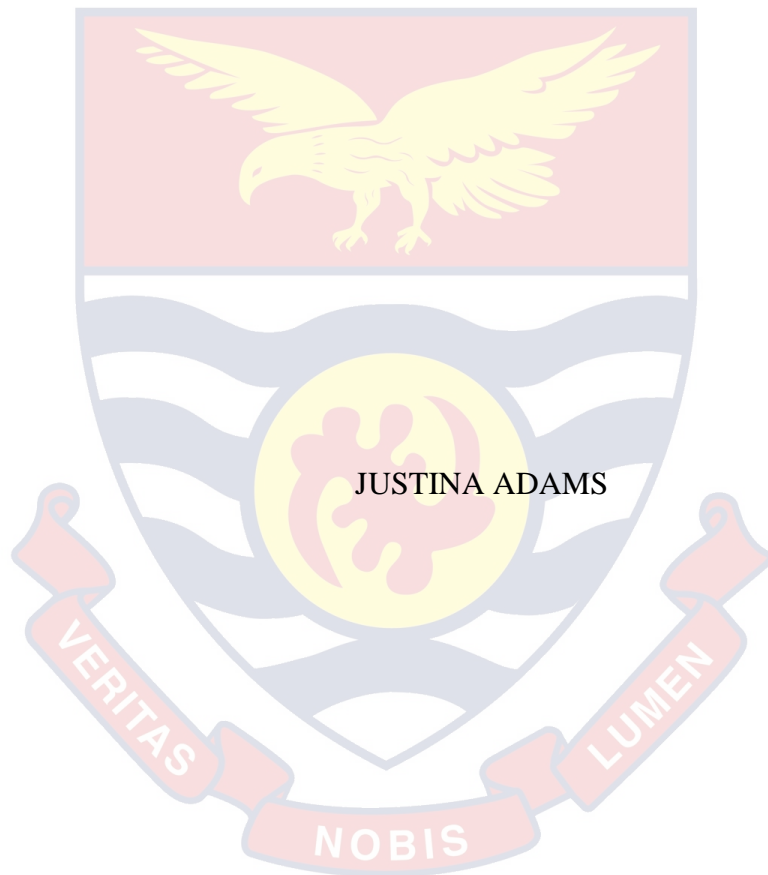UNIVERSITY OF CAPE COAST

CORPORATE GOVERNANCE AND RISK MANAGEMENT AMONG

BANKS IN GHANA

JUSTINA ADAMS

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UNIVERSITY OF CAPE COAST

CORPORATE GOVERNANCE AND RISK MANAGEMENT AMONG

BANKS IN GHANA

BY

JUSTINA ADAMS

Thesis submitted to the Department of Accounting of the School of Business,

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Accounting

JULY, 2019

DECLARATION

Candidate's Declaration

I declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's signature ………………………… Date ……………………………

Name: Justina Adams

Supervisors' Declaration

We declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature ………………… Date ……………………

Name: Dr. Clement Lamboi Arthur

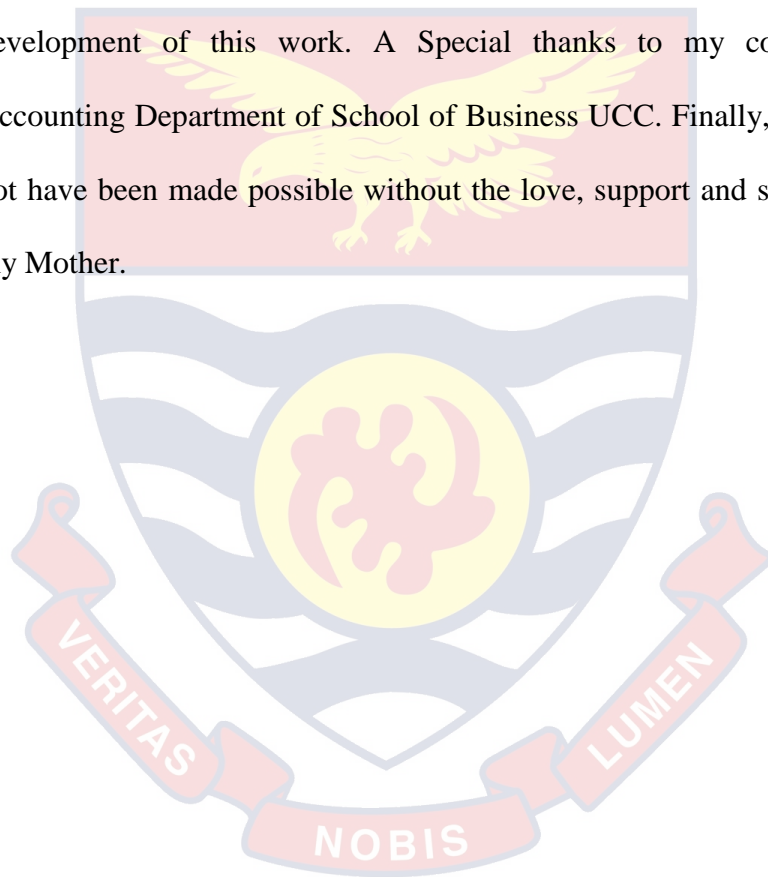Co-Supervisor's Signature …………………………. Date …………………

Name: Dr. Otuo Serebour Agyemang

ABSTRACT

Risk management is gradually becoming an area of concern to many organizations including banks due to the frequent banking crises. As a result of the 2007 global financial crisis and several corporate failures, there have been immense calls for good corporate governance practices to be employed in the running and managing of corporations. Good corporate governance helps corporations in managing risks. This study examined the relationship between corporate governance and risk management of banks in Ghana. The study used panel data generated from the annual reports of 18 sampled commercial banks for an eleven-year period, 2008 to 2018. The study employed fixed and random effect models of regression via GLS based on the outcome of the Hausman (1978) specification test. The findings revealed that institutional ownership and bank expert are positively associated with banks risk management specifically liquidity risk. Also the presence of risk management committee is positively significant with capital risk. The study recommends that Shareholders must review the banks governing board to include more bank expert to serve as a control mechanism to enhance proper risk management. The study also recommends that shareholders must establish or strengthen risk management committee to serve as a control mechanism.

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DEDICATION

To my Mother, Family and Friends for their love and support

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LIST OF ABBREVIATIONS

AC   Audit Committee

ASX   Australian Stock Exchange

BoG   Bank of Ghana

CEO   Chief Executive Officer

CG   Corporate Governance

CRSP   Center for Research and Security Prices

GCC   Gulf Cooperation Council

GLS   General Least Square

GSE   Ghana Stock Exchange

OECD   Organization for Economic Co-operation and Development

RM   Risk Management

RMC   Risk Management Committee

SA   South Africa

VIF   Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

Financial crisis coupled with corporate financial scandals such as Enron has created increased awareness of risk management as well as the need for instituting appropriate risk management systems in financial institutions. This calls for a thorough evaluation of the factors that affect risk management. Amidst other factors, corporate governance mechanism has been considered relevant in the management of risk levels in firms. Even though the issue of corporate governance and how it affects the performance of banks has received a significant level of attention in Ghana, its relationship with risk management of banks has not received much attention. Thus, it is imperative to examine the effects of corporate governance on the risk management of banks in Ghana.

Background of the Study

Corporate governance (CG) is one key element in improving economic effectiveness and growth as well as enhancing investor confidence in corporations as it provides the edifice through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance   (Agyemang, Kyeraa, Ansong & Frimpong, 2017). Good corporate governance provides appropriate motivations for the board and management to pursue objectives that are in the interest of the company and its shareholders and society at large (Klein, 2002). The presence of an effective corporate governance system within an individual company and across an economy as a whole helps provide a degree of confidence that is

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necessary for the proper functioning of an economy (Akicho, Oloko & Kihoro, 2016).

Corporate governance though not a contemporary concept, gained much popularity and attention during the high corporate failure era, which saw the collapse of firms like Enron and WorldCom. Dennis (2001) iterates that the past twenty-five years has witnessed ongoing flooding of research into the issue of corporate governance. But few of such studies considered the effect of corporate governance on risk management of banks, especially in Ghana. For instance, Adeboye and Rotimi (2016) examined the pattern of corporate governance, risk management, and performance of Zenith Bank Nigeria Plc. The findings show that the Bank's risks and corporate governance mechanisms were efficiently managed which contributed to the maintenance of its leadership position in the industry during the turbulent years. Chahine and Dagher (2008) examined risk management and corporate governance in the Lebanese Islamic Banking Industry and confirmed the importance of good corporate governance as a tool which is associated with the implementation of best practices in risk management. Also, Mukabi (2017) examined the influence of corporate governance on risk management in the horticultural sector in Kenya. The findings of the study revealed ownership structure had no effect on risk management practices.

Corporate governance issues are especially important in developing economies since these countries do not have a strong, long-established financial institution to deal with corporate governance issues. Corporate governance has become an important topic in developing economies in recent years. Directors, owners, and corporate managers have started to realize that

there are benefits that can accrue from having a good corporate governance structure. Good corporate governance helps in proper risk management. This is because theoretically, it can be argued that good corporate governance implies good risk management (Agyemang, Aboagye, Antwi, & Frimpong, 2014). Similarly, better risk management can help developing countries in their economic management; it can be done effectively only when some key conditions are fulfilled. Corporate governance mechanism is one of such key conditions (Claessens, 1993). The importance of risk management has been widely recognized in developed countries, but in the developing world, its application has been limited. This is partly because there are barriers which in some countries are formidable to the introduction of risk management techniques. Yet, many corporations in developing countries face identical risks and could benefit from hedging them.

