KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

SCHOOL OF BUSINESS

FINANCIAL DISTRESS AND ITS DETERMINANTS; EVIDENCE FROM BANKS IN GHANA.

BY
ABASS IBRAHIM
(PG-9423721)

A thesis submitted to the institute of distance learning, Kwame Nkrumah University of Science and Technology, Kumasi, in partial fulfilment of the requirements for the award of

MASTER OF SCIENCE ACCOUNTING AND FINANCE

SEPTEMBER, 2022

DECLARATION

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

Ibrahim Abass (PG-9423721) …………………………… ………………………

Student Name   Signature   Date

Certified By:

Prof K. O. Appiah   ……………………….   ………………………….

(Supervisor)   Signature   Date

Certified By:

Prof K. O. Appiah   ………………………….   ………………………….

(HOD)   Signature   Date

ABSTRACT

The main objective of this study is to assess the financial distress condition and its determinants of a country's banks. The study adopts the correlational research design. The research employs a quantitative method because it wants to determine whether there are any important correlations between the variables. The study made use of secondary data. Secondary data sources provide knowledge gathered from previous sources: journal paper searches on the Internet or archives, as well as the financial statements of the banks operating in Ghana. The population from banks operating in Ghana and listed on Ghana Stock Exchange. The study purposely selected 5 banks in Ghana from 2012 to 2021. The study revealed that the majority of Ghanaian banks are not in financial distress. Also, it was revealed that the determining factors of the financial distress condition of banks include profitability and capital adequacy but excluded liquidity. Therefore, the study concludes that the determinants of the financial distress condition of banks include profitability and capital adequacy but excluded liquidity. This tells that firms generating an adequate profit and having healthy capital adequacy will suffer a little from financial distress. Therefore, it is recommended that corporate managers must also set and keep the right levels of liquidity, leverage, profitability, and revenue growth to ensure smooth operation and the organization's continuous survival. The government must also pay special attention to the insurance sector to decrease the likelihood of a financial catastrophe by developing a supportive climate and providing the necessary infrastructure.

DEDICATION

To Allah my Lord and Master, and to my dear wife and also to my children.

ACKNOWDGEMENT

This thesis was made possible by the contributions of a number of people to whom I am very grateful. I would like to express thanks to my supervisor, Prof: K. O. Appiah who tireless offered constructive suggestions to the research process and who also took the pain to meticulously read and make the necessary corrections to ensure quality.

My thanks also go to my dear wife for her understanding and moral support throughout the period of the research. Sweetie, I appreciate all the support you gave me and Allah richly bless you.

I also acknowledge my colleagues who read through the work and offered suggestions, and everybody who helped in one or the other to make this project a success.

Glory be to Allah who has provided all that was needed for the successful completion of this work.
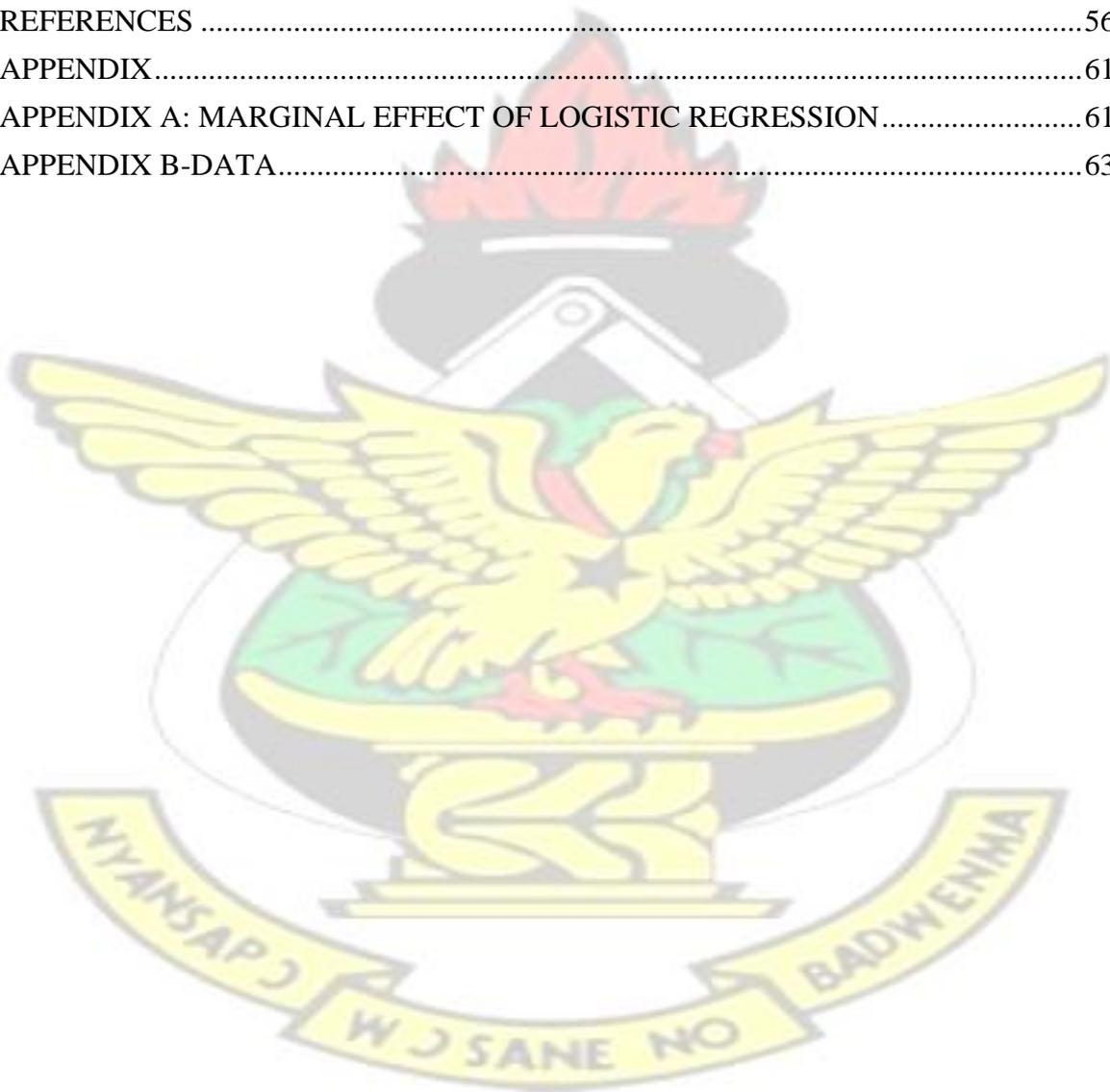
TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

A nation's economic system is cantered on its banks. The development of a nation's financial system depends critically on the banking sector. In today's economy, bank failures are a typical occurrence. Deep recessions typically follow financial turmoil and crises (Claessens and M. Kose, 2013). The main reason is the sudden drop in loans that happened after financial intermediation broke down. The word "financial distress" is used in corporate finance to describe when a bank fails, but it is hard to define (Isayas, 2021). Financially troubled businesses may face a number of problems, such as operational insolvency, dividend cuts, losses, plant closures, falling stock prices, and the loss of customers, important suppliers, and key workers (Purnanandam, 2008).

Since almost every part of the economy is linked to and served by the banking sector, if businesses in that sector fail, it will affect other parts of the economy. A global poll on global banking fraud done by KPMG (2019) found that between 2015 and 2018, both the amount and value of external fraud went up for more than half of the people who responded. A similar trend can be seen in the Ghanaian banking sector. According to a Ghana Web (2019) article about a Bank of Ghana study, the number of fraud cases reported by commercial banks in Ghana in 2018 was 50% higher than in 2017. Aubert (2012) says that the heart of a business is the balance between risk and return. Businesses can't make money without taking risks. But for it to make money, it needs to be carefully planned and run.

As the business world gets more difficult and uncertain, companies need to make sure they have good management systems in place to lower the risk that all businesses face.

Andrade and Kaplan (1997), who were cited by Enyew et al. (2019), said that a company is in financial trouble when it can't pay its debts to its creditors and has to restructure or go bankrupt as a result. This is partly true because there are many things that can cause people to be poor. There are a lot of things that can cause a bank to fail, but here are a few: operating losses, dividend cuts, branch closings, a rise in non-performing loans (NPLs), unstable return on assets (ROA) and return on equity (ROE), etc. Financial trouble is one of the biggest worries for many businesses around the world, no matter how big or small they are. (Outecheva, 2007) A business is said to be in financial distress when it has a temporary lack of cash flow and is having trouble meeting all of its financial responsibilities on time and in full.

Brownbridge (1998) says that banks are in a financial crisis when they are legally bankrupt and/or have no cash on hand. When a company's assets are less than what it owes, this is called being "insolvent." A situation in which a company's working cash flows aren't enough to pay its current debts, forcing the company to take action. For the economy to be stable and grow, it is very important that the banking industry is financially stable. Because of this, figuring out the financial health of banks is a key goal for many people. Because it is so expensive for a bank to fail, the body in charge of keeping an eye on them must act quickly to save failed banks before they fail (Cheserek, 2007). Even though there has been a lot of empirical study to find the most important factors that affect how financially troubled an institution is (Isayas, 2021).

1.1 Statement of Problem

An increasing tide of non-performing loans, an economic slump, and insolvency mostly caused by inadequate internal control systems and financial distress have all presented difficult times for Ghana's banking sector in recent years (Oxford Business Group, 2019). The Ghanaian banking industry expanded significantly prior to 2016, as seen by its contribution to GDP increasing from 4.4 percent in 2011 to 9.4 percent in 2016. (GSS,

2017). Additionally, from 16 in 2000 to 36 in 2016, there were more universal banks. (PwC, 2016). Although the banking industry is regarded as the second-largest banking group in sub-Saharan Africa, it nevertheless has difficulties. As a result, the Bank of Ghana decided to launch a significant healthcare refinancing project in the area. According to a Bank of Ghana report, several local banks are undercapitalized as a result of a review of the quality of bank funds conducted between 2015 and 2016. High debt levels and ineffective government management do not exist.

According to Banahene (2018), these issues could have been largely avoided if efficient internal control mechanisms had been put in place. Instead, these banks lost enormous sums of money, and some went bankrupt. After the sector had been cleaned up, 9 banks had their licenses to operate revoked, and GH13 billion had been injected to stabilize it. Although ineffective internal control systems may have contributed to the failure of these banks, it is unclear to what extent the 23 commercial banks that are still in operation have improved financially. Additionally, the banking industry in the nation is very competitive due to the rise in tier 2 and tier 3 banking companies (savings and loans, microfinance, finance houses, community banks, and rural banks) that also provide comparable and homogenous products to the same target market. According to economists Quartry and Afful-Mensah (2014), the number of banks in the nation is excessive when compared to the number of people who have bank accounts, which has a negative impact on the financial performance of these institutions.

According to Senbet and Seward (1995), there isn't always a connection between bankruptcy and how well a company operates. Economic hardship or subpar performance are not brought on by bankruptcy. Even in the event of bankruptcy, a very lucrative company with substantial leverage may continue to be operational, but an unsuccessful company may be liquidated even if it has no debt in its capital structure. According to Tan (2012), troubled businesses perform worse than healthy ones. When Mamo (2011)

and Bwisa (2010) conducted research on the application of Altman's (1968) model in predicting the financial distress of commercial banks and other enterprises listed at the Nairobi Stock Exchange in Kenya, they discovered that the model was reliable and applicable there. Chea (2012) conducted study on how Kenyan commercial banks' cash flow information might be used to anticipate financial crises.

Therefore, it is clear from reviewing earlier material that more research is required to fully understand the effects of financial difficulties. The dearth of empirical studies in Africa, particularly on the banking industry in Ghana, further emphasizes the need for such research. A sample of 23 Ghanaian banks will be used in the study for the years 2010 to 2020. By identifying the factors of financial hardship in the banking sector, the study will contribute to and enrich cross-country studies on the financial industry. We also make a methodological advancement over earlier empirical studies that focus on the effect of financial distress on banks in a nation. This study is distinct from those mentioned above in that it aims to determine how financial distress affects the financial performance of commercial banks in Ghana.

1.2 Research Objectives

The general objective of this study is to assess the financial distress condition and its determinants of a country's banks.

1. To examine the financial distress condition of banks on the Ghana Stock Exchange.
2. To assess the effect of profitability on financial distress of banks in Ghana.
3. To assess the effect of liquidity on financial distress of banks in Ghana.
4. To assess the effect of capital adequacy on financial distress of banks in Ghana.

1.3 Research Question

The study is to answer the following research questions.

1. To examine the financial distress condition of banks on the Ghana Stock Exchange.

2. To assess the effect of profitability on financial distress of banks in Ghana.

3. To assess the effect of liquidity on financial distress of banks in Ghana.

4. To assess the effect of capital adequacy on financial of banks in Ghana.

1.4 Significance of the Study

The two audiences for this study—those who value the research and those who gain from it highlight the justification for the investigation. In this study, commercial banks in Ghana will be examined in relation to the factors that influence financial distress.

The study has value for academicians and academics because it can serve as a starting point for additional research and analysis. A university that offers banking as a course for students, as well as resource centers run by financial firms and allied organizations, can all make use of this material.

The data banks of financial institutions will benefit most from having another source of information, though. The conclusions will also be helpful to the management of financial institutions and policymakers, notably in governments. In actuality, these stakeholders may utilize the findings to support laws and regulations that make it simpler for more people to use financial and non-financial services and make the most of them. The results can be a starting point for further research as well as a source of information.

1.5 Scope and Limitation of the Study

This study has been modified to better meet its goals of researching the factors that contribute to financial hardship and how those factors affect a nation's banks within the constraints of available time and resources. The researcher made the decision to focus just on the commercial banks listed on the Ghana Stock Exchange for this investigation. The research will span a ten-year period from 2011 to 2020. As a result, the scope of this

study is limited to the financial crisis situation of Ghanaian banks throughout the aforementioned time periods.

