

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

INSTITUTE OF DISTANCE LEARNING (IDL)

KNUST

**EFFECTS OF CORPORATE GOVERNANCE ON FIRMS' VALUE: THE
MEDIATING ROLE OF CREDIT RISK**

BY

KAFUI TEKO ADAMAH

MSC ACCOUNTING AND FINANCE

**A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND
FINANCE, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY (INSTITUTE OF DISTANCE LEARNING), KUMASI IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
THE DEGREE OF MASTER OF SCIENCE (MSC) ACCOUNTING AND
FINANCE**

AUGUST 2023

KNUST



DECLARATION

I hereby declare that this submission is my own work towards the award of the **MSc/Accounting and Finance** and that, to the best of my knowledge, it contains no material previously by another person or any material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Adamah Teko Kafui
(PG9353221)

.....
Signature

.....
Date

Certified by:

Dr. Ellis Akwaa-Sekyi
(Supervisor 1)

.....
Signature

.....
Date

Dr. Clement Oppong
(Internal Examiner)

.....
Signature

.....
Date

Prof. Kingsley Opoku Appiah
(Head of Department)

.....
Signature

.....
Date

ACKNOWLEDGEMENTS

I am most grateful to the almighty God for his immeasurable providence, guidance, and care throughout my academic pursuit. I wish to show appreciation to my entire family for their tremendous support, advice, and encouragement throughout the study period.

I am highly indebted to my supervisor, Dr Ellis Akwaa-Sekyi, for his patience, guidance, suggestions, and supervision throughout the entire research work.

Also, my special gratitude to all the lecturers of KNUST, Accounting and Finance (IDL) Department who taught me the knowledge I acquired which has made me a better person. To all, I say God richly bless you.



DEDICATION

I dedicate this work to my wife and kids and my loved ones, especially Esenam and Shere Adamah, Mr Kofi Mortsi, and Mr Sixtus Dery for their various support and encouragement throughout my studies.

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ABSTRACT

Poor corporate governance (CG) has been one of the causes of the recent financial sector crisis that characterized the Ghanaian banking sector. As a result, the current study was positioned to empirically examine the link between corporate governance and the firm value of commercial banks in Ghana, with a focus on the mediating effect of credit risk. In this regard, it aimed to address three specific objectives including, (1) to examine the effect of corporate governance and firm value (2) to investigate the influence of corporate governance on the credit risk of banks, and (3) to assess the mediating role of credit risk on the link between corporate governance and firm value of banks. With a population of 14 commercial banks (9 listed and 5 unlisted banks) over a study period of 17 years (that is from 2005 to 2021), the study employed the explanatory research design with a quantitative approach to investigate the study objectives. The dynamic models in the data analysis; thus, both the system and difference GMM were employed based on Bond et al. (2001) selection criteria. The study employed the indirect effect calculation method of Judd and Kenny (1981) to achieve the third objective. The dependent variables were Firm value measured by Tobin's Q, and credit risk measured by the rate of NPL. The regressors were corporate governance (board size, board independence, audit size, and board diversity) and controlled variables (firm size and firm leverage). The study found that large board sizes and a more independent board of directors contribute positively to the marketbased valuation of banks. However, audit size was found to be inversely related to the value of banks. The study further revealed that audit size and board diversity cause a decrease in banks' credit risk exposure, while it had a direct relationship with the board size of banks. Meanwhile, board independence had no significant impact on the risk exposure of banks. The indirect effect of corporate governance on firm value was mediated negatively by the credit risk of banks. Hence, for banks to attain growth in their market valuation, then good corporate governance should not be compromised.

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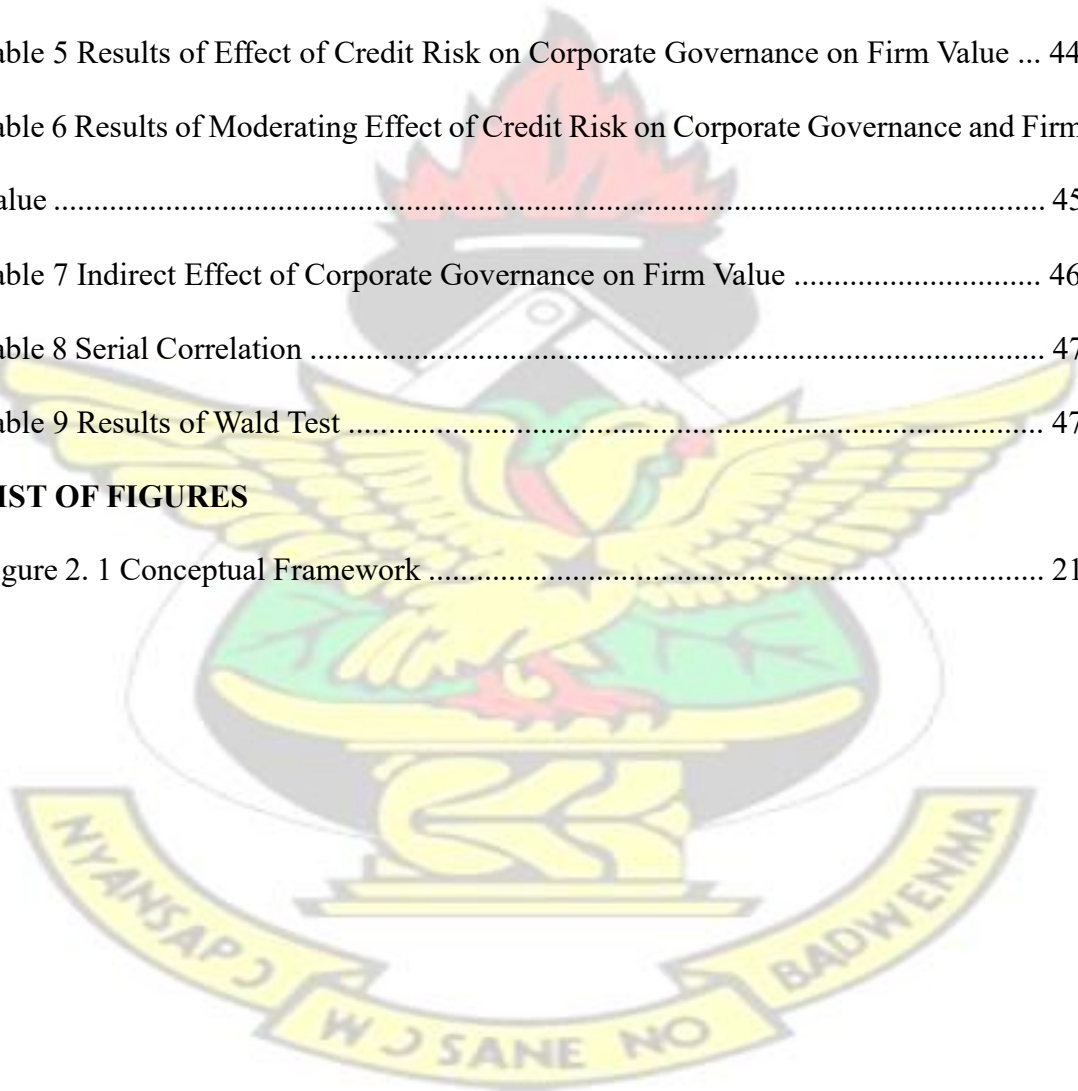
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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This section includes an overview of the study's background, problem statement, objectives of the study, and research questions. The study's significance and scope, a methodology summary, its limitations, and its organisational structure are also included in this section.

1.1 Background of the Study

The term "corporate governance" (CG) describes how the board and senior management of a regulated financial institution run the day-to-day operations of the company, set strategy and objectives, assess risk appetite and tolerance, look after depositor interests, fulfil shareholder obligations, and coordinate corporate goals (BoG, 2019). The recent surge in the quantity of research in this sector is evidence that both corporate governance (CG) and sustainability are areas that are attracting the interest of academics (Naciti et al., 2021). Therefore, this demonstrates that there is growing interest in both sustainability and the role of governance in sustainability (Naciti et al., 2021). The foundational rules, procedures, ethical norms, and institutional frameworks for doing business in a way that takes into account the needs and priorities of a variety of interested parties are set by corporate governance (Du Plessis et al., 2018). CG is crucial because it aids in the attainment of organisational objectives, the management of risks, and the making of formal decisions that are more likely to minimise risk exposure (Purbawangsa et al., 2019).

There are two viewpoints on corporate governance: a foundation at the national level and one at the business level. Country-level governance includes rules that regulate

equity ownership in publicly listed corporations, such as listing requirements. Firmlevel corporate governance addresses issues such as minority shareholder protection, disclosure rules and processes, board responsibilities and makeup, and remuneration structures (Li, Kong, Atuahene, Bentum-Micah and Agyapong, 2020). Following this, stakeholder theory proposes that good corporate governance can play a better role in regulating the operations of a firm to better serve the interest of investors and other stakeholders of the firm. Any country's ability to expand its economy is greatly influenced by its financial system. One of an economy's main sources of credit is the banking sector. By providing a variety of financial services to the general public, banks play an intermediate function that helps the economy expand faster. Financial institutions are fundamentally important for the economic growth of any country, much as blood vessels are for humans since they compel the transfer of financial resources from those who have them to those who are in need (Ali and Dhiman, 2019). Therefore, having a good CG to enhance firm value is very crucial to ensure the significance of the financial sector to the economy.

Furthermore, every business entity's main objective is to maximise profits and they control their operations by reducing risk to their revenue sources, raising market value, and expanding their market share. Depending on the type of organisation, different risks are met and managed. For instance, in the financial industry, credit risk management is a critical component that must be balanced while optimising shareholder profits (Shahid, Waris, Saqib and Asif, 2019). The fundamental objective of banking sector shareholders is the increase in corporate value which motivates the management of these institutions to participate in riskier business endeavours and jeopardises the stability of the financial system (Ferrarini, 2017). Credit provision is the principal activity of every bank in the world, the risk that a business partner will not fulfil its

commitments in accordance with the conditions set in the contract is known as credit risk or default risk (Brown and Moles, 2014).

Banks are particularly sensitive to the economic disruption of a crisis since they are financial organisations that rely heavily on loan interest revenue (Sivaprasad and Mathew 2021). However, managing a company and guaranteeing continued growth has become challenging for managers of financial institutions in this period of market competition and economic upheavals, particularly in developing nations like Ghana. Given the impact a healthy loan portfolio has on lending institutions' liquidity, lending capacity, revenues, and profitability, managers of these businesses have no alternative but to consider and employ appropriate credit risk management approaches to be profitable and remain sustainable (Boateng and Dean, 2020). The situation where managers of financial institutions are tempted to engage in riskier transactions such as extending loans to maximise returns is parallel with the objective of good corporate governance to protect shareholders' interests is explained by the agency theory.

