CHRISTIAN SERVICE UNIVERSITY COLLEGE

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING AND FINANCE

DETERMINANTS OF FAILURES OF COMERCIAL BANKS IN GHANA USING FINANCIAL RATIOS.

A CASE STUDY WITH UT BANK, BEIGE BANK AND GCB (2010 – 2015)

BY

MAXWELL OSEI-APPIAH

HELINA OWUSU ANSAH

FOUKUO MENSAH KILNET

MORDESTA ADAMS

SAMUEL SAIFA-BONSU

A THESIS SUMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE (SCHOOL OF BUSINESS) CHRISTIAN SERVICE UNIVERSITY COLLEGE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE Of BACHELOR OF BUSINESS ADMINISTRATION, BANKING AND FINANCE

JUNE, 2019

DECLARATION

We hereby declare that this submission is our own work towards the award of the BBA degree and that, to the best of our knowledge, it contains no material previously published by another person nor material which had been accepted for the award of the university, except where due acknowledgement had been made in the text.

Name	ID No.	Signature	Date
Osei-Appiah Maxwell	10002589	………………	………….
Owusu Ansah Helina	10001212	………………	………….
Foukuo Mensah Kilnet	10002486	………………	………….
Mordesta Adams	10004418	………………	………….
Samuel Saifa-Bonsu	10001266	………………	………….

Supervisor's Declaration

I hereby declare that the preparation and presentation of this dissertation was supervised in accordance with the guidelines on supervision laid down by Christian Service University College.

Certified by:

DR. Joyce Ama Quartey	………………………	……………………
Supervisor's/HOD	Signature	Date

Dr. Stephen Banahene	………………………	……………………
Dean of Faculty of Business School	Signature	Date

DEDICATION

We dedicate this work piece to the Almighty God for his inestimable protection and mercies granted us, which invariably have spurred us towards the achievement of this academic prowess.

Lest not forget, we also dedicate it to our individual families for their unflinching emotional, spiritual and physical supports for all these years and to our friends who have been there for us.

ACKNOWLEDGEMENTS

Our profound gratitude goes to the Almighty God for the protection, guidance and the everlasting grace he has shown us throughout our time in the university.

Obviously, the entire process of conducting a research project is indeed a formidable undertaking. Along the way, we were fortunate to receive continues criticism, directions and evaluation from many persons.

We would like to acknowledge the contributions made by our supervisor; **DR. Joyce Ama Quartey**, whose invaluable and astounding insights and suggestions greatly enriched this project.

ABSTRACT

Upsurge in bank failure cases under a more stable currency environment raised the need to deeply investigate sources of bank failures in Ghana. This is considered an imperative move considering the impact that bank failures pose to stakeholders outside the banking sector such as investors and depositors, the Ghanaian banking sector itself as well as the entire economy. This study investigated the determinants of bank failures in Ghana. The study employed pooled SPSS using general to estimate procedure on three banks by making use of the financial ratios for the period 2010-2015. Empirical findings indicated that the microeconomic environment, in particular liquidity, has much influence on bank failure than any of bank fundamentals. Among bank fundamentals, liquidity, profitability and capitalisation proved to be prominent bank related determinants of bank failures in their respective order. Findings also suggest that loan-to-deposits ratio (LTD), deposits-to-assets ratio (DTA), gross revenue ratio (GRR), return on assets(ROA), efficiency ratio(EFR), SIZE and GDP growth rate (GDP) variables are negatively correlated to the possibility of banks failing while loan-to-assets (LTA) have positive influence on bank failures. Based on these findings the researcher recommends that BOG must accentuate liquidity and capital requirements since both liquidity and capital ratios were significant and had higher marginal effects. Undoubtedly, the researcher recommends banks to curtail their operating expenses and also improve managerial efficiency so as promote and maintain bank safety and soundness and this will result in remarkable improvements in both profitability and efficiency ratios.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 Background Of Study

A sound financial system is indispensable for a healthy and developing economy. The banking sector constitutes a predominant component of the financial system of any economy (Singh, 2010). The banking sector plays an important role in channelizing the funds from savers (surplus financers) to borrowers (deficit financers). The growth and development of an economy largely depends on the success and efficient functioning of the banking sector. Banks are the most significant players in the Ghanaian financial market. As at 2008, the Banking system in Ghana accounted for 70 per cent of the financial sector (Bawumia et. al., 2008). This makes the commercial banking sector critical to the development of the economy as failure of this sector could have adverse systemic effect on the entire economy.

The term "bank failure" has been interpreted varyingly. The more precise definitions have focused on accounting factors (for example, Martin, 1977 and Beston and Kaufman, 1995), economic factors (Bell, Ribar, and Verchio 1990 and Gonzalez-Hermosillo, Uzarbasioglu and Billings 1997), or legal factors (Meyer and Pifer, 1970). Conversely, more general definitions have attempted to be all-inclusive and have applied a "catch-all" combination of specific definitions (for example, Thomson, 1992).

Over the last decade, national and international bank regulatory authorities have tightened capital adequacy requirements for financial institutions with the aim of increasing the stability of national banking systems. Instrumental in this development has been the Basel committee Capital Accord, which was issued in 1988 and set common minimum capital requirements on the perceived risk of bank portfolios instead of on simple leverage ratios.

The Ghana banking sector has witnessed many reforms and restructuring over the years as a result of internal and external economic developments and shocks. Recent developments in the banking sector are the adoption of International Financial Reporting Standards (IFRS) in line with international standards by Bank of Ghana as a way of reducing systemic risk. Other developments include the establishment of Collateral Registry and Credit Reference Bureaus that seeks to promote transparency and ease credit accessibility, the setting up of the Financial Intelligence Centre (FIC) to address money laundering and counter financing for terrorism, and the recapitalization of the banks required by Bank of Ghana. All these measures by Bank of Ghana are believed to have been fashioned to mitigate risk and stabilize the banking system. These reforms are backed by tighter and effective supervisory oversight to ensure financial stability and soundness of the financial system. Banking sector reforms have changed the Ghana banking industry outlook. These well sequenced financial sector reforms have been driven by banking sector liberalization, enhanced competition, and gradual capital account liberalization (Bawumia et al., 2008). It is therefore reasonable to assume that these reforms have changed the way commercial banks in Ghana operate and subsequently, their performance.

Several studies have identified the characteristics that cause banks to fail. Apart from excessive risk-taking, or simply bad luck, banks that are poorly managed are thought to be prone to failure. By contrast, the characteristics that determine whether a bank will fail have received comparatively little attention. One hypothesis, discussed by Hannan and Rhodes (1987), suggests that poorly-managed banks are likely targets for acquisition by bankers who think they can enhance the target's management quality, and hence its profitability and value.

Profitability is critical to the survival of commercial banks. Firstly, dividends are paid from profits (cash profits) and secondly, profit is an important source of retained earnings.

Retained earnings are residual profits after dividends are paid. These earnings are important component of bank capital. According to the Ghana Banking Survey 2010 (by Pricewaterhouse Coopers in collaboration with Ghana Association of Bankers), the banking industry profits show a declining trend in recent years despite increase in deposits and branch network. The increase in deposits is expected to enable the banks to lend more and make more profit through interest income. However, asset quality has been on the decline increasing industry impairment charge for loan. The increased branch network is expected to lead to some efficiencies and especially economies of scale.

The regulator evaluates banks on five criteria: capital adequacy, asset quality, management, earnings and liquidity (CAMEL). We base our empirical model on these criteria, and identify a number of characteristics significantly affecting the likelihood that a bank will disappear because of failure or acquisition. Not surprisingly, we find that highly leveraged banks, banks with low earnings, low liquidity, or risky asset portfolios are more likely to fail than other banks.

The question of bank failure has received much attention in the literature. Literally, from the US banking crisis in 1930's economic researches have addressed the question of causes of bank failure. There are basically two approaches to the explanation of this question and each centres upon a particular problem analysed. Meyer and Pifer (1970) created a model that analyses bank failure by matching each failed bank with comparable solvent bank under similar local and national economic conditions, and determined financial variables, which can potentially lead to insolvency. Hwang, Lee and Lian (1997) determined the most stable factors influence the probability of bank failure and those factors which can be changed over time.

In Ghana as in many parts of the world, the management of a bank's capital adequacy position is instrumental in sustaining its liquidity and by extension a key ingredient in maintaining its solvency. Without sufficient capital a bank can find itself unable to grow its deposit base and its loans portfolio. In addition to capital adequacy, too tight a regulation, such as that of raising the minimum liquidity ratio, may lead banks to reduce their credit offer and, as a result, give rise to a fall in productive investments. All these arguments justify studying the way banks set their capital to assets ratio.

On the other hand, restoring one or more of these excluded conditions, the value of the firm may reach an internal maximum with positive equity in its financial structure. In supporting the idea of an optimal capital ratio for banking institutions, some authors have contemplated several exceptions to the theorem of MM: bankruptcy and agency costs, liquidity services and operations costs associated to deposits and deposit insurance. In those situations they have shown that the market value of a bank is not independent of the way it is financed; in the absence of regulation an optimal capital ratio may exist.

The last few decades brought significant changes to financial markets on a global scale. Structural changes involving traditional operators in the fields of banking, asset management or insurance business led to modifications of regulatory as well as supervisory settings of the financial systems. Moreover, as numerous serious financial crises especially at the beginning of the twenty-first century (2000's) showed, the global financial architecture is still fragile and comparably easy to attack. Bank failures is not a unique phenomenon to the Ghanaian economy only, but have been experienced in both the developed and developing world.

The rapid growth in these financial institutions Ghana has facilitated control of the money supply by easy cash deposit and withdrawal which plays a vital role in an economy and

normal running of businesses. The Bank of Ghana, through the regulatory and supervisory roles has tried to establish a financial system which is developed. The numbers of commercial banks have grown over the last thirty years as well as the number of services they offer. The country also has thousands of savings and credit associations to which most Ghanaian workers belong and which have become very important avenues to accumulate savings. This makes it evident that the Ghanaian economy is highly monetized, with the monetary sector contributing nearly 95 per cent of the country's Gross Domestic Product (GDP).

Effective regulation is therefore meant to reduce failure and loss to depositors (Nicholl Peter, 1996). It is worth noting however, that despite the government's effort to streamline the banking sector by introducing statutory regulatory measures of containment some banks, have been liquidated or put under receivership in the period that followed the introduction of these control mechanisms. During this period, more financial institutions have collapsed due to the weak internal controls, bad governance and management practices.

For instance, the Bank for Housing and Construction Limited and The Trust Bank limited collapsed in the 2000's. One would have expected that lessons learnt from our history be a guide to ensure that no bank collapse again. Unfortunately, UT bank and Capital Bank collapsed in 2017, and a year on (2018), we have witnessed a revocation of licences of five banks (Construction Bank, Beige Bank, Sovereign Bank, Royal Bank and Unibank) leading to their strong consolidation into one strong bank.