1.6 Summary of Methodology

Using a quantitative research design, this investigation. This strategy will be employed since the study uses econometric techniques to gather and analyze already-existing numerical data. The Ghana Stock Exchange is a convenient source of the numerical data needed to carry out the research, making the use of a quantitative design appropriate for this study.

All banks listed on the Ghana Stock Exchange within the study's time frame, which is from 2011 to 2021, will make up the study's population. Purposive sampling approaches are used in the investigation.

The Ghana Stock Exchange served as the primary source of secondary data for this study. Excel and SPSS software version 23 are used to examine the data gathered. Regression analysis is used in the study to determine the relationship between the variables being examined. In the data analysis, cross-sectional and time series data are combined.

1.7 Organisation of the Study

Five chapters are arranged for the study and starts with an introduction of the study by providing background information on the research issue, goals, scope, as well as limitations of the study found in chapter one.

Chapter two reviews the relevant literature and the theoretical framework of the study. Chapter three throws light on the methodology of research adopted for the study and the relevant justifications. The analysis, conclusions, and presentation of data on determinants of financial distress of commercial banks are presented in Chapter four. Chapter five also outlines the findings and recommendations of the research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the literature review of the study. It reviews the theoretical and empirical literature of the study. The theoretical literature review focused largely on the description and discussion of relevant theories or concepts that have been tested and proven to be relevant. The empirical review discussed similar studies on the topic. It will concentrate on the concept of financial distress and its determinants.

2.1 Conceptual Review

2.1.1 Financial Distress

Fligstein et al. (2017) say that the word "financial distress" was made to be vague on purpose. In general, it means not being able to meet responsibilities (like paying back debt) by the time they are due (Assefa, 2021). Financial crisis has mostly been defined in terms of bond failure and bankruptcy, which are the two most important events. The times of these events are more or less clear, and most people are aware of them. Both of these qualities are important because empirical studies use each sign of financial distress as the dependent variable in statistical models that figure out how likely it is that financial distress will happen given certain conditions. This type of writing often uses the word "insolvency." There are two different ways to define "insolvent." The first has to do with being in financial trouble and not being able to pay bills when they are due. The second idea says that a company is insolvent when its assets are worth more than its debts.

Assefa (2021) defines financial hardship as a situation in which a person or business can't make enough money to meet or pay their financial responsibilities. Most of the time, this is caused by high fixed costs, a lot of hard-to-sell assets, or income streams that are vulnerable to economic downturns. Hu and Wang (2022) say that having financial trouble

has a number of effects, such as bankruptcy fees, losses from the sale of troubled assets, higher loan costs, indirect costs, and conflicts of interest.

According to Tung (2020), a business is having financial trouble when it can't pay its creditors and loans. This is more likely to happen when a business has a lot of debt, makes little money per unit, has a high breakeven point, or has sales that are sensitive to changes in the economy. To get out of the situation, managers would have to sell assets quickly, give the company their own money, or stop making purchases on their own time (Assefa, 2021). When a business is having money problems, other people who have an interest in it often do the following things to lower their risk.

Altman et al. (2019) say that a certain "catalyst" led to the company's financial problem and made it necessary for management to hire a "restructuring bank." When insolvency is described as having more assets than liabilities (which means a negative net value), this leads to a number of problems. Ruppel (2017) says that it is clear that the idea doesn't work with assets and liabilities as they are defined and measured by generally accepted accounting standards (GAAP). Altman et al. (2019) say that many high-tech companies with negative accounting net worth last for a long time and are not seen as being in a financial crisis. The reason is that these companies are thought to have enough money to meet their responsibilities on time and to have unrecognized intangible assets, such as the expected economic value of their research and development projects. The idea has to do with the economic value of assets and debts, but not in a way that makes sense, which is why net worth can be negative.

Anderson et al. (2009) suggest a simple way that uses a set of financial ratios as inputs (ABI) to make an overall bankruptcy index. This index rates the companies based on how much financial trouble they are in. It is a within-sample measurement that ranges from 0 to 1. ABI can be used to predict how likely it is that a company will fail financially and go bankrupt. Liao and Mehdian (2016) use multivariate discriminant analysis to estimate

the Z-score and compare the predictive power of the two methods to compare and analyze how well this index works. The financial measures they use are the same.

Altman et al. (2017) say that a Z-score of less than 1.8 means that the company is having money problems and is likely to go bankrupt. A grade of 3 or higher, on the other hand, means that the company is doing well and is not likely to go bankrupt. With a number between 1.8 and 3, the company is in the gray area and has a good chance of going bankrupt. Altman's Z-score is used by investors to predict a company's financial health and decide whether to buy or sell its shares. If a company's Z-score is close to 3, buyers should think about buying its stock because it's unlikely that the company will fail in the next two years.

Financial distress is often a harbinger of bankruptcy and can cause lasting damage to one's creditworthiness. In order to remedy the situation, a company or individual may consider options such as restructuring debt or cutting back on costs. Anxiety and depression are two of the most common effects of financial stress. These two conditions usually go hand-in-hand. Stress resulting from financial struggles such as unexpected expenses, saving for retirement, and out-of-pocket healthcare expenses are the major culprits.

2.2 Determinants of Financial Distress

Some of the identified determinants of include profitability (Lin and Dong, 2018), liquidity Dirman (2020) and capital adequacy Tutu (2020.

2.2.1 Profitability

Profitability ratios are used to assess a company's ability to create money over expenses by showing how well it earns profits given sales and/or its capital assets (Dar and Dar, 2017). All business endeavors aim to be profitable, and an unsuccessful business won't last very long (Alarussi and Alhaderi, 2018). According to Dar & Dar (2017), it's critical

to calculate both past and present profitability as well as project future profitability. Income and costs are used to calculate profitability.

A company's ability to generate a profit is crucial to its success since it affects its capacity to draw in investors, obtain bank financing, and expand its business. According to an assessment of a financially troubled corporation, the enterprise required to change in order to increase profitability (Lin and Dong, 2018). According to Isayas (2021), who examined the factors that influence corporate failure and the stock prices of financially troubled companies, reduced profitability results in more financial strain, which raises the likelihood that a company would go out of business. It is assumed that profitability and financial crises are inversely connected.

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important. Profitability is measured with income and expenses. Rising profitability suggests that the economy is on a secular growth path, while a peak or fall in profitability suggests that growth is slowing and the economy is headed for recession.

2.2.2 Liquidity

According to Ikpesu (2019), numerous research have shown the significance of liquidity in identifying corporate financial difficulties. Liquidity measures a company's capacity to repay short-term debts. The ability of your business to turn over assets or other belongings with monetary value into cash is measured by liquidity (Rashid, 2018). Currency may be converted fast and easily from liquid assets. With enough cash on hand, a business can circumvent borrowing limitations, create financial plans, and secure loans. According to Dirman's (2020) analysis, increased liquidity and reduced financial strain on the organization are directly associated. In 2021, Akgün and Memiş found a similar negative correlation between liquidity and financial crises. However, studies by Gathecha

10

(2016) and Kristanti et al. suggest that liquidity is closely related to financial difficulty (2016).

A company's liquidity indicates its ability to pay debt obligations, or current liabilities, without having to raise external capital or take out loans. High liquidity means that a company can easily meet its short-term debts while low liquidity implies the opposite and that a company could imminently face bankruptcy. Liquid assets can be quickly and easily changed into currency. Healthy liquidity will help your company overcome financial challenges, secure loans and plan for your financial future.

2.2.3 Capital Adequacy

Tutu (2020) asserts that having sufficient capital enables banks to make additional investments that invariably generate interest for the bank as the pass-through impact. The ability of banks to endure risks and boost their profitability is again made possible by maintaining an adequate quantity of capital. Financial institutions must have sufficient capital to protect its depositors and policyholders (Tutu, 2020). Regulators establish minimum capital rules in order to guarantee that financial organizations can endure unanticipated losses in their business operations. At the systemic level, it also promotes financial stability. It is a critical piece of prudential regulation equipment. The need for capital in stable institutions is illustrated by the following. Banks incur risks, and if those risks come to pass, they could suffer losses (Suyanto, 2021).

The capital adequacy ratio gauges how much loss a company can take before going out of business. Due to its increased ability to absorb unexpected losses, the company with the greater capital adequacy ratio will be more resilient to financial volatility. According to (Dang, 2011), the institution's internal resistance to losses during a crisis is demonstrated by the capital adequacy ratio. Deposits are the most unstable and susceptible to runs, therefore financial institutions' capital helps to create liquidity. With more cash, financial disaster is also less likely to occur (Jones, 1987).

CAR is critical to ensure that banks have a large enough financial cushion to absorb a reasonable amount of losses before they become insolvent. The CAR is decided by central banks and bank regulators to prevent commercial banks from taking excess leverage and becoming insolvent in the process. The CAR is important to ensure that banks have enough room to take a reasonable amount of losses before they become insolvent and, as a result, lose depositors' funds.

2.3 Theoretical Review

2.3.1 Liquid Asset Theory

In the context of a cash flow, the idea described financial difficulty (Waqas and Md-Rus, 2018). According to Kontu and Mihanovi (2019), a liquid asset is one that can be quickly and readily changed into cash. Liquid markets with high levels of demand and security are typically associated with liquid assets. In the current assets section of their balance sheet, businesses report liquid assets.

This strategy is predicated on the notion that the primary indicator of a company's financial health should be its current obligations divided by net cash flows. Companies with positive cash flows can raise money and borrow from the capital market, whereas those with negative or insufficient cash inflows are unable to do so. They incur the risk of default as a result.

According to this theory, if a company's net cash flow or profit for the current year is negative or less than its total debt, it is likely to fail. Technical insolvency is the term used to describe this situation. Technically, a business is insolvent when it is unable to pay its debts when they are due due to a lack of cash (Altman & Hotchkiss, 2006).

2.3.2 Cash Management

According to the free cash flow theory of cash management (Huseyin, 1991), management is in charge of holding onto cash so that they can gain control over it and

make investment decisions that could have an effect on the firm entity. As a result, the financial performance of corporate organizations will improve.

The fundamental objectives of cash management, which covers a broad variety of duties, are to efficiently manage the business's finances and control its cash flow. Effective cash flow management is a must for all companies. The purpose of managing cash, according to Karada (2018), is to determine the appropriate cash amount to generate the highest level of performance for an organization. The majority of cash management is divided into the areas of financial reporting and financial management (Hamza et al., 2015). The cash flow statement, bank reconciliation, and cash book are all examples of financial reporting tools for cash management. In financial management, the elements of cash management include credit control, cash position, cash planning, and cash flow prediction (Zietlow et al., 2018)

Every business's top priority is keeping track of its financial standing. This is a result of the difficulties in accurately forecasting financial flows, particularly inflows, and the adequacy of the congruence between cash inflows and outflows. The company's incapacity to manage its cash flow would be evident by an imbalance between cash inflows and withdrawals, which could eventually result in financial problems and, ultimately, bankruptcy (Zelie, 2019).

2.4 Empirical Review

2.4.1 Financial Distress Condition of Banks

In Gebreslassie's (2015) study, the researcher used panel data from the years 2002/03 to 2011/12 and six private commercial banks in Ethiopia to examine bank-specific factors influencing firms' financial hardship. First, the study's Altman Zscore model (ZETA Analysis) was used to gauge the financial standing of the selected private commercial banks. The ZETA scores of the banks are used in the study to simulate financial hardship.

The study's findings show that the capital to loan ratio and the net interest income to total revenue ratio have a statistically significant positive impact on banks' financial health, in contrast to the nonperforming loan ratio, which has a statistically significant negative impact on banks' financial health.

Investigating the influence of various factors on the ability to foresee financial troubles in Indonesian banks is the goal of Kuncoro and Agustina's (2017) study. The 5C technique was used to choose that variable. GCG (Good Corporate Governance), ROA (Return on Asset), LDR (Loan Deposit Ratio), CAR (Capital Adequacy Ratio), TAG (Total Asset Growth), NPL (Non-Performing Loans), PER (Price Earning Ratio), and PBV are the indicators utilized in the 5C approaches (Price Book Value Ratio). All banks that were listed on the Indonesia Stock Exchange (ISX) during 2012 and 2014 made up the study's sample. A population sample is gathered using a purposeful sampling strategy until it is established that there were 25 occurrences of financial difficulty during that time period. Logistic regression analysis was employed in this study to evaluate the impact of independent variables on the dependent variable.

The analysis found that the likelihood of financial difficulties was not significantly influenced by poor corporate governance, loan deposit ratios, total asset growth, non-performing loans, price earning ratios, or price book value ratios. However, the study's findings showed that a low capital adequacy ratio and a bad return on asset have a big impact on the likelihood of financial difficulty.

2.4.2 Profitability and Financial Distress of Banks

Studies by Rafatnia et al. (2020) and 2009-2016 examined data on a sample of 300 publicly traded Iranian companies. Logistic regression and decision trees were used to forecast financial trouble.

The statistical significance of differentiating distressed from non-distressed firms across industries was found to depend on profitability, liquidity, debt, interest rate, cash flow,

accruals, and GDP. According to the findings, DT models outperformed the other models in terms of prediction.

The goal of Saputri and Asrori's (2019) study is to examine and describe how changing leverage, liquidity, and profitability—along with moderating variables and the audit committee's efficiency—have an impact on financial hardship. From 2013 to 2016, 48 mining companies per year that were listed on the Stock Exchange made up the study's population. The purposive sampling technique is used to select a sample of 80 analysis units from 20 distinct businesses. The technique used in this study's data analysis was moderating regression analysis with IBM SPSS for Windows 21.0.

The study's conclusions show that profitability, liquidity, or leverage have no appreciable impact on financial difficulty. It has been demonstrated that the effectiveness of the audit committee can function as a moderating factor between the variables of leverage and profitability of financial distress, but not between the elements of liquidity and financial distress. The results of the study provide credence to the notion that giving the audit committee control of the management team will increase management efficiency and shield the company from future financial troubles.