Due to the banking system's constantly growing internal and external surroundings and the more complex hazards related to banking business activities, good CG practices and risk management are necessary for early risk reduction. The ability to identify possible losses that banks may incur that might affect bank capital will be facilitated by regulatory authorities through excellent CG practices and risk management. These practices will also provide a foundation for valuation when determining strategy and bank supervisory priorities. For banks, effective CG procedures and risk management may boost shareholder value (Permatasari, 2020). Purbawangsa et al. (2019) define firm value (FV) as the value of a corporation that investors need to consider when making investment decisions. This value is expressed by the company's market price and is

directly tied to the share price. As the value of its shares rises, FV can maximize shareholder wealth. A high FV corresponds to a high stock price. A good GC and ethical behaviour can help an organisation attain desired FV which is directly related to firm performance and corporate image, according to Kartika et al. (2019). Thus, considering the importance of corporate governance in managing credit risk in banks which are identified by scholars to negatively affect the stability of financial institutions, it is worth studying the interrelationship between the firm value, corporate governance and credit risk in banks in Ghana.

1.2 Statement of the Problem

The growing scholarly interest in corporate governance and risk management cannot be overemphasised considering the growing studies discussing them in various settings. This includes studies such as those of (Buallay, Hamdan and Zureigat, 2017; Djebali and Zaghdoudi, 2020; and El-Chaarani, Abraham and Skaf 2022). Tiep Le and Nguyen (2022) in studying the mediating role of corporate social responsibility and organisational identification on the relationship between corporate governance and firms' value, used the resource-based theory, stewardship theory, stakeholder's theory and social identity theory. They suggested that CG has a positive significant relationship with firm value and that their findings support all the theories underpinning their study. Tiep Le et al. (2022) noted that their research focused on SMEs from various segments, therefore variations in the structure of various businesses may have an impact on the crucial governance qualities for an efficient CG. Therefore, to better understand the impact of corporate governance on the value of firms, it could be helpful for future research to focus on companies from a specific category. They said that the southern area of Vietnam was the location of their investigation. As a result, in a different area,

nation, or culture, the outcomes could not be the same. To diversify approaches to the backdrop of the research in this field, future research may take into account other contextual aspects. This study responds and seeks to present evidence to fill these gaps identified by Tiep Le et al. (2022). It is against this backdrop that this study uses the agency theory and stakeholder's theory as foundational theories to investigate the mediating role of credit risk in the relationship between corporate governance and firm value in commercial banks in Ghana which to the best of the researcher's knowledge, limited study has been done to investigate. Tiep Le et al. (2022) used the CB-SEM method in analysing their primary data but this study seeks to use the pooled OLS regression method which gives the overall explanatory power of the independent variables which is given as R-square and is perfect for analysing secondary data (Musil, Jones and Warner, 1998).

Additionally, most studies on the effect of corporate governance on firm value use OLS regression and use the Hausmann test to decide between the fixed effect and random effect regressions (Bhat, Chen, Jebran and Bhutto, 2018; Ararat, Black and Yurtoglu, 2017). Also, studies involving corporate governance and credit risk barely use the pooled OLS regression, the GMM estimator is usually used (Liu, Brahma and Boateng, 2019; Safiullah and Shamsuddin, 2018) and Permatasari (2020) used MANOVA. Unlike these scholars, this study seeks to examine the phenomena using the GMM technique of estimation.

1.3 Objectives of the Study

The purpose of the study is to evaluate the mediating role of credit risk management in the relationship between corporate governance and firm value in commercial banks in Ghana.

Specific Objectives

1. To investigate the relationship between corporate governance and the firm value of commercial banks in Ghana.
2. To investigate the effect of corporate governance on the credit risk of commercial banks in Ghana.
3. To investigate the mediating effect of credit risk on the connection between corporate governance and the firm value of commercial banks in Ghana.

1.4 Research Questions

1. Is there a relationship between corporate governance and the firm value of commercial banks in Ghana?
2. How does corporate governance affect the credit risk of commercial banks in Ghana?
3. What is the mediating effect of credit risk on the connection between corporate governance and the firm value of commercial banks in Ghana?

1.5 Significance of the Study

This study investigates corporate governance mechanisms and credit risk management as means of improving firm value. The findings of this study provide insight for managers and policymakers of banks and other financial institutions to initiate relevant empirical-driven strategies through good corporate governance and credit risk management to grow the value of their firms. This study's second contribution is its insight into the mechanism of business value enhancement. Business owners and practitioners may gain a deep understanding of how CGV promotes firm value through

the use of CR as a mediator in the relationship between CG and firm value through this study. Shareholders through the findings of this study will make informed investment decisions to earn better returns by following the corporate governance and credit risk management performance of their firms. This study also adds to the existing literature on CG and CR and how they influence the sustainability of firms.

1.6 Scope of the Study

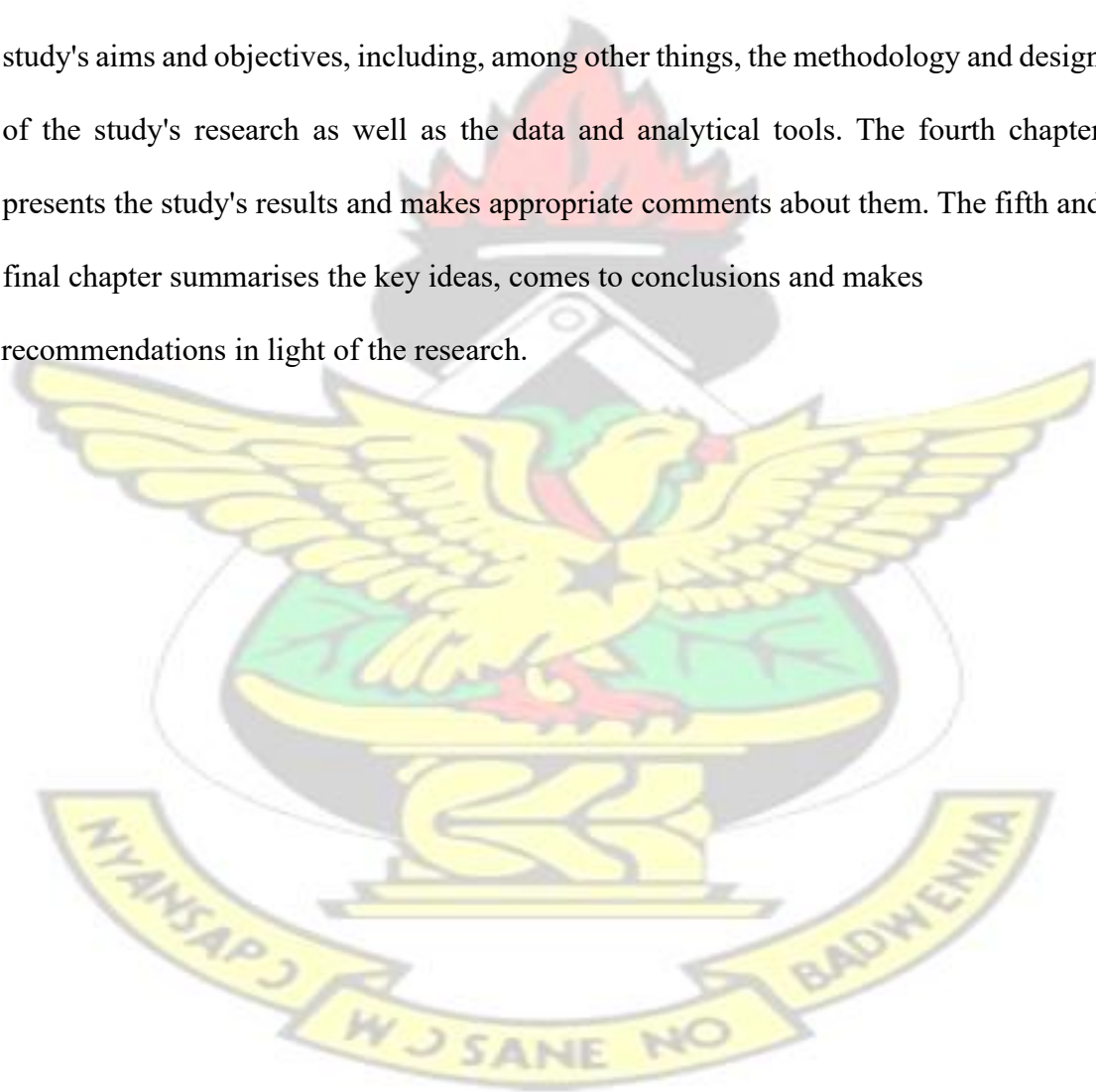
The research seeks to investigate how credit risk management mediates the relationship between corporate governance and the firm value of commercial banks in Ghana, therefore the study is limited to Commercial banks in Ghana. The study only focused on the corporate governance mechanisms, non-performing loans ratio and market value of commercial banks from 2005 to 2021.

1.7 Summary of Methodology

Positivism is used in this study since it is necessary to collect, analyse, and test hypotheses using secondary quantitative data (Buallay, 2020). The study uses a descriptive research approach to explain the relationship between two or more variables. The sample for the study consists of the commercial banks in Ghana which are selected by using purposive sampling. The study relied on secondary data gleaned from the annual reports of the commercial banks for the years 2005 to 2021. Data on the ratio of non-performing loans is used to measure credit risk management, the size of the board, the independence of the board, the size of the audit committee, the concentration of ownership, and the number of women on the board were all gathered to gauge corporate governance. The firm value was calculated using Tobin's Q. The multiple linear regression model is used to describe the connection between the dependent and independent variables after data have been analysed using Eviews v10.

1.8 Organization of the Study

This work consists of five major chapters. Chapter one of the study topic includes a general introduction. This section includes the study's history, the problem's definition, the research aims, a brief methodology of the study and any restrictions. A review of the literature that is relevant to the appropriate research variables is discussed in Chapter Two. This component consists of an empirical inquiry and a theoretical framework. The third chapter contains information on the research approaches utilised to carry out the study's aims and objectives, including, among other things, the methodology and design of the study's research as well as the data and analytical tools. The fourth chapter presents the study's results and makes appropriate comments about them. The fifth and final chapter summarises the key ideas, comes to conclusions and makes recommendations in light of the research.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

There are five (5) sections in this chapter. Concepts related to the study are discussed in Section 1 as a conceptual review. The theory employed in the study was briefly explained in Section 2, which is the theoretical review. An empirical review is presented in Section 3. Hypothesis development is presented in Section 4, and the conceptual framework is discussed in Section 5.

2.1 Conceptual Review

A conceptual review of the key concepts employed in this work is presented in this section. These concepts include corporate governance (CG), Firm value, and Credit risk. The key concepts are therefore discussed below.

2.1.1 Corporate Governance

The recent growth in the volume of research in this area shows that corporate governance (CG) and efficiency are two areas that are drawing more attention from academics (Naciti et al., 2021). This demonstrates that concerns about sustainability and the role of governance in performance are growing (Naciti et al., 2021). Corporate governance has its origins in the development of capital and modern stock organisations, the growth of international trade, and the enormous expansion of multinational firms during the "industrial revolution" in the early nineteenth century (McKenzie et al., 2019). Corporate governance definitions come in a wide variety and are classified into two categories. The first is centered on performance, effectiveness, growth, financial structure, and how shareholders and other stakeholders are treated. It involves a group of behavioural patterns or the particular behaviour of organisations, and it is the most important. The rules that direct how firms conduct their operations

are the subject of the second type of regulation. These norms may be found, among other places, in the financial markets, the factor (labour) markets, the legal system, and the judicial system (Bhaumik, Driffield, Gaur, Mickiewicz, and Vaaler, 2019).