Frequent banking crises in African countries in the last few years have brought the instability of African banking and finance into unique focus. Often preceded by a wave of commodity and oil import dependence by African countries coupled with exchange rate volatility, structural and institutional failures that weaken the efficacy of banks' risk management tactics (Beck & Cull, 2013), it can hardly be said that banking crises were widely foreseen. Although African banks have risk models to predict instability trends, an understanding of specific stability determinants and the variables to include in bank risk models is important for banks operating in unpredictable environments such as Africa (Ozili, 2018).

The banking industry is seen as crucial for economic growth and development hence, the need for its strict regulation (Khan & Snhadji, 2001).

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Particularly, in the aftermath of the global financial meltdown, board of directors (BoD) of banks and management alike regard risk management as a crucial area deserving the utmost attention. In Ghana, the industry has undergone several reforms aimed at ensuring the effective functioning of banks leading to consistency in their service delivery, amidst operational constraints and deficiencies (Therrell, Padilla, Loeber, Kneisser, Saadallah, Borrajo, & Adams, 2015) which limit their activities and investment drives. In terms of history, governance, and risk management, numerous studies have been undertaken (Mukabi, 2017; Adeboye & Rotimi, 2016; El-Masry, Elbahar, & AbdelFattah, 2016). Notable among the studies relating to the trend in Ghana's banking industry include Tsorhe et al., (2011). They emphasized the impact of the strength board of directors have on bank risk management and constructed an indicator of board strength in a manner similar to Greuning and Bratanovic (2004a).

Seyram, Yakubu and Bawuah (2014) looked at corporate governance and risk management in the banking sector of Ghana. They examined the degree to which banks in Ghana use risk management practices and corporate governance in dealing with different types of risk which is different from the purpose of this study. Ayernor (2014) investigated the impact of risk factors on shareholder value in Ghanaian banks and Nyarko (2016) also focused on how operational risk management and competitive advantage in the Ghanaian banking industry; a case study of Ecobank Ghana Limited.

Also, previous studies provide strong evidence that listed firms in Ghana are characterized by dominant and controlling share ownership (Agyemang & Castellini, 2015). More so, economic theory suggests that both

shareholders and board of directors can influence bank risk management. From the review of studies above, it can be seen that a few studies have been done on corporate governance and risk management of banks in Ghana especially the relationship between CG (ownership structure and board characteristics) on RM among banks in Ghana. Considering the collapse of UT bank and Capital bank and five other banks that have recently been merged as a result of undercapitalization, and also regarding the fact that those banks were beyond rehabilitation, with some having high non-performing loans and still others having obtained license by false pretenses through the use of suspicious and non-existent capital, questions on risk management and corporate governance in the banking industry have become rife. This study, therefore, seeks to fill this gap by investigating the effects of corporate governance on risk management in the banking industry in Ghana.

Statement of the Problem

The collapse of the leading financial institutions such as Citibank and Lehman Brothers during the global financial melt down from 2008 to 2009 precipitated the interest of the role of board of directors and owners in the management of risk in banks (BIS, 2014; OECD, 2010). The effectiveness of boards and owners in the banking sector is imperative in the sense that, this sector is associated with colossal intricacies and information asymmetries (Levine, 2004).   Managers of financial institutions encounter challenges that arise from the management of several kinds of risk (*Nichols, Wahlen, & Wieland, 2009*), and this can compel extensive unrestricted or discretionary decisions by management that might not serve the interest of stakeholders (Bamber, Jiang, & Wang, 2010). Effective boards and owners should be able

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to monitor and advise corporate managers on the tolerable risk levels whiles mitigating the tendency of bankruptcy (Erkens, Hung, & Matos, 2012). Such boards and owners can assist management to increase financial reporting transparency and thus, improves the management of risk.

A survey of sixty-two (62) international banks by Moody divulges that global banks have been fortifying their corporate governance structures to address issues of risk. An important revelation of the survey is in connection with the limitation of managerial discretion related to bank risk. Hence, this suggests that effective boards and owners are germane for risk management practice of banks (Mak & Li, 2001). Further, the global financial meltdown brought up some teething questions about the relationship between corporate governance and risk. Boards and owners can expect risk management to be an incrementally challenging aspect of their decision-making, but since risk management needs to be an important constituent of the culture, strategy and day-to-day business operations, boards and owners of banks are supposed to act in the best interest of stakeholders to address issues concerning risk in banks.

Previous studies have been conducted on how corporate governance influences bank performance (Adams & Mehran, 2012; Agyeman *et al*., 2014; González & Garcia-Meca, 2014; Owen & Temesvary, 2019), earnings predictability of banks (Mollah, Farooque, Mobarek, & Molyneux, 2019; Cheng & Courtney, 2006; Chen and Jaggi, 2000), capital structure of banks (Buyl, Boone, & Wade, 2019; Adusei & Obeng, 2019), corporate headquarters location (Borah & James, 2019) and the value for corporate international investment (Lai, Chen, & Song, 2019). However, the literature on corporate

governance and its effect on risk management of banks in still limited. Moreover, banks do have their idiosyncrasies, such as government interventions, heavy regulations and higher opaqueness (Levine, 2004) that require a clear and distinct analysis on how their corporate boards and owners undertake both their supervisory and advisory roles. In addition, given the incremental interest in risk management and the budding body of risk management-related research, there has been limited research on the effect of ownership structure on risk management in firms, particularly, in the banking sector.

Ghana is particularly an interesting case to conduct this study. Given the very different economic setting, it is uncertain whether the link between bank board, bank ownership and bank risk document for advanced economies may readily be applicable to Ghanaian banks. In addition, in the midst of improved knowledge and technology, the banking sector in Ghana is faced with a myriad of challenges and paramount among them is risk management challenges. Largely, the recent banking crisis that has bedeviled the banking sector in Ghana has been attributed to poor risk management practices and this has brought the link between boards and owners and bank risk into a sharper focus in the context of Ghana. Therefore, since boards and owners of banks are considered as the architects and drivers of the bank's corporate culture including its risk management framework, this study extends the extant literature by examining the effect of board's structure and ownership structure on risk management of banks. This study also analyze how some specific aspects of board's structure and ownership structure influence the management of risk of banks in Ghana.

Purpose of the study

The purpose of this study is to examine the effects of corporate governance on risk management of some selected banks in Ghana.

Research Objectives

Specifically, the study seeks to;

1) Examine the effect of ownership structure (institutional ownership, and state ownership) on risk management among banks in Ghana; and

2) Assess the relationship between board structure (board size, board independence, board expertise, board diversity, and the presence of the risk management committee) and risk management of banks in Ghana.

Hypotheses for the Study

1) H1a: There is no significant relationship between institutional ownership and risk management.

   H1b: There is no significant relationship between state ownership and risk management.

2) H2a: There is no significant relationship between board size and risk management.

   H2b: There is no significant relationship between board independence and risk management

   H2c: There is no significant relationship between Board Gender Diversity and risk management.

   H2d: There is no significant relationship between board expertise and risk management.

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H2e: There is no significant relationship between the presence of risk management committee and risk management.

Significance of the Study

The various banks operating in Ghana will benefit from the study since they will learn the importance of corporate governance in managing the risk exposure of their banks. Banks are exposed to different risks; reputational, operational, foreign exchange rate among others. Through the findings of this study, the management of the various banks has the opportunity to learn and incorporate best practices. Also, the findings of this study are important to the regulator of the banks in Ghana. Through the findings of this study, new policies on risk management of banks can be developed. More so, the findings of this study are valuable to future researchers and academicians by acting as an empirical source besides suggesting areas for further research.

Delimitations

This study examined the influence of ownership structure (institutional, and state ownership) and board characteristics (board size, board diversity, bank expert, board independence, and risk management committee) on risk management among banks in Ghana because of the recent financial crises in the banking sector. The present study was limited to only banks in Ghana. The decision of the researcher to use banks is informed in view of the relative ease it is to get the much-needed information from the Ghana Stock Exchange, banking Supervisory Department and Research Department of the Bank of Ghana about their financial ownership structures as well as their performance. Moreover, these institutions are willing to provide necessary

information regarding their performance which is usually published in their annual budget statement.

Limitations of the Study

The study employs econometric approach which is usually stochastic in nature and that has its own problem. Thus, it does not sometimes follow theory. This study did not consider all the financial institutions in Ghana since some of them do not have available financial statements needed for the study. Also the study did not employ all the firm specific factors for the analysis. It was chosen randomly on meeting the purpose and availability of such information.

Definition of Terms

Risk management (RM) - Risk management is the application of risk analysis to strategic, systems, human and organizational problems in order to improve performance (Nocco & Stulz, 2006).

Capital Risk (CAPRK) - the Capital risk is proxied by the ratio of capital invested in total assets following Brissimis, Delis, and Papanikolaou (2008) and Zhang, Jiang, Quc, and Wang (2013). It is the proportion of the bank's asset that is represented by the shareholder's equity.

Liquidity Risk (LIDRK) - Liquidity risk is proxied by the ratio of total loans to total deposit following the work of Fiordelisi & Molyneux (2010).