1.2 Composition Of Banking Sector In Ghana

The industry comprised thirty-four (34) licensed banks, seventeen (17) classified as domestically-controlled, while the remaining seventeen (17) were foreign-controlled, as at end of April, 2018. The collapse and conversion of 5 domestically-controlled banks into 1 (Consolidated Bank of Ghana) on 1st August, 2018, means the industry is currently made up of 30 licenced banks, 13 domestically-controlled and 17 foreign –controlled.
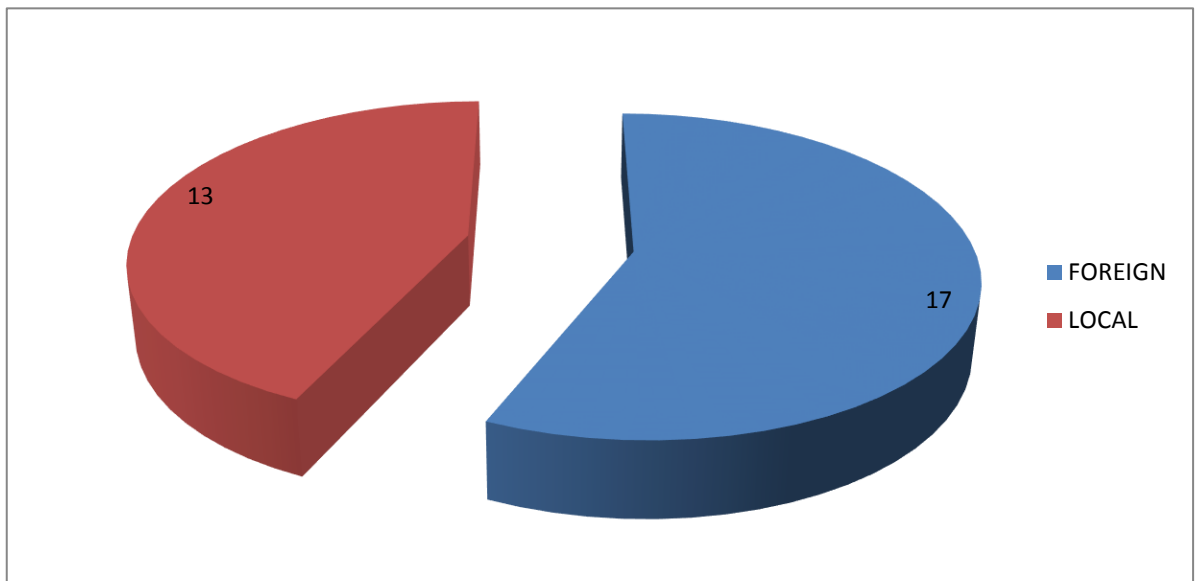
Figure 1.1 Diagram of the composition of banks in Ghana (Source: Researchers' field work May, 2019)

1.3 Problem Statement

Problems in the banking industry have been in the system since the early 2000's culminating in major bank failure (7 failed banks between 2017 to date). In a banking crisis, depositors, lenders to banks and owners of bank capital all lose confidence and seek to simultaneously salvage their resources by withdrawing them. The cost of bank failure is colossal hence the necessity to get "Out of the Dark" (Sheng, 1991). Indeed a "Wake up Call" to improve performance, restore insolvency, improve profitability and rebuild

6

confidence as most financial system, ''were asleep'' prior to the financial crisis, (Senbet, 1998).Ailing banks require quick action by supervisory authority to salvage them before they collapse.

Given the important role that banks play in any economy, it is crucial to understand the determinants that influence their predictability of viability and survival. Instances of bank failure thus raise important concerns to both local and foreign investors in any country. According to Waciira (1999), the apparent variability of collapse of companies with time has real implications for the business community, especially the banking sector. The recent failures in banking industry have raised great concern and have forced banks to put more emphasis on determining the variables that cause the bank failures.

Weak corporate governance practices, poor risk management strategies, lack of internal controls, weaknesses in regulatory and supervisory systems, insider lending and conflict of interest among others, are various factors that are attributed to failure in financial institutions in Ghana. The review of earlier researchers shows that the studies were not carried to survey the current variables that influenced the causes of commercial bank failure using a ratio analysis. It is of interest to evaluate the relationship of the capital adequacy, asset quality and earnings ratios as predictors of bank failures or other variables to explain the failure of banks in Ghana.

1.4 Objective of Study

The main aim of this study is to examine the determinants of commercial bank failures and the extent to which they impact on performance. The specific objectives for the study are as follows:

- To examine the factors that contribute to bank failures in Ghana using financial ratios.

- To assess the relationship between capital adequacy ratio and liquidity

- To assess the relationship asset quality and liquidity

- To assess the relationship between liquidity and return on capital employed.

1.5 Research Questions

Based on the research objectives the following questions are posed:

- What are the factors that contribute to bank failure?

- What is the relationship between capital adequacy and liquidity?

- What is the relationships between asset quality and liquidity?

- What is the relationship between liquidity and return on capital employed?

1.6 Hypothesis

To investigate this, the study will be guided by the following hypothesis

H0: Bank failure has a significant relationship with; capital adequacy, asset quality, returns on assets, total assets, total equity, total loans and earnings after tax.

H1: Bank failure has no significant relationship with; capital adequacy, asset quality, returns on assets, total assets, total equity, total loans and earnings after tax.

1.7 Significance of Study

Given the relation between the well-being of the banking sector and the growth of the economy, knowledge of the underlying factors that influence the financial sector's failure is therefore essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities and the public as a whole. Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of the Ghanaian banking sector.

Apart from contributing to the existing literature on bank operation and to the body of academic knowledge for financial and accounting students, the study will also identify other areas that need further research for researchers to pursue further studies in the area.

1.8 Scope of Study

The scope of the study will be limited to studying the impact of some financial ratios that may have a relation to the failures of commercial banks, comprising of capital adequacy, asset quality, return on assets, total assets, total equity, loan quality and earnings after tax. It is acknowledged that there are other factors that may impact on the failures of banks but not included in this study. These other factors may include but not limited to corporate governance, political stability, taxation, regulation indicators, quality of services and technological advancement. A future extension of this study may look at these factors. The study is focused on the operations of some selected commercial banks in Ghana for the period 2010-2018. The paper explores the overall management style used by banks with emphasises on the management of funds and operations of commercial banks

1.9 Structure of The Study

The rest of the paper will be organized as follows. In chapter two, we present a review of relevant literature while in chapter three we present the study methodology. In chapter four we analyse data and empirical results while in chapter five we present key research finding and conclusions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Banking activities started in Ghana in 1896 when the British Bank of West Africa, now Standard Chartered Bank (Ghana) Limited, opened an office in Accra and delivered primary banking services of lending and borrowing of money. The Ghanaian banking industry is relatively small consisting of 30 banks as of 1st August, 2018. Of this number, seventeen (17) are foreign banks (banks with foreign majority ownership) and thirteen (13) local banks (banks with local majority owner). The banking system is based on the concept of universal banking where banks can offer all banking services.

The financial system operates in a legal and regulatory framework. These frameworks define the legal and regulatory environment in which banks operate. We shall not delve into the legal and regulatory environment but it is worth mentioning that the Constitution of the Republic of Ghana and the following Acts define the regulatory system of the financial system.

- The Companies Act, 1963 (Act 179)

- The Constitution of Ghana 1992;

- The Securities Industry Act 1993 (Act 333);

- The Bank of Ghana Act, 2002 (Act 612);

- The Insurance Act 2006 (Act 724);

- The Central Securities Depository Act 2007 (Act 733);

- The Banking (Amendment) Act 2007 (Act 378); and

- The Non-Bank Financial Institution Act 2008 (Act 774).

The Banking industry is prone to crisis due to its unique characteristics, hence a special policy interest in preventing and dealing with such crisis (Gavin and Houseman, 1998).The proliferation of large scale banking crisis has therefore raised widespread concern, a banking crisis disrupts flow of credit to households and enterprises reducing investment and consumption and possibly forcing viable firms into collapse. Banking crisis may also jeopardise the functioning of payment systems and by undermining confidence in domestic financial institutions, they may cause decline in domestic savings and/or a large scale capital outflow.

Systemic crisis may force sound banks to close their doors (Vittas, 1997). In most countries, policy makers have responded to banking crisis with various interventions ranging from loose monetary policy to the bail out of insolvent financial institutions with public funds, as in the case of Unibank before its collapse (according to BOG reports). Even when they are carefully designed, rescue operations have several drawbacks which include;

- High budgetary costs,
- Possibility of inefficient banks remaining in business,
- Creating expectations of future bail outs thereby reducing incentives for adequate crisis management by banks,
- Weakening managerial incentives as is often the case, thus forcing healthy banks to bear the losses of ailing institutions,
- Inflammatory loose monetary policy to prevent banking sector losses and in countries with an exchange rate commitment and possibility of trigger of a speculative attack against the currency Kunt and Detragiache, (1997).

2.2 Role Of Banks

Recent literature on banking has emphasized the role banks play in reducing transaction costs, acting as delegated monitors for investors, and providing liquidity. These roles distinguish banks from other financial institutions, and thus make bank regulation and supervision necessary. Banks reduce transaction costs in the services they provide. Bank services can be viewed as transforming particular types of assets into others. Such transformation has two aspects. First, banks transform deposits with few or no restrictions on the minimal amount and of short-term maturity, such as demand deposits, into loans with a longer maturity and in larger amounts, and with credit risk. Thus they can be viewed as providing services of divisibility, maturity, and risk transformation. Second, banks provide payment services through the payment system. These services are too costly for many individual economic actors to perform for themselves. For example, it would be costly for most investors to write debt contracts with firms directly because these are complex agreements with restrictive clauses on firm activities. Moreover, investors typically like to diversify their risks, which would multiply contracts and transaction costs. A bank is able to exploit returns to scale by writing and enforcing debt contract with firms. In the case of payment services, a firm or individual who receives a check does not have to verify the solvency of its issuer. Such verification for each transaction would be very costly. Centralizing this process at the level of financial intermediaries avoids wasteful duplication of verification costs.

The second role of banks lies in their ability to bridge information asymmetries in the credit markets by providing delegated monitoring (see, e.g., Diamond, 1984). There is a sizable literature on how banks may improve efficiency by reducing agency costs. A bank first screens potential borrowers either based on collateral or loan size (Bester, 1985; and

Freixas and Laffont, 1990). Later, by auditing or, in the extreme, threatening to cut off credit, a bank prevents opportunistic behaviour by the borrower (see, e.g., Stiglitz and Weiss, 1983; Diamond, 1984; and Holmstrom and Tirole, 1997). As a result, the bank is in a position to provide cheap "informed" funds as opposed to costly "uninformed" or arm's length funds (Fama, 1985; and James, 1987). Finally, there is a positive externality of bank monitoring in that other fixed-payoff claims need not undertake a similar costly evaluation (Easterbrook, 1984; and Besanko and Kanatas, 1993). Several studies have outlined possible negative consequences of banks' monitoring role. For example, Sharpe (1990) and Rajan (1992) study bank-borrower relationships in dynamic models in which banks try to establish "customer relationships" with borrowers in order to gather information about them. As information is only known to the bank, successful firms are locked into the relationship because they face switching costs if they decide to change their lenders. This results in monopoly rents for banks, and reduces incentives for firms to achieve higher profits.

While delegated monitoring concerns bank assets, the third role of banks, liquidity provision, is related to bank liabilities. In the famous Diamond and Dybvig (1983 and 2000) model, banks can be considered as a "pool of liquidity" that provides households with insurance against idiosyncratic shocks that affect their consumption needs. As long as these shocks are not perfectly correlated, by the law of large numbers, a large coalition of investors will be able to invest in illiquid but more profitable securities, while preserving enough liquidity to satisfy the needs of individual investors. However, this is also the source of a potential fragility of banks. In the event that a high number of depositors decide to withdraw, banks have to liquidate long-term investments and incur economic losses. They then face the risk of not being able to repay depositors who withdraw later. Therefore, if a significant number of depositors have withdrawn, other depositors would imitate them,

resulting in bank runs. Banks face the following dilemma: either they invest in short-term assets and do not fulfill their asset transformation role, which is inefficient; or they efficiently fulfill their asset transformation role but they face the possibility of bank runs when they invest at least partially in illiquid long-term assets. How to ensure a banking system obtains a proper balance between efficiency and stability is a central issue in bank regulation and supervision. A combination of the above three roles distinguish banks from other financial institutions and suggest that bank loans are unique and special. Empirically, there is some evidence supporting the uniqueness of bank loans. Earlier literature looks at stock price responses to announcements of bank loans and other types of debt, such as private placements and public debt issues. James (1987) finds that there is a positive stock price response to a borrower's acquisition of bank loans but a negative response to debt placed privately with insurance companies. Recent literature further examines the causes of such uniqueness by looking at the relationship between bank health and firm performance. Most of these studies find evidence that banking relationships are valuable insofar as negative shocks to bank health are associated with lower stock market valuations and/or lower fixed investments.   The value of durable banking relationships also suggests a "credit channel" as a transmission mechanism of monetary policy. Bernanke and Blinder (1992), Kashyap, Stein, and Wilcox (1993), and Hoshi, Sharfstein, and Singleton (1993) present evidence that bank loan volume decreases during monetary contractions, and the latter two papers further document a rise in commercial paper issuance. A more direct test of bank credit constraints is by Kashyap and Stein (2000), who demonstrate, using aggregate bank-level loan data, that more liquid banks are less likely to reduce lending during monetary contractions than less liquid banks.

