UNIVERSITY OF CAPE COAST

CORPORATE FAILURE PREDICTION ON FIRM PERFORMANCE OF

LISTED BANKS ON THE GHANA STOCK EXCHANGE

BY

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my original research and that no part of it has been presented for another degree at this university or elsewhere.
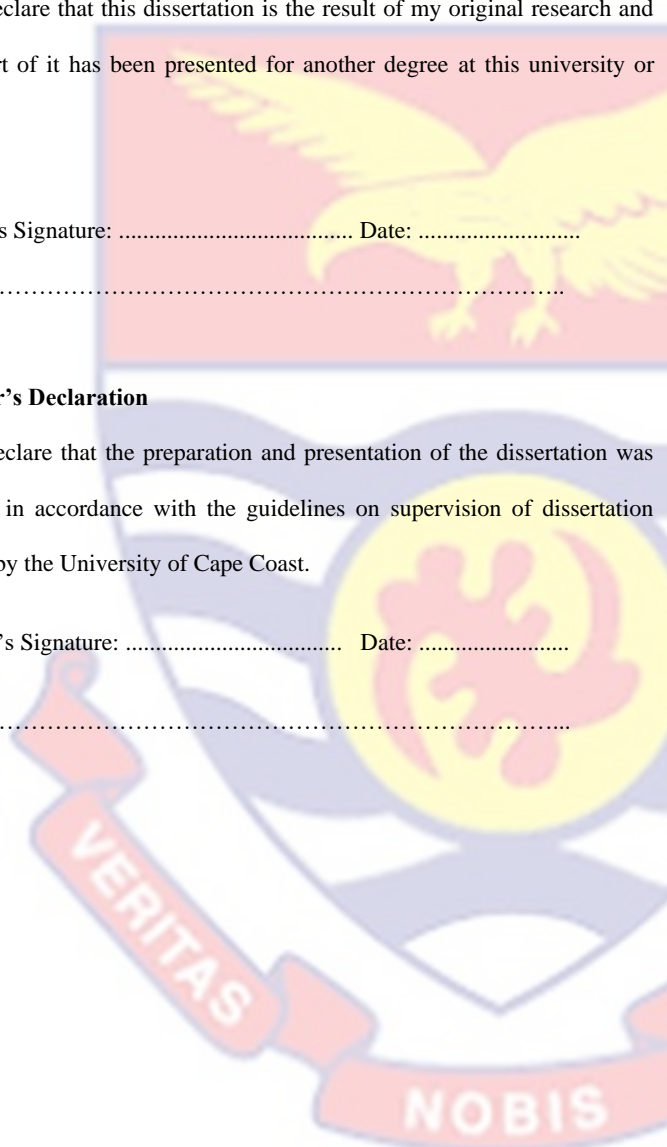
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Name……………………………………………………………..

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation was supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

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ABSTRACT

The study discussed the concept of corporate failures in the context of firms listed on the Ghana Stock Exchange. The commercial banks listed on the stock exchange were sampled using the purposive sampling approach. Secondary data in the banks' annual reports were gathered for the analyses. The data used for the study span was from 2010 to 2019. The study's goal was to evaluate the banks' performance and their level of distress. The Bankometer was used to assess the distress level, while Return on Assets was used to assess the performance. Descriptive analysis was conducted on the data to describe the variables used in the study. Correlation analysis was used to determine the link between the variables. The study revealed that the banks' return on assets ranged from as low as -4 percent to 9 percent, with an average of 4 percent. The correlation analysis revealed a statistically significant positive relationship between capital adequacy and returns on assets. The banks are financially sound as they recorded a minimum S-score of 98 percent. However, non-performing loans and the cost to income ratio remained high and, in most cases, were above the required maximum as recommended by IMF (2000), as high as 49 percent for non-performing loans and 138 percent for the cost to income ratio. Despite the sound performance of the banks, a conscious effort should be made by management of these banks to control the high rate of non-performing loans and reduce the high operational costs.

KEYWORDS

Bankometer

Commercial Banks

Corporate Failure

Financial Performance

Prediction

Stock Exchange

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DEDICATION

To my children; Matilda, Perfect, and Samuel.

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LIST OF ACRONYMS

CA   Capital to Asset Ratio

CAR   Capital Adequacy Ratio

CBR   Case-Based Reasoning

CI   Cost to Income Ratio

CUSUM   Cumulative Summer

EA   Equity to Asset Ratio

GA   Genetic Algorithm

IMF   International Monetary Fund

LA   Loans to Assets

LPM   Linear Probability Models

MDA   Multiple Discriminant Analysis

NN   Neural Networks

NPL   Non-Performing Loan

OLS   Ordinary Least Squares

RS   Rough Set

CHAPTER ONE

INTRODUCTION

The primary objective of every business establishment and corporate firms is to enhance their owners' value and wealth and, to an extent, stakeholders. There have been instances several firms have failed to meet this prime objective resulting in investors losing huge sums of money (Kihoooto, Omagwa, Ronald &Wachira,2016). The outcome of such corporate failures would not only affect the owners or shareholders of the company. It would affect stakeholders to varying degrees. This study assessed the performance of commercial banks listed on the Ghana Stock Exchange and used the bankometer to assess their distress level. The financial sector was one of the industries pivotal to the growth and well-being of every economy. Following this, an economy could not afford to experience a shock in industry, so it would be prudent to constantly and frequently assess the health status of these firms.

Background to the Study

The health status of business establishments would continue to be a subject of discussion so long as stakeholders have an interest in such establishments. Irrespective of the sector or industry, ill financial health status results in a fatal loss to investors, other stakeholders, and the economy (Eyo & Mbat, 2013). There have been many instances or cases of corporate failures, with firms being labeled bankrupt and economies crippled. Such cases cost investors huge sums of investments, and most economies are yet to recover from such shocks.

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Both the "Ants" and "Giants" in any industry are prone to such failures unless necessary policies and measures are put in place to ensure the sound financial health of the firm (Agbasonu & Suagwu, 2015).

Any company strategy that aims at meeting market demand is to produce a profit. On the other hand, many corporations have collapsed due to poor or non-existent strategies. This failure is linked to weak and inefficient management. A corporation's capacity to properly employ financial resources might also cause it to fail. This might result in a liquidity problem that could be traced back to several parts of a company's activities. When a corporate executive is unable to make successful resource mobilisation and allocation decisions, the end consequence would be low returns and, as a result, the inability to pay dividends to shareholders after a financial year.

In many cases, defunct business organisations might continue to operate without shareholders' awareness for a long period. This could be traced back to various types of window dressing implemented by management and the board of directors with the help of external auditors (Eyo & Mbat, 2013). External auditors are ideally positioned to alert management on financial accounting and management issues. They fail as external auditors if they do not do so. Enron, a company based in the United States, is a good example (Kihooto, Omagwa, Ronald &Wachira, 2016). Whatever window dressing was done to the company's accounts, an unmitigated failure that was obvious to everyone was on the horizon. This was a situation where a company was technically insolvent. In addition to this was the collapse of American International Group Inc., WorldCom., etc. These were international giants in the business world, but they ended up in the drain at the cost of

investors. Financially distressed firms had challenges with performance or profitability (Tan, 2012). This implies that economies' success, growth, or well-being depends on the firms' financial soundness in that economy.

The numerous sectors or industries in an economy work hand-in-hand to support economic growth and development. The financial sector or industry plays a pivotal role in all the other sectors as it operates as the market for demand and supply of financial resources. Persons or institutions with excess funds lodge their funds as deposits, and persons who need funds borrow or acquire an appropriate instrument (financial institutions) as loans or borrowing. What happens if the pivot is broken down? Everything holding on to it would also collapse. This implies that financial institutions' financial health considerably influences the economy (Mwawughanga & Ochiri, 2017).

The instance of corporate failure was not news in the Ghanaian economy as there had been a number of them, some privately owned and others state-owned. According to Addo and Nipah (2006), from 2001 to 2005 alone, Juapong Textiles Ltd., Ghana Airways Ltd., and Divine Gold Mines all failed. The net assets of these firms summed up to $38.2 million, which was quite a considerable sum. The banking sector in recent times experienced a hard shake-up when the minimum paid-up capital was revised upwards to Four Hundred Million Ghana Cedis (GHS 400 million). This led to some commercial banks being downgraded to lower levels in the sector (such as GN Bank to a Savings and Loans Unit).

Some of the banks were merged to create a new Bank, Consolidated Bank, Ghana (in the case of Construction Bank, Beige Bank, Royal Bank, Unibank, and Sovereign Bank). In August 2017, The Central Bank of Ghana

gave GCB Bank Ltd the go-ahead to acquire two banks (UT Bank and Capital Bank) due to their severe ill financial health (Capital Impairment) (Nyabor, 2018).

This made measuring the health status of financial institutions (especially commercial banks) a significant task that corporate managers, investors in the sector, depositors, and other stakeholders needed to focus on. The issues stated, including many others, have stimulated concerns of investors, stakeholders, policymakers, etc. To this effect, it is necessary to have a predictive model which would help detect the signs of corporate failures amongst these institutions (Financial institutions) and appropriate measures to be implemented for the well-being of investors and the growth of the economy (Glautier & Underwood, 2001).

Statement of the Problem

The role the financial sector, especially commercial banks, played in the Ghanaian economy could not be overlooked in the country's development. The impact of the recent financial sector clean-up made it evident that a weak sector was more deadly than the COVID-19 pandemic the world is now facing. The subsequent collapse of firms in the sector would cause investors and stakeholders to lose trust in the sector. There would be panic withdrawals which would eventually result in the total collapse of the sector. It is, therefore, necessary to know the health status of the firms and be able to detect signs of corporate failure in time to take the necessary steps to get them back to sound financial status. Considering the effects of additional corporate failures on economic growth and development, the performance of these banks

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listed on the Ghana Stock Exchange was assessed together with their distress level to ascertain their soundness for prudent measures to be taken.

Purpose of the Study

This study was carried out to inform investors, policymakers, and other relevant stakeholders about the financial health status of the Commercial banks listed on the GSE from 2010 to 2019. By the use of current data available, signs of corporate ill health or otherwise could be detected in time to prevent some of these institutions from joining the others in the drain.

Research Objectives

The study's goal was to evaluate and predict financial failure of commercial banks listed on the Ghana Stock Exchange. The Specific objectives were stated as to:

1. Assess the distress level of banks listed on the stock exchange for the 2010 to 2019 period using the Bankometer model.

2. Assess the financial performance of banks listed on the Ghana Stock Exchange from 2010 to 2019 using the Return on Asset.

3. Assess the impact of a firm's distress level on the performance of firms listed on the Ghana stock exchange from 2010 to 2019.

Research Questions

1. What is the distress level of banks listed on the Ghana Stock Exchange from 2010 to 2019 using the Bankometer model?

2. What is the level of the financial performance of banks listed on the Ghana Stock Exchange for the 2010 to 2019 period using the Return on Asset?

3. What is the impact of a firm's distress level on the performance of listed banks in Ghana?

Significance of the Study

This study updated the catalogue of empirical results on the performance and distress status of commercial banks listed on the Ghanaian stock market. It assists investors, policymakers, regulatory bodies, and other relevant stakeholders in the financial sector in making informed decisions. Furthermore, the decision would be made by the management of the banks on ways to manage the distress level of firms based on the various factors that can influence the distress level of firms. Finally, the depositors would be abreast with the various firms' distress levels, which would enhance their confidence in the banks with lower distress levels.

Limitations of the Study

The study focused on commercial banks listed on the Ghana Stock Exchange. They were: Access Bank Ghana Limited, Cal Bank Limited, Ecobank Ghana Limited, Standard Chartered Bank Limited, Societe Generale Ghana, Agriculture Development Bank, GCB Bank, and Republic Bank, which provided data from 2010 to 2019. Choosing these firms for the study was due to the information availability and accessibility for analysis.

Despite the limited scope of this study based on a few banks, the researcher strived to overcome this challenge by analysing the banking firms comprehensively. Since banks had similar characterisitics and exposures, inferences from the analysis could be made for the other firms in the industry from which generalisations could be made.

Organisation of the Study

        The study was organised into five chapters. Chapter One introduced the study and discussed the statement of the problem and the study's objectives. Chapter Two identified and explored the literature on distress analysis and firms' performance in Ghana. The Theoretical and Conceptual frameworks were also discussed in this chapter. Chapter Three explained how the study was conducted and how data were analysed. The results from the studies and discussions were presented in Chapter Four, while Chapter Five concluded the research and recommendations made.
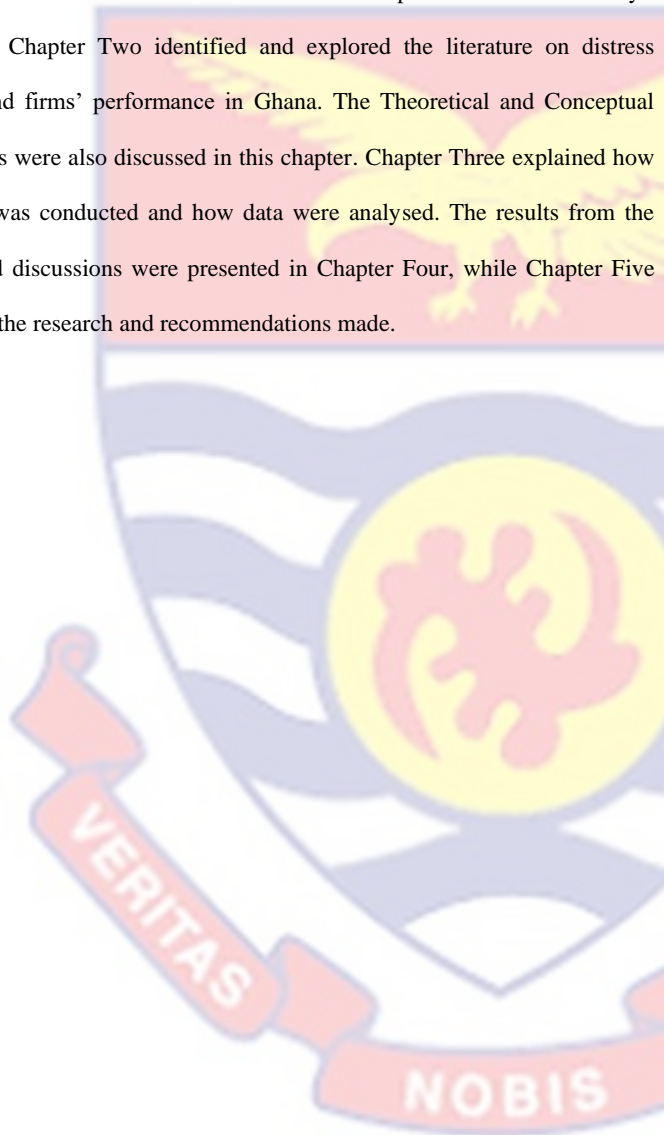
CHAPTER TWO

LITERATURE REVIEW

Introduction

Under this section, the study reviewed some theories and empirical evidence related to distress level and firm performance. Due to this, a review was done on corporate failure and the financial performance of the Ghanaian Banking Industry. These reviews provided a basis for the research gap and the empirical models used to predict the distress level of listed banks.