Corporate Governance (CG) - Corporate governance is the combination of corporate policies and best practices implemented by organizations to meet their objectives in relation to its investors and stakeholders (Mallin, 2007). It is the way in which the organizations are managed and controlled. According to Greuning and Bratanovic (2009b), corporate governance relates to the manner

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in which the business of the bank is governed. It is defined by a set of relationships between the bank's management, board, shareholders, and other stakeholders. This includes setting corporate objectives and a bank's risk profile, aligning corporate activities and behaviors with the expectation that management will operate the bank in a safe and sound manner, running day-to-day operations within an established risk profile and in compliance with applicable laws and regulations, while protecting the interests of depositors and other stakeholders.

Effective governance practice in the banking system helps maintain public trust and confidence in the banking system. According to Basel committee on banking supervision, effective corporate governance practices are essential to achieving and maintaining public trust and confidence in the banking system, which are critical to the proper functioning of the banking sector and the economy as a whole (Bank for International Settlement (BIS), 2010). Since the banking system contributes a significantly specific role in the economy, corporate governance is critical and so risk management is essential in financial institutions.

Ownership structure - This is the shareholding structure indicating who has the controlling power to the way company affairs are conducted. Lee (2008) observed that measurement of ownership structure involved the use of the percentage of shares held by a controlling shareholder as a proxy for ownership concentration (Fan, Wong & Zhang, 2013).

Institutional Ownership (INSTI) – This is defined as the percentage of institutional shareholdings relative to the total number of shares in the company according to Chen, Lu, and Sougiannis (2012).

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State ownership (STATE) - This is measured by the percentage of shares owned by the state.

Board Size (BSIZE) - This is the requisite number of individuals supposed to compose the board. It differs from the company's size (Byrd & Hickman, 1992).

Board independence (BIND) – This refers to the board's ability to make decisions without undue influence from the executive, shareholders and or political spheres (Byrd & Hickman, 1992).

Board Gender Diversity (BgDIV) – This is the proportion of women on the board (Hillman, Cannella, & Paetzold, 2000).

The present risk management committee (RkC) - 1 if there is risk Committee and 0 if otherwise.

Board expert-(BEXP) measured as the Group of Board Members who have financial literacy in accounting, finance and banking.

Organization of the Study

The present study is divided into five chapters. Chapter one focused on the background to the study, problem statement, significance of the study and the scope of the study. Chapter two is devoted to the review of relevant literature. The existing literature on the subject under investigation would be reviewed so as to provide an in-depth understanding of the research topic. Chapter three focuses on the research methods employed for the study. It comprised the research paradigm, design, approach, analysis among others. Chapter four focuses on analyses and discussion. Finally chapter five touches on the summary of findings, conclusions, recommendations and areas for further studies.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This section comprises the review of related literature relevant to the study. The specific areas covered here are; theoretical review, empirical review, and conceptual framework.

Theoretical Review

This section reviews the theoretical framework that discusses and explains the effect of corporate governance on risk management. The theories assist in appreciating how corporate governance affects risk management among firms in Ghana. The theories discussed are agency theory and resource dependency theory.

Agency Theory

According to Jensen and Meckling (1976), Agency theory is directed on an agency relationship, in which one party (the principal) appoints another party (the agent), to perform their work. This kind of relationship is described by agency theory in terms of a contract. The directors or managers who are the shareholder's agents are given the responsibility of running the business by the shareholders (Clark, 2004). The agents are expected to act and make decisions in the best interest of the principal (Padilla, 2002).

Agency theory aims at resolving problems that can occur in agency relationships. These problems arise due to conflict of interest between the principal and the agent, which is as a result of separation of ownership and control which has been confirmed by Davis, Schoorman, and Donaldson (1997). Managers tend to develop opportunistic behavior due to legitimacy

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authority that has been bestowed to them by the shareholders. This behavior leads to a conflict of interest causing agency problem; that is, despite the agent being given the decision-making authority by the principal, the agent will not always act in the best interest of the principals.

The principal has to control or restrain the behavior of the agent for his interest to be pursued. The principal will try to achieve controls through monitoring activities. To minimize the potential for such agency problems, Jensen (1983) recognizes two important steps: first, the principal-agent risk bearing mechanism must be designed efficiently and second, monitoring costs are incurred through performance measuring, observing and controlling the actions of the principals.

These costs include performance-based incentives like bonuses, the cost of dismissal, the cost of audit reports, corporate reports and cost of compliance. The agent incurs bonding costs which include the cost of additional information disclosure to shareholders. Agent stops incurring bonding cost when a marginal reduction in monitoring cost equals a marginal increase in bonding costs (Jensen & Meckling, 1976). The principal expects to be compensated if the agent takes action that might harm his investment.

For example, if the board of directors who are the agent made the decision to invest in a more risky project, the shareholders would demand to be compensated thus increasing the cost of capital. It is therefore a challenge to align the interest of the principal and the agent due to the following areas of conflict; moral threat, earnings retention, time horizon, and risk perception and which can be referred as agency problems (Jensen & Meckling 1976); Shleifer & Vishny 1989). The model of an employee portrayed in the agency theory is

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more of a self-interested, individualistic and are bounded rationality where rewards and punishments seem to take priority (Jensen & Meckling, 1976).

The theory is relevant to the study because the theory showed how the board of directors who are agents of the shareholders put up corporate governance mechanisms to reduce agency problems for the interest of the shareholders to be protected.

Resource dependency theory

Resource dependency theory (RDT) explains how organisations decrease external interdependence and uncertainty (Pfeffer & Salancik, 1978). RDT suggests that organisations are open systems, which are not independent due to their reliance on the external environment to acquire and secure critical resources that they require (Durand & Jourdan, 2012; Pfeffer & Salancik, 1978). The resource dependence role of directors is theoretically distinct from the agency role although directors may perform both roles simultaneously (Johnson, Daily, & Ellstrand, 1996). In the resource dependence role, directors serve to connect the firm with external factors which generate uncertainty and external dependencies (Hillman, Cannella, & Paetzold, 2000).

The resource dependency theory explains a firm's reliance on external resources to achieve stated objectives (Gariba, Amidu, & Coffie, 2018). Organisations, such as banks must manage their risks in order to gain a steady supply of critical resources, such as financial capital, deposits and legitimacy to reinforce their existence and their ability to grow sustainably in the longer term. Organisations are both supported and constrained by their external environments (Garud, Kumaraswamy, & Karnøe, 2010). Hence, thriving organisations need to improve their ways of operations in order to successfully

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deal with their external environmental needs and to gain the support of the main resource owners (Pfeffer & Salancik, 1978). Effective coping with uncertainty leads to power (Pfeffer and Salancik, 1978) and, ultimately, increased survival likelihood (Singh, House, & Tucker, 1986). Thus, by having directors who serve to link the organization with its external environment, a board may act to reduce uncertainty (Hillman, Cannella, & Paetzold, 2000).

But, in the resource dependence role, directors may do more than reduce uncertainty. Directors also bring resources to the firm, such as information, skills, access to key constituents (e.g. suppliers, buyers, public policy decision makers, social groups), and legitimacy (Gales & Kesner, 1994). The extent to which directors benefit the firm depends on whether their inclusion provides access to valued resources and information, reduces environmental dependency, or aids in establishing legitimacy (Daily and Dalton, 1994). Some support has been found in previous research for the effectiveness of boards in resource acquisition (Boeker and Goodstein, 1991; Zald, 1969). In addition, support has been found for the assertion that directors may enhance the reputation and credibility of their firms (Daily and Schwenk, 1996; Hambrick and D'Aveni, 1992).

One potential result of linking the firm with external environmental factors and reducing uncertainty is a reduction in transaction costs associated with the firm's external linkages. For example, having an outsider director who possesses regulatory expertise or knowledge may not only reduce uncertainty through a gain in information and expertise, but may also reduce the transaction costs associated with the regulatory agency. Information

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supplied by this director about the bidding process for government contracts, the appropriate personnel to contact, or influence over proposed regulation may actually reduce the costs of transactions between regulators and the firm, giving the firm a cost advantage over rivals. In addition to the benefits of reduced uncertainty and easier acquisition of resources, directors may also reduce the transaction costs associated with the interdependencies between the firm and various institutions in the environment (Williamson, 1984).

One of the basic propositions of resource dependence theory is that the need for environmental linkage is a direct function of the levels and types of dependence facing an organization. Using the classification scheme of insiders and outsiders, one might reason that as environmental dependencies and environmental uncertainty increase, the need for external linkages increases and more outsiders would be needed on the board. Therefore, the theory predicts a relationship between the degree of uncertainty or dependency and the composition of the board as measured by the number or proportion of outside directors or the size of the board. This relationship was confirmed by Pfeffer and Salancik (1978), Pennings (1980),   and Gales and Kesner (1994).

But, at this level of classification, all we can assert from these findings is that firms facing different levels of uncertainty and environmental dependency will tend to have different sizes of boards or mixes of outsiders and insiders, or, that across time as environments change, board size or the ratio of outsiders to insiders will vary. While these results confirm some of the logic behind the resource dependence role of the board, they cannot explain how board composition will vary other than in size or in outsider to insider ratios. Because each director, especially each outside director, brings different

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linkages and resources to a board, resource dependence theory would also suggest that underlying patterns of board composition more finely grained than an insider/outsider distinction will be observed. Pfeffer's (1972) original work in this area indicated that outside directors are heterogeneous and he finds systematic differences across environments for directors representing financial institutions. However, this further distinction among outside directors has not been adopted by other researchers. In the following section we discuss an expanded classification scheme for outside directors to better understand their resource dependence role.