2.3 Importance Of Bank Regulations

A number of reasons for this heavy burden of government supervision have been there over the years. The following are the reasons for this strict regulation.

First, according to (Rose, 1991), banks are the leading depositories of the public's savings which constitute the savings of individuals, families, companies, parastatals, pension societies. These savers lack the in-depth information to accurately evaluate the riskiness of banks. For this reason, regulatory agencies like Bank of Ghana comes in to frequently assess the financial condition of banks in order to protect the public against loss which most of the time comes from theft, fraud, corruption, and financial mismanagement.

Secondly, taking into account for instance, long-term savings for retirement in pension programs and individual retirement accounts, banks need heavy regulation in order to safeguard against such losses. According to Kareken, (1990) this regulation acts are done by providing deposit insurance through periodic examination of bank policies and practices so as to promote sound management.

Thirdly, banks are so closely watched because of the power in the form of readily spendable deposits by making loans and investments opportunities to the companies as well as individuals (Heller, 1989). This is because the amount of money in an economy is closely co-related with the national economic conditions in the area of job-creation and the presence or absence of inflation. Therefore since banks have the ability to create money which thus impacts on the vitality of the economy, there is an acute need for government regulations through Central Banks policies.

Fourthly, Banks are regulated because they give loans to individuals and institutions which support consumption and investment spending (Horvitz, 1983). At this level, regulation comes in to avoid discrimination in the granting of credit. This is especially very crucial if

access to credit is denied because of age, sex, race, national origin. Moreover this discrimination in credit grant would constitute a significant obstacle to personal well-being and improved standard of living. Therefore, Central Bank comes in to pass anti discriminatory laws and to promote more competition among banks (Bemette, 1984).

Finally banks provide financial support to governments to conduct their affairs in form of bank credits and taxation (Crockett, 1988). This support helps in the formulation of economic policy and dispensing government payments.

The Bank of Ghana is therefore, charged with the responsibility of ensuring that the financial system is stable to ensure that it serves as facilitator for wealth creation economic growth and development. The most important rationale for regulation in banking is to address concerns over the safety and stability of financial institutions, the financial sector as a whole and the payment system.

2.4 Bank Failure

Banks balance sheets mainly constitute of liabilities that are usually short-term deposits and assets that take the form of both short and long-term loans to corporates, SMEs and individual consumers. When the value of bank assets falls short of the value of liabilities, banks are insolvent (Demirguc-Kunt and Detragiache, 1998). Bank insolvency thus can be explained as bank distress or bank failure and stakeholders such as investors, bank managers, depositors and regulators share keen interest in knowing what causes banks to fail and also desire the ability to predict which banks will get into difficulty so as to protect themselves from negative repercussions emanating from bank failures. Bank failure can be described as the situation where a financial institution basically becomes insolvent and unable to meet to its credit obligations, and is forced to close by the regulator. This often happens when the institution has overleveraged itself and no longer has the funds necessary

to maintain a steady flow of cash.Macroeconomic factors have mainly been the focus on studies attempting to empirically identify the causes of bank failures in developing countries (Rojas-Suarez 1998, Bongini, Claessens and Feri, 2000). It is common for banking crises to occur in periods of macroeconomic downturn (Benston and Kaufman, 1995). Credit expansion is also seen as a factor associated with bank crisis. In contrast, other observers note that the link between lending booms and banking crises is weak, particularly outside Latin America. While macroeconomic factors are clearly important, bank failures are more likely to occur when banks are both weak and face macroeconomic shocks (IMF, 2000).Bank failure, then, would seem to result from the vulnerability of individual banks, macroeconomic shocks expose the inherent weaknesses of such banks.

Bank failures normally brings dire consequences to stakeholders outside the failed banks themselves and are usually catastrophic because of domino fashioned fears that they may spread all over the banking and financial system as well as the entire economy. Considering that the banking sector is the hub for most financial activities in the financial system, failure of an individual banking institution introduces the possibility of systemic risk and this is perceived to spread wider. When a banking institution is placed under curatorship or liquidated, shareholders, clients and creditors may lose their funds which lead to bank runs and hence long-term panics in the economy. This engrains panics to stakeholders that were transacting with Interfin and other banking institutions leading to wane in public confidence. Bank collapses can impede employment, earnings, financial development, payment systems and economic growth through financial system instability.

The literature on quantitative bank failure studies separates bank-specific effects from common industry or macroeconomic effects. In general, the bank-specific factors to which bank failures have been attributed are the 'CAMELS' variables. Capital adequacy measures have been found to be significant predictors in a number of studies (Martin 1977;

Lane, Looney and Wansley, 1986; Thomson, 1992; Bongini et al., 2000; Estrella, Park and Peristiani 2000). Bongini et al. (2000) found that the ratio of loan loss reserves to capital and the rate of growth of loans were good predictors of distress and closure in the East Asian crises. Sheng (1996) cited connected party lending between banks and their shareholder-managers as one of the main factors contributing to the lending problems in Argentina and Chile. The importance of the behaviour and capability of management to the survival of banks has also been emphasised (Meyer and Pifer, 1970; Wheelock and Wilson, 2000). In addition, the source of a bank's earnings (Espahbodi, 1991; Wheelock and Wilson, 2000) and also the level (Martin, 1977; Thomson, 1992; Bongini et al., 2000) have been shown to be significantly greater when a bank is illiquid (Lane et al., 1986; Bell et al., 1990).

In addition to the CAMEL components, other non-fmancial bank specific factors such as size (Boyd and Gertler, 1993 and Bongini et al., 2000 contrast with Thomson, 1992) and the extent of foreign ownership (Goldstein and Turner, 1996) have been suggested to explain bank failures. However, no consensus has emerged as to which indicators are most relevant for assessing bank soundness and stability, or for building effective 'early warning' systems. The statistical significance of individual factors, as well as variables, varies across studies and the results have produced conflicting results. Moreover, an understanding of the interplay between these factors and banking crises in developing countries is still scant.

2.5 Determinants Of Bank Failures

There is a growing and widening acceptance of the view that financial markets are an essential ingredient in promoting economic growth, development, and stability. Countries everywhere are therefore encouraged to do everything possible not to impede the development of financial markets, including the banking system, which is an important

component. Banks are instrumental not only in extending credit to finance both consumption and investment projects, but are also the conduit through which monetary policy is conducted, and banks serve as the payment mechanism through which transactions are consummated. Yet, it is clear that the role of banks has been evolving as countries move through various stages of economic development. As countries mature economically the credit role of banks diminishes, while the role of the capital markets becomes more important. This development has contributed to increased competitive pressures on banks, particularly in the economically more advanced countries, which has resulted in consolidation in the banking industry and expansion in the range of products and services banks offer.

2.5.1 Bank size

The most common determinant of bank failure that has been identified in almost every research is the size of the bank itself. Borovikova (2000), Nikolsko-Rzhevskyy (2003), Bagatiuk and Dzhamalova (2009), Cole and White (2011) and Li (2013) opines that size of the bank is a significant determinant of its failure. These entire authors incorporated this variable in their model but were not in consensus as to whether bank size influences failure positively or negatively. Taran (2012) and Li (2013) remained sceptical of the correlation that exists between bank size and the probability of failure. However all these researchers agreed in their research papers that bank size is proxied by the natural logarithm of bank gross assets.

Bagatiuk and Dzhamalova (2009) employed both linear probability and binary response models such as probit model to investigate financial ratios that better explains bank failures in Russia and Ukraine. The researchers used these models to analyse data on banks from 2002-2008. Their research findings revealed that bank size influence bank failure negatively thus they concluded a negative correlation between bank size and failure. The

research results also were also consistent with empirical results of Gonzalez and Kiefer (2006). Gonzalez and Kiefer (2006) concluded that size has negative impact on bank failure, ceteris paribus, and that increase in this variable decreases the risk of bank failure.

The negative sign implies a negative association between bank size and the probability of bank failure. Cole and White (2011) and Li (2013) in their studies carried in USA remained sceptical of the expected sign between bank size and the probability of bank failure. According to Shim (2013), large banks tend to be more diversified when managing capital assets and have easier access to capital markets than smaller banks, implying that small banks are more prone to bank failure than large banks. However Li (2013) cited that large banks might be prone to risky lending activities which may lead to huge losses and failure.

Nikolsko-Rzhevskyy (2003) examined causes of bank failures in Ukraine during 1998-2003 using micro-level data by employing Giant logit model and parametric survival estimator. Empirical results showed that bank size influences failure. Both models supported the findings that the bigger the bank, the less likely it will go into bankruptcy.

2.5.2 Moral hazard (salary expenses)

Some bank failures are also influenced by moral hazard but there is limited literature to econometrically support and incorporate moral hazard variables. Borovikova (2000) is one of the researchers who captured moral hazard problems by including the issue of salary expenses in the bank failure model. The author postulate that salary expenses influence bank failure and that this variable was a good detector of moral hazard problem. According to Borovikova, salary expenses are assumed to be negatively correlated to the probability of bank failure. Borovikova (2000) empirically tested the proposition that the probability and timing of bank failure depends on bank-specific factors, general macroeconomic conditions and political factors using a splitpopulation survival time model to Belarusian

banks. The model covered bank failures from 1992-1999. Research result revealed that salary expenses negatively influence bank failures.

2.5.3 Assets quality

Copious studies document asset-related problem to be chief causes of bank failure. Oshinsky and Olin (2005), Shaffer (2012) and Babanskiy (2012) were of the opinion that bank failure was more sensitive to non-performing loans. Oshinsky and Olin (2005) showed that banks that have riskier assets tend to have a high probability of failure. They recognised that fee income from riskier assets result in a higher noninterest which bears a positive correlation with failure. Campbell (2007) further explained that non-performing loans, that are considered to be asset quality indicators, have been the most common factor in all recent researches. Balasubramanyan (2010) further alluded that non-performing loans lead to huge write downs which erodes the capital base of the bank.

Shaffer (2012) used the logit estimator in the US and found that bank failures were largely related to non-performing loans (NPL) in 2008 and in 1980s. BOG (2012) also identified the impact of non-performing loans on loan books. This non-performing loans level is far much above the prudential benchmark of 5% stipulated in Basel II. Apparently it can be seen that this was the master cause of several banks' collapse since loans constitute a larger proportion of bank's assets. All research results showed positive sign associated with this variable, implying that the higher the non-performing loans level the greater the probability of failure.

Samad (2012) empirically tested the significant determinants, among credit risk variables, of US bank failures in USA in 2009. The study employed the Probit Model and found that among credit risk variables, the credit loss to net charge off, loan loss allowances to non-

current loans and non-current loans were significant for predicting bank failures. The model had 80.17 predictive power.

