of bank performance may result from this favourable bias. However, Garcia and Trindade (2019) suggest that ROA is a crucial profitability indicator in the banking industry. Return on Assets (ROA) has been used as a metric of profitability in the works of Petria et al. (2015). Return on Equity (ROE) is ascertained by dividing net income by equity as an alternative measure of profitability (Menicucci and Paolucci, 2016).

It is a metric for determining the return on investment for shareholders. The limitation of this ratio is that it tends to be greater for banks that use a lot of financial leverage (Almaskati, 2022). While banks with high levels of financial leverage often report healthy returns on equity, this strategy is not without its risks (Adelopo et al., 2018). Therefore, return on equity (ROE) may not always adequately reveal a bank's underlying financial health. Regulation is another issue with employing return on equity (Athanasoglou et al., 2022). In practise, though, ROE is often discussed with ROA.

O'Connell (2023) elaborated that Return on Average Assets (ROAA) and Return on Average Equity (ROAE) can assess the financial health of banks as Sugiri Dina (2020) indicated that they are small modifications of the ROA and ROE, respectively. Hence, the average opening and closing balances is used in place of total assets. Due to the fact that asset data is often only accessible at the close of each reporting period, taking an average is may not accurately show the fluctuations that occurred within the period (Mariyanti et al., 2023).

However, ROA and ROE have same meanings as ROAA and ROAE. ROI is also important, but ROAA is the standard. From here on in this analysis, references to ROA and ROE will refer to ROAA and ROAE, respectively. According to canonical asset

pricing models, arbitrage should guarantee that higher-risk investments get a greater return (Choirunnisak, 2022). Therefore, it is important for banks to account for both bank-specific risk and non-diversifiable (systemic) risk in their profitability. Therefore, most research on the variables that determine the profitability of commercial banks have taken into account both industry or macroeconomic factors (also known as external factors) and elements unique to the bank itself (internal factors) (Ben Uche et al., 2022). It is possible to further categorise the external forces as either macroeconomic or financial structural elements (Hanum and Harahap, 2022).

### **2.1.7 Micro-economic determinants**

That portion of a bank's profitability that may be impacted by managerial choices and policy goals is known as micro determinants (Abugamea, 2018). Branch density and distribution, operating efficiency, and other micro factors may all have a role effectiveness, marketing skills, management skills, leadership skills, employee morale, product quality, and strategy. Some of these factors may be difficult, if not impossible, to measure. derived from the institutions' underlying operational performance, which reflects financial statements and balance sheets of the companies being investigated (Vannoni, 2019). That's why it shouldn't come as a shock financial ratio have been used as stand-ins for internal drivers in previous research. The effects and correlations between Operating Efficiency, Capital Expenditure, the effects of capital adequacy, liquidity, asset quality, and bank size on returns are examined (Wieczorek-Kosmala et al., 2021).

#### **2.1.7.1 Operating efficiency**

One indicator of productivity is the operating efficiency. Profit margin is calculated as operational expenses divided by total revenues. Staff wages and administrative expenses make up the bulk of operational costs (Bunyaminu et al., 2021). It is a metric for gauging the efficiency premium's contribution to a bank's bottom line. It's also used to show how

much costs vary from one bank to another. In general, operational costs and profits should have a negative relationship, with more costs resulting in fewer profits and vice versa. On the other hand, higher operational costs may simply reflect a greater volume of financial transactions (Onuorah, 2023).

### **2.1.7.2 Capital adequacy**

Equity to total Asset ratio is utilized as a metric to assess a bank's Capital Adequacy. This metric signifies the proportion banks' total assets funded by equity capital (Yuan et al., 2022). Capital adequacy, in essence, gauges the sufficiency of equity capital that banks might utilized to combat shocks they might encounter. Higher Equity to Asset ratio is generally expected to lead to reduced reliance on external funding, resulting in enhanced bank profitability. Furthermore, well-capitalized banks tend to face lower costs in the event of financial distress, thereby reducing their overall funding costs (Tosin and Otonne, 2019).

However, there is more to this story. Banks with a higher capital to asset ratio are perceived to be better positioned to weather economic downturns, sustaining profitability even in challenging times (Shanko et al., 2019). In contrast, those with lower capital adequacy are seen as riskier compared to their counterparts. Nevertheless, the impact of capital adequacy on profitability remains somewhat uncertain, making it a question that demands empirical investigation (Shanko et al., 2019).

### **2.1.7.3 Asset quality**

The ratio of provisions set aside for potential bad debts in relation to total advances serves as a proxy for assessing the quality of assets. This metric provides insights regarding the health of a bank's loan portfolio and creditworthiness of its borrowers (Shanko et al., 2019). Consequently, it also gives clues on the credit risk inherent in a bank's operations.

As noted by Rathore (2018), credit risk refers to the potential that an asset or loan may become uncollectible due to outright default or delayed loan servicing. Credit risk can have far-reaching consequences, even leading to insolvency, as highlighted by Okyere and Mensah (2022).

When asset quality is higher, it signifies an elevated level of credit risk, with a corresponding increase in interest. Furthermore, the state of assets diminishes, eroding the financial soundness of the bank. Madugu et al. (2020) noted that poor asset quality can potentially exert unpleasant effects on banks' profitability.

#### **2.1.7.4 Size of banks**

Studies investigating the factors influencing bank profitability mostly represent bank's size with the total assets. This is typically considered to have lead to potential advantages or disadvantages (Bismark, 2021). Furthermore, bank size is often associated with diversification, which can have a favorable impact on risk management and the variety of products offered. Economies of scale are expected to lower the costs associated with collecting and processing information (Owusu-Antwi et al., 2017). Thereby leading to a positive effect that bank size exert on profitability (Barra and Ruggiero, 2021). Camino-Mogro and Bermúdez-Barrezueta (2019) suggests that size is closely linked to a bank's capital adequacy, as larger banks mostly have access to less costly capital, making them appear more profitable.

Researchers such as Rahman et al. (2020) and Warrad and Khaddam, (2020) have connected bank size with capital ratios, in which, positive correlation with size was argued. These findings suggest that as a bank's size increases, so does its profitability, particularly among small to medium-sized banks. However, increased diversification can mitigate risks in a bank's credit portfolio, potentially reducing returns (Thamae and Odhiambo, 2022). Large banks may exhibit a negative relationship between size and profitability due to

issues like bureaucracy and agency costs. According to Noor et al. (2020), there may be limited cost savings achieved by further increasing the size of a banking firm, implying that very large banks could eventually encounter inefficiencies related to scale.

#### **2.1.7.5 Net interest income to total assets**

This is a key financial metric that can enhance profitability of banks. It represents the income a bank earns from the difference between the interest it receives on loans and other interest-earning assets and the interest it pays on deposits and other interest-bearing liabilities, all relative to its total assets (Djalilov and Piesse, 2019). NIITA reflects the spread between the interest rates banks earn on their assets (like loans and investments) and the interest rates they pay on their liabilities (like deposits and borrowings). A higher interest rate spread means that the bank is earning more interest income than it is paying in interest expenses, resulting in a positive impact on profitability (Barth et al., 2013).

Interest income, as a significant component of a bank's revenue, is a core source of earnings for banks. NIITA measures the efficiency with which a bank can generate income from its core lending and deposit-taking activities. Banks rely on this income to cover operating costs and contribute to profits. Banks carefully manage their interest rate risk, aiming to balance the duration and interest rate sensitivity of their assets and liabilities. A well-managed NIITA ensures that a bank's interest income remains relatively stable even in changing interest rate environments, reducing the risk of income fluctuations and supporting consistent profitability (Athanasoglou et al., 2022).

Maintaining a healthy NIITA allows banks to generate sufficient liquidity from their operations to meet deposit withdrawals and fund loan disbursements without resorting to costly short-term borrowings or selling assets, which can erode profitability. A strong NIITA can contribute to a bank's capital adequacy. By generating consistent profits, a bank

can accumulate retained earnings, bolstering its capital base and enhancing its financial stability (Isayas, 2022).