Board experts are similar to Baysinger and Zardkoohi's (1986) decision controllers. They are directors who are active or retired executives in other for-profit organizations, and directors who serve on other large corporate boards. These directors bring expertise and knowledge to the firm as a result of their experience in internal decision making in other firms. Because these directors serve as executives in other organizations, they bring a working knowledge of strategic decision making and internal firm operations. As such, they may serve as sounding boards for executives, providing advice and council on internal operations (Mace, 1971). Further, their experience outside the firm permits them to supply alternative viewpoints on internal issues, providing executives with valuable information about how other firms deal with similar problems and concerns.

Business experts may facilitate effective evaluation of management proposals, in part, by providing valuable advice as strategies are formulated (Fama & Jensen, 1983; Johnson et al., 1996). This category of directors is best suited to meet the need of expertise in and linkages to critical interdependence

in the competitive environment. We add that directors of this category, as well as all other categories, serve to build legitimacy for the firm. Legitimacy is not the emphasis of our taxonomy, in that each type of director provides some type of legitimacy for the organization, but a business expert's in providing legitimacy would be assessed by noting the prestige associated with the director's work experiences or other affiliations. Moreover, risk management and the presence of board expertise can assist banks in achieving greater organisational efficiency (Rattanataipop, 2013). However, some banks may achieve these efficiencies with fewer resources because they possess complementary competencies. As a result, these banks may enjoy greater opportunities for competitive advantage through continual risk management (Barakat & Hussainey, 2013).

Similarly, recent literature suggests various arguments as to why the greater representation of women on boards results in better decision-making within the boardroom (Lückerath-Rovers, 2013). The presence of women might improve team performance, because more diverse teams may consider a greater range of perspectives and therefore reach better decisions. These better decisions could ultimately could lead to higher business value and business performance hence better risk management (Burgess & Tharenou, 2002; Singh and Vinnicombe, 2004; Carter, Simkins, & Simpson, 2003). Adams and Ferreira (2004, p. 14) suggested that gender diversity on boards may have a political dimension. Companies may care more about diversity when they are concerned about their public image, either because they are large firms which are visible to outsiders or because they are required to deal with government agencies which have preferences for diversity. Also such businesses show that

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they are responding to calls for increased diversity for better governance and better use of available talent (Singh, 2007, p. 2131). This might enhance their reputation and consequently their performance and risk management. Therefore, from the resource dependency theory the present of expertise and Board Gender Diversity ensure proper risk management.

Relation of theories to the research

The agency theory is a supposition that explains the relationship between principals and agents in business. Agency theory is concerned with resolving problems that can exist in agency relationships due to unaligned goals or different aversion levels to risk. The theory is relevant to the study as it shows how the board of directors who are agents of the shareholders put up corporate governance mechanisms to reduce agency problems for the interest of the shareholders to be protected.

The resource dependency theory explains a firm's reliance on external resources to achieve stated objectives (Gariba, Amidu, & Coffie, 2018). Organisations, such as banks must manage their risks in order to gain a steady supply of critical resources, such as financial capital, deposits and legitimacy to reinforce their existence and their ability to grow sustainably in the longer term. Organisations are both supported and constrained by their external environments (Garud, Kumaraswamy, & Karnøe, 2010). In the resource dependence role, directors and owners bring resources to the firm, such as information, skills, access to key constituents (e.g. suppliers, buyers, public policy decision makers, social groups), and legitimacy (Gales & Kesner, 1994) which help in proper risk management.

Empirical Review

This section looks at the objectives of the study and provides each objective with the material in an effort to answering the research hypotheses. This section looks at the areas covering each of the two objectives that examine the effect of corporate governance on risk management.

Ownership Structure and Risk Management

Institutional Ownership and Risk Management

Lotfi and Mohammadi (2014) analyzed the relationship between the ownership structure and risk management in the time period 2007 to 2013, based on a sample including 642 firms among companies listed in Tehran Stock Exchange. The study tested the relationship between Institutional Ownership, and risk management. The results indicated that there is no significant correlation between Institutional Ownership with Risk Management.

In a study by Hutchinson, Seamer, and Chapple (2015) on Institutional Investors, Risk/Performance and Corporate Governance, determined the role of the institutional investor in monitoring risk. Using a sample of Australian firms from 2006 to 2008, their empirical study shows a positive association between firm-specific risks, risk management policy for firms with increasing institutional shareholdings. The study also finds that the significance of this association depends on the institutional investor's ability to influence management, which in turn depends on the size of ownership and whether the investee firm does not have potential business dealings with the investor.

Mathew, Ibrahim, and Archbold (2016) carried a study on "Boards attributes that increase firm risk–evidence from the UK" with an aim of

identifying board attributes that significantly increase firm risk. The study data sample is an unbalanced panel of 260 companies' secondary data on FTSE 350 index in the UK, from 2005 to 2010. The data was statistically analysed using STATA. The result showed that a board which can increase firm risk is one that has high institutional investor ownership. That is, there is a negative significant relationship between institutional ownership and risk management.

More so, in a study by Callen and Fang (2013) on "Institutional Investor Stability and Crash Risk: Monitoring versus Short-termism? Sheds light on the extent to which institutional investor stability affects stock price crash risk. They presented two competing views regarding the impact of institutional investor holdings on managerial short-termism behavior as reflected in bad news hoarding activities. Their evidence suggests that stable institutional groups play a monitoring role in reducing future stock price crash risk through pre-empting bad news hoarding activities by management. Their results also imply that transient institutional investor ownership has an adverse impact on public firms, ultimately increasing the risk of a future stock price crash.

This discussion appears to point to an inconclusiveness or contradiction on the relationship between institutional ownership and risk management. Thus, there is a need for further examination of the association between institutional ownership and risk management. Hence, the study hypothesize that:

H1a: There is no significant relationship between institutional ownership and risk management.

State Ownership and Risk Management

Braham, Belkacem, and Peretti, (2018) carried out a study on 'The role of political patronage on risk-taking behavior of banks in Middle East and North Africa region aiming to examine the effect of political patronage on bank risk for a sample of 32 banks in some Middle Eastern and North African MENA countries. In general, they found that the presence of political patronage impact significantly bank risk, both directly and indirectly, consistent with their hypothesis that politically backed banks tend to exploit the moral hazard which, will cause them to behave less prudently.

In a similar study by Shaban and James (2018) on "The effects of ownership change on bank performance and risk exposure: Evidence from Indonesia" with the aim of investigating the effects of ownership change and risk of 60 Indonesian commercial banks over the period 2005- 2012. Analyzing jointly the static, selection and dynamic effects of the major types of ownership in the same model of Berger, Espinosa-Vega, Frame, and Miller (2005), they found that state-owned banks tend to be less profitable and more exposed to risk than private and foreign banks.

More so, Boateng, Liu, and Brahma (2018) explored whether the nature of ownership may condition the extent and impact of political connections on credit risk decisions. Their study was drawn from a sample of 88 banks in China over the period of 2003–2014. Drawing on agency theory, they argued that politically connected boards do exert significant influence on credit risk. Further evidence from their work shows that ownership type of the bank moderates the link between politically connected boards and credit risk. Specifically, state-owned banks appear to be more susceptible to credit risk.

Lestari (2018) analyzed the effect of corporate governance, bank capital reserve, and non-performing loan on bank risk-taking which listed in Indonesia Stock Exchange from 2009 to 2016. This study found that government-owned banks do not impact bank risk-taking since every bank has its own policy to decide the degree of bank risk-taking

Dong, Meng, Firth, and Hou (2014) examined the impact of ownership structure on Chinese banks' risk-taking behaviors. They classified the Chinese commercial banks into three categories based on the types of controlling shareholder and found that banks controlled by the government (GCBs) tend to take more risks than those controlled by private investors (PCBs).

Srairi (2013) studied the Ownership structure and risk-taking behaviour in conventional and Islamic banks: Evidence for MENA countries. Their study was drawn from Islamic banks in 10 MENA countries under three types of bank ownership (family-owned, company-owned and state-owned banks) over the period 2005–2009. The study found that State-owned banks display higher risk and have significantly greater proportions of non-performing loans than other banks.

In sum, the study argue that better state ownership in terms of proper monitoring should strengthen the level of risk management in Banks. Thus, the study hypothesize that:

H1b: There is no significant relationship between state ownership and risk management.

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Board structure and risk management

Board Size and Risk Management

Mathew and Ibrahim, Archbold (2018a) explored the relationship between the board governance structure and firm risk. Specifically, they developed a 'Governance index' based on four different aspects of the board: Board composition, Board leadership structure, Board member characteristics and Board processes, to examine how the overall index relates to firm risk. The study was conducted using a sample of 268 UK firms from the FTSE 350 index, over the period 2005 to 2010. Their study suggested that board size is significantly negatively related to firm risk.

El-Masry, Elbahar, and AbdelFattah (2016) examined the relationship between corporate governance and risk management in GCC banks. They aimed to contribute to the literature by providing empirical evidence from the GCC's banking industry of the association between risk management and corporate governance characteristics such as role duality, board size and percentage of nonexecutives. Using a sample of 900 observations from banks in the Gulf countries, nonparametric regression, Quantile and panel data analysis has been used to test the hypotheses and the proposed model. The study uses data from financial institutions in the Gulf countries over the period from 2003 till 2012. Findings suggested board size is negatively associated with risk management.

Mathew, Ibrahim, and Archbold (2016b) carried a study on Boards attributes that increase firm risk–evidence from the UK with an aim of identifying board attributes that significantly increase firm risk. The study data sample is an unbalanced panel of 260 companies' secondary data on FTSE

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350 index in the UK, from 2005 to 2010. The data was statistically analysed using STATA. The result showed that a board which can increase firm risk is one that is small in size, hence there is a positive significant relationship between board size and risk management.

