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BANK CAPITAL ADEQUACY AND FINANCIAL PERFORMANCE IN GHANA

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THIS THESIS IS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, CHRISTIAN SERVICE UNIVERSITY COLLEGE IN FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF BUSINESS ADMINISTRATION, BANKING AND FINANCE OPTION

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DEDICATION

We dedicate this work to our families and lecturers whose relentless support and love over many years laid the foundation for the discipline necessary to complete this work.

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DECLARATION

Student's Declaration

We hereby declare that this submission is our own work towards the Degree of Bachelor of Business Administration in Banking and Finance that, to the best of our knowledge, it contains no materials previously published by another person nor materials which has been accepted for the award of any other degree of the university, except where due acknowledgment has been made in the text.

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Supervisor's Declaration

We certify that the presentation of this research work was supervised in accordance with the guideline laid down by Christian Service University College.

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ABSTRACT

The study is about the effect of capital adequacy on the financial performance of banks in Ghana. The study sought to examine the effect of capital adequacy on the financial performance of banks in Ghana.The study adopted a random effect model and the sample size used was 18 banks over the period 2008-2017. Secondary data collected in excel sheets from the target population was used for the study. The random-effect model was used to analyse the data and establish the relationship between the dependent and independent variables. The primary objective of the study is to examine the effects of capital adequacy on the financial performance of banks in Ghana. The specific objectives of the study include: To examine the effect of capital adequacy on the financial performance of banks in Ghana; To examine the effect of changes in minimum capital requirement on the financial performance of banks in Ghana; To examine the effect of capital adequacy of banks on the financial stability of banks in Ghana. The results revealed that the relationship between capital adequacy ratio and the financial performance of the banks using both returns on asset and return on equity was positive and significant. The findings also show that the relationship between bank size and return on assets is negative and significant. The study therefore concluded that capital adequacy significantly affects the financial performance of banks. The study in its recommendation stated that the management of banks should hold sufficient capital adequacy to boost depositor's confidence so as to avoid bank runs.

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LIST OF ABBREVIATION

ROA - Return on Asset

ROE - Return on Equity

BOG - Bank of Ghana

DFI - Development Financial Institution

GSE - Ghana Stock Exchange

OLS - Ordinary Least Squares

CAR - Capital Adequacy Ratio

NIM - Net Interest Margin

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

A stable monetary structure is very important for any country's economic development and related health issues. Financial institutions hold a key role in any nation's monetary structure and are key agents in market economies' growth cycle (Rajan and Zingales, 1998; Levine, 2005). Trust and confidence are crucial for the performance of the monetary system, and that is why the banking the industry is among the industries with the most regulated of any economy. Regulation, therefore, there is the need for the banking sector to develop and maintain the confidence and trust of financial system participant especially customers. The legal framework influences the size and scope of the capital markets in a nation. (LaPorta et al. 1998). Preventing the risk of failure and its consequences on the economy is the major justification of the regulation of financial institutions. As intermediary institutions, banks take excess funds from the spending units in the surplus form of deposit and provides deficit spending by way of loans or credit facilities. However, the bank may either incur profits or losses from undertaking these activities due to risk-bearing factors that the bank may be exposed to (credit risk, liquidity risk etc.) and uncertainty of the economy. These same factors have the potential to collapse a bank. For this reason, banks maintain strict precautions in their operations.

As pointed at by Sajjad (2015), a bank failure or more than one bank can translate into negative and downward pressure on the economy. Nzioki (2011) also stated that. Bank failure will have a widespread effect on retail and institutional clients which could cause multiplier impacts on domestic and foreign markets. This emphasizes the importance of banks and their position as economic-financial intermediaries.

Adequate capital ensures the performance of banks who play a key position in a country’s economic development. This study helps to rekindle concern as to the financial stability impact on Banks’s monetary results. It will be useful for regulatory authorities, government and the banking industry as a whole when formulating policy and plans geared towards aggressive capital raising. It is, therefore, regulating the banks to ensure the stability and Effective monetary status and overall economy. One aspect of banks and their operations regulators are concerned about is the capital of the bank. From the Accounting point of view, the Capital structure is a distinction mid the

assets of a financial institution and its obligations. It also represents money held as a buffer that absorbs unexpected losses from the financial crisis. Financial performance measures the amount of equity necessary to withstand any losses the institution may encounter (Kosmidou, 2009). Regulators of financial institutions are most concerned about the adequate amount of capital that the banks keep to ensure their safety and soundness. Capital adequacy is prescribed minimum reserves of capital which must be allocated to a bank or other financial institution.

Bank of Ghana (BoG), the regulatory authority for all financial institutions in Ghana, sets the capital adequacy requirement to be met by all banks in the attempt to provide protection for customers and confer or maintain confidence in the banking sector. Currently, the Banking Act-2004 (Act 673) serves as rules and regulations or guidelines for the operations and activities of banks in Ghana. However, part of the Banking section 2004 (ACT673) 23 prescribes that all banks at all times must maintain a capital adequacy ratio of 10% while it is in operation. Under the same Act, Section 27 and 28 state penalties for non-compliance with the capital requirement. These penalties include prohibition from granting loans or credit or accepting deposits, payment of fines and merger with a healthier bank or wind up. The minimum capital requirement applicable to banks in Ghana has changed over the years. This was expanded to Gh¢60 million in 2007 for the first time. Then in 2013, it was again increased to Gh¢120 million.

The banking sector in Ghana was faced with some financial crisis coupled with the failure of two local banks (Capital and Unique Trust) which caused an increase in the minimum capital to Gh¢400 million by the Bank of Ghana an attempt to improve confidence in the banking sector and boost the nation's financial success.

1.2 Statement of the Problem

Having sufficient fund is very important to the banking sector, not only to compensate for risks they are exposed to but also as stated by Diamond (2000), capital adequacy impacts directly on bank lending limits that will certainly affect bank's returns and efficiency. Over the years, several pieces of research have been undertaken locally and internationally to identify factors affecting the bank's financial results. Kamande and Ariemba (2016) performed a report on banks' specific issues and profitability where they established that Banks' financial performance cannot only be determined or

influenced by one factor. However, Capital adequacy proved to be one of the factors affecting specific banks in terms of financial playback of banks as it enables banks to counter various risks. Another research by Blanco and Barrios (2003) argued that banks with adequate capital would always venture into various investments since adequate capital ensures the availability of long-term finances and as enough liquidity.

Most of the known researches related to the study were conducted outside Ghana and focused on bank performance only (Boniface K Musyoko 2017). One of the few pieces of research related to the study is by Gadagbui (2017) on Bank Capital and Profitability. The research examines the impacts of regulatory pressure on capital adequacy on the financial efficiency of banks in Ghana. The study or research also looks at the impacts of capital adequacy on commercial banks' financial results in Ghana.

1.3 Objectives of the Study

The main objective of this study is to find out the effects of capital adequacy on the financial performance of financial institutions in Ghana.

Specific objectives;

1) To examine the effect of capital adequacy of banks on the financial performance of banks in Ghana
2) To examine the effect of changes in minimum capital requirement on the financial performance of banks in Ghana
3) To examine the effect of capital adequacy on the financial stability of banks in Ghana.

1.4 Research Questions

1) What is the effect of capital adequacy on the financial performance of banks in Ghana?
2) How are shifts in the minimum capital requirement affecting the banks financial performance in Ghana?
3) What is the effect of capital adequacy on the financial stability of banks' in Ghana?

1.5 Significance of the Study

The main objective of this study is to investigate the impact of capital adequacy on the financial performance of banks in Ghana. The results in this study are expected to help both the economic and academic players in the financial sector.

In the economic sector, its value to players in the financial sector cannot be over emphasized. Adequate capital guarantees Bank efficiency that plays a major role in a country's economic development. This study rekindles concern about the effects of capital adequacy on banks' financial results. It will be useful for regulatory authorities, government and the banking industry as a whole in the formulation of policies and strategies geared towards aggressive capital raising.

Also, as to this study's contribution to the academic community, and inferring from literature several pieces of research have been carried on the connection between several other factors and the economic efficiency of banks in Ghana, however, very little research has been undertaken on the impact of capital adequacy on the financial performance of banks in Ghana.Also,this study contributes to filling this research gap and acts as the basis upon which further research studies can be undertaken.

1.6 Scope of the Study

This study covers some selected banks in Ghana. Banks that have data covering the ten-year study period from 2008 to 2017. This is the longest period for which data on the majority of the listed banks can be obtained. This explains the reason for which we chose the study period.

1.7 Summary of Methodology

To estimate the relationships among the variables, the analysis adopts a random effect model for the listed banks in Ghana. The random effect was introduced as a more suitable model, based on the Hausman Specification test. The sample includes listed banks with data spanning from 2008 to 2017. Data is sourced from the annual financial statements reports of the banks understudy where among other variables, the value of the financial efficiency proxies, the ROE and the ROA were computed for analysis.

The study estimates three regression equations in answering our research questions. The first and second equations regress capital adequacy and control variables on ROA and ROE respectively in order to determine the impacts of capital adequacy on the financial performance of Ghana's banks. The third equation regresses changes in minimum capital requirements (a dummy variable) on the financial success of Ghanaian banks.

1.8 Limitations of the Study

Access to data is a major setback for this study. The study originally intended to study Banks in all African countries but access to data limited this study to only Ghana. Nonetheless, the findings from the study provide the foundation for future studies that could cover all African countries. Additionally, it was tedious estimating the variables from the financial statements. The study, however, did due diligence in the computation by engaging others to recalculate the variables and then we compared with what we had gotten earlier.

1.9 Organization of the Study

Chapter one is an introduction, which constitutes a brief background and provides an overview of the research topic. This chapter also outlines the objectives, research questions, and the significance of the study. The study is then categorized into four diverse chapters of which to best achieve the stated objectives.