In order to predict the possibility that financial institutions may face financial difficulty between 2018 and 2020, Rokhayati et al.'s study from 2022 examines capital structure, female directors, liquidity, and profitability. Up to 105 financial companies active on the IDX in 2018 through 2020 are included in the study's sample. The sample size was established using a purposive sampling technique with a final result of 46 companies. The technique utilized to evaluate the study is panel data regression with the best-fixed effect model.

The results of the analysis lead to the conclusion that a company's capital structure has a major impact on its ability to withstand financial hardship, with the level of leverage raising this risk. The inclusion of female directors does not significantly affect the

company's financial troubles, liquidity, or profitability. It's expected that the company will always be mindful of how much leverage is being used in order to maintain the best possible condition for the firm's cash. Future research might potentially incorporate variables that can influence financial distress, such as the rate of sales growth, business size, tax, interest rate, and inflation rate.

With regard to potential financial crisis scenarios in an Indonesian manufacturing company, Finishtya's (2019) study attempts to empirically assess the effects of ratios on operational activity, cash flow, profitability, and financial leverage. The sample for this study includes all manufacturing firms that listed on the Indonesia Stock Exchange in 2016. A final research sample of 111 manufacturing enterprises was chosen utilizing the sampling method of deliberate sampling out of a total of 124 organizations that were observed.

To ascertain whether the company is in financial distress, the 1968 Altman Z-score model is employed. Binary logistic regression is the data analysis method used. The results of the hypothesis test show that operating cash flow, as measured by cash flow from operational/net sales, is significant for the company's financial distress, profitability, as measured by ROA, is significant for financial distress, and financial leverage, as measured by DER, is not significantly significant for financial distress.

Ikpesu's (2019) paper used FMOLS on annual time series data of 18 manufacturing companies listed on the Nigerian Stock Exchange (NSE), which was derived from their audited financial statements, in an effort to address the central research question of what actually determines the financial distress of companies in the country's manufacturing sector. The Altman Z score is the endogenous variable that affects financial hardship despite external variables like firm size, liquidity, profitability, and debt being included in the study. The study's control variables now also include share price and revenue growth.

Leverage, liquidity, profitability, company size, revenue growth, and share price are a few of the firm-specific factors that determine if a firm in the nation's manufacturing sector is experiencing financial difficulties, the study's findings show. The study's findings offer significant policy recommendations. Managers and owners of the corporate organization must, first and foremost, carefully consider these problems while making financial decisions. To ensure effective operations and the long-term survival of companies, corporate managers must establish rules for figuring out the ideal combination of liquidity, leverage, profitability, and revenue growth. The management must also set up safeguards that can identify early warning signs of financial instability.

2.4.3 Liquidity and Financial Distress of Banks

Chiaramonte and Casu (2017) examine how Basel III capital requirements and structural liquidity affect the likelihood of bank failure using a sizable bank-level dataset. We develop a broad indicator that accounts for state interventions, distressed mergers, the results of the EBA stress tests, as well as information on bankruptcies, liquidations, under receivership, and dissolved banks in order to include all relevant episodes of bank failure and distress (F&D) that have occurred in the EU-28 member states over the past ten years. Although capital ratios are only important for large banks, estimates from a variety of variations of the logistic probability model indicate that the likelihood of a bank collapsing and going into distress lowers as liquidity holdings rise. The outcomes show that Basel III's structural liquidity limits and the tighter regulatory oversight of big, systemic banks are both beneficial.

In order to comprehend the effects of financial hardship, liquidity, leverage, sales growth, and sound corporate governance, Dianova and Nahumury conducted a study in 2019. The analysis examined 55 samples of telecommunication and non-construction businesses listed on the Indonesia Stock Exchange between 2013 and 2017. The purposive sample

approach was used as the sampling strategy for this investigation. PLS is used in data analysis (Partial Least Square).

According to the study's findings, financial difficulty is unaffected by liquidity, leverage, sales growth, or sound corporate governance. These surprising results could be the outcome of the study's limitations. Future studies on this topic should therefore consider the sample size as well as other factors that are anticipated to have an impact on financial distress.

For the Spanish banking industry, the Paule-Vianez et al. (2020) project intends to create the first short-term financial crisis prediction model. The concept of financial trouble includes a variety of other financial issues in addition to bankruptcy, which is unusual in the industry. To predict financial worries, a number of classic financial variables based on the capital, assets, management, earnings, liquidity, and sensibility systems were integrated with a number of macroeconomic indicators, the effects of which have been thoroughly examined.

Statistics demonstrate that artificial neural networks are a highly effective method for studying financial distress in Spanish credit institutions and foreseeing all scenarios in which a business may experience short-term financial difficulties.

The goal of Saleem et al's study (2020) is to determine how operating cash flow, profitability, financial leverage, trading activity, and liquidity impact the ASEAN banking sector's financial distress. The researchers received information from the ASEAN central banks spanning the years 2009 to 2018. Both the generalized method of moments (GMM) and the random effect model have been employed in order to examine the effects of predictors such as operating cash flow, profitability, financial leverage, trading activity, and liquidity on financial distress in the ASEAN banking sector.

The findings show that operating cash flow, profitability, financial leverage, trading activity, and liquidity all have a positive link with the financial distress of the ASEAN

banking sector. These results offer regulatory bodies advice on how to concentrate more on the problem of financial hardship in order to strengthen the financial positions of the country and the banks.

The 2017 study by Rosa and Gartner sought to develop a model for the early detection of financial distress events in Brazilian banking institutions. To detect instances of bank insolvency and to only use publicly available data, a number of economic-financial variables provided by the risk management literature was initially examined. Multivariate logistic regressions are utilized to examine this data, with the financial indicators of profitability, liquidity, asset quality, management quality, and capital adequacy functioning as independent variables. 142 financial firms, including privately held, publicly traded, and state-owned companies, were sampled for the empirical research, which resulted in panel data with 12,136 observations utilizing monthly data from 2006 to 2014. In nine transactions involving mergers and acquisitions or other transactions, the Brazilian Central Bank participated during the research period.

Results were assessed using the estimation of the in-sample parameters, the results of the out-of-sample tests, and the early warning model's indicators for a forecast horizon of one year. For each of them, the real positive rates were 81, 94, and 89 percent, respectively. Our analysis leads us to the conclusion that traditional balance-sheet indicators are important for spotting early warning indications of financial instability in Brazilian banks. This adds to the corpus of knowledge regarding the credit risk posed by financial intermediaries, particularly from the standpoint of bank supervisory organizations working to advance financial stability.

The 2021 study by Liahmad et al. aims to investigate how financial factors, including liquidity, cash flow, company size, institutional ownership, earnings, and the non-financial factors of the independent commissioner, affect the financial health of insurance companies that are listed on the Indonesian Stock Exchange. Up to 17 insurance firms

were represented in the study's sample. Using a purposive sampling methodology, samples from 15 organizations were obtained throughout the course of 4 years, from 2017 to 2020, in order to gather 60 observations for the study. In the statistical data analysis, descriptive statistics and logistic regression are both employed.

The findings indicate that while a company's size and profitability have a significant impact on financial difficulty, other factors such as liquidity, cash flows, institutional ownership, and the independent commissioner have little incidence on this issue.

Amankwaah and Baidoo (2023) study examines the financial challenges of savings and loan companies in Ghana from 2016 to 2021. The data came from the Savings and Loans Companies database and the Bank of Ghana (BoG) database. Using panel data analysis and the Whited-Wu Index, the results show that the firm shows a consistent higher level of financial constraints of −1.7 in 2016. From 2019 to 2021, the company will have easier access to funds compared to the period between 2017 and 2018.

The study shows that cash holdings and private credit have a positive influence on the financial constraints of the companies. The study also found that firm size, collateral security, corruption index, and exchange rate significantly affect the financial challenges of companies negatively. It turned out that there was no connection between Ghana's economic growth and the company's financial challenges. The absence of sufficient financing significantly affects operations and profitability for the company. It is therefore recommended that there be business realignment at the savings and loan companies in Ghana. Company realignment is mostly done to get out of lines of business with poor margins and go into lines that are more naturally financially smart and boost performance.

2.4.4 Capital Adequacy and Financial Distress of Banks

The study by Buchdadi et al. (2020) aims to investigate the connection between credit risk, adequate capital at a rural bank, and the degree of financial distress as reflected by the interest coverage ratio (ICR). In order to gather samples for this study, 123 rural banks

in and around the Jakarta metropolitan area were visited between 2013 and 2018. This region was home to the majority of the nation's overall cash flow circulation, which made up almost 70% of the total. The data collected was examined using the logistic regression model.

According to the research, both capital adequacy and credit risk have a big impact on financial difficulty, with capital adequacy having a bad one and credit risk having a good one. The theories put out in this research suggest that rural banks evaluate their financial performance in terms of capital sufficiency and credit risk. The researcher is aware of how important credit risk is in coming to this conclusion.

To determine whether or not capital adequacy measures are reliable indicators of financial distress in Kenyan commercial banks, Karugu et al.'s (2018) study set out to answer this question. The study adhered to the fundamentals of the positivist research paradigm and used a descriptive research design. Participants for the study were given by 43 different Kenyan commercial banks between 2009 and 2015. All of these institutions were active. Commercial banks' annual reports were studied in order to compile the data needed for the data collection sheets. Stepwise logistic regression was employed in the data analysis. The hypothesis was evaluated at a significance level of 0.05.

The study's results showed that capital adequacy ratios in Kenyan commercial banks were major markers of financial stress. Core capital to total risk-weighted assets had a correlation coefficient of 0.419 and a significance level of 0.007, whilst total capital to total risk-weighted assets had a correlation coefficient of 0.320 and a significance level of 0.017. With a coefficient of 0.249 and a significance level of 0.026, the ratio of core capital to total deposits was calculated. Each of these three ratios demonstrated a sizable prediction value for money problems in commercial banks. It was discovered that the capital adequacy ratios were unable to anticipate the severity of the financial difficulty with any degree of precision. The results of the study show that capital adequacy ratios

are highly important indicators of financial stress in commercial banks. The study concluded as a result by urging the adoption of continuing, industry-driven rules and frameworks for reporting on the capital sufficiency of commercial banks.

The goal of Toby and Danjuma's research (2021) was to ascertain how liquidity management and BASEL capital sufficiency affected how financial crises were addressed in Nigeria. The study conducts its research using a unidirectional causal research method within a single-equation dynamic autoregressive distributive lag framework (ARDL). The empirical study's annual time series data were compiled from 1986 to 2018 using information from the Central Bank of Nigeria's (CBN) statistical bulletins, the Nigeria Deposit Insurance Corporation's (NDIC) quarterly reports, the Nigerian Stock Exchange's factsheet, and other sources. (NSE). The outcomes of the stationarity test show that the variables under investigation are integrated at a number of levels, with an overwhelming majority of these levels being I (1) series. The results of the ARDL study demonstrate that micro-prudential liquidity management has a negligible effect on the ratio of failing banks. However, macro-prudential liquidity management has a big impact on the ratio of troubled banks.

Additionally, the outcomes demonstrate that capital adequacy rules have no impact on the governance/compliance violations or ratios of failing banks. The rule does, however, significantly impact the asset quality and business risk exposure of troubled banks. Furthermore, the measures being taken to alter monetary policy are not having a substantial impact on how uneasy the Nigerian financial industry is. These results have led us to the conclusion that prudential measures implemented in Nigeria to achieve macro-level financial sector stability have substantial policy implications for the alleviation of financial distress. Additionally, the methods utilized to establish financial system stability, such as conventional monetary policy techniques, are ineffective. But the effectiveness of capital adequacy regulation in reducing financial distress will rely on

how the former is assessed. The utilization of the Newey-West robust framework is the key contribution of this study. Despite the heteroscedasticity and autocorrelation of the data, this methodology was able to reliably assess how liquidity management and BASEL capital sufficiency affected the settlement of the financial crisis. Even if both of these statistical occurrences occurred, nothing changed.

Amahalu et al.'s study (2017) intended to determine the impact that Capital Adequacy has on Financial Performance with a focus on a few listed Deposit Money Banks in Nigeria between the years of 2010 and 2015. The data for this study was compiled using secondary sources, including yearly reports, fact books, and the accounts provided by the Deposit Money Banks under scrutiny. The Hausman Test, Multiple Regression Analysis, Variance Inflation Factors, Multicollinearity, Heteroskedasticity Test, and Pearson Coefficient of Correlation were used to statistically examine the data. Additionally, the Variance Inflation Factors were calculated.

The results of the research indicate that there is a positive and significant association between capital adequacy and financial performance. Empirical data were used to support the argument and offered more evidence that Capital Adequacy influences the financial performance of Deposit Money Banks statistically substantially. The 5% significance level was applied. According to the results of this study, financial institutions should avoid relying too much on debt. This is true because a higher debt-to-equity ratio in the capital structure raises the risk of both financial hardship and insolvency.

Abou-El-(2016) Sood's study was inspired by the widespread bank failure that occurred during the financial crisis. It investigates if the necessary capital adequacy rules for regulators have anything to do with bank collapse. It evaluates whether the connection is harmed by the bank's close proximity to the minimum needed capital ratios. The ratios are regarded to be at an appropriate level if the data demonstrate a strong correlation between regulatory capital and the collapse of banks with capital ratios below the required

23

minimums. The results from a sample of 560 US bank holding companies for the years 2003 to 2009 show that there is a relationship between the core (Tier 1) capital ratio and bank failure, but only for bank holding companies with Tier 1 capital ratios < 6%. This was discovered through an examination of the US banking industry.

American bank authorities do not consider banks below this threshold to be appropriately capitalized. Only when the threshold was at or above 8 percent during the financial crisis, which lasted from 2007 to 2009, did it meaningfully correspond with the two variables. Failure is substantially more correlated with the market-based chance of default than with the Tier 1 capital ratio. The findings of the article are pertinent to Basel III talks on the optimal capital levels during times of financial instability as well as discussions on regulatory policy.