Banks with a favorable NIITA may be able to offer more competitive interest rates to attract deposits or win lending business. This competitive advantage can lead to increased market share and revenue growth. A healthy NIITA is attractive to investors and shareholders, as it indicates a bank's ability to generate sustainable profits (Hoque and Liu, 2023). This can lead to higher stock prices and access to capital markets for further expansion or risk management. In summary, Net interest income to total assets (NIITA) is a critical driver of bank profitability, as it measures the efficiency and effectiveness of a bank's core lending and deposit-taking activities. A well-managed NIITA contributes to consistent and sustainable profits, strengthens a bank's financial position, and enhances its competitive edge in the financial market (Hilton et al., 2023).

### **2.1.8 Macro Determinants**

The operational context in which banks function has the potential to influence their performance and affect future actions. Macro determinants encompass external happenings that lie beyond the banks' direct influence (Adelopo et al., 2018). These macro determinants encompass the legal, political, economic, technological, and social dimensions that form the backdrop against which banks operate. These factors are considered external because banks lack control over them, though, they can proactively predict the external environment and work towards them in order to capitalize on them as advantages (Almaskati, 2022). The macro environment can be categorized into determinants specific to the banking industry (pertaining to financial structure) and determinants tied to broader macroeconomic conditions (Athanasoglou et al., 2022). Industry-specific determinants pertain exclusively to the banking sector and include factors within the banking industry itself. Macro-economic determinants, on the other



hand, reflect the overall economic and market conditions within a country (Avezum et al., 2022). In this particular study, we are focusing on three as external factors for examination, given their extensive research and relevance in other countries (Batten and Vo, 2019).

#### **2.1.8.1 Gross domestic product**

Gross Domestic Product (GDP) serves as a widely recognized metric for gauging the overall economic activity within a nation. In this research, we utilize GDP growth as an indicator of macroeconomic conditions. GDP growth refers to the annual percentage change in the GDP. Studies conducted by Ben et al. (2022) and Chen et al. (2021) have consistently shown a positive relationship between economic growth and the profitability of the financial sector. Consequently, we expect to observe a positive correlation between GDP growth and profitability.

#### **2.1.8.2 Inflation**

The proportional change in overall level of prices is can affect banks. According to Perry (1992), hyperinflation impacts banks' profitability contingent upon whether it will be predicted or unplanned. Producing precise estimate of inflation, management may increase interest rates on loans faster than the pace at which operational expense is growing. In the circumstance when inflation is unforeseen, management are hesitant in modifying their interest's rates such that the rate of growth of operating cost is quicker than the percentage of increase of revenue from banks which causes a detrimental impact on competitiveness.

#### **2.1.8.3 Money supply**

It denotes the quantity and at times, the supply of money available within an economy. Money Supply is contingent on the monetary policies implemented by the Central Bank. Central Banks have the ability to exert significant control over the volume of currency circulating in the economy through mechanisms such as open-market operations and

adjustments to the bank reserve ratio (Choirunnisak, 2022). In accordance with the quantity theory, alterations in money supply might trigger changes that occur among both GDP and price levels. By employing expansionary monetary policies, the Central Bank can augment the money supply, leading to a decrease in price levels, and conversely (Dang et al., 2020). A study conducted by Djalilov and Piesse (2019) found that the money supply, used in their research as an indicator of market size, had a significant impact on bank profitability.

In Hanum and Harahap (2022) research noted that certain events like financial crises and financial deregulation have the potential to disrupt the link between changes in money supply and the returns of bank stocks. According to their research, in a competitive banking system, credit is allocated more selectively, resulting in higher deposit rates but lower interest rates. Although concentrated banks extend less credit, their higher profit margins (due to the elevated interest rates and reduced deposit rates) contribute to increased bank stock returns.

### **2.1.9 Ownership structure and profitability**

Across the banking industry and the non-banking sector, some research has looked into how ownership structure affects a bank's bottom line (Mateev et al., 2023). Because of variations in the market's discipline and aims, the theoretical literature implies that state-owned businesses, such as cooperatives, have less motivation for profit maximisation than private firms (Menicucci and Paolucci, 2016). However, the theoretical theories that ownership structure influences performance are not strongly supported by actual data. Findings for both the banking and non-banking sectors are contradictory, depending on the time frame and location of the research. Companies in the non-banking sector with stronger shareholder's rights had better profitability, according to research frequently quoted by the media (Noor et al., 2020). They employed a massive dataset consisting of

1500 companies with 1990s observations. When comparing companies with strong and poor shareholder rights, they discovered that the former had investment portfolios that returned 8.5% more than expected.

However, Petria et al. (2021) did not find a correlation between the ownership arrangement and business performance, therefore these results are in stark contrast to their work. Thamae and Odhiambo (2022) broaden the scope of ownership structure research to include the banking industry, where norms and regulations pertaining to risk taking are established by third-party actors. While the existence of regulators may have little effect on the risk-taking incentives of non-banking enterprises, the opposite may be true for banks. They conclude that managers in banks where stock options are available are more likely to take risks in order to increase shareholder value than managers in banks where managers do not have any additional incentives to do so. The findings are consistent with Warrad and Khaddam (2020) agency hypothesis. Subsequent research by Rahmah and Armina (2020) confirmed that during deregulation, there was more of a gap between banks that were compensated with stock options and those that weren't. The findings of Ali et al. (2018) have been verified by recent research. There is conflicting data on whether publicly traded banks perform better than their government-, mutual-, and co-operative-owned counterparts (Vera-Gilces et al., 2020).

Rahman et al. (2020) found that, in a sample of European banks operating between 2009 and 2015, publicly held banks were more profitable than privately owned banks. They argue that government-owned banks are more profitable than privately-held ones because they have a lower equity-to-asset ratio, which in turn generates a better return on equity, everything else being equal. Since the government implicitly ensures the underlying company, these banks may operate with a lower equity-to-asset ratio (Olalere et al., 2017).

In addition, Camino-Mogro et al. (2019) examine the efficiency and effectiveness of a selection of German banks under different ownership structures. Onuorah (2023) found private banks to be more efficient than their mutual and public sector equivalents, however these authors find the opposite to be true. However, indicators of inefficiency show that mutual and public banks have a modest edge in both costs and profits.

Al-Homaidi et al. (2018) offer a reason for the cost other profit benefit enjoyed by state-owned banks, arguing that the focus on retail and small-business clients results in reduced funding costs for state-owned, mutual, and public banks. Muhović and Subić (2019) argue that consumers of mutual and government-owned banks are less sensitive to interest rate changes than those of privately-owned banks, whereas research by Soekapdjo et al. (2018) suggests the opposite. No significant link between ownership structure and profitability is discovered in research conducted within the same time period using a more complete model with more explanatory drivers of bank profitability (Barra and Ruggiero, 2021). The aforementioned findings on the link between banks' ownership structure and profits vary widely by dataset and geographical area studied. Surprisingly, this connection shines brighter in under-developed nations. State-owned banks in underdeveloped countries are less lucrative than private banks, according to research by Yüksel et al. (2018), but they do not discover the same link in industrialised nations. The data they analyse comes from financial institutions in 179 countries and spans the years 1992-2002. Samanyanga (2018) discover a weak correlation among corporate management, ownership makeup, and profitability. They show that state-owned banks have worse long-term performance, even after controlling for the static, selective, and dynamic impacts of governance.

### **2.1.10 Balance Sheet Structure and Profitability**

According to the literatures on corporate finance, the expected return suffers when less risk is taken. However, Shanko et al. (2019) emphasized a positive causality link for banks suggesting an alternative explanation. As probable causes for the extraordinary outcome, they looked at signals and the predicted bankruptcy costs theory. No evidence is found to support the signalling theory, which claims that raising the equity-to-asset ratio will improve profitability in the eyes of investors. However, the projected bankruptcy costs concept is given considerable credence. In response to an exogenous shift in bank failure risks, institutions holding a large number of low-interest, uninsured debts raise their equity levels. Although the results from Abbas et al. (2021) are interesting, they should not be extrapolated too far since they may reflect an exogenous shift in failure probability brought on by the worsening financial position of the eighties. Specifically, the correlation throughout equity and performance shifted between 1990 and 1992, compared to the earlier time period of 1983 to 1989 (Mardani and Fallah, 2018). In addition to the debt-to-equity ratio, the next sentence will highlight another balance sheet statistic, the equity-to-asset ratio, in which a negative link is also established (Chen et al., 2019).