Chapter two is a review of related literature about capital adequacy and its impact on the financial performance of banks in Ghana. This section of the study also discusses major findings, theories and empirical research methodologies of related studies. It also provides brief descriptions of the variables used in the study. Chapter three focuses on data and methodology. It describes the types of data used and how they were collected. It also explains the analytical methodology that was used. This includes models, variables and how they will be measured. Chapter four presents the analysis, findings, and results. This chapter highlights the major findings and a discussion of the outcomes of the study. Chapter five summarizes the main findings and results. It also offers pertinent recommendations on the basis of identified concerns.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

Chapter two centred on banks' capital adequacy and review of the literature and financial results. The chapter is divided into five principal parts. Section one analyses the capital capability principles as well as the efficiency of Ghana's banks. Chapter two looks at the theories of capital adequacy and financial efficiency. A survey of the empirical literature on capital adequacy is presented in section four. Section five presents the conceptual framework on the capital adequacy of banks and their financial results.

2.1 Conceptual Review

The conceptual review was also centred on the previous research used for clarification on capital bank sufficiency and financial results. The section is broken down into four key parts. Firstly, the section reviews the different theories and frameworks for establishing a review course, secondly, it reviews the different concepts and mechanisms theories of capital adequacy, third is the final analysis in the research was the empirical evaluation of current literature and the conceptual context.

2.1.1 Bank Liquidity and Adequacy

According to Khaled and Samer (2013) capital structure shows a very influential part in safeguarding the strength and cohesion of banking institution and the protection of banking systems as a result, as it is a firewall gate that prevents any unforeseen losses that banks can encounter thus having enough adequate capital is essential for the survival for the bank. Kishare and Pandey (2005) defined Capital adequacy as a quantity of the pool of money is where a major bank ought to have a strategy to keep for the prudent conduct of its business. Capital adequacy could be observed as a proportion of the primary capital of a financial institution towards its (loan and investment), which is utilised as an indicator of its future cash flow (Amahalu, Abiahu, Okika and Obi, 2016). Financial stability is calculated by the ratio of capital sufficiency. That is said to be an indicator of the financial strength of a Bank. In a study conducted by Nzioki (2011) on the effectiveness of bank profitability on the financial performance of some mentioned or named commercial institutions in Kenya referenced the Nairobi stock exchange, it was observed that capital adequacy makes a positive

contribution to commercial bank profitability. It is therefore of importance for financial institutions to provide a reasonable cash position to stay viable as well as to preserve their customers confidence.

The Basel Committee on Banking Supervision is known to provide recommendations and for regulations in the financial institutions across the world stress on the importance capital adequacy by the provision of The Basel Accord which has become a standard used by several countries. Under Basel III, the minimum capital adequacy ratio that banks must maintain is 8% (Nickolas, 2018). The Banking Amendment Act, 2007, Act 738 also maintains the capital adequacy ratio at 10% which is above the Basel III requirement. Over the years, there has been an adjustment in the average requirement of the capital of banks in Ghana. It was first increased in 2007 to Gh¢60 million. Again in 2003, it was augmented to Gh¢120 million. The banking sector of Ghana was faced with some financial crisis coupled with the Abandonment of two native banks (Capital and UT Bank) which led to growth in the minimum financial obligation by the financial regulator of Ghana, Bank of Ghana, to Gh¢400 million in 2017 in an attempt to improve confidence in the banking sector and boost the financial stability of the country. Banks operating in Ghana were given a deadline by the Bank of Ghana to recapitalize at least Gh¢400 million by December 31, 2018, or risk having their licenses revoked. By January 2019 23 banks were said to have met the new minimum capital requirement as announced by Dr Ernest Kwamina Yedu Addison, Governor of the Bank of Ghana. According to Mubarik (2019) who reported on the status of banks in their attempt to meet the requirement that 16 banks have recapitalized, there had been 3 mergers and other 4 banks were being supported by the Government.

2.1.2 Asset Quality

Capital adequacy is a predictor of the risk of default on a mortgage coupled with the calculation of its earnings potential. The quality of the assets is therefore the estimate of the value at which financial institution will sell a loan to a third party as calculated by the lender (Farlex Financial Dictionary, 2009).

One factor that characterizes poor performing banks is a high rate of unproductive credits. For this reason, it is important for management to properly evaluate the firm's

portfolio to regulate the level of exposure to credit risk. Bank profitability is determined by the superiority of the credit portfolio. The quality of the loan portfolio has a significant effect on bank profitability. The greatest incidence a bank faces is failures resulting from offending loans (Dang, 2011). The quality of a bank's assets Varies based on access to various threats, patterns in un-performing loans on the safety and efficiency of bank lenders (Baral, 2005).

2.1.3 Management Quality

Management quality is an organisational term that defines the capacity of an organization in its management functions to achieve its high-quality targets. This leads to high customer satisfaction and better financial performance. Management quality and performance are qualitative hence difficult to measure. The quality of staff and the presence of control systems, as well as organizational discipline, are also used to establish management quality. Management compliance to rules and regulations set by regulatory bodies enables the bank to avoid sanctions associated with breaches thereby leading to a reduction in operating expenses.

Managers are tasked with making decisions which in the long term affect profitability and growth of the firm. Managers are considered as very essential to the prosperity of every organization as such; shareholders must ensure that they have quality management whose aim is profit and shareholder wealth maximization. Efficient and effective management often translates into competitive advantage; hence improving financial performance (Liargovas & Skandalis, 2008). Management quality can be measured using indicators such as asset growth and earnings growth rate. High long-term profits indicate efficient and quality management, which enables the firm to achieve high results on controlled cost. High expenses incurred due to improper management of resources, cut down the profit potential of the firm.

2.1.4 Liquidity

Liquidity shows the aptitude of a firm (bank) to efficiently accommodate or comply with its responsibilities whenever necessary. It usually involves the ability of a firm to meet short term obligations. Satisfactory liquidity talks about the circumstance in which an entity may acquire ample funds by either increasing liabilities or rapidly transforming its capital at affordable rates (Diamond and Rajan, 2000). Banks strive to

ensure that liabilities and assets are matched since a little disparity can lead to bankruptcy (Holmstrom and Tirole, 2000). Among other reasons, banks must have adequate liquidity because of confidence and relationship factor and forced sale factor. A bank with adequate liquidity means a bank that is able to meet obligations such as customer withdrawals as they fall due. Customers will have more confidence in a bank that is able to meet their demands and hence strengthening the relationship between the customers and the banks. Also, banks that face liquidity problems are forced to sell their assets usually at a discount or lower price in order to meet their obligations hence a higher cost to the bank. Liquidity which is measured mainly by; capital listed as a beneficial link to bank profitability as a liquid to net capital as well as bank deposit advances (Liargovas & Skanda, 2008). Ratio Lending to Deposit measures how a bank uses its resources or funds to meet customers' credit needs. A higher loan to deposit ratio means the bank is less capable to give out more loans and hence is selective as to who it gives loans to. A higher loan to deposit ratio means low liquidity and vice versa.

2.1.5 Bank Size

According to Musyoka, (2017) firm's size mostly determined by the total asset was argued as a key element of monetary performance. Some researchers argue that profitability and bank size are positively related. This could be because larger banks may enjoy economies of scale. Thus, larger banks usually achieve operational efficiency and hence resulting in an improvement in financial performance. Some authors such as Kovner, Vickery and Zhu (2014) found in their study that cost in relation to bank size declines as bank size increases. This may be because larger banks are able to spread certain costs like but not limited to, cost of compensation, information technology over their larger asset base, thus reducing their average cost.

However other researchers such Regehr and Sengupta (2016) on their study "has the relationship between bank size and profitability changed?" found that profitability in relation to bank size diminishes as banks continue to grow or increase in size.

2.2 Overview of the Banking Sector in Ghana

Banks are financial intermediaries that accept deposits from surplus spending units and channel these in the form of loan products to deficit spending units in the economy. The business of banking started in the then Gold Coast during the colonial era with the sole purpose of providing financial services to the British enterprises and the colonial

administration. In 1896, the Bank of British West Africa (which later became Standard Chartered Bank in 1985) opened its first branch in Accra. The success of the bank attracted other foreign banks to begin operations in the then Gold Coast. The Colonial Bank for instance started its operations in 1918 and later merged with Anglo-Egyptian Bank, the National Bank of South Africa and Barclays Bank and became known as Barclays Bank. The Bank of British West Africa and Barclays Banks were the only banks operating in the Gold Coast during the period, 1920 – 1950. The Ghana Commercial Bank was established in 1953 as the first indigenous bank to reduce the control of the banking sector by the two expatriate banks.

Immediately after independence in 1957, the Bank of Ghana was established to take control of the management of the country's currency. By 1974, many state-owned banks and Development Financial Institutions (DFI) had also been set up to enhance the financial sector by providing services, otherwise ignored by the commercial banks. Examples included the National Investment Bank, Agricultural Development Bank, Bank for Housing and Construction, Merchant Bank, the Social Security Bank. The DFIs raised finance through deposit mobilization, government support and foreign loans and were involved in providing commercial and development banking services.

2.3 Theoretical Review

The following subsection highlights theories and concepts relevant to the topic of study.

They establish research gaps that justify why the study should be carried. Two essential theories are discussed under this section. These includes; The Theory of Market Power and The Theory of Buffer Pertaining Adequacy of Bank Capital.

