

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI.**

**RECAPITALIZATION AND BANKS' FINANCIAL PERFORMANCE:
EVIDENCE FROM THE GHANAIAN BANKING INDUSTRY**

BY

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DECLARATION

I hereby declare that this work is the result of my own research, except for references to other peoples' work which have been duly acknowledged and that it has neither in part nor whole, been presented anywhere for another degree. I take absolute responsibility for shortcomings that may be detected.

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DEDICATION

This study is dedicated to my parents Mr. and Mrs. Oppong, my lovely sisters Oppong Linda, Oppong Margaret, Yeboah Janet, Oppong Jacqueline and my lovely daughter

Nana Yaa Yeboah Esmey for their support and encouragement during my stay in Kumasi.
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ABSTRACT

Prior to recapitalization, commercial banks in Ghana were in a bad position to finance large projects because they lacked the financial muscle to compete in industries that required more capital to invest in. While recapitalization may address this concern, the effect of the exercise on banks' financial performance after the 2017 recapitalization exercise remains a subject of empirical investigation. Thus, the principal aim of this research was to examine the role of recapitalization on financial performance of selected commercial banks in Ghana. The study relied on panel data from sixteen (16) commercial banks in Ghana from 2014 to 2021. The researcher employed Seemingly Unrelated Regression (SUR) to remove the effect of the cross-sectional dependence in the panel fixed effects model. The main dependent variable was financial performance of the commercial banks represented by profitability, liquidity, and asset quality of the commercial banks. Based on the empirical findings, recapitalization had a significant impact on the financial performance of the selected commercial banks in Ghana. Specifically, recapitalization had negative and significant effects on all the profitability measures; net interest margin (NIM), return on asset (ROA), and return on equity (ROE). Similarly, recapitalization had a significant negative impact on asset quality of the commercial banks. However, the study found a negative relationship between recapitalization and liquidity of the commercial banks. The adverse impact on the profitability of commercial banks suggest that Ghana's regulatory increase in bank capital has not improved the profitability condition for the country's banking sector. It is therefore recommended that banks should increase their total asset base and diversify in order to generate more income from their assets.

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LIST OF ABBREVIATIONS

BOG	Bank of Ghana
C	Constant of Regression
RECAP	Recapitalisation
BAZ	Bank Size
LEV	Leverage
INF	Inflation
GDPG	Gross Demestic Product Growth/Economic Growth
AQUALITY	Asset Quality
LIQ	Liquidity
ROA	Return on Asset
ROE	Return on Equity
NIM	Net Interest Margin
φ_0	The intercept of the model
φ_i	The coefficients of the explanatory variables of the model
μ_{it}	The error term.
ADB	Agricultural Development Bank
EBG	Ecobank Ghana Ltd
ABSA	ABSA Bank
CAL	Cal Bank
FBL	Fidelity Bank
SG	Société Générale
GCB	GCB Bank
ZBL	Zenith Bank
PBL	Prudential Bank
STANB	Stanbic Bank
SCB	Standard Chartered Bank
GTB	Guarantee Trust Bank
UMB	Universal Merchant Bank
ABG	Access Bank Ghana Ltd
FBN	FBN Bank
FAB	Fisrt Atlantic Bank

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The financial sector is a key component of the contemporary economy (Obuobi et al., 2020). The banking sector plays a crucial role in national development by serving as a conduit between deficit and surplus spending units, providing resources to investors in order to encourage investment, which leads to growth (Alnaa, Ahiakpor and Ahmed 2020). Without banks and other financial organizations, saving and transaction processes would not only be inefficient, but might also result in less-than-optimal resource allocations. Only with enough capital and deposit mobilization can banks efficiently carry out their tasks. (Yalley et al., 2018). One of the many transformations in the banking sector that have occurred very recently in both developed and emerging economies has been the recapitalization of banks. Recapitalization is one area of banking sector transformation that is designed to boost the capital base of banks, and also helps banks develop the necessary parameters to support the development of the countries (Lee et al., 2022).

Recapitalization refers to the process of altering a bank's debt-to-equity ratio with the common goal of stabilizing the bank's capital structure (Sadiq et al., 2017). It is used to improve banks debt/equity ratio. It may also be described as a significant change in the way a bank is funded. According to Bakare (2011), bank reform tends to be driven mostly by recapitalization. It primarily focuses on rebranding, restructuring and renovating the banking industry to meet the issues of bank liquidation. Recapitalization is also described as the reorganization of a business capital composition that aids in raising the capital structure of a business in order to increase the financial stability

(Adegbaaju and Olokoyo, 2008). It is mostly done by altering the debt and equity combination of a firm. According to Beccalli, Frantz, and Lenoci (2018), recapitalization produces a banking system with a stable capital structure, eliminating the fear of a liquidity crisis, which might jeopardize a country's whole banking industry. It was strongly urged that banks in less developed economies have a solid capital structure since it helps them to survive financial difficulties and safeguard depositors in the event of bankruptcy or a distressed macroeconomic environment (Sufian and Chong, 2008).

The African banking sectors and other developing countries including Ghana have experienced a significant transformation and recapitalization process. In order for banks to obtain the Universal Banking License, which allows them to provide financial transactions services, as well as any other function permitted by the Bank of Ghana (Banking Act, 2004), a new capital requirement of GHC60 million was introduced in 2008. The essence of the minimum or regulatory capital requirement was also to ensure a stable and functional banking industry. The initial capital requirement was again raised to GH¢120 million in 2012 from the GH¢60 million minimum capital threshold. This new act also gave the banks the opportunity to merge with other banks to improve capital requirements and increase financial performance.

In 2017, the BOG conducted a banking sector clean-up exercise. This is due to mismanagement and the inability of some financial institutions, such as UT Bank and Capital Bank, to meet their stated capital requirements. The initial capital requirements was revised by BoG for new entrants and existing banks from GH¢120 million to GH¢400 million which is (233.33% increase). This new reform was to be effective on September 11th, 2017 and all banking institutions must comply by December 2018. The

essence of this study sought to examine the influence of this recapitalization exercise on bank's financial performance.

1.2 Problem Statement

Advocates of bank recapitalization think that expanded capital base has the ability to boost bank returns through revenue and cost efficiency advantages (Olalekan and Adeyinka, 2013; Verma and Sharma, 2018; Naseer, 2019, Yalley et al., 2018; and Obuobi et al., 2020). Opponents of banks' recapitalization are of the view that expanded capital base exposes banks to risk taking as a result increased leverage and off-balance operations (Saona, 2011; Bunyaminu, Yakubu and Bashiru, 2021). The empirical evidence is divided on the subject matter. There is therefore divergent opinions of the growth implications, effectiveness, and efficiencies of banks recapitalization policy. This study seeks to clarify the situation by quantifying the influence of recapitalization on the financial performance of Ghanaian banks by means of proper economic analytical methodologies.

In recent times, commercial bank operations in Ghana have also been characterized by inadequate capitalization, which has hampered its financial performance. Financial institutions were in a difficult situation to fund large projects because they had the no financial power to compete in sectors that required more capital to participate in (Bank of Ghana, 2017). While recapitalization of Ghanaian banks may solve this hitch, the influence of the 2017 recapitalization exercise on bank financial performance in Ghana remains an area of empirical study. The primary issue to be answered in this research is whether recapitalization of Ghanaian banks has enhanced their financial performance.

Finally, certain researchers and professionals are against the practice of forcing banks to maintain a specific amount of capital because they think it puts banks at risk of liquidity problems caused by high financing costs and poor profitability (Ibrahim, Mohammed, and Gani, 2012; Okpara, 2011; Bernard and Michael, 2014). According to other researchers like Adegbaju and Olokoyo (2008), Bowa (2015) and Dauda, Ibrahim, and Ganiyu (2016), and Obuobi et al. (2019) assert that banks with greater capitalization tend to generate more liquidity, which is consistent with the "financial fragility-crowding out" concept. In order to add to the discussion on the impact of recapitalization on bank performance, researchers must identify the genuine impact of such a move on banks in Ghana. It is against this background that the researcher sought to investigate the impact of recapitalization on banks performance in Ghana, using the 2017 recapitalization exercise by the Bank of Ghana as a case.

1.3 Research Objectives

The main objective of the study is to evaluate the effect of recapitalization of banks' performance in Ghana. Purposively, this study sought to achieve the following objectives:

1. To examine the impact of recapitalization on profitability of banks in Ghana.
2. To establish the association between recapitalization and liquidity of banks in Ghana.
3. To evaluate the effect of recapitalization on asset quality of banks in Ghana.

1.4 Research Questions

In achieving the above research objectives, the following research questions will be asked:

1. What is the impact of recapitalization on profitability of Banks in Ghana?
2. What is the association between recapitalization and liquidity of Banks in Ghana?
3. What is the effect of recapitalization on asset quality of Banks in Ghana?

1.5 Significance of the Study

This research will serve as a knowledge frontier for market players, authorities, investors, and creditors. It will also demonstrate if the recapitalization process has benefited the Ghanaian banking system. The research will be an information tool for industry actors who may seek to make future decisions on recapitalization and bank financial performance. The research will also contribute to the compilation of information within academia regarding bank recapitalization, particularly in the Ghana-based banking industry, and will provide a source of information on how banks operated following the 2017 recapitalization. Furthermore, the study aims to close a research gap by analysing the influence of recapitalization on the financial performance of commercial banks in the financial industry.

The recapitalization can serve as an important policy objective to develop an efficient financial system to promote savings and to offer efficient payment and credit services. Finally, this study will serve as a roadmap for Bank of Ghana and the Government in terms of future recapitalization and how it will affect Ghana's banking industry.

1.6 Scope of the Study

The scope of this research restricted to the banking industry in Ghana. The exact drive of this report was the 2017 recapitalization of the financial sector in Ghana. The data for this research was confined to Banking Sector Survey reports, Annual Financial

Statements of the banks, Ghana Statistical Service Data Bank, and World Bank World Development Indicators. The study covered eight (8) years, from 2014 to 2021, comprising four (4) years of pre-capitalization and four years (4) of postcapitalization. Based on the data availability and convenience, the researchers' selected sixteen (16) banks that were in existence before and after the capitalization.