The objective of Das and Maji (2023) study is to ascertain the financial literacy (FL) of the farmers in three South Asian economies (India, Bangladesh and Pakistan). Further, an effort was made to explore various demographic and socioeconomic antecedents of FL of the farmers. The study used secondary data of 11,025, 782 and 657 farmers from India, Bangladesh and Pakistan respectively from Financial Inclusion Insights (2017) database. "Big five" FL questions were used to measure the FL of the farmers. Appropriate statistical techniques and censored Tobit regression were used to identify the determinants of such FL.

Bangladeshi farmers (48.75%: Moderate) were found to exhibit greater FL as compared to Pakistani (38.96%: Poor) and Indian (32.61%: Poor) farmers. The outcome of the study revealed that the farm ownership and educational attainment of the farmers significantly determined FL of the farmers in all three Asian countries. Financial confidence and gender were observed to exacerbate a positive influence on the level of FL of farmers belonging to India and Pakistan. Age, marital status, financial inclusion and economic status were found to be the major determinants of FL of Indian farmers.

2.4.5 Bank Size and Financial Distress

The study by Buchdadi et al. (2020) aims to investigate the relationship between credit risk, adequate capital at a rural bank, and the degree of financial distress as reflected by interest coverage ratio (ICR). Between 2013 and 2018, 123 rural banks in and around the Jakarta metropolitan area were visited to gather samples for this inquiry. In this region, where it made up over 70% of the total, the nation's entire cash flow circulation was concentrated. The information gathered was examined using the logistic regression model.

The study found that both capital adequacy and credit risk had a significant impact on financial difficulty, with capital adequacy having a negative impact and credit risk having a positive one. According to the theories discussed in this research, rural banks should assess their financial performance using both credit risk and capital sufficiency. The researcher acknowledges that credit risk is a key factor in reaching this finding.

The study by Karugu et al. (2018) set out to determine whether or not capital adequacy ratios are reliable indicators of financial distress in Kenyan commercial banks. The investigation followed the guidelines of the positivist research paradigm and employed the descriptive research design. 43 distinct Kenyan commercial banks, all of which were active between 2009 and 2015, offered study participants. Annual reports of commercial banks were studied in order to compile the data needed for the data collection sheets. Stepwise logistic regression was used to analyze the data that was gathered. The hypothesis was examined at a significance level of 0.05.

The study's findings showed that capital adequacy ratios were important predictors of financial difficulty in Kenyan commercial banks. The ratio of total capital to total risk-weighted assets had a coefficient of 0.320 and a significance level of 0.017, whereas the

ratio of core capital to total risk-weighted assets had a coefficient of 0.419 and a significance level of 0.007. The core capital to total deposits ratio had a coefficient of 0.249 and a significance level of 0.026. Each of these three ratios has a sizable predictive value for financial difficulty in commercial banks. It was discovered that the capital adequacy ratios did not, in any way, predict the severity of the financial distress. The study's conclusions show that capital adequacy ratios are highly important predictors of financial stress in commercial banks. This prompted the study to suggest the introduction of continuing, industry-driven regulatory and reporting systems on the capital sufficiency of commercial banks.

The goal of Toby and Danjuma's research (2021) was to ascertain how BASEL capital sufficiency and liquidity management affected how financial crises were addressed in Nigeria. The study conducts its research using a unidirectional causal research method within the context of the single-equation dynamic autoregressive distributive lag (ARDL). Annual time series data for the empirical study, which covered the years 1986 to 2018, were compiled using information from the Central Bank of Nigeria's (CBN) statistical bulletins, the Nigeria Deposit Insurance Corporation's (NDIC) quarterly reports, the Nigerian Stock Exchange's factsheet, and other sources. (NSE). The stationarity test findings show that the variables under investigation are integrated at numerous levels, with the vast majority of these levels being I(1) series. According to the ARDL study's findings, microprudential liquidity management has a negligible effect on the ratio of failing banks. However, macro-prudential liquidity management has a major impact on the ratio of failing banks.

The findings also demonstrate that capital adequacy requirements have no impact on the governance/compliance violations or ratios of failed banks. The guideline, however, significantly affects the asset quality and business risk exposure of struggling banks. Furthermore, the efforts being made to alter monetary policy are not having a substantial

impact on how uneasy the Nigerian financial industry is. These results have led us to the conclusion that prudential measures implemented in Nigeria with the goal of achieving macro-level financial sector stability have important policy implications for the alleviation of financial distress. Ineffective strategies, such as conventional monetary policy approaches, are also utilized to create financial system stability. The impact of capital adequacy regulation on the reduction of financial distress, however, will depend on how the former is measured. The adoption of the Newey-West robust framework is the study's key contribution. Despite the heteroscedasticity and autocorrelation of the data, this methodology was able to consistently assess how liquidity management and BASEL capital sufficiency affected the settlement of the financial crisis. The existence of these two statistical events had no impact on the scenario.

Amahalu et al.'s study (2017) intended to determine the impact that Capital Adequacy has on Financial Performance with a focus on a small number of listed Deposit Money Banks in Nigeria between the years of 2010 and 2015. The data used in this study was acquired from secondary sources such fact books, yearly reports, and the accounts provided by the Deposit Money Banks under scrutiny. The data were statistically analyzed using the Pearson Coefficient of Correlation, Multiple Regression Analysis, Variance Inflation Factors, Multicollinearity, Heteroskedasticity Test, and Hausman Test. The Variance Inflation Factors were also computed.

The results of the study show a positive and significant association between capital adequacy and financial performance. Empirical data were used to support the argument and offered additional evidence that Capital Adequacy influences Deposit Money Banks' financial performance statistically substantially. The 5% significance threshold was applied. The results of this study suggest that financial organizations should avoid relying too much on debt. This is true because a higher debt-to-capital ratio raises the risk of both financial difficulty and insolvency.

The study by Abou-El-(2016) Sood was inspired by the widespread bank failure that occurred during the financial crisis. It examines whether the capital adequacy requirements that regulators require have anything to do with bank collapse. It evaluates if the bank's close proximity to the minimal needed capital ratios has an impact on the connection. The ratios are regarded to be at an appropriate level if the data demonstrate a significant correlation between regulatory capital and the failure of banks that fall below the minimum capital ratios. The results from a sample of 560 US bank holding companies for the years 2003 to 2009 show that the association between the core (Tier 1) capital ratio and bank failure is only significant for bank holding companies with Tier 1 capital ratios under 6 percent. This was discovered through investigating the US financial industry.

American bank authorities do not consider banks below this threshold to be adequately capitalized. The threshold was only meaningfully connected with the two variables during the financial crisis, which lasted from 2007 to 2009, when it was at or above 8%. Failure is substantially more correlated with the market-based chance of default than it is with the Tier 1 capital ratio. The findings of the article are pertinent to Basel III talks on the optimal levels of capital during times of financial instability as well as discussions on regulatory policy.

2.5 Conceptual Framework

A conceptual framework is an analytical instrument with numerous settings and changes. It can be applied in many professions where a thorough image is needed. It is used to organize ideas and classify concepts. In Figure 2.1, the conceptual framework is displayed.
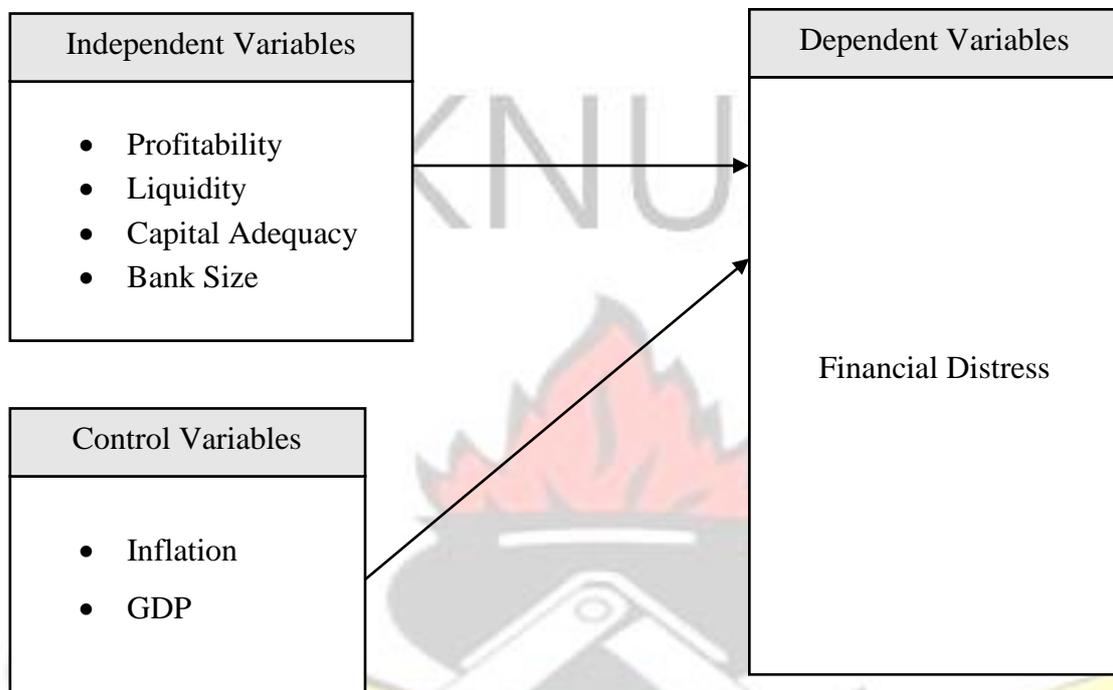
Figure 2.1: Conceptual Framework

Source: Author's Construction (2023).

As shown in Figure 2.1, the independent variable comprises profitability, liquidity and capital adequacy and the dependent variable is financial distress. Also, inflation and Gross Domestic Product (GDP) were used as control variables. Price-stability focused monetary policy frameworks, such inflation targeting, may also have non-negligible "side effects" on financial stability, according to Gong and Qian (2022).

Companies that have poor performance indicate that the profits generated are not sufficient to meet their obligations, so the lower Profitability and Liquidity, the higher potential that company will experience Financial Distress. Poor budgeting, inability to collect accounts receivables in a timely manner (which can cause severe cash flow

problems), and poor accounting practices are other potential causes of financial distress. The purpose of the study is to evaluate a country's banks' financial distress situation and its contributing factors.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter includes an explanation of the methodology. As a result, the chapter includes information about the study methodology, population, sample, and sampling methods, as well as the many types of data and data supplies, descriptions of the variables and proxy measurements, and instruments for data analysis.

3.1 Philosophical Approach

The phrase "research philosophy" refers to a set of beliefs and assumptions that guides the development of knowledge in a study or research project. These assumptions define how to research topics are understood, how the study's methodologies are used, and how the research findings can be interpreted (Kivunja and Kuyini, 2017). Major research paradigms must be understood by researchers in order to understand the essence of a study and to have a concept of the study's core philosophy. To put it another way, researchers must understand or be familiar with the technique and methodologies adopted, as well as why they were chosen to tackle the study topic (Mishra and Alok, 2017).

In Kuhn's seminal paper the Structure of Scientific Resolution, he coined the term "paradigms." Kuhn defines paradigms as a set of substantive notions, variables, and difficulties associated with standardizing methodological techniques and tools (Shah and Al-bargi, 2013). Research paradigms are also defined by Guba and Lincoln (1994) as the core framework or worldview that leads a researcher in a study. Holmes (1984) defines paradigms as the broad theoretical assumptions and principles, as well as the procedures employed by a community in research.

According to Cooper et al. (2020), it is defined by explicitly stated laws and theoretical assumptions, uniform application of laws to solving difficulties, instrumentation and instrumental procedures, basic principles that guide a research operation, and general methodological prescriptions on how to do research. Different considerations underpin a research's philosophical perspective. There are various opinions that best match or represent a research design or approach under the philosophical position of a study. The two basic philosophical considerations employed in social research are ontological and epistemological philosophical considerations, which are covered in this paper.

3.1.1 Ontological Position in Research

The study of the nature of existence and the organization of reality is known as ontology. According to Shah and Al-bargi (2013), it explains everything there is to know about the world. Ontology is concerned with our perceptions of the world in terms of its kind and nature (Gad et al., 2012). Ontological positions are made up of two perspectives: critical realism and relativism (Yucel, 2018). The world, according to critical realism, exists independently of the human intellect, which can only be accessible in part (Archer et al., 2013). The words transcendental realism and critical naturalism were combined to form the word realism. After identifying 'what is' or 'what exists, critical realism kicks in to focus on difficulties of information conception concerning existing concerns (Bergin et al., 2008). The researcher's mind has no bearing on the realism perspective.

According to Levers (2013), relativist ontology implies that nothing exists outside of human cognition. Reality is thought to be a finite subjective experience. The individual's primacy and experience are confirmed by the relativist stance. The observer, or perceiver, is not the center of the cosmos in any sense, nor is the universe anthropocentric (Horton, 2017). This viewpoint aids in the definition of the universe, which has an impact on how people think and the perspectives shaped by human experience.

3.1.2 Epistemology Position in Research

The term epistemology refers to the assumptions made about the type or nature of knowledge or the possibility of discovering how the world works (Al-saadi, 2014). In other words, epistemology is concerned with making sense of how the world is perceived (Al-saadi, 2014). In this role, the researcher's focus is on the methodology in terms of its purpose and goals, because research is done to find new ideas or knowledge (Ørngreen & Levinsen, 2017). In this case, the knowledge developed is dependent on the research approach, which is directly related to the new knowledge (Ørngreen & Levinsen, 2017). Epistemology also establishes the philosophical foundations for the knowledge required for research and this also aims to establish the sufficiency and legitimacy of knowledge (Benton, 2014). When structuring knowledge, presenting knowledge, and accepting the ultimate outcomes of knowledge, epistemology claims the knowledge that is valid in a study (Mulkay, 2014).

Epistemology, according to Code (2020), is interested in the relationship between the researcher and the knowledge and strives to understand how knowledge about the world will be known. Positivist and Interpretivist Positions are two opposed epistemological views. The relevance of mimicking natural sciences is confirmed by the positivist stance. It promotes the application of natural scientific methods to the study of social reality and beyond (Vigh and Sausdal, 2014). Positivism emphasizes the importance of objectivity and proof in determining the truth, in which the researcher has no influence over the world (Al-saadi, 2014).

