

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**COLLEGE OF HUMANITIES AND SOCIAL SCIENCES**

**SCHOOL OF BUSINESS**

**THE DETERMINANTS OF RURAL AND COMMUNITY BANKS (RCBs)**

**PERFORMANCE: EVIDENCE FROM GHANA**

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## DECLARATION

I hereby declare that this submission is my own work towards the MBA (Finance) and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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## DEDICATION

### To God Be The Glory

This work is dedicated to the Almighty God for his tender mercies and love and his sufficient grace through the period of the program.

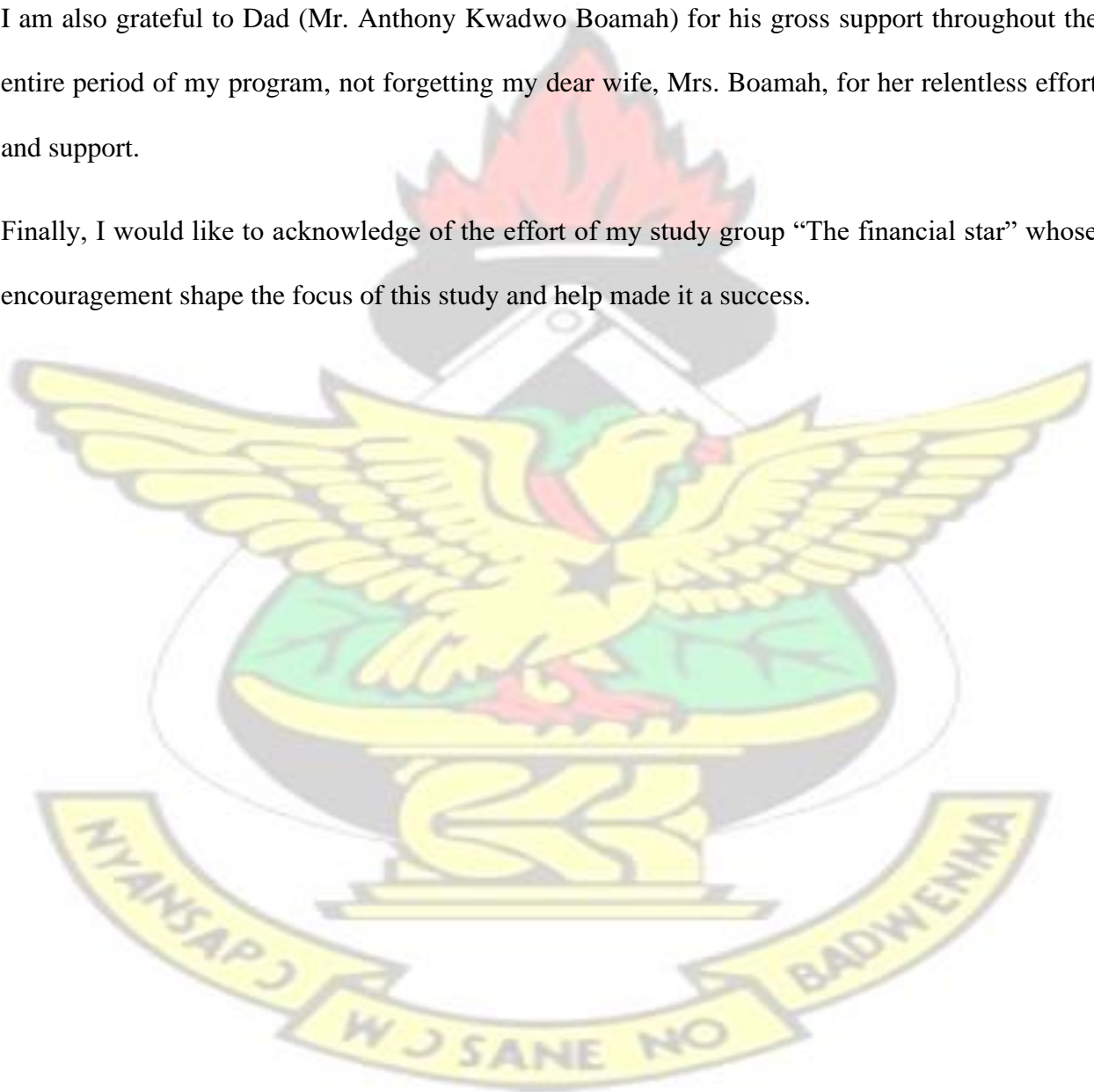


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## ABSTRACT

The study examines the determinants of rural and community banks performance in Ghana. The study uses annual panel data of 15 RCBs covering the period of 2010-2018. The study uses panel regression method to estimate the models. The study finds asset management, operational efficiency, interest rate, bank size as factors that determine the internal performance of RCBs. Inflation and GDP have inverse relationship with RCBs internal performance. The study further finds Assets Management, Bank Size and Interest rate as determinants of RCBs market-based performance, and Assets Management, interest rate and GDP as determinants of RCBs economic-based performance. The study concludes that the factors that drive RCBs performance in Ghana are Assets Management, Operational Efficiency, Interest rate, Bank Size and GDP. Based on these findings, the study recommends that RCBs strengthen their assets management. For example, high managerial skills to invest into an income earning assets like assets with characteristics of marketability on stock market would improve performance. RCB must efficiently operate in such that the cost associated with the maintenance and administration on a day-to-day basis compares well to the income accrued. The study further recommends the management of RCBs to improve their credit quality to increase interest income and reduce provisioning costs.



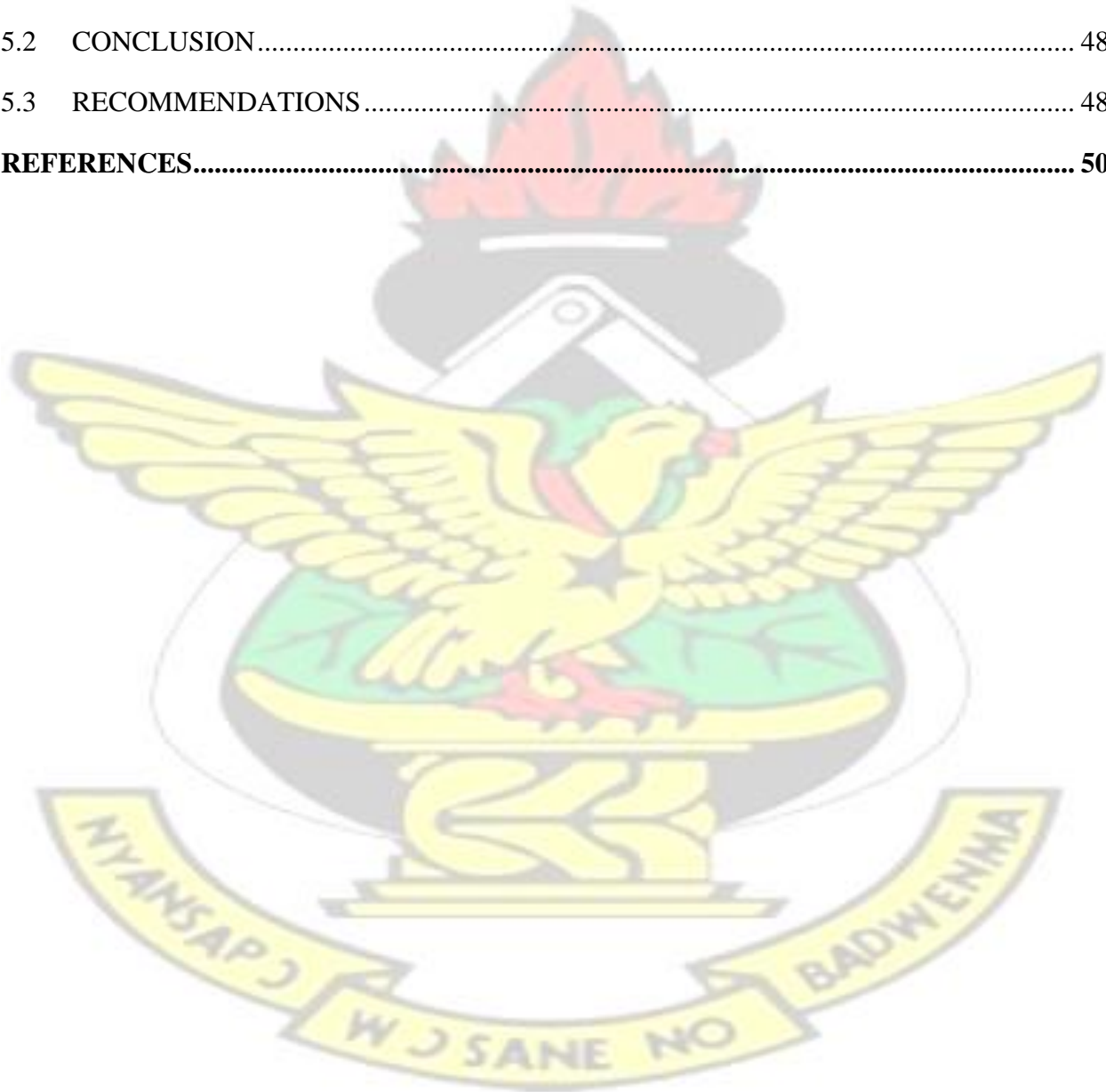
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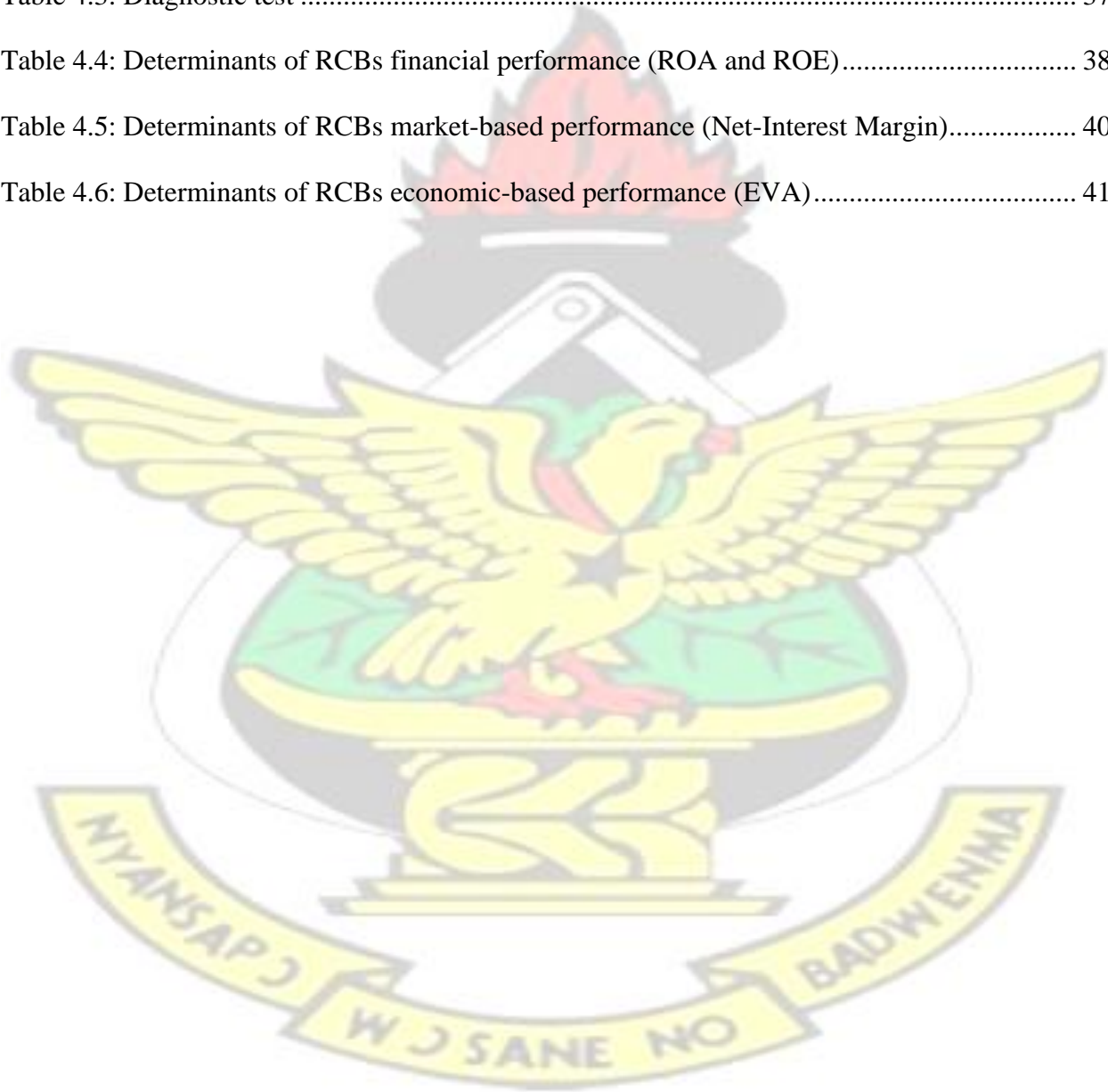
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## LIST OF ABBREVIATIONS