### **2.1.11 Macroeconomic, Industry-Specific and Bank-Specific Factors and Profitability**

Some scholars have explored many potential elements that affect performance in the published literature. Comprehensive analyses of bank performance have traditionally relied on traditional measures of success including market share, ownership structure, and money supply growth (Alexandru, 2021). More recent research has begun to add macroeconomic, industry-specific, and bank-specific drivers as well. Using data from 18 European nations between 2010 and 2015, Wiczorek et al. (2021) found a positive

correlation between the four variables they looked at: market concentration, nominal interest rates, the equity-to-assets ratio, and government ownership.

Except for the fact that they discover a strong positive correlation between governmental ownership and earnings on equity. Vannoni (2019) findings contradict those of Abugamea (2018). Newer research investigations (Fidasoski et al., 2018; Alexandru, 2021; Neupane, 2020) build on the work of Molyneux and Thornton (2018) by including additional factors. In addition, the recent research tends to choose dynamic models that take profit persistence into consideration. The research of Fidasoski et al. (2018) serves as a foundation for this thesis, and their work is explored in further depth in the following paragraphs. Other research, such as those by Mardani and Fallah (2018), Chen et al. (2019) is either older or utilise data from a different geographical location than the one under investigation. All three investigations discovered statistically significant connections between various factors.

## **2.2 Theoretical Review**

This part of the text explores the theories that serve as the foundation for examining the study. Additionally, it examines the significance of the various variables in this context.

### **2.2.1 Intermediation Theory**

Intermediation theory is an economic theory that explains the fundamental role of banks as financial intermediaries in the economy. The theory posits that the banking sector serve as intermediaries between those who have excess funds (savers) and those who need funds (borrowers) (Chirwa and Mlachila, 2004). This theory forms the basis of understanding how banks operate and generate profits through their core functions of deposit-taking and lending. Zheng et al. (2017) emphasized that the effectiveness of banking largely depends on the cost of financial intermediation. The banking sector of under developed countries

are having higher interests than that of developed countries (Chirwa and Mlachila, 2004; Hesse 2007).

According to this theory, banks act as intermediaries between savers (depositors) and borrowers (Chirwa and Mlachila, 2004). Savers deposit their surplus funds in banks, seeking a safe place to store money and earn interest. Banks, in turn, pool these deposits and lend them to individuals, businesses, and other entities that need capital for various purposes, such as investment, consumption, or business expansion. Buchory (2014) stated that one of the primary functions of banks is to mobilize funds from the public by accepting deposits. These deposits can be in the form of demand deposits (checking accounts) or time deposits (savings accounts, certificates of deposit). Banks pay interest to depositors and use a portion of these funds to provide loans and earn interest income and also extend credit to borrowers in the form of loans and credit facilities (Agu and Okoli, 2013).

Banks play a crucial role in managing financial risks (Buchory, 2014). They assess the creditworthiness of borrowers and diversify their loan portfolios to reduce the risk of loan defaults.

One unique aspect of Traditional Banking Theory is its recognition of banks' ability to create money through the process of credit creation. When banks provide loans, they are effectively creating new money in the economy, as the loan amount becomes spendable by the borrower. This concept is often referred to as fractional reserve banking. It's important to note that while Traditional Banking Theory provides a foundational understanding of how banks operate, the modern banking industry has evolved significantly with the advent of new financial products, technology, and regulatory changes. As a result, other theories and models have emerged to complement the understanding of banking dynamics in the contemporary context.

The intermediation theory also provides a theoretical framework and understanding of the factors that influence bank profitability in a specific country like Ghana. The theory suggests that the interest rate spread, which is the difference between the interest rates at which banks lend and borrow money, is a critical determinant of bank profitability and economic growth (Chirwa and Mlachila, 2004). In the Ghanaian context, the macroeconomic environment, including inflation rates which is a key economic indicator (Barajas, Steiner and Salazar, 1999), can influence the interest rate spread.

Intermediation theory stresses the significance of maintaining high-quality assets as it can impact the cost of financial intermediation which tend to affect the effectiveness of the banking sector (Zheng et al. 2017), and hence affect the profitability of banks. Efficiency in operations is a fundamental element of bank profitability (Bunyaminu et al., 2021). Intermediation theory suggests that banks should minimize operating costs. Bank regulations, both macro and micro, plays a crucial role in shaping banks' profitability (Hermes and Nhung, 2010).

The theory acknowledges the impact of macroeconomic factors such as GDP growth, inflation rates, and exchange rates on bank profitability. In Ghana, these macroeconomic determinants can influence the overall economic environment in which banks operate. Traditional banking theory suggests that a more competitive market may lead to thinner interest rate spreads but potentially higher efficiency gains (Hesse, 2007). Adequate capitalization is a key principle in traditional banking theory and involves examining the capital adequacy ratios of banks and their ability to absorb losses and sustain profitability (Tennant and Folawewo, 2009).



### 2.3 Empirical Review

Over the years 2008-2017, Bunyaminu et al. (2021) analysed how financial leverage affected the profitability of Ghana's recapitalized banks. Our results, which are based on both random effects and fixed effects estimating methodologies, show that leverage has a considerable negative influence on banks' earnings. This lends factual backing to the concept of a pecking order. The findings also show that larger banks are more profitable overall. Based on the data, the authors of this paper say that banks in Ghana should avoid using financial leverage to boost their profits.

Rahman et al. (2020) analysed how both micro and macroeconomic factors influence profitability in Pakistan's banking industry. The study employed a generalised method of moments (GMM) methodology within the Arellano-Bond framework to a panel of Pakistani banks during the period 2003-2017, taking into account endogeneity, unobserved heterogeneity, and profit persistence. Dynamic panel data analysis shows that increased capital adequacy boosts bank profitability in Pakistan. When banks have sufficient capital on hand, they are better able to weather economic storms without collapsing under the strain. In contrast, our data shows that factors like the liquidity ratio, business mix indicators, interest rates, and industrial production all have negative effects on banks' bottom lines. Increased liquidity risks for default translate to more unpaid loans and a lesser return. Our data also shows that Pakistani banks are not taking use of economies of scale to improve their bottom line.

Onuorah (2023) analysed the factors that led to the success of Nigeria's deposit money banks (DMBs) from 2001 to 2017. Non-performing Loans (NPLs), Capital Adequacy (CA), Inflation Rate (INFLR), Interest Rate (INTR), and Gross Domestic Product (GDP) are the internal and external factors that were taken into account, with Return on Asset (ROA) serving as a surrogate for profitability. CBN Statistical Bulletin, CBN Bank

Supervisory Annual Report, and NDIC Annual Reports were employed as secondary sources for this study. Descriptive statistics and a correlation matrix were used for the analysis. To test for a correlation between the explanatory variables and the dependent variable, we employed SPSS 23's Multiple Regression Model. The results indicate that NPLs, CA, and GDP all significantly affect ROA, but NFLR and INTR have negligible effects. The research revealed that nonperforming loans, capital adequacy, and GDP all have a role in the success of Nigerian banks.