Capital Adequacy Ratio (%)

Stripping off FBN and FNB due to outlier, Industry CAR for 17 banks is 25.34% (2017: 21.33%)

	FBN	FNB	GTB	ZBG	REP	SCB	UBA	FID	BBG	GCB	CAL	SGB	SBG	ACC	BOA	EBG	ADB
2018	190.30	182.00	52.80%	34.70%	34.40%	29.60%	28.10%	24.30%	22.30%	22.00%	21.80%	21.50%	20.50%	20.40%	19.40%	14.60%	13.70%
2017	52.40%	93.00%	29.20%	24.90%	23.10%	26.00%	28.00%	27.00%	20.50%	23.00%	21.10%	16.70%	23.80%	13.30%	17.10%	12.60%	13.70%
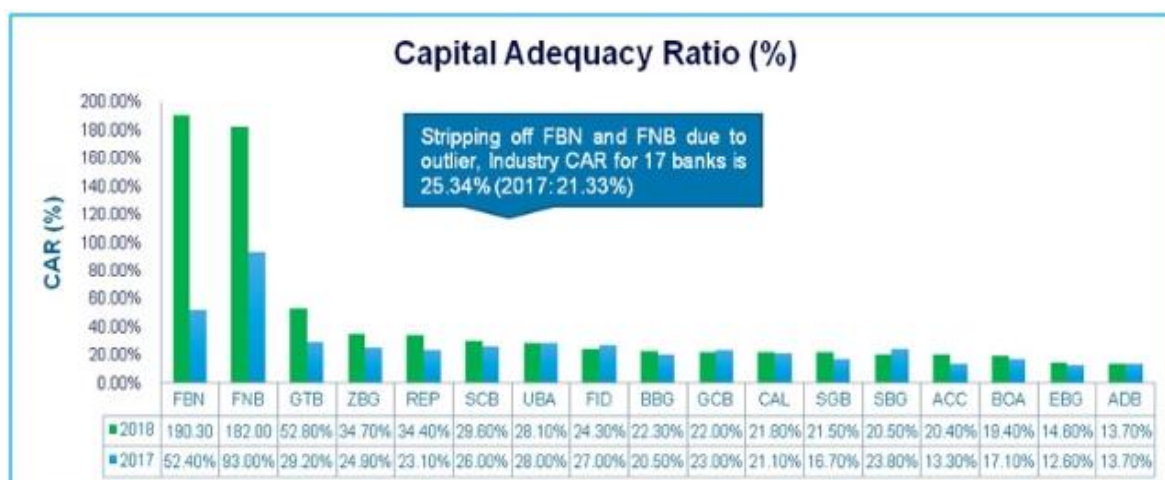
Figure 2.1 Capital Adequacy Ratio of Banks 2017 and 2018 (Source: www.bog.gov.gh)

2.5.4 GDP growth rate

Banks do not operate in an isolated tower but rather in an economy where they transact with less ability to influence the outside environment. Calomiris and Joseph (2003) and Wai (2009) found that the major determinant of bank failure is the state of the economy. Wai (2009) revealed that banks are more susceptible to bank failure during economic slump, which aggravate mistakes made during periods of buoyant growth. Calomiris and Joseph (2003) declared that banks fail when the economy is contracting. Their justification lies on the fact that asset prices fall and loan defaults increases in response to the contracting economy which will ultimate spur bank insolvency. Their study also revealed significant correlations between the characteristics of banks, the environment in which they operate and their chance of surviving the contracting economy.

Some researchers such as Cebula, Koch and Fenili (2011), Mayes and Stremmel (2012) identified real gross domestic product (GDP) growth rate as a cause of bank failure.

Researchers such as Lanine and Vennet (2006) neglected macroeconomic variables basing on the fact that all banks will be facing similar conditions. However there is need to incorporate this variable since similar macroeconomic variables such as GDP growth rate can influence banks differently. The bedrock assumption is that banks are affected differently by similar macroeconomic variables.

Mayes and Stremmel (2012) used the logit technique and discrete time analysis in USA to determine the influence of GDP growth rate in predicting bank failures. The research used US bank data from 1992 to 2012 and research results revealed negative influence of GDP growth rate on bank failures. Cebula, Koch and Fenili (2011) empirical results also conformed to the research hypothesis that real GDP growth is negatively correlated with the possibility of bank failures. Negative correlation implied that when economic conditions are good, real GDP will be high and banks are less likely to fail.

However, there is no clear-cut on whether bank failures influences economic growth or that it is economic growth that influences bank failures. Kupiec and Ramirez (2008) investigated the effect of bank failures on economic growth in the US using VAR and a difference-in-difference methodology. Their results indicated that bank failures reduce subsequent economic growth.

2.5.5 Capitalization

Various studies captured capitalisation from different standpoints but the majority relied on the CAMELS framework. Adeyemi (2011) established the main determinants responsible for bank failures in Nigeria from 1994-2003. The author used a survey research design through the use of questionnaires. The study observed that inadequate capital among other causes was accountable for bank failures in Nigeria. Gonzalez and Kiefer (2006) employed a duration model to identify main bank specific determinants of bank

failures in Colombia. To capture capitalisation, their study used the ratio of total equity to total assets ratio. The study suggested that capitalisation is negatively correlated to probability of bank failure, implying that capitalisation results in a reduction of banks' probability of failure. Research finding showed that capitalisation ratio was the most significant indicator explaining bank failures. Estrella, Park and Peristiani (2000) used a logit model to compare the effectiveness of different types of capital ratios in predicting bank failure in US using 1988-1992 data. The researcher used leverage, gross revenue and risk-weighted ratios. These authors totally neglected the ratio of total equity to assets that has been used by Gonzalez and Kiefer (2006). The fact was that unlike assets, gross revenue includes components associated with off-balance-sheet activities. Moreover, gross revenue contains a crude risk adjustment in that riskier projects are likely to be undertaken only if they provide larger revenues, at least ex ante. Thus, gross revenue may reflect the riskiness of bank assets better than total assets. Li (2013) suggested a negative correlation between this variable and bank failure, which implies that banks with higher gross revenue ratio will be less likely to fail.

Estrella Park and Peristiani (2000) also criticised the gross revenue ratio suggesting it captures factors other than risk. For example, banks engaging heavily in fee-generating activities, which may carry only a limited amount of risk, will report large revenue. Gross revenue may also be more sensitive to business cycles than total assets. Findings revealed that simple ratio, specifically the leverage ratio and the ratio of capital to gross revenue, predict bank failure as well as the more complex risk-weighted ratio.

However Mayes and Stremmel (2012) research findings were consistent with Estrella Park and Peristiani (2000) in terms of leverage ratios but not in the case of risk-weighted capital. Using the logit technique and discrete survival time analysis in US, they found that non-risk weighted capital and leverage ratio explained bank failures best. Lanine and Vennet

(2006) analysed the determinants of bank failure in Russia from 1998-2004 using the logit and trait recognition methods. The empirical results indicated that banks need sufficient capital to hedge against liquidity risk, default risk and capital risk that banks can face.

2.5.6 Managerial quality

Bank failures also emanate from managerial inefficiency. Chinn and Kletzer (2000), Deckle and Kletzer (2001) are of the opinion that the main source of failure rest on bank vulnerabilities to bad management practices reflected in deterioration of their portfolio and capital structure. DeYoung (2003), Wheelock and Wilson (2006) also identified managerial inefficiency as the primary cause for bank failures. DeYoung (2003) further document that operational cost inefficiency increase the likelihood of failure.

BOG (2017) argued that mismanagement mainly excessive risk-taking is the major determinant of most bank failures in Ghana. According to BOG (2017), technical mismanagement involves inadequate policies and procedures, cosmetic encompasses concealing past and current losses to buy time and remain in control while looking and waiting for solution. Clearly cosmetic mismanagement shows central bank's ineffectiveness in terms of on-site examination.

Managerial quality assessment was captured from different angles by many researchers. Ploeg (2010) used the probit, logit, hazard and neural networks model on US banks from 1987-2008. The researcher employed the ratio of total operating expenses to total operating income as a measure of management performance. Researcher findings suggest that banks with high operating expenses relative to operating income are expected to be less efficient and thus have higher probability of failure. Ercan and Evirgen (2009) advocate for the use of net income relative to the number of branches as the measure of managerial efficiency. Halling and Hayden (2006) states that the number of employees also could be indicators

of management performance, indicating the bank's productivity. The baseline was that the more productive a bank is, the bank the lower is the likelihood of collapse. Nikolsko-Rzhevskyy (2003) indicated that managerial efficiency accounts for bank soundness using the duration model. The bedrock hypothesis was that the higher is managerial efficiency, the less likely that bank will go into bankruptcy.

Tatom and Houston (2011), Kao and Liu (2004) evaluated management efficiency using Data Envelopment Analysis (DEA). Tatom and Houston (2011) employed the logit and probit model to analyse US banks data for 1988-1994 and 2006-2010 and they explained that DEA is a method of examining production efficiency. Mayes and Stremmel (2012) used an efficiency ratio to assess the management quality. According to these researchers, the efficiency ratio reflects expenses as a percentage of revenue.

2.5.7 Earnings ability

Bongini et al. (2001), Lanine and Vennet (2005) advocate that the usual indicator for earnings is return on assets (ROA) which is the general measure of bank profitability. Lanine and Vennet (2005) used the logit and trait recognition methods in Russia from 1998-2004. Some researchers back this ratio with ROE. However according to Taran (2012) the effect of the earnings factor is quite ambiguous. From one side, earnings may reflect the efficiency and operational performance and thus have a negative effect on the probability of failure as suggested by Lanine and Vennet (2005). Taran (2012) further explained that from the other side, high profitability may reflect a high level of portfolio risk, and thus has the positive impact on the likelihood of crash as sighted by Jordan et al. (2010).

Shim (2013), Samad and Glenn (2012) also made use of ROA and documents that higher ROA means greater efficiency in converting assets into net income. Low ROA indicating

less efficiency and that the organization is more likely to experience financial difficulty. These researchers expect this variable to have negative impact on the failure of banks.

Popruga (2001) utilised the probit cross-section model to identify factors that reduces or raise the probability of becoming bankruptcy in Ukraine. The study employed data for the period of 1995-1996 and findings revealed that, among other indicators, ROA is not key determinant of the soundness of Ukrainian medium-sized bank.

Figure 2.2 Non Performing Loans of Banks between 2018 and 2017 (Source: www.bog.gov.gh)

2.5.8 Liquidity

Some researches considered bank liquidity as a potential source of failure. Arena (2008) stipulates that liquidity shocks provoke bank failures due to their inability to honour their short term obligations. Chang and Velasco (1999) supported this view by adding on that if bank potential short-term debt exceeds its liquidation value, the bank run equilibrium exist. It is this equilibrium that will lead to ultimate failure of the bank. In a more general, these authors were sighting on the importance of matching bank assets and liabilities basing on the grounds that failure of any banking institution to cover its short position can also cause failures.

28

Different ratios were used by many researchers with some augmenting each other to produce plausible results. Arena (2008) captured liquidity as a ratio of liquid assets to total liabilities. Arena shows that liquidity ratio have an inverse relationship with the probability of bank crash in East Asia and Latin America during the 1990's. Ercan and Evirgen (2009) investigated the factors that were important in the failure of Turkish banks in 2000-2001 and included liquidity ratios in their analysis banks using a principal component analysis methodology. Finding showed that liquid assets-to-liabilities ratio appears to be significant while the liquid assets-to-total assets ratio does not.

Another widely discussed variable in bank failure context is relation of retail deposits to total loans, as well share of retail deposits in bank liabilities. According to King (2006), higher share of such deposits increases bank vulnerability to the unexpected bank run. Andersen (2008) is of the view that reliance on interbank deposits may indicate intentions to conceal the liquidity problems. The reason is that interbank financing is usually relatively expensive and short-term but easy to obtain.