2.3.1 The Theory of Market Power

John M. Connor developed market power. The principle seems to be the capacity of a company to regulate the price of the product through the manipulation of the supply, demand or both. The Market Power theory argues that certain market power is needed for firms to achieve financial performance. It also stipulates that such market power will only exist in cases of barriers of entry to a certain market. In the case of banks, the high capital requirement may be a source of entry barrier thus giving existing firms a chance to operate as a monopoly. These firms are then able to operate as price markers

or price setters because they can determine the price of a product or service without losing their customers or market share. Because of the reduced competition in the monopoly market, banks will have high-profit margins hence better financial performance. (Keely, 1990) argued that intense competition across banks might result in low profits or loss and this might lead to bank failures. The vitality of a theory to the research work is anchored on its argument that market power can be obtained when there is the existence of entry barriers to the market. Huge capital requirement as a barrier may allow existing banks to operate as a monopoly and hence improve financial performance.

2.3.2 The Theory of Buffer

This concept was developed by Calem and Rob (1996). The word buffer refers to anything that reduces a shock or anything that serves as a cushion against damages. The capital of a bank is known to prevent bank failures by absorbing possible losses or shocks. Capital buffer as a term refers to any of a bank's holdings that are exceeding the statutory reserve standard requirements. The buffer theory of capital adequacy stipulates that as most banks approach minimum capital requirements they then to strive to raise capital so as to avoid the cost which may be incurred where the administrative market capitalization is breached. Calem and Robb (1996) stated that breaching the regulatory provision will lead to penalties. Gropp and Heider (2010) argued that buffer capital has several functions among which are operational, protective and regulatory.

The operational function of capital is that it is used to support the bank's operational activities. The protective function is where capital serves as a cushion against possible or unexpected losses. According to Volkov (2010), as management ensures that adequate capital is held to absorb any unanticipated loss the capital of the bank ends up playing regulatory function thus protecting the bank from breach of capital requirements. The significance of the theory to the study is the fact that it argues in favour of holding excess capital as excess capital reduces cost which could be incurred as a result of the infringement of legal conditions and support operations and therefore result in improved financial performance.

2.4 Empirical Literature Review

The author's review revealed that there seem to be numerous reports on the impact of working capital management suitability on banks' success in established countries like the UK, etc. The African continent can boast of Nigeria and Kenya as emerging economies that have adequately ccontributed to the knowledge of the outcome of capital adequacy on the continent. This section intends to review relevant existing works as much as possible according to the study's objective whilst making a detailed critique of early authors and identifying a research gap.

2.4.1 Studies on the effect of capital adequacy and the performance of banks from developed countries.

Over the years several pieces of research in the banking sector around the world have concentrated on the existing correlation mid bank capital and financial results. This section of the study briefly reviews the literature surrounding this area. According to Attanasogluo et al., (2005) financial institutions with a healthy capital base is free to pursue market opportunities very aggressively and has more freedom and flexibility to cope with issues caused by unforeseen losses, resulting in higher profitability. Naceur (2006) studied the effects of capital adequacy and performance of banks in Eastern Europe. The capital structure, he said, significantly contributed to the competitiveness of the banks.

According to White and Morrison (2001), capital requirements guarantee banks in having an adequate stake in their shares. Kosmidon et al. (2005) examine the effect of bank characteristics, macroeconomic factors and capital sector development on banks' average profit rate and asset returns in the UK commercial banking sector for the period 1995-2002. The findings revealed that capital intensity has been one of the main indicators of UK banks' success in supporting the claim that well-capitalized banks experience smaller litigation costs, that lowers funding costs, or they are perceived to have lesser external liquidity needs, which contributes to greater income.

2.4.2 Studies On the impact of banks' capital sufficiency and results from developing countries.

Nzioki (2011) in his research pertaining the importance of bank profitability on how commercial banks perceives to perform on the Kenyan stock exchange, per the findings, capital adequacy significantly contributes to the competitiveness of commercial banks and thus claimed that a strong capital base was necessary for banks to compete effectively and retain customer trust. Other Researchers such as Muthuva (2009) who undertook a research on commercial banks in Kenya for a period of 1998 to 2007 seeking to justify the need for more capital requirements and Ranga (2012) who also analysed the impacts of minimum capital necessities on commercial banks performance in Zimbabwe supported that argument that there is a positive relationship between banks capitalization and its performance.

2.4.3 Studies On the impact of banks' capital appropriateness and results from African countries.

Studies such as Francis (2013) in investigating what determines banks' profitability across Sub Saharan Africa used financial statements for a period of 1999 to 2006 and a study population of 224 commercial banks. While results showed there was a positive relationship between adequacy of capital and financial results, the researcher noted that financial performance cannot be determined by one parameter. This argument was supported by Agbada and Osuji (2013) who stated that several problems have been attributed to poor performance in the banking sector, such as insufficient resources, high non-performing assets and so on which have contributed to recurrent turmoil in the banking sector and the bankruptcy of some banks. In another research by Okafor, Ikechukwu and Adebimpe (2010) where the researchers investigated the relationship between capital adequacy and banks' performance in the bank industry in Nigeria with a sample of 20 quoted banks for a period of 4 years (2000-2003). In their study, they however concluded that financial performance is not a major measure on bank results.

2.4.4 Studies On the impact of banks' capital appropriateness and results from Ghana.

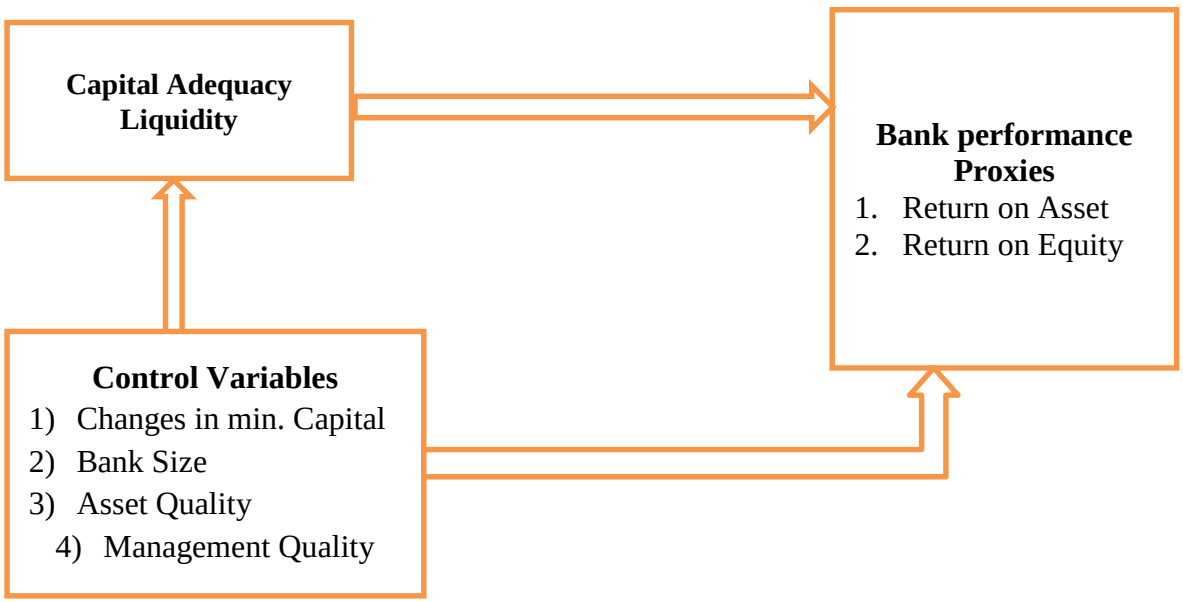
Even though there are not much research works on the impacts of capital adequacy on the efficiency or performance of banks in Ghana, Sarpei (2003) argued that no matter the definition adopted, a bank's capital is widely used to analyse the status of its financial strength. Elias and Annan (2009) also argued in support that the bank's capital

intensity is essential in influencing the efficiency of a firm. Specifying that a well-capitalized bank is deemed at a lesser risk and with these advantages would be turned into huge income. Adu and Ariemba (2016) carried out a study on the 11 Ghana Commercial Banks were seen on the Ghana Stock Exchange (GSE) from 2011 to 2015. The trigger was the fast growth of the industry for those five years. Using ROA as the dependent variable and capital adequacy as one of the independent variables, the study established that though bank's financial condition is affected by internal and external factors, capital adequacy is one of the factors that have an impact on bank's profitability and financial performance. The study was limited due to its focus on only Banks listed in Ghana Stock Exchange (GSE) leaving other financial institutions hence need to establish what would happen in banks listed and not listed on the Ghana Stock Exchange (GSE).

2.5 Conceptual Framework of the study.

Fig. 2.5 the conceptual structure for that analysis is presented below. It includes exploring the association mid the dependent interest variable and the independent variables including the influence of the control variables on the calculated dependent

Figure 1: Conceptual Framework



CHAPTER THREE
METHODOLOGY

3.0 Introduction

This chapter seeks to throw light on the entire study process. The chapter is segmented into four main fragments. First, it begins with the research design that highlights and brings together each aspect of the study, second is the data used for the study that will form the basis for the sampling and sampling technique, data collection procedures and sources; thirdly, the study will look at the measurements of both the explained and explanatory variables; and finally, an overview of the model specification and various analytical tools that would be used in the analysis of the data.

3.1 Research design

Panel data analysis is a method of studying an exacting subject within multiple sites, periodically observed over a defined time frame e.g. in economics, panel data analysis is used to study the behavior of firms and wages of people over time (Robert Yaffee, 2003). According to Baltagi (2008), panel data allow researchers to obtain reliable estimates and to find and estimate effects that pure cross-sections and time-series data cannot detect; moreover, panel data do not require restrictive assumptions. Since this research is attempting to measure and understand the relationship between banks capital adequacy and their profitability using annual financial data covering a period of ten (10) years, it is only suitable that the research design should take the panel data approach. Hence, cross-sectional data and time series data was combined for each of the banks under study to form the various panels for this research analysis.