Malgharni and Lotfi (2013) investigated the relationship between the composition of the board of directors and risk management. In their study, for each of the variables related to the composition of the board, including board size, board independence and financial literacy of the board, CEO duality functions, the board meeting frequency, as well as the two control variables, firm size and financial leverage, a hypothesis was formulated and its impact upon the risk management was investigated. The research population consisted of the companies listed in Tehran Stock Exchange during the years 2007-2012. The sample consists of 107 companies from 20 different industries. Correlation and multiple regression methods were used to examine the hypotheses. The results indicated that there is a significant and positive correlation between the size of the board of directors and risk management.

In a study conducted by Ntim, Lindop and Thomas (2013) examines the crucial policy question of whether the quality of firm-level CG has any effect on the quality and extent of corporate risk disclosures (CRD) in South Africa (SA) with particular focus on the pre- and post-2007/2008 global financial crisis periods. Using datasets on CG and CRD, from 2002 to 2011, and distinctively drawing on multiple theoretical perspectives, the study found that board independence is positively related to corporate risk management.

Pathan (2009) studied the relevance of bank board structure on bank risk-taking. Using a sample of 212 large US bank holding companies over

1997–2004 (1534 observations), the study found that strong bank boards (boards reflecting more of bank shareholders interest) particularly small and less restrictive boards positively affect bank risk-taking. That is firm risk is negatively associated with board size hence, positive relation between board size and risk management.

This debate appears to point to an inconclusiveness on the relationship between board size and risk management. Thus, there is a need for further examination of the association between board size and risk management. Hence, the study hypothesize that:

H2a: There is no significant relationship between board size and risk management.

Board Independence and Risk Management

In a study by Malgharni and Lotfi (2013) on the Analysis of the Relationship between Board of Director Composition and Risk Management in the Firms Listed in Tehran Stock Exchange, using research population of companies listed in Tehran Stock Exchange during the years 2007-2012 and a sample consisting of 107 companies from 20 different industries argued that there is no significant correlation between the independence of the board of directors and risk management. In this study, an independent member was a dormant board member whose presence in the board of directors does not have a negative impact on risk management.

El-Masry, Elbahar, and AbdelFattah (2016) carried out a study on *Corporate Governance and Risk Management* in GCC Banks with the aim to contribute to the literature by providing empirical evidence from the GCC's banking industry of the association between risk management and corporate

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governance characteristics such as role duality, board size and percentage of nonexecutives. Using sample of 900 observations over the period from 2003 till 2012, found that the percentage of non-executive members on the board was insignificant.

In a study conducted by Ntim, Lindop and Thomas (2013) examine the crucial policy question of whether the quality of firm-level CG has any effect on the quality and extent of corporate risk disclosures (CRD) in South Africa (SA) with particular focus on the pre- and post-2007/2008 global financial crisis periods. Using datasets on CG and CRD, from 2002 to 2011, and distinctively drawing on multiple theoretical perspectives found that board independence is positively related to corporate risk management.

Desender (2007) did a study on The Influence of Board Composition on Enterprise Risk Management Implementation. The sought to examine how board composition is related to the degree of enterprise risk management implementation. The study results revealed that board independent is significantly related to enterprise risk management implementation.

Similarly, Dionne and Triki (2005) carried out a survey among listed firms in Tehran stock exchanges with an aim of examining the relationship between the characteristics of Board, board independent, audit fees and ownership concentration on business risk management. The results of the study suggested that there is a significant relationship between board independence and business risk management. Thus, the study hypothesize that:

H2b: There is no significant relationship between board independent and risk management.

Board Gender Diversity and Risk Management

Adams and Ragunathan (2017) carried out a study on "Lehman sisters" using data on career experience that is available in BoardEx and instrumental variable methods concluded that, listed banks with more female directors did not engage in fewer risk-taking activities around the crisis and did not have a lower risk than other banks. Their results suggested that more gender diversity is not necessarily associated with less risk. That is, a high gender diversified board does not guarantee proper risk management. However, diversity may be valuable in crisis situations.

Similarly, Loukil and Yousfi (2016) studied the impact of board gender diversity on firm risk-taking in a developing market. Their study was drawn from a sample of 30 Tunisian-listed firms between 1997 and 2010. First, they found that women have a risk perception that leads to risk avoidance behavior: the presence of women directors, even when there is one woman director, is positively associated with cash ratio. Second, they showed no significant relationship between board gender diversity and the propensity to take strategic or financial risk-taking.

Sila, Gonzalez, and Hagendorff (2016) investigated the relationship between boardroom gender diversity and firm risks. To identify a causal effect of gender on risk, they used a dynamic model that controls for reverse causality and for gender and risk being influenced by unobservable firm factors. They found no evidence that female boardroom representation influences equity risk. They also showed that findings of a negative relationship between the two variables are spurious and driven by unobserved between-firm heterogeneous factors.

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Jane, Yu, Anne and Wu (2014), studied gender diversity on the board of directors and its relation to risk management. The sample consisted of companies from the Risk Metrics database from 2007 to 2011. This database contains information on the corporate board of directors. Financial variables were collected from the Compustat database and CRSP database for the years 2005-2011. The authors then measured the effect of gender diversity on corporate performance in terms of firm risk, using the model by Cheung, Jiang, Limpaphayom, & Tong (2008) which measured the variability of the stock market return. The study showed that more gender diversity on the board of director's impacts firm risk by contributing to lower variability of the stock market return. That is gender diversity leads to proper risk management.

Berger, Kick, and Schaeck (2014) conducted a study on "Executive Board Composition and Bank Risk". The study used two data sets from the Deutsche Bundesbank over the time period of 1994 - 2010. The study found that a higher proportion of female executives increase risk-taking. Hence negative relationship between Board Gender Diversityand risk management.

Lastly, Perryman, Fernando, and Tripathy, (2016) carried a study on "Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation", with aim of investigating the impact of gender diversity in top management teams (TMTs) on firm risk. The study found that firms with greater gender diversity in TMTs show lower risk. Hence positive relationship between Board Gender Diversityand risk management

This argument appears to point to an indecisiveness on the relationship between Board Gender Diversity and risk management. Thus, there is a need

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for further examination of the association between Board Gender Diversity and risk management. Hence, the study hypothesize that:

H2c: There is no significant relationship between Board Gender Diversity and risk management.

Board Expert and Risk Management

Yang, Ishtiaq, and Anwar (2018) carried out a study on "Enterprise risk management practices and firm performance, the mediating role of competitive advantage and the moderating role of financial literacy". Their study examined the moderating role of financial literacy between enterprise risk management practices and competitive advantage. A structured questionnaire was used to collect data from 304 SMEs operating in the emerging market of Pakistan. The hypotheses of the proposed study were tested through Structural Equation Modeling (SEM) in Analysis of a Moment Structures (AMOS). Finally, their result showed that financial literacy significantly moderates the relationship between enterprise risk management and competitive advantage.

Ahmad, Abdullah, Jamel, and Omar (2015) conducted a study "Board Characteristics and Risk Management and Internal Control Disclosure Level: Evidence from Malaysia". The study attempted to develop an index to measure the level of risk management and internal control disclosures for Malaysian listed firms and to measure the relationship between the board characteristics and risk management and internal control disclosures level among Malaysian public listed firms. The sample of the study consisted of 150 firms listed in the Main Market of Bursa Malaysia for the year 2013. Based on

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the result, the study found that, board of directors with financial literacy had significant and positive relationship with risk management.

In a study by Malgharni, and Lotfi (2013) on the "Analysis of the Relationship between Board of Director Composition and Risk Management in the Firms Listed in Tehran Stock Exchange", using research population of companies listed in Tehran Stock Exchange during the years 2007-2012 and a sample consisting of 107 companies from 20 different industries argued that there is a significant positive correlation between financial literacy of the board and risk management.

Additionally, Hommel and King (2013) in their study "The emergence of risk-based regulation in higher education; Relevance for entrepreneurial risk taking by business schools" with the focus on the financial dimension of institutional performance and drawn on the corporate risk management literature to derive general design principles for managing risk-taking in business schools. These are matched with a reviewed of the regulation literature to evaluate regulatory effectiveness.   They claimed that top management teams with high financial education can reduce different types of accounting costs and are more likely inclined towards competitive advantage. Therefore improving risk management.

Minton, Taillard, and Williamson (2011) conducted a study on Financial Expertise of the Board, Risk Taking, and Performance: Evidence from Bank Holding Companies. The original sample of financial institutions includes all U.S. banks along with specialty and other finance firms on the BoardEx database during the 2000 to 2008 period. They argued that financial expertise is positively associated with risk-taking levels. They also argued that

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their result was not driven by powerful CEOs who selected independent experts to rubber stamp strategies that satisfy their risk appetite.

Dionne, and Triki (2005) carried a study on "Risk Management and Corporate Governance: The Importance of Independence and Financial Knowledge for the Board and the Audit Committee" with the aim of investigating whether the new rules as well as those set by the Sarbanes Oxley act lead to hedging decisions that are of more beneficial to shareholders. They constructed a novel hand collected dataset that allows them to explore multiple definitions for the financially knowledgeable term present in the new regulation. Their result showed that, financially educated directors seem to encourage corporate hedging. This evidence suggests that shareholders are better off with financially educated directors on their boards and audit committees. Thus, the study hypothesize that:

H2d: There is no significant relationship between Board Expert and risk management.