1.7 Brief Overview of Methodology

The study was conducted using quantitative method based on the ex-post factor research design. Ex-post factor research design analyzes a cause on the basis of an effect that is being studied (Isaac and Michael, 1995). The population of the study covers all the 23 licensed commercial banks in Ghana that survived the 2017 Bank of Ghana recapitalization exercise. Based on convenience and availability of data, the researcher used sixteen (16) banks as a sample for the study. The research is centered on annual data gathered from period 2014 to 2021. The study period was split into pre-capitalization years (2014-2017) and post-capitalization years (2018-2021). The key explanatory variable employed in this study was recapitalization proxied by a dummy variable. Years in the pre-capitalization period been represented by a "0" and years after the post-capitalization period denoted by a "1". The main dependent variables include profitability, liquidity, and asset quality. Profitability of the banks selected for the study will be measured by return on assets (ROA), return on equity (ROE) and net interest margin (NIM). A single profitability index will be generated using Principal Component Analysis (PCA). The use of PCA will help mitigate the problem of multi-collinearity between the profitability proxies. Liquidity of the banks will be proxied by liquid funds to total asset ratio whiles Asset Quality will be measured by non-performing loans ratio. Data on all the dependent variables were sourced from the PwC Ghana Banking Survey Reports, and Annual Financial Statements of the

selected banks from the period 2014 to 2021. Control factors were added in the panel regression model to improve internal validity by reducing the effect of confounding and other extraneous variables. Specifically, the study utilized GDP Growth, Inflation, bank size and leverage as its control variables. Data on the control variables, that is, GDP Growth and Inflation were gathered from World Bank -World Development indicators database from 2014 to 2021. Data on bank size (proxied by natural logarithm of total bank assets), and leverage (proxied by ratio of bank's debt to equity) were computed from annual financial statements of the selected banks.

The data generated was analyzed using the STATA statistical tool, to examine the effect of recapitalization on the key dependent variables employed. Preliminary analysis in the form of descriptive analysis, graphical analysis and correlation analysis will be carried on the various variables of the study. According to Box et al. (2016), the Levin, Lin, and Chu panel unit root test will be employed to ensure that data variables are stationary and also satisfy the statistical requirement of being time independent. The panel Fixed/Random Effects regression technique will be used to evaluate the association between recapitalization and the financial performance variables of the selected licensed commercial banks. The Hausman test was to be exploited to decide whether the Fixed Effect Model or the Random Effect Model should be used for the static panel data approach. The panel data regression technique was chosen because it allows for wide data set, improves variability, limits the presence of collinearity between the variables, and allows for the enhancement of the variables' efficiency.

1.8 Limitations of the Study

The Bank of Ghana raised the required minimum capital for commercial banks in Ghana from GHC120,000,000 to GHC400,000,00 by December 31, 2018, all banks in

Ghana, both foreign and domestic, have satisfied the recapitalization criteria. As of January 2019, all banks had begun operations with the minimum capital of GHC400,000,000. This leaves the researcher with only four years of postrecapitalization data. The researcher treated the time of recapitalization as post recapitalization data in order to increase the data size. The research focuses solely on the Bank of Ghana's recapitalization policy, which was introduced in 2017 and requires local and international banks to achieve specific capital requirements. The study was constrained by data availability. The researcher only concentrated on commercial bank that survived the recapitalization directive, and for which there was sufficient data in both pre- and post-capitalization period.

1.9 Organization of the Study

This study was divided into five segments. The first chapter entails the introductory part covers the background of the study, problem statement, objectives of the study, research questions, and significance of the study and the scope of the study. The second chapter talks about the literature relevant to the study. It deliberates the various concepts, theoretical frameworks and empirical literature related to the study. The third chapter summarizes the research methodology employed. It discusses the research design, population of the study, sample and sampling procedure, data collection and data analysis. The results and discussion of the findings of the study are presented in chapter four. The final part of highlights the conclusion made, recommendations and the suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter review significant theories and literature by various researchers concerning macro-recapitalization and bank's performance. The chapter will include a conceptual literature review, theoretical literature, empirical literature review, and conceptual framework, expressing the association between the dependent variables and explanatory variables employed in the study.

2.1 Conceptual Literature Review

This section of the report examines and explores the notion of recapitalization, its purpose, and the benefits it provides to the financial services industry of Ghana. A basic overview of Ghana's banking industry is also presented in this section.

2.1.1 The Concept of Recapitalisation

Recapitalization is a general term that covers mergers and acquisitions, capital restructuring and organization as well as management overhauling (Kalfaoglou, 2016). The concept of recapitalization, as it applies in the banking industry, is perceived as an attempt by a central bank to regulate the minimum operating capital of the banks in a country. The policy usually leads to increasing the minimum capital of banks which eventually alter their capital structure. According to Kalfaoglou (2016), recapitalization generally describes the process of increasing the amount of long-term financing in the capital structure of a financial institution (or any other institution). Ojo (2016), asserts that recapitalization results in maximizing the debt held by the financial institution or the issuance of extra shares to current or new stockholders, or a combination of the two.

Recapitalization forms part of the regulatory functions of the Bank of Ghana and includes periodic evaluation of minimum required capital of the banks. Whenever the minimum paid up capital is increased, there are at three ways the banks may meet the new capital requirement; by increasing equity, reducing lending risky borrowers, and reducing the assets side in order to reduce Risk Weighted Assets. (Becalli, Frantz and Lenoci, 2018). The motivation to recapitalize often results from the fact a firm's market value declines substantially below its optimum potential intrinsic value. Recapitalization is the result of a continuous deterioration in the operating capital of a bank beyond its minimum capital requirement.

2.1.2 Types of Recapitalizations

Bank recapitalization takes different forms. Ogbola (2020) lists several different types of recapitalizations including leverage buyout, leveraged recapitalization, equity recapitalization, capital/nationalization infusion. To properly comprehend how they function, these are further explained.

A leveraged buyout occurs when one business acquires another using a significant amount of borrowed money, such as by issuing bonds to pay for the purchase cost (Ayash and Rastad, 2021). Leveraged buyouts are said to be the result, not the cause, of recapitalization. In a similar vein, changing the target company's capital structure is not necessarily the acquiring company's goal. But because of the borrowing by the acquiring firm, the debt obligation of the acquired company tends to increase, and the debt/equity ratio automatically alters, resulting in the development of recapitalization (Ogbola, 2020).

A leveraged recapitalization occurs when a private or public company issues bonds on the debt markets and then uses the money to repurchase shares or pay equity dividends to investors (Lipman, 2018). While using the debt markets may seem ineffective, there

are a number of macroeconomic and microeconomic incentives that can influence a company's decision to pay off debt, purchase company stock, or reward investors rather than using earned profit.

An equity recapitalization represents a different option from selling a company outright. In this case, the initial owner can continue to run the company as a partner and/or manager, and the new partner will be a private equity company that agrees with the owner's philosophy and long-term objectives (Fethi, Shaban and WeymanJones, 2012). That is, the culture and vision of the business owner are never changed by the new partner. In contrast to some strategic acquirers that purchase with the purpose of cutting overhead, private equity funds prefer a more passive or board level engagement and a constructive relationship with the existing owner and management (Oluitan, et al., 2014).

A capital infusion is the process of moving funds from a prosperous branch, unit, or subsidiary of a business to a struggling unit in an effort to give the struggling unit new life (Misquitta and Sharma-Singhania, 2017). According to Mendoza and Rivera (2017), capital infusion is the process by which funds are injected into startup or big companies by an investor having a financial stake in the company. This type of recapitalization is where a country's government injects capital into private companies by purchasing a significant portion of the company's equity. The primary goal of capital infusion or nationalization infusion is to change the capital structure (Dikko and Alifiah, 2020). Nationalization is typically carried out when a large conglomerate or a big company having an impact on a country's economy is facing liquidation or bankruptcy. The government may use nationalization as a tool to acquire highly profitable companies.

2.1.3 Benefits of Recapitalisation

Bank recapitalization provides security for depositors and as a back-up for absorbing possible loan losses or bad debts. Spong (2000) in his study came to the conclusion that commercial banks needed enough capital to cover probable loan losses, finance internal expenses, finance development plans, and provide depositors more protection. This can only be accomplished by recapitalization (Ogbola, 2020). This explains specifically why Clementina and Isu (2016) claimed that many Banks aim to maximize its capital base even in the absence of Central Bank action because they think a successful banking industry is better equipped to withstand unfavorable externalities and aid in keeping the financial system stable.

Advocates of bank recapitalization believe that increasing bank capital size can improve bank performance by increasing revenue generation and cost efficiency. Recapitalization of the banking industry might improve bank performance (Obuobi et al, 2019). The BOG is therefore advised to put in place enough regulatory safeguards to maintain the advantages of banks recapitalization for the good of depositors and the country at large.

Recapitalization also gives financial institutions the ability to give out more loans (PwC, 2018) Recapitalization also usually leads to more job opportunities in the banking industry even though it might initially cause some job losses (Saona, 2011).

2.1.4 The Meaning of Bank Performance

In the simplest form, bank performance is described as the accomplishment of its goals within the predetermined timeframe, at the lowest possible cost, and with the best use of the available resources (Hajer and Anis, 2018). Performance for a manager may take many different forms, such as profitability, competitiveness for the company or the

individual, the work environment, or the standard of services offered to clients. Performance measurement acts as a technique of directing people and inspiring them to perform, just like any other control and management function does. As a result, while measuring performance is the first step in improving performance, improvement cannot occur without a mechanism to obtain feedback on performance.

These are the two kinds of measuring performance: financial and non-financial. While non-financial measurement is focused on the factors that influence the results, financial performance measurement is focused on the outcomes or results (Dossi and Patelli, 2010). The financial success of a corporation serves as a barometer for how efficiently it can employ its resources in its core operation to generate profit. Additionally, financial performance is employed as a general gauge of an organization's long-term financial health. Investors are informed about a bank's overall strength by its financial performance. It paints a picture of the management's effectiveness and the state of the economy. The main financial performance metrics of banks include interest income, net interest margin, earnings per share, return on equity, and return on assets (Alshatti, 2015; Nuhiu, Hoti and Bektashi, 2017; Zhongming, Frimpong and Guoping, 2019). Non-financial performance measures convey performance in terms other than money. Non-financial performance measurements are those that offer performance information in non-monetary terms, such as market share, customer happiness, innovation or new product creation, and staff attrition (Sadek et al., 2012; Marie, Ibrahim and Al Nasser, 2014; Kori, Muathe and Maina, 2020).