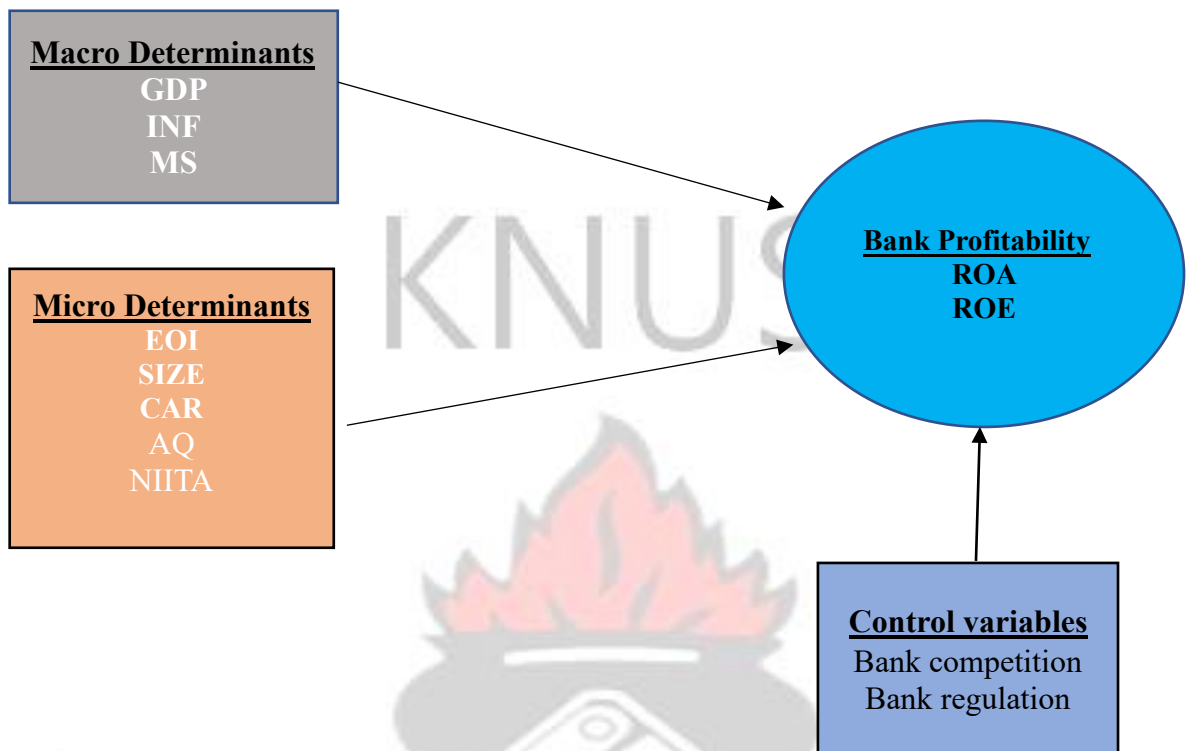
Yuan et al. (2022) research how various factors affect commercial banks in Asian nations in terms of profitability. The researchers settled on a South Asian nation like Bangladesh or India as their study site. A secondary goal of this research is to analyse how various micro- and macroeconomic variables affect private commercial banking profits in Bangladesh and India. The information was collected from the private commercial banks of India and Bangladesh's Annual Reports for the years 2010 through 2021. Forty private commercial banks were selected at random, including twenty each from India and Bangladesh. As an approach to estimate, the panel data study methodology was utilized. Data was also analysed using a regression model based on the ordinary least squares (OLS) method. The Breusch-Pagan Lagrange Multiplier (LM) Test was utilized to examine the adequacy of the models. Comparing private banks in Bangladesh and India, we found nearly identical changes in terms of both bank-specific and microeconomic parameters. E-views econometric software was used for all model and test evaluations.

Return on Asset (ROA) from bank-specific factors, Bank Size (BS), and Debt to Asset Ratio (DAR) are shown to be positive and statistically significant in the current study. Negative and statistically significant values are observed for banks' Deposit to Asset Ratio (DTAR) and Loan to Deposit Ratio (LDR). There is zero positive or negative influence from either the Equity to Asset or Debt to Equity ratios. The ROA is found to be positively

and significantly correlated with both the inflation rate (IR) and the GDP growth rate (GDPGR), both of which are macroeconomic factors. The Inflation Rate (IR) and the GDP Growth Rate (GDPGR) are positive and statistically significant when used as macroeconomic variables in the context of ROA. The results of this study may be used by the relevant authorities in charge of regulating the financial performance of the banking industry to make a number of useful judgements on bank profitability.

Tosin and Otonne (2019) analysed the internal elements that contribute to the profitability of both commercial and microfinance banks in Nigeria and to highlight the potential impact of policy measures taken by the Central Bank of Nigeria. Panel data was used for this investigation. The study selected a random sample of 4 commercial banks and 4 microfinance banks out of a total of 22 commercial banks and 898 microfinance institutions. The Random Effect Panel Estimation Method was used to examine data collected from bank income statements and balance sheets from 2010-2018. The study found that while liquidity ratio had little effect on the profitability of either commercial or microfinance banks, capital adequacy had a positive effect on the profitability of the former but a negative effect on the latter. Profitability at commercial banks was found to be significantly influenced by real GDP. Inferring from this, it seems likely that the recent policy moves by the central bank, which saw the rise of cash reserve ratio from 22.5% to 27.5%, will have only a minor effect on bank profitability. The study's primary flaw is that it relies on only one profitability metric and one external factor metric. The length of the investigation and the small size of the sample were also taken into account as restrictions. The results of this research can benefit both the banks' management and their stockholders. This research also sheds light on how the Central Bank's recent policy may affect the financial services industry. Policymakers and regulators in Nigeria's banking sector will benefit from this study's findings.

## 2.4 Conceptual Framework



**Figure 2.1: Determinants of bank profitability in Ghana**

**Source:** Researcher's Own Construct

The conceptual framework describes the relationship between bank profitability and micro and macro determinants.

### **Micro Determinants**

The micro determinants are the factors that affect the bank's profitability from within the bank, such as

#### **Return on assets (ROA)**

This is a measure of how profitable a bank is per unit of assets. It is calculated by dividing the bank's net income by its total assets.

#### **Return on equity (ROE)**

This is a measure of how profitable a bank is per unit of equity. It is calculated by dividing the bank's net income by its total equity.

### **Efficiency ratio (EOI)**

This is a measure of how efficiently a bank operates. It is calculated by dividing the bank's non-interest expenses by its total operating income.

### **Size**

The size of a bank can affect its profitability; as larger banks may have economies of scale.

### **Capital adequacy ratio (CAR)**

The CAR is a measure of how much capital a bank has relative to its risk-weighted assets. A higher CAR can make a bank more stable and less risky, which can lead to higher profitability.

**Asset quality (AQ):** The AQ is a measure of the quality of the loans that a bank has made. A higher AQ can lead to lower credit losses, which can improve profitability.

### **Net interest income to total assets (NIITA)**

This is a measure of how much interest income a bank generates from its loans and investments. A higher NIITA can lead to higher profitability.

### **Macro Determinants**

The macro determinants are the factors that affect the bank's profitability from outside the bank, such as

#### **Gross domestic product (GDP)**

The GDP is a measure of the overall economic activity in a country. A growing GDP can lead to higher demand for loans and other financial services, which can boost bank profitability.

#### **Inflation (INF)**

Inflation can affect bank profitability in a number of ways. For example, if inflation is high, the bank may have to pay higher interest rates on its deposits, which can reduce its profitability.

**Money supply (MS)** The MS is a measure of the amount of money in circulation in an economy. A larger MS can lead to higher demand for loans and other financial services, which can boost bank profitability.

### **Control Variables**

The control variables are the factors that can affect bank profitability, but are not directly related to the micro or macro determinants. These factors can include

**Bank competition (BC):** The level of competition in the banking industry can affect bank profitability. A more competitive industry can lead to lower profits for individual banks.

**Bank regulation (BR):** Government regulations can also affect bank profitability. For example, regulations that restrict the types of loans that banks can make can reduce their profitability.

The conceptual framework in the image shows how the micro and macro determinants can affect bank profitability.

## **2.5 Chapter Summary**

The study aims to examine the macro and micro determinants of banks' profitability in Ghana, especially when it comes to the current economic climate. In this section, a quick summary of other studies that have already looked into this topic were discussed. These studies have shown that the ideas we're looking at in this study have already been studied in depth. The next chapter will explain how the research was done. It emphasizes on the way the research was done and the whole plan, which was divided into three parts: getting ready, designing the study, and analyzing the data. Details about these parts among other matters are elaborated in the following chapter.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter delves into the techniques employed throughout the study, encompassing the full spectrum of the research design. This encompasses the methodology employed for sampling, the study's sample size, the origin and character of the data, as well as the procedures utilized for data collection and analysis. Additionally, it addresses the research's objectives, its approaches, and the strategies employed. Finally, the last section of the chapter provides a summary of everything undertaken within this chapter.

#### **3.1 Nature and Data Source**

To achieve the objectives of the study, the research sampled the financial reports of eight banks who had operated in Ghana since 2017 to 2022. The study utilised these secondary data which also include the macro-economic and micro-economic determinants from “[www.annualreportsgh.com](http://www.annualreportsgh.com)” and Bank of Ghana Research Department. Secondary data refers to data gathered at an instance to carry out an act (Malhotra, 2017). Secondary data are readily available and are gathered at low cost mostly, though, they can mislead and a times are irrelevant. Malhotra (2017) emphasized that because secondary data have been accumulated for specific purposes, their uniqueness at an instance may be limited. Thus, the main idea behind the data collection and ways used to collect the data may not fit to the intention of current tasks.