Risk management committee and Risk management

Ratnasari, and Hermawan (2019, January) carried a study on "The effect of characteristics and overlap membership of risk oversight committee on banking credit risk in Indonesia", aiming to provide empirical evidence regarding the effects of characteristics and overlap membership of Risk Oversight Committee on banking credit risk in Indonesia. Samples use consists of banks listed in Indonesia Stock Exchange (IDX) during 2013-2017. The result from this research concluded that expertise and competence of risk oversight committee has negative effect on bank credit risk.

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Bhuiyan, Cheema, and Man (2017) empirically examined the impact of the stand-alone risk committee on corporate risk-taking and firm value. They argued that the existence of a stand-alone risk committee enhances the quality of corporate governance which results in improved investor protection by reducing corporate risk-taking. They found several measures of risk-taking decline significantly for firms that have a stand-alone risk committee compared with firms that have a joint audit and risk committee. The evidence was consistent with the proposition that firms with a stand-alone risk committee can effectively evaluate potential risks and implement a proper risk management system.

Abdullah, Shukor, and Rahmat (2017) also examined the influences of committees that are being appointed to manage risk towards voluntary risk management disclosure (VRMD) among non-financial companies in Malaysia. Based on resource dependence theory, their study contended that the committees provide risk management resources particularly in terms of risk management information that could influence the VRMD. All data of VRMD, RMC and AC were collected from companies' annual reports by using content analysis method. The sample in this study consisted of 395 non-financial companies which were listed on Bursa Malaysia in 2011. Their multiple regression results show that RMC presence and AC activeness increase VRMD. Their findings provided evidence that the establishment of RMC could increase the risk management among companies in Malaysia.

A study by Subramaniam, McManus, and Zhang (2009) on "Corporate governance, firm characteristics and risk management committee formation in Australian companies" sought to examine how a risk management committee

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(RMC) as a newly evolving sub-committee of the board of directors, functions as a key governance support mechanism in the oversight of organization's risk management strategies, policies, and processes. Data was drawn from the annual reports of the top 300 Australian Stock Exchange (ASX)-listed companies. The results, based on logistic regression analyses, indicated that, companies with separate risk management committee are more likely to have higher financial reporting risk.

Yatim (2010) carried out a study on "Board structures and the establishment of a risk management committee by Malaysian listed firms". The study employed a cross-sectional analysis of 690 firms listed on the Bursa Malaysia for the financial year ending in 2003. The study suggested that Malaysian firms with a higher number of independent directors on the board are likely to set up an independent or stand-alone risk committee to show their commitment to minimizing financial, operational and reputational risks.

Also, Ng, Chong and Ismail (2013) in their study on "Is the risk management committee only a procedural compliance? An insight into managing risk taking among insurance companies in Malaysia" aiming to identify the relationships between risk management committee characteristics and risk taking of the Malaysia's insurance companies, from 2003-2011, found that risk-taking is negatively associated with risk committee size. Thus, the study hypothesize that:

H2e: There is no significant relationship between the presence of risk management committee and risk management.

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Control Variables

The study controls for corporate governance variables such as Bank size, bank type and bank age.

Tsorhe, Aboagye and Kyereboah-Coleman (2011) argued that bank size has implication for the risks that a bank takes and how these risks are managed. They said, bank size has significant positive impact on bank capital management. This is consistent with the general feeling that bigger banks are safer.

Lassoued, Sassi, and Attia (2016) investigated the impact of foreign ownership on banking risk. Panel data regression analysis was applied to a sample of 171 commercial banks from the MENA region during the 2006–2012 periods. Two-stage least-squares analysis was conducted. Their results showed that foreign ownership reduces risk-taking.

Rokhim, and Susanto (2011) investigated the impact of increasing foreign ownership to the performance, competition and short-term risk in Indonesian banking industry. Their study uses financial report of 115 commercial banks over period of six years. Foreign banks are proven to be superior compared to domestic banks in terms of profitability and cost-efficiency. At the industry-level, results of this study reveal that increasing foreign ownership reduces profitability, increases competition and risk.

Gaps in existing studies

Risk management literature in financial institutions has been expanded to include explanatory factors such as corporate governance characteristics and ownership structure. While majority of studies in risk management literature focus on banks in highly developed countries, less discussion of risk

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management and corporate governance institutions has been taken place in developing countries. Moreover, there are inconsistencies in the findings of the study done so far. More so few studies on corporate governance and risk management concentrated on banks. Lastly, most of the studies have looked at how board structure influences risk management with little concentration on how ownership structure influences risk management. The current study aims to fill this gap by providing empirical evidence of the association between corporate governance and risk management among banks in Ghana over the period from 2008 till 2018.

The Conceptual framework of the study
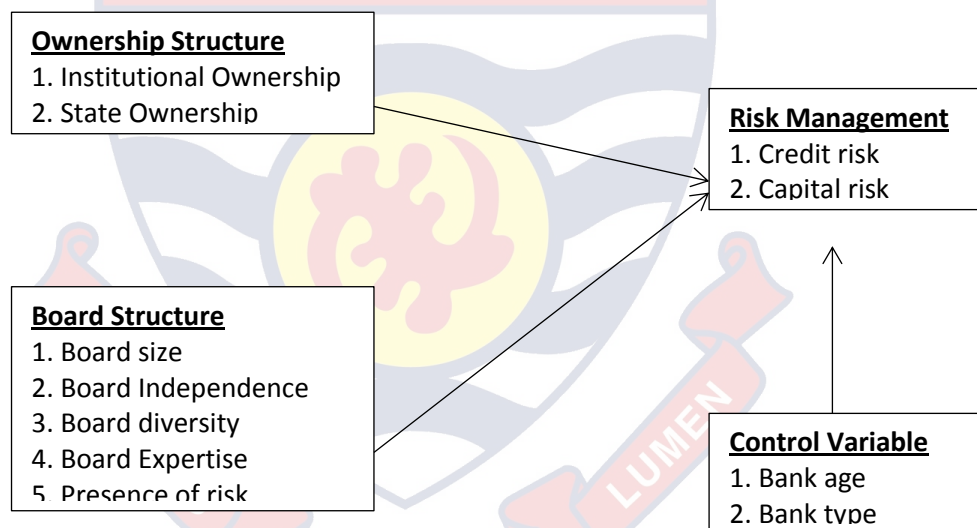
Figure 1: Conceptual framework

Source: Author's construct

The above research framework shows how the ownership structure and board   structure affect risk management among banks in Ghana. The ownership structure (Independent variable) looks at institutional ownership and state ownership whilst the board of directors (Independent variable) also look at the board size, board independent, board expert, Board Gender

Diversity and the presence of risk management committee. Effective risk management is achieved when there is a presence of effective ownership structure and board structure. The study also controlled for bank type, bank age and bank size.

Chapter Summary

The chapter employed the agency theory and the resource dependency theory. The agency theory aims at resolving problems that can occur in agency relationships. These problems arise due to conflict of interests between the principal and the agent, which arise due to the separation of ownership and control which has been confirmed by Davis, Schoorman, and Donaldson (1997). Finally, the resource dependency theory suggests that organisations are open systems, which are not independent due to their reliance on the external environment to acquire and secure critical resources that they require (Durand & Jourdan, 2012; Pfeffer & Salancik, 1978). The chapter then provided the empirical justifications for the relationships between corporate governance and risk management and a conceptual framework.
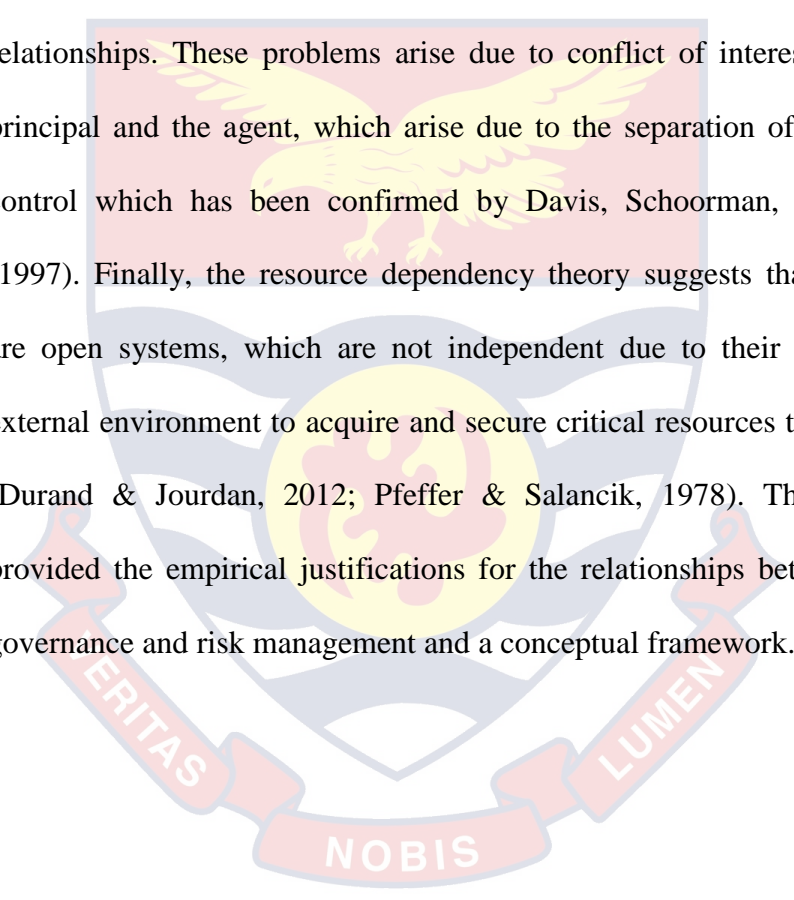
CHAPTER THREE

RESEARCH METHODS

Introduction

The emphasis of this chapter is to describe the methods and procedures employed to conduct this research study. The chapter begins with the research paradigm, description of the research design, followed by the study population, sample and sampling technique, instrumentation design, definition, source and measurement of variables This chapter further looked into data analysis and model specification.