BOG	Bank of Ghana
ERP	Economic Recovery Programme
EVA	Economic Value Added
FINSAP	Financial Sector Adjustment Programme
GDP	Gross Domestic Product
NIM	Net Interest Margin
RCBs	Rural and Community Banks
ROA	Return on Assets
ROE	Return on Equity
SCPM	Structure Conduct Performance Mode



## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

The management of the financial system is important to the growth of every economy. Rural Banks are rural financial institutions/cooperative/community banks that provide customized financial services to rural communities, Aboagye et al (2010). Financial performance is a measure of how well a firm uses its assets to generate revenue. So many factors need to be taken care while differentiating performing banks and non-performing banks. The determinants of performance of RCBs need to be subject to evaluation to determine how they should be managed to achieve profitability. Yaron *et al.* (2016) conduct a study on three highly performed Asian RCBs. Zaman (2004), also examine the intermediation role of four Bangladesh RCBs. The study of Zaman (2004) and Yaron *et al.*, (2016) summarize the key RCBs performance indicators as quality leadership, independence of management in the formulation of operational policies, transparent and effective recruitment process, fair remuneration system, innovation, efficient and flexible cost delivery system, effective loan portfolio, management of information system that enhances effective planning and assists management to monitor and control operational expenses and ensures adequate internal control system. The studies further consider the influence of macroeconomic stability and regulatory system as a financial performance indicator.

Aboagye and Otieku (2010) contend that the success of RCBs is linked to their ability to dispense quality loans and fiduciary activities or services, plough back profit, that cover operational and

financing costs. This enhances the financial performance, growth and sustainability of RCBs. The finding of Aboagye and Otieku (2010) supports the position of Naceur (2003) that there is a positive and significant relationship between loan and RCBs financial performance in that banks loan generates an interest income and thus expects to significantly influence bank performance. This supports the liquidity position that assets quality which is dependent on effective loan portfolio is a key factor of bank liquidity which has a positive and significant effect on financial performance (Buyinza, 2010).

Financial environment composes of five elements, namely; money, financial instruments, financial institutions, regulation and financial markets. Financial institutions primary function is liquidity transformation. Among these institutions, banks are the most recognized players in the financial system, Dhanabhakya and Kavitha (2012). Banks are financial institutions which perform intermediation role by transferring funds from the surplus unit to the deficit unit. They gain from the spread of the difference in interest charged. By the nature of their operation and activities, banks are the backbone of many strong economies (Rashid, 2010).

The world in general, have experienced financial crisis. This occurrence has brought about several reforms, interventions and strict supervision. The financial turmoil has increased the banks regulation. Banks in Ghana have received attention from regulators, academia, government, civil society. Small and medium banks, Savings and Loans and Community banks have not received same level of attention given to the commercial banks. 23 Rural and Community banks experienced liquidation in 2007. Seventy (70) Micro finance institutions (MFIs) were shut down



in January in 2016. In 2019, the bank of Ghana (BOG) revoked the licenses of twenty-three (23) insolvent Savings and Loans Companies. The licenses revocation affected the communities those companies operated. The bank of Ghana gave notice in 2015 to the RCBs and MFIs of the revision of the minimum capital requirement for Rural and Community Banks and Microfinance Institutions to One million Ghana cedis (GHs 1,000,000) to be complied by 2017, and Two Million Ghana cedis (GHS 2,000,000) to be complied by 2018, respectively. Bank of Ghana directed all the RCBs and MFIs to meet their respective minimum capital by February 2020.

The collapse of some RCBs rural banks confirms the disregard of the effective supervision on rural banks operation in the country, it is therefore imperative to delve into the causes of the instability in the Rural banking operation and discuss their ability to withstand the Micro finance crises. Delving deeper and recommending effective measures for the smooth operation of rural banking will not only serve as a mitigating factor to the distressed Rural banks, but most importantly, it is a lesson to how important to repair the dwindling public trust and confidence by failed rural and community banks, Micro Finance Institutions.

## **1.2 PROBLEM STATEMENT**

Financial institutions are undoubtedly the bulwark of socioeconomic development of every country. The rural banks serve as a medium of general economic growth and development, (Appiah *et al.*, 2015). The effectiveness and efficiency with which a bank implements its strategies determines its performance and profitability (Dhanabhakym & Kavitha, 2012). A well-managed bank performs creditably better, and is less susceptible to the unfavorable economic conditions

that may negatively affect its performance. Unlike many other universal banks, rural and Community Banks (RCBs) have a lower earning capacity, and hence performance is affected, (Appiah *et al.* (2015). The high default coupled with the high operational cost of RCBs contribute significantly to their poor performance, Zaman (2018). Aside the high cost of operation and the high default rate, the low earning of RCBs, arguably, can be attributed to the stringent measures put in place by regulators to ensuring a robust financial intermediation in the rural communities, (Yaron *et al.*, 2016). According to Appiah *et al.* (2015), geographical location of a bank could negatively affect its performance, however, there are some other bank specific, industry specific, government policies and macroeconomic factors, which affect performance. Therefore, banks performance should correlate with local economic data (Robinson, 2016).

Dhanabhakyaam and Kavitha (2012) examine the determinants of RCBs performance in India and find that quality loan portfolios affect RCBs performance. Yaron *et al.*, (2016) studied the performance of RCBs in Russia and find that seasonal flow of loans and deposits affect RCBs performance. Clair (2015) evaluates the determinants of financial performance of RCBs in Singapore and finds that economic value added (EVA) and the net interest margin (NIM) do better than the conventional performance measures like ROA and ROE. Mensi (2010) studied the measures of competitiveness degree of Tunisia RCBs and finds that competition improves the performance of RCBs if the macro-economic condition is favorable. Literature presents result on RCBs determinants, and it seems like the determinants are specific to the geographic location, bank specific and macro-economic factors of that country.

Rural banks in Ghana face major problems. Inadequate legal framework, low adoption of international performance standard, low capitalizations, low disclosure standards, poor human

resource management, (Appiah et al., 2015). Low adoption of management information system is identified as major challenges faced by rural banks in Ghana. The situation is becoming worse on recent liquidation of rural banks that has brought about stringent measures and tighter requirement on capital adequacy and liquidity standards, (Congore *et al.*, 2013). Awo and Akotey (2019) examine the financial performance of rural banks Ghana, and find that smaller banks performance is influenced by liquidity management, bank size and capital adequacy. Their findings lend support to Financial Sector Development report (FSD) (2018) that rural banks in Ghana are struggling to meet deposit outflows due to liquidity challenges. Owusu *et al.* (2015) studied the determinants of banks performance, and finds the macroeconomic variables such as a high inflation rate has a negative influence on commercial banks performance in Ghana.

In spite of these enormous studies and the enormous contributions made by rural banks to the socioeconomic development of Ghana, it is still evidenced that rural banks in Ghana are characterized with an increasing default rate, low deposits and intense competition from the Micro Finance Institutions (MFIs). It is against this backdrop that determinants of RCBs profitability have attracted research interest across many developing economies including Ghana.

Many studies conducted on determinants of RCBs in Ghana concentrated on the traditional financial performance measure, i.e, either ROA or ROE. No research work has been done on RCBs in Ghana which assesses the market -based performance measure of RCBs using net interest margin as a performance measure, or on the economic -based performance of RCBs in Ghana using the economic value added (EVA) as a performance measure. Thus, extending research on these performance measures on the rural banks is advancement to improving the robustness of rural banks in developing economies especially in Sub-Sahara Africa. This study therefore fills the gap of examining both the bank specific and macroeconomic factors like inflation, GDP and



interest rate in Ghana, using market-based and economic based performance measures since these variables significantly affect the general economic conditions in the Ghanaian economy.

### **1.3 RESEARCH OBJECTIVES**

The main objective of this study is examining the determinants of performance of selected rural banks in Ghana. The specific objectives are:

1. To estimate the determinants of RCBs' financial performance in Ghana.
2. To evaluate the determinants of RCBs' market - based performance in Ghana.
3. To examine the determinants of RCBs' economic - based performance in Ghana.