Theoretical Review

Corporate failure has been an enemy every business establishment tries to avoid. However, it is complicated as several factors, signs, and indicators have resulted in that state. Corporate failure is an end, not a means to an end. Several theories attempted to explain why it is not the means to an end. These theories cut across industries and sectors, while some are specific to some industries. The banking industry would differ from other industries regarding operations and trading matters. However, they are businesses whose primary objective is to maximise the wealth of their owners or shareholders (for listed firms). This means they exhibit similar characteristics somehow with other business establishments with the same objective (maximising shareholders' wealth).

Commercial loan theory

The commercial loan theory was developed in the 18th century by the Father of Economics, Adams Smith (Mwawughanga & Ochiri, 2017). The theory provided a foundation upon which most commercial banks operate.

The theory states that commercial banks must provide short-term liquidation loans to meet their working capital requirement. Banks have to use the depositors' money to generate returns higher than they offered them in the shortest possible time. This means that commercial banks' ability to meet their short-term financial obligation of depositors' money (liquidity) was assured so long as short-term loans were realised in the ordinary course of business. However, in times of economic challenges like depression, the realisation of loans, like any other firm's working capital management, is crucial in the survival of financial institutions such as banks. Banks should always maintain a bigger share of less risky liquid assets in their overall assets to ensure that they can satisfy their financial and operational responsibilities on time (Filomena, Grazina, Jasienei &Jonas, 2012).

Going by this theory, commercial banks ought to be able to recover loans within the timeframe allocated to the beneficiary of the loan. That is a practice that defies the assumptions of the commercial loan theory and may result in the bank having challenges with meeting their obligations to depositors as and when they fall due. For example, a depositor has an average deposit day of 6 months (182 days) to keep with the bank. The bank then takes this money and gives it out as a loan expecting borrowers to pay within four months so that the depositor can access their money. Delaying in loan recovery may put the banks in a tight corner where they would not be able to release the depositor's money as and when the depositors require them. More of these isolated instances may cripple the bank and make them insolvent in the long run.

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Pecking order theory

There are different categories, or sources firms could be financed. It could be either debt or equity or internal or external funding sources. According to the pecking order hypothesis (equity and debt), firms prefer internal sources of funding (retained earnings) to external sources of financing. If for some reason, there were no internal funds available, the firm would prefer debt financing to equity financing. In other words, equity finance seems to be the last resort for business funding, according to the theory. Donaldson initially proposed this theory in 1961 and was subsequently made well-known by Stewart Myers (Mwawughanga & Ochiri, 2017). Changes in retained earnings, a firm's features, and managerial discretion were linked (Kayhan, 2007).

Unlike other theories on the capital structure that used an optimal finance composition as a starting point, the pecking order theory focuses on using as many internal funds (retained earnings or excess liquid assets) as available to fund its activities. This theory argued on the empirical fact which showed firms' taste for internal sources of finance against external finance. In other words, they consider the internal funds less expensive than external funds. In summary, firms peck in the following order: internal funds, debt finance, and equity or share finance. These firms try as much as possible to avoid external equity financing due to the cost (financial and non-financial) associated with it. Investors tend to discount the firm's share price as rational as they may be when it issues new equity. This is because investors may suspect that the value of the shares has been overpriced.

This discourages them from buying the shares and hence a fall in the price (Brealey, Marcus & Myers, 2003).

When there are no investment opportunities for firms (growth, expansion, etc.), they retain profits and build up as much as possible to prevent going to external sources for funds in the future. They would only pay a small portion of the profit as a dividend and pile up the rest. The market-to-book ratio is a technique for appraising investment prospects, according to Mwawughanga and Ochiri (2017). As a result, the link between the market-to-book ratio and a company's financial structure is extremely difficult to reconcile with this static model (pecking order model). The model indicates that a firm's leverage would increase in periods where there are high investment opportunities. This trend would continue to a high previous market-to-book ratio corresponding to increased investment, despite empirical evidence that suggests a decrease in leverage (Mwawughanga & Ochiri, 2017).

Going by this theory, retained earnings could significantly impact a firms' operational capacities (negatively or positively). A firm's strength could be assessed based on its retained profits. If the firm were not making a profit, it would not have any (profit) to pile. It might even end up using what it had already gathered; besides, there is a significant impact on cash holdings by profitability and leverage under the pecking order theory (Al-Najjar & Belghitar, 2011)

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Organisational theory

Every organisation is regarded as an independent legal entity by its owners. This means that the company could sue and be sued, and so could the managers, but separately. Usually, owners would not have what it takes (skills, knowledge, experience, etc.) to run the firm's affairs on their own, so they have to get management in place to take charge of the daily running of the firm. For publicly listed companies, it would be usually required such firms to have another 'layer of management' who would be between the managers and the owners, known as the board. This board is charged with governance in the firm's best interest and would be rewarded financially and otherwise. They implement policies and establish systems to check on management's activities and bring more ideas on board to ensure the growth and expansion of the business. This, in other terms, is known as Corporate Governance (Kingsley, 2011).

The separation of ownership from management will give rise to the need for a robust system that would guide the governance of firms (especially publicly listed ones) to serve the interest of all stakeholders. Lapses in their mandate have resulted in several corporate failures around the world. Studies have shown that an entity's performance (listed companies) depends on those charged with governance and the firm's management (Anisom-Yaansah, Oware & Samanhyia, 2016). This implies that a firm may run into distress or bankruptcy simply because of a lack of cooperation between the two layers seeking to maximise shareholders' wealth. This showed how defective policies could push a firm down the drain of collapse.

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According to Sanusi (2002), disclosure and openness were important pillars of corporate governance because they gave all stakeholders the information, they needed to determine whether or not their interests were being met. Transparency and disclosure are crucial components of the supervisory process since they help maintain market discipline in the banking industry. The information must be available, timely, relevant, and qualitative for transparency to be meaningful. Transparency and disclosure of information are critical attributes of good corporate governance. According to Anameje (2007), the banks must cultivate with renewed zeal to provide stakeholders with the needed information to assess whether their interests are being protected.

According to Sanusi (2002), a lack of openness jeopardises sound corporate governance ethics and the possibility of an efficient contingency plan for addressing systemic crises. According to Anya (2003,) a lack of transparency has disguised numerous financial and economic operations, contributing to the alarmingly high rate of economic or financial crimes in the financial industry. 'Trust' and the fiduciary principle, which were once the cornerstones of banking, had been abandoned as banks engaged in various nefarious activities. Some of these heinous acts entail the purposeful manipulation or distortion of documents to conceal the real condition of events. These documents, which serve as the foundation for regulatory authorities' supervisory control in monitoring the system's soundness, are therefore jeopardised.

As a result of the distortions, incorrect information is submitted to the regulatory authorities, which should have been able to take appropriate actions

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to prevent further worsening of the bank's position. As a result, the regulatory agencies are hampered until the bank reaches an irreversible point of catastrophic collapse. As a result, one of the most severe modern social issues confronting banks today is the lack of transparency. According to Imala (2004) in the new dispensation, the problem of transparency must be handled seriously.

Empirical Review

The loss of millions of investors' funds, loss of employment, and economic downturns resulting from corporate failures have motivated several researchers to examine and analyse the causes of such failures and how they could predict such occurrences. However, the predictability of bankruptcy has been the focus of most researchers. This was because it helped advise investors, regulatory bodies, and policymakers ahead of time. Some studies focused on how effective the models were, while others were investigative.

To test the accuracy of Altman's model (Z-score), Campbell and Wang (2010) analysed publicly listed companies in China from 2000 to 2008. They concluded their study asserting the model's effectiveness and recommended it for such a purpose. Mitchel and Yim (2005) reviewed ninety-nine collapsed firms and two hundred and seventy-four active firms in Brazil and revealed that Altman's model correctly classified 74% of the active firms and 63% of the failed firms.

The result was quite remarkable. Christopoulos, Gerantonis, and Vergos (2009) observed in their study to examine the accuracy of the Z-score model that the model proved well in anticipating corporate failure. Some

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studies also reasoned with Altman and discussed that the model might also provide evidence in determining a firm's potential future financial distress.

In Ghana, Appiah (2011) did similar research. He took a sample of companies listed on the Ghana Stock Exchange and discovered that the Z-score might predict the health of listed companies in Ghana. This was determined by the size of the firm and the type of the business. Appiah applied a cross-sectional study on 15 sampled non-failed and failed firms in the manufacturing sector. The dataset was from 2004 to 2005. Similar research was also replicated by Tistshabona (2014) from 2011 to 2013. His study revealed that 83.33% of the financial institutions were not healthy, while the remaining percentages were in the grey zone (were about to collapse). He concluded that none of the firms in the financial sector was healthy. Mwawughanga and Ochiri (2017) saw Altman's model as a useful tool that may be used in conjunction with other indicators.

Notwithstanding the number of studies favouring the model, Jeffry (2005) argued that the model was more academic than practical. He argued that in the practical world, the model would be useless. The basis of the argument was the arbitrary choice of financial ratios.

Some other studies focused on the components used to assess firms' health and had interesting findings. Ehiedu (2014) assessed the effect of liquidity on profitability using companies in Nigeria. 75% of his assessment affirmed the current ratio, which was current assets divided by current liabilities, as having a positive impact on profitability. One of the ways managers could create value for their owners was by managing their working capital effectively and efficiently (Ajilore & Falope, 2009). Working capital

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management had a significant impact on a firm's profitability, according to a study by Elvis and Stephen (2011) that looked at the impacts of working capital management on 232 SMEs in Kenya. This meant favourable working capital results in better performance; hence healthy conditions are assured.

Mahama (2015) used Altman's Z-score to assess financial reports of 10 publicly traded businesses in a debate on the corporate financial crisis. He wanted to know how well a company was doing financially. He revealed that 6 out of the ten firms were financially sound; two were likely to be in distress, while the other two were in Altman's grey zone. Agyeman, Bediako and Frimpong (2014) studied the financial health status of banks located in the Koforidua Municipality in Ghana. The data from 8 banks used in their study revealed that all banks were in the red zone of Altman's model. However, the study lacked validity as the banks may be subsidiaries and operate as a municipality branch. Notwithstanding, there is evidence of similar studies across the globe. This study added up to the empirical stocks and identified further exploration and research areas.

Rahman (2017) used the bankometer model to assess the financial health of Bangladeshi commercial banks. The research was based on panel data from 30 private commercial banks listed on the Dhaka Stock Exchange from 2010 to 2015. The study aimed to assess several banks' solvency ratings, offer instructions to the bank's internal management for resolving insolvency difficulties, and acquaint the bankometer's framework for assessing financial stability. The study's findings suggested that the "Bankometer" model helped the management to determine insolvency issued and removed the shortcomings in operations. According to the results, the bankometer would

assist internal bank management in avoiding bankruptcy difficulties by correctly regulating operations and eliminating flaws caused by inefficiencies in banking systems.

Budiman, Herwany and Kristanti (2017) used the bankometer model to measure and assess the financial stress of Islamic banks in Indonesia. The study used data from 11 Islamic banks from 2011 to 2015. In this study, panel data was analysed to determine the insolvency concerns encountered by Indonesian Islamic banks using the bankometer model. The research was carried out to see the differences between listed and non-listed Islamic banks that used the same model. According to the findings, all Islamic banks were assessed as highly healthy throughout the research period. According to the criteria, there were variances between listed and non-listed banks, but no substantial variations existed between variable capital assets, equity assets, or cost to income ratios.

Africa (2018) investigated the bankometer model's suitability for anticipating financial trouble in the banking industry. This research aimed to explore if the bankometer model can be used to predict financial difficulties. From 2014 to 2016, 111 banks listed on the Indonesia Stock Exchange were investigated for this investigation. The study investigated whether the bankometer model could predict financial trouble in foreign and non-foreign exchange banks. The bankometer model, according to the study, may be used to predict bank financial trouble in Indonesia. According to the findings, a bank might use this model to predict financial situations and bankruptcy risk and avoid a circumstance that would lead to bankruptcy.

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Landjang and Tumiwa (2017) used the bankometer methodology to assess the financial health of Indonesia's top-tier banks with asset bases of over Rp50 trillion. From 2014 to 2016, panel data from 19 banks were studied using the IMF's 2000 model for the main six financial ratios of capital to an asset, equity to an asset, CAR, NPL, the cost to income, and loans to assets. The analysis revealed that all banks studied had an s-score greater than the IMF's limit, are solvent, and may be classified as super sound institutions. The report advised and proposed that the banking industry retain its solvency ratings.

Conceptual Review

Corporate failures

Businesses or firms are established to maximise the wealth of their shareholders. One of the fundamental principles for businesses is being a going concern, where the business would be expected to exist for the foreseeable future (Addo & Nipah, 2006). This assumption paves the way for firms to acquire resources that they expect to use for more than one financial year (non-current assets) and be able to borrow and pay after one financial year (non-current liabilities). This assumption keeps firms going, but it would not hold for all firms. Some factors (both internal and external) may scrap this assumption, and the firm would stay out of business. Corporate failures are not news in the 21st-century business world. Several such failures have resulted from various reasons for both the giants and the ants. Examples included WorldCom, Enron, Dotcom, DKM, MenzGold, etc. Corporate failure is when firms cease to exist, and the future is dashed into the drains (Kingsley, 2011). It is the time that a firm would die out of business. When this happens, the

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company would be said to have gone into liquidation. All its debts will be settled with the available resources. Some firms will be lucky to get bailouts from governments and other investors.

Financial distress

Financial distress may impact a company's connection with its obligations (Opler & Titman, 1994). This results in the firm encountering impaired access to new capital (either debt or equity) while bearing an increasing cost of keeping up with its financial obligations. If used negatively, this term sends many negative signals to stakeholders. In other words, the term is used to describe the financial state of a firm when it faces liquidity issues that, when prolonged, would result in insolvency issues. Liquidity is defined as a firm's ability to settle its short-term obligations when they fall due. Solvency is when the firm does not have enough resources (assets) to settle its total liabilities (Gordon, 1971).

The liquidity issue for banks and financial institutions is their inability to pay depositors their money when they (depositors) wish to make withdrawals. This is a serious problem since simply a single symptom of difficulty would prompt panic withdrawals, resulting in the bank's final collapse.