CG is characterised as the set of principles, processes, moral standards, and organisational structures that promote ethical business behaviour that is geared towards the interests of numerous stakeholders (Du Plessis et al., 2018). Another way to think about corporate governance is as a system of laws, regulations, and practices that influence managerial decision-making and operational activity (Pratiwi, 2016). CG is crucial because it aids in formal decision-making to reduce risks, control hazards, and help organisations accomplish their goals (Purbawangsa et al., 2019). Elston (2019) asserts that corporate governance is the mechanism by which lenders to enterprises assure that they will obtain a return on their investment. Corporate governance (CG), according to the Organisation for Economic Cooperation and Development (OECD, 2004), is the procedure by which a company is governed and controlled to guarantee the satisfaction of all of its owners. CG also refers to practices intended to enhance corporate accountability and prevent big disasters in their tracks, according to Ronooowah and Seetanah (2022). From the above definitions, the study, therefore, recommended using the definition of Elston (2019), which stated that CG is the mechanism by which lenders to enterprises ensure that they will obtain a return on their investment.

The goal of corporate governance is to enhance a company's profitability. Companies will be encouraged by the deployment of CG to manage resources in a way that is reflected in the company's performance and value. An organisation might be judged to have accomplished a company goal if its performance is improving (Wati 2016).

Studies by Aprianingsih and Yushita (2016); Fidiana (2017); Melia (2015); Zahroh Naimah and Hamidah (2016); Santoso, Yulianeu, and Fathoni (2018); Harefa (2015); Dewi and Nugrahanti (2017), among others, demonstrate how Corporate Governance may increase a company's profitability.

2.1.2 Firm Value

The firm value of an organisation is regarded as a workable economic term, according to Gichobi (2019). The value of an organisation, however, is the market value or its growing value for shareholders, according to Gosal et al. (2018). A firm's achievement of a certain goal known as "firm value" is a measure of the public's confidence in the business (Setiadi, 2016). Firm value, in the opinion of Gendro Wiyono (2021), explains how good or bad top management handles its assets. Investors' view of a business's achievement in managing its resources determines its firm value (Wahyuni, 2019). The success of the shareholders is reflected in the value of the firm. The greater the organisation's value, the greater the profits received by the shareholders (Brigham and Ehrhardt, 2016). Purbawangsa et al. (2019) define FV as the value of an organisation that investors need to consider when making investment decisions. This value is expressed by the organisation's market rate and is directly tied to the share price. Firm value is defined as the market value (Sari and Riduwan, 2013). The main purpose of a company is to increase its value of the company through increasing the prosperity of its owners, or shareholders (Gwenda and Juniarti, 2013).

One measure of investor opinion is firm value. Investors' opinion of the business's potential for future success is reflected in its firm value. The value of a company is reflected in its stock price, and a higher stock price indicates a higher business value.

The increased stock price enhances investor confidence in the company's present performance and future prospects (Hermuningsih, Kusuma, and Cahyarifida, 2020). As a result, the company aims to maximise its stock price to raise firm value (Pratiwi, 2016). When a company is being sold, the amount that local investors are willing to pay is known as the "firm value". However, according to Juwita (2019), the firm's market value of its debt and equity securities equals its outstanding stock. According to Sudiyatno et al. (2020), the bigger the financial output as measured by financial ratios, the higher the stock valuation. For the purposes of this investigation, the company's value was determined using the Tobin Q ratio. FV's ability to increase shareholder wealth coincides with the rising value of its shares. High FV equals a pricey share of stock. A high corporate governance value is one way to boost a company's FV and improve its reputation.

2.1.3 Credit Risk

Credit risk, according to Ali and Dhiman (2019), is the possibility that a bank borrower or creditor won't fulfil their commitment in line with the conditions set out. Also, Ngigi, Wamugo, and Koori (2021) define credit risk as the possibility of losing principal and encourage commercial banks to utilise both financial and operational measures to analyse accurately their financial performance and reduce the risk (Ngigi, Wamugo, and Koori, 2021) more accurately. Credit risk is the possibility that a borrower won't live up to its financial obligations under the terms of the loan agreement (Kwashie, Baidoo, & Ayesu, 2022). According to Shrestha (2017), credit risk has a far larger influence on commercial banks' health than any other risk, making it the costliest risk in the sector. Between 2017 and 2019, Ghana's banking sector was plagued by number of difficulties. Because of the unsteadiness in the industry, the licences of some financial institutions were revoked (Baidoo and Akoto, 2019). Several financial organisations had their

licences revoked due to poor performance and collapse (Baidoo et al., 2020; Bank of Ghana, 2018), and two major contributors were non-performing loans and deficient corporate governance. According to Samuel (2015), commercial banks' high rates of loan defaults may be traced back to a variety of causes, including faulty credit processing, external involvement in the credit process, and insufficient or inadequate collateral. Boahene et al. (2012) claim that the bad financial performance of commercial banks may be traced back to the institutions' inability to keep an eye on their credit risk. Since then, several studies have questioned the use of financial and operational measures in gauging success, including Ngigi et al. (2021) and Altman (2018). In one of the studies that included discriminant analysis, Ngigi et al. (2021) found that the comparisons were more effective at differentiating between commercial banks that had good credit risk management strategies and those that had issues. However, Altman (2018), who examined the assets and liabilities of commercial banks, said that the ratios may be used to inform institutions of potential financial difficulty and assist them in developing plans to fight it.

2.2 Theoretical Review

This section discusses the theoretical literature that underpins this research. Stakeholder theory and information asymmetry theory are two examples of the theoretical literature the study takes into account. A brief overview of these theories is given in the following subsections.

2.2.1 Stakeholder Theory

According to stakeholder theory, businesses must strike a balance between the demands and desires of various stakeholders since they offer tangible and intangible assets necessary for their survival and success, including investors, shareholders, employees, communities, suppliers, governmental entities, and the environment (Brower and

Mahajan, 2013; Fernando and Lawrence, 2014). The financial resources come from the shareholders and equity investors; the sales, loyalty, and advocacy of the customers; the skills and effort of the employees; the raw materials, parts, and expertise of the suppliers; the location and infrastructure provided by the communities; and the ecosystem facilities provided by the natural environment. Stakeholders may entirely or partially stop providing the businesses with the resources they formerly provided if they are unable to accommodate the various interests of many stakeholders. The firms' longterm survival and sustainability might ultimately be put in jeopardy (Ahn and Park, 2018). Only if a company's management is able and devoted to generating money, satisfaction, or value for all of its stakeholders, can a company be certain of its existence and success (Clarkson, 1995).

Stakeholder theory holds that businesses cannot be deemed successful if they just prioritise their financial gains without considering the interests of other stakeholders and striking a balance between the values of the economy, society, and the environment. According to Freeman et al. (2020), from the viewpoint of the stakeholder theory, a company's stakeholders may be impacted by its corporate results, which may also influence its corporate responsibility in several ways. Given that FV emphasises the need for businesses to behave and act properly toward society and the environment, particularly in the context of globalisation, it is expected that this will help the interaction between CG and FV. From this perspective, it should be emphasised that stakeholders want businesses to fulfil their duties in a way that increases stakeholders' values while maintaining their commitment to social and environmental concerns.

According to the stakeholder theory, Michelon and Parbonetti (2012) contend that effective CG promotes corporate sustainability, which strengthens ties among a firm's

stakeholders. Sustainability and good governance are seen as mutually supportive approaches to better stakeholder management. Long-term management and stakeholder objectives may be harmonised according to stakeholder theory's provision of a linkage between governance systems and sustainability initiatives. Stakeholder theory is divided into management and ethical branches by Barako and Brown (2008).

Donaldson and Preston (1995) assert that all branches of stakeholder theory are "mutually supportive" and support the absence of conflict in the managementstakeholder relationship, following Deegan (2009) and O'Dwyer (2002), who identified managerial as a positive and ethical as a normative branch of stakeholder theory.

2.2.2 Information Asymmetry Theory

Stiglitz (2002) defines information asymmetry as a situation in which one participant in a transaction has more information than the other. A more plausible assumption is proposed by Auronen (2003) to back up the idea of asymmetric information. He claims that, during negotiations, one party will often have more information than the other. The borrower often knows more about the loanee's financial stability than the lender does. Similarly, a seller knows more about a product's quality than a buyer does. The company's board of directors knows more about the company's true performance than the shareholders do. The policyholders are more aware of the insurance firm's risk than the insurance company itself. Kane and Malkiel (1965) and Huynh, Wu, and Duong (2020) argue that a bank can only learn about a borrower's traits by extending credit to the borrower several times. A lender's assessment of a borrower's creditworthiness may be improved by looking at their past performance. Due to a lack of complete background information, the bank runs the risk of issuing poor loans before the

application process has even started. Due to informational inequalities, institutions may be more vulnerable to credit risk, which might affect their bottom lines.

2.3 Empirical Review

This section reviews related literature on the mediating role of credit risk management in the relationship between corporate governance and firm value.

2.3.1 Effect of Corporate Governance on Firm Value

Buallay et al. (2017) assess the influence of corporate governance on the firm performance of Saudi stock exchange-listed enterprises. The information was gathered from the Saudi stock exchange between 2012 and 2014. The findings revealed that corporate governance has no direct effect on company performance and that the greatest shareholder ownership had no impact on firm performance (ROE, ROA, Tobin's Q). The study indicated that stakeholders such as investors, shareholders, creditors, and debtors should expand their understanding of corporate governance and its role in a company to make better investment decisions.

Mishra and Kapil (2018) investigate the relationship between board features and business performance in Indian firms. From 2010 to 2014, a sample of 391 corporate governance strategies was chosen based on the National Stock Exchange. For the analysis, panel data regression was employed. According to the study, market-based indicators (Tobin's Q) were more influenced by corporate governance than accountingbased measures (ROA). The study suggested that future research should look at the link between governance and performance, utilising a larger collection of data in terms of the number of firms and the number of years.

Mardnly et al. (2018) investigate the influence of aggregate and individual corporate governance standards on the business performance of all Damascus Securities Exchange (DSE) firms from 2011 to 2015. The analysis employed multiple linear regression. They discovered that ownership concentration, as one of the corporate governance factors, was the sole important factor in influencing company performance in Syria. They stated that foreign ownership was mostly responsible for the favourable effect. Future research should aim to categorise corporations based on their industry, especially given the banking and insurance sectors' overwhelming dominance in terms of corporate governance metrics.

Junaid et al. (2020) investigated the association between corporate governance mechanisms and insurers' performance on the Pakistan Stock Exchange. Data was gathered through yearly reports over 12 years, from 2007 to 2018. The study used pooled OLS for analysis and discovered that ownership concentration, company size, and age have a significant influence on business performance, whereas board composition, CEO salary, and leverage had a negative impact. The study advised that future research should include other enterprises and external governance mechanisms to quantify their influence on financial performance.

2.3.2 Effect of Corporate Governance on Credit Risk

Akbarian et al. (2019) examine how corporate governance affects credit risk in the Iranian banking industry. Using panel data, the sample comprises 20 banks registered on the Tehran Stock Exchange between 2011 and 2016. The study also discovered a substantial negative link between corporate governance quality and credit risk. The study's time constraint was encountered. The study proposes to decrease credit risk in the Iranian banking industry by enhancing corporate governance processes.