### **1.4 RESEARCH QUESTIONS**

1. Do the determinants of RCBs' have an impact on financial performance
2. Do the determinants of RCBs' have an impact on market-based performance?
3. Do the determinants of RCBs' have an impact on economic-based performance?

### **1.5 SIGNIFICANCE OF THE STUDY**

It is anticipated that the study will appraise the performance of rural banks in Ghana and to recommend the governance structure to employ for banks sustainability, for the benefit to the financial industry, investors, management, customers, institutions, academia, government, countries and the goal economy. The findings of the study provide meaningful result which

explains and provides adequate information to scholars on future studies pertaining to the rural banking performance in Ghana. The findings of the study add to the store of knowledge on the subject and serve as impetus for further research. From policy perspective, the study would endow policy makers with insight on the strategies and processes to manage the risk-taking behavior of rural banks in achieving high performance. This will cause policy makers to adjust the capital requirement of saving and loans companies for the purposes of shock absorbance at a high rate of uncertainties. The outcome is expected to be of immense benefits to decision and policy makers to devise appropriate policies and decision of the overall good of the industry.

The findings are practical policy implication for effective management and supervision of rural banks. It will help deal with the spillover effect of the financial system crisis by instilling confidence and assuring customers of the rural banks financial integrity. The recommendations of the study will inform the clients on which bank is performing well and which is performing poorly. The findings of the study would provide information to the players in the banking industry to establish the appropriate guidelines that will achieve effective rural banking in Ghana. The outcome of the study will help in the formulation of the policies by Bank of Ghana.

## **1.6 SCOPE OF THE STUDY**

This study focuses on some selected rural banks in Ghana. The research specifically analyses the determinants of performance of the selected Rural banks. The study also looks at how credit risk Assets management and operation efficiency, inflation, GDP and Interest rate impact ROA, ROE



and EVA. The study is limited to some selected rural banks in Ghana. The findings may therefore not be applicable to the entire industry of banking in Ghana.

## **1.7 OVERVIEW METHODOLOGY**

The study employs a descriptive research design for secondary data gathered from the annual financial reports of 15 Rural and Community banks in Ghana. The study uses quantitative approach. The population for the study is all the Rural and Community Banks in Ghana. However, the study uses a convenience sampling method to sample 15 savings and loans companies for the study. The study uses panel data regression model to examine the determinants of RCBs performance in Ghana for a time period of eight (9) years starting from 2010 - 2018. The generalized regression estimate is used in the analysis of the data to improve the level of significance of the variables. Respective diagnostic tests including multicollinearity test, Hausman test and the Breusch-Pagan Lagrange Test are carried out to evaluate the assumption of the regression estimate.

## **1.8 ORGANIZATION OF THE STUDY**

The study is divided into five chapters. Chapter One - Introduction - This chapter introduces the study and provides background information on Rural banking in Ghana and how these banks operate in Ghana. It covers the objectives, problem statements, significance of study, overview of methodology and the research questions being outlined for the study.

Chapter Two - Literature Review - This chapter reviews relevant studies conducted on Rural banking. Chapter Three - Methodology - The chapter outlines the various methods utilized in the

collection and analysis of data. It also looks at the population, sampling size and procedure as well as reliability and ethical consideration of the study.

Chapter Four presents the results and interpretation. Chapter Five presents conclusions and recommendations



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

This chapter reviews literature related to the determinants of RCBs performance. The chapter is organized in six (6) main sections. Section 2.1 presents a review of conceptual literature and covers concepts including banks' financial performance, determinants of banks performance. Section 2.2 covers overview of the sector which includes financial system in Ghana, Rural and Community Banking in Ghana. Section 2.3 discusses the theoretical literature and covers theories such as efficiency hypothesis and the structure conduct performance model. Section 2.4 reviews empirical literature. Section 2.5 gives the conceptual framework and section 2.6 summaries the chapter.

#### **2.1 CONCEPTUAL LITERATURE**

The conceptual review presents the arguments, and findings by scholars, organization on the area of determinants of RCBs' performance.

##### **2.1.1 Determinants of Bank Performance**

Financial performance connotes the potential earning capacity of a business as against its expenditure (Sanni, 2017). Return of total assets (ROTA), a proxy for financial performance, measures the overall earnings performance of a company as well as its efficiency in utilizing assets. Thus, the ratio measures a firm's earnings before interest and taxes against its total net assets. Accordingly, it is considered as an effective indicator of how firms use their assets to generate

earnings before contractual obligations are paid. This said the profitability ratio identifies how well rural banks are actually able to make intelligent choices on their expenditure on new assets. Here, optimal choice and efficient use of total asset base is expected to increase bank profitability (see Ansoff, 1965; Gale, 1972 and Appiah *et al*, 2015). Put simply, return on total asset is an indicator of the firms' efficiency and effectiveness to generate profit from asset.

The profitability of banks is usually expressed as a function of internal and external determinants (Appiah *et al*, 2015). The internal determinants, also called bank specific determinants of profitability, are related to bank management (Kosmidou, 2016). On the other hand, the external variables reconcile the economic and legal environment that affects the operations of banks such as inflation rate, real GDP growth, cocoa prices, oil prices and gold prices (Sanni, 2017; Sufian and Habibullah, 2009). The researcher discusses some determinants of bank profitability in the next subsections.

#### **2.1.1.1 Bank size**

Prior studies establish association between bank size (assets) and profitability. Kosmidou (2016) finds positive linkage between bank size and profitability which the author attributes to economies of scale enjoyed by banks for their presence in the banking industry. Kosmidou (2016) demonstrates that large banks are more profitable because of the extent to which they are able to raise less costly funds. Appiah *et al.*, (2015) also confirm this notion. Gibson (2016) however, argues that due to presence of bureaucracy in the management of banks with large asset holdings, bank size may negatively influence profitability. In a sharp contrast, little cost saving can be



achieved by increasing the size of a banking firm, thereby enhancing profitability of banks (Bikker and Hu, 2012).

#### ***2.1.1.2 Credit risk***

Credit risk is the possibility of loss resulting from a debtor unable to honour debt obligation. There is a possibility that a lender may not receive the money advanced to the borrower. For this reason, the ratio of reserves for doubtful loans to total loans and advances is used as a proxy for credit risk. If the ratio is high then the bank is more stable to credit risk. Prior studies (e.g., Karim and Alam 2013; Sanni 2017)) establish that insufficient reserve for doubtful debt is responsible for banks' failure in current global economy. This notwithstanding holding more reserve has an opportunity cost. For instance, holding more reserve for doubtful debt are associated with lower rates loans advancement, thereby reducing income and profitability. Thus, the author speculates that holding excessive reserve for credit risk, a non-interest earning asset, is expected to negatively correlate with performance (Karim & Alam, 2013).

#### ***2.1.1.3 Operational efficiency***

Operational efficiency measures how the bank is able to meet up its operating expense. Operational efficiency is measured by a ratio of total operating expense to net interest income, (Karim and Alam, 2013). Each bank has its own purpose in the chase of performance goals which include higher profitability, higher stock value. A company is deemed as efficiently operated if the cost associated with the maintenance and administration on a day-to-day basis compares lowly to the income accrued to the company. Higher operational efficiency positively affects the performance



of banks, Sanni, (2017). Increase in revenue over and above the cost of expenses made on administration increase the operational efficiency of banks.

#### **2.1.1.4 Assets Management**

Assets management is measured by Karim and Alam (2013) as the ratio of operating income to total assets. The ratio indicates how effectively assets are being used to generate revenue. The greater the ratio, the more effectively the company is said to be using its assets properly.

The effective utilization of the assets of the company has positive relation to profit. Most rural banks lack the managerial skills to invest into an income earning assets like assets with characteristics of marketability on stock market, and therefore suffer loss on the non-income earning assets which shrink revenue of the company. Proper investment into profitable assets and its management lead to profitability (Karim & Alam, 2013)

#### **2.1.2 Banks Financial Performance**

Harker and Zenios (2015) define financial performance as economic performance measured in both the long-and the short run by a number of performance ratios and indicators. Bank-specific, industry specific and macroeconomic factors influence the financial ratios and indicators. The macroeconomic and the local social economic factors are referred to as external factors which affect financial performance. Mushonga *et al.*, (2018) argue that financial performance of RCBs is mostly influenced more by the internal factors than the external factors. The authors conclude that the future of RCBs rests on a massive improvement in technology, culture shift and environmental policy.

Yaron *et al.*, (2016) conduct a study on three highly performed Asian RCBs. Zaman (2004) also examine the intermediation role of four Bangladesh RCBs. The study of Zaman (2004) and Yaron *et al.*, (2016) summarize the key RCBs performance indicators as quality leadership, independence of management in the formulation of operational policies, transparent and effective recruitment process, fair remuneration system, innovation, efficient and flexible cost delivery system, effective loan portfolio, management of information system that enhances effective planning and assists management to monitor and control operational expenses and ensures adequate internal control system. The studies further consider the influence of macroeconomic stability and regulatory system as a financial performance indicator.

Aboagye and Otioku (2010) contend that the success of RCBs is linked to their ability to dispense quality loans and fiduciary activities or services, plough back profit, that cover operational and financing costs. This enhances the financial performance, growth and sustainability of RCBs. The finding of Aboagye and Otioku (2010) supports the position of Naceur (2003) that there is a positive and significant relationship between loan and RCBs financial performance in that banks loan generates an interest income and thus expects to significantly influence bank performance. This supports the liquidity position that assets quality which is dependent on effective loan portfolio is a key factor of bank liquidity which has a positive and significant effect on financial performance, Buyinza (2010). Size of the bank represented by the natural logarithm of total assets has been found as a determinant of banks profitability. Literature presents a mixed finding of the relationship between size and banks profitability. This makes size of a bank an inconclusive determinant of profitability. Example, Berger *et al.*, (1987) operational cost of a bank reduces

when its size increases. Aboagye (2015) finds a positive significant relationship between size and profitability. The finding of Zaman (2018) supports the findings of Aboagye (2015). Zaman (2018) argues that an increase in banks size brings about economies of scale which positively influences financial performance. On the other hand, Naceur (2015) finds a negative relationship between bank size and profitability due to inefficiencies associated with the diseconomies of scale. Clair posits that efficient management of credit, assets quality and control of expense enhance financial performance. Clair (2015) further finds that the effect of interest rates can have a downward effect on capital and liquidity, and that non-performing loans (NPL) erode profits. According to Robison and Barry (2016), a bank would have a liquidity challenges as a result of loan default and low customer deposit. The authors conclude that improving asset quality and making available liquidity funds would reduce the risk of RCBs. Silva *et al.*, (2017) posit effective cooperatives are conservative and are less risky with lower impairment on assets.