To avoid misinterpretations and enhance accuracy, the data was examined on the basis of the method used to collect the date. The annual reports of the individual commercial banks were obtained from [www.annualreportsgh.com](http://www.annualreportsgh.com) whilst the macroeconomic and micro-economic indicators were obtained from the Bank of Ghana Research Department.

Beginning from 2017 to 2022 was the period selected because it offers recent time series observations.

### **3.2 Sampling Criteria**

The non-probability sampling technique was employed as eight (8) banks who already operated in Ghana as at 2017 to 2022 are examined, though, data availability played a crucial role in the sampling. The banks examined in the study are Access Bank, Agricultural Development Bank of Ghana (ADB), CAL Bank, Ecobank Ghana, Ghana Commercial Bank (GCB), Société Générale Bank, Republic Bank and Standard Chartered Bank.

### **3.3 Methods**

#### **3.3.1 Description of Variables**

The main variables for the study are described in this section. Bank profitability is the variable to be measured and hence, the dependent variable. Macro determinants, which is measured by three proxies, and micro-determinants which is also measured by five proxies, are the independent variables of interest. Bank competition and bank regulation are included in the model as control variables.

##### **3.3.1.1 Dependent variable**

The dependent variable for the study is bank profitability which is represented by Return on Assets (ROA) and Return on Equity (ROE). However, for better clarification and accuracy, the averages of key components of ROA and ROE are used. This include the average of total assets and the average of total equity.



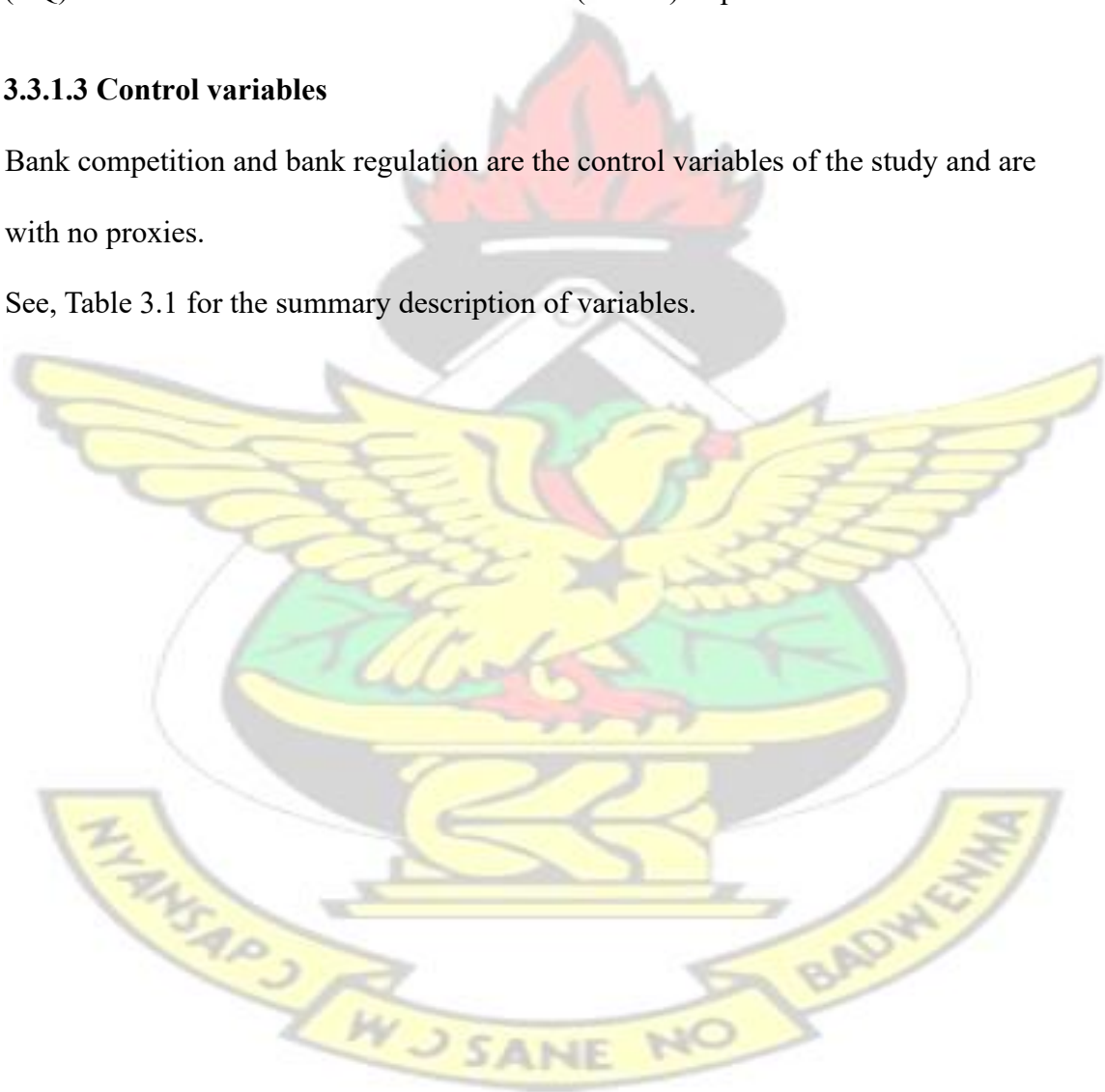
### 3.3.1.2 Independent variable

The independent variables employed in the study include two variables which are the macro determinants and micro determinants. They come together as the determinant of bank profitability. Also, macro determinants have Gross Domestic Product (GDP), Inflation (INF) and Money Supply (MS) as proxies whilst micro determinants have Efficiency Ratio (EOI), Bank's Size (Size), Capital Adequacy Ratio (CAR), Asset Quality (AQ) and Net Interest Income to Total Assets (NIITA) as proxies.

### 3.3.1.3 Control variables

Bank competition and bank regulation are the control variables of the study and are with no proxies.

See, Table 3.1 for the summary description of variables.



**Table 3.1 Description of Variables**

<b>Variable</b>	<b>Measurement</b>	<b>Source</b>
Bank Profitability:	This is indicates the profitable state of a bank.	Yuanita (2019)
- Return on assets	It illicit how profitable a bank is per unit of assets. It involves dividing the net income by its total assets.	Karkowska (2020)
- Return on equity	This is a measure of how profitable a bank is per unit of equity. Dividing the bank's net income by its total equity is how it is achieved.	Kladakis et al. (2023)
Micro Determinants:	These are the factors that affect the bank's profitability from within the bank.	Menicucci and Paolucci (2016)
- Efficiency ratio	This is delves into how the operations of a bank is efficient. Dividing a bank's non-interest expenses by its total operating income arrives at it.	Laeven, and Levine (2009)
- Bank Size		Le and Ngo (2020)
- Capital adequacy ratio	The size of a bank can affect its profitability; as larger banks may have economies of scale.	Mateev and Bachvarov (2021)
- Asset quality	The CAR is a measure of how much capital a bank has relative to its risk-weighted assets. A higher CAR can make a bank more stable and less risky, which can lead to higher profitability.	Mateev et al. (2023)
- Net interest income to total assets	Iis a measure of the quality of the loans that a bank has made. A higher AQ can lead to lower credit losses, which can improve profitability.	Noor et al. (2020)
	This is a measure of how much interest income a bank generates from its loans and investments. A higher NIITA can lead to higher profitability.	
Macro Determinants:	The macro determinants are the factors that affect the bank's profitability from outside the bank	O'Connell (2023)
- Gross domestic product	It indicates the overall economic activity in a country. A growing GDP can lead to higher demand for loans and other financial services, which can boost bank profitability.	Petria et al. (2015)

- Inflation	Inflation can affect bank profitability in a number of ways. For example, if inflation is high, the bank may have to pay higher interest rates on its deposits, which can reduce its profitability.	Polyzos et al. (2021)
- Money supply	The MS is a measure of the amount of money in circulation in an economy. A larger MS can lead to higher demand for loans and other financial services, which can boost bank profitability.	Prasetiyo (2022)
Control Variables:	The control variables are the factors that can affect bank profitability, but are not directly related to the micro or macro determinants.	
- Bank competition	It refers to the level of competition in a banking industry. A more competitive industry can lead to lower profits for individual banks.	Supriyono and Herdhayinta (2019)
- Bank regulation	Government regulations can also affect bank profitability. For example, regulations that restrict the types of loans that banks can make can reduce their profitability.	Thamae and Odhiambo (2022)

### 3.2 Method of Data Analysis

The process of analyzing data is a very important part of any research. It impacts on the quality of the conclusions of a study. The study utilized only one method to analyze the data quantitatively. Once collection of relevant data is done, it was put together in a spreadsheet in the program Excel so that it could be carefully examined.