Nura (2021) investigates the impact of corporate governance on credit risk management in Kenyan commercial banks. A descriptive research design was used in the study. Data was gathered yearly from 2016 through 2020. SPSS was used to analyse panel data.

Multiple linear regression and correlative analysis were used to analyse the data.

Corporate governance was discovered to have a strong positive impact on credit risk. The research solely looked at corporate governance and credit risk management. As a result, the study suggested that future research should focus on additional dependent factors such as operational success, investment, and profitability.

Ahmadyan and Ghasemi (2021) assess the influence of corporate governance on bank risks such as capital risk, credit risk, and liquidity risk of twenty commercial banks listed on the Pakistan Stock Exchange from 2009 to 2018. Data were gathered from the sampled banks using yearly reports. To analyse the data, the random effect GLS regression approach was utilised. The findings revealed that corporate governance (CG) characteristics had a considerable influence on bank risk. The research recommends that banks improve their corporate control of banking risk.

Permatasari (2022) investigates Indonesian banks' corporate governance and risk management. The sample for the study was all registered banks from 2010 to 2016. The study used a quantitative approach. The study was analysed in two stages: classical assumption testing and multivariate analysis of variance (MANOVA). According to the findings, corporate governance has a considerable impact on credit risk and liquidity risk. Future research should employ market risk as an indicator to enhance market risk measurement.

2.3.3 Effect of Credit Risk on Firm Value

Isanzu (2017) investigated the impact of credit risk on Chinese commercial banks between 2008 and 2014. It was discovered that banks needed to control their credit risk since there was a substantial association between the mentioned risk and the banks' financial performance. The study was conducted in China on the five major commercial banks, and the data were analysed using a regression model. As a result, the study concluded that controlling credit risk is critical for bank financial success.

Mendoza and Rivera (2017) investigated rural banks in the Philippines to examine if there was a link between their financial performance, credit risk levels, and capital sufficiency. It was determined that a negative and statistically significant association did exist, as shown using the Arellano-Bond estimator. However, capital sufficiency had no discernible impact on profitability. As a result, the authors proposed that rural banks determine if capital injections would have any effect on their profitability versus growing their debts.

Kayogire and Shukla (2016) conducted a case study on Equity Bank (Rwanda) to see whether their credit risk management policy influenced the bank's financial performance. The researchers gathered primary data from 57 of the bank's credit officers and discovered that there was a link between the bank's performance and loan outstanding debts, as well as the rules in place to evaluate lending to its clients.

2.3.4 Mediating Role of Credit Risk

Adam et al. (2018) studied how problem credit risk plays a moderating role in company size, liquidity, and operational efficiency on bank profitability. The study was conducted with 30 commercial banks using a purposive sampling technique. Panel data analysis

was used to analyse the data. The results suggest that the moderating role of problem credit risk has a positive effect on the link between operational efficiency and bank profitability. Future studies should consider other external companies' variables that can provide economic consequences, like government changes and policies,

inflation rates, and natural disasters.

Trivedi (2019) examines the moderating role of perceived risk in the relationships between the three dimensions and customer experience. A descriptive research design was used, with a well-structured questionnaire. A sample of 258 was selected from the various banks for analysis. The instruments used for the analysis were SPSS, AMOS, and MS Excel. The finding shows that perceived risk moderates the link between INFQ, SYSQ, and SERQ and customer experience. This study only focused on banking chatbots. Future studies should investigate the impact of chatbots on other industries' consumer experiences, like e-commerce and telecom.

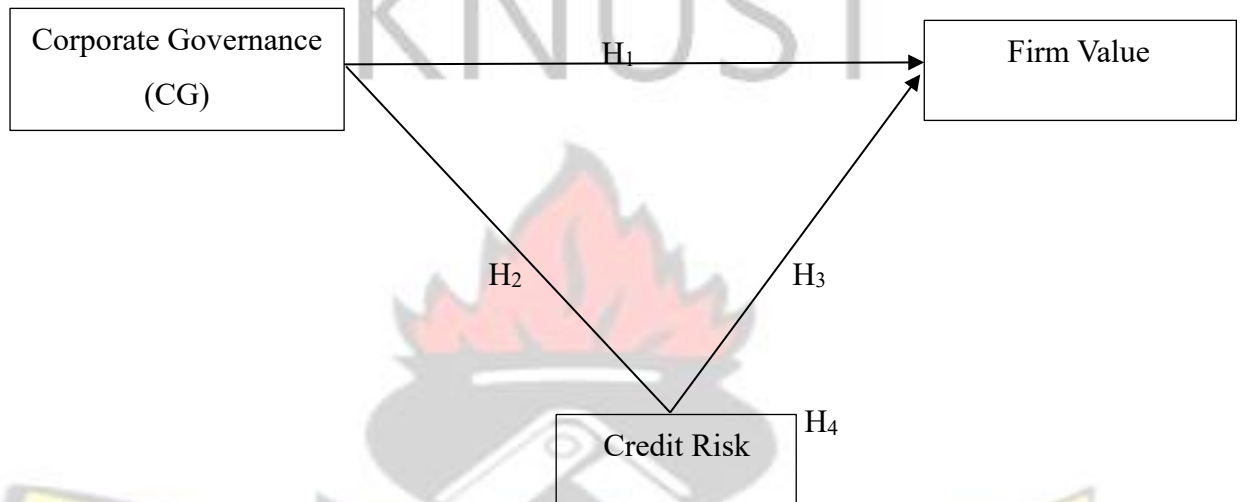
Mulwa and Kosgei (2016) investigate the moderation effect of solvency and credit risk on the relationship between bank diversification and financial performance using an ex post facto explanatory design. Panel data analysis was employed on 34 commercial banks in Kenya over nine years. The result shows a significant positive moderation effect of credit risk on the link between income diversification and financial performance.

2.4 Conceptual Framework

This study sought to examine the mediating role of credit risk management in the relationship between corporate governance and firm value. Corporate governance (CG) formed the independent variable while firm value was the dependent variable. The study

also introduces credit risk as a mediating variable. Figure 2.1 illustrates the interrelationship between these variables.

Figure 2. 1 Conceptual Framework



2.5 Hypothesis Development

Based on the conceptual framework from the above section the following hypotheses were formulated.

2.5.1 Effect of Corporate Governance on Firm Value

The number of value investors are willing to pay for an organisation when it is sold is referred to as firm value. The organisation's value increases when CG is used more frequently. Because of this, investors' consideration to purchase shares of the company is influenced in part by the firm's worth (Dewi and Nugrahanti 2017). The growing requirement for control over management behaviour, as one part of good corporate governance, is stated by Wijaya and Linawati (2015). To raise the firm's value and entice investors to acquire shares, the number of public shareholders will have an

impact on the monitoring of the company. Prices on the share prices serve as a measure of how the top management is doing by providing a comprehensive evaluation of all stakeholders. Investors who invest in a firm more frequently suggest that the company has a positive reputation. The company's stock price has increased as a result of the increased demand for its shares (Harefa 2015). The most current studies demonstrate that CG significantly improves FV. For instance, strong CG has a significant and considerable influence on a company's value (Ibrahimov and Omarova, 2020). Additionally, taking actions that are ethical in terms of both the environment and society has a significant influence on FV. (Xie et al., 2019; Qureshi et al., 2020).

H1: Firm value is significantly affected by corporate governance.

2.5.2 Effect of Corporate Governance on Credit Risk

A credit rating often serves as a benchmark for a company's credit risk. According to Hong, Li, and Minor (2016), a company's credit rating reflects the rating agency's assessment of that entity's general creditworthiness and ability to meet its financial commitments. Corporate governance and credit risk go "hand in hand" because poor governance can harm an organisation's financial stability and leave debt holders exposed to losses. Corporate governance issues can result in high debt financing costs for businesses. Flammer and Kacperczyk (2016) substituted a proportion of outside directors for corporate governance in the literature. They discovered that businesses with larger percentages of institutional ownership and outside directors on the board had reduced credit risk (as surrogated by credit ratings). Mustafa et al. (2019) discovered that the costs of debt financing were lower for companies with greater corporate governance (as determined by shareholder rights). The study observes that most of the research on corporate governance in the literature concentrates on how it

affects shareholders (Bhat et al., 2018; Akyol, 2020; Mustafa et al., 2019). There is not a lot of research on the effects of corporate governance on credit risk, which is what this study looks at.

H2: Credit risk is significantly influenced by corporate governance.

2.5.3 Effect of Credit Risk on Firm Value

Since credit risk presents such a substantial danger to banks' performance, many scholars have investigated its effects from several angles. Credit risk and bank performance in 1990s Egypt and Lebanon are studied by Nwude and Okeke (2018), as reported by Al-Yatama (2020). Using data for banks from the two nations from 1993 to 1999, an ordinary least squares regression (OLS) model of bank return is estimated with changing intercepts and coefficients. The findings show that although the liquidity variable has no influence on profitability at any of the analysed institutions, the credit variable does have a substantial positive correlation with profitability. The research finds that there is a high correlation between capital sufficiency and commercial bank return and that the cost of deployment is a barrier to return. The research found that large financial institutions earn high profits in absolute terms but not in percentage terms, implying that capital is a non-recoverable expense. According to Mogga et al. (2018), a rise in credit and an investor craze for yield followed a decline in real riskfree interest rates to historically low levels. Large-scale economic issues may be traced back to boards of directors and executives who, in their pursuit of superior returns for shareholders, are willing to take unnecessary risks. Tassew and Hailu's (2019) research focused on how credit risk management practices related to the financial success of Nigerian banks. The capital asset ratio was determined to be substantial and positively associated utilising secondary data for 10 banks and four years that suggested an inverse connection between the financial performance of banks and dubious loans. In a similar

line, it suggests that the more overall assets a bank manages, the better those assets will perform. The research concludes that there is a strong link between risk management and bank performance. Therefore, banks should practise sound risk management to protect the interests of their investors. The effect of credit risk on the profitability of Nigerian banks was studied by Afolabi, Obamuyi, and Egbetunde (2020). Data on bank performance and credit risk was extracted from selected banks' annual reports and accounts between 2004 and 2008 and was analysed using descriptive, correlative, and regression methods. The findings demonstrated the importance of credit risk management to the bottom lines of Nigerian banks. It concluded that a bank's profitability is inversely proportional to its amount of deposits, loans, and nonperforming loans, putting the bank at serious risk of insolvency. This study explores the consequences of credit risk on corporate value since there is little research in this area.

H3: Firm value is significantly affected by credit risk.

2.5.4 Mediating Role of Credit Risk

Sovereign risk is a type of credit risk that develops when a nation adopts foreign exchange controls that make it difficult for third parties to fulfil their financial obligations. Organisational risk is the danger of default; nation risk is the risk of the sovereign. Settlement risk, which develops when two payments are made in different currencies on the same day, is another type of credit risk. This risk happens when the counterparty (the other party) may experience a default after the institution makes payments. The other party's loss as the default financial institution is equivalent to the whole amount to be paid upon settlement. The net value of the two payments is the sole exposure prior to the settlement. A policy or rule governing how a firm or bank manages

its capital is known as capital adequacy. Capital is money that the owner invests in the formation of a company with the goal of financing that company's operations and adhering to monetary authority laws (Safitri, Kadarningsih, Din, and Rahayu, 2020). Because it shows that banks can handle the potential loss risk they may encounter as a result of their operating activities, enough capital can enhance public trust. The following hypothesis is given:

H4: Credit risk significantly mediates the link between corporate governance and firm value.