Interpretivism, on the other hand, is an epistemological position that considers the writer's perspectives on the use of scientific models to examine the world and how they are influenced by traditions (Al-Saadi, 2014). This varies from the positivist approach, which makes applying scientific models to social studies challenging. The practicality of context is given more weight. As a result, when taking an interpretive stance in a study, it is

impossible to be objective (Al-Saadi, 2014). The study took a positivist approach to epistemology, in which established facts are utilized to verify scientific knowledge (Aliyu et al., 2014).

3.2 Research Design

The study adopts the correlational research design. This describes the research design whereby the researcher aims to unravel the nature of relationships between variables in terms of direction and strength of association without any manipulation or control of the variables (Andrew et al., 2019). A correlational research design is appropriate for assessing the association between variables. It is also useful in gathering data on a given population to test theoretical claims (Andrew et al., 2019).

3.3 Research Approach

The selection of a research problem is typically influenced by both the characteristics of the issue and the goals the researcher is trying to accomplish. Whereas the quantitative research approach has traditionally been used to establish significant relationships between and among variables, qualitative research has often been utilized to achieve a thorough understanding of a research phenomenon (Andrew et al., 2019). The research employs a quantitative method because it wants to determine whether there are any important correlations between the variables. This is appropriate for establishing how various firm variables significantly influence the capital structure choices of firms.

3.4 Data and Data Source

The study made use of secondary data. Secondary data sources provide knowledge gathered from previous sources: journal paper searches on the Internet or archives, as well as the financial statements of the banks operating in Ghana. Douglas et al. (2021) maintained that records already present can also contain documentation and details already used in the program: reports and educational manuals, financial information, student/customer data, staff performance evaluations, etc.

The population are commercial banks operating in Ghana. According to the Bank of Ghana as of 31st October 2022, 23 commercial banks are operating in Ghana after the banking sector cleared up. Of the 23, 10 were found to be foreign banks while 13 are domestic banks and nine are listed on the Ghana Stock Exchange. Therefore, the population of the study is the nine (9) commercial banks.

The data of the study is been sourced from the 2022 PwC Ghana Banking Survey Report and the individual financial statements of the sampled Banks used in the study which was downloaded from the Ghana Stock Exchange, and the websites of some of the banks.

3.5 Sample Size and Sampling Technique

A sample that is either too large or too small is both ineffective and unethical, claim Verma and Verma (2019), hence the sample size for a study must be calculated at the time the study is proposed. On the basis of a set of assumptions, statistical software can be used to calculate the necessary sample size. Sampling is very helpful in research and one of the most crucial aspects that affects the reliability of your research/survey results (Verma and Verma, 2019).

Therefore, 5 Ghanaian banks were specifically chosen for the study's 2012–2021 time span. The researcher can obtain a better understanding and present more accurate research findings by gathering qualitative responses through purposive sampling. The findings are relevant to the research setting because the researcher collects information from those who are most compatible with the research issue (Douglas et al., 2021). The availability and consistency of data for the banks led to the selection of the ten years and five banks. This approach was suitable because some of the firms did not have completed and audited data between 2012 and 2021.

3.6 Model Specification

Sarstedt et al. (2021) contend that a model equation's variable selection must be based on theory. As a result, the variables used in the model to examine company characteristics

that affect capital structure are premised on the theoretical explanations provided in the literature review. Furthermore, Bell et al. (2019) point out that it is crucial to add more explanatory variables to models while creating them in order to improve model estimates. For these reasons, the model equation for the study will include other control variables as they also influence the financial distress of banks based on theoretical grounds. In particular, inflation and Gross Domestic Product (GDP) are the study's control variables. Galati et al. (2018) argued that inflation GDP has an impact on financial distress and, as a result, on the investment decisions made by enterprises in a prior study. The model equations are stated in Model 1 below:

$$FID_{it} = a_{it} + \beta_1 LQ_{it} + \beta_2 ROA_{it} + \beta_3 CA_{it} + \beta_4 BS_{it} + \beta_5 IR_{it} + \beta_6 GDP_{it} + \mathcal{E}_{it} \ldots\ldots Model\ 1$$

Where:

FID	=	Financial Distress
LQ	=	Liquidity
ROA	=	Profitability (Return on Assets)
CA	=	Capital Adequacy
BS	=	Bank Size
IR	=	Inflation Rate
GDP	=	Gross Domestic product

I and t are time and firm-specific indicators

$\mathcal{E}$ is the error term.

3.7 Measurement of Variables

Variables have slightly different meanings and use in statistics, although they have a little overlap with algebraic meaning, therefore their uses and definitions are vastly different (Galati et al., 2018).

In an effort to anticipate company bankruptcy, a number of business failure prediction models have been created, used in various contexts, and modified through time (Appiah

and Abor, 2009; Appiah, 2011). The other researchers, with the exception of Appiah (2011), which looked at the applicability of the Altman model in Ghana, concentrated on applying the model to forecast corporate failure.

Table 3.1: Measurement of Variables

Variable Name	Measurement	Data Source
Dependent Variable		
Financial Distress (FID)	Altman's revised (2000) Z-Score (if below 3= 1, otherwise = 0)	BOG and GSE Websites
Independent Variables		
Profitability (ROA)	Net Income/ Total Asset	PwC Ghana Banking Survey
Capital Adequacy (CA)	Equity/Total Asset	PwC Ghana Banking Survey
Liquidity (LQ)	Current Asset/Current Liability	PwC Ghana Banking Survey
Bank Size	Log of Total Assets	PwC Ghana Banking Survey
Control Variables		
Inflation	Consumer Price Index	Ghana Statistical Service
GDP	Annual Economic Accession Changes	Ghana Statistical Service

Source: Author's Construct (2023).

Using the Altman Z score, financial distress is evaluated in this study. Details on the study's constructs, the variables' methods of measurement, and their data sources are provided in Table 3.1.

3.8 Estimation Techniques

The study used a panel design because the data structure had cross-sectional and time series (years) aspects (banks). Based on the outcomes of the Hausman tests, the random effect estimator was used in the study. Depending on the outcomes of the Hausman test, either fixed effects or random effects were chosen. The fixed effect approach to panel data analysis's fundamental framework was described by Wooldridge (2010).

To get rid of unobserved firm-specific effects that might be linked with the independent variables, the fixed effect estimator employs a degrading time-based method. The panel structure will therefore be free of any endogeneity problems or measurement mistakes once the unobserved effects have been removed (Verbeek, 2008). This indicates that fixed effect estimators need a rigorous serial correlation test to confirm the accuracy of the estimates.

However, most researchers estimate both fixed and random effect models in practice and make their decision based on the Hausman test. The unobserved term's lack of a correlation with the independent variables is the null hypothesis of the Hausman test. This suggests that the fixed effect estimates are more accurate, and vice versa, indicating that the random effect estimates are more accurate.

3.9 Validity and Reliability

The validity of research instruments is determined by their ability to measure what they are designed to measure. Internal consistency of the study instrument, once again, contributes to reliability. As part of the validity and reliability assessments, the study also performed the following diagnostic tests: multicollinearity and heteroscedastic.

3.10 Data Analysis

The data was analyzed using STATA 12 software. The study analyzed the descriptive and correlational data it had gathered using a linear regression data analysis method. The data analysis includes cross-sectional and time series data. Mean, Maximum, Minimum, and Standard Deviations are used in descriptive statistics to quantify the key performance variables.

Additionally, Pearson correlation analysis has been employed to ascertain the link between independent factors and controlled variables. Correlation analysis cannot be used to establish causal relationships between variables; it can only show the degree of relationship between variables (Marczyk et al., 2005).

CHAPTER FOUR

DATA ANALYSES AND DISCUSSIONS

4.0 Introduction

In relation to the determinants of nonperforming loans of commercial banks in Ghana, this chapter presents data analyses and discussions. Specifically, the study focuses on the following specific objectives: to examine the financial distress condition of banks; to assess the effect of profitability on the financial distress of banks; to assess the effect of liquidity on the financial distress of banks in Ghana and to assess the effect of capital adequacy on financial of banks in Ghana.

4.1 Descriptive Statistics

The variables used to examine the determinants of nonperforming loans of commercial banks in Ghana listed on the Ghana Stock Exchange are described statistically in Table 4.1. The variables include Financial Distress, Gross Domestic Product, Inflation Rate, Capital Adequacy Ratio, Return on Assets, Liquidity, and Banks Size.

Table 4.1: Descriptive Statistics

S/N	Variable	Obs.	Mean	Std. Dev.	Min	Max
1	Return on Assets	50	0.07	0.15	-0.43	0.35
2	Liquidity	50	0.85	0.41	0.43	2.81
3	Banks Size	50	1.62	2.56	0.01	6.78
4	Capital Adequacy Ratio	50	0.17	0.05	0.09	0.29
5	Inflation Rate	50	10.69	5.03	0.41	17.45
6	Gross Domestic Product	50	6.04	3.84	0.51	14.05
7	Financial Distress	50	2.12	1.78	-1.02	5.21

Source: Author's Estimation

As shown in Table 4.1, Return on Assets recorded a maximum amount of 0.35 and a minimum of -0.43, the standard deviation, and a mean of 0.15 and 0.07 respectively. This result implies that on average the banks have generated 5% profit for each cedi period of 10 years from 2011 to 2020. This is low as argued by Isayas (2021) that the Return on Assets that is higher than 15% indicates that a company has generated more profit for each cedi of assets it has employed. A company's Return on Assets measures how productive and successful it is at managing its balance sheet to produce profits. A lower Return on Assets suggests there is potential for improvement (Isayas, 2021).

The Capital Adequacy Ratio found that the average rate for the period was 0.17, with a standard deviation of 0.05, a maximum rate of 0.29, and a minimum value of 0.09. Alajmi and Alqasem (2015) the ratio of a bank's capital in relation to its risk-weighted assets and current liabilities.

The maximum inflation rate recorded for the period of 10 years is 17.45 with a minimum being 0.41, the standard deviation being 10.69, and a mean value of 5.03. The average rate of increase in prices over a given period of ten years from 2011 to 2020 is 5.03%.

The minimum Gross Domestic Product rate for the 10 years period is 0.51 and the maximum value of 14.05. In respect of GDP, an average growth rate of 6.04 is recorded and a standard deviation of 3.84. The total market value of all final goods and services produced within a country in a given period grows at an average rate of 6.04%.

The minimum bank size was 0.01 and a standard deviation of 6.78, the means was 1.62 and a standard deviation of 2.56. This means that on average the banks grew by 1.62 over the ten years period.

The respect to liquidity, the minimum rate recorded was 0.85 and the standard deviation was 0.41, the minimum value recorded was 0.43 whiles a standard deviation of 2.81 is recorded. With an average of 0.41, it is an indicator of the financial health of the banks.

With respect to financial distress, the mean of 2.12 and the standard deviation of 1.78. The minimum score was -1.02 and the maximum score of 5.21. With this standard deviation of 1.78, this implies that there is a wide difference between the banks in terms of financial distress level.

4.2 Financial Distress Condition of Banks

The Z-score of the banks was used to evaluate the financial distress status, and the findings are shown in Table 4.2. According to Altman et al. (2017), a Z-score of less than 1.8 denotes financial distress and a high chance of insolvency for the company. On the other hand, a score of 3 or higher indicates that the business is doing well and is not likely to declare bankruptcy. If the company's score is between 1.8 and 3, it is in the grey area and has a moderate possibility of declaring bankruptcy.

Table 4.2: Distress Condition of the Banks

S/N	Situation	Obs.	Per cent
1	Distress	15	30%
2	Grey Area	15	30%
3	Safe Zone	20	40%
	Total	**50**	**100%**

Source: Author's Estimation

As shown in Table 4.5, the out of the 50 observations in this study, 15 times financial distress observation was made which is 30%, the grey area observation is also 15 also representing 30% and the Safe Zone observation made was 20 which is 40%. This signifies that most of the banks are in the Safe Zone. This outcome indicates that the majority of the banks are not at risk of collapsing. This demonstrates that there is little risk of the company going out of business in the next two years, thus investors may want to think about buying the company's stock.

In this study firms in the distress and grey areas are considered financial distress and firms in the safe zone are considered non-financial distress. Using binary logistic regression, if a firm is in financial distress it is coded 1, and otherwise, it is coded 0.

4.3 Test of Heteroscedasticity

Statistics refers to heteroskedasticity as the condition when a variable's standard deviations do not remain constant throughout a predetermined length of time (Gao et al., 2016). The existence of heteroscedasticity in regression analysis and the analysis of variance is a serious problem because it invalidates statistical tests of significance that assume that the modelling errors all have the same variance. The investigation used the Cook-Weisberg or Breusch-Pagan test for heteroskedasticity.

Table 4.3: Test of Heteroscedasticity

Particulars	Item/Value
Ho:	Constant Variance
Variables:	Fitted Values Of Financial Distress
chi2(1) =	0.63
Prob > chi2 =	0.4266

Source: Author's Estimation

If the probability of the F-statistics of the test show significance that implies that there is a presence of Heteroscedasticity. Heteroscedasticity was not an issue in the investigation, as evidenced by the models' significance, as indicated in Table 4.2. Prob > chi2 has a p-value of 0.4266, which corresponds to the Chi-Square test statistic. We can rule out the null hypothesis and conclude that the data do indeed show heteroscedasticity because this number is more than 0.05.

4.4 Multicollinearity

Multicollinearity is the correlation between several independent variables in a model. Perfect collinearity is shown by a correlation coefficient of +/- 1.0 between two variables.

When independent variables are Multicollinearity, statistical inferences are less reliable. The variance inflation factor (VIF), a measurement of the degree of and correlation between the explanatory variables in a regression model, can be used to detect Multicollinearity.

Table 4.4: Variance Inflation Factor

Variable	VIF	1/VIF
Banks Size	1.95	0.5124
Liquidity	1.70	0.5889
Capital Adequacy Ratio	1.41	0.7084
Inflation rate	1.33	0.7503
GDP	1.33	0.7544
Return on Assets	1.15	0.8697
Mean VIF	**1.48**	

Source: Author's Estimation.