3.2 Population and Sample Size

According to Nachmias and Nachmias (1992) “a population is the aggregate of all cases that conform to some designated set of specification” whiles a sample is any subset of the sampling units from a population. By this definition, a list consisting of all banks on Ghana stock exchange official websites is the population. Any subsequent list drawn from the list above to represent the population is a sample. In order to obtain a near balanced panel, banks with missing data were eliminated and the availability of all relevant information and annual financial information for the covered period 2008 – 2017 was considered. According to Babbie (2008), “purposive sampling is a type of non-probability sampling in which the units to be observed are selected on the basis of

the researcher's judgment about which ones will be the most useful or representative". Therefore, purposive sampling technique was used to select the banks used in this research.

3.3 Sources of Data

In order to investigate the relationship between capital adequacy with profitability, information from the annual financial statements of the banks listed on the Ghana stock exchange official websites covering the period 2008 to 2017 was used. These banks were selected because their financial statements were readily available. With the ten year financial reports of the selected rural banks, we had a total of 198 observations for the analysis. From the financial reports' information, values for variables contributing to return on asset, return on equity and capital adequacy ratios were extracted and computed for the analysis. Data on corporate governance features was obtained from the "Report on Corporate Governance and Ownership Structure" for the listed banks in their annual financial statements for the study.

3.4 Methodology

To estimate the relationships among the variables, the analysis adopts a random effect model for the listed banks in Ghana. The random effect was introduced as a more suitable model, based on the Hausman Specification test. The sample includes listed banks with data spanning the ten-year period 2008 through 2017. Data is sourced from the financial statements and annual reports of the bank's institutional monetary value were measured using the ROE and the ROA.

The study estimates three regression equations in answering our research questions. The first and second equations regress capital adequacy and control variables on ROA and ROE respectively in order to determine the impacts of capital adequacy on the financial performance of Ghana's banks. The third equation regresses changes in minimum capital requirements (a dummy variable) on the financial success of Ghanaian banks.

3.5 Model specification

ROE as a measure of financial performance

$$ROE_{it} = \beta_0 + \beta_1 AQ_{1it} + \beta_2 BS_{it} + \beta_3 \mathrm{CAR}_{it} + \beta_4 CMCR_{it} + \beta_5 LIQ_{it} + \beta_6 MQ_{it} + \epsilon_{it} \ldots (1)$$

Where:

i = the Individual Bank

t = the Year in question

β_0 = Constant/ Intercept

$\beta_{(1, 2, 3, 4, 5)}$ = Regression Coefficient

ROE = the dependent variable, Return on Equity, a measure of financial performance

CAR = Capital Adequacy (Main independent variable)

CMCR = Changes in minimum capital requirement

AQ = Asset Quality

BS = Bank size

MQ = Management Quality

LIQ = Liquidity

ϵ = Error term

ROA as a measure of financial performance

$$ROA_{it} = \beta_0 + \beta_1 AQ_{1it} + \beta_2 BS_{it} + \beta_3 \mathrm{CAR}_{it} + \beta_4 CMCR_{it} + \beta_5 LIQ_{it} + \beta_6 MQ_{it} + \epsilon_{it} \ldots (2)$$

Where:

i = the Individual Bank

t = the Year in question

β_0 = Constant/ Intercept

$\beta_{(1, 2, 3, 4, 5)}$ = Regression Coefficient

ROA = the dependent variable, Return on Assets, a measure of financial performance

CAR = Capital Adequacy (Main independent variable)

CMCR = Changes in minimum capital requirement

AQ = Asset Quality

BS = Bank size

MQ = Management Quality

LIQ = Liquidity

ϵ = Error term

Z – Score (Financial Stability)

$$Z_{it} = \beta_0 + \beta_1 CAR_{1it} + \beta_2 AQ_{it} + \beta_3 BS_{it} + \beta_4 MQ_{it} + \beta_5 LIQ + \epsilon_{it} - - - (3)$$

Where:

i = the Individual Bank

t = the Year in question

β_0 = Constant/ Intercept

$\beta_{(1, 2, 3, 4, 5)}$ = Régression Coefficient

Z = the dependent variable, Z-SCORE, a measure of financial stability

CAR = Capital Adequacy (Main independent variable)

AQ = Asset Quality

BS = Bank size

MQ = Management Quality LIQ = Liquidity and ϵ = Error term

3.6 Variables Description and Measurement

This section presents how the study variables were measured. These measurements were chosen following the work of Ongore and Kusa (2013).

Category	Variables	Measures
Dependent Variable	Financial stability	The z –score = (k+μ)/σ, of which k is equity as a percentage of assets, μ conotes the income as a percentage of assets and σ talks about the standard deviation of stock as a proxy for variability in returns.
Independent Variables	Financial performance (ROA)	Net Income/Total Assets
	Financial performance (ROE)	Net Income/Total Equity
	Capital Adequacy	(Tier 1 + tier 2 capital) / Risk weighted Assets

	Asset Quality	Non-performing loans/ gross loans
	Liquidity	Total Loans to customers/ Deposits from customers
	Management Quality	Operating revenue/total profit
	Bank size	The logarithm of Total Assets

3.7 Summary of Chapter

This chapter focuses on the entire research methodology. First, the chapter looks at the research design that highlights and brings together each aspect of the study. Secondly, the data used for the study formed the basis for the sampling and sampling technique, data collection procedures and sources; thirdly, the study looks at the measurements of both the explained and explanatory variables; and finally, an overview of the model specification and various analytical tools that would be used in the data analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter summarizes the data collection process. It presents the results from the econometrics approximation using Stata. It is sectioned into four different sections. The descriptive statistics, which describes the summary of data using numerical measures such as the mean, standard deviation, minimum and maximum. Second is the correlationanalysis, third is the panel unit root test and regression analysis that helped the researcher to apply rigorous analysis to come out with more cogent results and lastly the diagnostic tests.

In order to attain the results necessary for this research, the study conducted a regression analysis to ascertain the correlation mid the dependent and the independent variable. It also talks about the regression statistical data analysis acquired for the aim of the research. The acquisition of the data was from 18 banks between the year 2008 to 2017.This section also covers a discussion on the major findings that fall within the objectives of the study.

4.1 Preliminary Analysis of Data

This presents the summary statistics, correlations and unit root tests.

Table 4.1: Summary descriptive statistics

	ROA	ROE	ASSET_QUAsL.	BANK_SIZE	CAR	LIQUIDITY	MGT_Q
Mean	0.025495	0.190986	0.050470	5.359745	0.621686	1.205615	0.692339
Median	0.022903	0.174661	0.020000	5.993843	0.256657	1.360000	0.579998
Maximum	0.450313	9.711663	2.280000	6.980374	70.25010	3.350000	14.57386
Minimum	-0.048790	-4.524610	0.000000	0.000000	0.000000	1.470000	0.000000
Std. Dev.	0.037531	0.772846	0.173627	1.947545	4.977720	0.686757	1.180961

Skewness	7.243903	8.347753	11.06557	-2.250435	-13.92788	0.464766	9.000216
Kurtosis	84.17337	124.5789	139.5333	6.487719	195.3246	5.607231	100.3748
Jarque-Bera	56091.85	124246.3	157831.7	267.4816	311558.8	63.20888	80898.41
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	5.047930	37.81519	9.993157	1061.230	123.0938	238.7117	137.0831
Sum Sq. Dev.	0.277483	117.6663	5.938827	747.2072	4881.206	92.91223	274.7500
Observations	198	198	198	198	198	198	198

4.2 Summary Descriptive

Table 4.1 shows the average cost of the asset quality measure was 0.05 with 0.17 as the standard deviation. Furthermore, a value of 0.02, 0.00 and 2.82 for the median, minimum and maximum values attained respectively. A leptokurtic distribution was also observed for net asset quality as shown by its kurtosis value >3. However, the Skewness value of 11.07 is not normally distributed and has a long right tail with higher values than the sample mean.

In addition, the summary descriptive for return on asset (ROA) showed 0.025 as the mean value with 0.038 as the standard deviations. Its minimum, median and maximum attained are -0.049, 0.023 and 0.450 respectively. It also showed a Skewness value of 7.243 and a kurtosis value >3. Hence, for return on asset (ROA) series distribution does not mirror a normal distribution at all but rather leptokurtic (since 84.17 < 3) with the possibility of high values than the sample mean with a sharp-peaked curve. Also, return on equity (ROE) showed 0.919 as mean value and 0.773 standard deviations away from the mean. Its minimum, median and maximum attained are 0.-4.524, 0.174 and 9.120 respectively. However, just like to return on asset (ROA), return on equity (ROE) has also leptokurtic (since 124.58 > 3). Hence, a peak-curve with the possibility of higher values than the sample mean. Also, for bank size, 5.359 mean value and 1.947 standard

deviations away from the mean. Its minimum, median and maximum attained are 0.000, 5.994 and 6.980 respectively. This also shows a leptokurtic (since a kurtosis of 6.49 > 3) distribution. Hence a peak-curve with the possibility of higher values than the sample mean.

Again, for capital adequacy (CAR) 0. 622 represents the mean value and 4.977 mean deviation away from the mean. Its minimum, median and maximum attained are 0.000, 0. 256 and 70.250 respectively. However, the capital adequacy ratio also shows a leptokurtic behaviour (since its kurtosis value of 195.32 > 3) distribution. Hence a peak-curve with possibility of higher values than the sample mean.

Again, for capital adequacy (CAR) a score of 0. 622 mean value was obtained with 4.977 away from the mean. Its minimum, median and maximum attained are 0.000, 0. 256 and 70.250 respectively. Also, liquidity ratio shows a leptokurtic behaviour (since its kurtosis value of 5.61 > 3) distribution. Hence a peak-curve with the possibility of higher values than the sample mean.