2.6 Summary of Chapter

This chapter has five (5) sections that were further addressed. In Section 1 conceptual review, study-related concepts are covered. Section 2, which is the theoretical review, contains a brief explanation of the study's underlying theory. Section 3 presents the empirical review related to the study. Section 4 presents the development of hypotheses, while Section 5 discusses the conceptual framework. The research methodology used in the study is covered in the next chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents an outline of the various methods and strategies employed by the researcher to collect data, clean the data and analyse the data using the appropriate analytical tools. It looks at the research design, data, method, model specification, diagnostics, and chapter summary.

3.1 Research Design

In terms of data collection, measurement, and analysis, the research design refers to how a study will be carried out. It sets the parameters for data collection and analysis in a manner that optimises both efficiency and conformity with the study's stated goals (Kothari, 2004). The goal of developing such a strategy and evaluating its efficacy is to conduct research that yields the most data in the least amount of time. In other words, the objective of the study design is to get as much information as possible with as little investment of time, money, and resources as possible (Cohen, Manion, & Morrison, 2009).

Due to the need to gather and analyse secondary quantitative data and test hypotheses in this study, positivism will be applied (Buallay, 2020). The objective of this study is to evaluate the mediating role of credit risk management in the relationship between corporate governance and firm value listed on the Ghana Stock Exchange. The study utilises quantitative data techniques employing panel data types derived from the annual

reports of the selected firms for the investigation. Listed banks are included in the analysis focused on the most recent 12-year data acquired from their annual records.

Stata version 13 is utilized in estimating the regression.

In this study, a quantitative approach to research and an explanatory study design is being utilised. The data is analysed using Stata statistical version 13. Both descriptive and inferential statistics is being used in this study. Descriptive statistics were used to summarise the data. Inferential statistics (static and dynamic panel estimation) is being used to analyse the effect of corporate governance and credit risk management on the firm value of all banks listed on the Ghana Stock Exchange.

3.2 Data

Data on the study variables is collected from secondary sources of the thirteen (13) listed banks (Agricultural Development Bank, CalBank PLC, Ecobank Ghana PLC, Ghana Commercial Bank Limited, Republic Bank (Ghana) PLC, Standard Chartered Bank Ghana Ltd, Trust Bank Ltd, and Société Générale Ghana Ltd, Access Bank, ABSA Bank, Prudential Bank and Zenith Bank Ghana) in Ghana. The secondary sources of data were used, extracting data from the reports of companies listed on the Ghana stock exchange on the dependent (firm value), mediating variable (credit risk), and independent variable (corporate governance). The data was extracted from a period of 12 years (2009–2021). Data was gathered using an excel sheet.

3.3 Methods

The research design is a panel study, which utilises a time-based longitudinal approach. The panel study is an effective method of longitudinal research in which the same people, groups, or organisations are studied over the course of several time periods (Neuman, 2007). So, the panel research design is useful for tracking changes in the

features of certain businesses over time. Furthermore, this type of research is useful for recording real-time alterations. For the purpose of this study, considering the research objectives, secondary data is adopted for all analyses and estimations. Secondary data refers to already collected and compiled data. Secondary data may be based on already published data or compiled data in its original form (Church, 2002). For the purpose of this study, secondary data was collected from the Ghana Stock Exchange. Data for the analysis is principally secondary and obtained from the 12-year annual reports of the thirteen listed banks on the Ghana Stock Exchange. The data for the study spans from 2009–2021. Data on the ratio of non-performing loans is used to measure credit risk management. The size of the board, the independence of the board, the size of the audit committee, the concentration of ownership, and the number of women on the board are all gathered to gauge corporate governance. The firm value is being calculated using Tobin's Q.

3.4 Model Specification

In order to shed light on the impact of dividend policy on the stock prices of companies listed on the Ghana Stock Exchange between 2009 and 2021, this study uses the panel data technique. The panel data technique, according to Baltagi (2001), delivers more convincing and decisive results than the classic cross-sectional and time series techniques because it capitalises on their advantages while addressing their drawbacks. Similar to cross-sectional and time series methodologies, panel data shows the capacity to compensate for omitted variables and allows for both long- and short-term effects (Imbens and Wooldridge, 2009). The study utilises the modified empirical models of Akotey et al. (2013), Alhassan et al. (2015), and Olalekan et al. (2016) due to the panel nature of the data. The simulation of the dynamic mediation model takes the form of

Judd and Kenny (1981). Therefore, the Generalized Method of Moment together with the Judd and Kenny (1981) mediation modelling approaches were used simultaneously. Based on the model of Judd and Kenny (1981), two regression models have been specified: the partial regression model and the simple regression model.

$$FV_{i,t} = \beta_0 + \gamma FV_{i,t-1} + \beta_1 \sum_{i=1}^4 CG_{i,t} + \beta_2 CRM_{i,t} + \beta_3 Controls_{i,t} + \epsilon_{i,t} \quad (1)$$

$$FV_{i,t} = \beta_0 + \gamma FV_{i,t-1} + \beta CG_{i,t} + \epsilon_{i,t} \quad (2)$$

The expanded form of the system GMM model with the mediation effect of credit risk management is presented in equations (3) and (4); where TobinsQ was used to proxy firm value (FV), board independence, size of the audit committee, the ratio of women on board, and ownership concentration of the firm were used as proxies for Corporate Governance (CG). The mediator variable is credit risk management (CRM). The firm size (FirmSize) and firm leverage (LEVERAGE) were used as the control variables.

$$TobinsQ_{i,t} = \beta_0 + \gamma TobinsQ_{i,t-1} + \beta_1 BINDP_{i,t} + \beta_2 AUSE_{i,t} + \beta_3 WOMEN_{i,t} + \beta_4 OWN_{i,t} + \beta_5 FirmSize_{i,t} + \beta_6 LEVERAG_{i,t} + \beta_5 CRM_{i,t} + \epsilon_{i,t} \quad (3)$$

According to Judd and Kenny (1981), the indirect effect of a moderator is obtained from equation (3) by subtracting all the coefficients of the independent variables in the partial model (3), that is; $\beta_1, \beta_2, \beta_3$, and β_4 from the coefficient of the other model.

$$TobinsQ_{i,t} = \beta_0 + \gamma TobinsQ_{i,t-1} + \beta (BINDP_{i,t} + AUSE_{i,t} + WOMEN_{i,t} + OWN_{i,t} + CRM_{i,t}) + \beta_1 FirmSize_{i,t} + \beta_2 LEVERAG_{i,t} + \epsilon_{i,t} \quad (4)$$

β_0 is the regression intercept. $\beta_{indirect} = \beta - (\beta_1, \beta_2, \beta_3, \beta_4 \text{ and } \beta_5)$, the subscript 'i' and 't'

are firm i at time t. $\epsilon_{i,t}$ is the stochastic error term.

3.4.1 Diagnostic Testing

Hausman Test

A specification test was run to discover whether random and fixed-effect models were the most successful. This test, which bears the Durbin-Wu-Hausman nomenclature, compares the consistency of one estimator to that of a different, ostensibly inferior estimator. The test allows for the evaluation of the correspondence between empirical data and research data. By deciding between random and fixed effect effectiveness, this method is used in panel regression to explain the relationship between the dependent and autonomous variable(s). Under the null hypothesis, the random effects model is selected over the alternative set effects model.

Instrument Validity Tests

To test the validity of the instruments used in the system GMM model, the Hansen and Sargan test for over-identifying restrictions was used. The hypotheses to be tested are;

H_0 : Instruments are valid.

H_1 : Instruments are not valid.

Failure to reject the null hypotheses means the instruments are valid for both Hansen and Sargan tests (Prob < 0.05).

Autocorrelation/Serial Correlation Test

The study also tests for the serial correlation of the error terms in both first-order and second-order serial correlation as:

AR(1)= reject the null hypothesis of no autocorrelation (Prob<0.05)

AR(2)= accept the null hypothesis of no autocorrelation (Prob >0.05) **Multicollinearity Test**

Multicollinearity occurs when the autonomous variables are correlated with one another. The VIF (Variance of the Inflation Factor) has being utilised to investigate this further. Multicollinearity tests use an inflatable component, the VIF, to determine the degree to which the variance has been inflated.

Heteroscedasticity Test

It is essential to assess the sturdiness of the standard errors in relation to fixed effect regression. When using Stata, the study does not need to add robustness to the regression equation if the standard errors are robust. The investigations search for signs of both heteroscedasticity and homoscedasticity in the data. If the sample is homoscedastic, meaning the variance of the error term is constant, then we do not need to use robust standard errors in our regression. If not, the regression will be unreliable. However, if our data is heteroscedastic, then robust standard errors are essential for avoiding bias in our findings. The researcher put this to the test using the BreuschPagan/CookWeisberg heteroscedasticity test.

3.5 Variables Description and Measurement

Measurement of the various variables and expected direction of the relationship is captured below.

Table 3.1 Measurement of Variables and Expected Sign

Variable	Measurement	Direction
Dependent		
Firm Value	The total market value of the firm divided by the total value of assets	
Independent		
Corporate Governance	1. Board Independence (BINDP): Independent nonexecutive board members as a ratio of total board size	+/-
	2. Audit size (AUSize): Total audit members as a ratio to the board size	+/-
	3. Ownership (OWN): 1=private and 0 =governmentowned	+/-
	4. Women on board (WOMEN)= number of women as a ratio of total board size	+/-
Mediating Variables		
Credit Risk	The non-performing loans ratio (NPL) Management	+/-
Controlled Variables		
Firm Size	Natural Logarithm of firm total assets	+/-
Firm Leverage	Total firm assets divided by total liabilities	+/-

3.6 Chapter Summary

To answer the research objectives and questions outlined in Chapter one, this chapter justifies the use of a positive paradigm and its accompanying quantitative methodologies. It also included a full justification for the design, sources of data and method of data measurement and collection. Furthermore, the chapter highlighted the data analysis technique by justifying the use of Stata for Panel data analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the results obtained from the data analysis. It is organised to ensure that the results for all the objectives of the study are obtained. The chapter was structured into the preliminary analyses of the data, results for the various objectives, diagnostic tests and chapter summary.

4.1 Preliminary Analyses of Data

Researchers must get to know the nature, behaviour and qualities of the data that will be used for analysis. For that matter, the study conducted various preliminary tests to obtain a clear picture of the data and how the variables relate at the bivariate level. As a result, the trend analysis, descriptive statistics, correlation analysis and panel unit root tests were carried out.

4.1.1 Trend Analysis

The trend of panel data used in this study was obtained by representing the data on a graphical view, where each of the variables was plotted without considering the crosssectional nature of the dataset. Thus, only the time-series components of the variables were considered. Refer to Figure 1 for the EViews output of the graphs. The pictorial view of the graphs indicates that all the variables jump about their mean values, and there exists no specific trend or consistent path taken by the graph movement as shown in the figure. Thus, the data is not persistent or there exists no positive correlation in the data. This gives the signal that the variables may be stationary at levels. The graphs of firm value, credit risk management, leverage and audit board size revealed that there were outliers in the dataset.