This means that the management must see far ahead of time to mitigate against such happenings. Financial distress is a critical event whose occurrence draws a line between the times of a healthy financial status of a firm from the period of financial illness. It requires undertaking necessary actions to overcome the troubling situation (Whitaker, 1999).

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According to Andrade and Kaplan (2002), there are two forms of financial distress. They are the failure to pay a debt and an action taken to restructure a company's debt to avoid a default scenario. According to Agilebu and Lucky (2019), financial hardship and failure result from long-term losses that result in a disproportionate increase in liabilities and a decrease in asset value.

For banks, unlike other industries, their modus operandi itself posed issues of financial distress. Banks accept deposits from their customers and give them out as loans to those who need the funds. The commercial loan theory explains how banks operate and what they do with depositors' funds. In reducing non-performing loans, banks would have to be looking for other alternatives to make depositors' funds available as and when they need them. Financial distress is defined by McEwen and Turestsky (2001) as a sequence of following stages marked by a specific set of bad financial circumstances. There is a distress point at each level of financial difficulty, which persists until the next distress point is reached. Each stage of financial hardship is technically defined as a space between two instances of financial distress.

The transition from positive to negative cash flow is the first sign of a financial crisis. The subsequent dividend decrease signals the following phase, which leads to default. Technical default on debt frequently occurs before troublesome debt restructuring, which reduces the chance of bankruptcy. Researchers categorised and characterised financial hardship as a continuous process with a specified structure for the first time.

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Predicting corporate failures

The impact corporate failures have on economies is dire, and this has led to many researchers developing models to help predict the end so that conscious efforts are put in place to avert such an end. These models are categorised into groups based on the kind of data used in the assessment. They are the quantitative models and the qualitative models. The quantitative models use the information available in the published financial information, and appropriate statistical methods are applied to the data to assess. The latter is based on management information or internal evaluation of the firm.

Notwithstanding the approach, both groups have the same motive. Statistical models, Theoretic Models, and Artificial Intelligence and Expert Systems are the three primary kinds of prediction models, according to another research (AIES). Univariate Analysis, Multiple Discriminant Analysis (MDA), Linear Probability Models (LPM), Profit Models, and Cumulative Summers were examples of statistical or quantitative models (CUSUM). The Recursively Partitioned Decision Tree (Inductive Learning) model, Case-Based Reasoning (CBR) Model, Neural Networks (NN), Genetic Algorithm (GA), and Rough Set (RS) Models were all included in the AIES. The Balance Sheet Decomposition Measure, The Gambler's Ruin Theory, Cash Management Theory, and Credit Risk Theory are among the Theoretic Models (Altman, 2006; Aziz & Dar, 2006).

Altman Z-Score for banks

Altman's Z-score is one of the most well-known of these models. Professor Edward I. Altman published the formula. He was a finance assistant professor at New York University. To assess a company's financial health, the

score was produced using numerous income statements and statements of financial condition. In his proposal, Altman distinguished between manufacturing and non-manufacturing businesses. This resulted in two different formulae for each instance. In other words, the formula for calculating the Z-score for a manufacturing firm was different from what was used for non-manufacturing firms. The score was based on a weighted linear combination of typical financial ratios of four (non-manufacturing enterprises) or five (manufacturing firms). Altman developed the method using discriminant analysis on a publicly-traded industrial companies' dataset. As a result, the data has been updated to include private manufacturing, non-manufacturing, and service businesses.

All the models of Altman used in several studies have proven to have a significant predictive ability (Campbell &Wang, 2010; Christopoulos, Vergos & Gerantonis, 2009; Mitchel & Yim, 2005). This has made it more useful to investors, managers, and various stakeholders in decision-making. The updated Altman's Z-score is a weighted linear combination of four standard corporate financial measurements.

The four parameters are weighted together to get an overall score used to identify companies as distressed or non-distressed. The model used is in the form below as stated in (Altman, Hartzel, & Peck, 1995);

$$Z'' = W_1X_1 + W_2X_2 + W_3X_3 + W_4X_4$$

Where Z'' = Discriminant score (Dependent variable)

$W_1W_2W_3W_4$ = Discriminant coefficients

$$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

X = Independent Variables which are:

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X_1 = Working Capital/Total assets

X_2= Retained earnings/ Total assets

X_3= Earnings before Interest and Taxes/Total assets

X_4= Book values of Equity/Total liabilities

Discrimination zones

Z" > 2.99------- "Safe" zone

1.81< Z" < 2.99 -------- "Grey" zone

Z" < 1.81 -------------- "Distress" zone

Bankometer model

This model measures the financial vulnerability/soundness by solvency score (S-score). IMF has recommended six different ratios which could be combined to measure the financial distress of any bank. This is shown in Figure 1.

Sr#	Parameters	Measurement	Threshold
1	Capital Adequacy Ratio (CAR)	Tier-1 Capital +Tier II Capital / Risk Weighted Assets	25 %=< CAR >= 08 %
2	Capital to Assets Ratio (CA)	Capital / Total Assets	CA >= 04 %
3	Equity to total Assets (EA)	Equity / Total Assets	EA >= 02 %
4	NPLs to Loans (NPL)	Non-Performing Loans / Total Loans	NPLs =< 15 %
5	Cost to Income ratio (CI)	Operating Expenses / Operating Income	CI =< 40 %
6	Loans to Assets (LA)	Loans / Total Assets	LA =< 65 %

Figure 1: Summary of Bankometer

Source: IMF (2000)

Figure 1 mentioned ranges described that the bank has Capital Adequacy Ratio (Basel III) as per the defined criteria given in Table 1. Banks

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maintaining the above standards are considered super sound as per the defined criteria of the model.

Table 1: Definition of S-Score Variables

VARIABLE	DEFINITION
Capital Adequacy Ratio	The regulatory capital-to-risk-weighted-assets ratio was the ratio of regulatory capital to risk-weighted assets. The numerator was total regulatory capital, while the denominator was risk-weighted assets. It assessed depositor capital adequacy, which influenced the financial institution's ability to absorb shocks to their balance sheets (IMF, 2000).
Capital Asset Ratio	This measured the number of assets financed by equity and long-term debt; the higher the ratio, the safer the bank because long-term funds financed the assets.
Equity to Asset Ratio	This indicated how much of the bank's assets were financed by its own money. Because more assets were supported by the bank's capital rather than external funding, the greater this ratio was, the more secure the bank's financial situation was in the long run.
Non-Performing loans ratio	This indicated the proportion of the bank's loans classified as non-performing loans. These loans resulted in unremitted interest for long periods, say 90 days. A high ratio indicated the higher non-productive loans issued by the bank.
Cost to Income Ratio	This was the ratio of operating expenses (excluding non-cash expenses) to operating income
Loans to Asset Ratio	The number of long-term credit assets that had been invested. The higher the ratio, the more loans there were, which positively impacted bank earnings but negatively impacted bank liquidity. The lower the ratio, the fewer loans there were, which had a negative impact on bank earnings but a positive impact on bank liquidity.

Source: Kirori and Ouman (2019)

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Discriminant functions recommended by the IMF include:

S -Score (Solvency) $= 1.5CA + 1.2EA + 3.5CAR + 0.6NPL + 0.3CI + 0.4LA$

With Criteria Score:

• S-Score > 70 are classified as Sound banks

• S-Score < 70 Grey area or faced with financing problems. The probability of bankruptcy /distress was dependent on management decisions;

• S-Score < 50 were classified as banks with a high risk of bankruptcy.

Financial performance

Working capital

Working capital is the difference between the current (short-term) assets of a firm and its short-term obligations (current liabilities); according to Edda and Menhet (2009), working capital is the whole current assets owned by an organisation. It is also defined as the portion of assets needed by a firm in its operations. In other words, it is the investment in short-term assets. The higher the current asset, the better it is for a firm as it would have enough short-term resources to settle its short-term obligations indicating the firm's strong liquidity. Current assets include cash balance, bank balance, inventories, and account receivables, and the account payables, expenses owing are examples of current obligations or current liabilities considered in the working capital computation.

Notwithstanding, the most important components in the working capital computations are inventories, accounts receivables, and accounts payables. Total assets refer to a firm's overall resources, including short-term and long-term resources. This makes working capital management a useful tool in maintaining operational capabilities. Effective working capital

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management was required to maintain the liquidity of a firm. Liquidity, therefore, has a role to play in assessing a bank's performance. Dang (2011) concluded that an adequate liquidity level is positively related to a bank's profitability.

Positive working capital is healthy for a firm as current surplus assets are used to settle financial commitments and obligations key to continuing growth. For banks, this means there is the need to ensure the short-term loans they issue to customers are repaid in time to meet the demand made by other sections of customers. When there were numerous defaulters, the bank will have challenges should all depositors run in for their deposits.

Return on Assets (RoA)

The resources controlled by a firm are used to generate economic returns, which eventually maximise shareholders' wealth. ROA measures the rate of returns on invested assets. In other words, the firm's net profit is divided by the value of assets used to get how much each asset was generating for the business. The higher the returns, the better for the firm as profitability increases. This is one of the financial ratios used to measure the performance of firms (Amaral-Baptista, De Melo & Klotzle, 2011).

Sales Growth

The financial performance is highly likely to be affected by the level of growth in its revenue (Elliot, 1972). Consistent growth in the sales or revenue of a firm can increase its gross profit and thereby increase the net profit after tax. Also, as discussed in Callen-Fuertes and Cuellar-Fernandez (2019) sales growth positively impacts a firm's profits. This indicates that measured financial performance such as Return on Assets could be affected by the level

of sales growth. Based on that, the growth in revenue of the banks is included in the model as a control variable.

Size of Firm

The firm's size could normally be seen from the company's total assets and total sales (Daud, Meiryani, Olivia & Sudrajat, 2020). All other things being equal, the larger the size of the firm, the more the resources available to the firm and hence an increased financial performance (Devi & Khairunnisa, 2017).

However, Meiryani et al. (2020) indicated that a firm's size would not affect the firm's financial performance as proxies by the Return on Asset Ratio. Also, Bank size, which is measured as the natural logarithm of the total assets, could be included in the model as a control variable.

Conceptual Framework
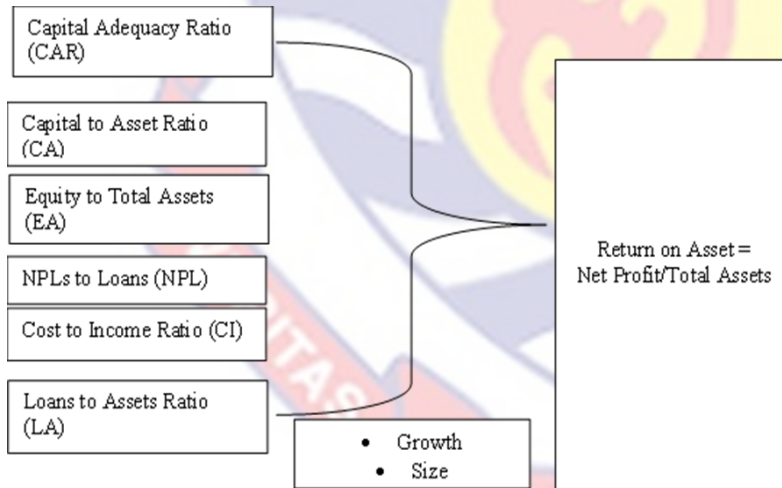
Figure 2: Conceptual Framework

Source: IMF (2000)

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Chapter Summary

The goal of the initial literature study was to determine the influence of a bank's level of distress on its performance. Different academics and researchers' perspectives were provided to determine what had already been done that was important to the study. The literature found that Altman's Z-score and the Bankometer were among the models employed to forecast business failures theoretically and empirically. The idea of distress level was examined and an overview of the Ghanaian banking system was presented. Following IMF (2000) recommendations, the researcher used the Bankometer, which has the quality to measure the solvency of banks to assess their financial soundness of the banks.
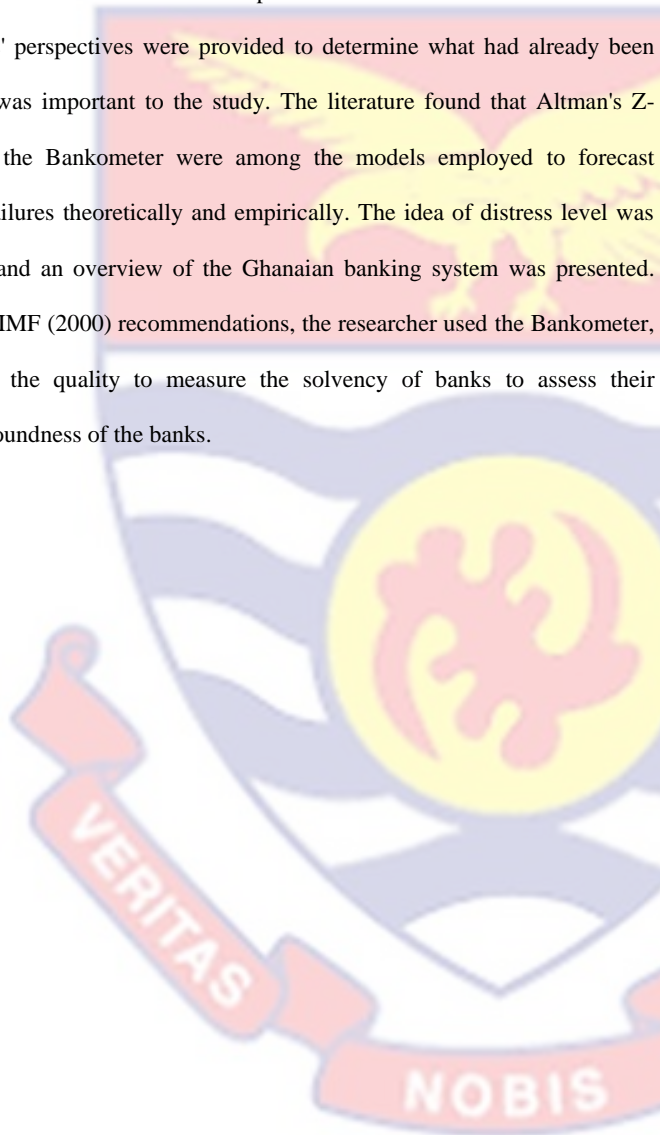
CHAPTER THREE

RESEARCH METHODS

Introduction

The study's research methodology is presented in this chapter. The procedures utilised to collect data for the study are described in this chapter. The research methodology was broken into the following sections: research design, the study scope, study population, sample and sampling methodologies, data collecting processes and instruments, data analysis method, and ethical issues. The chapter also discussed why these elements in the research methodology were used.