Since neither of the variables that recorded weight or length had VIF values more than 5 suggests that Multicollinearity is not a problem in the regression model, it is assumed that there is no issue with Multicollinearity.

4.5 Correlation Matrix

Table 4.4 displays the correlation matrix. To evaluate the relationship between two variables in a data collection, a correlation matrix is a statistical technique. The matrix is a table containing correlation coefficients in each cell; a correlation coefficient of 1 denotes a strong association between variables, a correlation coefficient of 0 is a neutral relationship, and a correlation coefficient of -1 is a weak relationship.

As shown in Table 4.2, none of the correlations between the variable recorded Values greater than 0.8, this indicates that there is no Multicollinearity problem in the data. Therefore, the data is used for the analysis.

Table 4.5: Correlation Matrix

	ROA	LIQ	SIZE	CAR	INFL	GDP	NPL
ROA	1						
LIQ	0.753	1					
	0.000						
SIZE	-0.116	0.1605	1				
	0.4225	0.2654					
CAR	-0.1624	-0.1086	0.5204	1			
	0.2598	0.4529	0.0001				
INFL	-0.0251	0.098	-0.041	-0.0164	1		
	0.7628	0.4984	0.7774	0.9097			
GDP	0.2162	0.131	0.0065	-0.1074	-0.4328	1	
	0.1316	0.3645	0.9643	0.4578	0.0017		
FID	-0.3521	-0.1057	-0.0611	0.0248	-0.0758	-0.2458	1
	0.0122	0.4651	0.6733	0.8645	0.601	0.0854	

Note: Financial Distress (FID), Gross Domestic Product (GDP), Inflation Rate (INFL), Capital Adequacy Ratio (CAR), Return on Assets (ROA), Liquidity (LIQ), and Banks Size (SIZE).

Source: Author's Estimation

It was revealed that NPL correlates negatively with ROA (r=-0.3521, p=0.0122) and GDP (r=-0.2458, p=0.0854). Also, GDP is found to correlate with INFL (r=-0.4328, p= 0.0017). Similarly, CAR is found to correlate with SIZE (r=0.5204, p=0.0001) and LIQ also correlates with ROA (r=0.753, p=0.000).

4.6 Logistic Regression Analysis

The goal of this analysis is to predict the outcome of the secondary data that was collected. The goal of this study is to create a model of the relationship between the explanatory and secondary data that were collected. Table 4.6 is showing the Logistic Regression Analysis with the Marginal effect for the relationship between the control, independent and dependent variables.

The results presented in Table 4.6, is showing the marginal effects, the standard of error, and z and t-values of each variable. Marginal effects measure the impact that an instantaneous change in one variable has on the outcome variable while all other variables are held constant.

The study result shows that the inflation rate recorded a marginal effect of 0.0489 and a p-value of 0.000. This result indicates that the inflation rate predicts corporate failure by 4.89%. In the case of GDP, marginal effects of 0.0004 and a p-value of 0.967. These results indicate that GDP predicts corporate failure by 0.04% although is insignificant. Also, Bank's Size recorded a marginal effect of 0.1677 and a p-value of 0.378.

In respect of the dependent variables, the study revealed that Return on Assets which is used to measure profitability, the marginal effects of 0.7562 is recorded. This implies that the profitability level of a bank predicts corporate failure by about 76%. In the case of capital adequacy, the marginal effect recorded was 0.6614, with a p-value of 0.000. This result indicate that Capital Adequacy predicts corporate failure by 66%. The marginal effect recorded for Liquidity was 0.0387 but it was insignificant.

The results presented in Table 4.6, is showing the Coefficient of each variable, the t-test results in the bracket and the significant level indicated using stars. Also shown in Table 4.6 are the model summary which is used to accept or reject the model employed in this study and indicated in chapter 3.

Table 4.6: Correlation Matrix

Variable	Marginal Effect	Model 1
Inflation Rate	0.0489***	1.3546***
	(3.74)	(2.07)
Gross Domestic Product	0.0004	0.0108
	(0.04)	(0.04)
Banks Size	0.1677	4.6469
	(0.88)	(0.85)
Return on Assets	0.7562***	20.951**
	(1.76)	(1.45)
Capital Adequacy	0.6614***	183.265***
	(3.79)	(2.08)
Liquidity	0.0387	1.072
	(0.15)	(0.15)
_cons		(-50.788)
		(-2.14)
Number of obs.		50
LR chi2(6)		57.44
Prob. > chi2		0.000
Log-likelihood		-5.9362

*** p<.01, ** p<.05, * p<.1

Source: Author's Estimation

As shown in Table 4.6, the summary shows that the p-value (Prob > F =0.0000) recorded is below the theoretical level of 0.05, while an LR chi2 (6) of 57.44 and Log likelihood of -5.9362, signifies that the model significantly predicts the dependent variable (financial distress). It was also found that the study is based on an observation of 50 (Number of obs =50) employed in this study.

Other variables that are not part of the study model account for the remaining 34.5%. The smaller the standard error, the more precise the estimate (Dar and Dar, 2017). This result shows that the model used in this study which included six variables as independent and control variable explains the distress condition of the banks.

It was revealed that the one macroeconomic variables used as control variables has a significant influence on the financial distress condition of the banks which is the inflation rate (β=1.3546, t= 2.07, p<0.05) but Gross Domestic Product (β=0.0108, t=0.040, p>0.05) which recorded a p-value value above the theoretical level of 0.05. It does indicate that the economic conditions have little or no influence on the financial distress conditions of the banks.

The only firm characteristic used as a control variable which is Banks Size (β=4.6469, t=-0.85, p<0.05) was found to negatively and significantly influence the financial distress condition of banks. This result indicates that the financial distress condition of the banks is more of banks' activities than the economic conditions in the country.

In the case of the independent variables, two which included, Return on Assets (β=20.951, t=1.45, p<0.05) and Capital Adequacy (β= 183.265, t=2.08, p<0.05) were found to be positive and significantly influence financial distress condition of banks but one of the variables which are Liquidity (β= 1.072, t=0.15, p>0.05) was found to not to influence the distress condition of the banks.

4.7 Discussion of Results

The first objective of the study was to examine the financial distress condition of banks on the Ghana Stock Exchange. According to Fligstein et al. (2017), the term financial distress is purposely broad and hence somewhat vague. Generally speaking, it refers to the inability to pay obligations (e.g., debt) when due (Assefa, 2021). Operational definitions of financial distress have focused on two main events bond default and bankruptcy. To Assefa (2021) financial distress is a condition in which a company or individual cannot generate sufficient revenues or income, making it unable to meet or pay its financial obligations.

The study revealed that the majority of the banks are not in distress condition according to the z-score for each bank from 2012 to 2021. This can be explained by the fact the banks of Ghana has revoked the license of banks with financial distress condition.

According to Hu and Wang (2022), there are several costs associated with financial distress, including bankruptcy costs, distressed asset sales, a higher cost of capital, indirect costs, and conflicts of interest. The finding of Gebreslassie's (2015) study indicates that capital to loan ratio and net interest income to total revenue ratio have a statistically significant positive influence on the financial health of banks whereas the nonperforming loan ratio has a statically significant negative influence on the financial health of the banks. Tung (2020) asserted that financial distress occurs when an organization is unable to pay its creditors and lenders. This condition is more likely when a business is highly leveraged, its per-unit profit level is low, its breakeven point is high, or its sales are sensitive to economic declines.

The second objective of the study was to assess the effect of profitability on the financial distress of banks in Ghana. Alarussi and Alhaderi (2018) argued that profitability is the primary goal of all business ventures and without profitability, the business will not survive in the long run. Profitability ratios indicate how effective a company is in

generating profits given sales and/or its capital assets and measure a company's ability to generate revenue over expenses (Dar and Dar, 2017). The profitability of the banks was measured by Return on Assets.

The study found that return on assets ($\beta=20.951$, $t=1.45$, $p<0.05$) positively and significantly influences the financial distress condition of banks. This means the return on assets has a positive influence on the financial distress condition of banks. This signifies that profitability has an impact on the financial distress condition of banks. The result shows that an increase in profitability leads to decreased financial distress.

Similarly, Isayas (2021) studied the determinants of corporate failure and the pricing of financially distressed stocks and shows lower profitability will lead to a higher level of financial distress that increases the chance to fall into bankruptcy. Thus, it implies that there is an inverse relationship between profitability and financial distress. Also, Kuncoro and Agustina's (2017) established that a return on asset and capital adequacy ratio negatively significantly influences the probability of financial distress, meanwhile, good corporate governance, loan deposit ratio, total asset growth, non-performing loans, price earning ratio, and price book value ratio had no significant influence to the probability of financial distress.

On the contrary, the result of Saputri and Asrori's (2019) research showed that leverage, liquidity, and profitability have no significant effect on financial distress. But rather they asserted that the effectiveness of the audit committee has proven to be a moderating variable between the variables of leverage and profitability of financial distress, but cannot be a moderating variable between the variables of liquidity and financial distress. Also Rokhayati et al. (2022) found that female directors, liquidity, and profitability have no significant effect on the company's financial distress.

The result of Finishtya's (2019) study also shows that operating cash flow as measured by cash flow from operational/net sales is significant towards the company's financial

distress, profitability measured by ROA shows a significance towards financial distress and financial leverage measured by DER does not show any significance towards financial distress.

The third objective of the study was to assess the effect of liquidity on the financial distress of banks in Ghana. According to Ikpesu (2019) liquidity, which indicates the firm ability to meet short-term maturing obligations, has also been shown as an important determinant of corporate financial distress in various studies. Rashid, 2018) argued that liquidity is a measure of a business's ability to convert assets or anything a company owns with financial value into cash.

The study revealed that liquidity (β= 1.072, t=0.15, p>0.05) has insignificantly influenced the financial distress condition of banks. This means that liquidity has no or little effect on the financial distress condition of banks. This implies that the ability of the banks to convert assets or anything the company owns with financial value into cash does not affect the financial distress condition of banks.

But a study conducted by Dirman (2020) showed that an increase in liquidity leads to a decrease in corporate financial distress. Similarly, Akgün and Memiş (2021) indicated that there is a negative link between liquidity and financial distress. However, studies conducted by Gathecha (2016) and Kristanti et al. (2016) indicated that liquidity has a positive link with financial distress. The results of Saleem et al. (2020) study revealed that all the predictors such as operating cash flow, profitability, financial leverage, trading activities and liquidity have a positive association with the financial distress of the banking industry of ASEAN countries. Also Liahmad et al. (2021) found that liquidity, cash flows, institutional ownership and the independent commissioner do not affect significantly financial distress, while the method of the size of the company and profit and significant effect on financial distress.

For Chiaramonte and Casu (2017) the likelihood of failure and distress decreases with increased liquidity holdings, while capital ratios are significant only for large banks. Similar to the finding of this study Dianova and Nahumury (2019) found that liquidity, leverage, sales growth, and good corporate governance do not affect financial distress. This is explained by the finding of Paule-Vianez et al. (2020) that artificial neural networks are a highly suitable method for studying financial distress in Spanish credit institutions and for predicting all cases in which an entity has short-term financial problems.

The fourth and final objective was to assess the effect of capital adequacy on the financial distress of banks in Ghana. According to Tutu (2020), the pass-through effect is that enough capital adequacy is able to ensure that banks are able to venture into other investment that invariably accrues interest for the bank. Again, enough capital adequacy helps banks to absorb risks and thereby make more money. Adequate capital is critical to protect financial institutions' depositors and policyholders (Tutu, 2020). Regulators set requirements on minimum capital to ensure financial institutions can absorb unexpected losses in their business.

The study found that Capital Adequacy (β= 183.265, t=2.08, p<0.05) positively and significantly influences the financial distress condition of banks. This means capital adequacy has a positive influence on the financial distress condition of banks. This signifies that capital adequacy has an impact on the financial distress condition of banks. The result shows that an increase in capital adequacy leads to decreased financial distress. Similar to the finding of this study Buchdadi et al. (2020) found that both credit risk and capital adequacy had significant influences on financial distress, with positive and negative effects, respectively. Karugu et al. (2018) study found that capital adequacy ratios were significant predictors of financial distress in commercial banks in Kenya. Toby and Danjuma's (2021) also found that capital adequacy regulation has no significant

effect on both ratios of distressed banks and governance/compliance breaches of distressed banks, while it has a significant effect on the business risk exposure of the distressed banks and the asset quality of distressed banks.