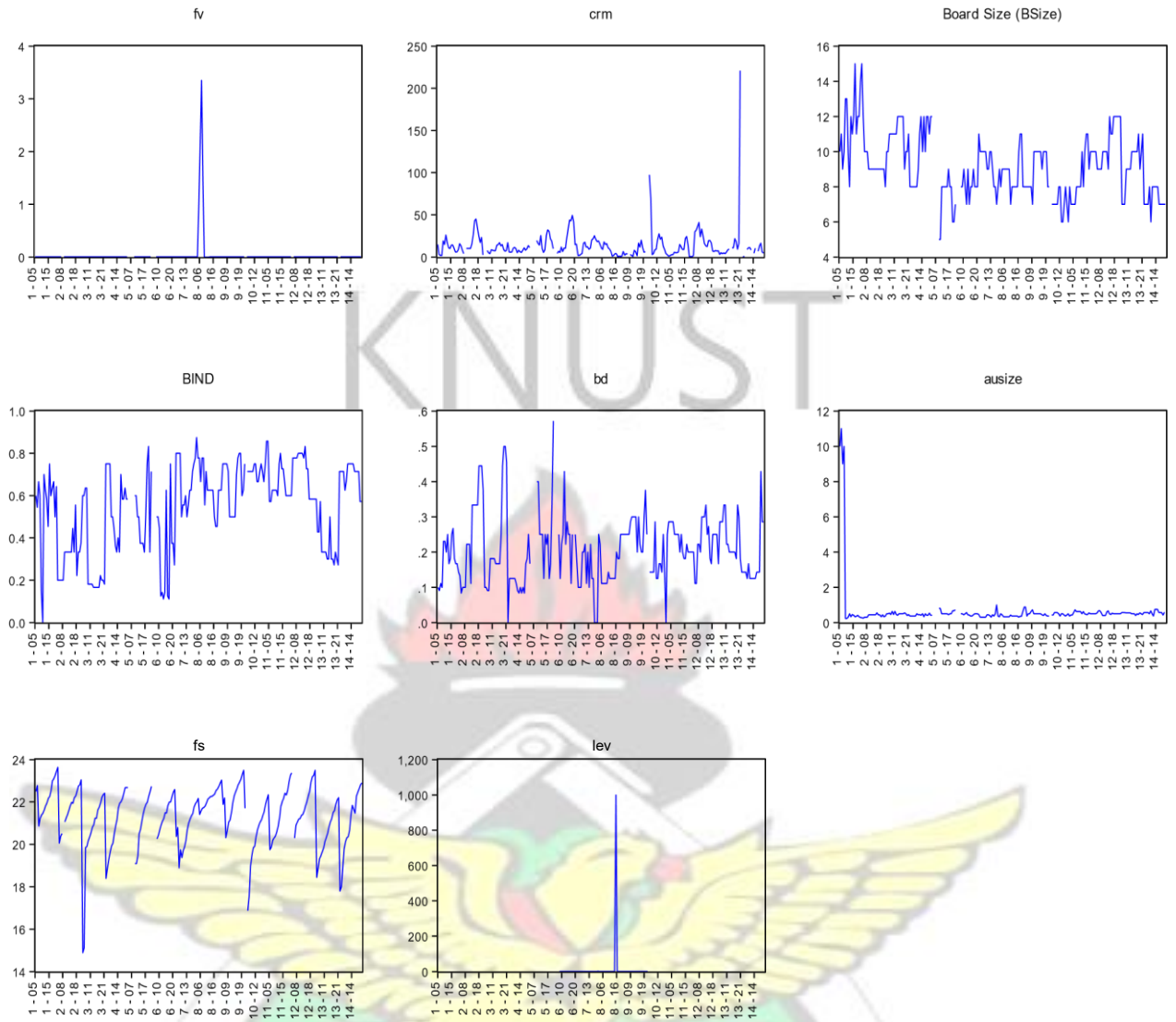


Figure 1: Trend Analysis of Variables

4.1.2 Descriptive Statistics

To have full control over the dataset, the various characteristics of the data should be known. Thus, the descriptive statistics of each of the variables were computed to reveal the inherent features of the variables across the study period. The measures of central tendency (mean), measures of dispersion (standard deviation), and range of the data (minimum and maximum) were computed. Consider the output in Table 1. From the output, the mean value of firms (FV) is 0.036, showing that on average, all firms achieve a valuation of 0.036 units. Since the FV (measured by Tobin's Q) falls between 0 and

1, it means that on average, the cost of replacing the firms' assets is higher than the firms' stock value. Thus, on average, all 14 banks are undervalued. The highest firm value obtained was 3.349, with zero as the minimum firm value. The firm values disperse from the central value (0.036) by 0.291 units. Thus, there is low variation or dispersion in the FV.

The board diversity (BD) measured the proportion of females on the board of directors. The results showed that on average, a proportion of 0.209 women occupy the firms' board, which means 21% of the board is made up of women. This result accentuates the gender disparity in the leadership position in the country. The highest proportion of women on firms' boards was obtained to be 0.571, with 0 as the minimum. This shows that some firms' boards of directors had more females than males to the extent of 57% occupied by women. The minimum results also showed that some firms do not have female board directors. The variation of the proportion from their central point (0.209) was 0.096. Firm size (FSIZE) recorded a statistical mean of 21.386 units, indicating that on average the size of firms is approximately 21.4%. The maximum and minimum size was 24% and 17% respectively, with the deviation from the central point being 1.2%.

Table 1 Results of Descriptive Statistics

	FV	BD	FSIZE	BSIZE	BINDP	AUSIZE	CR	LEV
Mean	0.036	0.209	21.386	9.211	0.548	0.650	13.687	5.656
Maximum	3.349	0.571	23.636	15.000	0.875	11.000	221.0	1000
Minimum	0.000	0.000	16.871	5.000	0.000	0.231	0.000	0.001
Std. Dev.	0.291	0.096	1.234	1.794	0.203	1.290	18.289	67.657
Obs.	218	218	218	218	218	218	218	218

Author's computation (2023)

The average size of the board of directors (BSIZE) was recorded as 9.21%, where the highest number of board size was 15 directors, while the minimum number was found to be 5 directors. The dispersion from the mean number of board of directors was found to be 1.8%. The average independence of the board from the management (BINDP) was shown to be 0.548, indicating that on average 55% of board independence exists in the firm. Where the highest independence is 87% and the minimum is 0. The deviation from the mean was recorded to be 0.20%. The size of the audit as a ratio to the board size was an average of 65%, with the highest audit size being 11, while the lowest board size was 0.231. The variation of the audit sizes from the central point is 1.3%. The credit risk (CR) measured by the nonperforming loans ratio was found to be 13.7% on average. The highest CR recorded by banks was 221% and the lowest was 0%. The variation among variables was huge, recording over 18.29%. The high values of CR show that banks are facing a serious challenge with a debt default. The leverage of firms (LEV), on average was found to be 5.66 units. The highest value is 1000 units, while the lowest value is 0.001 units. The variation in firm leverage was the highest, which is 67.66%. The total observation used for the study was 218, from 2005 to 2021.

4.1.3 Correlational Analysis

The bivariate relationship between the variables was investigated using the Pearson correlation coefficient. This analysis enables the study to establish the strength and direction of the linear relationship existing between the variables. This analysis also shows to what extent do two or more variables move together. Hence, a positive correlation coefficient indicates that the variables move together in the same direction, while a negative coefficient reveals that as one variable increases, the other decreases and vice versa. The results in Table 2 show that firm value (FV) has negative correlation

coefficients with board diversity (BD), BSIZE, AUDSIZE and LEV. This shows that as the firm value increases, the corporate governance (BD, BSIZE and AUDSIZE) and firm leverage (LEV) decrease. The coefficients -.127, -.015, -.031 and -.008 point to the existence of a weak negative relationship since they are below 0.5. However, the correlation between FV and FSIZE, BINDP and CR was positive, indicating that the variables increase together. The correlation coefficients of .025, .123, and .003 point to the existence of a weak positive relationship between the variables.

Table 2 Results of Correlational Analysis

	FV	BD	<u>FSIZE</u>	<u>BSIZE</u>	<u>BINDP</u>	<u>AUSIZE</u>	<u>CR</u>	<u>LEV</u>
FV	1							
BD	-0.127	1						
FSIZE	0.025	0.217	1					
BSIZE	-0.015	-0.122	0.345	1				
BINDP	0.123	-0.23	-0.039	-0.302	1			
AUSIZE	-0.031	-0.134	0.046	0.026	0.046	1		
CRM	0.003	0.015	-0.042	-0.016	-0.059	-0.064	1	
LEV	-0.008	-0.06	0.051	-0.047	0.028	-0.014	-0.036	1

Author's construct (2023)

To establish collinearity between these variables, Rekha (2019) posits that an absolute correlation coefficient greater than 0.7 indicates the presence of multicollinearity.

However, the highest correlation coefficient was found to be 0.345 between BSIZE and FSIZE. Thence, this value is less than 0.7, showing the possibility of the absence of multicollinearity between the variables.

4.1.4 Unit Root Tests

Conducting regression with nonstationary data yields spurious or nonsensical output (Abdulai and Abubakari, 2022), which cannot be relied upon for forecasting, prediction, and policy adoption. Thus, it was pertinent to conduct a test for the stationarity of the

variables. This was done using the unit root test techniques of Levin, Lin and Chu t-test and the Im, Pesaran and Shin W-stat, ADF-Fisher Chi-square and the PP-Fisher Chisquare. The unit root was tested under two null hypotheses: common unit root process and individual unit root process. LLC assumes the existence of a common unit root process; meaning that the cross-sections are homogeneous (Tugcu, 2018), while the IPS (Im et al, 2003, ADF-Fisher and PP-Fisher chi-squares) assumes that cross-sectional are heterogeneous. Based on these assumptions, the unit root hypothesis was tested at both level form and the first difference of the variables. The results as shown in Table 3 indicates that all the variables under the common unit root process reject the null hypothesis and conclude that there is no common unit root at a statistically significant level of 1%. Likewise, the individual unit root test results indicate at those levels, all the variables (except CR) show the absence of unit root. However, at first different, the level-form nonstationary variable (CR) became stationary at a statistical significance level of 1%. Therefore, since all the variables are stationary at levels $I(0)$ and $I(1)$, it shows that there exists no problem of unit root or non-stationarity of the variable

Table 3 Results of Unit Root Test

LEVEL	FV	BINDP	FSIZE	BSIZE	AUSIZE	LEV	CR
Null: Unit root (assumes common unit root process)							
LLC	-36752.0***	-3.002***	-4.398***	4.18***	-161.883***	-6.376***	-3.263***
Null: Unit root (assumes individual unit root process)							
IPS W-stat	-23505.6***	-2.269***	-1.359***	-3.713***	-41.727***	-6.178***	-1.988
ADF-Fisher	151.143***	46.712***	48.300***	61.614***	87.112***	93.947***	49.693***
PP - Fisher	453.690***	45.50***	58.132***	73.326***	64.833***	87.981***	40.651
FIRST DIFFERENCE							
	ΔFV	$\Delta BINDP$	$\Delta FSIZE$	$\Delta BSIZE$	$\Delta AUSIZE$	ΔLEV	ΔCRM
Null: Unit root (assumes common unit root process)							
LLC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IPS W-stat	N/A	N/A	N/A	N/A	N/A	N/A	-5.643***
ADF-Fisher	N/A	N/A	N/A	N/A	N/A	N/A	87.271***
PP - Fisher	N/A	N/A	N/A	N/A	N/A	N/A	112.860***

Author's construction (2023) where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively

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4.2 Results of Effect of Corporate Governance on Firm Value of Commercial Banks in Ghana

The effect of corporate governance on firm value was examined using the instrumental variable (IV) estimation technique, specifically the two-step difference generalised method of moment (GMM) estimation. With an unbalanced panel of 191 observations, the estimation used the white period instrument weighting matrix. The two-period lag of the dependent variable, $FV(-2)$, and the one-period lags of four other independent variables, as well as the constant term were selected as the instruments. Using the EViews version 10. The difference GMM estimation technique was selected over the system GMM based on the three-step criteria as stipulated by Bond et al. (2001).