2.1.5 Factors Affecting Financial Performance of Banks

This panel reviews factors or determinants that affects banks financial performance. Some of the determinants include capital adequacy, asset quality, management

efficiency, liquidity, and variables such as inflation, interest rate, exchange rate, and money supply in the economy are macroeconomic variables.

2.1.5.1 Asset Quality

Asset quality is another bank-specific factor that determines the financial performance of banks. The assets of banks comprise current assets, fixed assets, investments and loan portfolios. The quality of a loan portfolio has a straight impact on the Bank performance. Losses arising nonperforming loans provide the highest risk to a bank. As a result, nonperforming loan ratios are the best predictors of asset quality. Keeping nonperforming loans to a minimum is a primary concern for all commercial banks. Thus, a low nonperforming loan to total loan ratio implies that a bank's range is healthy (Sangmi and Nazir, 2010).

2.1.5.2 Liquidity

Liquidity is another indicator that influences a bank's performance. A bank's capacity to satisfy its obligations., mainly those of depositors, is referred to as liquidity (PriceWaterCoopers, 2021). A certain quantity of liquidity is required for a bank's financial performance. The most frequent ratios or indicators used to assess a bank's liquidity include total loan per customer deposits, liquid funds per deposit ratio and customer deposit per total asset. There are other ratios and indicators that can also be used to assess liquidity of banks, that is acid test ratio, and cash ratio.

2.1.5.3 Capital Adequacy

Capital adequacy is defined as having enough own capital to bear losses for a short period of time while hoping to return the bank to profitability (Carlson, Shan and Warusawitharana, 2013). Capital adequacy refers to the quantity of assessible capital available to banks to combat risks such as credit, market, and operational risks in order

to cater for losses and protect the banks' borrowers (Bateni, Vaklifard and Asghari, 2014). A high capital sufficiency ratio promotes financial system stability and efficiency by lowering the risk of bank failure.

2.1.5.4 Management Efficiency

Management efficiency influences bank financial performance. Efficiency in banking is measured using several financial measurements such as net interest income to total funds ratio, total asset growth rate, cost-income ratio, and overheads to total assets ratio (Kauko, 2009; Onaolapo, 2012; Andrieş Căpraru and Nistor, 2018).

Subjective judgments of management systems, control systems, organizational discipline, staff quality, and other characteristics are commonly used to assess management performance. Another criterion employed to assess management efficiency is the operational profit to total income ratio. The greater the operating profit relative to total income, the more effective management is, in terms of generating revenue and operating efficiently. Another important indicator utilized to judge management quality is the expense-to-asset ratio. Profitability is likely to be inversely related to the operating expense-to-asset ratio.

2.1.5.5 Ownership Structure

The ownership structure of a bank is a firm- and industry-specific factor of its success. According to Podder (2012), the industry's relationship between bank performance and ownership structure exists due to spillover effects from privately owned banks' greater performance relative to publicly owned banks. This is based on the idea that publicly held banks are inefficient and do not always aim for profit maximization. At the industry

level, there is no clear empirical data establishing the association between ownership and bank performance. It is, nonetheless, a factor worth looking into (Podder, 2012).

2.1.5.6 Bank Size

Another determinant that most studies have looked at is size of the bank, which is often defined in terms of assets. According to Goddard et al. (2004), the size of a bank has a significant and positive link with its financial performance. This is since the larger a bank is, the moderate its cost of raising capital is, and hence the greater the profitability ratios are. The size of a commercial bank or any other corporate organization in terms of assets is a very important indicator of profitability. Commercial banks with a significant asset base can expand their operations geographically to areas where there is little competition or where the market is mostly unexplored. Such a move would significantly enhance the bank's customer base, which would result in greater customer deposits.

2.1.5.7 Macroeconomic Indicators

Macroeconomic issues can impact banking performance in a variety of ways. For starters, demand for bank loans will be stronger during periods of economic boom than during periods of crisis. An increasing rate of aggregate growth may boost the loan payment ability of domestic borrowers, resulting in decreased credit risk. Adverse macroeconomic conditions, on the other hand, are bad for banks since they increase the amount of nonperforming loans. As a result, bank performance is likely to improve as the economy grows.

Second, it is commonly assumed that as interest rates rise, the spread between saving and borrowing rates widens, resulting in increased banking sector profitability. Between 1976 and 1984, Hanweck and Kilcollin (1984) discovered that this association is

especially evident for smaller banks in the United States. They discovered that lower interest rates result in low loan growth and a higher chance of loan default during a recession. As a result, as the market rate declines, banks, particularly small ones, may find it difficult to maintain profit.

Also, the impact of inflation on banking performance must be considered. If inflation is precisely forecast and interest rates are effectively adjusted, it appears to have a favorable impact on profitability. Unexpected surges in inflation pose cash flow concerns for borrowers, which can lead to loan agreements being cancelled early and loan losses occurring. If banks are hesitant to raise interest rates, bank expenses may climb faster than bank earnings.

High and volatile inflation, according to Hoggarth et al. (1998), might make loan planning and bargaining difficult. It's feasible that bank costs will outpace bank income. The findings of a study into the association between inflation and financial performance are inconclusive. Despite the findings of Guru et al. (2002) and Jiang et al. (2003), which indicate that a high inflation rate result to increased bank profitability, Abreu and Mendes (2000) in Europe discovered a negative link between inflation and bank profitability. Furthermore, Demirguc-Kunt and Huizinga (1999) point out that developing-country banks are less profitable during inflationary periods, especially when their capital ratio is high. In these countries, bank costs are rising faster than bank revenues.

2.2 Theoretical Literature Review

2.2.1 Buffer Theory of Capital

This is an important theory that explains recapitalization and bank financial performance. The buffer theory states that banks would aim to have more capital in order to avert regulatory fines for not meeting regulatory capital requirements (Adu,

2019). According to the buffer theory, banks are required to keep obligatory capital as well as other minimum capital requirements. Supporters of the buffer theory (Caleb and Rob, 1996) contend that adequately capitalized banks may take on hazardous projects with higher profit margins, illustrative of a favorable link between enhanced capital adequacy and profitability. According to Buffer et al. (1981), banks maintain sizable buffer capital reserves to avoid the policymakers' surcharge on the required minimum level of capital. A capital buffer is a technique used by banks to prevent excessive risk, according to Ayuso, Pérez, and Saurina (2004). This shows that a bank can endure a challenging time provided it maintains a bigger capital buffer against an increase in risk.

According to Heid et al. (2004), the coordination of capital and risk adjustments is dependent on the amount of surplus capital held by the bank. Banks with inadequate capital buffers attempt to develop an adequate buffer by boosting capital while minimizing risk. Banks with big buffers, on the other hand, maintain their capital buffer by increasing risk as capital grows.

2.3 Empirical Literature Review

2.3.1 Recapitalization profitability, liquidity and asset quality

This section reviews literature on empirical research conducted in the area under research, specifically on the relationship between recapitalization and financial performance. The various empirical studies are explained in turns below:

Antonio (2013) and Martins, Serra, and Stevenson (2019) investigated the primary factors of bank profitability in Spain from 1999 to 2009. According to the findings of these studies, greater capitalization levels of banks have a good influence on return on average assets (ROAA) but have an adverse impact on return on average equity

(ROAE) (ROAE). This contradicts earlier findings from research on the influence of capital and ROE in several European economies. The research also reveals that the pace of deposit growth, size, and revenue diversification have little effect on bank profitability. External variables such as market concentration, inflation rate, economic cycle, and interest rates have all had an impact on bank profitability. Antonio (2013) study confirms Asedionlen (2004) argument that, while recapitalization may provide liquidity in the near term, it does not secure the supportive macroeconomic climate necessary to safeguard high asset quality and profitability.

Owolabi and Ogunlalu (2013) utilized net profit margin (NPM), return on assets (ROA), and return on capital employed (ROCE) data from five years before and after consolidation to assess the impact of banking merger on the performance of a few Nigerian banks. The study used four banks and utilized data from 2001 to 2010. The two-sample t-test was used to assess the data to see whether there was any indication of a substantial difference in the mean of these variables as a result of this exercise. The mean of ROCE differed considerably amongst pre-consolidation period and postconsolidation period, but not for NPM and ROA. Post-The findings thus revealed a post-consolidation to have a significant impact on ROCE.

Sadiq et al. (2018) found that utilizing the random effect as suggested by the Hausman test, recapitalization did not increase bank performance as assessed by return on assets. This was in line with the results of Balderin and Kalhoefer (2009) and Straub (2007), which indicated that recapitalization failed or had a negative influence on bank profitability performance.

Olalekan and Adeyinka (2013) employed both primary data and secondary data in their study on the influence of capital sufficiency on performance of banks in Nigeria. Using both the panel fixed effect and random effect models, they discovered that capitalization

had a significant beneficial influence on the financial performance of Nigerian banks. On the other hand, the primary data revealed an insignificant association between capital sufficiency and performance. Similarly, Obamuyi (2013) used the fixed effect model on data derived from financial statements of 20 banks spanning the period 2006 to 2012 to study the impacts of capitalization, bank size, expenditure management, interest income, and the economic environment on banks' financial performance in Nigeria. His findings supported the bankruptcy and signaling theories by revealing a positive significant link between capitalisation and profitability.

Athanasoglou, Brissimis, and Delis (2008) investigated the influence of recapitalization on bank profitability performance in Ghana using the GMM and the Arellano and Bond (1991) criterion of one lagged GMM. The study looked at the link between regulatory capital increases and bank profitability as well as if the state of the economy had any bearing on that relationship. Using the equality of means test, the research revealed that the Return on Equity (ROE) was minimal and inconsequential.