Lastly, for management quality 0.692 was the obtained mean value with 1.181 as the standard deviation away from the mean. Its minimum, median and maximum attained are 0.000, 0.579 and 14.574 respectively. Also, management quality shows a leptokurtic behaviour (since its kurtosis value of 100.37 > 3) in its distribution. Hence a peak-curve with the possibility of higher values than the sample mean. The Jarque-Bera Confidence intervals or the test statistics calculate the skew and kurtosis deviation of the sequence from those of normal distribution.

H_0 for the Jarque-Bera test statistics was said to be the distribution is normal. Hence from table 4.1, we reject the H_0 of Jarque-Bera test statistics for all our measured variables since their p-values < 0.5. Hence, none of the above-measured variables follow a normal distribution.

Table 4.2: Covariance & Correlation Analysis: Spearman rank-order

Correlation	ROA	ROE	ASSET_QUALITY	BANK_SIZE	CAR	LIQUIDITY	MGT_Q
ROA	3261.806						
	1.000000						
ROE	2951.422	3261.806					
	0.904843	1.000000					
ASSET_QUALITY	273.1944	89.27273	3251.646				
	0.083886	0.027412	1.000000				
BANK_SIZE	1681.684	1605.831	1264.667	3262.444			
	0.515518	0.492265	0.388287	1.000000			
CAR	1240.801	643.2247	1191.439	1143.553	3261.806		
	0.380403	0.197199	0.365840	0.350555	1.000000		
LIQUIDITY	1248.232	1180.730	835.4457	1649.902	1303.644	3260.558	
	0.382755	0.362056	0.256579	0.505872	0.399746	1.000000	
MGT_Q	668.5682	823.3308	973.3725	750.2222	47.71465	630.3131	3261.672
	0.204973	0.252421	0.298887	0.229984	0.014629	0.193281	1.000000

From Table 4.2, Asset quality showed 0.084 and 0.027 correlation coefficients on ROA and ROE respectively. i.e. slightly strong on ROA. Bank size shows a correlation coefficient 0.516 and 0.492 respectively on ROA and ROE. Also, 0.380 and 0.197 were the coefficients for the Spearman rank correlation on ROA and ROE respectively revealed on capital adequacy ratio. Liquidity correlation coefficients on ROA and ROE were 0.383 and 0.362 respectively. Lastly, 0.205 and 0.252 was experienced for ROA and ROE on management quality. However, all relationships are strongly positive on the two dependent variables (only slight weak on asset quality).

4.3 Panel Unit Root Test

Here the stationarity of the eight (8) measure ratio values was checked under the following test:

- ❖ Levin, Lin & Chu t* test statistic Hypothesis

H_0: Unit root (assumes common unit root process)

- ❖ In Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square hypothesis

H_0: Unit root (assumes individual unit root process)

Table 4.3: Panel unit root test:

Method	Statistic	Prob.**	Cross-sections	Obs
Null: unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.89536	0.0019	18	126
Breitung t-stat	0.81857	0.7935	18	108
Null: unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.85115	0.1973	18	126
ADF - Fisher Chi-square	60.1808	0.0070	18	126
		0.2771	18	126
Breitung t-stat	0.76425	0.7776	18	108
Null: unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.94496	0.0259	18	126
ADF - Fisher Chi-square	80.2402	0.0000	18	126
PP - Fisher Chi-square	225.474	0.0000	18	144
Levin, Lin & Chu t*	-7.03469	0.0000	18	144
Breitung t-stat	0.69890	0.7577	18	126
Null: unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.29424	0.0978	18	144
ADF - Fisher Chi-square	64.7145	0.0023	18	144
PP - Fisher Chi-square	168.835	0.0000	18	162
Levin, Lin & Chu t*	-5.33562	0.0000	18	144

Breitung t-stat	-1.54124	0.0616	18	126
Null: unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.35681	0.3606	18	144
ADF - Fisher Chi-square	43.2996	0.0329	18	144
PP - Fisher Chi-square	135.446	0.0000	18	162
Levin, Lin & Chu t*	-12.9555	0.0000	18	162
Breitung t-stat	0.82943	0.7966	18	144
Im, Pesaran and Shin W-stat	-1.07454	0.1413	18	162
ADF - Fisher Chi-square	52.8213	0.0349	18	162
PP - Fisher Chi-square	58.2955	0.0108	18	180

** Probabilities for Fisher tests are added using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

The above table 4.3 can be seen for ROA that majority of the test shows significance at the second difference. Hence, the null hypothesis is rejected because ROA has no unit root and so it is stationery at 2nd difference.

Also, it can be seen that for CAR majority of the test shows significance at first difference. Hence, the null hypothesis s then rejected with a reason that capital adequacy ratio (CAR) has no unit root and so it is stationery at 1st difference.

Additionally, for liquidity, the majority of the test shows significance at first difference. Hence, the null hypothesis is rejected based on the fact that liquidity has no unit root and so it is stationery at 1st difference.

However, for MGT_Q, four out of five-unit root test methods report p-value less than the test sig. value of 5% at the level and indicating a significance. Since the majority favour the alternate hypothesis, of which the null hypothesis has been rejected based on the fact that Management quality (MGT_Q) has no unit root at the level and so it is stationery.

Lastly, it can be seen that for BANK_SIZE, all of the tests show significance at the second difference. Hence, we reject the null hypothesis and conclude that Bank size (BANK_SIZE,) has no unit root and so it is stationery at 2nd difference.

Table 4.4: Financial results and capital adequacy (ROE)

Cross-sections included: 18

Total panel (balanced) observations: 198

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.994539	0.408514	14.67399	0.0000
ASSET_QUALITY	-4.057891	0.294505	-13.77868	0.0000
BANK_SIZE	-0.697594	0.062302	-11.19690	0.0000
CAR	4.851318	0.414432	11.70595	0.0000
CMCR	-0.057604	0.013130	-4.387163	0.0000
LIQUIDITY	-0.844902	0.040684	-20.76757	0.0000
MANAGEMENT_QUALITY	-0.666251	0.033555	-19.85576	0.0000
R-squared	0.838272	Mean dependent var		0.285212
Adjusted R-squared	0.832663	S.D. dependent var		0.141616
S.E. of regression	0.057930	Akaike info criterion		-2.821034
Sum squared resid	0.580577	Schwarz criterion		-2.696864
Log-likelihood	260.8931	Hannan-Quinn criteria.		-2.770688
F-statistic	149.4499	Durbin-Watson stat		3.358676
Prob (F-statistic)	0.000000			

This result in table 4.4 demonstrates that, there exist a true outcome of capital adequacy on Equity Return. The findings showed that an increase in capital adequacy ratio translates into better financial performance. The prob. value of capital adequacy in table 4.1 is 0.00 which is below 0.05 indicates that the adequacy of capital has a huge impact on banks' earnings per share. The findings of this work correspond to that of Mpuga (2002). In his study on the role of capital requirement on the banking crisis of 1998-1999 in Uganda. He argues that the insufficiency of assets is a leading factor in financial institution failures in Uganda. Kariuki and Wafula (2016) also conducted

research aiming to evaluate the financial stability impact on savings and loans cooperatives (SACCOs) in Kenya. With a sample of 103 deposit-taking savings and credit societies and their financial statements for the year ended 31st December 2014, they used three ratios as determinants of economic results ROA, ROE and NIM. After the analysis, they established that capital adequacy affects the three determinants of performance positively. This explains why financial institutions with substantial capital appropriateness perform better.

The analysis of regression in table 2 further revealed that the financial performance increases with every unit, the return on equity of banks decreases by 4.058. The prob. value of asset quality in table 1 is 0.00 which is below 0.05 indicates that the consistency of the assets has a big impact on bank equity returns in Ghana.

From the table 4.1 shows that administrative quality is having an adverse effect on equity returns with a coefficient of -0.666. The prob. value of 0.00 suggests that management quality is statistically significant in influencing the interest on bank's equity in Ghana.

Additionally, the results in Table 4.1 revealed that bank liquidity negatively affect returns on equity. The prob. value of 0.00 suggests that liquidity has an important outcome on banking results in Ghana. According to Irawan and Faturohman (2015), Cash flow and competitiveness are frequently seen as coin points. He continues by saying that, as indicated by the risk and profit theory, whereby the greater the risk, the greater the interest and likewise. Financial leverage was never in common terms, indicating that they are also entitled to a regressive partnership, since the more capital an organization has; implies that funds are limited to liquid assets, making them unavailable for profitable or investment-creating productive activities.

Table 4.5: Financial results and capital adequacy (ROA)

Cross-sections included: 18

Total panel (balanced) observations: 198

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001926	0.058232	7.182023	0.0002
CAR	-0.001124	0.041981	-12.62570	0.0015
ASSET QUALITY	-0.050814	0.008881	-5.721665	0.0051
BANK SIZE	0.096773	0.059076	13.48728	0.0021
MQ	-0.004035	0.001872	-2.155680	0.0325
LIQUIDITY	-0.006136	0.005799	-11.40407	0.0001
R-squared	0.441257	Mean dependent var		0.037158
Adjusted R-squared	0.4235752	S.D. dependent var		0.020376
S.E. of regression	0.008258	Akaike info criterion		-2.717207
Sum squared resid	0.011797	Schwarz criterion		-6.593036
Log-likelihood	611.5486	Hannan-Quinn criteria.		-6.666861
F-statistic	152.8025	Durbin-Watson stat		2.378962
Prob(F-statistic)	0.000000			

Table 4.5 demonstrates the result of regression which implies that there is an increase in capital sufficiency of the selected banks led to a 0.797 increase in ROA. This means that there is an encouraging effect of sufficiency on capital as well as profit on assets. The prob. value of capital adequacy ratio in table 3 is 0.00 which is below 0.05 indicates that capital sufficiency has huge Effect on Bank asset returns. Mpuga (2002) in his research on the role of capital requirement on the banking crisis of 1998-1999 in Uganda argues that insufficiency of funds is a leading factor in bank failures in Uganda. Kariuki and Wafula (2016) also conducted research aiming to evaluate the efficiency on the capital impact on deposit-taking saving and credit cooperatives (SACCOs) in Kenya. With a sample of 103 deposit-taking savings and credit societies and their end of year 31st December 2014 monetary reports, they utilized three proportions as determinants of financial performance ROA, ROE and NIM. After the analysis, they established that capital adequacy affects the three determinants of performance positively. This explains why banks with high capital sufficiency perform better.