## **2.2 An Overview of the Financial System in Ghana**

The financial system in Ghana are categorized into formal, semi-formal and informal. The formal financial institutions are incorporated under the companies' code 1963 (Act 179) qualifying them with legal identity as limited liability companies. Subsequently, they are licensed by Bank of Ghana (BOG) under either the Banking Law 1989 (PNDCL 225) or the Financial Institutions (Non-Banking Law 1993) PNDCL 328) to provide first class financial services under Bank of Ghana regulation. Formal banks appeal to the urban middle and high net worth clientele. The Rural and Community Banks (RCBs) functions as commercial banks under the banking law, except that they are limited to transact foreign exchange operations. Their clientele are mostly rural people with low net worth, and found in the local catchment area. The minimum capital impose on them



is averagely lower. Many partner with Non-Governmental organization (NGO) using micro finance methodologies. Among the Non-Bank Financial Institutions (NBFIs), the RCBs are the most active category, performing micro and small-scale financial intermediation role by using microfinance methodologies and approach, although they are limited to a range of formal banking activities.

Informal Financial System, undertakes the less complex and locally intensive financial activities including Susu collectors, rotating savings and credit associations, and savings and credit clubs. Stakeholders within this sector includes money lenders, family members and relatives, trade creditors etc. Police license the operation of the money lenders under the Money Lenders Ordinance 1957. Financial Sector Adjustment Programme (FINSAP), was launched under the Economic Recovery Programme (ERP) to strengthen the financial sector. Aryeetey (2008) states that the eases access to credit by RCBs attracted petty traders, many of whom were women, to make a regular deposit with them. However, many of such RCBs turned as fraudulent and misappropriated millions of depositors' money. To stabilize the financial system and protect depositor's money, the Bank of Ghana in 1990 started the process to license Susu/Finance companies under the classified name of Savings and Loans companies. The institutionalization of the informal savings companies was aimed at strengthening the RCBs to achieve its objective of saving mobilization for economic development of the country, Aryeetey (2008). The NBFI, under which this study falls, is valuable to the financial system sustainability, and the fact that they fall under different categorization of licensure and operation, does not limit their importance in the financial industry.



### 2.2.1 Rural banking industry in Ghana

The concept of Rural banking was adopted by Bank of Ghana in 1960s, and legally integrated into the formal banking system since 1976 to facilitates banking and credit services to the rural communities of farming populace, as well as providing support to other Small and Medium Enterprises (SMEs) (Allen *et al.*, 2016). The supervision of the activities of RCBs was poor on the part of the central bank. Many of these RCBs were bankrupt as a result of the fraudulent intention in setting up the banks. The central bank, in restoring the financial integrity and stability, withdrew the licenses of 23 non-performing RCBs between the period of 1999 and 2000 (Asiedu-Mante, 2011). The ARB -Apex Bank was registered in 2000 as a public limited liability, and a clearing bank to supervise the operation of the rural banking in Ghana. The ARB-Apex bank is a central bank for the RCBs. The ARB-Apex bank is locally owned with government as the majority shareholder. Among the many mandates of the ARB-Apex bank, the bank provides banking and non-banking support to improve the operational efficiency as well as transform the rural banks into efficient and robust financial institutions which address the banking and credit needs of rural population (Asiedu-Mante, 2011). Notwithstanding, RCBs have performed poorly on financial intermediation role. RCBs have their branches scattered across rural areas to cater for the financial needs of both medium and small businesses, until recently, where most of these RCBs have started opening more branches in the urban area to access more customers.

RCBs in Ghana are mandated to provide financial intermediation services to rural communities to achieve rural industrialization (Bank of Ghana, 2006). The industry has since experienced a steadily growth in size and branches. The assets base of some RCBs continues to increase, while others are facing challenges requiring the central bank to strengthen its supervision and oversight

function. As at August 2020, ARB Apex-Bank had 144 members operating from 800 branches across the country. In 2019, the sector had a total asset of GHs 4.69 billion which is GHS 550 million increase from 2018 (IFAD, 2008). ARB-Apex bank functions as the mini-central bank for all ARBs in Ghana, however, Bank of Ghana maintains its primary supervisory function over rural banks in Ghana and is the sole authority that issue new license to ARBs as well as audit the RCBs performance reports.

#### ***2.2.1.1 Products and Service of Rural and Community Banks (RCBs)***

The services provided by RCBs can be categorized into four different categories, Ledgerwood (2015), which are:

- a) RCBs provide financial services like financial intermediation, and products like savings, insurance, credit, payment systems with no ongoing subsidy.
  - b) RCBs provide social intermediation by building the human and social capital needed for sustainable financial intermediation.
  - c) RCBs provide enterprise growth by facilitating the equipping of entrepreneurs to meet the standard of marketing, managerial, financial, technological skills needed for sustainable rural growth and economic development.
  - d) Non-financial services or social services that promotes the development of the welfare and improving nutrition, education, health and literacy among rural people.
- (Bennett, 2014; Ledgerwood, 2015).

## **2.3 THEORETICAL LITERATURE**

Theories form a vital part upon which any research hinges. In regard to this, the study reviews relevant theories which underpin and explain the concepts of this topic. This section therefore provides a review of some basic theories directly related to the topic under study. These theories include the structure conduct performance model, and efficiency hypothesis.

### **2.3.1 The structure conduct performance model**

Ann *et al.* (2010) document that a structure of an industry are factors such as concentration, technology, and the conditions of the market, while the manner in which the individual's firms act in the market is referred to as the conduct. Grygorenko (2009) explains performance as the profits and social welfare which emanate from the market. The structure conduct performance model (SCP) concludes on the behavior of the market by integrating factors like concentration, conditions and technology of the market. This behavior, in turn, forms the basic characteristics of market resource allocation. (Mason 1939) and Bain (1951) conclude that firms which operate in a highly concentrated industry perform better than firms operating in a lower concentrated market. SCP theory presupposes a higher collusion of firm in higher concentrated industry which lead to higher profitability.

### **2.3.2 Efficiency hypothesis**

The efficiency hypothesis argues that performance of firm is not necessary as a result of the firms' collusive behavior, but how efficient the firm is, which result into a large market share and hence

a high profitability. In other words, the profitability of a bank is not due to the higher concentrated industry the bank operates, but how much efficiency the bank has, (Grygorenko, 2009). This theory opines that a bank with higher efficiency than its competitors is likely to record lower operational costs and higher market share than its competitors. Hence the efficiency of a firm is a key determinant of the differences in performance among banks (Mensi, 2010).

## **2.4 EMPIRICAL LITERATURE**

The review of empirical studies takes a critical look at the existing literature and provides a comprehensive analysis of current situation warranting this study. This section covers banks performance and determinants of banks.

### **2.4.1 Determinants of Banks Performance**

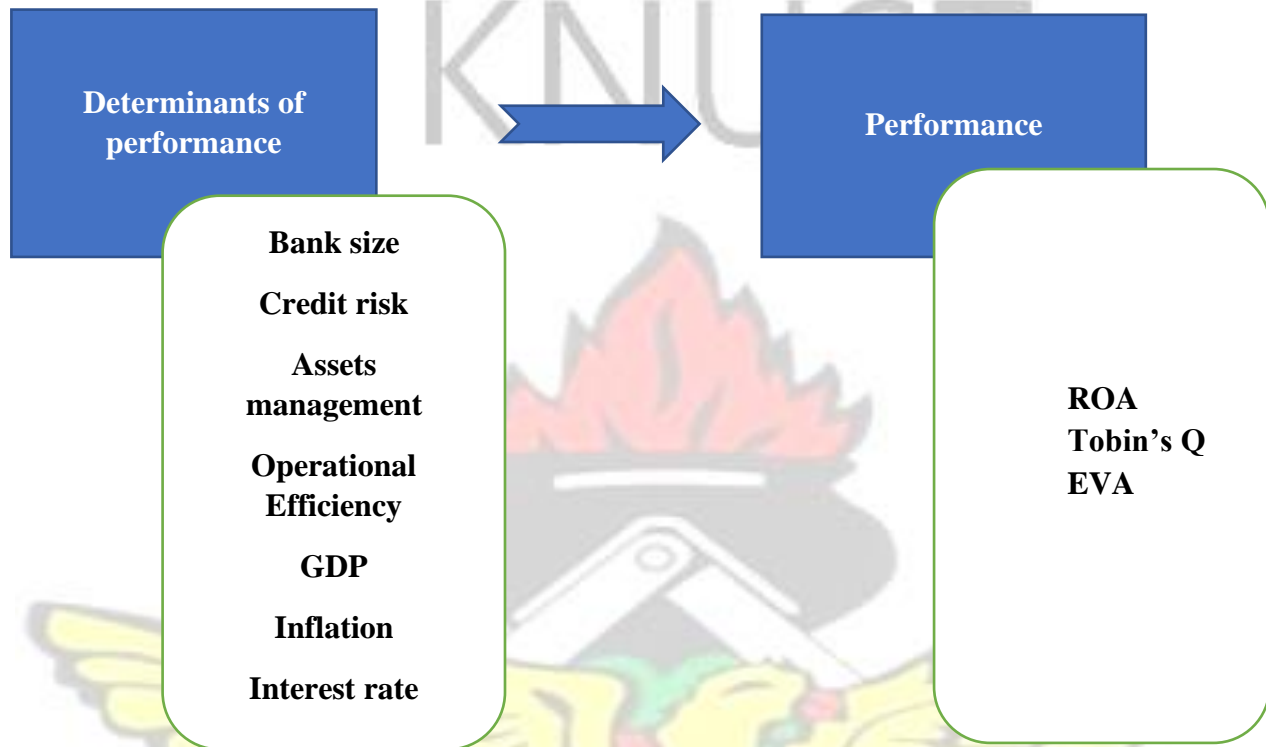
Owusu-Antwi *et al.*, (2015) examine the determinants of banks profitability in Ghana. The study uses average time series data of 28 banks from 1988-2011. The study uses Economic value Added (EVA) as the performance measure. The study finds that liquid assets of bank determines the profitability of banks. Maigua and Mouni (2016) investigate the effect of interest rate determinants on the performance of banks in Kenya, by using data on 26 commercial banks from 2010-2015. The study uses multiple regression analysis to estimate the model. The study finds interest rate, inflation rates and exchange rate as having positive and significant relationship with banks performance, whiles reserve requirement ratio register a negative significant relationship with performance. Antwi and Crabbe (2014) examine the determinants of Rural and Community Banks



in Ghana by using average time series data of 127 RCBs in Ghana. The study uses Linear Regression to estimate the models. The study finds that the ratio of total overhead expense to total assets has a positive and significant relationship with RCBs profitability in Ghana.