Research Design

This study used a quantitative research design as data collected from the financial statements of the banks were financial (quantitative) in nature. Quantitative research collected and analysed numerical data (Booij, Lewis, Thornhill, Saunders, & Verckens, 2011) This design allowed for descriptive analysis, correlation analysis, and regression analysis. This allowed researchers to make predictions and formally test hypotheses using statistics. Despite the high degrees of analysis it provides, it oversimplifies concepts to numerical forms and usually ignores qualitative features in a study. Notwithstanding these downsides, the quantitative research design was appropriate for the researcher to address the research objectives.

Study Area

This study was conducted on commercial banks listed on the Ghana Stock Exchange. Several financial institutions suit the study, but the availability of published financial data, which contained the key variables,

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informed the researcher to focus on those commercial banks listed on the Ghana Stock Exchange. As such, these firms were mandated to publish their financial statement annually. In addition, the listed companies were public entities and had a broader scope of stakeholders. The topic fell in the area of Finance, where the investors and key stakeholders of institutions cared to know the going concern of the institution.

Population

The population considered for this study were all firms listed on the Ghana Stock Exchange. When performing this study, thirty-five (35) firms were listed on the Ghana Stock Exchange.

Sampling Procedure

To address the research questions, data availability on the population would be instrumental. For this reason, the purposive sampling technique was used in this study. This sampling technique allowed the researcher to sample based on the availability of adequate and relevant data for the study (Lewis, Thornhill & Saunders, 2009). Eight listed banks were selected for the study. They are Access Bank limited, CAL Bank, Ecobank, Standard Chartered Bank, Agricultural Development Bank, GCB Bank Limited, Societe Generale, and Republic Bank. Since these were the commercial banks listed on the Ghana Stock Exchange, they were used as the sample resulting in a sample size of eight (8). The profile of the banks is presented in Table 2.

Profile of the Banks

The eight banks selected for the study were listed on the stock markets on different dates and had different numbers of shares issued and amounts of stated capital, as shown in Table 2. Except for ADB and Access Bank, which

were listed in 2016, the remaining six banks were listed years before the period under review. Two out of the eight banks were indigenous banks (GCB Bank and Agricultural Development Bank). The remaining six (Ecobank, Access Bank, Societe Generale, Republic Bank, CAL Bank, and Standard Chartered Bank) are foreign banks. All these companies could withstand the financial sector clean-up and were still listed on the Ghana Stock Exchange.

Table 2: Profile of Selected Banks

Symbol	Company	Date Listed	Stated Capital (GHS) '000	Issued Shares	Authorized Shares '000,000
ACCESS	Access Bank Ghana Ltd	2016	400,000.00	173,947,596	500,000
ADB	Agricultural Development Bank	12-Dec-16	421,700.00	261,721,483	10,000
CAL	Cal Bank PLC	5-Nov.-2004	400,000.00	626,585,000	2,000
EGH	Ecobank Ghana Ltd	July 2006	416,641.00	322,551,209	500
GCB	Ghana Commercial Bank Limited	17th May. 1996	500,000.00	265,000,000	1,500
SCB	Standard Chartered Bank Ghana Ltd.	Provisional: - Nov. 12, 1990. Formal: - August 23, 1991. Listing of Preference Shares: Feb. 16, 2006	400,000.00	134,758,000	250
SOGEGH	Societe Generale Ghana Limited	Oct. 13th. 1995	404,245,427.00	709,141,367	1,000
REPUBLIC	Republic Bank Limited	17th March 1995	401,191,000.00	851,966,373	1,000

Source: Ghana Stock Exchange (2020)
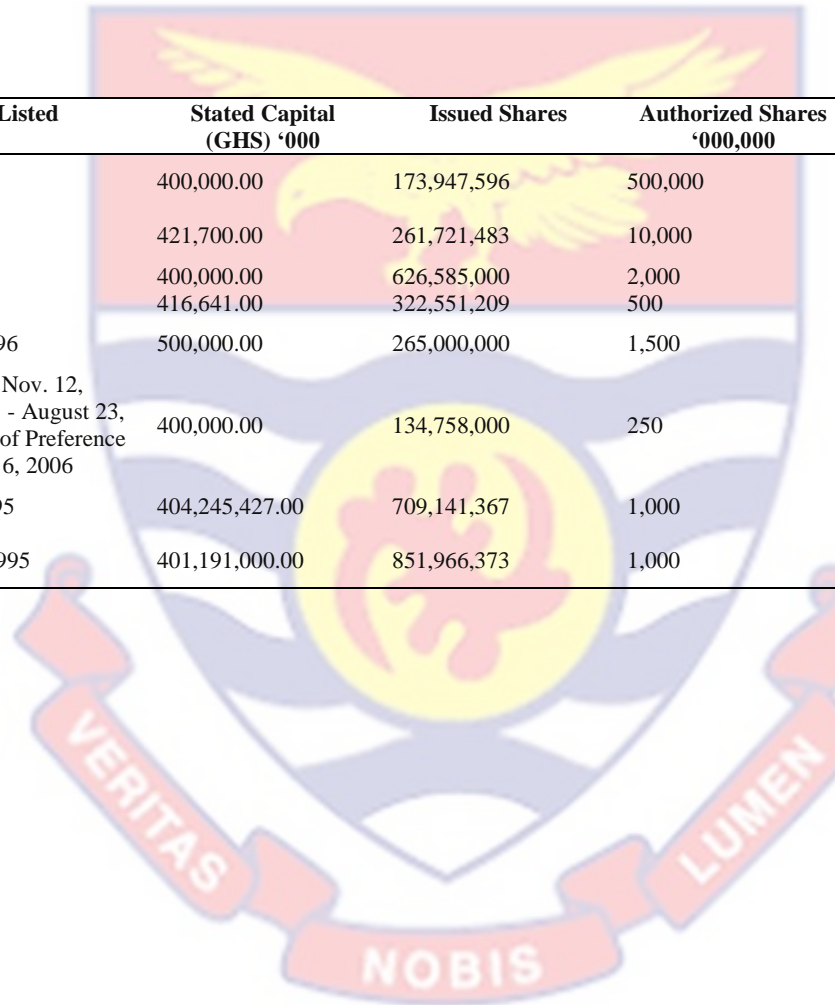
Data Collection Instrument

Since all companies listed on the stock market were required to publish their audited annual financial statements and other reports, secondary data was used in the study as data required for the study area is the financial statements. Audited financial statements for the stated periods were downloaded from the selected companies' websites, and the relevant data was taken from the GSE. Data span over the period 2010 to 2019. The annual reports served as the primary data source for calculating the key ratios.

Data Collection Procedure

The data sources for the study were primarily secondary sources. Relevant data were extracted from the downloaded data and used for the study. This was carried out by the researcher in March 2021 over a three-week period.

Data Processing and Analysis

Financial data downloaded from companies' websites were reformulated using Microsoft Excel, and relevant ratios were calculated. The financial ratios were then coded into the Statistical Package for Social Sciences (SPSS).
This package had several useful statistical solutions that assisted the researcher in answering the research questions. The key financial ratios for performance, such as the profitability ratio (Return on Asset) and the liquidity ratio using working capital, were calculated to assess the performance of the firms. In addition, the S-score was used to assess the financial soundness of the banks, while correlation analysis was used to identify the relationship between the variables. This approach was not inconsistent with that of (Saeed, 2019). The Ordinary Least

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Squares (OLS) model was used to assess the impact of the S-score composition on the banks' financial performance with the return on assets as a proxy.

Model Specification

Several models are used in assessing firms' distress levels depending on their characteristics and the industry they operate in, as discussed in the literature review. The model used for this study was the Bankomoter which uses the S-score to measure the financial soundness of banks as recommended by the (IMF., 2000).

Table 3: Model for Distress Analysis

S/No	Parameters	Measurement	Threshold
1	Capital Adequacy Ratio	$\dfrac{Tier\ 1\ Capital + Tier\ II\ capital}{Risk\ Weigted\ Asset}$	25%=<CAR>= 08 %
2.	Capital to Assets Ratio (CA)	Capital/Total Assets	CA >= 04 %
3.	Equity to Total Assets (EA)	Equity/Total Assets	EA >= 02 %
4.	NPLs to Loans (NPL)	Non-Performing Loans/Total Loans	NPLs =< 15 %
5.	Cost to Income ratio (CI)	Operating Expenses/Operating Income	CI =< 40 %
6.	Loans to Assets (LA)	Loans/Total Assets	LA =< 65 %

Source: IMF (2000)

S -Score (Solvency) $= 1.5CA + 1.2EA + 3.5CAR + 0.6NPL + 0.3CI + 0.4LA$

With Criteria Score:

- S-Score > 70 were classified as Sound banks

- S-Score < 70 Grey area or facing financing problems. The probability of bankruptcy /distress is dependent on management decisions;

- S-Score < 50 were classified as banks with a high risk of bankruptcy.

To assess the impact the various variables used in the financial distress assessment had on the banks' profitability, the Ordinary Least Squares (OLS) regression model was used. The model was described as follows

$$y = a + bx + c \ldots \ldots \ldots eq\ 1$$

Where y is the dependent variable, x is the independent variable, and c is the control variable.

The model was further broken down to

$$RoA = \alpha + b_1 CAR + b_2 CA + b_3 EA + b_4 NPL + b_5 CI + b_6 LA + Growth + Size$$

Reliability and Validity

Selecting an appropriate methodology was imperative to obtain valid statistical results (Silverman, 2011). Research methodology could be quantitative or qualitative. This study sought to examine the effect of the distress level on a firm's performance.

Therefore, a quantitative approach was deemed the most appropriate within the context. The quantitative method entailed systematic empirical studies, which involved quantifying through the assistance of mathematics and statistics (Mbilla, 2018). Also, quantitative approaches took the guesswork to a more concrete conclusion. This was because the results are usually based on quantitative measures rather than mere interpretation and therefore enable future application and comparison with other works. Again, the quantitative approach offered broader coverage of events where statistics were combined from a larger sample (Whaley, 2014). In addition, the quantitative approach enhanced the use of statistical data analysis methods, thus, making it easier to generalise the findings

from the study. It should, however, be noted that this approach to research approach lacked flexibility and, thus, made it very challenging to apply the same in assessing or gauging human behaviour (Booij, Lewis, Thornhill, Saunders, Verckens, 2011).

Ethical Consideration

The issues to deal with were how results were obtained had been a subject of discussion among scholars and practitioners. There had been growing concerns about how things would be done right to produce a justified result. Data used in this study were publicly available as these firms were listed on the Ghana Stock Exchange. Models used in the analysis were based on models used in similar studies, and the discussion of results was strictly an interpretation of the data available. In light of that, all ethical considerations had been catered for, and the conclusions drawn were free from bias.

Chapter Summary

The study used a quantitative approach to draw an inference. This study investigated the relationship between distress level and firm performance of commercial banks in Ghana. The sample for the study was from 2010 to 2019. Descriptive analyses, correlation analysis, and regression analysis were the analysis that was conducted on the dataset.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presented the findings of the study, analysis of the data collected and discussed the results thereof. The analysis to be focused on were descriptive, correlation, and regression analyses.

Descriptive Statistics

This section of the discussion discussed the overall description of the variables used in the study. It also discussed the financial performance as measured by the Return on Asset Ratio. The Capital Adequacy Ratio (CAR) measures a bank's available capital expressed as a percentage of a bank's weighted credit exposure. This was used to protect depositors and promote stability and efficiency in the financial systems (Hayes & James, 2020). In other words, the higher the CAR, the more cushioned a bank would have to absorb a reasonable number of losses before it could become insolvent and consequently lose depositors' funds. The required minimum CAR in Ghana as per the Bank of Ghana is 10%. Amongst the selected banks, the CAR ratio over the ten years ranged between 8.26% and 52%, as shown in Table 4. This indicated a good performance concerning the CAR, as the minimum required for the firm to be considered sound was 8%.

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Capital Adequacy Ratio	80	.0826	.5200	.183880	.0670536
Capital-Asset Ratio	80	.0105	.3961	.064528	.0563735
Equity-Asset Ratio	80	.0690	.4404	.154783	.0493037
Non-performing Loans	80	.0066	.4929	.152546	.1076008
Cost-Income Ratio	80	.0400	1.3807	.560326	.2265277
Loan-Asset Ratio	80	.0925	.6447	.428321	.1138609
S-Score	80	.9775	2.9555	1.357065	.2906690
Return on Asset	80	-.0469	.0918	.042040	.0278087
Firm Growth	80	5.2900	9.6500	6.764750	1.0151996
Firm Size	80	-.1700	4.0500	.252250	.4810089
Valid N (listwise)	80				

Source: Field data (2021)

The Capital to Asset Ratio measured the number of assets financed by long-term sources of funds. The descriptive of the eight banks revealed a minimum of 1% and a maximum of 39.61%. The minimum required of sound banks is 4%. The average was 6%, which indicated that, on average, about 6% of the banks' total assets were financed from long-term funds. The Equity to Asset Ratio measured the proportion of the total assets financed by equity. This ratio ranged between 7% and 44%, with an average of 15%. The minimum required was 2%. The selected banks had a secure financial position as the ratios were above the 2% minimum.

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Non-performing loans indicated the level and effectiveness of a bank's credit management policy. Since the bank's business was to give out loans amongst others if these loans were not repaid, the providers of funds (depositors) money would be locked up, and the bank would find itself in trouble. The maximum recommended by IMF (2000) was 15%. It ranged between 0.6% and 50% for the selected banks, with an average of 15%. This meant that, on average, these banks were within the recommended average range. However, individual bank discussions will be made in the next section to highlight individual performances.

The cost to income ratio measured the percentage of the operating income spent on operating expenses. The maximum required for sound banks was 40%. It ranged between 4% and 138% for the selected banks, with an average of 56%. This was about 16 basis point above the maximum required. This indicated that banks listed on the Ghana Stock Exchange incurred high operating expenses. This would have to be prudently considered by the management of these banks.

The loan to asset ratio measured the proportion of the bank's resources that they control, which were given out as loans. The higher the ratio, the more interest income the bank earned, but this came at the expense of liquidity. The recommended maximum was 65%. Data from the eight selected banks revealed an LA ranging between 9% and 64% within the maximum threshold. Notwithstanding, some of the banks were conservative with their liquidity. The detail of this analysis is discussed on the individual banks in the next section.

Using the natural log of total assets to measure the size of the banks, the minimum size was 5.29, and the maximum was 9.65. This described how large the banks' asset base was, with assets comprising both financial and non-financial assets. The growth of firms ranged from as low as -17% to as high as 405%. The maximum was an outlier related to Access Bank between 2011 and 2012. Though the negative growth would not be a good indicator, considering the pressure on banks in the sector between the latter parts of 2017 to 2019, it was not surprising to record a significant decline in revenue made up of interest income, fees and commission charged.