Examining a sample of 560 US bank holding companies for the period 2003–2009, Abou-El-Sood's (2016) study revealed that the association between the core (Tier 1) capital ratio and bank failure becomes significant only if the bank holding company has a Tier 1 capital ratio of less than 6%. This is the level below which US bank regulators do not regard banks as being well-capitalized. During the financial crisis period of 2007–2009, there is a significant association only when the criterion is set at or above 8%.
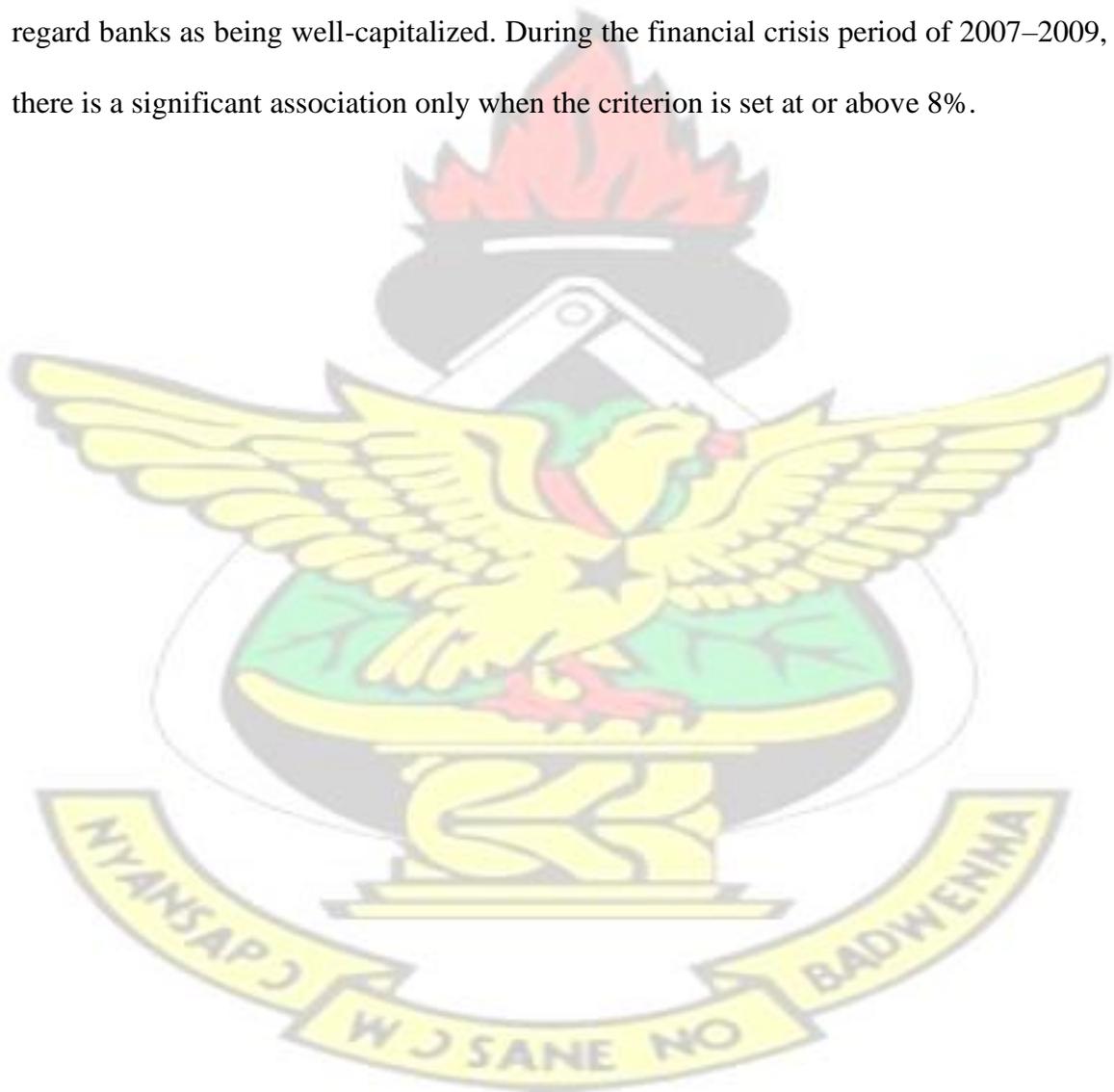
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

5.0 Introduction

This section of the study presents the summary of the study findings in the previous chapter (chapter four), it also presents the conclusion and recommendations for policy implementation as well as future research. The main objective of this study was to assess the financial distress condition and its determinants of a country's banks. The presentation is done base on the specific objectives of the study.

5.1 Summary of Findings

5.1.1 Financial Distress Condition

The first objective of the study was to examine the financial distress condition of banks on the Ghana Stock Exchange. The study revealed that the majority of the banks are not in distress condition according to the z-score for each bank from 2012 to 2021. This means most of the banks are not at risk of collapsing. This can be explained by the fact the banks of Ghana has revoked the license of banks with financial distress condition.

5.1.2 Profitability and Financial Distress

The second objective of the study was to assess the effect of profitability on the financial distress of banks in Ghana. The study found that return on assets positively and significantly influences the financial distress condition of banks. This means the return on assets has a positive influence on the financial distress condition of banks. This signifies that profitability has an impact on the financial distress condition of banks. The result shows that a decrease in profitability leads to an increase in financial distress.

5.1.3 Liquidity and Financial Distress

The third objective of the study was to assess the effect of liquidity on the financial distress of banks in Ghana. The study revealed that liquidity has insignificantly influenced the financial distress condition of banks. This means that liquidity has no or little effect on the financial distress condition of banks. This implies that the ability of the banks to convert assets or anything the company owns with financial value into cash does not affect the financial distress condition of banks.

5.1.4 Capital Adequacy and Financial Distress

The fourth and final objective was to assess the effect of capital adequacy on the financial distress of banks in Ghana. The study found that capital adequacy positively and significantly influences the financial distress condition of banks. This means capital adequacy has a positive influence on the financial distress condition of banks. This signifies that capital adequacy has an impact on the financial distress condition of banks. The result shows that a decrease in capital adequacy leads to increase financial distress.

5.2 Conclusion

The study adopts the correlational research design. The research employs a quantitative method because it wants to determine whether there are any important correlations between the variables. The study made use of secondary data. Secondary data sources provide knowledge gathered from previous sources: journal paper searches on the Internet or archives, as well as the financial statements of the banks operating in Ghana. The population are commercial banks operating in Ghana and listed on Ghana Stock Exchange. The study purposely selected 5 banks in Ghana for the period of 2012 to 2021. The study revealed that the majority of Ghanaian banks are not in financial distress. Also, it was revealed that the determining factors of the financial distress condition of banks include profitability and capital adequacy but excluded liquidity.

Therefore, the study concludes that the determinants of the financial distress condition of banks include profitability and capital adequacy but excluded liquidity. This tells that firms generating an adequate profit and having healthy capital adequacy will suffer a little from financial distress.

5.3 Recommendation

The following important policy and operational directions are provided in light of the study's findings for managers of banks to implement: The aforementioned significant determinants of financial distress should be taken into consideration by the board of directors when making financial decisions and developing financial policies and strategies because they may serve as an early warning sign for corporate financial distress. To ensure seamless operation and the organization's continued survival, corporate managers must also establish and maintain the proper amount of liquidity, leverage, profitability, and revenue growth. In order to lessen the likelihood of a financial crisis in the sector, the government must also give particular attention to the insurance industry by fostering a supportive environment and providing adequate infrastructure.

5.4 Recommendation for Further Study

For academia future research may use a combination of firm-specific and macroeconomic variables to examine the factors that contribute to financial distress.

REFERENCES

Assefa, Y., 2021. *Determinants Of Financial Distress In Three And Four Star Hotels In Case Of Addis Ababa, Ethiopia* (Doctoral Dissertation, St. Mary's University).

Tung, F., 2020. Financing failure: Bankruptcy lending, credit market conditions, and the financial crisis. *Yale J. on Reg.*, *37*, p.651.

Fligstein, N., Stuart Brundage, J. and Schultz, M., 2017. Seeing like the Fed: Culture, cognition, and framing in the failure to anticipate the financial crisis of 2008. *American sociological review*, *82*(5), pp.879-909.

Altman, E.I., Hotchkiss, E. and Wang, W., 2019. *Corporate financial distress, restructuring, and bankruptcy: Analyze leveraged finance, distressed debt, and bankruptcy*. John Wiley & Sons.

Ruppel, W., 2017. *Wiley GAAP for Governments 2017: Interpretation and Application of Generally Accepted Accounting Principles for State and Local Governments*. John Wiley & Sons.

Liao, Q. and Mehdian, S., 2016. Measuring financial distress and predicting corporate bankruptcy: An index approach. *Review of Economic and Business Studies*, *9*(1), pp.33-51.

Altman, E.I., Iwanicz-Drozdowska, M., Laitinen, E.K. and Suvas, A., 2017. Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-score model. *Journal of International Financial Management & Accounting*, *28*(2), pp.131-171.

Kontuš, E. and Mihanović, D., 2019. Management of liquidity and liquid assets in small and medium-sized enterprises. *Economic research-Ekonomska istraživanja*, *32*(1), pp.3247-3265.

Waqas, H. and Md-Rus, R., 2018. Predicting financial distress: Importance of accounting and firm-specific market variables for Pakistan's listed firms. *Cogent Economics & Finance*, *6*(1), p.1545739.

Dar, S.Q. and Dar, A.A., 2017. The working capital and its ratios: A qualitative study. *International Journal of Statistics and Actuarial Science*, *1*(1), pp.24-30.

Alarussi, A.S. and Alhaderi, S.M., 2018. Factors affecting profitability in Malaysia. *Journal of Economic Studies*.

Lin, K.C. and Dong, X., 2018. Corporate social responsibility engagement of financially distressed firms and their bankruptcy likelihood. *Advances in accounting*, *43*, pp.32-45.

Isayas, Y.N., 2021. Financial distress and its determinants: Evidence from insurance companies in Ethiopia. *Cogent Business & Management*, *8*(1), p.1951110.

Ikpesu, F., 2019. Firm specific determinants of financial distress: Empirical evidence from Nigeria. *Journal of Accounting and Taxation*, *11*(3), pp.49-56.

Rashid, C.A., 2018. Efficiency of financial ratios analysis for evaluating companies' liquidity. *International Journal of Social Sciences & Educational Studies*, *4*(4), p.110.

Dirman, A., 2020. Financial distress: the impacts of profitability, liquidity, leverage, firm size, and free cash flow. *International Journal of Business, Economics and Law*, *22*(1), pp.17-25.

Akgün, A.I. and Memiş Karataş, A., 2021. Investigating the relationship between working capital management and business performance: Evidence from the 2008 financial crisis of EU-28. *International Journal of Managerial Finance*, *17*(4), pp.545-567.

Tutu, B.O., 2020. *Capital Adequacy and Performance of Banks Licensed in Ghana* (Doctoral dissertation, University of Cape Coast).

Suyanto, S., 2021. The effect of bad credit and liquidity on bank performance in Indonesia. *The Journal of Asian Finance, Economics and Business*, *8*(3), pp.451-458.

Karadağ, H., 2018. Cash, receivables and inventory management practices in small enterprises: their associations with financial performance and competitiveness. *Small enterprise research*, *25*(1), pp.69-89.

Hamza, K., Mutala, Z. and Antwi, S.K., 2015. Cash management practices and financial performance of small and medium enterprises (SMEs) in the Northern region of Ghana. *International Journal of Economics, Commerce and Management*, *3*(7), pp.456-480.

Zietlow, J., Hankin, J.A., Seidner, A. and O'Brien, T., 2018. *Financial management for nonprofit organizations: Policies and practices*. John Wiley & Sons.

Zelie, E.M., 2019. Determinants of financial distress in case of insurance companies in ethiopia. *Research Journal of Finance and Accounting*, *10*(15), pp.2222-1697.

Gebreslassie, E., 2015. Determinants of financial distress conditions of commercial banks in Ethiopia: A case study of selected private commercial banks. *Journal of Poverty, Investment and Development*, *13*(2422), pp.59-74.

Kuncoro, S. and Agustina, L., 2017. Factors to Predict the Financial Distress Condition of the Banking Listed in The Indonesia Stock Exchange. *Accounting Analysis Journal*, *6*(1), pp.39-47.

Rafatnia, A.A., Suresh, A., Ramakrishnan, L., Abdullah, D.F.B., Nodeh, F.M. and Farajnezhad, M., 2020. Financial distress prediction across firms. *Journal of Environmental Treatment Techniques*, *8*(2), pp.646-651.

Saputri, L. and Asrori, A., 2019. The effect of leverage, liquidity and profitability on financial distress with the effectiveness of the audit committee as a moderating variable. *Accounting Analysis Journal*, *8*(1), pp.38-44.

Rokhayati, I., Purnomo, S.D., Retnowati, D., Winarto, H., Prabawa, A. and Kencana, H., 2022. Analysis of financial distress in banking companies listed on the indonesian stock exchange. *Akuntabel*, *19*(2), pp.269-274.

Finishtya, F.C., 2019. The role of cash flow of operational, profitability, and financial leverage in predicting financial distress on manufacturing company in Indonesia. *Jurnal Aplikasi Manajemen*, *17*(1), pp.110-117.

Ikpesu, F., 2019. Firm specific determinants of financial distress: Empirical evidence from Nigeria. *Journal of Accounting and Taxation*, *11*(3), pp.49-56.

Chiaramonte, L. and Casu, B., 2017. Capital and liquidity ratios and financial distress. Evidence from the European banking industry. *The British Accounting Review*, *49*(2), pp.138-161.

Dianova, A. and Nahumury, J., 2019. Investigating the effect of liquidity, leverage, sales growth and good corporate governance on financial distress. *Journal of Accounting and Strategic Finance*, *2*(2), pp.143-156.

Paule-Vianez, J., Gutiérrez-Fernández, M. and Coca-Pérez, J.L., 2020. Prediction of financial distress in the Spanish banking system: An application using artificial neural networks. *Applied Economic Analysis*, *28*(82), pp.69-87.

Saleem, R., Hussain, A. and Ibraheem, R., 2020. Banking Industry Specific Determinants of Financial Distress: Empirical Evidence from ASEAN Countries. *iRASD Journal of Economics*, *2*(2), pp.113-123.

Rosa, P.S. and Gartner, I.R., 2017. Financial distress in Brazilian banks: an early warning model. *Revista Contabilidade & Finanças*, *29*, pp.312-331.

Liahmad, K.R., Utami, Y.P. and Sitompul, S., 2021. Financial Factors and Non-Financial to Financial Distress Insurance Companies That Listed in Indonesia Stock Exchange. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, *4*(1), pp.1305-1312.

Buchdadi, A., Nguyen, X., Putra, F. and Dalimunthe, S., 2020. The effect of credit risk and capital adequacy on financial distress in rural banks. *Accounting*, *6*(6), pp.967-974.

Karugu, C., Achoki, G. and Kiriri, P., 2018. Capital adequacy ratios as predictors of financial distress in Kenyan commercial banks. *Journal of Financial Risk Management*, *7*(03), p.278.

Toby, A.J. and Danjuma, J.K., 2021. Liquidity Management, Basel Capital Adequacy and Financial Distress Resolution in the Nigerian Banking Industry. *Journal of Finance and Accounting*, *9*(4), p.154.