Bobykin (2010) used logit and hazard models of prediction banking failures using efficiency measures and tested it empirically using the data on Ukrainian banks during 2006-2010. Empirical findings found an inverse relation between the probability of banking failure in Ukraine and a liquidity indicator, proxied by the cash to assets ratio. More specifically, empirical results showed that the most significant liquidity ratio was cash to assets ratio.
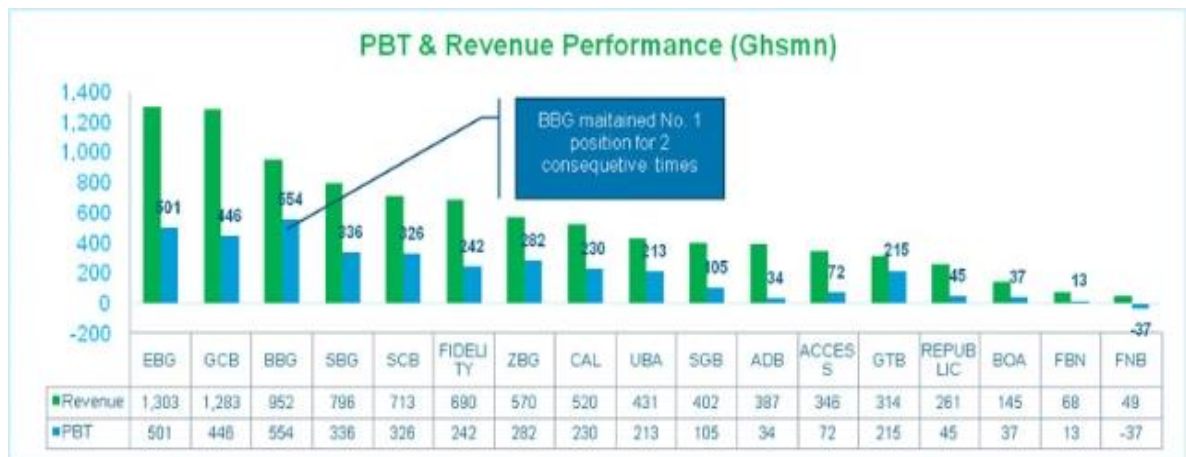
Figure 2.3 Profit before Tax and Revenue Performance of Banks (Source: www.bog.gov.gh)

2.6 Determinant model of predicting failure of commercial bank

In choosing the hazard model, we attempt to account for capital adequacy, asset quality and earnings are used to predict the bank failure or disappearance of a commercial bank. We analyse the disappearance of banks using proportional hazards models with time varying covariates, which are estimated by maximising the partial likelihood function. The approach is standard in most applied work (e.g. see Meyer 1990). In modelling the failure hazard, acquired banks are treated as censored in modelling the failure, banks that failed are treated as censored at the failure date. Specifically, we define the following variables:

1. Capital adequacy = total equity/total assets

2. Asset Quality = total assets/total assets

3. Earnings = Net income after taxes/ total assets

Partial selection of CAMEL'S variables in predicting bank's failure, the study assumed that bank failure is a linear function of capital adequacy, asset quality and return on assets.

BF= CAPAD +AQ+ROA

30

Where

BF: Bank's Failure ratio

CAPAD: Capital Adequacy

AQ: Asset Quality

ROA: Return on Asset

Since CAPAD, AQ and ROA are also affected by equity, total assets, total loans and earnings after tax.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the population of study, the basis of sampling, the data collection instruments as well as the data analysis techniques to be used to achieve the objectives of study. The study is a survey, which sought to assess the predictors of the causes of commercial bank failure in Ghana.

3.2 Research Design

Cooper and schindler (2003) defined a research design as a plan and structure of investigation so conceived as to get answers to the questions. The research design therefore is a plan for the entire research study that gives the framework of the research's plan of action. A research design thus provide an answer to such questions like: what techniques will be used to obtain data? What kind of sampling will be used? And how will constrains be dealt with.

Primary and secondary data was used in carrying out this research. The primary data was mostly used for the purpose of this research and the method used to collect the data was the questionnaire method.

The researcher also used secondary data due to the general limitations of primary data in order to come up with more accurate results. The secondary data used in this case include the annual financial reports of individual banks and macroeconomic data drawn for the period 2015-2018. The research intends to determine the causes of commercial bank failures using a ratio analysis. The ratio analysis model will be used as the predictors of commercial bank failures to ascertain the influence of capital adequacy requirements, asset

quality and the earnings ratios. These variables are critical in determining the eventual success and avoid the speed disappearance of local commercial banks in the market.

3.3 Nature And Source Of Data

The objectives of the study will be achieved through the use of secondary data in the form of the annual financial reports of three banks drawn for the period 2010-2015. Secondary data is defined as data that have been collected for some purpose other than the problem at hand (Malhotra, 2007). The advantages of secondary data lie in the fact that they are easily accessible, relatively inexpensive and quickly obtained. They can however be misleading and irrelevant since the objective, nature and methods used to collect the secondary data may not be appropriate to the present situation. Also, secondary data may be lacking in accuracy, or they may not be completely current or dependable. The collected secondary data will therefore be evaluated on the basis of specification or method used to collect the date; accuracy or error in approach, research design, sampling, data collection, data analysis and reporting; currency in terms of time lag between collection and publication; objectives (i.e. why the data were originally collected); nature (in terms of the definition of key variables, units of measurement; categories used and relationship examined); and dependability (as in expertise, credibility, reputation and trustworthiness of the source). Secondary data on bank financials and macroeconomic indicators will be acquired from the Bank of Ghana Research Department. From the financial data, which is basically bank's balance sheet and income statement, data on total assets, advances, provision for bad debt and total annual overhead expense will be used to estimate ratios and coefficients for the internal determinants. The time period selected was based on the fact that it offers recent time series observations and it constitutes a period of major changes for the Ghana banking system listed by the Bank of Ghana.

3.4 Research instruments

According to Cooper and Schindler (2003), data collection instrument/tool refers to the device used to collect data, such as a paper questionnaire or computer assisted interviewing system. It also refers to the methodologies used to identify information sources and collect information during an evaluation. An ideal measuring instrument is the one that produces measures that are relevant, accurate, unbiased and efficient: P Kotler (1994).

3.4.1 Primary data

P Kotler (1994) defines primary date as the data that the researcher collects in the field specifically for the project. Primary data analysis refers to the research which is designed and implemented by the researcher on his or her sources. Stoner J (1982) defines primary data as "the data collected in field specifically for the project under review". Primary data analysis refers to research, which is designed and implemented by a researcher on his or her resources and professional initiatives. Questionnaires will be used to collect the primary data. In order to make the questionnaire more flexible the questionnaire will be made up of both open ended and closed ended questions. However, more closed ended questions will be used because they are easier to administer and for tabulating the data. Open ended questions require respondents to answer in their own words. They will however be used to a lesser extend because they do not restrict the respondents and thus give information which is difficult to categorise and summarise.

3.4.2 Secondary data

According to Jewel B (1997) secondary data refers to already available and collected research. This means it is data gathered and collected prior to and for a purpose other than this research project. The researcher will use secondary data to gather information concerning already collapsed banks where the selected primary sources will not be effective. Secondary data will be used to gather information with the prime intention of

making literature-based information on the topic under review. The secondary sources that were used include newspapers, the internet, textbooks, journals, financial reports, magazines and newsletters government and BOG publications including other studies carried out on the same topic by other researchers.

3.4.2.1 Advantages of secondary sources

1) Secondary information provides insight into what has already been researched and thus provide some guidelines on what should be done and avoiding repetitions.

2) Secondary data is the cheapest, easy, and faster way to find out more about corporate governance.

3) The internet provides extensive information on every subject and it is updated more frequently than any other source.

3.4.2.2 Disadvantages of secondary data

1) It is difficult to circumvent biased opinions expressed in the secondary sources of information because biases and inaccuracies cannot be checked.

2) Can be difficult to gather data especially if there are few authors who have addressed the issue.

3) The data is historical and is not representative of the future.

3.5 Data Analysis

Data analysis is defined as the whole process, which starts immediately, after data collection and end at point of interpretation of the processes results. Data will be analysed using statistical package for social science (SPSS) and excel regression analysis to summarise the findings. Descriptive statistics and regression analysis will be used in determining the determinants of bank failures. Financial ratios will be plotted in graphs to

determine the trend, while the cause established by estimating a ration analysis for the period under study.

3.5.1 Dependent variables:

Lin (2010) showed that a bank whose capital adequacy ratio less than 8%, Tier I capital ratio less than 4%, and nonperforming loan ratio more than one third is determined for the distressed bank. In addition, the capital adequacy ratio is calculated by dividing total capital by average assets; the elements of total capital are used as core capital combined with additional capital (i.e., Tier I capital plus Tier II capital).2Tier I capital (i.e., common stock and qualifying preferred stock) divided by risk-adjusted assets yields the Tier I capital ratio. The nonperforming loan ratio is measured as the nonperforming loans (i.e., past due loans, the principal and/or interest of which is unpaid for 30 days or more after the due date) divided by all loans (including interbank loans). This formula is based on the 1988 Basel Capital Accord standards for the definition of equity. Overall, the value of the dummy variable was 1 (distressed group), and the value of the contrary variable was 0.

3.5.2 Independent Variables

Jayadev (2006) stated that successful banks have high current ratios, earnings before interest, and taxes-to-assets ratios. Furthermore, Shkurti and Duraj (2010) stated that successful banks have high profit before taxes-to-equity ratios, and Li et al. (2011) showed that successful banks have low expenses-to-assets ratios. EVA also can be used to detect corporate failure (Timo and Virtanen, 2001; Pasaribu, 2008; Klecka and Scholleova, 2010; Anvarkhatibi et al., 2013).

In our study, we maintain 18 ratios associated to different dimensions of financial analysis that represent the different indicators of banking vulnerability measure. These ratios are regrouped into five groups, liquidity, management, activity, profitability and vulnerability.

CHAPTER FOUR

PRESNTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1 1ntroduction

The main purpose of this research was to investigate the determinants of bank failures in Ghana from 2010 to 2015. Research findings were based on financial ratios that were generated from financial statements obtained from GES. The chapter discusses, analyses and interpret the findings for the research with the aid of statistical measures and analytical techniques. Main area of discussion includes interpretation of descriptive statistics (mean, median, variance and standard errors), construction of the correlation matrix and interpretation of logit regression results.

4.2 Qualitative Analysis

Table 4.1 Demographic Characteristics of respondents

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	63	57.8	63.0	63.0
	female	37	33.9	37.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	63	57.8	63.0	63.0
	female	37	33.9	37.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		

Age range

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-27	21	19.3	21.0	21.0
	28-37	31	28.4	31.0	52.0
	38-47	23	21.1	23.0	75.0
	48-57	12	11.0	12.0	87.0
	58 above	13	11.9	13.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

(Source: Researchers' field work May, 2019)

Sex

From the results above, males form 63 respondents representing 57.8% and 37 respondents representing females 33.9% from the general market (bank). Females are somewhat less involved in the banking activities than their male counterparts

Age range

The data output of the age distribution of the respondents included in the study. Results from the study unveiled that, 21 of the respondents representing 19.3% were within the ages of 18 – 27 years. 31 of the respondents representing 28.4% fell within 28 - 37 years. Also 23 of the respondents representing 21.1% indicated 38 – 47 years. Again 12 respondents representing 11.0% were between the ages 48 - 57 years. Finally, 13 respondents which represents 11.9% were 58 years above. The table therefore concluded that majority of the respondents were within the range of 28 – 37 years making most of people who banks to be young adults.

Table 4.2 Banking experience of respondents in terms of years

Banking experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1	18	16.5	18.0	18.0
	1-10	32	29.4	32.0	50.0
	11-20	24	22.0	24.0	74.0
	21-30	15	13.8	15.0	89.0
	50 above	11	10.1	11.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

(Source: Researchers' field work May, 2019)

From the study above, 18 respondents representing 16.5% had a less the 1 year experience in banking. 32 respondents corresponding 29.4% represents 1-10 years of banking experience. Also, 24 respondents representing 22.0% had a banking experience of 11-20 years. Again, 15 respondents representing 13.8% were people who had a banking experience of 21*30 years. Finally, 11 respondents representing 10.1% had a banking experience of 50 years and above

Table 4.3 Analysis on Bank choice, Bank's Profitability and Bank Failure per respondents' perception

What informs you about your choice of bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	21	19.3	21.0	21.0
	Management	36	33.0	36.0	57.0
	Liquidity	17	15.6	17.0	74.0
	Loans	9	8.3	9.0	83.0
	Assets	17	15.6	17.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

What informs you about bank's profitability?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	22	20.2	22.0	22.0
	Management	28	25.7	28.0	50.0
	Liquidity	15	13.8	15.0	65.0
	Loans	20	18.3	20.0	85.0
	Assets	15	13.8	15.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		

What informs you about your choice of bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	21	19.3	21.0	21.0
	Management	36	33.0	36.0	57.0
	Liquidity	17	15.6	17.0	74.0
	Loans	9	8.3	9.0	83.0
	Assets	17	15.6	17.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

What informs you about bank's failure?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	27	24.8	27.0	27.0
	Management	23	21.1	23.0	50.0
	Liquidity	23	21.1	23.0	73.0
	Loans	14	12.8	14.0	87.0
	Assets	13	11.9	13.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

What informs you about your choice of bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	21	19.3	21.0	21.0
	Management	36	33.0	36.0	57.0
	Liquidity	17	15.6	17.0	74.0
	Loans	9	8.3	9.0	83.0
	Assets	17	15.6	17.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		

What means do you get information about bank performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alerts	23	21.1	23.0	23.0
	Media	26	23.9	26.0	49.0
	financial statement	20	18.3	20.0	69.0
	Customers	17	15.6	17.0	86.0
	None	14	12.8	14.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		

What informs you about your choice of bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Size	21	19.3	21.0	21.0
	Management	36	33.0	36.0	57.0
	Liquidity	17	15.6	17.0	74.0
	Loans	9	8.3	9.0	83.0
	Assets	17	15.6	17.0	100.0
	Total	100	91.7	100.0	
Missing	System	9	8.3		
Total		109	100.0		

(Source: Researchers' field work May, 2019)

From the study above, management style influences correspondents' choice of bank the most (33% with 36 correspondents). The size of the bank was the next choice followed by liquidity and assets. Loans was the least criteria to the choice of bank by the correspondents.