Appiah *et al.*, (2015) examine factors that influence the performance of Rural banks in Ghana by using a quarterly data from 138 RCBs from 2009-2012. The study employs Ordinary Least Square (OLS) regression analysis for the estimates. The study finds that RCBs performance relates positively and significantly with liquidity and deposit. However, RCBs performance relates negatively but significant with assets quality, bank size, and oil prices, whiles inflation and cocoa prices relates positively significant with RCBs performance. Awo & Akotey (2019) examine determinants of the financial performance of RCBs in Ghana by using annual financial reports of RCBs covering a period of 2012-2015. The study employs GMM analysis for the estimation. Government treasury bill rate has an inverse relationship with RCBs profitability, however, RCBs loan portfolio has a positive effect with RCBs profitability.

## 2.5 CONCEPTUAL FRAMEWORK



**Fig 1: Conceptual Framework**

Fig. 1 presents the conceptual Model of the study: The conceptual Framework consists of two primary constructs: 1) Determinants of RCBs performance measured by size, credit risk, assets management and operational efficiency, inflation, GDP, interest rate and 2) Financial performance as measured by ROA and Tobin's Q and EVA.

## 2.6 SUMMARY OF THE CHAPTER

The chapter reviews related literature on determinants of RCBs financial performance. It is found that size, operational efficiency, assets management and credit risk have mixed effect on RCBs

performance. Factors underpinning effective financial performance of RCBs include visionary leadership, management autonomy in policy formulation, proper staff recruitment and remuneration system, controlled risk-taking, innovation. Financial system in Ghana falls into formal, semi-formal and informal system. The banking sector has undergone several reforms since 1970s. RCBs provide specific development driven and livelihood empowerment services to the informal sector mainly made up of households. The structure conduct performance model and efficiency hypothesis theories were reviewed. The structure conduct performance model argues that a highly concentrated industry has a high collusion of firms which enhances profitability. Efficiency hypothesis assumes that higher profit of banks is not due in part to their collusive behavior but their efficiency. Empirically, the size, capital adequacy, liquidity, loan portfolios, deposit, credit risk, assets quality affect performance of banks. The conceptual Framework consists of two primary constructs: 1) Determinants of RCBs performance as measured by size, credit risk, assets management and operational efficiency, inflation, interest rate and GDP, and 2) Financial performance as measured by ROA, ROE, NIM and EVA.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 INTRODUCTION**

This chapter presents the methodology for the study. The chapter is organized in five sections; Section 3.1 presents the research design of the study, Section 3.2 provides the data of the study, highlighting the population, sample size and sampling technique, method of data collection, method of data analysis. Section 3.3 describes the empirical model; section 3.4 presents the description and measurement of the variables used for the study, section 3.5 presents the estimation techniques and diagnostic test used for the study

#### **3.1 RESEARCH DESIGN**

The study adopts a descriptive survey research design. According to Mugenda and Mugenda (2003), research design refers to the structure, plan and strategy to be adopted in order to answer various research questions. The study employs a panel survey research design to evaluate the performance of RCBs. A panel survey research design is used because of its usefulness in describing the characteristics of a large population which ensures a more accurate sample to gather targeted results in which to draw conclusions and make important decisions (Yaron *et al.*, 2016). Quantitative data is used for achieving the study objectives. Quantitative data is used because of its ability to provide summaries of data that support the generalisations about a phenomenon and also allows a greater objectivity and accuracy of results (Myles, 2008).



### 3.2 DATA

The main source of data for this study is secondary data. Secondary data are collected from the annual reports of RCBs' in Ghana. The yearly audited financial reports from 2010-2018 are used for the study. The population of the study is all RCBs in Ghana. The sampling technique depends on the availability of adequate audited financial reports of an RCB for the study period. Thus, 15 RCBs with adequate audited financial reports covering the period of 2010 to 2018 were selected for the study.

#### 3.1 Table of RCBs for the study

No.	RCBs
1	Atwima Kwanwoma Rural Bank
2	Amenfiman Rural Bank
3	Nwabiagya Rural bank
4	Asokore Rural bank
5	Bosomtwe Rural Bank
6	Amanano Rural Bank
7	Otuasekan Rural Bank
8	Okomfo Anokye Rural Bank
9	Atwima Mponua Rural Bank
10	Juaben Rural Bank
11	Amansie West Rural Bank
12	Odotobri Rural Bank

13	Kumawuman Rural Bank
14	Sekyere Rural Bank
15	Sekyedomase Rural Bank

*Source: ARB-Apex Bank*

### 3.3 MODEL SPECIFICATION

The study adopts a quantitative approach relying on panel data regression analysis to achieve the objectives of the study. Examine the determinants of RCBs performance in Ghana, three models are developed with each having one dependent variable and seven identical independent variables. Return on Assets (ROA) and Return on Equity (ROE) are used as internal financial measures, Net Interest Margin (NIM) is used as an indicator for market performance, and Economic value Add (EVA) as economic performance. The econometric models are specified as:

(1). To estimate the determinants of RCBs financial performance.

$$ROA = \alpha + \beta_1 BS + \beta_2 CQ_{t,i} + \beta_3 OE_{t,i} + \beta_4 AM + \beta_5 IR + \beta_6 INF + \beta_7 GDP + \varepsilon_{t,i} \dots \dots \dots (1)$$

$$ROE = \alpha + \beta_1 BS + \beta_2 CQ_{t,i} + \beta_3 OE_{t,i} + \beta_4 AM + \beta_5 IR + \beta_6 INF + \beta_7 GDP + \varepsilon_{t,i} \dots \dots \dots (2)$$

(2). To evaluate the determinants of RCBs market – based performance

$$NIM = \alpha + \beta_1 BS + \beta_2 CQ_{t,i} + \beta_3 OE_{t,i} + \beta_4 AM + \beta_5 IR + \beta_6 INF + \beta_7 GDP + \varepsilon_{t,i} \dots \dots \dots (3)$$

(3). To examine the determinants of RCBs economic-based performance.

$$EVA = \alpha + \beta_1 BS + \beta_2 CQ_{t,i} + \beta_3 OE_{t,i} + \beta_4 AM + \beta_5 IR + \beta_6 INF + \beta_7 GDP + \varepsilon_{t,i} \dots \dots \dots (1)$$

Where,

ROA = Return on Assets

NIM= Net Interest Margin

EVA = Economic Value add

BS = Bank Size

CQ = Credit Quality

OE = Operational Efficiency

IR = Interest Rate

INF= Inflation rate

AM = Asset Management

GDP = Gross Domestic Product

$\alpha$  = Constant term of the model

$\beta$  = Coefficients of the model

$\varepsilon_t$  = Error term

### 3.4 DESCRIPTION OF VARIABLE

#### 3.4.1 Dependent Variable

The dependent variables used in this study are ROA and ROE as a measure for Internal Financial performance. ROE is computed as a ratio of after-tax profit to equity shareholders' fund. It is a profitability measurement which indicates the profit available to ordinary shareholders from a cedi

provided by shareholders. NIM as a performance measure for market-based performance of bank. Economic Value Add measures the Economic -based bank performance. It measures economic profit of the bank and state that welfare can be created when a firm meet all operating costs and cost of capital. It also measures the success of the management in increasing added value of the firm. The efficiency of management in adding value to the firm has a positive effect on the firm stock price.

### **3.4.1 Independent Variables**

#### ***3.4.1.1 Bank Size***

The researcher adopts the standard measure of banks size, which is the natural logarithm of total assets. According to Ibrahim and Rizvi (2017), there is a positive association between bank size and performance; and this association is further strengthened by activity better management and capital adequacy of larger banks. Further, Adusei (2015) has reported a positive linkage between bank size and stability indicating that large banks are more stable to credit risk than smaller banks.

#### ***3.4.1.2 Operational Efficiency***

To assess the role of management and officers of banks, the efficiency of management is measured. Management efficiency is measured by the ratio of operating expenses to total income. Banks that had high operating efficiency are mostly able to sustain a lower cost to income ratio, which improves profits.



#### ***3.4.1.3 Credit Quality***

Credit risk measures bank stability and it is the ratio of provision of doubtful debt loans to total loans. This ratio is a traditional measure of bank credit risk (Fernández, González, & Suárez, 2016; Martinez-Peria & Schmukler, 2001). A high ratio depicts banks' asset quality; and a low ratio means better asset quality which eventually improves bank stability (Ozili, 2018). On the other hand, banks with higher loan loss coverage ratios are expected to have greater safety against loan losses which contributes to improving stability; whereas a low loan loss coverage ratio implies inadequate safety against loan losses. It is important to note that a too low coverage ratio may not basically imply the risk of under-provisioning since it could also reflect difficult lending practices or a strong insolvency framework where collateral repossession is easy for creditors (Mesnard, Margerit, Power, & Magnus, 2016).

#### ***3.4.1.4 Asset Management***

Assets management is measured by Karim and Alam (2013) as the ratio of operating income to total assets. The ratio indicates how effectively assets are being used to generate revenue. The greater the ratio, the more effectively the company is said to be using its assets properly.

The effective utilization of the assets of the company has positive relation to profit. Most rural banks lack the managerial skills to invest into an income earning assets like assets with characteristics of marketability on stock market, and therefore suffer loss on the non-income earning assets which shrink revenue of the company.

#### **3.1.4.5 Inflation**

Inflation is a macroeconomic variable which is considered in this study. Inflation is defined as the persistent increase in the general price level of goods and services over a period of time. Inflation devalues units of currency and leads to higher cost of living. Inflation affects revenue and thereby erodes profit. “All other things being equal”, inflation will cause shareholders and loan providers to demand higher returns from their investments thereby increasing the savings and loans company’s cost of capital and this can in turn affect the level of profit that such firms can make, Bokpin (2016). Inflation was included in the model as a control variable to determine its influence on the profitability of RCBs.

#### **3.4.1.6 Interest Rate**

Interest rate is the rate at which RCBs lend to the public. It is selected as a control variable to measure its effect on returns of equity or shareholders equity, and the other dependent variables. Economic conditions like inflation, lending rate are the other determinants of profitability of banks. In an economy where the economic conditions are favorable, it has positive impact on the profitability of firms because there is lower rate of unemployment (Bokpin *et al*, 2016).