The t-test results for the Return on Assets (ROA) equality of means test were equally insignificant. As a consequence, there is no statistically significant change between the mean ROE of the banks before and after recapitalization. ROA was the same before and after recapitalization. The test, however, was significant for both before and after recapitalization's after-Tax Profit. This implies that the recapitalization process significantly enhanced After-Tax Profit. The empirical data show that the recapitalization process had a weighty negative influence on profitability of Banks. It also claimed that while recapitalization boosted banks' capital bases, it does not necessarily result in strong financial intermediation.

Boahene, Dasah, and Agyei (2012) conducted research on the profitability of Ghanaian banks. Their study showed evidence for earlier empirical work indicating capital influences profitability of bank positively and significant. Boahene, Daseh, and Agyei (2012) employed a five-year data of six commercial banks from 2005 to 2009. The data was evaluated using the fixed-effect panel model. From the study, the capital of the bank has a substantial effect on the profitability of Ghanaian banks. Obuobi et al. (2019) analyzed bank recapitalization using data from Ghana's banking industry.

The study's crux was determining if bank recapitalization was meaningful, using the 2012 exercise as a baseline. According to findings of the study, recapitalization of banks has the capacity to advance the bank's financial performance. As a result, it was suggested that the BoG begin necessary regulatory steps to preserve the advantages of banks recapitalization for the benefit of depositors and the nation as a whole. Another study by Alnaa, Ahiakpor, and Abdul-Majeed (2020) investigated the Ghanaian banks' profitability before and after capitalization. Secondary data from the years 2006 to 2016 were used. The study found that recapitalization policy had a good impact on managerial efficiency but a negative impact on the profitability of Ghanaian banks. Offiong et al. (2020) evaluated the capital sufficiency of Nigerian banks. The study evaluated using 10 different performance metrics for both pre- and postrecapitalization periods using descriptive statistics, independent sample t-test, and Levene's test for equality of variance. According to the results of the study, the bulk of performance metrics did not become better after post-recapitalization. Similarly, Okotori and Ayunku (2020) explored how banking innovations and changes affected the profitability of Nigerian Deposit Money Banks (DMBs). The data collection includes 12 banks with national and international authorisation, and the resulting panel data was studied using a dynamic GMM econometric technique. The results revealed that inflation rate, bank

credit risk exposure, and currency rate were important indicators of Deposit Money Bank profitability in Nigeria.

Nsanyan Sandow, Duodu, and Oteng-Abayie (2021) used the panel corrected standard error technique to evaluate the effect of regulatory capital requirements on bank performance in Ghana. The crux of the research work was to examine among minimum capital requirement and bank performance in Ghana. The study used data from 20 licensed universal banks in Ghana from 2008 to 2017. According to the findings, the regulatory capital requirement has a favorable and weighty impact on bank performance as measured by ROA and ROE. The consequences were negative at ROA and ROE performance levels of 1.7% and 1.6%, respectively. The study comes to the conclusion that the association between capital requirements and bank performance in Ghana is a two-edged sword. The performance of the banks is initially enhanced by the capital requirement, but once the threshold levels are reached, the performance declines.

2.4 Conceptual Framework

The conceptual model below contained both independent variable and dependent variables. The explanatory variables affects the dependent variables of which the researcher has absolute control over them. From the model, the independent variable was bank recapitalization, and the dependent variable was financial performance. Bank recapitalization was denoted by a dummy variable. Financial performance was viewed in terms of bank's profitability, bank's liquidity, and bank's asset quality. Profitability, proxied using return on equity (ROE), return on assets (ROA), and net interest margin (NIM). Liquidity was proxied using liquid funds to total assets ratio whiles asset quality was proxied by non-performing loans ratio. The conceptual framework is shown in figure 2.1.

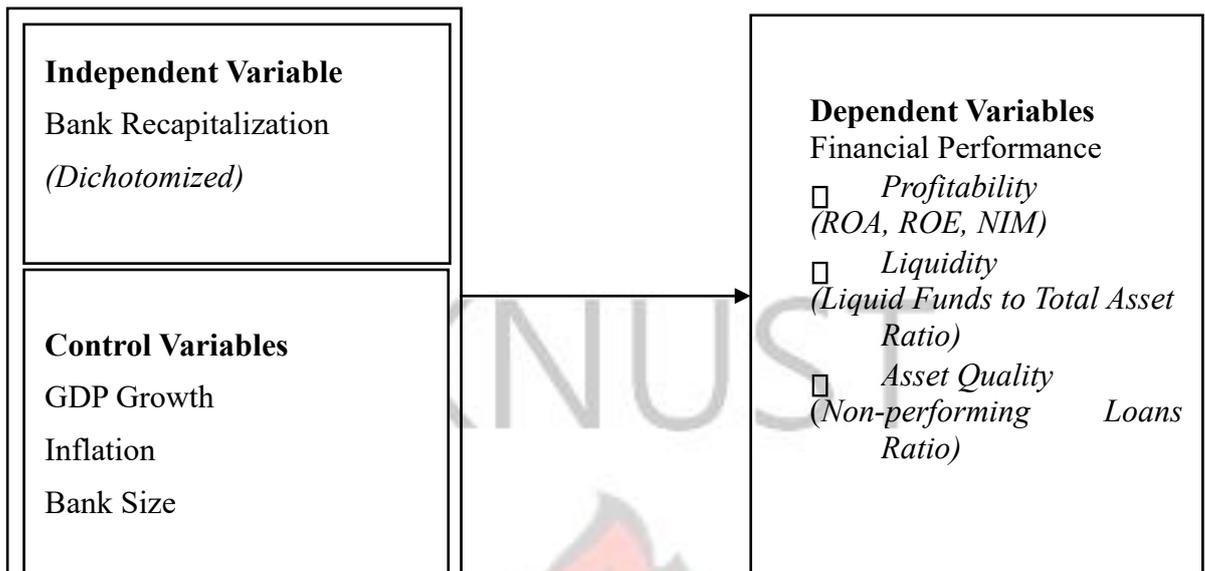


Figure 2.1: Conceptual Model

Source: Researchers' Own Construction, 2022

2.5 Summary of Chapter

This chapter lays out a detailed conceptual, theoretical and empirical literature review and a brief overview of the banking industry. Furthermore, it thoroughly specified the conceptual framework of the study, detailing the explanatory and the dependence variables and the associated control variables.

3.1.1 Research Purpose

The purpose of a research can either descriptive, explanatory or exploratory. Descriptive research tries to characterize a population or phenomenon in an accurate and systematic way (Nassaji, 2015). Explanatory research is a form of research that focuses on elucidating certain aspects of your research and deals with explaining the relationship between variables. The researcher begins with an idea and then employs research as a technique for identifying areas that will be addressed in the near future (Fisher, 2004). Exploratory research is the process of looking into a problem that has never been thoroughly researched or deliberated on before (Swedberg, 2020).

For this study the research purpose was both explanatory and descriptive. The descriptive research was used to describe the various variables employed in this study while explanatory research was utilized to explain the significant associations between the selected variables of the study.

3.2 Population of the Study

According to Umair (2018), population is the whole group of attention that the researcher desires to analyze. It refers to explicitly defined aspects, services, individuals, objects, or households under research (Umair, 2018). The study's population comprised all the licensed commercial banks in Ghana. As of March 2023, Ghana has a total of 23 commercial banks licensed by the Bank of Ghana which operates through a total of 1711 branches

3.3 Sampling and Sampling Techniques

The sample size for this study comprised sixteen (16) licensed commercial banks in Ghana. These commercial banks include Ghana Commercial Bank (GCB), Ecobank Ghana Limited (EBG), Agricultural Development Bank (ADB), CAL Bank Limited

(CAL), Fidelity Bank Limited (FBL), ABSA Ghana (ABSA), Société General Ghana (SG), Zenith Bank Limited (ZBL), Standard Chartered Bank (SCB), Access Bank Ghana Limited (ABG), Prudential Bank Limited (PBL), Stanbic Bank Ghana Limited (STANB), Guaranty Trust Bank (GTB), Universal Merchant Bank (UMB), FBN Bank Limited (FBN) and First Atlantic Bank Limited (FAB). The researcher employed a non-probability sampling variant and the purposive sampling method. Only banks that survived the 2017 recapitalization exercise carried out by the Bank of Ghana (BOG) were used.

3.4 Data and Data Analysis Instruments

There are two kinds of data sources for a research work: primary and secondary data. Primary data refers to those data collected directly from main sources by researchers via surveys and questionnaires, interviews, and experiments (Currie, 2005). Secondary data is data that has previously been gathered from other sources and made available to researchers for use in their own research work (Saunders, Lewis, and Thornhill, 2012). Andrews et al. (2012) describe secondary data as archive data or existing data, which serve as a foundation for a research work. The argument for using secondary data was due to cost constraints, as the data is deemed both economical and inexpensive.

For the purposes of this research, annual panel data from 2014-2021 was used. Data on the macroeconomic and the control variables were derived from World Bank World Development Indicators (2021) database for the selected listed banks used for this study. Data on the financial performance measures were derived from the PwC Ghana Banking Survey Reports and yearly reports of the various banks.

The data was further analyzed using STATA statistical software. The collected data was examined for completeness and later coded and tabulated. It was evaluated by applying descriptive statistics, correlation, and panel regression analysis.

3.5 Estimation Method

To establish the link between the bank recapitalization and financial performance indicators, the researcher first used descriptive statistics to delineate the features of the measures using measures of central tendency, such as minimum, maximum, mean, median, skewness and standard deviation. In addition, a correlation matrix was created to reveal the extent of the relationship between the measures. Specifically, the correlation matrix aids in detecting the presence of multicollinearity among the variables, as well as the type of multicollinearity. If two variables are highly correlated, the one with high p. value is dropped. This is because, the higher the p. value, the lower the significance of the variable in question.