From the study above, customers attribute banks profitability to management (with 25.7% and 28 respondents). Size of bank and Loans were the next factors the correspondents relate to banks profitability.

From the analysis above, the bank failure is highly dependent on size. The closure of branches, reduction in staff number by banks affects its survival. Liquidity and Management are the next choice by the population.

From the study above, customers of the banking industries acquire moist of their banking information through the use of the media which constituted 26 respondents representing 23.9% whiles the least form of information is acquired by the customers through no communication at all was 14 respondents representing 12.8%,.

4.3 Quantitative Analysis

Financial statements from two of the seven recently failed banks were analysed and compared with that of an existing bank, with financial ratios to a certain the predictability of some to failures of banks.

4.3.1 Descriptive Analysis of variables from UT BANK.

Central tendency, dispersion, and median values were analysed to describe the variables within the period of study from UT Bank. The mean value of cash ratio was 14.05% with a very low dispersion of 3.29, as seen in table 1. This signifies that averagely, UT bank could only afford to finance 14% of its liability with the available cash and cash equivalents (the most liquid component). This may result in liquidity risk which will be very crucial to the survival of the bank. Current ratio averagely is slightly above 1 (that is 1.04) so might mean the bank averagely can meet its short term liabilities when due. This is not always a complete measure of liquidity since some of the assets might be over aged.

Capital adequacy ratio CAR displays the ability of the bank's cushion in case of risk so as to protect depositor's funds. It was 10% but according to the Base III, it is currently at 8%. If a figure falls below the CAR line, it is very dangerous. It signifies the institution's

susceptibility to failure. UT Bank averagely had a central tendency of 7.45 and a dispersion of 16.41 from table 1 which is below the benchmark. UT Bank was heading to failure.

Table 4.4 Descriptive analysis of financial ratios of UT Bank from 2010 to 2015

DESCRIPTIVE ANALYSIS OF THE VARIABLES				
VARIABLE	MEAN	MEDIAN	VARIANCE	STDEV
CURRENT RATIO	1.0483333	1.035	0.004096667	0.06401
CASH RATIO	14.05	14.2	10.875	3.29773
ROCE	60.026667	56.5	961.1986667	31.0032
ROE	7.4666667	12.125	269.3759067	16.4127
ROA	1.2233333	1.485	2.515626667	1.58607
CAR	7.57	9.76	45.20516	6.72348
DEBT RATIO	59.275	90.225	5654.80771	75.1985
DEBT TO EQUITY	5.0616667	9.25	110.7630167	10.5244
CAPITAL GEARING	-36.15	16.13	28637.58712	169.226
ASSET QUALITY	0.005164	0.02	2.66667E-05	0.00516

(Source: Researchers' field work May, 2019)

Asset Quality was a positive on the average but very small. It explains the returns on the loans granted by UT bank to its customers. This is due to the fact that the non-performing loans (NPL) were very high. Increased NPL's in any portfolio is very dangerous and as such a key determinant to bank failure. This simply means the bank did not have adequate provisions.

Below is a graphical representation of UT banks ratio over the period of study. It can be seen that most ratios decreased as the years progressed. ROCE had the greatest reading as compared to the others across the period. As already explained a high return does not mean the firm is very liquid due to the fact that some of the assets might be over aged. Liquidity in terms of cash ratios and current ratios were on the low. Capital gearing was very low which signifies positive remarks. As already explained, there might be a a lot of returns from ROCE but this is not employed to help grow the bank, hence the effect on many factors.

In 2015, UT bank recorded a very low CAR value. This is because the CAR value was in the negative. There was no capital to cushion depositors' funds. This is a major determinant for the failure of UT BANK.
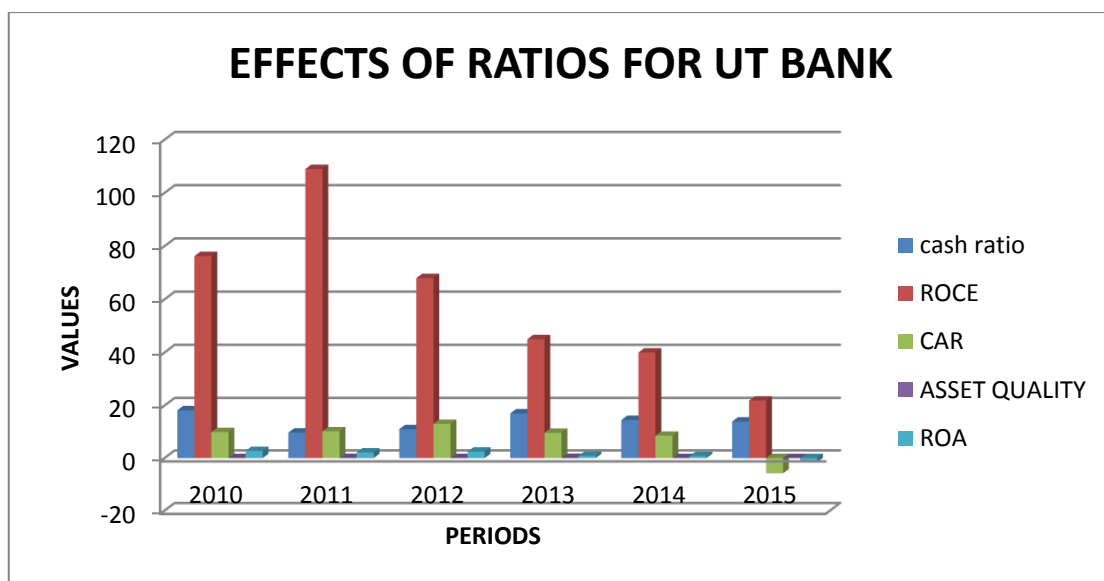

Figure 4.1 Effects of Ratios on UT bank from 2010 to 2015 (Source: Researchers' field work May, 2019)

4.3.2 Descriptive Analysis of variables from BEIGE BANK.

Beige bank had an average current ratio of 0.89 and a dispersion of 0.12. Current ratio is a measure of Liquidity and any liquidity value which is less than 1 implies the risk is high. This simply means there are more liabilities than assets. It also implies that more short-term liabilities were used to fund long term assets hence the liquidity challenge. Any bank with such challenge has a high risk of failure.

This effect is seen in the average value of cash ratio (11.81%). Averagely the bank can only pay 11.81% of its liability per the cash and cash equivalents available. All other factors were very good but liquidity. This iterates the importance of liquidity as a determinant to bank failure.

Table 4.5 Descriptive analysis of financial ratios of Beige Bank from 2010 to 2015

DESCRIPTIVE ANALYSIS OF THE VARIABLES				
VARIABLE	MEAN	MEDIAN	VARIANCE	STDEV
CURRENT RATIO	0.8983333	0.99	0.014616667	0.1209
CASH RATIO	11.816667	9.68	33.74634667	5.80916
ROCE	49.225	48.785	613.06255	24.7601
ROE	13.86	14.91	113.48752	10.6531
ROA	2.9866667	2.665	8.369626667	2.89303
CAR	15.578333	16.9	32.19317667	5.6739
DEBT RATIO	81.991667	81.1	14.25345667	3.77538
DEBT TO EQUITY	5.0916667	4.235	6.165656667	2.48307
CAPITAL GEARING	1.2733333	0.37	6.519266667	2.55329
ASSET QUALITY	1.1994943	1.75	1.438786667	1.19949

(Source: Researchers' field work May, 2019)

The graphical representation below shows the trends of the ratios across the period if study for Beige bank.
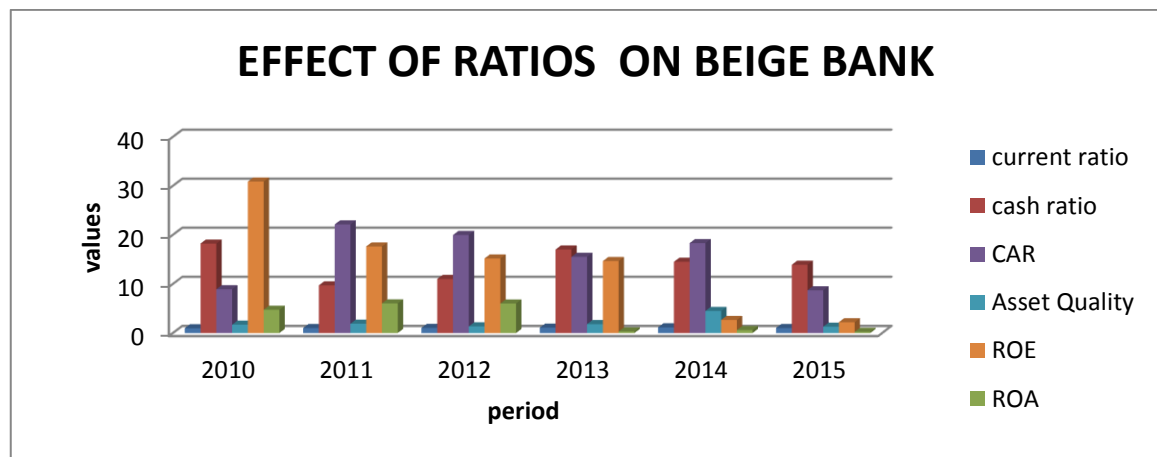
Figure 4.2 Effects of Ratios on Beige bank from 2010 to 2015 (Source: Researchers' field work May, 2019)

Level of liquidity was very low. CAR and ROE values were high but decreased across the years. 2015 saw the least performance of all these factors.