#### **3.4.1.7 Gross Domestic Product**

GDP is perceived as a key driver of banks profitability. GDP is measured at constant price. The economic wellbeing of the people would determine the improvement in the banking activities since economic viability boosts businesses and expose individuals to capital which would pass through the banking system.

**Table 3.2: Summary of Variable**

<b>Dependent Variables</b>	<b>Description</b>	<b>Independent variables</b>	<b>Description</b>
ROA	Net income/Total assets	Bank size	LOG (Total assets)
Net Interest Margin	Interest income-interest expense	Credit quality (CQ)	Reserves for doubtful loans/total loans and advances
Economic value Add	Net operating profit after taxes (NOPAT)- (Capital cost of capital)	Operational Efficiency (OE)	Total operating expense/net interest income
		Assets Management (AM)	Operating income/total assets
		Inflation	Consumer price index
		Interest rate	
		Gross Domestic Product	GDP (current US\$)

Source: Appiah et al. (2015)

### **3.5 ESTIMATION TECHNIQUES**

Secondary data are analyzed with the aid of a statistical instrument called STATA. Data are analyzed descriptively. Descriptive statistics is used to present and organize data. Data organization may take the form of tables. This kind of statistics is also used to describe the relevant features of parameters adopted in the study in a quantitative way by making use of frequency, standard deviation, minimum, maximum and mean. Correlation matrix and t-test are employed to assess and interpret the data. The panel regression analysis is used for the estimation. The rationale for using panel is to ensure that the residual of all the variables are weighted equally across board so as to reduce the standard errors in the regression model. The F-test and the t-test would be used to test the statistical significance of the parameters at 5% significant level

### **3.6 DIAGNOSTICS TEST**

Series of test are conducted to enhance the reliability of the findings. Some of which are stationarity test to ensure that all the variables are stationary at level. Multicollinearity test using Pearson correlation coefficient to assess that variables are not perfectly correlated. In addition, Durbin Watson statistical test is used to ascertain the level of serial correlation in each regression model. All the tests of significance are measured across various significant level. Thus 1%,5% and 10% with asterisk given as follows \*\*\*, \*\*, \* respectively.



## **CHAPTER FOUR:**

### **PRESENTATIONS AND DISCUSSION OF RESULTS**

#### **4.0 INTRODUCTION**

This chapter presents the analysis and interpretation of the variables used for the study on the determinants of RCBs performance in Ghana. The chapter is divided into six sections. Section 4.1 presents the descriptive analysis; section 4.2 presents correlation analysis; section 4.3 presents the diagnostic results which include; autocorrelation, normality and Heteroskedasticity; section 4.4 and 4.5 and 4.6 presents the regression results and discussion.



**Table 4. 1 : Descriptive statistics**

Variables	Obs	Mean	Std.Dev.	Min	Max
Return on Equity	135	0.206	0.119	-0.145	0.780
Return on Assets	135	0.026	0.014	-0.039	0.075
Economic Value Add	135	-535540.8	146511	-70075	0.386
Net Interest Margin	135	0.0618	0.0337	0.018	11.754
Bank Size	135	7.581	0.313	6.890	8.348
Credit Quality	135	0.453	2.623	0.0045	30.443
Operational Efficiency	135	6.736	61.152	0.004	705.25
Asset Management	135	0.173	0.056	0.001	0.404
Inflation	135	12.051	3.701	7.12	17.45
Gross Domestic Product	135	35.08e+10	1.07e+10	3.2e+1	6.56e+10
Interest rate	135	23.728	4.013	16.32	29

From Table 4.1, the mean value for ROE is 0.20 and a standard deviation of 0.11. This suggest a high performance of RCBs with regard to shareholders investment. This reveals that for every GHS 100.00 invested by equity shareholders, it earns an average income of GHS 20 to the equity shareholders. The mean for ROA is 0.02 and a standard deviation of 0.01. The results show that every GHS 100 invested in assets earns 2% average income. This is a poor performance of RCBs in Ghana. Economic value added has a mean of -535540.8 and a standard deviation of 146511.

This indicates that the cost of capital is higher than the Net operating profit after tax (NOPAT) of RCBs, accounting for the inverse relationship with performance. The result shows a mean NIM value of 0.06 and a standard deviation of 0.033. This indicates that RCBs are not earning enough income on interest income. The mean value of Bank Size is 7.5 and a standard deviation of 0.3, indicating that RCBs, as they are, are not large banks. Inflation (ir) is the yearly average inflation rate. Over the years of the study the average inflation rate was 12.05% whilst the highest was 17.50% (in 2016) as against the minimum of 7.1% (2006). With this fluctuating inflation rate could be as result of the longer year interval and the transition of different government over the years. It is expected to affect the results; therefore, it is served as a control variable. The results show a high Assets and operational efficiency of RCBs, but poor credit quality.



**Table 4.2: Correlation Matrix**

	ROE	ROA	NIM	EVA	OE	CQ	BS	AM	IR	GDP	INF
ROE	1										
ROA	0.5*	1									
NIM	-0.02	0.006	1								
EVA	0.35*	0.54*	-0.51	1							
OE	0.13	0.17*	-0.01	0.087	1						
CQ	0.023	-0.009	-0.05	0.07	-0.017	1					
BS	0.07	0.26*	0.17*	-0.06	0.07	0.188*	1				
AM	-0.03	0.13	0.28*	-0.24*	-0.31*	-0.035	0.18*	1			
IR	0.04	0.17*	-0.06	0.31*	0.05	-0.09	-0.14	-0.07	1		
GDP	-0.1	-0.04	0.2*	-0.24*	0.09	0.05	0.5*	0.27*	-0.1	1	
INF	-0.2	-0.04	0.03	0.06	-0.03	-0.004	0.2*	0.1*	0.5*	0.1*	1

*Source: Research data, 2020*

Table 4.2 presents the correlation matrix of the variables used for the study. Before conducting the regression analysis, the researcher conducts a correlation matrix to check for the possible multicollinearity among the variables used in the model. Table 4.2 reveals a weak correlation among the variables, except pair of ROA and ROE with a correlation of 0.5; pair of EVA and ROA with a correlation of 0.54; pair of GDP and size with a correlation 0.5; pair of Inflation and Interest rate with a correlation of 0.5. The coefficients between these two variables are less than the limit value of (0.7). The study, therefore, concludes that there is no serious multicollinearity problem (Kennedy, 2003). There is no problem of variables in the model.



### 4.3 Test of Diagnostic

**Table 4.3: Diagnostic test**

BP/CW Hetttest	chi2(1)	0.01
	prob > chi2(2)	0.9355
Durbin-Watson d-statistic (6, 54)		2.0
Hausman (b-B)'[(V <sub>b</sub> -V <sub>B</sub> ) <sup>-1</sup> ](b-B)	chi2(6)	25.69
	Prob>chi2	0.0003

**Source: Research data, 2020**

From table 4.3, Durbin Watson test for autocorrelation is 2.0. Durbin-Watson test explains if there is autocorrelation between the successive observations in the data. Durbin Watson test for no autocorrelation is between 1.5 and 2.5. This mean the researcher rejects the null hypothesis of no first order autocorrelation in the data. The null hypothesis of constant variance of the Breusch-Pagan/Cook-Weiseberg test for heteroskedasticity was not rejected since there is an insignificant p-value of 0.9. The summary of the result shows homoskedasticity and no first order correlation are met. The researcher therefore performs the Hausman test. The Hausman test rejects the null hypothesis, indicating that fixed effect model is appropriate for the estimation.

#### 4.4 EMPIRICAL RESULTS

Table 4.4 presents the results of the empirical estimations. The results are shown in Table 4.4, 4.5 and 4.6. Table 4.4 presents the regression results of the determinants RCBs profitability in Ghana.

##### 4.4.1 To estimate the determinants of RCBs financial performance in Ghana

**Table 4.2: Determinants of RCBs financial performance (ROA and ROE)**

Variable	ROA				ROE			
	B	Std. Error	t-Stats	Prob.	B	Std. Error	t-Stats	Prob.
AM.	0.07	0.021	3.38	0.001***	0.213	0.194	1.10	0.274
OE	0.003	0.008	0.44	0.006***	0.0002	0.0001	1.60	0.113
CQ	-0.0002	0.0004	-0.55	0.586	0.0003	0.003	0.10	0.917
Size	0.02	0.004	5.53	0.000***	0.11	0.03	2.81	0.006***
INF	-0.001	0.0003	-3.77	0.000***	-0.01	0.003	-3.65	0.000***
IR	0.001	0.0003	4.27	0.000***	0.007	0.003	2.54	0.012**
GDP	-4.2e-13	1.e-13	-3.32	0.001***	-2.2e-12	1.1e-12	-2.00	0.047**
C	-0.16	0.03	-5.20	0.000***	-0.59	0.29	-2.06	0.042**
R-squared	0.31				0.15			
Adjusted R-squared	0.27				0.10			
F-statistic	8.15				3.26			
Prob(F-statistic)	0.000				0.0032			
Durbin-Watson stat	2.0514				1.5065			

\*= variable significant at 10%, \*\*= variable significant at 5%, \*\*\*= variable significant at 1%,

The first column of Table 4.4 presents the regression results on the study variables. The adjusted R-squared is 0.27, which indicates that about 27% of the variations in the dependent variable are caused by the independent variables. From the results as measured by ROE, Assets Management has no influence on profitability. However, Assets Management is positive and statistically significant with financial performance (ROA) (at 1%) significant level. This suggest that a unit change in Asset Management increases RCBs financial performance by 0.07 per cent. This result is consistent with the study Karim and Alam (2013). Proper investment into profitable assets and its management lead to profitability. On the other hand, Khalil and Khalil (2017) find assets management as having an inverse relationship with profitability. This could be due to the fact that many rural banks lack the managerial skills to invest into an income earning assets like assets with characteristics of marketability on stock market, and therefore suffer loss on the non-income earning assets which shrink revenue of the bank. The findings confirm the efficiency hypotheses theories which state that a highly efficient firms stand to benefits from a highly resourced and competent staff, managerial capability which would translate into higher profitability.

The results show that operational efficiency is not statistically significant with ROE, but it is significant with ROA (at 1%) significant level, which indicate that Operational efficiency determines RCBs profitability. The result shows that credit risk is not significant with performance. This is contrary to studies like Silva et al. (2017) and Sufian & Habibullah (2009) who find that credit risk decreases banks financial performance. Bank size is significant with performance on both ROA and ROE (at 1%) significant level.