#### 3.3.1. The profitability of banks in Ghana

With profitability of banks been already established as the dependent variable, this study employed the Return on Assets (ROA) and Return on Equity (ROE) ratios as metrics for assessing the banks' profitability. The trend of the Return on Asset (ROA) and Return on Equity (ROE) of the banks are analyzed using a line graph for the stated period. ROA offer insights into earnings gained from assets utilised by an institution for a period. ROE, on the other hand, looks at earnings on equity for a period. To account for any fluctuations

throughout the fiscal year, this study uses the averages of these banks. Furthermore, an average ROE and ROA was determined for all the ten banks for each year, starting from 2017 to 2022. These averages are then plotted on a line graph to examine the trend of the profitability of these financial institutions in Ghana.

### **3.3.2 Macro-economic and micro-economic determinants of bank's profitability**

To identify the elements influencing the banks' profitability, an econometric methodology is employed. This evaluation followed the four principal phases of econometric research detailed by Koutsoyiannis (1977), with the exception of assessing the predictive capability of the model. The econometric approach encompassed three key phases: formulating the model, estimating the model, and appraising the estimations. The model used to employed in the research is discussed below as the model is used to analyse all the independent variables and control variables to ascertain whether they impact the dependent variable or not. The model was also used to ascertain whether if any variable influences the dependent variable, is the impact significant.

### **3.4 Model Specification**

Panel data represents recurring surveys of the same sample of entities in various time intervals (Koutsoyiannis, 1977). This method entails aggregating data from a specific group of units over multiple time points, offering insights that cannot be gleaned from exclusively cross-sectional or time-series investigations (Abor, 2007). As noted by Vong and Chan (2009), panel data is frequently employed due to its ability to provide a richer dataset. Fixed Effect panel data model will be used for this study. Fixed Effect panel data models tend to be more efficient than pooled OLS (Ordinary Least Squares) regression or simple cross-sectional analysis because they make full use of the available data. This efficiency can lead to more precise estimates of the relationships between macro and micro

determinants and banks' profitability (Athanasoglou et al., 2008). Normally for regression analysis, endogeneity can sprout out concerns, much more in the case where certain explanatory variables are correlated with the error term. In studies of banks' profitability, this can happen if there are omitted variables or reverse causality issues. Fixed Effects models help mitigate endogeneity concerns by controlling for unobserved individual-specific factors, reducing the likelihood of omitted variable bias.

### **Model 1**

$$\text{ROA} = \beta_0 + \beta_1 * \text{EOI} + \beta_2 * \text{SIZE} + \beta_3 * \text{CAR} + \beta_4 * \text{AQ} + \beta_5 * \text{GDP} + \beta_6 * \text{INF} + \beta_7 * \text{MS} + \beta_8 * \text{NIITA} + \beta_9 * \text{BC} + \beta_{10} * \text{BR} + \varepsilon$$

### **Model 2**

$$\text{ROE} = \beta_0 + \beta_1 * \text{EOI} + \beta_2 * \text{SIZE} + \beta_3 * \text{CAR} + \beta_4 * \text{AQ} + \beta_5 * \text{GDP} + \beta_6 * \text{INF} + \beta_7 * \text{MS} + \beta_8 * \text{NIITA} + \beta_9 * \text{BC} + \beta_{10} * \text{BR} + \varepsilon$$

Where:

ROA = Return on Assets

EOI = Efficiency of Operations Index

SIZE = Size of the bank

CAR = Capital Adequacy Ratio

AQ = Asset Quality

GDP = Gross Domestic Product growth rate

INF = Inflation rate

MS = Market Share

NIITA = Net Interest Income to Total Assets ratio

BC = Bank Competition

BR = Bank Regulation

$\beta_0, \beta_1, \beta_2, \dots, \beta_{11}$  = Coefficients for each independent variable

$\varepsilon$  = Error term

For the first model 1, it is a general linear regression equation that relates the dependent variable (ROA) to a set of independent variables (EOI, SIZE, CAR, AQ, GDP, INF, MS and NIITA), notwithstanding, the control variables (BC and BR) with corresponding coefficients ( $\beta_1, \beta_2, \beta_3, \dots, \beta_{10}$ ). The coefficients represent the change in the dependent variable for a unit change in the corresponding independent variable, holding other variables constant. The error term ( $\varepsilon$ ) accounts for unobserved factors and random variability in the relationship. The goal of the regression analysis would be to estimate the coefficients ( $\beta_0, \beta_1, \beta_2, \dots, \beta_{10}$ ) that best fit the data and determine the strength and significance of the relationships between the variables

Similar for the Modell 2, the regression model relates to the dependent variable (ROE) to the independent variables (EOI, SIZE, CAR, AQ, GDP, INF, MS and NIITA) and the control variables (BC and BR) with their respective coefficients. The coefficients represent the change in the dependent variable for a unit change in the corresponding independent variable, while keeping other variables constant. The error term ( $\varepsilon$ ) captures unobserved factors and random variability in the relationship.

### **3.5 Chapter Summary**

The chapter of the study called "Methodology" focused on explaining how the research was conducted. It talked about the plan for the study and the banks that are involved. It also mentioned how the banks were selected and how variables were measured for the study. The chapter also emphasized on the models to used. The next chapter analyzed the data that was collected using the method described earlier.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

#### 4.1 Introduction

This chapter highlight a summary on regression statistics output, revealing the relationships between the variables used in the model. Additionally, the coefficients associated with the independent variables within the regression model are provided. These results elucidate the impact or contribution of each estimated coefficient to the respective independent variable concerning the dependent variable.

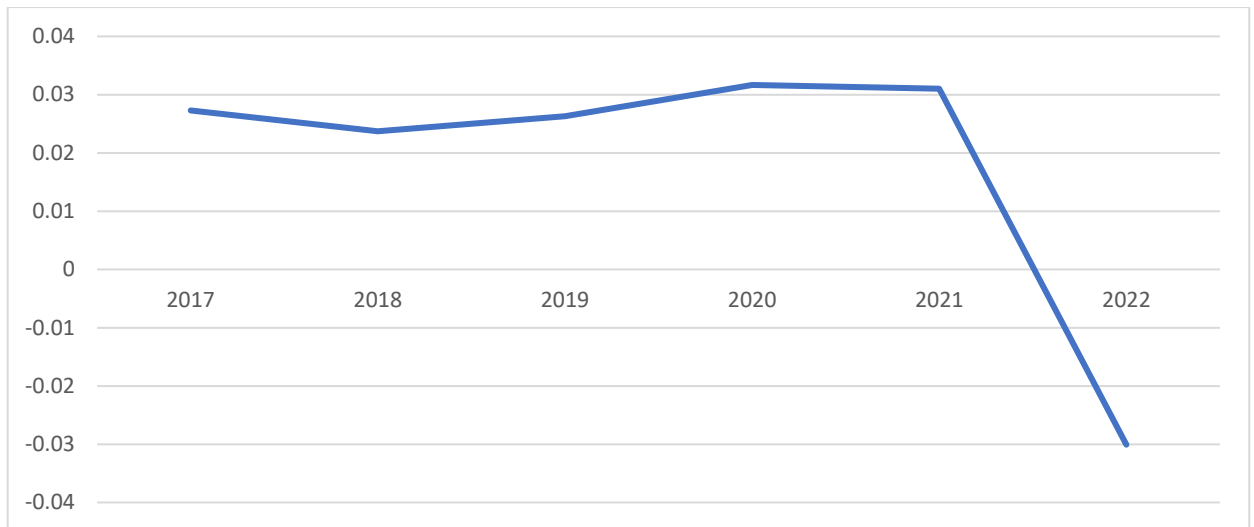
#### 4.2 Profitability of Banks in Ghana

This section presents analysis on the banks' profitability with Return on Assets (ROA) and Return on Equity (ROE) being the two variables sampled. Graphs are utilised to present the results. Averages for the respective years were determined and used for the graph.