4.3.3 COMPARATIVE ANALYSIS OF RATIOS

CURRENT RATIO:

Current ratio measure the liquidity of a bank. GCB a surviving bank amongst the three under study has an increasing ratio and above one. This explains that GCB is more liquid than both UT Bank and Beige Bank. Comparatively, the lower your liquidity, the more susceptible you are to failure. Liquidity can be a determinant of bank failure.
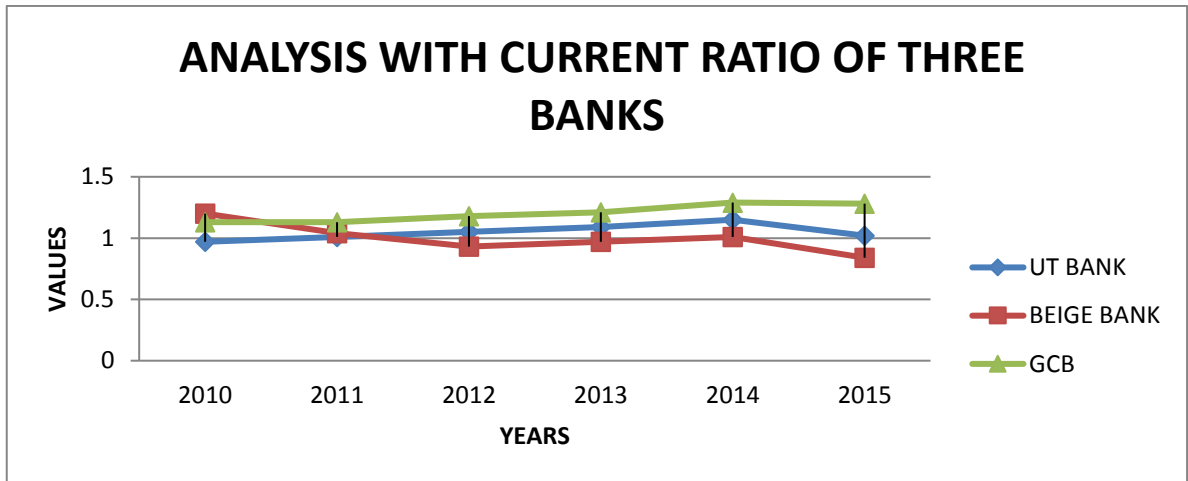
ANALYSIS WITH CURRENT RATIO OF THREE BANKS

Figure 4.3 Graphical representation of current ratio of UT, Beige and GCB from 2010 to 2015 (Source: Researchers' field work May, 2019)

CASH RATIO:

The cash ratio as displayed in the graph below shows that again GCB is the most liquid amongst the three. GCB has more cash to pay more liabilities averagely than all the three banks. This affirms the fact that the lower your cash ratio, the lower your liquidity, hence the more likely you are to fail.
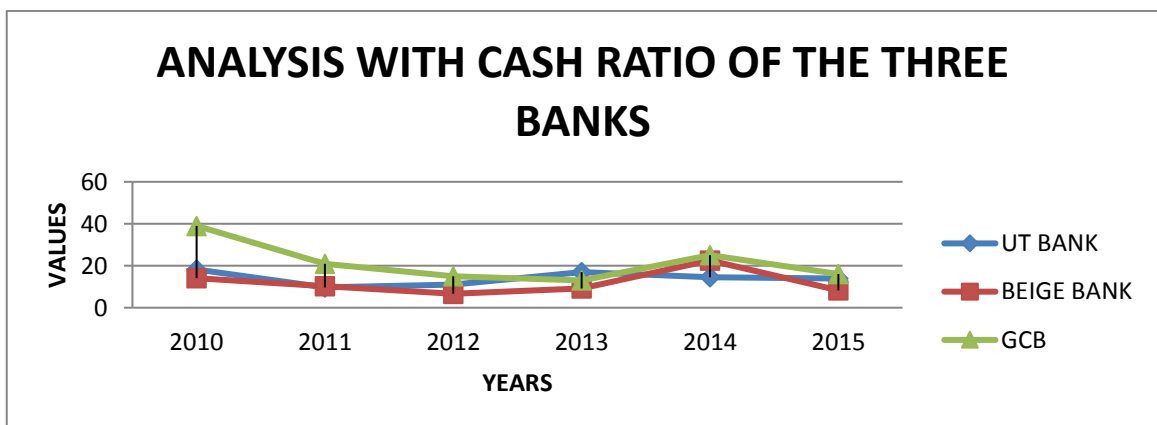

ANALYSIS WITH CASH RATIO OF THE THREE BANKS

Figure 4.4 Graphical representation of cash ratio of UT, Beige and GCB from 2010 to 2015 (Source: Researchers' field work May, 2019)

CAPITAL ADEQUACY RATIO:

This ratio measures the financial strength of a bank by using its capital assets. This is used to protect depositors and promote stability and efficiency of the financial systems. Comparatively, GCB averagely met the requirement hence being the most stable amongst the three banks. Regulators make sure capital requirements are met (GHC 400'000'000.00 currently) to ensure stability in the industry.

Figure 4.5 Graphical representation of CAR of UT, Beige and GCB from 2010 to 2015 (Source: Researchers' field work May, 2019)

RETURN ON EQUITY (ROE):

This provides a single metric for returns made by the bank's equity. A steady or substantial increase in ROE value means the company or bank is good in making significant returns because it knows how to reinvest its earnings wisely to increase productivity and profits. Comparatively, GCB has the highest value meaning the company is profitable. Likewise a low in ROE values signifies low profitability hence the bank will be near collapse.
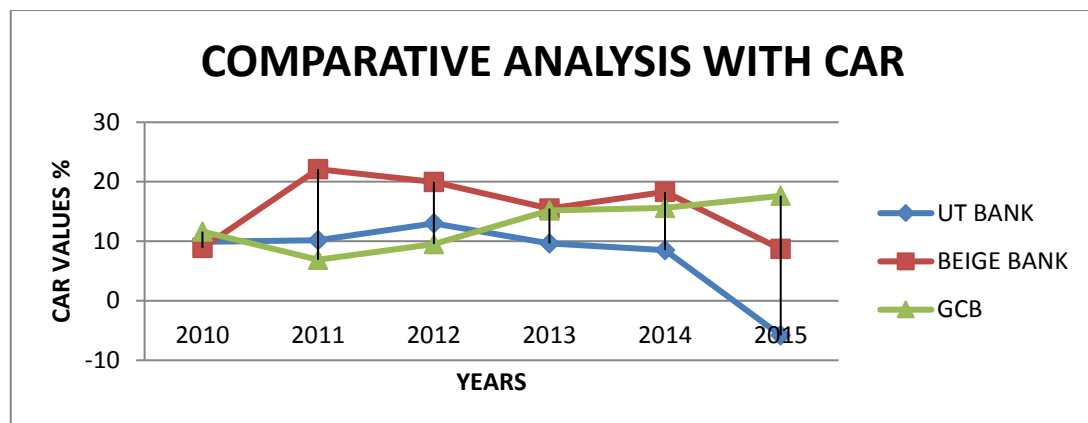
Figure 4.6 Graphical representation of ROE of UT, Beige and GCB from 2010 to 2015

(Source: Researchers' field work May, 2019)

RETURN ON CAPITAL EMPLOYED (ROCE):

This also has the same effect as ROE just that this assumes the use of capital employed.

Higher value signifies high profitability. Some banks will have a low ROCE but it does

not mean it is very profitable. There might be a huge capital base which has not been

employed. Comparatively GCB had a low ROCE but yet a surviving bank. This is possible

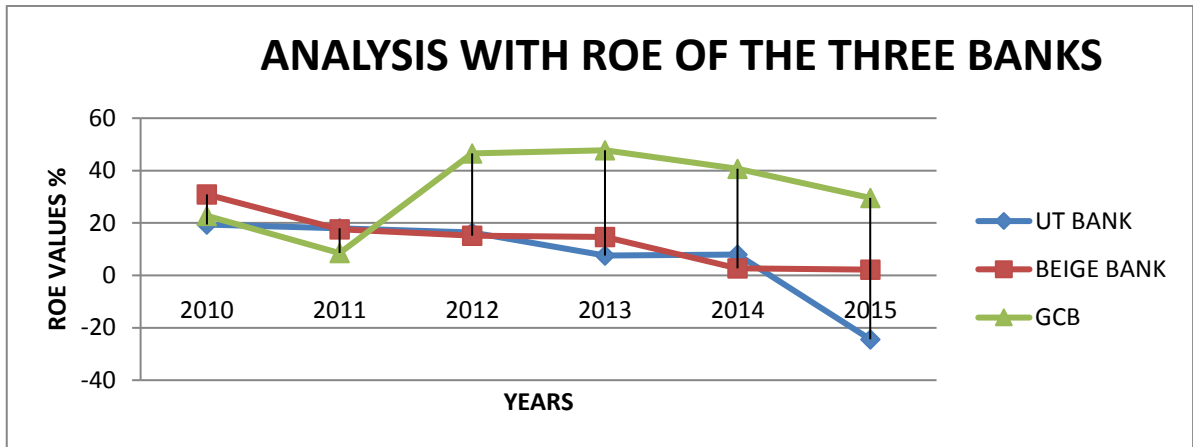because ROCE is just a part performance of financial prowess.
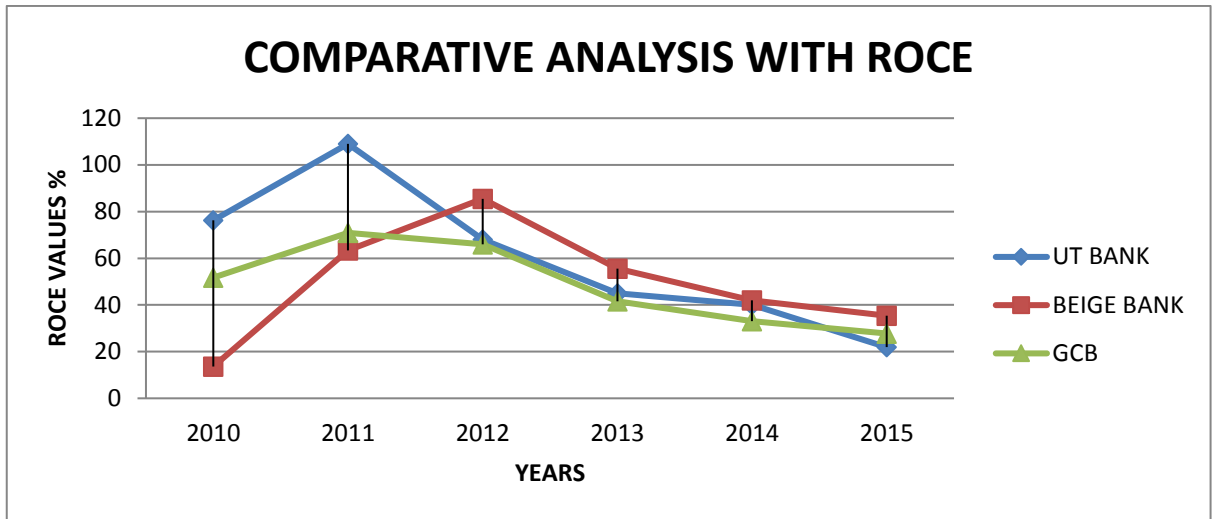
Figure 4.7 Graphical representation of ROCE of UT, Beige and GCB from 2010 to 2015

(Source: Researchers' field work May, 2019)

4.4 Regression Analysis

Predictive model for the failure of banks using financial ratios as determinants was done using excel. Multiple analysis was done through excel to relate liquidity to capital adequacy ratio, return on equity and asset quality.

$$Y = C + b_1 X_1 + b_2 X_2 + \ldots\ldots + b_n X_n + e$$

Where Y is the dependent variable which is liquidity (cash ratio)

X_1 is idependent variable ROE

X_2 is independent variable CAR

X_3 is independent variable Asset quality

e is the error.

ROE (representing Profitability of a bank), CAR (representing Capital), and Asset quality (representing Size of the bank) were our independent variables as shown above. Liquidity in a bank is largely dependent on these factors (X_1, X_2, and X_3).

The p-values of the independent variables are supposed to be less than 0.05 to be very significant.

YEAR	CURRENT RATIO	CAR	ROE	ASSET QUALITY
2010	18.2	9.89	19.39	13.62
2011	9.7	10.2	17.96	63.3
2012	11	13.01	16.35	85.5
2013	17	9.63	7.6	55.53
2014	14.5	8.5	7.9	42.04
2015	13.9	-5.81	-24.4	35.36

SUMMARY OUTPUT

Regression Statistics

Multiple R	0.946494
R Square	0.895851
Adjusted R Square	0.739627
Standard Error	1.682723
Observations	6

ANOVA

	df	SS	MS	F	Significance F
Regression	3	48.71189	16.2373	5.734406	0.032083
Residual	2	5.663114	2.831557		
Total	5	54.375			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	15.80462	2.051698	7.703192	0.016438	6.976879	24.63237	6.976879	24.63237
X Variable 1	1.429043	0.563385	2.536533	0.126579	-0.99501	3.853092	-0.99501	3.853092
X Variable 2	-0.51231	0.21647	-2.36665	0.141584	-1.4437	0.419087	-1.4437	0.419087
X Variable 3	-0.1777	0.043162	-4.11701	0.034242	-0.36341	0.008013	-0.36341	0.008013

The summary results output above shows that all the three independent variable collectively accounted for 89% of variance of the dependent variable. The significance figure from the Anova table is 0.032 which is less than 0.05 hence the variance is very significant. This proves that collectively, the variance on the dependent variable from the independent variable is significant. In summary we can say that the overall regression model is significant;

$$F (3, 2) = 5.73 \; p < 0.05, \; R^2 = 0.89$$

From the results above, the P values of X1 and X2 are above the significance level of 0.05. There are p-values were 0.126579 and 0.14584 which renders the coefficients highly non-significant.