Consider Table 4 for the selection criteria of Bond et al.'s (2001).

The coefficients of $FV(-1)$ as produced by each of the four different estimators showed that the coefficient produced by the difference GMM estimator is above that of the lower bound (fixed effect model estimator). Thus, according to Bond et al. (2001), it shows that the difference GMM is not a downward bias, hence it is a good estimator of the system GMM. Refer to the results in Table 4.1 in Appendix 1.

From Table 5, the results showed that the previous firm value ($FV(-1)$) has a positive relationship with the current FV. Therefore, at a statistical significance level of 1%, a unit increase in the previous valuation of the firm will increase the current firm valuation by 1.63 units. Similarly, corporate governance as measured by the board size (BSIZE) and board independence (BINDP) were found to relate positively with the value of the banks. Thus, at a statistically significant level of 1%, a unit increase in board size and board independence led to a commensurate increase in the value of banks by 0.0329 and 0.3011 units respectively. However, when corporate governance was measured by audit size (AUDSIZE), it related negatively to the value of banks. Hence,

Table

at a statistically significant level of 1%, any unit increase in the audit size will reduce the valuation of banks, other things being equal.

The controlled variables such as bank size (FS) and bank leverage were found to relate negatively with firm value (FV). This shows that at a statistically significant level of 1%, a unit increase in the bank size and banks' leverage leads to a decrease in the valuation of banks by magnitudes of -0.022 and -0.0004 units respectively. The credit risk variable (CR) measured by the NPL was found to relate negatively to the valuation of the bank. Hence, a unit increase in the debt defaults or NPL leads to a decrease in the value of the firm by a small magnitude of 0.0001. Another variable that was used to measure corporate governance was board diversity (BD); however, after conducting the variable significance using the Wald-test, (BD) was dropped from the model. The Hanson J-statistic was used to determine the presence of heteroskedasticity in the model. With a J-statistic of 5.0035 and a p-value of 0.6595, the study concludes that the GMM model as presented in Table 4 is free from heteroskedasticity.

4 Results of the Effect of Corporate Governance on Firm Value

Dependent Variable: FV

Method: Panel GMM

Transformation: Difference

Sample (adjusted): 2007-2021

Total panel (unbalanced) observations: 191

Instrument specification: (FV,-2, BIND,-1, LEV,-1, CR,-1, AUDSIZE,-1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FV(-1)	1.6299	0.4854	3.3578	0.0010***
BSIZE	0.0329	0.0084	3.9321	0.0001***
BINDP	0.3011	0.0760	3.9640	0.0001***
AUDSIZE	-0.0071	0.0017	-4.1814	0.0000***
FS	-0.0219	0.0053	-4.1152	0.0001***
LEV	-0.0004	0.0002	-1.8499	0.0659*
CR	-0.0001	0.0000	-4.2158	0.0000***

Effects Specification

Cross-section fixed (first differences)

Mean dependent var

	-0.0110	S.D. dependent variable	0.1958
S.E. of regression	0.3720	Sum squared residual	25.4565
J-statistic	5.0035	Instrument rank	14
Prob(J-statistic)	0.6595		

Author's construction (2023). Where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively

4.3 Effect of Corporate Governance on Credit Risk

To examine the effect of corporate governance, on credit risk the study relied on the criteria of Bond et al. (2001) to select the appropriate estimator between system GMM and difference GMM. The selection results as presented in Table 4.2 in Appendix 1 shows that the system GMM was a better estimator over the difference GMM. Hence,

Table

the results of the system GMM are presented in Table 4. The corporate governance was measured by four variables; board size (BSIZE), board independence (BINDP), board diversity (BD) and audit size (AUDSIZE). Control variables were firm value (FV) firm size and firm leverage (LEV). The results showed that the previous credit risk of the bank has a positive link with the current credit risk. Hence, at a statistical significance level of 1%, a unit increase in the previous credit risk, that is NPL will lead to a 0.641 unit increase in the current credit risk of the banks, *ceteris paribus*. Likewise, the board size of the banks was found to relate positively with the credit risk. That means, at a statistically significant level of 10%, a unit increase in the size of the board result in an increase in the credit risk by 0.756 units, with other variables held constant. However, when corporate governance was measured by the board diversity and audit size, there existed a negative relationship. As a result, of a unit increase in the proportion of women on board (that is board diversity) and the size of the audit committee, the credit risk decreases by 12.881 and 0.736 units respectively at statistical significance levels of 5% and 10% respectively.

The control variables firm value, firm size and firm leverage all related positively to the credit risk of the banks. Hence any unit increase in all of them will lead to an increase in credit risk by 3.021, 1.064 and 0.012 respectively. The Hanson J-statistic was employed to test the model for the presence of heteroskedasticity. The result of Jstat =111.922 at a p-value =0.811 shows that since the p-value is greater than 0.05, the model is free from heteroskedasticity.

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5 Results of Effect of Credit Risk on Corporate Governance on Firm Value

Dependent Variable: CR

Method: Panel Generalised Method of Moments

Transformation: Orthogonal Deviations

Instrument specification: @DYN(CR,-2, FS,-1, FV,-1, C)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR(-1)	0.641	0.035	18.370	0.000***
FV	3.021	1.336	2.262	0.025**
FS	1.064	0.454	2.346	0.020**
BSIZE	0.756	0.388	1.948	0.053*
BIND	0.924	2.525	0.366	0.715
BD	-12.881	5.647	-2.281	0.024**
AUSIZE	-0.736	0.424	-1.736	0.084*
LEV	0.012	0.009	1.342	0.181
Effects Specification				

Cross-section fixed	1 deviations)		
(orthogona Mean dependent	-1.634	S.D. dependent var	12.134
var			
S.E. of regression	16.283	Sum squared resid	47196.126
J-statistic	111.922	Instrument rank	134.000
Prob(J-statistic)	0.811		

Author's construction (2023). Where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively.

Table

4.4 Mediating Effect of CRM on the Relationship between Corporate Governance and Firm Value

According to Judd and Kenny (1981), when estimating the indirect effect of a variable, two regression equations should be specified; (1) a regression model that contains both the main independent variables and the mediator, β (Model 1); and (2) a regression model that contains only the independent variables without the mediator, β_1 (Model 2). Based on this approach, the indirect effect is obtained by subtracting the partial coefficients of the independent variables (β) from the coefficients of the independent variables obtained, (β_1). Model 1 in this study is found in Table 4, while the results for Model 2 was presented in Table 6. Corporate governance was measured by BSIZE, BIND, AUDIZE and BD. The mediator variable as found in Table 4 is CRM. The results of the indirect effect were presented in Table 7.

Table 6 Results of Moderating Effect of Credit Risk on Corporate Governance and Firm Value

Dependent Variable: FV				
Method: Panel Generalized Method of Moments				
Transformation: First Differences				
Total panel (unbalanced) observations: 197				
Instrument specification: @DYN(FV,-2, C)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FV(-1)	0.6762	0.0000	179331.7741	0.0000***
FS	-0.0387	0.0000	-7647.9930	0.0000***
BSIZE	0.0103	0.0000	341.7452	0.0000***
BIND	0.2320	0.0000	7306.5019	0.0000***
AUSIZE	-0.1160	0.0006	-204.0072	0.0000***
LEV	-0.0001	0.0000	-15.3755	0.0000***
BD	-0.0200	0.0001	-155.1079	0.0000***
Effects Specification				

Cross-section fixed (first differences)

Mean dependent var	-0.0106	S.D. dependent var	0.1928
S.E. of regression	0.2342	Sum squared resid	10.4204
J-statistic	7.0416	Instrument rank	14.0000
Prob(J-statistic)	0.4246		

Author's construction (2023). where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively

7 Indirect Effect of Corporate Governance on Firm Value

Variable	β	β_1	$\beta - \beta_1$ (Indirect Effects)
			-0.0226
BSIZE → CR → FV	0.0329***	0.0103***	
BIND → CR → FV	0.3011***	0.2320***	-0.0691
AUSIZE → CR → FV	-0.0071***	-0.1160***	-0.1089
BD → CR → FV	omitted	-0.0200***	-0.0200

Author's construction (2023). Where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively

The results as shown in Table 7 indicates that there is a negative mediating effect of the credit risk of banks on the relationship between all the corporate governance variables

Table

(board size, board independence, audit size and board diversity) and firms value. This can be shown by the coefficients of $\beta - \beta_1$. As such, a unit increase in board size, board independence, audit size and board diversity will lead to a 0.0226, 0.0691, 0.1089 and 0.0200 units decrease in firm value when mediated by credit risk respectively. The fact that the coefficient of credit risk, as found in Table 4 is statistically significant further accentuates the finding that there is a negative mediatory effect of credit risk on the interaction between corporate governance and firm value, *ceteris paribus*.

4.5 Diagnostic Tests

The study conducted diagnostic tests on all the generalised method of moments (GMM) estimations that were carried out. Specifically, the heteroskedasticity, Wald test and serial correlation tests were computed. The result of the serial correlation is presented in Table 8, while the results for the heteroskedasticity were presented together with each of the estimations in the respective tables. The Arellano and Bond first and second order serial correlation tests were computed.

Table 8 Serial Correlation

Arellano-Bond Serial Correlation Test

Sample: 2005-2021

Included observations: Model 1=191, Model 2 =186 and Model 3 =197

Test order	m-Statistic	rho	SE(rho)	Prob.
Model 1 (Objective 1)				
AR(1)	-0.576	-1.058	1.838	0.565
AR(2)	-1.152	-10.301	8.944	0.249
Model 2 (Objective 2)				
AR(1)	-0.813951	-68471427.5	84122340.1	0.416
AR(2)	0.914849	96830.1	105842.8	0.360
Model 3 (Objective 3)				
AR(1)	-1.203	-1.545	1.285	0.229
AR(2)	-0.823	-2.272	2.761	0.411

Author's construction (2023)

AR (1) provided the results for first-level serial correlation while AR(2) tested for second-order serial correlation. Both results showed that the models are free from first and second-order serial correlation because their p-value is greater than 0.05. Hence the study fails to reject the null hypothesis of no serial correlation.