Amahalu, N., Okoye, E.I., Nweze, C., Chinyere, O. and Christian, O., 2017, July. Effect of capital adequacy on financial performance of quoted deposit money banks in Nigeria. In *Chapter 57 in the proceedings of the 2017 International Conference on African Entrepreneurship and Innovation for Sustainable Development (AEISD)*.

Abou-El-Sood, H., 2016. Are regulatory capital adequacy ratios good indicators of bank failure? Evidence from US banks. *International Review of Financial Analysis*, *48*, pp.292-302.

Gong, D. and Qian, Z., 2022. Inflation targeting and financial crisis. *Applied Economics*, *54*(41), pp.4782-4795.

Andrew, D.P., Pedersen, P.M. and McEvoy, C.D., 2019. *Research methods and design in sport management*. Human Kinetics.

Douglas, J.A., Antony, J., Ciasullo, M.V. and Douglas, A., 2021. Recognising waste in higher education institutions using lean thinking. In *Lean six sigma for higher education: research and practice* (pp. 21-38).

Verma, J.P. and Verma, J.P., 2019. Sampling Techniques. *Statistics and Research Methods in Psychology with Excel*, pp.291-332.

Sarstedt, M., Ringle, C.M. and Hair, J.F., 2021. Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587-632). Cham: Springer International Publishing.

Bell, A., Fairbrother, M. and Jones, K., 2019. Fixed and random effects models: making an informed choice. *Quality & quantity*, *53*, pp.1051-1074.

Galati, G., Poelhekke, S. and Zhou, C., 2018. Did the crisis affect inflation expectations?. *24th issue (Mar 2011) of the International Journal of Central Banking*.

Yazdanfar, D. and Öhman, P., 2020. Financial distress determinants among SMEs: empirical evidence from Sweden. *Journal of Economic Studies*, *47*(3), pp.547-560.

Claessens, S. and Kose, M.A., 2018. Frontiers of macrofinancial linkages. *BIS Paper*, (95).

Purnanandam, A., 2008. Financial distress and corporate risk management: Theory and evidence. *Journal of Financial Economics*, *87*(3), pp.706-739.

KMPG, 2019. Ghana-banking-survey-2019. https://www.pwc.com/gh/en/assets/pdf/ghana-banking-survey-2019.pdf

Ghana Web (2019). High-trend-of-fraud-cases-among-bankers-call-for-inculcation-of-ethical-behaviour-Governor. https://www.ghanaweb.com/GhanaHomePage/business/High-trend-of-fraud-

cases-among-bankers-call-for-inculcation-of-ethical-behaviour-Governor-1880921

Amankwaah, E. and Baidoo, N.O., 2023. Effect of firm size and corruption on financial challenges of savings and loans companies: Evidence from Ghana. Social Sciences & Humanities Open, 8(1), p.100552.

Das, S. and Maji, S.K., 2023. Farmer's financial literacy and its determinants: evidence from South Asia. International Journal of Social Economics.

Abdelzaher, M.A., 2023. Determining Factors Affecting the Mobilization of Deposits in Egyptian Listed Banks. International Journal of Economics and Financial Issues, 13(3), p.11.

Hu, X. and Wang, Y., 2022, September. A Survey of Research on the Costs of Financial Distress. In *Proceedings of the 2022 International Conference on Business and Policy Studies* (pp. 821-831). Singapore: Springer Nature Singapore.
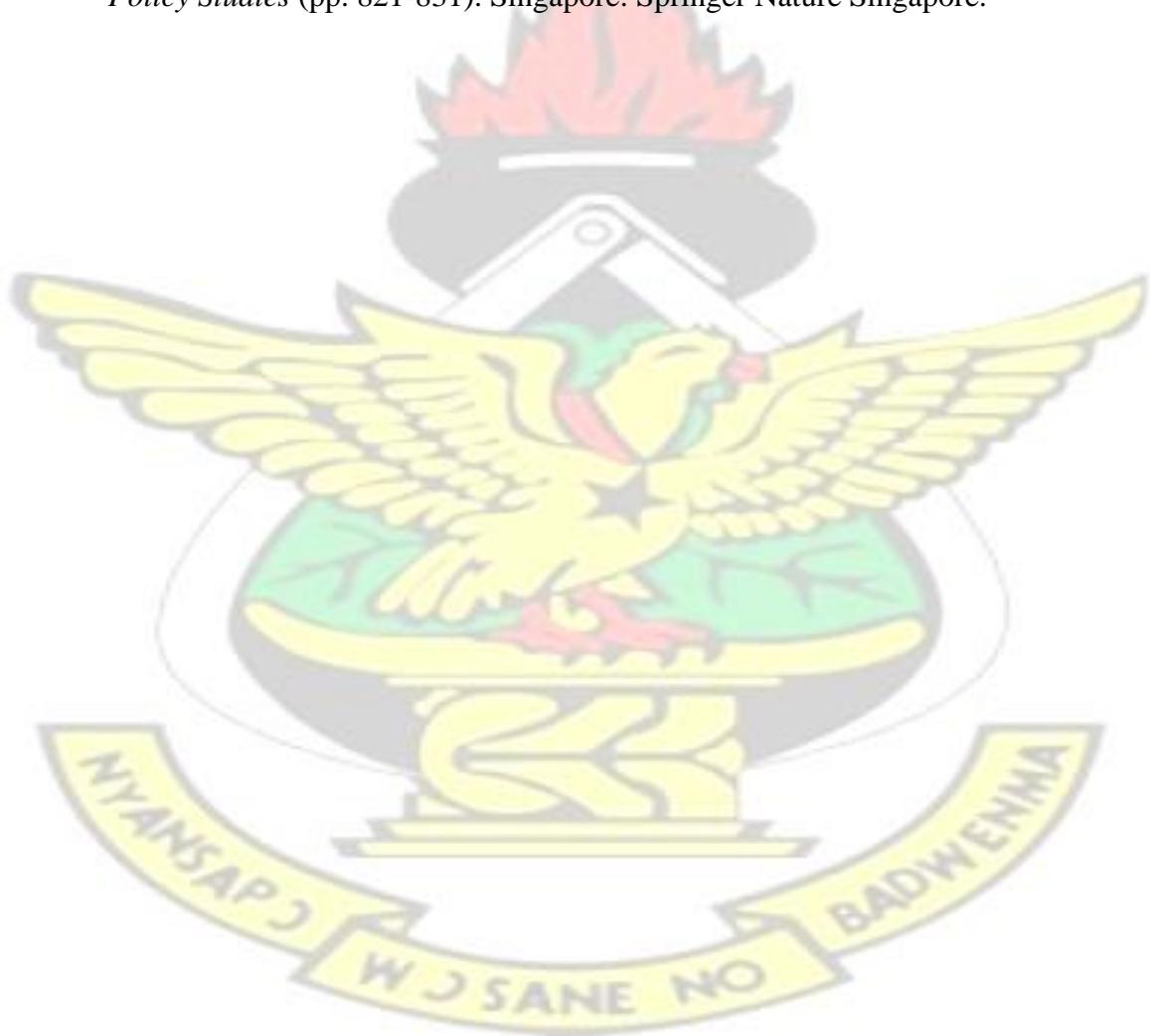
APPENDIX

APPENDIX A: MARGINAL EFFECT OF LOGISTIC REGRESSION

Marginal Effect of Logistic Regression result for identifying determinants of FD

	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf.	Interval]
Inflation Rate	0.0489	0.0131	3.74	0.000	0.0233	0.0745
Gross Domestic Product	0.0004	0.0093	0.04	0.967	-0.0179	0.0187
Banks Size	0.1677	0.1903	0.88	0.378	-0.2053	0.5407
Return on Assets	0.7562	0.4289	1.76	0.038	-0.0845	1.5968
Capital Adequacy	0.6614	1.7439	3.79	0.000	3.1963	10.0323
Liquidity	0.0387	0.2626	0.15	0.883	-0.4759	0.5533

Appendix B: Logistic Regression result for identifying determinants of FD

				Number of obs		50
				LR chi2(6)		57.44
Log likelihood	-5.93621			Prob > chi2		0.000
FD	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Liquidity	1.0720	7.3257	0.15	0.884	-13.286	15.430
GDP	0.0108	0.2589	0.04	0.967	-0.497	0.518
Inflation Rate	1.3546	0.6535	2.07	0.038	0.074	2.636
Capital Adequacy	183.2654	87.9449	2.08	0.037	10.897	355.634
Banks Size	4.6469	5.4794	0.85	0.396	-6.093	15.386
Return On Assets	20.9510	14.4143	1.45	0.044	-7.300	49.202
_cons	-50.7883	23.7278	-2.14	0.032	-97.294	-4.283

Appendix BMulti-collinearity test for FD

Variable	VIF	1/VIF
Banks Size	1.95	0.5124
Liquidity	1.70	0.5889
Capital Adequacy Ratio	1.41	0.7084
Inflation rate	1.33	0.7503
GDP	1.33	0.7544
Return on Assets	1.15	0.8697

Mean VIF	1.48	

Appendix C: Heteroskedasticity test for FD

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity Ho: Constant variance

Particulars	Item/Value
Ho:	Constant Variance
Variables:	Fitted Values Of Financial Distress
chi2(1) =	0.63
Prob > chi2 =	0.4266

Appendix D: Hausman FE

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)

=   36.67

Prob>chi2 =   0.0000

(V_b-V_B is not positive definite)

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
Size	.0792311	-.0290014	0.108233	0.034671
Car	-2.88898		-0.85907	0.349241
Infl	.0045053	-.0015007	0.006006	.
Gdp	.0104176	.0071132	0.003304	.
Fid	.0963469	-.0515079	0.147855	0.039528
Liq	.0580637	.0787146	-0.02065	.

62

APPENDIX B-DATA

Bank	Code	year	ROA	SIZE	CAR	INFL	GDP	LQ	FD
GCB	1	2011	0.05	6.67	0.19	8.73	14.05	0.81	1
GCB	1	2012	0.03	6.71	0.22	7.13	9.29	0.81	1
GCB	1	2013	0.04	6.75	0.18	11.67	7.31	1.56	1
GCB	1	2014	0.03	6.78	0.19	15.49	2.86	2.81	1
GCB	1	2015	0	6.78	0.24	17.15	2.12	1.89	1
GCB	1	2016	0	6.78	0.29	17.45	3.37	1.86	1
GCB	1	2017	0.03	6.22	0.25	11.7	8.13	0.84	1
GCB	1	2018	0.01	6.28	0.22	0.41	6.2	0.81	1
GCB	1	2019	0.03	6.32	0.2	7.18	6.51	0.75	1
GCB	1	2020	0.01	6.39	0.18	9.95	0.51	0.77	1
GTB	2	2011	0.29	0.35	0.17	8.73	14.05	0.75	1
GTB	2	2012	0.21	0.23	0.2	7.13	9.29	0.88	1
GTB	2	2013	0.22	0.31	0.16	11.67	7.31	1.03	1
GTB	2	2014	0.1	0.17	0.17	15.49	2.86	1.04	1
GTB	2	2015	0.18	0.28	0.22	17.15	2.12	0.94	1
GTB	2	2016	0.27	0.71	0.26	17.45	3.37	0.71	1
GTB	2	2017	0.3	0.43	0.23	11.7	8.13	0.94	1
GTB	2	2018	0.35	0.57	0.2	0.41	6.2	0.95	0
GTB	2	2019	0.21	0.41	0.18	7.18	6.51	0.86	0
GTB	2	2020	0.05	0.11	0.16	9.95	0.51	0.65	0
RBL	3	2011	-0.08	0.04	0.22	8.73	14.05	0.68	0
RBL	3	2012	-0.12	0.06	0.2	7.13	9.29	0.67	0
RBL	3	2013	-0.07	0.03	0.18	11.67	7.31	0.65	1
RBL	3	2014	-0.03	0.01	0.17	15.49	2.86	0.67	1
RBL	3	2015	0.16	0.57	0.2	17.15	2.12	0.64	1
RBL	3	2016	0.13	0.63	0.16	17.45	3.37	0.46	1
RBL	3	2017	0.13	0.77	0.17	11.7	8.13	0.68	1
RBL	3	2018	0.34	3.05	0.22	0.41	6.2	0.73	1
RBL	3	2019	-0.43	2.57	0.26	7.18	6.51	0.57	1
RBL	3	2020	-0.2	0.81	0.22	9.95	0.51	0.65	1
SGG	4	2011	0.09	0.22	0.11	8.73	14.05	0.65	0
SGG	4	2012	0	0.03	0.12	7.13	9.29	0.56	0
SGG	4	2013	-0.13	0.22	0.12	11.67	7.31	0.43	0
SGG	4	2014	-0.03	0.04	0.13	15.49	2.86	0.56	0
SGG	4	2015	0.01	0.02	0.14	17.15	2.12	0.51	0
SGG	4	2016	0.05	0.08	0.13	17.45	3.37	0.7	0
SGG	4	2017	0.04	0.06	0.16	11.7	8.13	0.91	0
SGG	4	2018	0.03	0.04	0.15	0.41	6.2	0.86	0
SGG	4	2019	-0.05	0.03	0.16	7.18	6.51	0.92	0
SGG	4	2020	-0.12	0.07	0.18	9.95	0.51	0.84	0
SCB	5	2011	0.27	0.71	0.09	8.73	14.05	0.93	0
SCB	5	2012	0.3	0.43	0.11	7.13	9.29	0.91	0
SCB	5	2013	0.35	0.57	0.1	11.67	7.31	0.86	0

SCB	5	2014	0.21	0.41	0.11	15.49	2.86	0.92	0
SCB	5	2015	0.05	0.11	0.12	17.15	2.12	0.84	0
SCB	5	2016	0.05	0.08	0.11	17.45	3.37	0.85	0
SCB	5	2017	0.04	0.06	0.14	11.7	8.13	0.65	0
SCB	5	2018	0.03	0.04	0.13	0.41	6.2	0.56	0
SCB	5	2019	-0.05	0.03	0.14	7.18	6.51	0.43	0
SCB	5	2020	-0.12	0.07	0.15	9.95	0.51	0.56	0