The results in Table 4.2 further revealed that the asset quality increases with every unit, the return on asset of banks decreases by 0.530. The prob. value of asset quality in table 3 is 0.00 which is below 0.05 indicates that the quality of capital has a direct impact on the income on bank assets in Ghana. The study results correspond to the research findings of Musyoka (2017) on his research. The impact of financial sufficiency on the performance on finance of commercial banks in Kenya in which there exist an adverse correlation mid the value of assets and financial performance was found using ROA.

Additionally, Table 4.2 demonstrated that the quality of management has an adverse impact on an asset's income with a coefficient of -0.039. The prob. value of 0.00 suggests that management quality is statistically significant in influencing the income on banks' capital in Ghana. Musyoka (2017) found similar results in his study where he found a negative value of 0.00001686 for the coefficient of management quality. However, Liargovas and Skanda (2008) argued that effective and efficient management leads to competitive advantage hence influencing the performance of banks' monetary value.

Table 4.2 furthermore revealed that bank liquidity has an adverse impact on the income on an asset. The prob. value of 0.00 suggests that there is a positive correlation of impact on banks' performance in Ghana. Eljelly (2004) affirms these results arguing that firms with high liquidity usually have a majority portion of their investments in short-term capital that also yield less as compared to long-term capital. For this reason, high liquidity is expected to be associated with low profitability and vice versa.

Finally, yet importantly, the results in Table 4.2 demonstrates that bank liquidity has an adverse impact on income on capital. The prob. value of 0.00 suggests that liquidity has a significant impact on banks' performance in Ghana. The study result corresponds to the research findings of Musyoka (2017) where he ascertained an adverse correlation mid the size of a bank and its financial performance by adopting ROA model.

4.4 Capital sufficiency and Financial Stability(Z-Score)

Table 4.6: Capital Adequacy and Financial Stability(Z-Score)

Included observations: 198

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MANAGEMENT_QUALITY	-0.018893	0.0048075	-3.929911	0.0094
LIQUIDITY	0.100722	0.0110234	9.137108	0.0362
ASSET_QUALITY	-0.103909	0.0314176	-3.307315	0.0741
BANK_SIZE	-0.001282	0.0308719	-0.041513	0.0936
CAR	0.092109	0.0498774	1.846114	0.0306
C	0.199875	0.187135	1.805335	0.0286
R-squared	0.012061	Mean dependent var		0.207872
Adjusted R-squared	-0.013667	S.D. dependent var		0.771220
S.E. of regression	0.776472	Akaike info criterion		2.361722
Sum squared resid	115.7585	Schwarz criterion		2.461367
Log-likelihood	-227.8105	Hannan-Quinn criteria.		2.402055
F-statistic	133.8784	Durbin-Watson stat		1.952241
Prob(F-statistic)	0.000003			

From Table 4.5, the results show that higher sufficiency of capital improves banks' performance in Ghana. A positive significant coefficient t of 0.092109 shows that an increase in capital adequacy of a bank improves its stability.

4.5 Discussion

This segment introduces the interpretation of the results gathered in line with the research questions as identified in chapter one.

In line with how the sufficiency of banks capital affects the performance of the bank's financial status over a period of 11 years. In the regression analysis, it was observed that the sufficiency of capital has a positive impact on the income on asset of banks. The study also revealed a positive effect of the sufficiency of capital on the income of equity (ROE) Ghana's banks. This means that increasing a bank's sufficiency of capital increases the bank's performance on finance.

These findings are in agreement with the outcome of Suka (2009) who examined the correlation mid capital sufficiency and revenue growth of commercial banks cited on

Kenya's stock exchange. He claimed a significant correlation exists between capital adequacy and financial efficiency. The same results were found in Kipruto, Wepukhulu, & Osodo(2017) on the study; Capital adequacy ratio's impact on the financial output of second-tier commercial banks in Kenya, where they found strong correlation values (r=0.560 for ROE and r=0.629 for ROA) for capital adequacy ratio. They concluded that, the Central Bank of Kenya's supervision of commercial banks had resulted in increased capital, which led to increase in profitability.

The study further identified how changing the minimum capital requirement by the Bank of Ghana affects the financial performance (ROA and ROE) of banks in Ghana. This objective was carried out using a dummy variable. Years in which minimum capital requirement changed was represented with "1" and years with no change were represented with "0". The result in both table 4.1 and 4.2 show that in years that the minimum capital requirement changed, banks' financial performance was affected negatively, meaning an improvement in the minimum required capital led to a fall in financial performance. This implies that an increase in least assets requirement in Ghana has a negative impact on banks performance as they struggle to meet the requirement.

In relation to how asset sufficiency affects monetary steadiness in Ghana, this research work looked at the impact of the return on equity on the economic security of Ghana's banks over an 11 year period. In the regression analysis, it was observed that capital adequacy had a positive effect on the z-score of the bank. This shows that banks that maintain higher capital adequacy ratios are more stable than those that keep lower capital adequacy ratios.

4.6 Summary of Chapter

This section discussed the study's findings, thus the results of this study on capital adequacy on Banks' financial results in Ghana. To achieve the results necessary for this study, the study conducted a regression analysis to determine the associations mid the dependent and independent variables. The section covers the regression statistical analysis of the data acquired for the research. Data was gathered on 18 financial institutions over a 10year period. This section also covers a discussion on the major findings that fall within the objectives of the study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This section discusses the summary of the results. The researcher sought to explain the capital adequacy and financial performance of banks in Ghana. This section is sub-divided into the summary of findings, conclusion, the implication for policy implementation (recommendations), constraints on the report and areas suggested for further studies.

5.1 Summary of Findings

The research aimed at evaluating the impacts of capital adequacy on the financial results of selected banks in Ghana. This being known, the study went on to find out if other factors such as quality of assets, bank size, liquidity and quality of management also had negative or positive impacts with selected banks ' financial results.

Capital Adequacy

Considering this method, the tier 1 assets and the tier 2 assets of the selected banks was ascertained and it was divided by the risk-weighted asset for the various year in question and regression was run on it against the ROE and the ROA of the banks. The results showed that the financial output has had a positive impact on capital adequacy (ROA and ROE) of the banks in Ghana. However, additional findings showed that higher capital adequacy improves the stability of banks in Ghana.

Asset Quality

Asset quality was ascertained by dividing the ineffectual loans of the various banks by the total loans granted out to customers. A regression was also run on it against the ROA and ROE of the banks and the findings showed a negative impact on both ROE and ROA.

Management Quality

Management quality was ascertained by dividing total operating revenue by the total profit of the selected banks. Again, a regression was run on it against the ROA and ROE, the banks and their operations have had negative impacts on both banks' ROA and ROE.

Liquidity

Liquidity was calculated as the overall loans divided by the number of deposits from the customers. A regression was subsequently run on it against the ROA and ROE of the banks and the outcomes displayed a negative effect on both ROA and ROE.

Bank Size

The size of the bank was calculated using a logarithm of the total assets. A regression against banks' ROA and ROE was performed on it, and the findings showed a negative effect on both ROE and ROA.

5.2 Conclusion

The goal of this research was to assess any correlation between capital adequacy and the financial performance of selected banks in Ghana. Research findings showed that the relationship between Equity of capital and financial results of banks using Ghana both ROE and ROA has been positive and significant. There is a relationship between capital adequate, based on the findings.

The study findings also revealed a negative and important Correlation mid the efficiency of the assets and banks' financial results in Ghana using both ROA and ROE. Based on the results show a correlation mid the value of the assets and the profitability of commercial banks in Ghana.

The study further showed an adverse and important effect of management quality and financial performance in Ghana using both ROE and ROA as such, there exist a connection mid the quality of management and the financial results of the banks in Ghana.

In addition, liquidity and financial performance using both ROE and ROA were found to have a negative and significant relationship. As a result, there was a liquidity-funding partnership in Ghana.

Finally, the study revealed a negative and important relationship between the scale of banks and their financial results in Ghana using ROA whilst ROE showed a positive

and irrelevant relationship. This shows that there exist an adverse correlation mid bank size and bank's financial results in Ghana, using both ROA and ROE.

5.3 Policy Implications and Recommendations

Grounded on the findings of the researchers, there was a positive and important ratio of capital adequacy to the financial results of Ghana's bank using both ROA and ROE. As a result, banks in Ghana should endeavour to maintain a high capital adequacy ratio to boost financial results and boost depositors' confidence, which will help avoid a spate of bank runs in the country.

The study revealed that most locally owned banks are facing massive encounters in adhering the new minimum obligation. The regulator should, therefore, have local banks in mind when setting the standard for minimum requirement regulation in order to keep indigenous banks in operation.

5.4 Summary of Chapter

The summary of the results was discussed on the basis of this chapter. The researcher sought to explain the return on equity of banks in Ghana and their financial results. The chapter was sub-divided into the summary of findings, conclusion, the implication for policy implementation (recommendations), study confines and suggested areas for further studies and research.

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APPENDIX

LIST OF BANKS USED.