Research Paradigm

According to Hallebone and Priest (2008), research paradigm reflects the philosophy of scientific research and the scientific approach that is considered most appropriate to the purpose, context, and focus of the research task. This study is in line with the positivist research paradigm. Proponents of positivism paradigm postulate that the positivist approach to scientific research involves researching into an observable social reality and finally making law-like generalizations as done by physical and natural scientists (Saunders, Lewis & Thornhill, 2012). The fact that such social reality is observable means that it can be measured and quantified into variables. Thus, the use of the positivism paradigm involves collecting data on variables, analyzing data by the use of a statistical test of significance and affirming or rejecting hypotheses to make generalizations. Positivism paradigm of research produces generalizable findings which are normally reported quantitatively, and also allows for the possibility of making predictions about general phenomena (Hallebone & Priest, 2008).

The positivism research paradigm was adopted for this study because this study involved the collection of data on corporate governance and risk management, analysis of the data to establish relationships by using statistical test of significance, and finally accepting or rejecting hypotheses to establish the effect of corporate governance and risk management among banks in Ghana.

Research Design

The research design is the overall strategy through which the different components of the study will be integrated in a coherent and logical manner thereby ensuring that the research problem will be effectively addressed. It constitutes the blueprint for the collection, measurement, and analysis of data. The research design is the structure from which the work plan will flow, and is dependent on the purpose of the research. The three main types of research are Descriptive Research, Explanatory Research, and Exploratory Research.

In order to fully elicit relevant information pertinent to the objectives of the present study, the study employed the explanatory research design. According to Saunders et al. (2012), empirical studies that seek to establish cause and effect relationships between variables may be termed explanatory. Explanatory research design places emphasis on studying a situation to explain the relationships between variables. Explanatory research was employed in this study to explain the relationship between corporate governance and risk management among banks in Ghana.

Research Approach

According to Creswell (2014), there are three main approaches to research, namely, the quantitative approach, the qualitative approach, and the

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mixed approach. The study employed the quantitative research approach because the variables used in this study are quantitative. The first-rate of quantitative approach over the other research approaches such as qualitative and mixed research approach was informed by the affirmation of Harwell (2005) that quantitative approach is appropriate if the purpose of the study is to use instrument such as tests or surveys to collect data, and rely on probability theory to test statistical hypothesis that corresponds to the research questions of interest. The technique allows the result of the study to be generalized from the sampling perspective (Bondan & Biklen, 1998).

The study sought to collect numerical data from annual reports of the individual commercial banks in Ghana on corporate government (measured by ownership and board structure) and risk management (liquidity risk & capital risk). Also, the study sought to examine the relationship between corporate governance and the bank's risk management. Moreover, the analysis for the study requires statistical test therefore, it will require deductive reasoning to analyze the data (Bondan & Birklen, 1998). Nevertheless, one weakness of the quantitative approach is that it does not allow for an in-depth study of the variables (Mulligan, 2008).

Models Specification

Model 1- The relationship between ownership structure and risk management among banks in Ghana

Model 1 is the regression equation for the objective one and it was adapted from the regression equation of Mohammadi and Lotfi (2013). By focusing on government ownership, Mohammadi and Lotfi (2013) explain that ownership structure can influence risk management. This study extends the

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model of Mohammadi and Lotfi (2013) by including one more form of ownership, that is, institutional ownership. The justifications for these variables were provided in chapter two. Grounded on the literature review, the model below shows the relationship between ownership structure and risk management whilst controlling for other factors that affect risk management.

$$\text{RKM}_{it} = \beta_0 + \beta_1\,\text{INSTIit} + \beta_2\,\text{STATEit} + \sum_{i=3}^{n} \beta_i X_{it} + \mu i + \lambda_t + \varepsilon it$$

Where;

RKM is liquidity risk and capital risk

INSTI is Percentage of shares owned by institutions

STATE is the Percentage of shares owned by the state

$\sum_{i=3}^{n} \beta_i X_{it}$ is a vector of the control variables

β denotes the coefficients in the model

μ, represent bank-specific effect.

t is the time-series dimension

ε_{it} is the error term
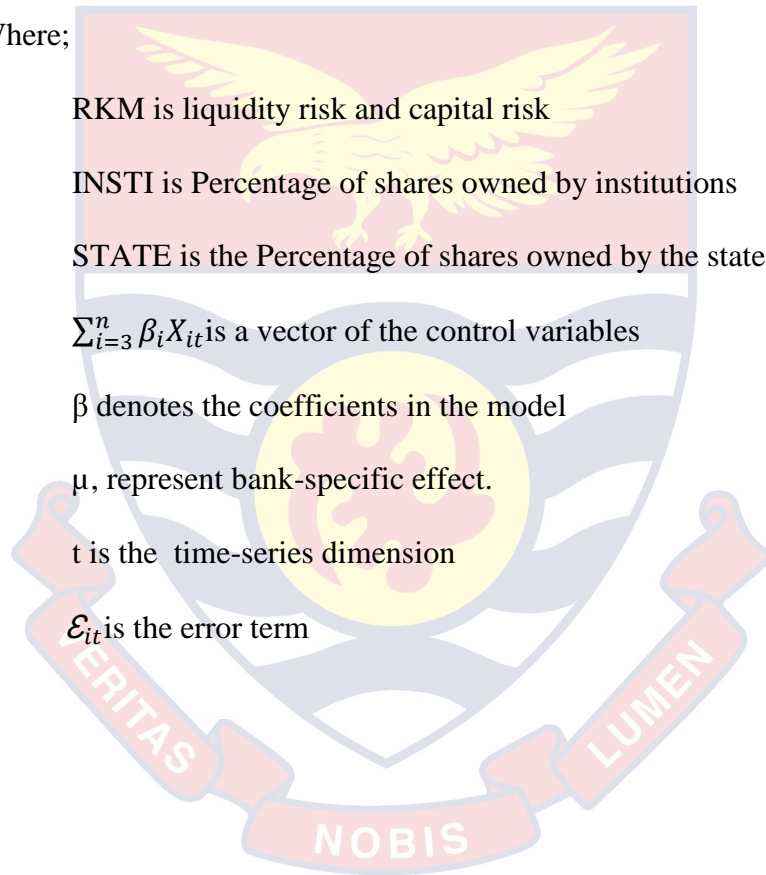
Model 2- The relationship between board structure and risk management among banks in Ghana

Model 2 is the regression equation for objective two, and it was adapted from the regression equation of El-Masry et al. (2016). Following the model of El-Masry et al. (2016), this study examines the relationship between board characteristics and risk management. The relationship is specified in the model below:

$$RKM_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BgDIV_{it} + \beta_4 BEXP_{it} + \beta_5 RkC_{it} + \sum_{i=6}^{n} \beta_i X_{it} + \mu_{i} + \lambda_{t} + \mathcal{E}_{it}$$

Where;

RKM is liquidity risk and capital risk

BSIZE is the total number of the members on the board

BIND is the ratio of non-executive directors to the total number of directors on the board.

BgDIV is the proportion board of women on the board

BEXP is the Group of Board members who have financial literacy

RkC is 1 if there is risk Committee and 0 if otherwise.

$\sum_{i=4}^{n} \beta_i X_{it}$ is a vector of the control variable

β denotes the coefficients

μ, represent bank-specific effect.

t is the time-series dimension

$\mathcal{E}_{it}$ is the error term

A Priori Expectation

Table 1 depicts the expected signs of the independent variables founded on theoretical and empirical literature discussed in chapter 2.

Table 1: A Priori expected signs of the independent variables

Variable	Measure	Expected sign/effect
Institutional Ownership	Percentage of shares owned by Institutions	+/-
State ownership	Percentage of shares owned by the state	-
Board Size	Represented by the total number of members of the board.	+/-
Board Independence	The proportion of independent executive on board	+
Board Diversity	The proportion of women on the Board	+/-
Risk management committee	1 if there is risk Committee and 0 if otherwise	+
Bank expert	Group of Board Members who have financial literacy	+

Source: Field Survey (2019)

Estimation Technique

The study used unbalance panel data to examine the relationship between corporate governance and risk management of banks in Ghana. Correlation matrix and variance inflation factor (VIF) test were conducted to check for the existence of correlation among the explanatory variables. In the estimation phase, Hausman (1978) specification test was used to determine the appropriate estimator between fixed effects and random effects. The model

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was estimated using general least square (GLS) regression model to mitigate the heteroscedasticity problem. GLS is applied when there is a certain degree of correlation among the explanatory variables. The significant effect of the explanatory variables on the dependents variables was evaluated at $(p < 0.1)$ significant level using T-statistics. The estimation was carried out with the use of Stata IC13 software.

To examine the relationship between corporate governance and banks risk management from 2008-2017, the study employed panel dataset of all licensed commercial banks (universal banks) in Ghana. Panel data involves the pooling of observations on the cross-section of units over several time periods and facilitate identification of effects that are simply not detectable in pure cross-sections or pure time-series studies (Ahmed &Khaoula, 2013). According to Vong and Chen (2009), panel data is commonly used because it has the advantage of giving more information as it consists of both cross-sectional information, which captures individual variability and time-series information. Thus, panel data helps to identify a common group of characteristics while at the same time takes into account the heterogeneity that is present among individual units. Baltagi (2001) posits that panel data helps in studying the behavior of banks over time and across space. However, Torres-Reyna (2007) argues that one difficulty with panel data is the issue of data collection.