The panel data regression approach was utilized to clarify the connection between bank recapitalization and financial performance by limiting the impact of dependent variables. Because there are several approaches for analyzing panel data sets, the question of which method is most appropriate arises. As a result, it is necessary to choose the most appropriate method of panel data regression, namely between the random effect model (REM) and the fixed effect model (FEM). The Hausman (1978) Chi-square specification test is used to determine the best approach. A statistically significant relationship between the explanatory variables and the observation of specific random effects of the unobserved unit is what is in contention here. If the data show that there is no association, then REM will be more appropriate. However, if the findings indicate yes, FEM will be more appropriate, making REM an inconsistently estimated model.

The panel data regression model was chosen to enhance variability, reduces collinearity among the determinants and boosts the efficiency of the determinants.

3.6 Model Specification

The model adopted and amended Athanasoglou et al. (2005) empirical model. Based on the research objectives, the following individual models are derived to satisfy objectives of the study. Model 1 satisfies the objective of the study whilst models 2 and 3 satisfy the second and third objectives respectively.

Model 1:

$$NIM_{i,t} = \varphi_0 + \varphi_1 RECAP_{i,t} + \varphi_2 LEV_{i,t} + \varphi_3 GDPG_{i,t} + \varphi_4 INF_{i,t} + \varphi_5 BAZ_{i,t} + \mu_{it} \dots \dots \dots 1$$

Model 2:

$$LIQ_{i,t} = \varphi_0 + \varphi_1 RECAP_{i,t} + \varphi_2 LEV_{i,t} + \varphi_3 GDPG_{i,t} + \varphi_4 INF_{i,t} + \varphi_5 BAZ_{i,t} + \mu_{it} \dots \dots \dots 2$$

Model 3:

$$AQUALITY_{i,t} = \varphi_0 + \varphi_1 RECAP_{i,t} + \varphi_2 LEV_{i,t} + \varphi_3 GDPG_{i,t} + \varphi_4 INF_{i,t} + \varphi_5 BAZ_{i,t} + \mu_{it} \dots \dots \dots 3$$

Where:

NIM = Net Interest Margin (A proxy for profitability)

LIQ = Liquidity

AQUALITY = Asset Quality

φ_0 , = The intercept of the model φ_i , where $i = 1, 2$, and 3 , represents the coefficients of the explanatory variables of the model, and

μ_{it} = the error term.

3.7 Diagnostic Tests

Empirical research is frequently an interactive procedure. The procedure starts with a specification of the relationship to be estimated. The functional form connecting these variables, the variables to be included, and, if the data are time series, the dynamic structure of the association between the variables are all things to consider when choosing a specification. Before the equation has been approximated, diagnostic tests were run to assess the specification's quality across a variety of dimensions. Specifically, stationarity would be conducted to assess whether the variables contain unit root or not. Finally, the Hausman Specification test will be used to select between the fixed effect model and the random effect model of the panel regression.

3.7.1 Stationarity Test

According to Dickey and Fuller (1981), the major problem with time series or panel data is the problem of non-stationarity. Time series data must achieve stationarity and meet the statistical condition of being time independent, according to Box et al. (2016). The stationarity or unit test evaluates the variables' integration order. In line with Dickey and Fuller (1981), panel unit roots test was carried out to examine the series' stationarity.

3.7.2 Hausman Specification Test

The choice between the RE and FE is an important issue in panel data analysis.

Hausman Specification Test was carried out to decide whether to use Random Effect (RE) Model or Fixed Effect (FE) Model. However, the FE model is chosen over the RE model if the individual heterogeneity is connected with the error term.

3.8 Variable Description and Measurement

This section explains the variables that were used in this study. The dependent variables, explanatory variables, and control variables are all explained in turns in this section. The independent variable utilized in the study was recapitalization represented by a dummy variable (DRECAP). A dummy variable of zero is used to represent pre-capitalization periods (2014-2017) and dummy variable of 1 is used to represent post-capitalization periods (2018-2021). Financial performance is measured using profitability, liquidity, and asset quality. Profitability is measured by net interest margin (NIM), return on assets (ROA) and return on equity (ROE). Liquidity by liquid funds to total assets ratio and asset quality by non-performing loans ratio. A full description and measurement of the variables of interest are provided in Table 3.1.



Table 3.1: Variable Description and Measurement

	Measurement Variables	Abbrev.	Measurement	References
Recapitalization	Recapitalization	RECAP	Years in the post-capitalization period is represented by a "1", and the years in the precapitalization period is represented by a "0"	Nakashima, 2016; Montgomery and Shimizutani, 2009; Poczter, 2016
Profitability	Net Interest Margin	NIM		Doyran, 2013; Nguyen, 2012; Silaban, 2017
			$\frac{\text{Net interest Income}}{\text{Average Operating assets}} \times 100$	
	Return on Assets	ROA	$\frac{\text{Net Income}}{\text{Average total assets}} \times 100$	Al Nimer, Warrad and Al Omari, 2015; Sitompul and Nasution, 2019
			$\frac{\text{Net Income}}{\text{Average total equity}} \times 100$	
	Return on Equity	ROE		Haralayya and Aithal, 2021; Hassan, Manurung and Osman, 2020; Nguyen, 2020
			$\frac{\text{Liquid Funds}}{\text{Total assets}} \times 100$	
Liquidity	Liquid funds to total assets ratio	LIQ		Charmler, 2018; Shah et al., 2018; Assfaw, 2019; Mennawi, 2018
			$\frac{\text{Non – performing loans}}{\text{Total gross loans}} \times 100$	
Asset Quality	Non-performing loans ratio	AQUALITY		Hamdillah, Purwanto and Ermawati, 2021; Rachman et al., 2018.
Control Variables	Bank Size	BAZ	Natural log of bank's total assets	Bahreini and Zain, 2013; Arifin, 2016
	Leverage	LEV	$\frac{\text{Total Debt}}{\text{Total equity}} \times 100$	Bunyaminu, Yakubu and Bashiru, 2021; Haniffa and Hu, 2015
	Inflation	INF	Consumer Price Index (annual percentage)	Rosman et al., 2014 ; Zagorchev and Gao, 2015
	Economic Growth	GDPG	Real GDP Growth.	Chazi et al., 2018 ; Haris et al., 2019

Source: Researcher's Own Construction (2022)

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3.9 History and Overview of the Ghanaian Banking Sector

Banking emerged in the colonial period with the objective of providing monetary support to colonial government. In 1896, the Bank of the British West Africa, which would eventually become Standard Chartered Bank, established its first branch in Accra. As a result of the bank's success, numerous foreign banks opted to locate branches on the Gold Coast. The only banks functioning in the Gold Coast between 1920 and 1950 were the Barclays Banks and the British Bank of West Africa. In an effort to counter the hegemonic position of the two foreign banks on the financial market, the Ghana Commercial Bank was founded in 1953. To control the country's currency, the Bank of Ghana was established immediately after Ghana's independence in 1957. In order to improve the financial system by offering services that private banks were unable to provide, a number of state-owned banks and Development Financial Institutions (DFIs) were established by 1974 (Ampofo, 2020).

Ghana's banking system is now made up of the central bank (BOG), commercial banks, development banks, merchant banks, and a plethora of rural banks (Mbilla et al., 2020). The BOG, as the country's central bank, is primarily in charge of the economy's monetary policy. As of December 2021, the country had 23 banks with universal banking licenses. There are 14 international banks and 9 domestic banks among the 23 banks having universal banking licenses (Pwc, 2021).

The ECOWAS protocol and Ghana's favorable economic climate have resulted in a large presence of foreign banks in the country. It is critical, however, to recognize that the level of competition in the Ghanaian banking sector has a direct impact on efficiency. There have been some notable developments in service delivery and efficiency all over the nation's numerous institutions (Boadi, Dziwornu and Osarfo, 2022). Banking industry competition has resulted in technology developments such as

automated teller machines (ATMs), e-banking, telephone banking, SMS banking, and so on (Felix, 2018). These technological advances have greatly aided the spread of financial services in Ghana.

To safeguard depositors' money and prevent insolvency, the BOG began a significant clean-up operation in the banking system in 2017. This resulted from poor management and some banks' claimed capitals not being available. The BOG looked into all banks in order to guarantee a healthy financial sector after discovering that UT Bank and Capital Bank had mismanaged cash and used their stated capitals illegally. The BOG revised the minimum regulatory capital requirement for new entrants and existing banks from GHC120 million to GHC400 million. The recapitalization is meant to further develop, strengthen, and modernize the financial sector in order to support the government's economic strategy and agenda.

The COVID-19 pandemic, which has pushed innovative products and digitalisation, as well as regulator-driven changes and directives and a reassessed competitive environment, has prompted the industry to mobilize considerable deposits to finance the restored lending appetite in a rebounding economy.

3.10 Ethical Consideration

The study thought it was critical to follow specific ethical guidelines in accord with those stated by the American Psychological Association (APA, 2002) governing the use of human subjects in research. In order to provide guidance for the majority of the circumstances psychologists come across while doing research, hence the ethical principles.

3.11 Chapter Summary

Unlike the other chapters, this chapter laid out a detailed explanation of the research design based on the study's objectives. Furthermore, it thoroughly specified the following sections: research, population and sampling, data sources, estimating techniques, methodological model formulation, diagnostic tests, and variable description and measurement.



CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents a discussion of the results on the impact of macroeconomic conditions on financial performance of selected listed banks in Africa by employing a static panel data regression model. In the preliminary part, the researcher discusses the descriptive statistics, correlations between variables, and graphical illustrations of key variables of the study. The second part of the chapter focused on the initial diagnostic tests carried against the assumptions of the various panel regression models. Further, the chapter presents the panel regression results to satisfy the objectives of the study. The final section of this chapter ends with a conclusion which summarizes the entire chapter.

4.1 Descriptive Statistics

Table 4.1 talks about the main descriptive statistics on the various variables employed. The descriptive statistics presented in the table includes mean, median, minimum value, maximum value, standard deviation, probability of Jargue-Bera statistic, and total number of observations. In all, there were 128 observations across 8-eight period (2014-2021). The average values of the profitability measures used were 8.86%, 2.85%, and 18.31% for net interest margin (NIM), return on assets (ROA) and return on equity (ROE) respectively. The standard deviations as displayed in the table are 6.28% for NIM, 1.91 for ROA and 16.81% for ROE. These indicates that the standard deviations of the profitability measures are very close to their mean.