##### 4.2.1 The trend of Ghanaian Banks' ROA

The trend of Return on Assets (ROA) among the eight banks for the period of 2017 to 2022 is presented in this section of the study and illustrated in Figure 4.1.

As shown in Figure 4.1, it can be found that the ROA of the Ghanaian banks has fallen significantly, and it continues to fall. However, before and after covid-19 until 2020, there was quite an upward movement in the ROA. But subsequently, it has fallen drastically ever seen. Much more, in just between 2021 and 2022, these banks in Ghana recorded their lowest ever ROA for the past 6 years.

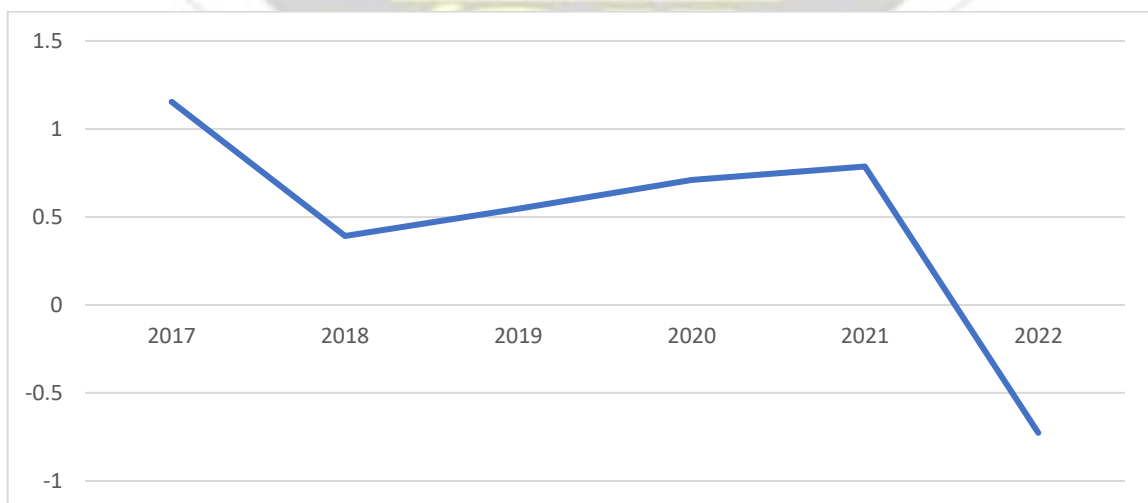


**Figure 4. 1: The trend of Ghanaian Banks' ROA**

#### 4.2.2 The trend of Ghanaian Banks' ROE

This section dive into the trend of the Return on Equity of the Ghanaian banks for the beginning from 2017 to 2022.

As shown in Figure 4.2, there have also been a significant decrease in the ROE among these Ghanaian banks. Though before covid-19, the ROE of these banks had decreased significantly from 2017 to 2018, the ROE started to increase gradually until 2021 when it fell again significantly. The 2021 to 2022 marks the period in which these banks in Ghana recorded their least ROE ever within the six years period.



**Figure 4. 2: The trend of Ghanaian Banks' ROE**



### 4.3 Regression Statistics

These regression statistics provide the performance and how good the regression model fit. They indicate how well the model explains the various likelihood of the dependent variable (ROA) based on the independent variables and the number of observations used in the analysis.

Multiple R is the multiple correlation coefficient. From table 4.1, the value is 0.80, indicating a strong positive correlation between the dependent variable and the independent variables in the model. R Square ( $R^2$ ) is the coefficient of determination and from table 4.1, there is an approximation of 44% of the variances. This is fairly good.

The standard error is a measure of the variability of the residuals. Table 4.1 estimate the standard error to be 0.81 which is also a good indication. Observations represent the number of data points or observations used in the regression analysis.

**Table 4.1: Summary Output of Regression Statistics for ROA and ROE**

Variable	ROA		ROE	
	Coefficients	P-value	Coefficients	P-value
Intercept	2.12**	0.03	1.42**	0.0100
EOI	1.18**	0.02	0.92**	0.0167
Size	2.10**	0.01	1.95**	0.0223
CAR	1.37**	0.02	0.91**	0.01837
AQ	0.82**	0.02	0.61**	0.0180
NIITA	0.90**	0.01	0.71**	0.0331
GDP	0.55**	0.00	0.30**	0.0021
INF	-0.89**	0.01	-0.51**	0.0015
MS	2.10**	0.00	1.35**	0.0011
BC	-0.50	0.06	-0.88	0.0713
BR	2.04**	0.00	1.16**	0.00021
Multiple R	0.80			
R Square	0.44			
Standard Error	0.81			
Observations	48			

\*\*Indicate statistical significance at  $P < 0.05$

#### **4.4 Macro-economic determinants of banks' profitability**

Here, a discussion is done on the regression statistical output, focusing on the dependent variables. The independent variables in this section are the macro-economic determinants. Additionally, the section offers insight into how each estimated coefficient influences or contributes to the corresponding independent variable's impact on the dependent variable. From table 4.1, the coefficients of GDP signify that Gross Domestic Product (GDP) impacts the dependent variables (ROA and ROE) positively, as it impacts ROA higher than it impact ROE while holding all other independent variables constant. This implies that as the economic activity and size of the economy (GDP) increases, the banks tend to have higher profitability, according to the findings of this model. The p-values of GDP also indicates that GDP significantly influence the banks' profitability.

Inflation (INF) on the other hand, reflects the overall economic environment's inflationary pressure. Table 4.1 shows negative coefficients for inflation (INF) with regards to both ROA and ROE. Thus, the model posits that as inflation rises, these banks tend to have lower ROA and ROE. This is consistent with the idea that higher inflation can erode the real value of assets and reduce profitability. The associated p-values indicates a statistically significant relationship as well. Emphasizing the fact that inflation significantly influence ROA and ROE. In simpler terms, there is a meaningful and statistically significant negative association between inflation and the profitability of the banks in this regression model. This strengthens the conclusion that inflation is a significant predictor of ROA and ROE in this model.

Money supply (MS) measures the total amount of money in circulation within an economy, including currency, demand deposits, and other liquid assets. Table 4.1 also shows that, the model depicts that the coefficients of money supply influences ROA and ROE and as such, as money supply in the economy increases, banks tend to have higher ROA and ROE.

A higher money supply can indicate increased economic activity and lending opportunities for banks. And since the p-value of Money supply (MS) is much less than 0.05, it indicates a significant impact of Money Supply (MS) on ROA and ROE and hence, on the profitability of the banks. This strongly supports the conclusion that money supply is a significant predictor of ROA in this model.

#### **4.5 Micro-economic determinants of banks' profitability**

Here, the focus is still on ROA and ROE as they are the proxies of the profitability of the banks. The independent variables here are micro-economic determinants and include Efficiency Ratio (EOI), Size, Capital Adequacy Ratio (CAR), Asset Quality (AQ) and Net Interest Income to Total Assets (NIITA).

From table 4.1, the coefficients of Efficiency Ratio (EOI) for both ROA and ROE are positive. Indicating that Efficiency Ratio positively influences ROA and ROE. The p-value (0.03 and 0.01) suggests that the Efficiency Ratio is a significant predictor of ROA and ROE in the model and hence, the model posits that Efficiency Ratio (EOI) significantly impact the profitability of the banks positively.

Size in this context, refers to the measure of the size of the banks in the model. Table 4.1 indicates that, the Size as a determinant, have a coefficient that emphasize that, banks' size positively impacts ROA and ROE, holding all other independent variables constant. This also depicts that Size significantly influence the banks' profitability as it also has a p-value less than 0.05. This means that the coefficient for "Size" is statistically significant.

Capital Adequacy Ratio (CAR) from table 4.1 signifies that, it influences the dependent variables (ROA and ROE) positively. The p-values (0.02 and 0.18) indicates a significant influence and thus, CAR significantly influence the profitability of these banks.