This tells us that from our data collected, liquidity is not significantly dependent on CAR and ROE but highly dependent on Asset Quality (0.03).

Y was further regressed against X3 (which had a p-value of 0.03) as shown below:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.740164
R Square	0.547843
Adjusted R Square	0.434803
Standard Error	2.479216
Observations	6

ANOVA

	df	SS	MS	F	Significance F
Regression	1	29.78895	29.78895	4.84648	0.009251
Residual	4	24.58605	6.146512		
Total	5	54.375			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	18.90262	2.425526	7.793202	0.001462	12.16828	25.63696	12.16828	25.63696
X Variable 1	-0.09858	0.044779	-2.20147	0.042501	-0.22291	0.025747	-0.22291	0.025747

The p-value of the table above for variable X3 has a value of 0.042501 which indicate high significance.

This means that liquidity is highly dependent on asset quality (size of the bank). The predicted model for the determinants of bank failure with respect to financial ratios will be;

$$Y = 18.90 - 0.09 \ X_3$$

During our qualitative analysis in table 4.7, size was the main determinant of failure of banks by correspondent. This means liquidity is highly dependent on banks as determined quantitatively through the predictive model because size accounted for 54.7% of variance on liquidity a significance of 0.009.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes all findings of the research, draws conclusions and gives policy recommendations and scope for further studies. Recommendations given here are specifically aimed hedging against bank failure based on identified causes in the country.

5.2 Summary

The study investigated the determinants of bank failures in Ghana. Empirical findings supported the study hypothesis that bank failure has a significant relationship with; capital adequacy, asset quality, returns on assets, total assets, total equity, total loans and earnings after tax. In Chapter Four research finding revealed that changes in financial ratios using the CAMEL model influence the possibility of bank failure by greater magnitude.

5.3 Conclusions

Based on analyse done in chapter four, the following conclusions were made on causes of bank failures in Ghana. The study concludes that:

- Consumer trust and confidence are significant determinant of bank failure in Ghana. This was statistically proved by the significance of the ROA and Asset ratios and this is true considering the transitory nature of deposits that is characterising the Ghanaian banking sector.

- Macroeconomic environment affects banks' survival equation along with bank specific variables.

- Ghanaian banks that are operating undercapitalised and are also characterised by poor liquidity positions and are also prone to failure

- Based on magnitudes of each of the proxies of causes of bank failures, liquidity, profitability and capital indicators are reliable predictors of bank failures in Ghana. Liquidity was identified as the most prominent bank related cause of failure. This was shown by higher coefficient associated with ROA and ROCE ratios. Higher coefficient implied that banks with low Debt ratio and high Loan to asset have weak liquidity power. Also banks with low liquidity thresholds are more likely to fail than those with higher margins. Profitability and capitalisation were also identified as relevant determinants of bank failures. Banks with low capital have higher chance of failure relative to those with high capital holdings. Among bank fundamentals, size of the banks also plays a key role in determining an impending failure. According to empirical findings, small banks are more likely to fail than bigger banks. Banks expenditure and revenue generation impacts on the rating of managerial efficiency.

- Large banks are more likely to fail regardless of their size due higher levels of loans as a proportion of bank assets. Banks such as UT bank and Beige have higher LTA ratios which also characterised some failed banks as Uni bank and Royal bank. Off-balance sheet activities determine the riskiness of bank assets.

5.4 Recommendations

Based on the finding of this study, the following recommendations are provided in the paragraphs below for policy direction.

Bank capitalization should be encouraged so that bank performance can be enhanced. Banks should endeavour to retain earnings to boost up capital rather than paying exorbitant bonuses. A well- capitalized banking system will ensure financial stability and make the industry more resilient against external shocks and risk. This is because well capitalized banks have lower financial risk and thus are more likely to survive

financial crisis. The study of Flamini *et al.* (2009) on the determinants of bank profitability, gives some support to a policy of imposing higher capital requirements in the Sub-Saharan region in order to strengthen financial stability. In line with this, the recapitalization requirement by the Central Bank is appropriate.

Efficient and effective liquidity management should be adopted by bank managers to ensure that banks do not become insolvent. Since banks are less profitable when less liquid, bank managers should be encouraged to invest in more liquid assets. This will not only improve bank profitability but it will also enable banks meet their short term obligations as they fall due. It is possible that liquid bank assets are more profitable due of some market inefficiency. Further empirical study will be required to establish this.

Bank managers and credit officers must adhere to prudential guidelines in the administration of credit. Banks must be encouraged to establish an appropriate credit risk environment, operate under a sound credit-granting process, strictly adhering to know your customer (KYC) norms, maintain an appropriate credit administration, measurement and monitoring process (both on-site and off-site supervision) and ensure adequate controls over credit risk. These practices should also be applied in conjunction with sound banking supervision practices related to the assessment of asset quality, the adequacy of provisions and reserves, and the disclosure of credit risk. The establishment of the Collateral Security by the Central Bank is appropriate as it ensures the integrity of the collateral instruments and transparency in credit administration process.

5.5 Suggestions for Future Studies

Future researchers must consider such issues as political interference, loan loss provisions and ownership and capital structures of banks. These factors need to be considered because the researchers believes that bank failure are only occurring to locally owned banks, thus there is need to identify forces that are making foreign bank resilient to failures.

REFERENCE

Adeyemi, B. (2011) 'Bank failures in Nigeria: A consequence of capital inadequacy, lack of transparency and nonperforming loans? *Journal of banks and bank systems,* 6(1), p 99.

Allen, F, and Gale, D. (2004). "Financial Fragility, Liquidity, and Asset Prices," *Journal of the European Economic Association,*2(1), p 20-23

Andersen, H., 2008. Failure Prediction of Norwegian Banks; A Logit Approach. *Working Paper*, Norges Bank. P 6-12 Babanskiy (2012); "Determinants of bank failures: The case of Russia"; Umea University., http://www.essays.se, p 29-32

Arena, M(2008), Bank Failures and Bank Fundamentals: A Comparative Analysis of Latin America and East Asia during the Nineties using Bank Level Data.*Journal of Banking and Finance* 32(9): p67-74.

Bagatiuk, O. And Dzhamalova, V. (2009) "The determinants of bank failure: the evidence from Ukraine and Russia", School of economics and management: Lund university, seminar 4 June 2001, p24-25

Bhattacharya, s. and Thakor, A.V. (1993) "Contemporary banking theory".*Journal of Financial Intermediation*. 3(2), p 26.

Bouvatier, V., Brei, M., and Yang, X. (2013) "The determinants of bank failures in United States: Revised", BIS Working Paper No. 357, p 26.

Calomiris, Charles W., and Joseph R. Mason (2003). "Fundamentals, Panics and Bank Distress During the Depression," (with Joseph Mason) *American Economic Review* 93, 1615-47.

Calomiris, W.C, (2007) , " Bank failures in theory and history: The great depression and other contagious events", *National Bureau of economic research*, *Working Paper* 13597,

p526.Availableat:http://www.homepage.ntu.edu.tw/~nankuang/Bank%20Failures%20in%20Theory %20and%20History.pdf

International Monetary Fund. Tannar Archibald A. (1990) *Financial Sector Restructuring the Ghana Experience* -Paper presented at World Bank Federal Reserve Board and Bank of Ghana Seminar for Bank Supervisors Feb 15-18 1990 Accra. *The Post* on Sunday, Kenya Finance Journal. (Nov 29- Dec 5, 1998) *The World Bank Economic Memorandum on Argentina* (1984), Washington:

Rojas-Suarez, L., 1998. *Early Warning Indicators of Banking Crises:* What works for Emerging Markets? mimeo, February.

Rose S. P. (1991) "*Commercial Bank Management*", Boston: Richard D. IRWIN.Inc.

Senbet W.L.; (1998) "*Global Financial Crisis: Implications for Africa*" University of Maryland. The Robert H. Smith School of Business. College Park. Sheng A., (1991) *"The Art o f Bank Restructuring*", Economic Development Institute, Working Paper, World Bank, Washington DC.

Sheng, A., 1996. *Bank Restructuring-Lessons from the 1980s.* World Bank: Washington, D.C.

Sundararajan V. and Balino J. (1991) "*Banking Crises: Cases and Issues*", Washington D.C.:

Waciira W. (1999), *"An Analysis of the Relationship Between Liquidity and Macroeconomic Indicators:* An Inter Industry Comparison" Unpublished MBA Project, University of Nairobi.

World Bank. Vittas D. (1998) *"The Role of Non-Financial Intermediary (With particular reference to Egypt":* World Bank Policy Research Working paper 1892. Wheelock, D.C., Wilson, P.W., 2000. *Why do banks Disappear? The Determinants of U.S. Bank Failures and Acquisitions.* The Review of Economic and Statistics 82:1, 127-138.

APPENDIX A: QUESTIONNAIRE

CHRISTIAN SERVICE UNIVERSITY COLLEGE

SCHOOL OF BUSINESS

(BBA BUSINESS ADMINISTRATION -FINANCE OPTION)

QUESTIONNAIRE

The purpose of this study is to analyse determinants of bank failures in Ghana. The rational behind this is purely academic and that any information so gathered will be given strict confidentiality.

Please provide the answers by ticking where applicable.

SECTION A: **General Information**

1. Sex ☐ Male ☐ Female

2. Age range (Years) ☐ 18 - 27 ☐ 28 - 37 ☐ 38 - 47

   ☐ 48 - 57 ☐ > 58

3. Marital Status ☐ Single ☐ Married

4. Do you bank? ☐ Yes ☐ No

5. Banking experience (years) ☐ < 1 ☐ 1 - 10 ☐ 11 - 20

☐ 21 - 30 ☐ > 30

6. What informs you about your choice of bank? ☐ Size ☐ Management ☐ Liquidity

☐ Loans ☐ Assets

7. What informs you about bank's profitability? ☐ Size ☐ Management ☐ Liquidity

☐ Loans ☐ Assets

8. What informs you about bank's failure? ☐ Size ☐ Management ☐ Liquidity

☐ Loans ☐ Assets

9. What means do you get information about bank performance? ☐ Alerts ☐ Media ☐ Financial Statement

Customers ☐   None ☐

SECTION B

10. Please indicate the extent to which you agree with the following statements on

the effect of CORPORATE GOVERNANCE

STATEMENT	SA	A	N / A	DA	SDA
Violation of Banking Act and failure to conduct business in a sound administrative and accounting principles and procedures					
Failure to adhere to risk management practices					
Abuse of corporate structure, high level of non-performing insider and related party exposures					
Poor board and senior management oversight					
Lavish personal lives of bank directors leading to serious abuse of depositors funds					

11. Please indicate the extent to which you agree with the following statements on

the effect of CAPITAL ADEQUACY RATIO

STATEMENT	S A	A	N / A	DA	SD A
Inability to meet capital requirements by BOG					
Low levels of safety and insurance of customers deposit					
Delay of customers to have access to deposits demands by banks can be a determinant of bank failure					
Inability of bank to meet depositors demands due to NPLs					

12. Please indicate the extent to which you agree with the following statements on the effect of LIQUIDITY

STATEMENT	SA	A	N / A	DA	SDA
Delay in paying customers demand					
Failure in giving out loan advances					
A bank which meets borrowers timely is profitable					
Low profitability leads to bank failure					

13. Please indicate the extent to which you agree with the following statements on the effect of SIZE

STATEMENT	SA	A	N/A	DA	SDA
Availability of more branches of a bank can be used to determine its profitability					
Closing of one or more branches of a bank can be used to determine its failure					
Size of bank's asset can influence the probability of bank failure					

14. Does liquidity have a relationship with capital adequacy, management, size, earnings? ☐ yes ☐ no

a. If YES please explain …………………………………………………………

....

b. If NO please explain …………………………...

....

KEY TO NOTE:

SA = STRONGLY AGREE

A = AGREE

N = NEITHER AGREE NOR AGREE

DA = DISAGREE

SDA = STRONGLY DISAGREE

THANK YOU.