From the table, the average liquidity (LIQ) as proxied by liquid funds to total assets of the banks is 75.6% (0.756). This declares the banks' position to continue providing

security for depositor funds in the unlikely event of any significant withdrawals from mainly institutional and corporate customers. The minimum and maximum liquidity of the banks are 0% and 89% respectively. The standard deviation of liquidity as presented in the table is 57.9% implying liquidity of the selected banks is minimally dispersed around the average liquidity.

From the table, the average asset quality (AQUALITY) as measured by ratio of nonperforming loans and impairment charges to gross loans and advances is 7.65%. This means the asset quality of the selected licensed commercial banks has shown a positive sign of strong loan recovery and minimal write-downs of impairment charges and provision. The standard deviation of asset quality as displayed in the table is 5.65%. The minimum and maximum asset quality ratios are 0% and 28.5 % respectively.

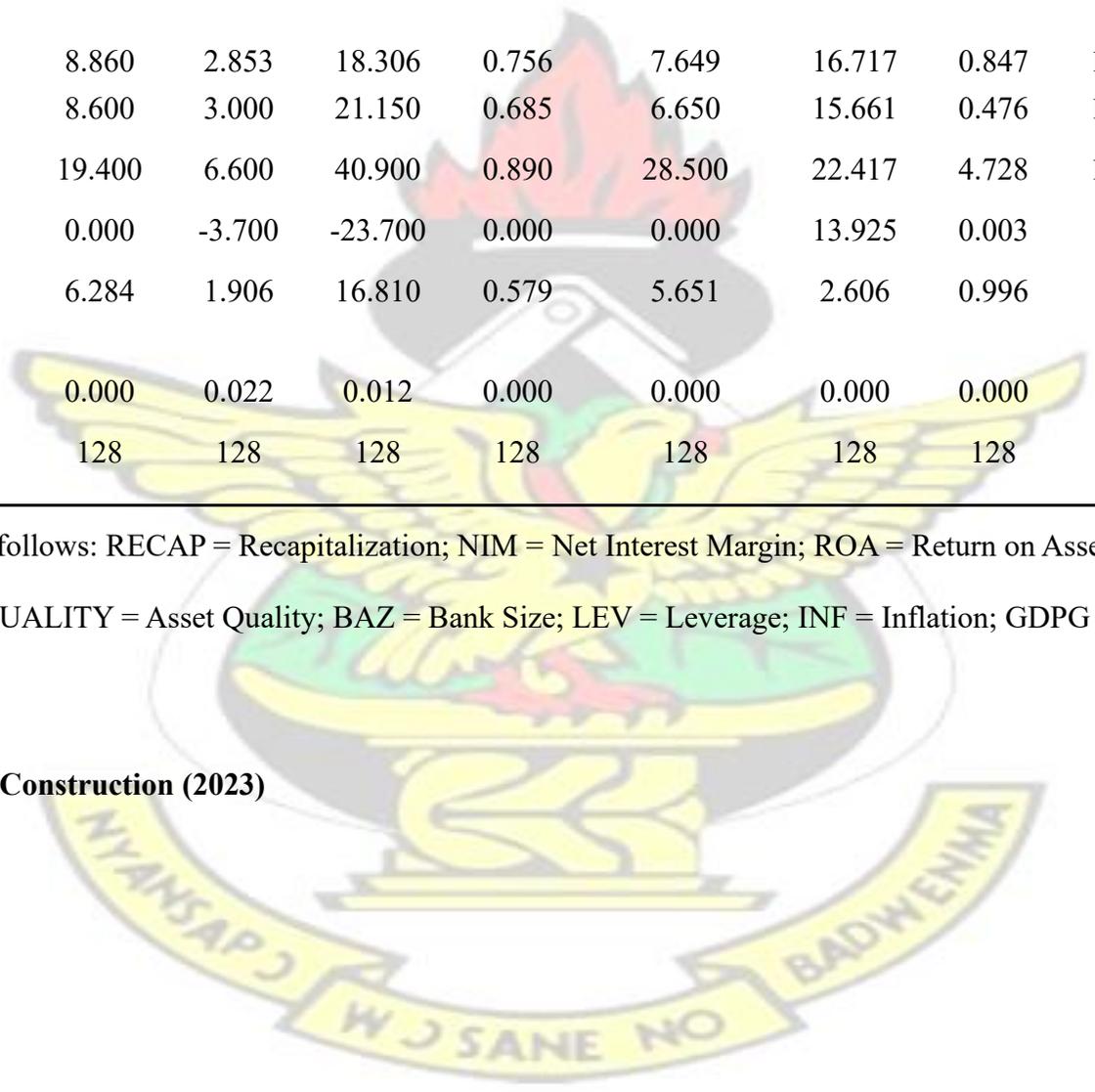
The Jarque-Bera test statistic is a test of goodness-of-fit and it indicates how the data series are normally distributed. For all the variables used for the study, the p. values of the Jarque-Bera test statistic are less than 5%. This implies that for the variables, the deviations from normality are statistically significant.

Table 4.1: Descriptive Statistics of the Variables

Variables	RECAP	NIM	ROA	ROE	LIQ	AQUALITY	BAZ	LEV	INF	GDPG
Mean	0.500	8.860	2.853	18.306	0.756	7.649	16.717	0.847	12.188	4.388
Median	0.500	8.600	3.000	21.150	0.685	6.650	15.661	0.476	11.200	4.400
Maximum	1.000	19.400	6.600	40.900	0.890	28.500	22.417	4.728	17.500	8.100
Minimum	0.000	0.000	-3.700	-23.700	0.000	0.000	13.925	0.003	7.200	0.500
Std. Dev.	0.502	6.284	1.906	16.810	0.579	5.651	2.606	0.996	3.864	2.410
Prob (Jarque-Bera)	0.000	0.000	0.022	0.012	0.000	0.000	0.000	0.000	0.001	0.023
Observations	128	128	128	128	128	128	128	128	128	128

The variables are defined as follows: RECAP = Recapitalization; NIM = Net Interest Margin; ROA = Return on Assets; ROE = Return on Equity; LIQ = Liquidity; AQUALITY = Asset Quality; BAZ = Bank Size; LEV = Leverage; INF = Inflation; GDPG = Gross Domestic Product Growth

Source: Researcher’s Own Construction (2023)



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4.2 Correlation Analysis

Correlation measures the strength of the linear association between two variables (Mukaka, 2012). A positive correlation indicates that both measures are increasing in relation to one another, whereas a negative correlation indicates that as one measure rises, the other falls. Table 4.2 displays a correlation matrix of the variables on recapitalization and financial performance of the selected banks in Ghana employed in the study. This is done as part of preliminary analyses of data on the influence of recapitalization on financial performance of banks in Ghana. The key profitability measures, that is Net Interest Margin (NIM), Return on Assets (ROA), and ROE, were significantly correlated with recapitalization. At 1% significance level, NIM is negatively correlated with recapitalization. ROA and ROE are negatively correlated with recapitalization at 10% and 5% significance levels respectively. Liquidity (LIQ) proxied by liquid funds to total asset ratio is positively correlated with recapitalization at 5% significance level, whilst asset quality (AQUALITY) is insignificantly correlated with recapitalization. Overall, the dependent variables exhibit different forms of correlation with the independent variable recapitalization. From the initial correlation analysis, there is degree of correlation between recapitalization and financial performance of banks. But correlation does not mean causation. In the subsequent subsections, regression analysis is conducted to examine the degree of causation between the variables of interest.

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Table 4.2: Correlation Matrix

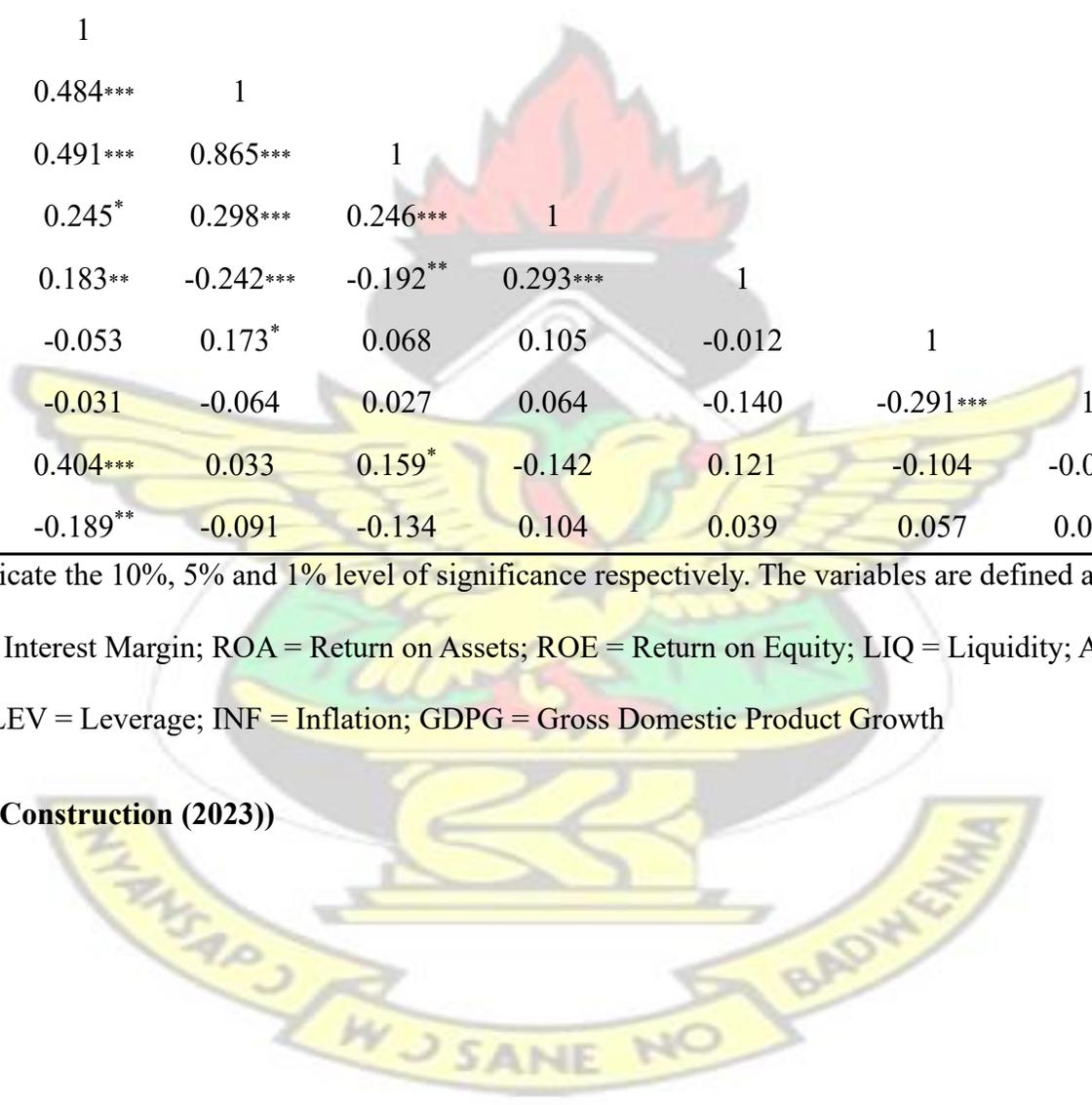
<u>Variables</u>	<u>RECAP</u>	<u>NIM</u>	<u>ROA</u>	<u>ROE</u>	<u>LIQ</u>	<u>AQUALITY</u>	<u>BAZ</u>	<u>LEV</u>	<u>INF</u>	<u>GDPG</u>
RECAP	1									
NIM	-0.440***	1								
ROA	-0.027*	0.484***	1							
ROE	-0.149*	0.491***	0.865***	1						
LIQ	0.138*	0.245*	0.298***	0.246***	1					
AQUALITY	-0.131	0.183**	-0.242***	-0.192**	0.293***	1				
BAZ	0.106	-0.053	0.173*	0.068	0.105	-0.012	1			
LEV	0.018	-0.031	-0.064	0.027	0.064	-0.140	-0.291***	1		
INF	-0.900***	0.404***	0.033	0.159*	-0.142	0.121	-0.104	-0.049	1	
GDPG	0.109	-0.189**	-0.091	-0.134	0.104	0.039	0.057	0.098	-0.442***	1