GCB- Ghana Commercial bank ltd

SCB-Standard Chartered bank ltd

BBG-Barclays bank Ghana ltd

SG-G-Societe General Ghana ltd

EBG-Ecobank Ghana ltd

UT- Unique trust ltd

PBL-Prudential Bank ltd

CAL-Cal bank Ltd

NIB-National Investment Bank ltd

ADB-Agricultural Development Bank

BOA-Bank of Africa ltd

HFC-HFC Bank Ghana ltd

APEX- ARB Apex Bank ltd

ACCESS-Access Bank Ghana ltd

ENERGY-Energy Bank Ghana ltd

GT BANK- Guarantee Trust Bank

FIDBANK-Fidelity Bank Ghana LTD

ZENBANK-Zenith Bank Ghana LTD

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
1	2007	0.028033	0.185772	0.207116	0.000863236	0.894304507	1.434283	6.0610829	1
	2008	0.022484	0.181518	0.17357	0.008080072	1.055346731	1.322227	6.2163815	0
	2009	0.00945	0.091118	0.165448	0.028980251	1.004801226	1.083126	6.2826454	0
	2010	0.026317	0.306085	0.277106	0.07126194	0.628359495	1.237751	6.3235295	0
	2011	0.006772	0.093599	0.204167	0.022364036	0.23101451	1.779116	6.3915309	0
	2012	0.046507	0.490697	0.28255	0.01	0.36	1.36	6.4743851	0
	2013	0.06591	0.499843	0.299641	0.01	0.37	1.39	6.5303406	1
	2014	0.063806	0.409242	0.35939	0.02	0.4	1.4	6.6265928	0
	2015	0.052863	0.299694	0.398706	0.05	0.44	1.43	6.6655423	0
	2016	0.049432	0.294555	0.431034	0.02	0.33	1.49	6.7816695	0
	2017	0.022255	0.191093	0.261532	0.02	0.3	1.45	6.9803739	1
2	2007	0.042699	0.373758	0.227694	0.006249369	0.53673809	1.306798	5.8885934	1
	2008	0.033694	0.370966	0.148282	0.003708145	0.620159237	1.320999	5.9934115	0
	2009	0.040946	0.360307	0.290563	0.036897424	0.490392325	1.455972	6.147433	0
	2010	0.043293	0.368444	0.274779	0.029061205	0.427621787	1.405841	6.2221653	0
	2011	0.039408	0.333981	0.274784	0.016501766	0.40327718	1.468124	6.2947003	0
	2012	0.057008	0.437734	0.257818	0.007	0.56	1.25	6.3785222	0
	2013	0.06961	0.427184	0.261581	0.02	0.64	1.31	6.4754326	1

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2014	0.059399	0.393761	0.343085	0.04	0.58	1.32	6.5448487	0
	2015	0.019632	0.119164	0.475408	0.17	0.5	1.38	6.5275588	0
	2016	0.051334	0.293396	0.446392	0.06	0.39	1.54	6.6408355	0
	2017	0.059368	0.308006	0.426182	0.007	0.41	1.49	6.6791538	1
3	2007	0.025514	0.321746	0.063712	0.008647224	0.623716629	1.43104	6.0759172	1
	2008	-0.00531	-0.05974	0.185417	0.06525206	0.604803089	1.393197	6.1410821	0
	2009	-0.01405	-0.1112	0.315985	0.118512722	0.449495352	1.271795	6.1595344	0
	2010	0.036187	0.244542	0.3626	0.047749806	0.340999175	1.445311	6.2140956	0
	2011	0.043548	0.262087	0.359542	0.010541319	0.390858481	1.390102	6.2803489	0
	2012	0.053185	0.281765	0.463922	0.02	0.49	2.81	6.2958882	0
	2013	0.061507	0.322724	0.374152	0.03	0.56	2.71	6.3666301	1
	2014	0.059642	0.394278	0.31078	0.005	0.58	2.67	6.474406	0
	2015	0.04902	0.303395	0.321509	0.06	0.71	3.35	6.5576407	0
	2016	0.05777	0.385739	0.23006	0.004	0.73	2.25	6.7233585	0
	2017	0.064859	0.366914	0.30191	0.007	0.82	2.29	6.7748114	1
4	2007	0.037278	0.266615	0.205132	0.025649112	0.759431045	1	5.6210266	1
	2008	0.035539	0.22279	0.199504	0.022265952	0.961602224	1.408775	5.6402468	0
	2009	0.033455	0.17778	0.292109	0.014975407	0.762180076	1.394806	5.7609447	0
	2010	0.028954	0.167051	0.288857	0.021619971	0.608002051	1.375529	5.836269	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2011	0.027194	0.151798	0.254741	0.00263536	0.550590149	1.44102	5.9248358	0
	2012	0.027545	0.176617	0.209966	0.01	0.61	1.36	6.0369589	0
	2013	0.030503	0.191578	0.20147	0.02	0.8	1.38	6.0851317	1
	2014	0.029247	0.220811	0.214595	0.04	0.78	1.43	6.2242605	0
	2015	0.022309	0.169255	0.237307	0.04	0.65	1.44	6.3016248	0
	2016	0.026094	0.192149	0.29988	0.4	0.53	1.44	6.3889595	0
	2017	0.032443	0.174439	0.302411	0.03	0.71	1.4	6.4455612	1
5	2007	0.033419	0.345607	0.166967	0.00204715	0.57999566	1.350351	5.8252631	1
	2008	0.036511	0.396268	0.27171	0.01442728	0.60554799	1.307097	5.9636438	0
	2009	0.038794	0.262169	0.456495	0.020865532	0.458025914	1.349767	6.1424499	0
	2010	0.039519	0.264081	0.348737	0.011615928	0.418159533	1.508874	6.1821946	0
	2011	0.033947	0.275633	0.249608	0.007256208	0.495148391	1.458035	6.3288245	0
	2012	0.042372	0.313591	0.218155	0.02	0.57	3.02	6.528768	0
	2013	0.040192	0.333621	0.162531	0.03	0.66	3.14	6.6650559	1
	2014	0.054609	0.405321	0.250097	0.01	0.67	2.72	6.7535547	0
	2015	0.048944	0.371751	0.181868	0.04	0.67	3.13	6.8255436	0
	2016	0.056967	0.480132	0.257588	0.051306274	0.585256754	1.40416	6.9044726	0
	2017	0.00393	0.034827	0.288683	0.064763443	0.416537657	1.400871	6.958979	1
6	2007	0.057567	0.393732	0.152594	0.276179819	1.024395923	1.351784	4.8805049	1