Financial Performance of the Banks (RoA)

Access bank started with a 6% return on assets in 2010, then reduced to 5% in 2011. It increased marginally from 7% in 2014. In 2015 it declined to 5% and further declined till 2018 when it recorded 2%. However, it experienced a sharp rise to tin profitability of 5% in 2019, which indicated the recovery of its financial performance (profitability). Cal Bank's profitability had not been consistent over the period. As measured by ROA for Cal Bank for 2010, Profitability was 2%. It increased to 3% in 2011 and then increased significantly to 6% in 2012. This increased further to 8% in 2013, but the trend could not be maintained as it dropped to 7% in 2014. It has been declining ever since, with the worse drop in 2016 when it dropped significantly from 6% in 2015 to 0.3% in 2016. However, the downward turn could not become a trend, and it recovered sharply in 2017 to 5%.

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Notwithstanding, it declined to 4% in 2018 and fell further in 2019. This was not a good performance, and the bank's risk profile worsened the volatility in return to investors.

The situation would become worse when the decline was not controlled, and it got to the negatives that would deplete the cumulative earnings retained in the bank. Ecobank's profitability had been positive, ranging from 7% to 4%. It started with a ROA value of 5% in 2011, 6% in 2012, continued to 7% in 2015 and declined to 6% in 2016 and 4% in 2017. However, it started picking up as it increased to 5% in 2018 and 2019. This average profitability of 5% meant each unit of resource used by Ecobank generated a return of 5%. There appeared to be stability in the bank's profitability, which was remarkable. Société Generale's profitability had been alternating between 3% and 4%. Despite the low return, there was consistency in its profitability over the period under review, as shown in Figure 3.

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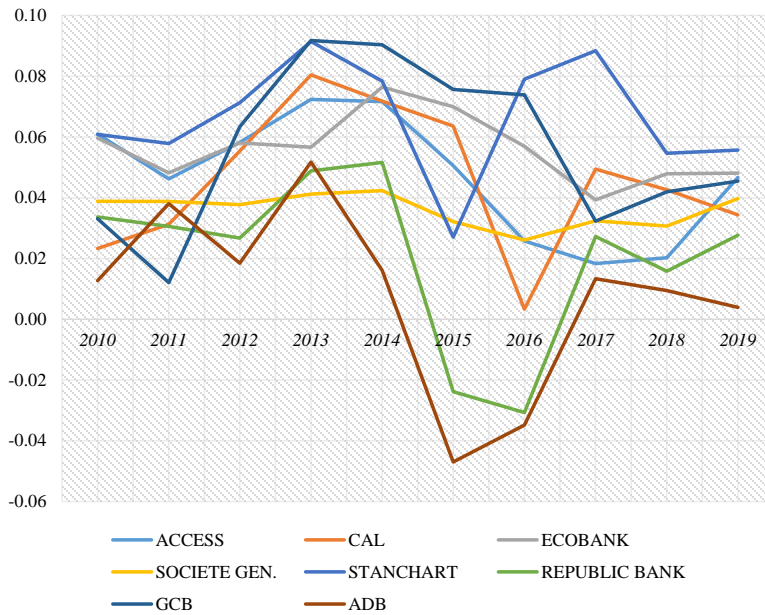
Figure 3: Graph of Return on Asset

Source: Field data (2021)

Unlike the other banks, except for GCB Bank, Standard Chartered Bank recorded relatively higher profitability (ROA). As shown in Figure 3, the profitability measured by ROA had been alternating between 6% and 9% from 2010 to 2014. However, it dropped significantly from 8% in 2014 to 3% in 2015%. From 3% in 2015, it increased significantly to 8% in 2016 and 9% in 2017. However, this point could not be sustained. The ROA declined to 5% in 2018 but increased marginally to 6% in 2019. On average, Standard Chartered Bank recorded the highest ROA (7%), indicating relatively good performance. Republic Bank's profitability had not been as good as the ROA values.

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The highest profitability recorded over the period was 5% and the minimum being-3%. It exhibited quite an average performance before 2015, as shown in Figure 3. Its ROA values were positive for 2011, 2012, 2013, and 2014 (3%, 3%, 5%, 5% respectively). It recorded negative returns in 2015 and 2016 (-2% and -3% respectively). However, it returned to the positive road in 2017 and recorded ROA of 2% in 2018 and 3% in 2019. The average ROA score for Republic bank was 2% which was quite low as only 2% of its total assets were being generated as earnings before interest and tax.

GCB Bank ROA in 2010 was 3% and declined to 1% in 2011, but rose consistently to its peak of 9% in 2014. It declined marginally in 2015 to 8%, then to a further 7% in 2016, and significantly further to 3% in 2017. It started picking up in 2018 as it recorded ROA of 4% and 5% in 2019. On average, over the period, the ROA value for GCB Bank was 6% which was relatively low but not a bad performance. The Agriculture Development Bank (ADB) has struggled with its ROA value with an average of 1%. The firm's profitability had not been consistent, as shown in Figure 3. Some periods recorded negative earnings before interest and tax. This meant that the firm had not made enough profit from its operations. It started at 4% in 2011, then declined to 2% in 2012, increased again in 2013 (5%), and dropped to 2%. It further declined to -5% in 2015, which increased to -3% in 2016, then significantly increased to 1% in 2017 and stabilised at 1% in 2018. However, in 2019, the sustenance did not last, and it recorded approximately 0% profitability.

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Distress Level of Banks

The S-score was used to assess the financial soundness of the selected banks, and the results are discussed below.

Access Bank

Over the ten years, the CAR of Access bank remained within the threshold as set out by the IMF. The minimum CAR the bank recorded was 11% which was in 2016. Even with this, it was above the minimum required by the Bank of Ghana. This indicated that the bank was well positioned to absorb shocks in its balance sheets as they were at least three basis points above the minimum required (IMF., 2000).

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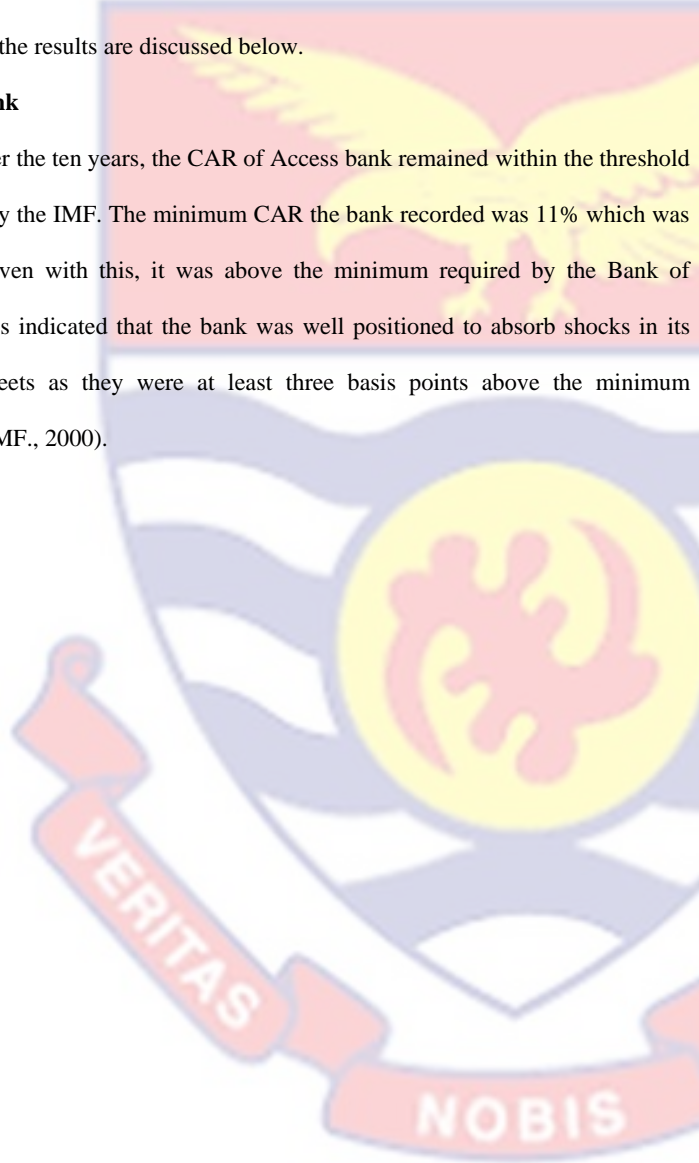
Table 5: Distress Analyses of Access Bank

	2010	2011	2012	2013	ACCESS BANK LTD 2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	12%	52%	23%	16%	12%	12%	11%	13%	20%	22%	19%
CA >= 04 %	40%	29%	15%	12%	7%	5%	5%	5%	11%	8%	14%
EA >= 02 %	44%	35%	21%	22%	17%	15%	16%	14%	18%	17%	22%
NPLs =< 15 %	18%	5%	26%	10%	9%	5%	26%	32%	30%	22%	18%
CI =< 40 %	46%	48%	22%	21%	48%	54%	75%	78%	79%	43%	51%
LA =< 65 %	9%	27%	34%	44%	50%	50%	48%	28%	23%	27%	34%
S-Score: >70 - sound; <70 - Grey; >50 – Distress	181%	296%	163%	129%	114%	107%	123%	124%	161%	146%	154%

Source: Field data (2021)

The bank recorded an average of 19%, which signified high strength. CA measured the percentage of total assets financed from the capital and other long-term sources of funds. The higher the ratio, the better it was for the company. The minimum threshold for CA was 4%. Over the period under review, Access Bank recorded percentages above the required minimum, which showed a good performance. The ratio was significantly high in 2010, 2011, and 2012.

This was due to the low amount of total assets of the bank. However, the total assets grew over the years, and the ratio reduced in 2014 as the bank recorded its first single-digit CA (7%). The CA over the period was above the minimum, which was a good practice by the bank. Equity, in other words, is referred to as the shareholders' fund in an entity. EA measured the percentage of the total assets, which were resources controlled by the bank were financed by the shareholders' interest in the bank. The model required a minimum of 2%. Access Bank recorded a minimum of 14%, which was significantly above the minimum threshold, and it was a good practice.

Banks gave out loans to be repaid over a specified number of periods. Non-performing loans refer to the portion of a bank's loans classified as non-performing loans. In other words, borrowers might have defaulted in meeting their obligations. It was in the better interest of banks to reduce non-performing loans to their barest minimum, as this indicated effective credit risk management. IMF (2000) recommended a maximum of 15% to indicate sound credit risk management. The higher the rate, the worse it was for the bank. Over the period under review, the NPL for Access bank ranged between 32% and 5%. This indicated that the bank's management of its credit risk had been mixed over the years. It recorded an average NPL of 18%, which was not good.

In addition, the NPL since 2016 had been way above the maximum. The CI ratio measured the ratio of operating expenses to operating income generated by the bank. The higher the ratio, the worse it was for the bank as it spent more on generating such income. According to IMF (2000), the CI ratio should have had a

maximum of 40%. This meant that banks should spend, at most, 40% of their operating income on operating activities. Over the period, Access Bank's CI ranged between 78% and 21%, with an average of 51%. This was not a good indication. In most years, the bank was incurring way above the maximum (40%). Thus, the firm was not operating efficiently. Management should have considered prudent ways to minimise the CI ratio.

The LA measured the number of Long-term credit assets invested. A higher ratio indicated that the banks had issued more loans, which might positively impact banks' earnings in the form of interest on loans. However, this negatively affected liquidity. The reverse was true. The maximum threshold is 65%. Access bank, over the period, recorded as high as 50% and as low as 9%. This indicated that the maximum amount given out as loans was, at most, 50% of the bank's total assets. However, the minimum of 9% indicated a conservative approach as the firm preserved its liquidity. However, this came at the expense of forgone interest income. Management ought to balance the two tradeoffs to maximise bank earnings.

The S-score of the bank recorded positive results over the period as the scores were between 296% and 107%. The minimum required for a bank to be considered sound was 70%.

Based on that, Access bank was considered a sound bank and not in distress.

Cal Bank Limited

Table 6: Distress Analysis of Cal Bank Ltd

	2010	2011	2012	2013	CAL BANK LTD 2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	16%	12%	20%	19%	22%	21%	18%	21%	17%	23%	19%
CA >= 04 %	5%	4%	9%	6%	4%	3%	3%	2%	7%	6%	5%
EA >= 02 %	15%	12%	18%	18%	14%	15%	14%	15%	14%	14%	15%
NPLs =< 15 %	11%	10%	5%	8%	6%	6%	8%	11%	8%	10%	8%
CI =< 40 %	53%	51%	37%	34%	33%	36%	41%	41%	44%	45%	41%
LA =< 65 %	51%	52%	64%	63%	49%	54%	55%	44%	45%	41%	52%
S-Score: >70 - sound; <70 - Grey; >50 – Distress	126%	102%	143%	138%	132%	133%	124%	132%	122%	140%	129%

Source: Field data (2021)

48
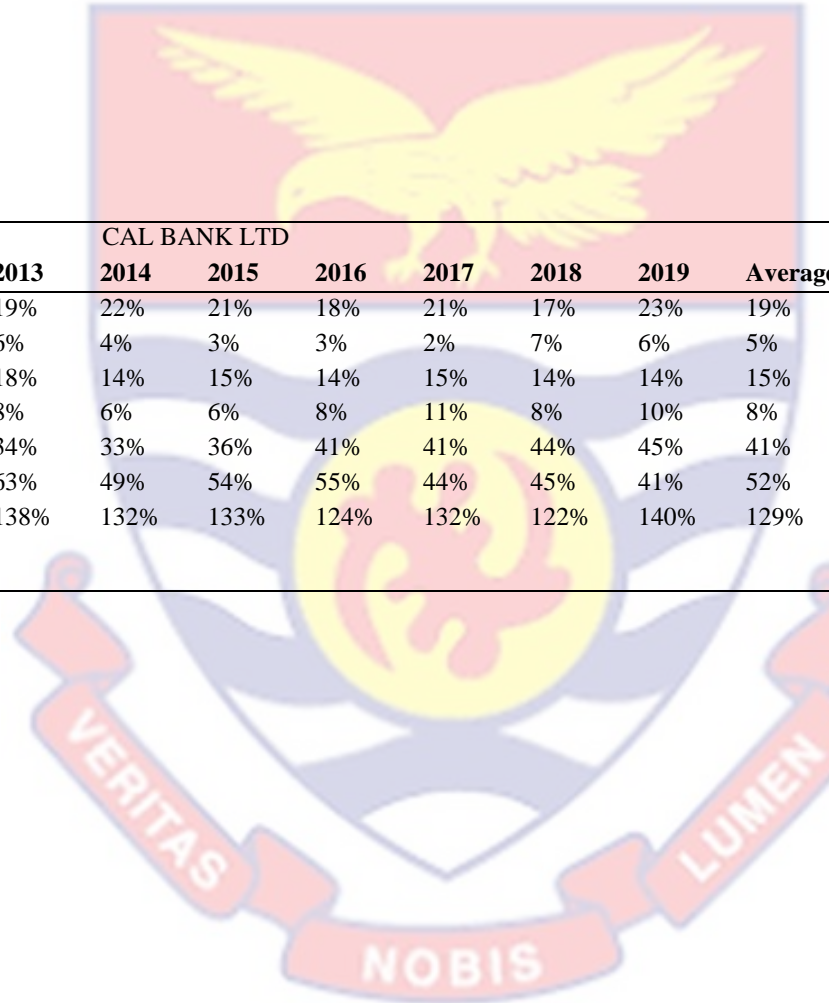
The CAR of Cal Bank over the ten years ranged between 12% and 23%, with an average of 19%. These CARs fell within the recommended threshold, indicating the sound management of their capital. In other words, depositors' funds had been safe with this bank. The CA ratio ranged between 2% and 7%, with an average CA of 5%.