Note: (*), (**) and (***) indicate the 10%, 5% and 1% level of significance respectively. The variables are defined as follows: RECAP =

Recapitalization; NIM = Net Interest Margin; ROA = Return on Assets; ROE = Return on Equity; LIQ = Liquidity; AQUALITY = Asset

Quality; BAZ = Bank Size; LEV = Leverage; INF = Inflation; GDPG = Gross Domestic Product Growth

Source: Researcher's Own Construction (2023))



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4.3 Panel Stationarity Test

Table 4.3 also talks about the panel stationarity test for the variables of interest employed in this research. Stationarity means the statistical properties of time series do not change over time. Stationarity is conducted to ensure the panel regression results is not fabricated. Specifically, the researcher adopted Levin, Lin and Chu (2002) Panel Stationarity to ensure that the data series do not contain unit root. For Levin, Lin and Chu unit root test, if p. value is greater than 5%, the null hypothesis is accepted, indicating the absence of stationarity in the data series. Also, if prob. value is less than 5%, the null hypothesis is rejected, implying that the data series are stationary. Data series were tested for stationarity at levels with intercepts. From table 4.3, the null hypothesis for all the data series were rejected. This implies that all the data series are stationary at levels.

Table 4.3: Panel Stationary Test – Levin, Lin and Chu Test (2002)

Variables	At Levels		Hypothesis
	t-statistic	p.value	
RECAP	-2.7510	0.0030	Rejected
NIM	-3.0429	0.0012	Rejected
ROA	-10.4937	0.0000	Rejected
ROE	-10.2559	0.0000	Rejected
LIQ	-8.1096	0.0000	Rejected
AQUALITY	-4.4331	0.0000	Rejected
BAZ	-6.9690	0.0000	Rejected
LEV	-8.0284	0.0000	Rejected
INF	-10.2350	0.0000	Rejected
GDPG	-2.1093	0.0175	Rejected

Probabilities are calculated assuming asymptotic normality.

Source: Researcher's Own Construction (2023).

4.4 Hausman Specification Test

The Hausman specification test assess whether the regressors and the observation of specific random effects of the unobserved unit have a significant relationship (Tian and

Zeitun, 2007). The Hausman Test is conducted to select among Fixed Effect Model and Random Effect Model. The null hypothesis for the Hausman Test is that the Random Effect is suitable. The substitute hypothesis is that the model is Fixed Effect. If the p. value of the Hausman Chi Square is greater than 5%, the null hypothesis is accepted and the Random Effect model is preferred over the Fixed Effect Model. To satisfy the objectives of this research, five regression models were specified as referred to in chapter three. The Hausman Specification test was conduct on each of these respective models. From the Hausman Specification test, as shown in Table 4.4 the null hypothesis is accepted for all the respective models since the p. values of the Hausman Chi Square were greater than 5%. The Random Effect Model is therefore appropriate for the models. In contrast to the fixed effect model, the random effect model has the benefit of being able to estimate shrunken residuals and account for unequal efficiency by using random coefficients models.

Table 4.4: Hausman Specification Test Results

	Hausman Test	Results	Model Selection
Model 1	Hausman (Chi2)	0.6826	
	Prob > Chi2	0.7108	Random Effect
Model 2	Hausman (Chi2)	0.5649	
	Prob > Chi2	0.7540	Random Effect
Model 3	Hausman (Chi2)	1.2573	
	Prob > Chi2	0.5331	Random Effect
Model 4	Hausman (Chi2)	1.5055	
	Prob > Chi2	0.4711	Random Effect
Model 5	Hausman (Chi2)	5.4186	
	Prob > Chi2	0.0666	Random Effect

Source: Researcher's Own Construction (2023)

4.5 Pesaran CD Test for Cross-sectional Dependence in Random Effect Model

Panel data may exhibit widespread cross-sectional dependency, in which the various cross-sections are correlated (Sarafidis and Wansbeek, 2012). This is frequently ascribed to the influence of certain unobserved common elements that are shared by all cross-sections and affect each of them differently. If cross-sectional dependence exist in a regression model, the regression outcome will be biased and unreliable (De Hoyos and Sarafidis, 2006). After obtaining the random effect model estimation findings, the Pesaran CD test for cross-sectional dependence in random effect is run. The null hypothesis for the Pesaran CD test is that the data series has no cross-sectional dependence. The null hypothesis is rejected in favor of the alternative hypothesis indicating the presence of cross-sectional dependence if the p. value of the asymptotic test statistic is less than 5%. The Pesaran CD cross-sectional dependence test for the respective Random Effect regression models is shown in Table 4.5. The null hypothesis is supported by the p. values of the asymptotic test statistic.

Table 4.5: Pesaran CD Cross Sectional Dependence Test

	Hausman Test	Results	Null Hypothesis
Model 1	Test Statistic	9.5115	
	Prob > test statistic	0.0000	Rejected
Model 2	Test Statistic	4.8336	
	Prob > test statistic	0.0000	Rejected
Model 3	Test Statistic	2.1942	
	Prob > test statistic	0.0282	Rejected
Model 4	Test Statistic	7.2101	
	Prob > test statistic	0.0000	Rejected
Model 5	Test Statistic	5.4904	
	Prob > test statistic	0.0000	Rejected

Source: Researcher's Own Construction (2023)

4.6 Wooldridge Autocorrelation Test

The Wooldridge autocorrelation test in panel data is also performed. Table 4.6 presents the results for the Wooldridge autocorrelation for all the five models as outline in chapter 3. The null hypothesis for Wooldridge autocorrelation is that there is no first order autocorrelation of the residuals. If the p. value is greater 5%, the null hypothesis is accepted indicating the absence of autocorrelation of residuals. Based on the table presented, there were no autocorrelation of residuals in all models, and as such all the null hypotheses were accepted.

Table 4.6: Wooldridge Autocorrelation Test Results

		Results	Null Hypothesis
Model 1	Test Statistic	0.9738	
	Prob > test statistic	0.1683	Accepted
Model 2	Test Statistic	1.2345	
	Prob > test statistic	0.1237	Accepted
Model 3	Test Statistic	1.1132	
	Prob > test statistic	0.1428	Accepted
Model 4	Test Statistic	0.9920	
	Prob > test statistic	0.1592	Accepted
Model 5	Test Statistic	1.2583	
	Prob > test statistic	0.1344	Accepted

Source: Researcher's Own Construction (2023)

4.7 Empirical Results and Discussion of Findings

4.7.1 The Effect of Recapitalization on Profitability of Licensed Bank's in Ghana

In estimating the influence of recapitalization on profitability of selected listed banks in Africa, the study utilized a static panel model focusing on Seemingly Unrelated Regression (SUR) method to correct the effects of cross-sectional dependence in the data series. The dependent variables used to measure profitability included net interest

margin (NIM), return on assets (ROA), and return on equity (ROA). Table 4.7 displays the regression results on the effects of recapitalization on the profitability of selected banks used for the study. The Adjusted R Square for all the profitability models were all above 50%. This means the explanatory variables employed in the study jointly explains more than 50% of the changes in net interest margin (NIM), return on assets (ROA), and return on equity (ROE). The p. values of the F. Statistics are less than 5% indicating the joint significance of the explanatory variables in explaining the dependent. Overall, the respective models fit the data very well.