The results show that all the macroeconomic variables (inflation, interest rate, GDP) are statistically significant with ROA and ROE (performance). However, inflation and GDP are negatively related with profitability. Inflation devalues units of currency and leads to higher cost of living. Inflation affects revenue and thereby erodes profit. “All other things being

equal”, inflation will cause shareholders and loan providers to demand higher returns from their investments thereby increasing the savings and loans company’s cost of capital and this can in turn affect the level of profit that such firms can make.

#### 4.4.2: To assess the determinants of RCBs market-based performance in Ghana

**Table 4.5: Determinants of RCBs market-based performance (Net-Interest Margin)**

Variables	NIM			
	B	Std. Error	t-Stats	Prob.
Asset Management	0.17	0.06	2.71	0.008***
Operational Efficiency	0.002	0.005	0.51	0.614
Credit quality	-0.009	0.001	-0.77	0.441
Bank Size	0.01	0.012	0.87	0.088*
Inflation	-0.0004	0.001	-0.43	0.668
Interest rate	-7.42e-06	0.001	-0.01	0.094*
GDP	3.77e-13	3.72e-13	1.01	0.313
C	-0.06	-0.09	-0.70	0.448
R-squared	0.2988			
Adjusted R-squared	0.2421			
S.E. of regression	2.802			
F-statistic	5.27			
Prob(F-statistic)	0.00			
Durbin-Watson stat	1.2			

\*= variable significant at 10%, \*\*= variable significant at 5%, \*\*\*= variable significant at 1%,

Net interest margin is used as a market-based performance measure. The purpose is to gain from the cost of financial intermediation. It reflects the real operational efficiency of the bank and how competitively the banking environment is. Table 4.5 shows that Assets Management



is statistically significant with bank-market-based performance (at 1%) significance level. About 24% of the variations in the dependent variable are explained by the independent variable. The Durbin Watson score shows no autocorrelation. Operational efficiency has no significant relationship with market-based performance. Credit quality is not statistically significant with market-based performance. Bank size has a positive and statistically significant relationship with bank market-based performance. This confirms the finding of Awo & Akotey (2019) that at the initial stage, size has a positive effect on profit, after which the effect is expected to be negative for banks which grows too largely, due to bureaucracy. The results show that interest rate is positive and significant (at 10%) with NIM. However, GDP and inflation has no relationship with NIM. The findings show that bank specific variables like size, management efficiency, as well as macroeconomic variables like inflation, interest rate and GDP can affect the market performance of a bank in terms of how much profit they can earn from loan administration, thereby affecting its market position.

#### **4.4.2: To examine the determinants of RCBs economic-based performance in Ghana**

**Table 4.6: Determinants of RCBs economic-based performance (EVA)**

Variables	EVA			
	B	Std. Error	t-Stats	Prob.
Asset Management	-4119249	2330087	-1.77	0.079*
Operational Efficiency	706.47	2056.5	0.34	0.732
Credit quality	50058.5	45553.11	1.10	0.274
Bank Size	648005.5	475131.2	1.36	0.175
Inflation	-28853.1	40984.9	-0.70	0.08*
Interest rate	123671.1	36914.3	3.35	0.001***
GDP	-0.00003	0.000013	-2.31	0.023**
C	-5746691	3470891	-1.66	0.100
R-squared	0.19			
Adjusted R-squared	0.15			
S.E. of regression	2.802			
F-statistic	4.50			
Prob(F-statistic)	0.0002			
Durbin-Watson stat	1.2			

\*= variable significant at 10%, \*\*= variable significant at 5%, \*\*\*= variable significant at 1%,

The results from Table 4.6 show that Asset management has a negative but significant (at 10%) relationship with EVA. Moreover, operational efficiency has a positive but insignificant effect on EVA. The results show that credit quality and bank size have positive but insignificant relationship with EVA. Inflation and GDP have a negative and significant effect on EVA. Finally, the results show that interest rate has a positive and significant relationship with EVA.

## 4.5 DISCUSSION OF RESULTS

### 4.5.1 Determinants of RCBs financial performance in Ghana

The study finds that asset quality has a negative relationship with RCBs financial performance. The study is consistent with Antwi and Apau (2015). This confirms the perception the public have on RCBs that they lack the managerial competency in managing loan portfolio and as such require improvement in this area. The study, however, is inconsistent with Naceur (2015) and Sufan *et al.* (2009) who find a significant positive relationship between asset quality or credit risk and performance of RCBs. Bank size which is a natural logarithm of total assets have a positive and significant influence on RCBs ROA. This support the finding of Kosmidou (2016) who argues that size of a bank positively impacts on performance. The author attributes such relationship to economies of scale that larger banks enjoy in the banking industry. Kosmidou (2016) demonstrates that larger banks are more profitable because of the extent to which they are able to raise less costly funds. Appiah *et al* (2015) also confirm this notion. Gibson (2016), however, argues that due to presence of bureaucracy in the management of banks with large asset holdings, bank size may negatively influence profitability. In a sharp contrast, little cost saving can be achieved by increasing the size of a banking firm, thereby enhancing profitability of banks (Bikker & Hu, 2012).

Additionally, the study finds that operational efficiency positively and significantly influences RCBs financial performance, consistent with Owusu-Antwi *et al.*, (2015) who find that the quality of management determines the performance of the bank. The finding, is also consistent with Sanni (2017) who finds that higher operational efficiency positively affects the performance of banks. Profitability increases when a bank is efficiently operated such that the cost associated with the maintenance and administration on a day-to-day basis compares lowly

to the income accrued to the bank. Furthermore, asset management positively influences RCBs financial performance. Support Karim and Alam (2013) that proper management of a bank's assets would lead to higher profitability.

Inflation has a negative impact on performance of RCBs. This finding is not consistent with Antwi and Apau (2015) who find a positive relationship between inflation and performance. The effect of inflation on profitability majorly depends, sometimes, on the ability of managers to forecast changes in inflation accurately and set a contingency plan to reduce its effect, or gain from the change. GDP has a negative impact on the financial performance of RCBs. The finding contradicts Sufian *et al.*, (2009) who observe that GDP positively impacts on banks financial performance. Interest rate has a positive and significant effect on RCBs financial performance. This is consistent with (Maigua & Mouni, 2016).

#### **4.5.2 Determinants of RCBs market-based performance in Ghana**

The study finds that Asset management has a positive and significant influence on RCBs-market based performance. The study further finds that operational efficiency has no significant relationship with NIM. The finding is consistent with Ahmad and Tunde (2013). This could be attributed to poor management of RCBs operational expenses. The results, however, is inconsistent with Molyneux and Thornton (1992) and Ben Neceur and Goaiad (2015) who find that operational efficiency relates positively and significantly with NIM. Moreover, asset quality has a negatively insignificant relationship with NIM, consistent with Ahmad and Tunde (2013). This suggests that there is less or no provision of loan loss by RCBs in Ghana. GDP has no significant relationship with NIM.



Size is positively and significant with NIM. This is inconsistent with Ahmad and Tunde who finds that size is not a determinant of RCB profitability. Apart from interest rate, the results of the macroeconomic factors, i.e. GDP and inflation, show an insignificant relationship with NIM, contrary to the expectation of the study. This is inconsistent with the findings of Ahmad and Matemilola (2013) who find a positive relationship between GDP, interest rate and bank size, and a negative relationship with inflation.

#### **4.5.3 Determinants of RCBs market-based performance in Ghana**

The study finds that assets management is statistically significant and positively related with Economic Value Add. This means RCBs generate Economic value through its assets management and generates a higher profit. This is consistent with the finding of Jarim and Alam (2013) who observe that effective management of a firm's assets adds value to the firm, and consequently influences the price of share. The results show that operational efficiency, credit quality and the size of bank, although positively signed, but have no significant relationship with Economic value add. This finding is consistent with Jarimand Alam (2013), although the researcher expected an impact of these variables on EVA since the determination of EVA involves the determination of operating income and incorporate capital and size, which have an impact on Net operating profit after tax (NOPAT) and affect EVA.

The results show that inflation is negatively signed, but not statistically significant with EVA. This suggests that inflation may a determinant of profitability in an unstable economic condition like Ghana. Interest rate is positive and statistically significant with EVA. This is consistent with Ahmad and Matemilola (2013) who find interest rate to influence profit of banks. GDP is statistically significant, but negatively related with EVA. This indicates that an unfavorable GDP reduces the value addition activities of RCBs and therefore affect its

performance negatively. The results are inconsistent with Ahmad and Matemilola (2013) who find a positive relationship between GDP and EVA.

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## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 INTRODUCTION**

The chapter presents the summary of findings of the study, conclusion and recommendation. The chapter is divided into three main sections. Section 5.1 presents a summary of the findings, and section 5.2 presents the conclusion of the study. Section 5.3 provides recommendations for policy makers.

#### **5.1 SUMMARY OF KEY FINDINGS**

The study finds that Assets Management significantly influences RCBs internal financial performance in Ghana. Operational efficiency, Interest rate are also found as having a positive influence on RCBs internal financial performance in Ghana. On the other hand, the study finds inflation and GDP as having a negative effect on internal performance of RCBs in Ghana. Effective management team and the proper management of assets in a favorable interest rate regime would improve performance of Rural and Community Banks in Ghana. A high level of inflation and a poor GDP growth indicate economic instability causing a negative relationship on RCBs internal performance. The study finds Assets management, Bank Size and interest rate as determinants of RCBs market-based performance in Ghana. The study further finds that Assets Management, Interest rate are the determinants of the RCBs Economic-based performance in Ghana.

## **5.2 CONCLUSION**

The study examines the determinants of Rural and Community Banks performance in Ghana. The study uses annual panel data. Convenience sampling technique is used to select 15 Rural and Community Banks in Ghana for the period of 2010-2018. The study uses panel regression method to estimate the models. The study finds Asset Management, Operational Efficiency, Interest rate, Bank Size as factors that determines the internal performance of RCBs. Inflation and GDP have inverse relationship with RCBs internal performance. The study further finds Assets Management, Bank Size and Interest rate as determinants of RCBs market-based performance, and Assets Management, interest rate and GDP as determinants of RCBs economic-based performance. The study concludes that the factors that drive RCBs performance in Ghana are Assets Management, Operational Efficiency, Interest rate, Bank Size and GDP.

## **5.3 RECOMMENDATIONS**

The study has found Assets Management, Operational Efficiency, interest rate and GDP. as determinants of RCBs internal- based performance in Ghana. Based on this finding, the study recommends that RCBs strengthen its assets management. For example, high managerial skills to invest into an income earning assets like assets with characteristics of marketability on stock market would improve performance. RCB must efficiently operate in such that the cost associated with the maintenance and administration on a day-to-day basis compares lowly to the income accrued.