At least 4% of the bank's total assets should be funded from long-term funds for financial soundness. For three consecutive years, the bank CA was below the minimum (3% in 2015, 3% in 2016, and 2% in 2017). However, it improved in the subsequent years, which was the good news for their soundness. The bank was average one basis point above the minimum (5%).

A bank's financial position was more secure in the long run when it had more of its assets financed by its capital instead of external funding (Ouma & Kirori, 2019). The minimum EA recommended was 2% as per IMF (2000). Cal Bank, over the period, recorded EA between 12% and 18%. These were significantly higher than the minimum recommended; hence, the bank's financial position was secure as at least 12% of its assets were funded by equity. The average EA over the period was 15%. NPL as indicating how effective the credit management policies of the bank were and, in turn, reduces credit risk. A higher NPL indicated high credit risk or inefficient credit management. Cal Bank's non-performing loans were below the 15% threshold. This was an indication of the sound credit management policies of the bank. The CI ratio of Cal Bank ranged between 33% and 53%. It fell below the maximum required of them on the low side, but it was above the 40% threshold on the high side. On average, 41% of the

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bank's operating income was spent on operating activities. This was a little (1 basis point) above the maximum. This indicated that the bank had been quite efficient, but it could improve this ratio.

The all-time highest LA for the bank was 64% which was below the threshold. And the average threshold was 52% which was commendable. On average, the bank only lent out 52% of its assets. This helped promote its liquidity while maximising the returns in interest income. On the overall soundness, the bank's S-score ranged between 102% and 143%, with an average of 129%. This was way above the minimum for being considered sound (70%). Following this, Cal Bank is considered financially sound

Ecobank Limited

Ecobank, in similar regard, maintained a Capital Adequacy Ratio (CAR) above the 8% threshold with a minimum of 13% and a maximum of 23%. The average over the period was 16%. CA ratio of the bank also ranged between 7% and 2%, with an average of 4%. The bank's CA had not been quite convincing since 2014 despite having CA equal to 4% in 2014 and 2018. It reduced from 5% in 2013 to as low as 2% in 2017, and its 2019 score is 3% which was below the threshold. This meant that the bank was less safe regarding financing its total assets as it relied more on short-term funds.

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Table 7: Distress Analysis of EcoBank Limited

	2010	2011	2012	2013	ECOBANK LTD 2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	23%	14%	15%	14%	16%	17%	15%	13%	16%	19%	16%
CA >= 04 %	7%	5%	7%	5%	4%	3%	3%	2%	4%	3%	4%
EA >= 02 %	15%	12%	14%	12%	14%	13%	12%	11%	13%	13%	13%
NPLs =< 15 %	3%	1%	8%	6%	3%	17%	16%	15%	11%	6%	9%
CI =< 40 %	46%	53%	50%	45%	44%	44%	47%	52%	52%	46%	48%
LA =< 65 %	33%	40%	41%	46%	48%	47%	43%	30%	39%	40%	41%
S-Score: >70 - sound; <70 - Grey; >50 – Distress	135%	101%	114%	105%	114%	123%	111%	98%	116%	119%	114%

Source: Field data (2021)

The EA over the years was at least 10bp above the minimum threshold. The Equity to Asset ratio ranged between 12% and 15%, with an average of 13%. Non-performing loans had been well managed as in most of the years it was below 15%. The bank recorded its highest NPL in 2015 (17%). However, it has been reducing ever since to 6% in 2019. This showed a good credit management policy. Cost to Income ratio had not been relatively high, but it had been above the maximum threshold. The ratio ranged between 44% and 53%, with an average of 48%. The bank managed its loans very well and balanced its interest earnings and liquidity. The LA ratio had an average of 41%. Overall, the bank's soundness (S-score) was higher than 70% ranging from 101% to 135% and averaging 114%. Based on this, the bank was financially sound.

Societe Generale Bank

Société Generale maintained a capital adequacy ratio between 13% and 27% over the ten years, with an average of 18%. This was above the minimum required (8%). The CA ratio in similar regard scored a minimum of 4% and a maximum of 12%, with an average of 7%. This was above the minimum required (4%) and signified that the bank was safe as long-term funds financed at least 4% of its assets. The bank's financial position was much safer as it recorded an EA ratio between 13% and 20%, which was at least six times the minimum required. Non-performing loans had been managed with the well managed except for 2016, where it recorded NPL 2bp above the 15% maximum threshold. This was an indication of sound credit risk management policies. The bank failed to be within the 40% maximum threshold except for 2011 – 24% and 2019 – 24% operational efficiency. The minimum CI was 24%, and the maximum was 68%. Based on an average of 49% CI ratio, management had to put conscious efforts to improve operational efficiencies.

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Table 8: Distress Analysis of Societe Generale Bank

	SOCIETE GENERAL BANK										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Averag
25 %=< CAR >= 08 %	25%	27%	20%	16%	13%	16%	15%	17%	17%	15%	18%
CA >= 04 %	9%	7%	6%	5%	4%	5%	6%	5%	12%	9%	7%
EA >= 02 %	17%	18%	16%	16%	13%	13%	14%	19%	20%	18%	16%
NPLs =< 15 %	9%	8%	8%	7%	14%	15%	17%	13%	15%	9%	11%
CI =< 40 %	68%	24%	54%	51%	45%	50%	60%	57%	59%	24%	49%
LA =< 65 %	44%	41%	48%	61%	53%	46%	38%	51%	49%	59%	49%
S-Score: >70 - sound; <70 - Grey; >50 – Distress	163%	155%	136%	127%	111%	122%	122%	134%	147%	124%	134%

Source: Field data (2021)

The LA had been below the 65% maximum threshold, and it was pretty good. An average of 49% of the bank's total assets were issued as loans. On the overall soundness of the bank, the S-score ranged between 111% and 163%, with an average of 134%.

These scores were above the minimum threshold for financial soundness. Thus, the bank (Société Generale Bank) was financially sound.

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Stanchart Bank

Stanchart Bank maintained adequate capital to cushion depositors of their funds. The CAR ranged between 16% and 29%, with an average of 21%. This was above the 8% minimum required and the 10% needed for the Bank of Ghana. The bank's CA was not quite convincing despite being above the 4% minimum threshold in 2018 (5%) and 2019 (7%). Between 2011 and 2017, the CA was consistently below 4% (1%-3%). The EA ratio over the period was above the 2% minimum threshold.
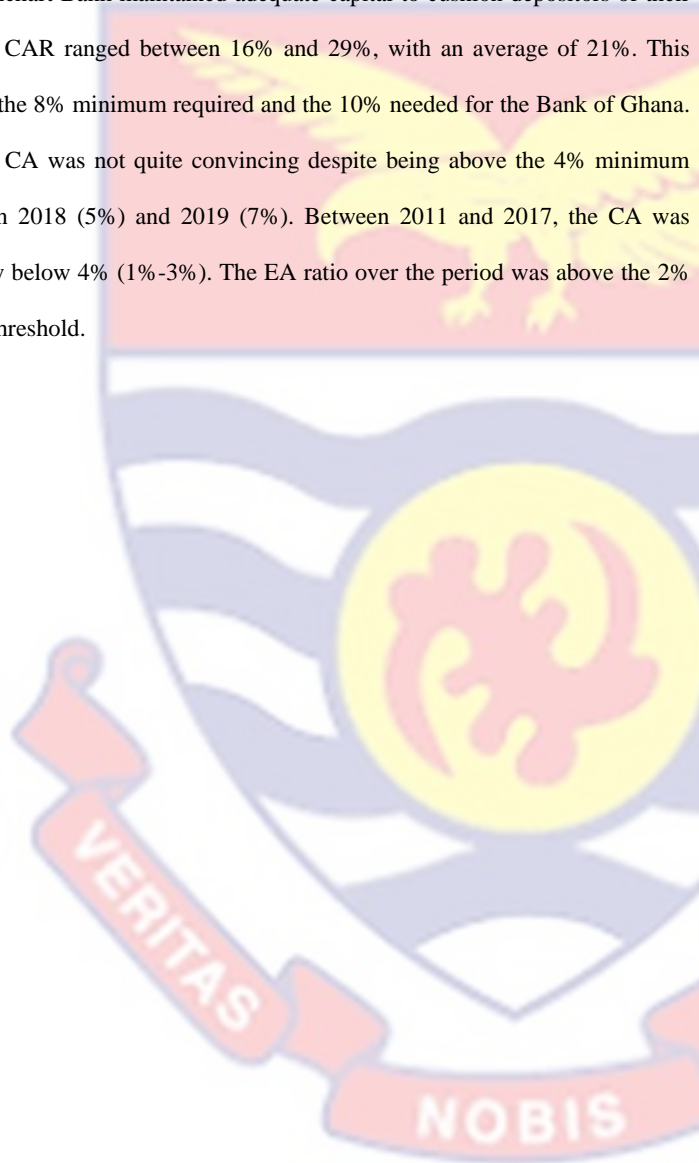
Table 9: Distress Analysis of StanChart Bank

	2010	2011	2012	2013	STANCHART BANK 2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	16%	17%	17%	24%	16%	16%	22%	26%	29%	28%	21%
CA >= 04 %	4%	3%	3%	2%	2%	2%	1%	2%	7%	5%	3%
EA >= 02 %	12%	12%	13%	16%	15%	16%	13%	13%	18%	15%	14%
NPLs =< 15 %	12%	10%	10%	16%	27%	43%	45%	8%	6%	17%	19%
CI =< 40 %	47%	43%	37%	31%	38%	4%	31%	36%	40%	39%	35%
LA =< 65 %	50%	55%	47%	39%	48%	45%	29%	29%	24%	25%	39%
S-Score: >70 - sound; <70 - Grey; >50 – Distress	117%	118%	116%	140%	122%	123%	141%	137%	158%	154%	133%

Source: Field data (2021)

The management of NPL had been mixed. Non-performing loans ranged between 6% and 45%, with an average of 19%. On the high side, about 45% of the bank's loans were impaired, which was not good.

The bank's credit management was not at its best and should be prudently reviewed. It was by no surprise that it was more conservative in giving out loans. The average LA was 39%. This ratio has been below 30% since 2016. The S-score of the bank ranged between 116% and 158%, with an average of 133%. The bank was financially sound, and the minimum of the years was higher than the 70% minimum threshold for financial soundness.

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Republic Bank

The Republic Bank's operations between 2010 and 2019 had managed its capital adequacy very well. It ranged between 12% and 34%, with an average of 22%. This was above the minimum threshold (8%) as per IMF (2000) and that of the Bank of Ghana (10%). The bank had at least 5% of its total assets financed from long-term funds as it records CA between 5% and 16% and an average of 10%. This was above the minimum threshold (4%). At least 8% of the total assets of the bank's assets were funded by the owners of the company (shareholders' funds). The IMF (2000) required a minimum of 2% for a bank to secure its financial position. The percentages on NPL had not been convincing.

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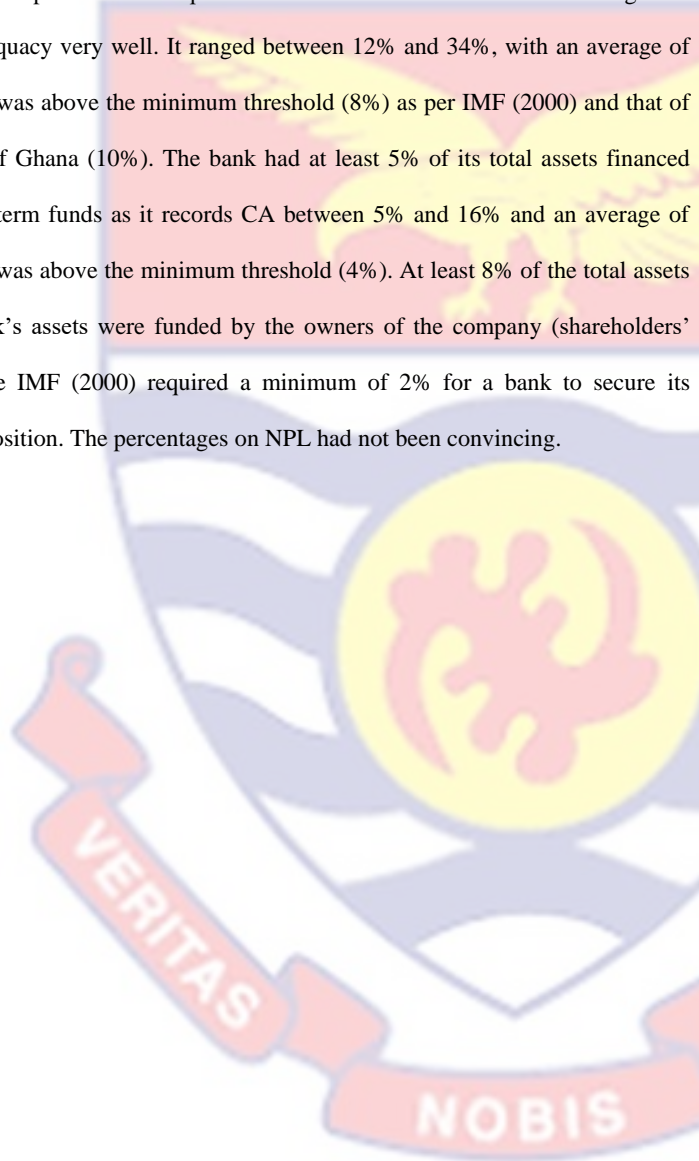
Table 10: Distress Analysis of Republic Bank

REPUBLIC BANK	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	19%	17%	29%	23%	19%	13%	12%	23%	34%	31%	22%
CA >= 04 %	12%	10%	16%	10%	7%	6%	5%	7%	14%	12%	10%
EA >= 02 %	19%	17%	22%	17%	18%	12%	8%	11%	17%	17%	16%
NPLs =< 15 %	16%	14%	13%	12%	11%	15%	22%	25%	21%	18%	17%
CI =< 40 %	67%	73%	67%	53%	54%	76%	96%	75%	69%	62%	69%
LA =< 65 %	51%	50%	58%	53%	51%	59%	50%	39%	41%	42%	49%
S-Score: >70 - sound; <70 - Grey; >50 - Distress	159%	147%	204%	159%	142%	125%	119%	158%	212%	192%	162%

Source: Field data (2021)

Non-performing loans since 2016 had been above the 15% maximum. NPL ranged between 11% and 25%. This meant more had to be done on the credit risk management policy of the firm to maintain the NPL within the 15% threshold. The bank's CI ratio had been very high. It ranged from 53% to as high as 96%, with an average of 69%. Operational efficiencies had not been at their best, and more needed to be done by management to reduce it to the maximum of 40% of operating income. The loans to asset ratio ranged between 41% and 58%, below the maximum threshold. What helped the bank balance was liquidity with interest income. On the overall financial soundness of the bank, it had an S-score between 119% and 212%, with an average of 162%. This indicated that the bank was financially sound.