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2008	0.041464	0.314018	0.14154	0.123945126	1.02474229	1.424528	5.106609	0
	2009	0.03549	0.323081	0.042205	0.061996948	0.836672213	1.290387	5.326174	0
	2010	0.018001	0.182042	0.161863	0.022210804	0.835697588	1.307527	5.7131813	0
	2011	0.018327	0.213379	0.144574	0.029972729	0.870694457	1.324148	5.8530067	0
	2012	0.021209	0.16297	0.209196	0.02	0.85	1.28	5.9942753	0
	2013	0.007301	0.075889	0.143408	0.03	1	1.36	6.1259157	1
	2014	0.006727	0.079141	0.121953	0.02	1.24	1.52	6.2117643	0
	2015	0	0	0	0	0	0	0	0
	2016	0	0	0	0	0	0	0	0
	2017	0	0	0	0	0	0	0	1
7	2007	0.013247	0.279605	0.095156	0.016724557	0.647246281	1.571827	5.3870889	1
	2008	0.015638	0.275555	0.087454	0.003805068	3.992163049	1.504552	5.4486739	0
	2009	0.010231	0.138097	0.093239	0.008078206	0.738474824	1.172875	5.5261518	0
	2010	0.00986	0.103063	0.128255	0.012030239	0.864304177	1.371507	5.6090509	0
	2011	0.014982	0.174779	0.128473	0.012833749	14.57386208	1.42564	5.7401881	0
	2012	0.014243	0.113003	0.176873	0.01	0.77	1.34	5.8294041	0
	2013	0.01699	0.146697	0.189091	0.03	0.76	1.5	5.9193935	1
	2014	0.017379	0.171284	0.145532	0.02	0.86	1.56	6.0475132	0
	2015	0.00703	0.068025	0.145987	0.04	0.78	1.43	6.1442425	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2016	0.005291	0.05653	0.153589	0.02	0.69	1.49	6.2124942	0
	2017	0.006161	0.062277	0.149788	0.03	0.735	1.46	6.1783683	1
8	2007	0.020237	0.156312	0.172083	0.014305331	0.958219172	1.398525	5.370091	1
	2008	0.023763	0.22526	0.139865	0.011448743	1.183297079	1.300401	5.5258854	0
	2009	0.019708	0.155716	0.204578	0.016188902	0.802510895	1.235075	5.6536659	0
	2010	0.017629	0.115135	0.24377	0.050067411	0.931375502	1.323496	5.6987537	0
	2011	0.023329	0.19735	0.187488	0.02778956	0.730984982	1.340604	5.8954574	0
	2012	0.042711	0.242678	0.255727	0.02	1.06	1.3	6.0642127	0
	2013	0.05902	0.326053	0.260993	0.02	1.22	1.36	6.1928358	1
	2014	0.051837	0.357749	0.248153	0.02	0.99	1.38	6.4325752	0
	2015	0.047759	0.316374	0.240617	0.02	1.17	1.33	6.5251795	0
	2016	0.002001	0.014327	0.277446	0.1	0.85	1.68	6.5562247	0
	2017	0.03446	0.22422	0.279059	0.03	0.76	1.44	6.6245541	1
9	2007	0	0	0	0	0	0	0	1
	2008	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0
	2010	0	0	0	0	0	0	0	0
	2011	0.008618	0.090252	0.162618	0.058279769	0.643486561	1.249374	5.9446391	0
	2012	0.01327	0.116126	0.156366	0.06	0.64	1.01	5.9429694	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2013	0.032378	0.266894	0.299007	0.05	0.68	1.17	6.0755291	1
	2014	0.034229	0.163089	0.35701	0.02	0.57	1.38	6.3654082	0
	2015	0.045239	0.221118	0	0.03	0.42	1.2	6.424059	0
	2016	0.039734	0.192104	0.178505	0.025	0.495	1.29	6.3947336	0
	2017	0.042486	0.206611	0.089252	0.0275	0.4575	1.245	6.4093963	1
10	2007	0	0	0	0	0	0	0	1
	2008	0.023924	0.137421	0.217425	0.018680165	4.225030496	1	5.7953725	0
	2009	0.017244	0.104155	0.24939	0.042632052	0.87703019	1.052657	5.8660308	0
	2010	0.012081	0.109636	0.315776	0.01158605	1.076309648	3.000601	5.9843036	0
	2011	0.036166	0.247542	0.21421	0.011211836	0.820022036	1.052697	6.0812598	0
	2012	0.018674	0.13676	0.248949	0.05	0.8	1	6.1596343	0
	2013	0.049717	0.286941	0.23302	0.06	0.86	1.04	6.2099869	1
	2014	0.020802	0.130492	0.319432	0.08	0.77	0.73	6.3337978	0
	2015	-0.03701	-0.23724	0.328389	0.18	0.72	1.27	6.3292243	0
	2016	-0.02307	-0.15398	0.377051	0.1	0.47	1.51	6.4822292	0
	2017	0.007478	0.055343	0.445233	0.04	0.45	1.79	6.5496338	1
11	2007	0	0	0	0	0	0	0	1
	2008	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2010	-0.04036	-4.52461	0.165582	0.106658719	0.506804088	0	5.6176324	0
	2011	-0.0348	-0.31136	0.329384	0.088783904	0.663739535	1	5.5894994	0
	2012	0.003666	0.033688	0.254226	0.05	0.84	1.15	5.7540317	0
	2013	-0.00451	-0.03456	0.263559	0.06	0.83	0.9	5.801377	1
	2014	0.030953	0.258226	0.26592	0.04	0.62	0.97	5.9649174	0
	2015	0.023992	0.198577	0.346011	0.08	0.62	1.44	6.0595627	0
	2016	0.021116	0.147413	0.325297	0.02	0.66	1.04	6.0586093	0
	2017	0.010744	0.076678	0.234239	0.017464448	0.560385414	1.394122	6.1280873	1
12	2007	0.012871	0.161148	0.465277	0.011858593	1.228186072	1.392204	5.2080461	1
	2008	0.01516	0.207497	0.40884	0.016380821	1.323795364	1.386893	5.57572	0
	2009	0.021399	0.172406	0.465782	0.011813751	1.155036078	1.216754	5.4121009	0
	2010	0.021026	0.108906	0.299768	0.010771535	0.92430814	1.603237	5.5580014	0
	2011	0.022951	0.133632	0.510082	0.010025575	0.778348818	1.333266	5.6344017	0
	2012	0.061824	0.285336	0.420489	0.02	1.07	1.21	5.7692185	0
	2013	0.013386	0.079569	0.274134	0.02	1.14	1.31	5.9881405	1
	2014	0.040975	0.229868	0.33508	0.02	1	1.26	6.1220028	0
	2015	-0.02505	-0.2183	0.28633	0.1	0.98	0.94	6.1949079	0
	2016	-0.0208	-0.27351	0.176867	0.09	0.78	-0.94	6.268618	0
	2017	0.027245	0.250426	0.206267	0.08	0.59	-1.47	6.3178745	1

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
13	2007	0	0	0	0	0	0	0	1
	2008	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0
	2010	0	0	0	0	0	0	0	0
	2011	0.02581	0.207941	0.425111	0.009663064	0.065328261	-1	5.1926511	0
	2012	0	0	0.485258	0	0	0	5.2628259	0
	2013	0.039781	0.263927	0.363936	0.004	0.26	1	5.3383449	1
	2014	0.021722	0.151022	0.458927	0.19	0.15	1	5.4089604	0
	2015	0.003822	0.027757	0.533801	0.09	0.09	1.49	5.441747	0
	2016	-0.04879	-0.53863	0.347466	0.06	3.14	1	5.4376126	0
	2017	0.013656	0.152661	0.309313	0.006	1.07	0.45	5.5140255	1
14	2007	0	0	0	0	0	0	0	1
	2008	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0
	2010	0.042082	0.095544	1.69397	0.626379661	0.176374308	1.449342	5.2939898	0
	2011	0.030054	0.085623	0.849835	0.082417083	0.448832982	1.540508	5.4473007	0
	2012	0.043436	0.203641	0.579075	0.08	0.05	1.57	5.9016169	0
	2013	0.045976	0.211364	0.430351	0.02	0.6	1.34	5.99622	1
	2014	0.049582	0.293623	0.307081	0.02	0.71	1.45	6.2352031	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2015	0.033166	0.224014	0.269902	0.01	0.07	1.53	6.3846113	0
	2016	0.015649	0.097851	0.316829	0.04	0.64	1.65	6.4280669	0
	2017	0.009249	0.063131	0.42214	0.05	0.41	2	6.5050911	1
15	2007	0	0	0	0	0	0	0	1
	2008	0	0	0	0	0	0	0	0
	2009	0	0	0	0	0	0	0	0
	2010	0	0	0	0	0	0	0	0
	2011	0.01825	0.057419	1.453223	0.010297293	0.056110039	1.368263	5.3016267	0
	2012	0.016029	0.088915	0.299495	0.004	0.14	1.25	5.5747695	0
	2013	0.022579	0.078705	1.038305	0	0.15	1.45	5.3895754	1
	2014	0.003311	0.015018	0.694374	0	0.18	1.44	5.4970292	0
	2015	0.004049	0.020117	0.760126	0.27	0.15	1.49	5.5433726	0
	2016	0.001675	0.008601	0.413847	0.08	0.39	1.02	5.5612255	0
	2017	0.002243	0.011824	0.373046	0.06	0.36	1.62	5.5759414	1
16	2007	-0.03832	-0.25609	0.247149	0.013938639	0.37642162	0.972922	4.6173988	1
	2008	0.021551	0.376947	0.129134	0.020603027	0.261624322	1.192749	5.2406815	0
	2009	0.042551	0.137893	0.476277	0.021047529	0.596068474	1.39607	5.4560972	0
	2010	0.028161	0.119922	0.403389	0.030037693	0.478092801	1.435981	5.6179434	0
	2011	0.031025	0.132094	0.562994	0.047922057	0.427139135	1.509431	5.6476704	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2012	0.057057	0.271399	0.447148	0.04	6.04	1.28	5.8344004	0
	2013	0.056166	0.282761	0.422484	0.005	0.45	1.42	5.9721149	1
	2014	0.054362	0.309007	0.334099	0.01	0.6	1.44	6.0652984	0
	2015	0.044859	0.261751	0.294959	2.28	0.67	1.44	6.1398662	0
	2016	0.047718	0.260456	0.349145	0.02	0.56	1.44	6.1890232	0
	2017	0.047066	0.262976	0.457758	0.004	0.27	1.45	6.2727411	1
17	2007	0.002734	0.057405	0.121734	0.014988482	0.282551558	0.9825	5.1653304	1
	2008	0.010608	0.245462	0.083442	0.00111079	0.547739012	1.091144	5.3409693	0
	2009	0.005601	0.063673	0.154124	0.008995944	0.560110928	1.515779	5.5588129	0
	2010	0.007432	0.130685	0.228762	0.027842884	0.386926604	1.413615	5.8131264	0
	2011	0.009417	0.174543	0.101984	0.028404846	0.456789986	1.471801	6.012806	0
	2012	0.020761	0.229455	0.185929	0.03	0.58	1.32	6.1248402	0
	2013	0.025968	0.28491	0.18192	0.02	0.6	1.43	6.2278019	1
	2014	0.027121	0.214204	0.22634	0.02	0.88	1.37	6.4800476	0
	2015	0.035912	0.293156	0.306211	0.4	0.5	1.39	6.6142444	0
	2016	0.003525	0.029819	0.350933	0.13	0.42	1.26	6.620511	0
	2017	0.016815	0.169286	0.335047	0.07	0.27	1.5	6.7306247	1
18	2007	0.450313	9.711663	0.093486	0.012841962	0.461941764	0.741846	5.1938172	1
	2008	0.025334	0.244615	0.219905	0.008972487	0.404840688	1.321956	5.5763425	0

BANK	YEAR	ROA	ROE	CAR	ASSET QUALITY	MGT Q	LIQUIDITY	BANK SIZE	min.capital
	2009	0.022855	0.169272	0.348607	0.05584567	0.400964328	1.492445	5.7312712	0
	2010	0.016643	0.125924	0.238434	0.032712752	0.499783591	1.505869	5.816362	0
	2011	0.03351	0.2131	0.312795	0.021355738	0.3476715	1.109808	5.8449702	0
	2012	0.032008	0.216409	0.386708	0.03	0.42	1.32	5.977489	0
	2013	0.035202	0.302193	0.282935	0.02	0.63	1.46	6.3203661	1
	2014	0.044707	0.39096	0.308854	0.01	0.59	1.46	6.487613	0
	2015	0.03259	0.191193	0.430438	0.055456659	0.480804953	0.575032	6.4063918	0
	2016	0.041209	0.24403	0.248906	0.01	0.38	0.25	6.5319569	0
	2017	0.036941	0.279363	0.316174	0.009	0.23	0.25	6.6694003	1