From the table, the coefficients of of the all the profitability measures; NIM, ROA and ROE were negative and significant at different degrees of significance. At 1% significance level, net interest margin (NIM) is negatively influenced by recapitalization. This means net interest income as a percentage of the total average operating assets of the banks decreased after the recapitalization exercise. Return on assets (ROA) and return on equity are negatively influenced by recapitalization at 10% and 5% significance level respectively. This implies that recapitalization directive deteriorated the efficiency levels of the banks to produce sufficient returns on its assets and maximize the returns given to holders of equity. Overall, the recapitalization exercise introduced by the Bank of Ghana significantly reduced the profitability of the selected banks. The findings in this study reconciles the position of Beccalli, Frantz and Lenoci (2018) who studied the hidden effects of recapitalization of the European Banking Industry between the period 2002-2014. According to the findings of Beccalli, Frantz and Lenoci (2018), recapitalization led to a reduction in profitability and increase in systematic risk. Also, the result of this study opposes the views of Obuobi et al. (2020) who carried a similar study in Ghana analyzing the Ghanaian Banking industry

post the 2012 recapitalization exercise. Their findings suggest recapitalization have a positive and weighty impact on the profitability of banks used for the study.

Table 4.7: Results on the Effects of Recapitalization on Profitability

Regressor	NIM	ROA	ROE
C	19.5442 (3.9540)	4.0333 (2.1386)	24.3426 (13.0267)
RECAP	-5.9868*** (1.2860)	-1.2211* (0.6750)	-8.2344** (4.1080)
BAZ	0.0039 (0.1363)	0.1213 (0.0772)	0.5501 (0.4704)
LEV	0.2594 (0.2814)	0.2066 (0.1525)	2.8982*** (0.9288)
INF	-0.4834*** (0.1843)	-1.6410* (0.0967)	-0.7097 (0.5883)
GDPG	-0.4746*** (0.1309)	-0.1760* (0.0687)	-11211*** (0.4180)
<i>Adj. R²</i>	0.72	0.69	0.78
<i>F. Stats</i>	14.4897	2.9582	5.1488
<i>Prob (F. Stats)</i>	0.0000	0.0200	0.0002

Source: Researcher's Own Construction (2023)

4.7.2 The Effect of Recapitalization on Liquidity of Licensed Commercial Banks.

The second objective of the study was to examine the impact of recapitalization on liquidity of the licensed commercial banks in Ghana. Similarly, the researcher used Seemingly Unrelated Regression (SUR) to address the issue of cross-sectional dependence in the panel data. Table 4.8 presents the regression results on the effects of recapitalization on the liquidity of the selected banks employed in the study. As presented in the table, both the Adjusted R Square and the p. value of the F. Statistic meet the statistical conditions of good explanatory power and joint significance.

From the table, the coefficient of recapitalization (RECAP) is positive at 1% significance level. It can be concluded that recapitalization increased the liquidity of

the selected licensed commercial banks. With the recapitalization directive, the banks are able to increase their liquid funds relative to total deposits and total assets held by the banks. The banks are also able to offset their interest-bearing liabilities with ease post recapitalization. The result of this study is in line with the findings of Kafe et al. (2022) who found a positive relationship between recapitalization and liquidity position of banks in Nepal. However, the findings of this research oppose the views of Mariathan and Merrouche (2012) who examined the nexus between recapitalization, credit and liquidity and found a negative relationship between recapitalization and liquidity.

Table 4.8: Results on the Effects of Recapitalization on Liquidity

Regressor	LIQ
C	0.2138** (5.4512)
RECAP	0.0943*** (10.5439)
BAZ	0.0071 (0.0084)
LEV	0.0458*** (0.0176)
INF	0.5083* (6.4521)
GDPG	0.4746*** (0.024)
<i>Adj. R²</i>	0.88
<i>F. Stats</i>	2.7056
<i>Prob (F. Stats)</i>	0.0235

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Researcher's Own Construction (2023)

4.7.3 The Effect of Recapitalization on Asset Quality of Licensed Commercial Banks.

The third and final objective was to examine the effect of recapitalization on asset quality of the licensed commercial banks in Ghana. Again, the researcher used Seemingly Unrelated Regression (SUR) to address the issue of cross-sectional dependence in the panel data. Table 4.9 displays the regression results to address the third objective of the study. The explanatory variables in the regression model collectively explain the variations in asset quality (AQUALITY) by 78%. The p. value of the F. Statistic is statistically significant making the model adequate.

From the table, the coefficient of recapitalization (RECAP) is negative and statistically significant at 1% significance level. By implication, the recapitalization directive improved the asset quality of the selected licensed commercial banks used for the study. This means the banks were able to reduce the rate of non-performing loans and impairments charges and allowances on gross loans and allowances following the recapitalization. The improved asset quality will offer several advantages. Smaller risk weightages reduce the outstanding risk weighted assets, saving the bank's capital. The result of this study is congruent with the study of Arrawatia et al. (2019) who examined the determinants of asset quality of Indian banks using a sample of 47 banks over a 15-year period. According to the results of their study, the infusion of capital (recapitalization) reduces the rate of nonperforming loans.

Table 4.9: Results on the Effects of Recapitalization on Asset Quality

Regressor	AQUALITY
C	0.4423* (7.1074)
RECAP	-5.9868*** (1.2860)
BAZ	0.0234*** (4.4587)
LEV	0.0478** (1.4581)

INF	0.4581 (3.3850)
GDPG	0.3823*** (0.2732)
<i>Adj. R²</i>	0.78
<i>F. Stats</i>	4.4999
<i>Prob (F. Stats)</i>	0.0000

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Researcher's Own Construction (2023)

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In recent times, commercial bank operations in Ghana have also been characterized by inadequate capitalization, which has hampered its financial performance. Financial institutions were in a difficult situation to fund large projects because they had the no financial power to compete in sectors that required more capital to participate in (Bank of Ghana, 2017). While recapitalization of Ghanaian banks may solve this hitch, the influence of the 2017 recapitalization exercise on bank financial performance in Ghana remains an area of empirical study. This current research aims at bridging the gap in knowledge and literature by examining the effects of macroeconomic variables on financial performance of listed banks in Africa.

This chapter presents summary of empirical findings, conclusion, policy implication recommendations, and suggestions for future research. Thus, this chapter is the concluding chapter and recaps the whole work.

5.1 Summary of Findings

In the quest to answer the research questions, a static panel model was specified to test the link between recapitalization and financial performance of banks in Ghana.

Specifically, the models were tested using seemingly unrelated regression (SUR) due to the presence of cross-sectional dependence in the panel random effect. The study was underpinned by three main objectives. First, the study sought to establish the relationship between recapitalization and profitability of banks in Ghana. The second objective was to examine the impact of recapitalization on the liquidity of banks in Ghana. The final objective was to examine the impact of recapitalization on asset quality of banks in Ghana. The summary of the findings on each objective are presented below:

Based on the empirical findings in the preceding chapter, recapitalization has a significant impact on profitability of the selected banks in Ghana. Specifically, recapitalization has negative and significant effects on all the profitability measures; net interest margin (NIM), return on asset (ROA), and return on equity (ROE). The results therefore support the views of Beccalli, Frantz and Lenoci (2018) who found recapitalization to have a negative impact on profitability. In contrast, the results of this study oppose the views of Obuobi et al. (2020) who carried a similar study in Ghana analyzing the Ghanaian Banking industry post the 2012 recapitalization exercise. The negative effects of recapitalization on profitability could be largely due to the short time to the take-off of the policy within which the study was carried out. Adequate time may be required to effectively assess the impact of the exercise on profitability.

The study posited that recapitalization has a positive and significant influence on liquidity of the selected banks in Ghana. With the recapitalization directive, the banks are able to increase their liquid funds relative to total deposits and total assets held by the banks. The banks are also able to offset their interest-bearing liabilities with ease post recapitalization. The result of this study is in line with the findings of Kafe et al.

(2022) who found a positive relationship between recapitalization and liquidity position of banks in Nepal.

The third objective of the study sought to examine the impact of recapitalization on asset quality of the selected banks in Ghana. The study found a negative and a significant relationship between recapitalization and asset quality. Asset quality is measured by rate of non-performing loans. The findings in of this implies that recapitalization policy improved the asset quality of the selected licensed commercial banks used for the study. Banks were able to reduce the rate of non-performing loans and impairments charges and allowances on gross loans and allowances following the recapitalization. The result of this study is congruent with the study of Arrawatia et al. (2019)

5.2 Conclusion

This study has no doubt examined the salvaging role that recapitalization can play in ensuring financial soundness. The thesis examines the effect of recapitalization on the financial performance of banks in Ghana. Sample was drawn from sixteen licensed commercial banks over eight-year period. Based on the findings of this research, bank recapitalization has the potential to improve the financial performance of the banking sector, particularly in terms of delivering on its primary duty of generating economic growth and protecting depositors' money through banking operations. With the recapitalization directive, banks were able to improve their liquidity and asset quality. Although, the profitability of the banks declined post recapitalization, therefore Bank of Ghana report in 2017 will have a better affirmative impact on the banking sector in the long run

5.3 Policy Implications and Recommendations

It is suggested that suitable regulatory restrictions be implemented to preserve the advantages of bank recapitalization and to reduce the prevalence of shady business practices in the industry. In order to protect the stability of the industry, it is also crucial to prevent the exercise from creating banks that could become too powerful and make effective supervision difficult. Last but not least, in order to favorably impact their decisions, there needs to be enough customer and depositor education regarding banking and its associated dangers. This will inform them about what is involved with their investments and savings.

A research will be done in the future to compare the short-term outcomes of the three recapitalization exercises using monthly data to establish the level of efficacy and efficiency of recapitalization on the industry.

5.4 Suggestions for further research

Due to time constraints, the study was unable to employ a large number of observations to enhance its conclusions. Future studies will and must attempt to use several data points for all African banks listed on their various stock markets. This would give a full understanding of the influence of macroeconomics in the performance of banks listed on Africa's stock exchanges.

The analysis was based on a ten-year period spanning from 2010 to 2019, because this is the most recent era and so has more data that is relevant to the current economic condition. A lengthier research period, on the other hand, would have recorded periods of varying economic significance, such as booms and busts. Future research regarded in this area should consider longer time periods.

In the future, studies should be carried out to compare the short-term outcomes of the three recapitalization exercises using monthly data to determine the efficacy and efficiency of industry recapitalization.

Finally, due to the limitations of the static fixed effects regression model, additional models, for instance, Dynamic Panel data Models, such as First Difference GMM and System GMM, can be employed to explicate the links between macroeconomic indicators and the financial performance of African banks.

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