GCB Bank

The Capital Adequacy Ratio of GCB in the years under review ranged between 10% and 28%. The minimum required by the Bank of Ghana was 10%, and the bank met it all the years. Also, the CAR was within the range IMF recommended for a bank to be able to absorb shocks. Regarding financing the bank's assets from long-term funds, the bank had an average CA ratio of 3%, which was below the minimum threshold of 4%. This indicated that the bank (GCB) finances the majority of its total assets from short-term funds, so the bank's assets were secured on short-term funds. The bank needed to improve this ratio to the safe zone (>=4%).

Table 11: Distress Analysis of GCB Ltd

	2010	2011	2012	2013	GCB 2014	2015	2016	2017	2018	2019	Average
25 %=< CAR >= 08 %	10%	11%	15%	21%	25%	24%	28%	23%	24%	18%	20%
CA >= 04 %	3%	3%	2%	3%	2%	2%	2%	1%	5%	4%	3%
EA >= 02 %	8%	7%	10%	13%	16%	18%	17%	12%	12%	13%	13%
NPLs =< 15 %	13%	21%	17%	14%	11%	13%	14%	10%	6%	6%	12%
CI =< 40 %	58%	86%	64%	39%	59%	49%	55%	68%	61%	59%	60%
LA =< 65 %	57%	28%	30%	33%	32%	37%	31%	24%	28%	31%	33%
S-Score: >70 - sound; <70 - Grey; >50 -	98%	101%	109%	127%	146%	146%	160%	132%	137%	117%	127%

Source: Field data (2021)

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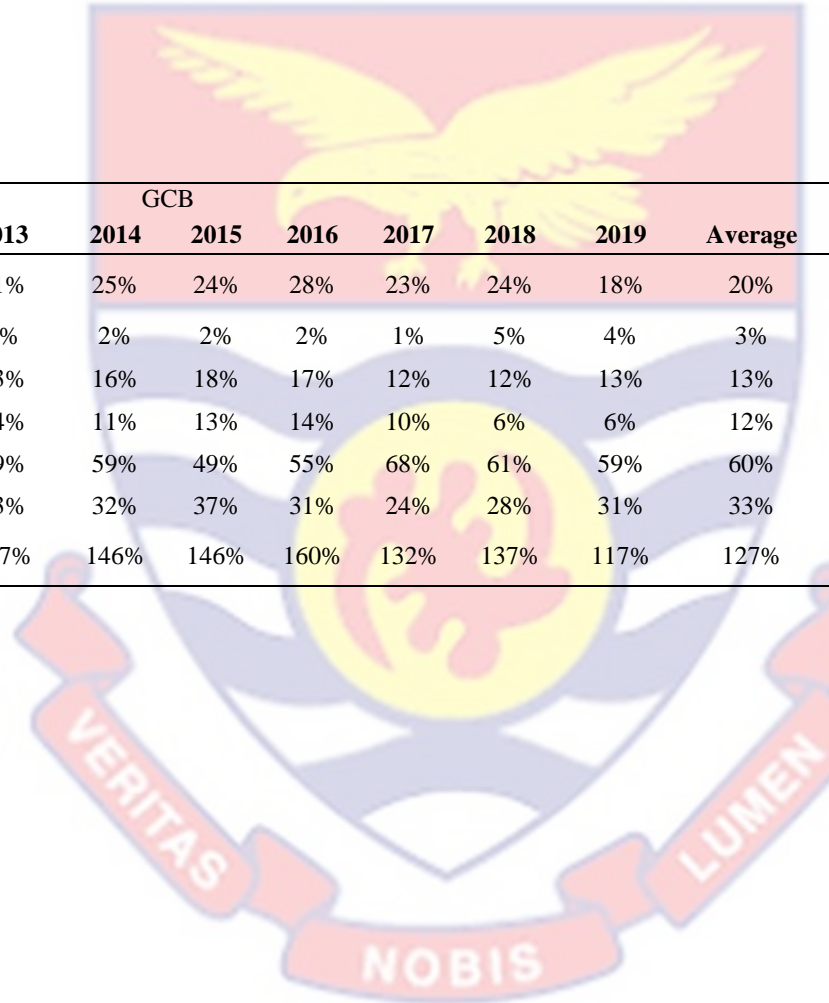
Unlike the CA, the Equity-Asset ratio recorded percentages above the minimum required. The EA ranged from 8% to 18%, with an average of 13%. This indicated that the proportion of total assets financed by shareholders' funds was above what was required of a sound bank, and this was a positive indication. Non-performing loans ranged from 6% to 21%. It had been declining since 2016, which showed a sign of an effective credit management policy. In addition, since 2013, the bank's NPL had remained below the maximum threshold, which was positive. On the CI ratio, the bank had not been able to meet the 40% maximum threshold. The range of CI ratio over the period was from 39%, which was recorded in 2014, to 86% in 2011. However, it had been declining since 2017, which was an improvement. However, more had to be done to manage operating expenses efficiently.

The average LA is 33%, which indicates a conservative approach to giving out loans. The bank appeared to prefer liquidity to interest earnings. The S-score, measuring the bank's financial soundness, indicated that the bank was very sound as its minimum S-score over the period was 98%. And this was above the 70% minimum recommended by IMF (2000).

ADB Bank

The Agricultural Development Bank (ADB) recorded an average CAR of 12%, only 2bp above the minimum required by the Bank of Ghana. The CAR over the years ranged between 8% and 16%. After a consistent decline from 2013 to 2015 (where it recorded its minimum of 8%), it has improved since 2016 to a maximum of 16% in 2019.

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These CARs were within the recommended range as per IMF (2000). The bank had enough to cushion it against shocks in its balance sheet. However, this improvement needed to be maintained.

Table 12: Distress Analysis of ADB Ltd

					ADB						
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Average**
25 %=< CAR >= 08 %	10%	10%	11%	13%	10%	8%	14%	14%	14%	16%	12%
CA >= 04 %	5%	6%	5%	5%	3%	4%	9%	8%	8%	9%	6%
EA >= 02 %	11%	15%	14%	17%	16%	16%	15%	14%	18%	17%	15%
NPLs =< 15 %	5%	7%	11%	12%	23%	34%	44%	43%	49%	42%	27%
CI =< 40 %	80%	83%	78%	70%	89%	137%	138%	88%	91%	96%	95%
LA =< 65 %	60%	56%	54%	56%	52%	51%	33%	32%	30%	32%	46%
S-Score: >70 - sound; <70 - Grey; >50 -	107%	114%	113%	124%	123%	135%	162%	141%	150%	159%	133%

Source: Field data (2021)

Long-term funds financed an average of 6% of the total assets. This was above what was required of the bank to be safe, as per IMF (2000). The percentage of total assets financed by shareholders' funds ranged between 11% and 18%, with an average of 15%. This was above the minimum recommended for a sound bank. The Non-performing loans increased from 5% in 2010 to 49% in 2018, which was not a good indication. The latest NPL as of 2019 was 42%.

The bank had not been managing its credit management policies had not been effective. The bank's performance was worse in terms of the cost to income ratio. The minimum over the period was 70% which was about 75% higher than the maximum recommended (40%). In some instances, the CI ratio was more than 100% (2015 – 137%; 2016 – 138%), meaning the bank made losses in such period, which was not a good performance. The average was 95%. Corresponding to the high NPL, the bank reduced its loan as a percentage of total assets from 56% in 2013 to 32% in 2018. In 2019, it increased to 32%, corresponding to NPL reduction. Notwithstanding, the overall measure of soundness (S-score) over the years was above the 70% minimum required for banks to be considered sound.

Impact of Distress Level on Financial Performance

Correlation Analysis

This section used correlation analysis to analyze the relationship between the variables used in the study. According to Lewis, Thornhill and Saunder, (2009) Pearson correlation analysis helped examine the relationship between two or more variables.

Table 13: Correlation Analysis

		Capital Adequacy Ratio	Capital-Asset Ratio	Equity-Asset Ratio	Non-performing Loans	Cost-Income Ratio	Loan-Asset Ratio	S-Score	Return on Asset	Firm Growth	Firm Size
Capital Adequacy Ratio	Pearson Correlation	1									
	Sig. (2-tailed)										
	N	80									
Capital-Asset Ratio	Pearson Correlation	.313**	1								
	Sig. (2-tailed)	.005									
	N	80	80								
Equity-Asset Ratio	Pearson Correlation	.374**	.868**	1							
	Sig. (2-tailed)	.001	.000								
	N	80	80	80							
Non-performing Loans	Pearson Correlation	-.177	.036	.016	1						
	Sig. (2-tailed)	.116	.751	.885							
	N	80	80	80	80						
Cost-Income Ratio	Pearson Correlation	-.303**	.037	-.153	.426**	1					
	Sig. (2-tailed)	.006	.747	.177	.000						
	N	80	80	80	80	80					
Loan-Asset Ratio	Pearson Correlation	-.317**	-.239*	-.232*	-.320**	-.043	1				
	Sig. (2-tailed)	.004	.033	.038	.004	.707					
	N	80	80	80	80	80	80				
S-Score	Pearson Correlation	.815**	.700**	.690**	.142	.057	-.297**	1			
	Sig. (2-tailed)	.000	.000	.000	.208	.617	.007				
	N	80	80	80	80	80	80	80			
Return on Asset	Pearson Correlation	.293**	-.097	.136	-.422**	-.744**	-.130	-.052	1		
	Sig. (2-tailed)	.008	.394	.231	.000	.000	.252	.650			
	N	80	80	80	80	80	80	80	80		
Firm Growth	Pearson Correlation	-.028	-.200	-.121	-.098	-.134	.085	-.145	-.035	1	
	Sig. (2-tailed)	.807	.076	.287	.389	.235	.455	.200	.759		
	N	80	80	80	80	80	80	80	80	80	
Firm Size	Pearson Correlation	.104	.138	.127	-.019	-.281*	.040	.086	.257*	-.113	1
	Sig. (2-tailed)	.359	.223	.263	.869	.012	.727	.447	.021	.318	
	N	80	80	80	80	80	80	80	80	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2021)

There was a positive relationship between CAR and CA, EA, S-score, and RoA. This relationship was statistically significant. The correlation coefficients were (0.313, 0.374, 0.815, and 0.293 respectively). The relationship between CAR and S-score was positively strong (0.815). This meant that maintaining a good CAR or improving CAR positively impacted the bank's financial soundness. Thus, firms with higher CAR were highly likely to be financially sound and improved financial performance as measured with RoA. Interestingly, there was a statistically significant negative relationship between CAR and CI and LA (correlation coefficient of -0.303 and -0.317, respectively). There was a statistically significant positive relationship between the Capital to Asset ratio and EA and S-score. The correlation coefficient is 0.868, 0.7 respectively with p-values of 0.000 and 0.00. This indicated that the better the CA position of the bank, the more financially sound the bank was as the relationship was strong. There was also a statistically significant negative relation between CA and Loans to Asset Ratio. The better the CA's position, the more conservative the bank was to preserve its liquidity.

The EA ratio had a statistically positive relationship with the bank's financial soundness (S-score). The correlation coefficient was 0.69, and the p-value of 0.000. This indicated that firms are considered more financially sound when they fund their total assets from equity. However, doing so was likely to reduce the Loan to Asset Ratio, hence the negative relationship (correlation coefficient of -0.232. Though weak, the relationship was statistically significant.

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Non-performing loans and the Cost to Income Ratio had a statistically significant negative relationship with firms' return on assets. The correlation coefficient is -0.422 and -0.744, respectively. This indicated that the higher the non-performing loans, the lower the firm's profitability. This called for stringent credit management policies for the banks to maintain good financial performance (return on assets).

Regression Analysis

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	.839[a]	.704	.671	.0159516

Source: Field data (2021)

The R-value provided in Table 14 represented the correlation, and it was 0.839. This indicated a high positive correlation (Lewis, Thornhill & Saunders, 2009). The R-squared value indicated how much of the total variation in the dependent variable (RoA) could be explained by the independent variables. 70% of the variations in the RoA could be explained by CAR, CA, EA, NPL, LA, and CI.

Table 15: Summary of ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.043	8	.005	21.137	.000[b]
	Residual	.018	71	.000		
	Total	.061	79			

Source: Field data (2021)

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The summary of ANOVA indicated that the regression model predicted the dependent variable significantly well. According to Lewis, Thornhill and Saunders (2009), the model was statistically significant when the p-value of the model was less than the critical value used in the study. The p-value of the model was (0.000), which was less than the 5% significance level used in the study. This indicated that the regression model statistically significantly predicted the outcome variable (RoA) (i.e., it was a good fit).

The coefficients table provided the necessary information to predict the independent variables' financial performance (RoA). The significance level of the individual variables was also indicated in the table.

Table 16: Coefficients of Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.123	.021		5.835	.000
Capital Adequacy Ratio	-.006	.032	-.015	-.192	.849
Capital-Asset Ratio	-.294	.071	-.596	-4.129	.000
Equity-Asset Ratio	.274	.081	.485	3.365	.001
Non-performing Loans	-.073	.020	-.283	-3.574	.001
Cost-Income Ratio	-.065	.010	-.531	-6.264	.000
Loan-Asset Ratio	-.066	.018	-.268	-3.549	.001
Firm Growth	-.004	.002	-.159	-2.361	.021
Firm Size	.007	.004	.117	1.677	.098

a. Dependent Variable: Return on Asset

Source: Field data (2021)

Except for Equity-Asset Ratio, all the other independent variables had a negative impact on the Return on Asset of the banks. Non-performing loans (NPL) Cost Income Ratio was statistically significant with an unstandardized coefficient of -0.73 and -0.065, respectively. This indicated that the higher the NPL and CI, the lower the RoA. This finding was consistent with that of Saeed (2019) and (Africa, 2018). However, the statistically significant negative coefficients of the loan ratio were not consistent with their findings. This negative impact implied that an increase in LA would result in a reduction in RoA. The EA had a statistically significant positive impact on RoA. The shareholder's fund was made of owners' capital and accumulated retained profits. This finding was consistent with others (Kirori & Ouma, 2019). Although it had a negative coefficient (-0.006), CAR was not statistically significant as its p-value was 0.849, and it was higher than the 5% critical value.