The study finds that credit quality is not significant with RCBs performance, and inflation and GDP have inverse relationship with performance. In light of this finding, the study recommends the management of RCBs to improve its credit quality to increase interest income and reduce provisioning costs. The central bank must address any imbalance in the economy and risks such as the unfavorable inflation and poor GDP growth in the country since these affect the performance of fragile banks like RCBs.

### **5.3.1 RECOMMENDATIONS FOR FUTURE STUDIES**

These findings in this study sheds light on the need for rural banks to expand their scope of corporations to cover other markets in order to lower inefficiencies to generate profitability. And the researcher limits his analysis to data on rural banks in Ghana. Future studies may consider RCBs dataset from at least five countries in Sub-Sahara Africa. The bank specific, macroeconomic and financial performance variables used are not exhaustive. For this reason, research efforts should continue, the final word on determinants of performance of rural banks is not yet said.

## REFERENCES

- Antwi, F. and Appau, E.V. (2015), “Financial performance of Rural and Community Banks (RCBs) in Ghana”, *The international Journal of Business and Management*, Vol. 3, Issue 2, pp.76-84.
- Ahmad and Matemilola. (2013), ‘Determinants of banks profit and Net Interest Margins’, *Journal of Business* (3), 32, pp. 231-244.
- Akotey, J.O & Awo, J.P (2019), ‘The financial performance of rural banks in Ghana: The Generalized Method of Moments approach’, *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 15, No. 1, pp. 2-18.
- Allen, F., Otchere, I. and Senbet, L.W. (2016) ‘African financial systems: A Review of Modern Approaches’, *Journal of Finance*, Vol. 2, No. 1, pp. 112-130.
- An, Y., Baye, M.R., Hu, Y., Morgan, J. and Shum, M. (2010), ‘Horizontal Mergers of Online Firms: Structural Estimation and Competitive Effects’, Working papers, No. 564, The Johns Hopkins University, Department of Economics and Finance, Vol. 7, No. 1, pp.203–215.
- Ansoff, H.I. (1965) *Corporate Strategy*, McGraw-Hill, New York.
- Antwi and Crabbe (2014). ‘The performance of Rural Bank’s in Ghana: The Ages Have Past Anything Recommended for the Future’, *International Review of Management and Business Research*, Vol. 3, Issue 2, pp. 1047-1060.
- Appiah K.O, Adu-Asamoah L., & Narkotey Z.(2015). ‘Determinants of Rural Banks performance in Ghana’, *African Journal of Accounting, Auditing and Finance*, Vol. 4, No. 4, pp.345-359.
- Asiedu-Mante, E. (2011) “Rural Banking in Ghana”, *International Journal of Accounting ad Finance*, No. 4, Issue 5, pp. 43-54.

- Bain, J.S. (1951) 'Relation of profit rate to industry concentration: American manufacturing, application of the Panzar and Rosse model', *Panoeconomicus*, Vol. 57, No. 2, pp.189–207.
- Bank of Ghana (2006). "Application of the Panzar and Rosse model", *Panoeconomicus*, Vol. 57, No.2, pp. 189-207. [online] <http://www.bog.gov.gh/> (accessed 22 March 2020).
- Barathi Kamath, G. (2007) 'The intellectual capital performance of the Indian banking sector', *Journal of Economics and Business*, Vol. 34, no. 2. pp.224-35.
- Bikker, J.A. and Hu, H. (2012) 'Cyclical patterns in profits, provisioning and lending of banks' *Journal of Business* (3), 2, pp. 133-145.
- Bokpin, G.A, Kuranchie-Pong, L., & Andoh, C. (2016). 'Empirical evidence on disclosure and risk-taking of banks in Ghana', *Journal of Financial Regulation and Compliance*, Vol. 24 No. 2, 2016 pp. 197-212.
- Cangore P. and Bolton F. (2013) Report of the Committee of Inquiry on Small Firms. HMSO, London.
- Clair, S.R. (2015), "Determinants of banking financial performance and resilience in Singapore", MAS Staff Working Paper No. 38, Monetary Authority of Singapore, Singapore.
- Convoy W. K. (2013). Effect of Microfinance Products on Small Business Growth: Emerging Economy Perspective. *Journal of Entrepreneurship and Business Innovation*, 5. 59-71. *Development Finance*, Vol. 1, No. 2, pp.79–113.
- Dhanabhakyaam M. & Kavitha, M. (2012). Financial Performance of selected Public sector banks in India". *International Journal of Multidisciplinary Research*, 2(1), pp 255- 269.
- Fernández, A. I., González, F., & Suárez, N. (2016). "Banking stability, competition, and economic volatility'. *Journal of Financial Stability*, 22, 101-120.
- Flemini, L.J. and Barry, P.J. (2018), "Portfolio adjustments: an application to rural banking", *America Journal of Agricultural Economics*, Vol. 59 No. 1977, pp. 311-312.

- Gibson, H.D. (2016) 'Greek banking profitability: recent developments', *Economic Bulletin*,
- Grygorenko, O. (2009) *Effects of Price Setting on Bank Performance: The Case of Ukraine*, Kyiv School of Economics, Ukraine.
- Harker, P.T. and Zenios, S.A. (2015), "What drives performance of financial institution", Wharton Financial Institutions Center Paper Series No. 98-21, University of Pennsylvania.
- International Fund for Agricultural Development (IFAD) (2008) *The Republic of Ghana Rural and Agricultural Finance Program (RAFiP)*, Rome.
- Karim and Alam, (2013). 'An evaluation of Financial performance of Private commercial banks in Bangladesh: Ratio analysis', *Journal of Business Studies Quarterly*, Vol 1, No. 2, pp. 66-77.
- Khalil and Khalil (2017). 'Does Bank size and operational Efficiency matters? An impact of Financial Gearing and Assets Management on Islamic Banks performance in Pakistan', *Journal of Accounting and Finance in Emerging economies*, Vol. 1, No.1,pp. 123-133.
- Kosmidou, K. (2016) 'The determinants of banks' profits in Greece during the period of EU Adjustment', *Journal of Accounting and Finance*, (3), 5, pp. 134-144.
- Ledgerwood, J., (2015). *Microfinance handbook; an institutional and financial perspective*. The World Bank, Washington D.C
- Maigua and Mouni (2016). 'Influence of interest rates Determinants on the performance of Commercial Banks in Kenya'. *International Journal of Academic Research in Accounting and Management Sciences*, Vol. 6, No. 2 pp. 121-133.
- Martinez-Miera, D., & Repullo, R. (2010). Does competition reduce the risk of bank failure?. *The Review of Financial Studies*, 23(10), 3638-3664.



- Mason, E.S. (1939) 'Price and production policies of large-scale enterprise', *The American Journal of Banking* (5), 4, pp.132-142.
- Mensi, S. (2010) 'Measurement of competitiveness degree in Tunisian deposit banks' *Journal of Accounting and Finance*, (3), 5, pp. 134-144.
- Mushonga, M., Arun1, T.G. and Marwa, N.W. (2018), "Drivers, inhibitors and the future of co-operative financial institutions: a Delphi study on South African perspective", *Technological Forecasting & Social Change*, Vol. 133, pp. 254-268.
- Myles (2008) Brands matter: An empirical demonstration of the creation of shareholder value through branding. *Journal of Economics and Business*, Vol. 34, no. 2. pp.224-35.
- Naceur, S.B. (2003), "The determinants of the Tunisian banking industry profitability: panel evidence", *Universiteit Libre de Tunis Working Paper*, Tunis.
- Naceur, S.B. (2015), "The determinants of the Tunisian banking industry profitability: panel evidence", *Universite Libre de Tunis Working Paper*, Tunis.
- Nair, A. and Fissaha, A. (2017) *Rural Banking: The Case of Rural and Community Banks in Ghana*, World Bank Agriculture and Rural Development Discussion Paper, No. 48.
- Osei, B., Baah-Nuakoh, A., Tutu, K. and Sowa, N. (2013) Impact of Structural Adjustment on Small-Scale Enterprises in Ghana. In: Helmsing, A. and Kolstee, T., Eds., *Small Enterprise and Changing Policies: Structural Adjustment, Financial Policy and Assistance Programmes in Africa*, IT Publications, London, 53-70.
- Owusu-Antwi, G., Mensah, L., Crabbe. M. and Antwi, J. (2015) 'Determinants of bank
- Ozili, P. K. (2018). Banking stability determinants in Africa. *International Journal of Managerial Finance*, 14(4), 462-483.

- Palinkas, L. A., Horwitz, S. M., Wisdom, J. P. Duan, N. and Hoagwood, K. (2013). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Research*. 42(5) pp. 1-12.
- Rashid W.O., (2010). The Impact of Microfinance Banks on the Growth of Small and Medium Enterprises in Lagos Metropolis. *European Journal of Sustainable Development*, 8, 3, 261-274.
- Robison, L.J. and Barry, P.J. (2016), "Portfolio adjustments: an application to rural banking", *America Journal of Agricultural Economics*, Vol. 59 No. 1977, pp. 311-312.
- Samad, A. (2008) 'Market structure, conduct and performance: evidence from the Bangladesh', *Journal of Economics and Business*, Vol. 34, no. 2. pp.224-35.
- Sanni, M.R. (2017) 'Short term effect of the 2006 consolidation on profitability of Nigerian banks', *Nigerian Research Journal of Accountancy*, Vol. 1, pp.177–188.
- Sathye, M. (2005) 'Privatization, performance, and efficiency: a study of Indian banks', *Vikalpa, Journal of Business* (3) 3, pp. 231-243.
- Schaeck, K., & Cihák, M. (2014). Competition, efficiency, and stability in banking. *Financial management*, 43(1), 215-241.
- Silva, T.P., Leite, M., Guse, J.C. and Vanderlei, G. (2017), "Financial and economic performance of major Brazilian credit cooperatives", *Contaduría y Administración*, Vol. 62 No. 5, pp. 1442-1459.
- Sufian, F., & Habibullah, M.S. (2009). "Bank specific and macroeconomic determinants of profitability of banks: Empirical evidence from the China Banking sector. *Front. Econ. China*, 4(2), 274-294.

Yaron, J., Benjamin, M. and Chariotonenko, S. (2016), “Promoting efficient rural financial intermediation”, World Bank Research Observer, Vol. 13 No. 2, pp. 147-170.

Zaman, H. (2018), “The scaling-up of microfinance in Bangladesh: determinants, impact, and lessons”, World Bank Policy Research Working Paper No. 3398, World Bank, Washington, DC.