Asset Quality (AQ) assess the risk associated with its loans and investments. The coefficients from table 4.1 suggests that Asset Quality (AQ) positively impacts ROA and ROE. This implies that banks with better asset quality, meaning lower risk in their assets, tend to have higher ROA and ROE, according to the findings of this model. Asset Quality (AQ) also influence ROA and ROE significantly as seen from table 4.1 again, with p-values less than 0.05. The model therefore posits a meaningful and statistically significant positive impacts of asset quality (AQ) on ROA.

Net Interest Income to Total Assets (NIITA) reflects how effectively banks generates income from their assets. From table 4.1, NIITA influences the dependent variables, ROA and ROE, while keeping all other independent variables constant. This also implies that the banks with a higher proportion of net interest income relative to their total assets tend to have higher ROA and ROE, according to this model. Also, since the p-values are less than 0.05, it indicates a statistically significant impacts. Hence, NIITA significantly influences banks' profitability. This strengthens the conclusion that the net interest income ratio is a significant predictor of ROA in this model.

#### **4.6 Discussion of results**

A concise overview of the findings of the study established here. It highlights on the key findings of the study and compares it with prior literatures. Moreover, within this section, the details of the effects the control variables are emphasized.

##### **4.6.1 The profitability of banks in Ghana**

The study discovered that these banks in Ghana just experienced their lowest profitability ever since 2017 last year-2022. Though in 2018, their profit margin had decreased significantly from 2017, in the subsequent years, they tend to have enjoyed quite some increases in their profitability. During covid-19, though the economy was not buoyant,

these Ghanaian banks still enjoyed quite some increases in their profitability until 2021 where they profitability decreased massively to 2022. It was found that a number of these banks made losses in 2022 whilst others made little profits. This finding is in line with the study by Bunyaminu et al. (2021) who advocated that Ghanaian banks should avoid the use of financial leverage to boost their profits. These significant decreases draw much attention to the profitability of these banks (Lyimo and Hussein, 2022)

#### **4.6.2 Macro-economic determinants of banks' profitability**

From previous discussions above, it is discovered that Growth Domestic Product (GDP), Inflation (INF) and Money Supply (MS) which are macro-economic determinants all influence the profitability of the banks significantly. However, with the except inflation which negatively impacted banks' profitability, both Growth Domestic Product (GDP) and Money Supply (MS) had a impacted on the profitability of the banks positively. This negative impact by inflation in Ghana aligns with the findings of Lekwauwa and Bansa-Akutey (2022) whilst the positive impact the remaining determinants are also consistent with the findings of prior literatures (Derbali and Lamouchi, 2021; Okyere and Mensah, 2022; Lyimo and Hussein; 2022)

#### **4.6.3 Micro-economic determinants of banks' profitability**

Regarding micro-economic determinants as independent variables, the study discovered that all the variables including Efficiency Ratio (EOI), Size, Capital Adequacy Ratio (CAR), Asset Quality (AQ) and Net Interest Income to Total Assets (NIITA), positively influenced the profitability of the banks. All these variables impacted both ROE and ROA significantly. This finding is in line with the findings of prior literature which include the findings of Adelopo et al. (2018) and Almaskati (2022) on Efficiency Ratio (EOI), the findings of Barth et al. (2013) on Capital Adequacy Ratio (CAR), Athanasoglou et al.

(2022) and Garcia and Trindade (2019) on Asset Quality (AQ) and lastly, the findings of Batten and Vo (2019) on Net Interest Income to Total Assets (NIITA).

#### **4.6.4 The impact of bank competition and bank regulation on banks' profitability**

The study also discovered a negative impact that bank competition have on the banks' profitability but a positive impact that bank regulations have on the profitability of the banks. However, the negative impact of bank regulation was seen to be insignificant whilst the positive impact of bank regulations on the banks' profitability was seen to be significant. The negative impact of bank competition with the findings of Olalere et al. (2017) and the positive impact of bank regulations aligns with the discovery of Rahman et al. (2020).

#### **4.7 Summary of Chapter**

The entire section gives a thorough discussion regarding the findings and a summary as well of the data gathered and discusses them. The regression statistics of the dependent variables (ROA and ROE) were examined and were found to be good for the analysis. The fixed effect model was used to examine the micro-economic and macro-economic determinants of banks' profitability, notwithstanding, the control variables as well.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

#### 5.0 Introduction

This section provides conclusions and recommendations. It also discusses the essence of the study and emphasize the relevance of the study. The summary encompasses the objectives, the methodology used and the key findings obtained from the analysis. The conclusions are based on the significant findings of the research topic. The recommendations are drawn from both the findings and conclusions, suggesting practical implications and suggestions for further action. The chapter also highlights the contribution of the study to the existing knowledge in the field and proposes potential areas for future research to expand upon the current findings.

#### 5.1 Summary of Findings

Determining the impact of the independent variables Efficiency ratio (EOI), Size, Capital adequacy ratio (CAR), Asset quality (AQ), Net interest income to total assets (NIITA), Gross domestic product (GDP), Inflation (INF) and Money supply (MS) which make up macro-economic and micro-economic determinants on the dependent variables, Return on Assets (ROA) and Return on Equity (ROE) which are the proxies of banks' profitability is what the study aimed for. The study employed the non-probability sampling technique, made use of secondary data which was sourced from "[www.annualreportsgh.com](http://www.annualreportsgh.com)" and utilised available data from the year 2017 to 2022. The Fixed Effect panel model is employed in the study to examine the impact among eight banks.

The findings showed that all these macro-economic and micro-economic determinants significantly impact banks' profitability. With the exception of inflation which impacts ROA and ROE negatively, all the other independent variables have a positive on both

Return on Assets (ROA) and Return on Equity (ROE) and hence, on banks' profitability. With regards to Bank Competition (BC) and Bank Regulation (BR) which are the control variables in the study, it was discovered that only Bank Regulation (BR) significantly impact the profitability of banks in Ghana. Bank Competition (BC) negatively impact banks' profitability but the findings also depicted that this impact is insignificant.

## **5.2 Conclusion**

The findings of the study underscore the multifaceted nature of bank profitability in Ghana, and provides comprehensive analysis on several key insights of the drivers of bank profitability to stakeholders in the banking industry. The study emphasized the importance of certain factors as it is aimed to examine the macro and micro determinants of commercial bank profitability in Ghana. The findings of this comprehensive analysis provide several key insights into the drivers of bank profitability.

Regarding macro-economic determinants, it is evident that factors such as Gross Domestic Product (GDP), Inflation (INF), and Money Supply (MS) all play significant roles. A strong GDP positively influences both ROA and ROE, while inflation exerts a negative impact. Interestingly, a higher Money Supply is associated with higher ROA and ROE, indicates the importance of liquidity. In a similar vein, micro-economic determinants such as Efficiency Ratio (EOI), Bank Size, Capital Adequacy Ratio (CAR), Asset Quality (AQ), Net Interest Income to Total Assets (NIITA), Efficiency Ratio, Bank Size, CAR, and NIITA are also key predictors of banks' profitability as they all exhibit positive and statistically significant associations with ROA and ROE.

Whilst on the other hand, Bank Competition (BC) does not significantly impact, but Bank Regulation (BR) significantly impacts banks' profitability, underlining the role of regulatory environments in shaping bank profitability.



### **5.3 Recommendations**

Based on the conclusions drawn from the study, recommendations are made.

Given the significant positive impact of certain aforementioned macro-economic and micro-economic determinants of banks' profitability, parties such as policymakers, banks and investors can make informed decisions and take necessary actions to enhance and sustain profitability in an ever-evolving banking landscape. Understanding these determinants gives insights as to what is happening and what is likely to happen as well, in order for appropriate actions and decisions to be made.

The study underscores the impact of macroeconomic factors, such as Gross Domestic Product (GDP) and Inflation (INF), on banks' profitability. Banks should closely monitor economic conditions and tailor their strategies accordingly. During periods of economic growth, banks can leverage opportunities to expand their operations, while during inflationary periods, they should employ strategies to mitigate the adverse effects on profitability.

### **5.4 Recommendations for Further Study**

For researchers who wish to conduct similar research, it is hoped that they can increase the scope of the research and the time period, in order for the results of the research to be even better, since this study only used eight banks and is also based on 5 years that is from 2017 to 2022.

Also, for future researchers, it is hoped that this research can serve as reference in conducting studies. The determinants of the study can be further looked at, to find further ways of strengthening or weakening the relationships established.

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