Chapter Summary

The findings from the study revealed that the banks listed on the Ghanaian Stock Market had high non-performing loans with as high as 49%. A number of the banks with such high non-performing loans (above the 15% threshold) appeared to be more conservative in giving more loans. They had a Loan-Asset Ratio far below the 65% maximum threshold. The bank's return on assets ranged from negative (-4.69%) to positive (9.18%) with an average of 4.2%. Notwithstanding these mixed results, all the eight banks could be considered sound.

Their S-score ranged from approximately 98% to 296%, with the minimum being above the 70% minimum threshold required by the IMF (2000) for a bank to be considered sound.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The study focused on discussing the issues of corporate failures and how they affected investors and the economy by looking at eight commercial banks listed on the Ghana Stock Exchange from 2010 to 2019. This chapter presented the summary of the findings and discussions on the research topic and provided recommendations for future research.

Summary of Key Findings

Findings from the study revealed that the banks listed on the Ghana Stock Exchange were sound. The bank's Capital Adequacy Ratio was within the recommended range (between 8% and 25%), with some banks recording as high as 54% in some years. The average CAR was 18%. This indicated that the banks had enough capital to cushion them against shocks on their balance sheet. At least 1% of the banks' total assets were financed from long-term funds. The required minimum as per IMF (2000) was 4%. This indicated that some banks fell below the minimum in some periods. The maximum was 40% which was quite commendable as such banks were safer with their financing of total assets. The average CA was 6% and was above the minimum threshold.

The proportion of total assets financed by shareholders was recommended to be at least 2% for a bank to be considered sound (IMF., 2000). The EA of the banks ranged between 7% and 44%. This was a positive indication that the banks would not rely extensively on debt financing.

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The average EA was 15%. Non-performing loans ranged between 0.6% and 49%, with an average of 15%. While some banks had non-performing loans below the 15% maximum threshold, others recorded ratios higher than that. This indicated the variability in the credit management policies in the financial sector. The majority of the banks had a CI ratio more than the maximum threshold (40%) required of sound banks (IMF., 2000). On the issue of loans to asset ratio, most banks with high NPL resorted to a conservative approach of giving out loans by reducing the percentage of their total assets given out as loans. NPL ranged between 9% and 64%, with an average of 43%.

In all, the banks were considered financially sound, with S-scores over the ten years being above the 70% minimum threshold for sound banks as per the bankometer. The S-score for the banks ranged between 98% and 295%, with an average of 114%. This implied that the banks were financially sound. Concerning the Return on Assets, it ranged from -4.7% to 9%, with an average of 3%. Thus, some banks made some negative returns in some periods.

NPL and CI ratio had a statistically significant negative relationship with RoA. However, CAR had a statistically significant positive relationship with RoA. Thus, an increase in CAR would cause an increase in RoA.

Conclusions

As complex as their operations, banks were needed to operate efficiently to maximize the returns to their shareholders (stakeholders by extension).

- The banks listed on the Ghana Stock Exchange were financially sound.

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- However, the banks had averagely high non-performing loans and cost-income ratios. Higher non-performing loans indicated weak or porous credit management policies, which may cost shareholders' wealth.

- The banks accepted deposits, added to their funds available and issued them out as loans. If large portions of these loans remained unpaid, how would the bank repay the depositor's money and grow the owners' wealth?

- In addition, the banks' operating expenses were significantly high, with some having a CI ratio above 100%. This eroded the gains made out of operations and negatively impacted the shareholders' wealth.

Recommendations

Based on the finding of the study, the following recommendations were made.

- The non-performing loans of the banks were high. This was a cause for concern for investors and owners. Management of the banks should prudently review their credit policies to maintain non-performing loans as low as possible (within the 15% maximum threshold).

- CI ratio continued to be high amongst the banks. The management of the banks should implement cost-efficient policies to curtail the high operational costs recorded by the banks. This would help maximize operational efficiency and improve the returns generated by the banks.

- The Bank of Ghana as the main regulator should continually monitor the critical ratios of these banks to proactively make the necessary interventions to the banks to prevent more corporate failures in the sector.

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APPENDICES

ACCESS BANK LTD

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	11.50%	52.00%	22.54%	15.88%	12.44%	12.22%	11.10%	13.24%	20.40%	21.75%
CA >= 04 %	39.61%	28.91%	14.83%	11.93%	6.88%	4.88%	5.40%	4.54%	11.30%	8.49%
EA >= 02 %	44.04%	35.02%	21.33%	21.75%	16.89%	14.81%	15.95%	14.33%	17.84%	17.06%
NPLs =< 15 %	18.13%	4.72%	25.63%	9.79%	8.60%	5.40%	25.71%	32.31%	30.31%	21.60%
CI =< 40 %	45.68%	48.05%	22.24%	20.98%	48.20%	54.06%	74.67%	78.33%	79.23%	42.55%
LA =< 65 %	9.25%	27.26%	34.41%	43.75%	49.63%	49.98%	47.98%	27.52%	23.03%	27.44%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	180.79 %	295.55 %	162.55 %	129.25 %	113.60 %	107.31 %	123.11 %	124.23 %	160.92 %	146.03 %
Return on Asset	0.0610	0.0462	0.0582	0.0724	0.0717	0.0506	0.0258	0.0184	0.0203	0.0467
GROWTH	0.0000	0.1299	4.0453	0.1708	0.6127	0.1233	0.0206	-0.0084	0.2786	0.1083
Size	5.2940	5.4483	5.9016	5.9962	6.2352	6.3846	6.4281	6.5037	6.5491	6.6732

CAL BANK LTD

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	16.10%	11.60%	19.66%	19.03%	21.80%	21.40%	18.20%	21.10%	16.50%	22.70%
CA >= 04 %	5.43%	3.53%	8.63%	6.41%	3.69%	2.98%	2.78%	2.37%	7.40%	5.68%
EA >= 02 %	15.31%	11.82%	17.60%	18.10%	14.49%	15.10%	13.97%	15.37%	14.14%	13.65%
NPLs =< 15 %	11.40%	9.70%	5.10%	7.90%	6.20%	5.50%	8.00%	10.90%	8.00%	9.90%
CI =< 40 %	52.70%	50.90%	36.60%	33.80%	32.60%	35.90%	41.10%	40.80%	44.20%	44.80%
LA =< 65 %	51.35%	52.48%	64.47%	62.94%	49.41%	53.90%	54.63%	44.00%	44.91%	41.48%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	126.05 %	102.16 %	142.69 %	138.00 %	132.49 %	133.12 %	123.61 %	132.23 %	121.85 %	140.32 %
Return on Asset	0.0233	0.0313	0.0554	0.0805	0.0718	0.0636	0.0034	0.0495	0.0426	0.0344

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	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
GROWTH	0.0000	0.3444	0.8539	0.6639	0.4786	0.2216	-0.0797	0.2486	0.1662	0.1293
Size	5.6988	5.8955	6.0642	6.1928	6.4326	6.5252	6.5562	6.6246	6.7329	6.8476

ECOBANK LTD

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	22.51%	13.57%	14.77%	13.69%	16.45%	17.13%	14.74%	12.57%	16.35%	18.58%
CA >= 04 %	6.57%	4.70%	6.71%	4.90%	4.00%	3.44%	2.82%	2.49%	3.98%	3.16%
EA >= 02 %	14.96%	11.79%	13.51%	12.05%	13.83%	13.37%	11.86%	11.29%	12.56%	13.38%
NPLs =< 15 %	3.36%	0.66%	8.00%	6.10%	3.20%	16.56%	15.70%	15.29%	11.47%	5.70%
CI =< 40 %	46.00%	52.50%	50.00%	45.30%	44.20%	43.96%	46.94%	52.40%	51.50%	45.80%
LA =< 65 %	32.61%	39.87%	41.29%	45.94%	47.75%	47.31%	43.37%	29.52%	39.43%	40.30%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	135.46 %	100.78 %	114.28 %	105.35 %	114.44 %	123.21 %	110.91 %	97.97%	116.38 %	119.10 %
Return on Asset	0.0596	0.0482	0.0581	0.0566	0.0765	0.0700	0.0570	0.0393	0.0479	0.0481
GROWTH	0.0000	0.2851	0.8679	0.3494	0.4468	0.2149	0.1710	-0.0710	0.1675	0.1858
Size	6.1822	6.3280	6.5288	6.6651	6.7536	6.8187	6.9045	6.9590	7.0194	7.1205

SOCIETE GENERALE BANK

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	24.52%	26.90%	19.79%	16.19%	13.48%	16.07%	15.47%	16.72%	16.70%	15.06%
CA >= 04 %	9.03%	7.42%	5.73%	5.13%	3.72%	4.99%	5.65%	4.96%	11.78%	9.10%
EA >= 02 %	17.20%	17.91%	15.59%	15.86%	13.25%	13.18%	13.58%	18.60%	20.45%	18.05%
NPLs =< 15 %	8.50%	8.15%	7.50%	7.35%	13.75%	14.80%	16.90%	13.30%	14.80%	8.80%
CI =< 40 %	68.17%	23.84%	54.02%	50.68%	44.82%	50.01%	59.99%	56.94%	59.41%	23.77%
LA =< 65 %	43.59%	40.96%	47.76%	60.86%	52.69%	45.51%	38.48%	50.53%	48.53%	59.48%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	163.00 %	155.20 %	136.39 %	127.35 %	111.44 %	121.64 %	122.44 %	133.55 %	146.78 %	124.22 %

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Return on Asset	0.0388	0.0388	0.0377	0.0412	0.0424	0.0321	0.0261	0.0324	0.0307	0.0398
GROWTH	0.0000	0.1599	0.2109	0.3140	0.5056	0.1326	-0.0244	0.1740	0.0421	0.2668
Size	8.8395	8.9248	9.0370	9.0851	9.2243	9.3016	9.3890	9.4456	9.5355	9.6478

STANCHART BANK

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	16%	17%	17%	24%	16%	16%	22%	26%	29%	28%
CA >= 04 %	4%	3%	3%	2%	2%	2%	1%	2%	7%	5%
EA >= 02 %	12%	12%	13%	16%	15%	16%	13%	13%	18%	15%
NPLs =< 15 %	12%	10%	10%	16%	27%	43%	45%	8%	6%	17%
CI =< 40 %	47%	43%	37%	31%	38%	4%	31%	36%	40%	39%
LA =< 65 %	50%	55%	47%	39%	48%	45%	29%	29%	24%	25%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	117%	118%	116%	140%	122%	123%	141%	137%	158%	154%
Return on Asset	0.0609	0.0579	0.0713	0.0914	0.0784	0.0270	0.0790	0.0884	0.0547	0.0557
GROWTH	0.0000	-0.0031	0.2988	0.4882	0.2420	0.0180	0.1688	0.0902	0.0534	0.1965
Size	6.2222	6.2947	6.3785	6.4754	6.5448	6.5276	6.6408	6.6792	6.7754	6.8819

REPUBLIC BANK

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	19%	17%	29%	23%	19%	13%	12%	23%	34%	31%
CA >= 04 %	12%	10%	16%	10%	7%	6%	5%	7%	14%	12%
EA >= 02 %	19%	17%	22%	17%	18%	12%	8%	11%	17%	17%
NPLs =< 15 %	16%	14%	13%	12%	11%	15%	22%	25%	21%	18%
CI =< 40 %	67%	73%	67%	53%	54%	76%	96%	75%	69%	62%
LA =< 65 %	51%	50%	58%	53%	51%	59%	50%	39%	41%	42%

S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	159%	147%	204%	159%	142%	125%	119%	158%	212%	192%
Return on Asset	0.0337	0.0306	0.0267	0.0488	0.0516	-0.0238	-0.0307	0.0272	0.0158	0.0277
GROWTH	0.0000	0.2228	0.3016	0.8269	0.5649	0.0268	-0.0325	0.2018	0.2556	0.1815
Size	5.5580	5.6344	5.7692	5.9881	6.1220	6.1922	6.2686	6.3179	6.4561	6.5220

GCB BANK

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	10%	11%	15%	21%	25%	24%	28%	23%	24%	18%
CA >= 04 %	3%	3%	2%	3%	2%	2%	2%	1%	5%	4%
EA >= 02 %	8%	7%	10%	13%	16%	18%	17%	12%	12%	13%
NPLs =< 15 %	13%	21%	17%	14%	11%	13%	14%	10%	6%	6%
CI =< 40 %	58%	86%	64%	39%	59%	49%	55%	68%	61%	59%
LA =< 65 %	57%	28%	30%	33%	32%	37%	31%	24%	28%	31%
S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	98%	101%	109%	127%	146%	146%	160%	132%	137%	117%
Return on Asset	0.0331	0.0121	0.0634	0.0918	0.0904	0.0757	0.0739	0.0323	0.0420	0.0455
GROWTH	0.0000	-0.1268	0.4527	0.3560	0.2903	0.1796	0.2253	0.0475	0.1324	0.2403
Size	6.3167	6.3900	6.4731	6.5303	6.6266	6.6655	6.7817	6.9804	7.0267	7.0940

ADB

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
25 %=< CAR >= 08 %	10%	10%	11%	13%	10%	8%	14%	14%	14%	16%
CA >= 04 %	5%	6%	5%	5%	3%	4%	9%	8%	8%	9%
EA >= 02 %	11%	15%	14%	17%	16%	16%	15%	14%	18%	17%
NPLs =< 15 %	5%	7%	11%	12%	23%	34%	44%	43%	49%	42%
CI =< 40 %	80%	83%	78%	70%	89%	137%	138%	88%	91%	96%
LA =< 65 %	60%	56%	54%	56%	52%	51%	33%	32%	30%	32%

S-Score: >70 - sound; <70 - Grey; <50 – Bankrupt	107%	114%	113%	124%	123%	135%	162%	141%	150%	159%
Return on Asset	0.0127	0.0381	0.0185	0.0518	0.0161	-0.0469	-0.0348	0.0134	0.0095	0.0039
GROWTH	0.0000	0.1892	0.4765	0.1592	0.1707	-0.1670	0.0189	0.4624	-0.0477	0.1021
Size	5.9843	6.0813	6.1596	6.2100	6.3338	6.3292	6.4822	6.5496	6.5560	6.6606

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