Table 9 Results of the Wald Test

Test Statistic	Value	df	Probability
Model 1			
F-statistic	60888.86	(7, 184)	0.0000***
Chi-square	426222.0	7	0.0000***
Model 2			
F-statistic	9.29E+13	(7, 190)	0.0000***
Chi-square	6.50E+14	7	0.0000***
Model 3			
F-statistic	47.86739	(8, 178)	0.0000***
Chi-square	382.9392	8	0.0000***

Null Hypothesis: $C(1)=0, C(2)=0, C(3)=0, C(4)=0, C(5)=0, C(6)=0, C(7)=0$

Author's computation (2023). where ***, ** and * represent statistical significance level at 1%, 5% and 10% respectively

The F-statistic and Chi-square Wald tests were conducted to examine the overall significance of the coefficients specified under each of the models. Thus, with a statistically significant p-value, the study concludes that the models were all statistically significant.

4.6 Results Discussion

4.6 1 Effect of Corporate Governance on Firm Value of Commercial Banks in Ghana

The governing board of banks are the highest decision-making body. They are made up of experts who serve as watchdogs over the management of banks. In essence, when it comes to running a corporation, corporate governance is what sets the ground rules for how to do it in a way that is a win-win for everyone involved (Du-Plessis et al., 2018). Thus, failure to adhere to good corporate governance can result in poor firm performance. For instance, the 2017-2019 Ghana banking sector crisis which led to the collapse of nine commercial banks was partly due to poor corporate governance, especially regarding the withdrawal of the licenses of Capital Bank and UT Bank, as opined by the Governor of Bank of Ghana. For this reason, the current study examined the effect of corporate governance on firm value.

The results showed that both board size and board independence relate positively to firm value, while audit size relates negatively to firm performance or value. This outcome corroborates the studies such as (Buallay, Hamdan and Zureigat, 2017; Mustafa, Rasheed and Khalid, 2019; Mardnly, Mouselli and Abdulraouf, 2018; Gichobi, 2019; Ararat, Black and Yurtoglu, 2017) who assess the effect of corporate governance on the performance of commercial banks in countries such as Saudi Arabia,

Pakistan, Syria, Kenya and Indonesia. They found that corporate governance positively influences the performance and valuation of banks. The study's findings partly confirm that of Buallay, Hamdan and Zureigat (2017) and Gyamerah, Amo and Adomako (2020), which revealed that board independence increases the firm value or financial performance of banks. However, the negative link between board size and firm performance as posited by Buallay, Hamdan and Zureigat (2017) and Gyamerah, Amo and Adomako (2020) contradicts the current findings of the study. Similar to the finding of this study, Puni and Anlesinya (2020) also found that the presence of board committees (audit board) has a negative impact on the firm value of banks. The positive impact of board size and board independence on firm value could be imputable to the fact that a large board size easily coordinates the activities of banks, thus improving the market value of banks. Also, an independent board can reproach bank managers when they do wrong, thus if the bank board is independent, the problems of conflict of interest will not occur between the board and managers.

4.6.2 Effect of Corporate Governance on Credit Risk of Commercial Banks in Ghana

Credit risk is arguably the most excruciating risk relative to the other challenges faced by banks (Kwashie, Baidoo and Ayesu, 2022). This has been one of the factors that causes the collapse of the financial sector. For instance, in Ghana between 2017 and 2019, the financial sector faced a huge crisis occasioned by several factors, chiefly high nonperforming loans (Bank of Ghana, 2018; Baidoo et al., 2020). Therefore, good oversight over the management of banks is very necessary to curb the downfall of banks emanating from poor risk management. The current study, however, found that increases in the size of the board induce an increase in the credit risk exposure of banks.

Though this outcome is unexpected because, theoretically, a greater number of boards of directors means there is more oversight on the banks' performance which can reduce the rate of NPL.

However, the study also found that audit size and board diversity cause decrease in the exposure of banks to credit risk. This result confirms the studies of Permatasari (2022), Akbarian et al. (2019) and Bastomi, Salim and Aisjah (2014). Where Bastomi, Salim and Aisjah (2014) indicated that corporate governance is the means through which banks can reduce their exposure to credit risk. This implies a big audit size puts banks on a stricter accountability trail. Thus, bank managers will not willfully issue loans to customers who are not creditworthy. Similarly, women on boards also have a significant role to play in avoiding increments in loan loss. This could be attributable to the fact that women are risk averse in nature, thus if they sense any looming risk of loan default from loan seekers, they can prevent the bank from issuing credit to such non-creditworthy clients, thereby reducing the credit risk of the bank. Meanwhile, the independence of the board of directors had no significant impact on reducing or increasing the credit riskiness of banks.

4.6.3 Mediating Effect of Credit Risk on the Relationship between Corporate Governance and Firm Value

It is also important to note that the impact of corporate governance on firm value could exhibit an indirect effect. That is, banks will appreciate the impact of corporate governance only when it is intervened by a third factor. For this reason, the study found the existing mediating role of credit on the relationship between corporate governance and the market-based value of commercial banks in Ghana. Using Judd and Kenny (1981) approach, the study found that corporate governance (board size, board

independence, audit size and board diversity) negatively affect banks' market value when it is intervened or mediated by the rate of loan losses (NPL). Impliedly, banks that fail to benefit from good corporate governance are occasioned by the increased levels of credit risk. Extant studies that confirm these findings are Badriyah, Sari, and Basri (2015), Bastomi, Salim and Aisjah (2017), Joeswanto and Malelak (2015), Arif and Anees (2012), and Permatasari and Novitasary (2014) who also affirmed that corporate governance has an indirect effect on firm performance through the intervention of credit risk. This mediating effect of credit risk on the interaction between corporate governance and firm value gives indications that with good corporate governance, the credit risk of banks can be curbed.

4.6 Chapter Summary

The chapter operationalized the methods and methodology as specified in chapter three to run the data analysis. This chapter started with the preliminary analysis such as descriptive statistics, trend analysis, correlational analysis, and unit root test. The instrumental variable estimation techniques, specifically both two-step difference and system generalized method of moments were employed to proffer answers to the three research questions asked in chapter one. The results were preceded by diagnostic tests such as the multicollinearity test, serial correlation, heteroskedasticity and Wald test were conducted. The results were then discussed with references to extant literature presented. The summary of the chapter was then concluded.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the results and key findings obtained from the data analysis undertaken in Chapter Four. It drew conclusions based on the key findings and gave recommendations for policy adoption and future studies.

5.1 Summary of Findings

This study was poised to examine the link between corporate governance and the firm value of commercial banks in Ghana, with a focus on the mediating effect of credit risk. In this regard, it aimed to address three specific objectives: (1) to examine the effect of corporate governance and firm value (2) to investigate the influence of corporate governance on the credit risk of banks, and (3) to assess the mediating role of credit risk on the link between corporate governance and firm value of banks. With 14 commercial banks (9 listed and 5 unlisted banks) over a study period of 17 years (that is from 2005 to 2021), the study employed the dynamic models to achieve these objectives; thus, both the system and difference GMM were employed respectively on the objectives based on Bond et al. (2001) selection criteria. The study employed the indirect effect method of Judd and Kenny (1981) to achieve the third objective. The dependent variables were Firm value measured by Tobin's Q, and credit risk measured by the rate of NPL. The regressors were corporate governance (board size, board independence, audit size, and board diversity) and controlled variables (firm size and firm leverage). The study found that both controlled variables influenced banks' market value negatively, while they positively impacted credit risk. The diagnostic test results on all the estimations showed that they were free from heteroskedasticity, serial correlation, multicollinearity, and overall model insignificance.

5.1.1 Effect of Corporate Governance on Firm Value of Commercial Banks in Ghana

The study results revealed that a large board size and a more independent board of directors are significant factors that increase the market-based value of the firm. This indicates that investors will place much value on firms that have a significant number of board directors who are entirely independent from the executive directors of the banks. Meanwhile, any increase in the number of audit committees vis-à-vis the board of directors will have a deleterious impact on the market valuation of banks.

5.1.2 Effect of Corporate Governance on Credit Risk of Commercial Banks in Ghana

The effect of corporate governance on the risk exposure level of commercial banks generated mixed results due to the fact that, different variables were used to proxy corporate governance. As a result, the study found that increasing the number of boards of directors is directly related to the credit risk of banks. This means, credit risk increment is occasioned by big board size. However, board diversity (proportion of women on firms' boards) and audit committee size turn to have an inverse association with the credit risk level of banks. Meanwhile, board independence had a positive but statistically nonsignificant association with the credit risk of banks.

5.1.3 Mediating Effect of Credit Risk on the Relationship between Corporate Governance and Firm Value

The study results found that credit risk does not only have a negative direct impact on firm value as shown in Table 4, but it also has a negative indirect influence on firm value. Thus, it was found that through credit risk, corporate governance tends to have a

deleterious impact on firms' market value. This was true for all the four corporate governance proxies used in the study.

5.2 Conclusion

Corporate governance influences the market valuation of banks and the credit risk level of banks. Good corporate governance, especially large board size and board independence leads to good firm performance. Likewise increasing the audit committee and proportion of women on boards are precursors to lowering the credit risk exposure of banks. Hence, to curtail the incessant rise in the nonperforming loans that characterise the Ghanaian banking sector, implementing a good corporate governance measure hinged on the current study results can emancipate banks from the excruciating pains of credit risk. Also, investors' confidence level increases alongside the large board size and an independent board of directors, since they are capable of shelving the issues of agency problems with banks.

5.3 Policy Implications and Recommendations

The study's conclusion, therefore, gives credence for commercial banks to adopt the following recommendations toward achieving high market valuation and also reducing the credit risk exposure levels.

1. To gain the trust of investors, which will result in improving the market value of banks, managers should adopt good corporate governance measures by retaining a large number of boards of directors who will serve as guarantors to the investment of shareholders.
2. The independence of the board of directors is very necessary for banks that seek to achieve growth in their market value. Thus, banks should ensure that the number of independent non-executive directors is many on their boards. This

measure is a necessary factor to curb agency costs, since the independent nonexecutives will have no personal interest in the proceeds of the banks, thus they will supervise over more efficient corporate governance which will boost banks' performance.

3. Commercial banks should also note that when they implement good corporate governance rules, they are capable of solving the issues of credit risk exposure of the banks.
4. With the negative mediating role of credit risk on the interplay between corporate governance and firm value, it shows that when banks fail to control their risk exposure levels as a result of NPL, the bank's board size, audit size, board independence, and board diversity will have no positive influence on the market valuation of the banks.
5. Also, if banks aim to eliminate the issues of rising NPL in their balance sheets, then more women should be made to occupy the top position in the board of directors' roles.
6. Since the mediating output shows that corporate governance turns out to have a negative effect on banks' performance in the presence of credit risk, it shows that banks should not only focus on building a large and independent board of directors, but it should ensure that credit risks are at reasonably low since it cannot be inevitable.

5.4 Suggestions for Further Research

The current study was focused on only banks as the study units, which limits the generalisability of the results to all listed and unlisted firms, thus prospective studies should include both listed and unlisted non-financial firms. Also, future studies can

assess the moderation-mediation effect of credit risk on the interplay between corporate governance and firm value.

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