Data Collection Procedures

Data on corporate governance and risk management of banks were collected from secondary sources. I primarily sourced my data from the annual reports of banks, obtained from the internet. Wikipedia defines an annual

report as a detailed publication of a firm's activities throughout the previous year. They are designed in a manner so as to give investors and other stakeholders' information about the firm's activities and financial performance over the period in question. This study, therefore, is based on secondary data. Secondary data is data that has already been collected for some other purpose.

Sources, definitions, and Measurement of Variables

Dependent Variables

The choice of measurement for all the variables was influenced by the fact that those measures have been widely used in literature.

Capital risk; is defined as the ratio of equity capital to total assets. This ratio is a good measure of capital risk because a decline in equity funding relative to assets proposes increased exposure of shareholders (and debt holders). A higher ratio represents higher bank sensitivity to the public interest, hence less risk. Konishi and Yasuda (2004) established that the implementation of capital adequacy provision reduced risk-taking by commercial banks.

Liquidity risk; Liquidity risk is proxied by the ratio of total loans to total deposit following the work of Fiordelis i& Molyneux (2010). The conviction is that banks use long term deposits for short term loans in order to generate interests. Therefore banks are exposed to liquidity risk if there is a mismatch between the maturity of the loans and when the bank is expected to perform its obligation of meeting the demands of depositors. A higher ratio shows better liquidity risk management. Liquidity is necessary for banks to compensate for expected and unexpected balance sheet fluctuations and to provide funds for growth.

Liquidity represents a bank's ability to efficiently accommodate the redemption of deposits and other liabilities and to fund increases in loan and investment portfolios. Liquidity risk management lies at the heart of confidence in the banking system, as banks are highly leveraged institutions. The importance of liquidity transcends the individual institution because a liquidity shortfall at a single institution can have system-wide repercussions. It is in the nature of a bank to transform the term of its liabilities to different maturities on the asset side of the balance sheet. Since the yield curve is typically upward sloping the maturity of assets generally tends to be longer than that of liabilities. A bank may, therefore, experience liquidity mismatches, making its liquidity policies and liquidity risk management key to survival.

Independent Variables

Institutional ownership; is measured by the percentage of shares owned by institutions though there have been mixed results on the relationship between institutional ownership and risk management. This work expects that there exists a positive relationship between Institutional ownership and risk management. This is because institutions that own shares in banks have their integrity to protect thus ensuring that the right thing is done to avoid reputational issues.

State ownership; is measured by the percentage of shares owned by the state. This work expects that there exists a negative relationship between state ownership and risk management. This is because banks controlled by the government (GCBs) tend to take more risks than those controlled by state-owned enterprises (SOECBs) or private investors (PCBs) (Dong et al., 2014)

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Board independence; is calculated by dividing the number of non-executive directors by the total number of board members (Geraldes Alves, 2011). That is the ratio of non-executive directors to the total number of directors on the board. Structuring of a bank's board of directors also plays a crucial role in reducing agency costs (Hutchinson & Gul, 2003). Therefore, the role of the executive board's structure is also crucial for the bank's risk management. Non-executive directors on the board of directors, acting on the part of external shareholders, are generally expected to monitor a firm's strategy and decision -making in this regard (Fama, 1980). There has been no consensus on the nature of the relationship between board independence and banks risk management. However, this study is motivated that the presence of more non-executive directors may obstruct the indulgence of the firm in riskier projects as they are concerned with the volatility of the returns in such scenarios. Also, the chief executive officer (CEO) may not feel comfortable to discuss all the strategic matters with the non-executive directors, thereby creating a gap between the firm's decisions and the involvement of its independent board members. Therefore, a positive association may be expected in this regard.

Board size; It is represented by the total number of members of the board. Board size is also relevant to the bank risk management as more the number of directors in the board are, better will be the decision-making concerning risk management, as no one person will be able to make decisions. Similarly, there has been no consensus on the nature of the relationship between board size and banks risk management. From the agency point of view, one could argue that a larger board is more likely to be alert to the

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agency problems because, more people will supervise the work of the management (Kiel & Nicholson, 2003). But because of the risky environment facing Ghana's banks, it is expected that there may exist a negative relationship between board size and bank's risk management as collective information of the small members of the board will be useful and may prevail in such environments.

Board diversity; is the proportion of women on the board. A woman holding a managerial position is not a new concept. It dates far back as in the 17th century where women were made to manage the farms of their households (Miles, 1988). Corbett (1997) study on corporate firms in New Zealand posited that some firms in the country were subjected to shareholder scrutiny due to the absence of any female on the board of directors.

Board expert; is measured as the Group of Board Members who have financial literacy. That is to say, in order to oversee the management and participation in decision-making, the board of directors requires a variety of skills such as accounting, banking, and law to be effective for increasing the company's value (Hillman, Cannella, & Paetzold,2000).

The presence of the risk management committee; 1 if there is risk Committee and 0 if otherwise Brown, Steen, and Foreman (2009) and Jiraporn, Singh, and Lee (2009) questioned the ability of AC as the committee is seen not having the time to address risk properly. Bates and Leclerc (2009) also doubted the expertise of the AC to effectively manage company risks because they advocated that a company needs a committee with extensive skills in risk management so that the company's risk management can be executed effectively. As such, studies such as Brown et al. (2009) and Fraser

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and Henry (2007) proposed companies to establish RMC to manage their risks. This work expect a positive relationship between the presence of the risk management committee and risk management

Control variable

The study controlled for four corporate governance variables consisting of bank size, audit committee, bank type, and bank age. The table below shows how the variables were measured, their source and the empirical justifications for their measurements.

Table 2: Summary of Measurement, Data source and Empirical

justification

Variable	Measurement	Data source	Empirical Justification
Dependent variables			
Capital risk	The ratio of equity capital to total assets.	Annual report, 2008-2017	Tsorhe, et al. A. (2011); Brissimiss et al. (2008); Zhang et al. (2013) Ayernor (2014)
Liquidity risk	the ratio of total loans to total deposit	Annual report, 2008-2017	Ayernor (2014); FiordelisiandMolyneux (2010a);
Independent variable			
Institutional ownership	Percentage of shares owned by institutions	Annual report, 2008-2017	Kukah et al. (2016); Ntim et al, (2013);
Foreign ownership	Percentage of shares owned by foreigners	Annual report, 2008-2017	Kukah et al. (2016);
State ownership	Percentage of shares owned by the state	Annual report, 2008-2017	Ntim et al, (2013);
Board size	The total number of the members on the board	Annual report	El-Masryet al. (2016) Alam and Ali Shah (2013); Xie et al, 2003; Mohammadi and Lotfi, S. (2013).
Board independent	The ratio of non-executive directors to the total number of directors on the board.	Annual report, 2008-2017	GeraldesAlves, 2011 Kukah et al. (2016); Alam and Ali Shah (2013). El-Masryet al. (2016) Ntim et al, (2013);
Board diversity	Proportion board of	Annual report,	Kukah et al. (2016);

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Table Con'd

Bank expert	The Group of Board Members who have Financial literacy	Annual report, 2008-2017	Alhosseini et al, 2010; Mohammadi and Lotfi, S. (2013)
Risk management committee	1 if there is risk Committee and 0 if otherwise.	Annual report, 2008-2017	Kukah et al. (2016); El-Masryet al. (2016)
Control variables			
Audit committee	1 if there is audit Committee and 0 if otherwise	Annual report, 2008-2017	Kukah et al. (2016); El-Masryet al. (2016)
Bank type	1 if foreign ownership 0 if otherwise	Annual report, 2008-2017	
Bank size	Log of total assets	Annual report, 2008-2017	Kukah et al. (2016); Sharma et al. (2014) El-Masryet al.
Bank age	The number of years between observation year and year of incorporation.	2017 Ghana Banking Survey	Bajagai et al. (2019); Sharma et al. (2014)

Source: Field Survey (2019)

Chapter Summary

This chapter presented the research methods employed in conducting the study. The study is based on the positivism research paradigm and the quantitative research approach. The study also employed an explanatory research design as it seeks to explain the relationships between corporate governance and risk management in Ghana. It must be noted that the study

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included only 18 out of a total of 23 commercial banks due to availability of data. The study developed two baseline models. The first model specification sought to establish the relationship between ownership structure and risk management in Ghana. The second model was developed to determine the relationship between board structure and risk management in Ghana. The study mainly employed fixed and random effect estimation techniques to estimate all the models.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results and discussion for the study. It begins with the results of the descriptive statistics, followed by the results of the correlation analysis and variance inflation factor (VIF) tests showing the level of association among the explanatory variables used in the regression model. Results from the fixed and random effect panel regression model are then discussed. Inferential analyses are done alongside the presentation of the estimated results to help explain the relationship between corporate governance and risk management of banks in Ghana.

Descriptive Statistics

The descriptive statistics shows the mean, standard deviation, minimum and maximum of the dependent and independent variables as well as the control variables. Table 3 below presents the results of the descriptive statistics.

Table 3: Descriptive Statistics for all Variables Employed

Variable		Observation	Mean	Std. Dev.	Min	Max
CAPRK	174	0.146	0.099	0.000	0.973
LIDRK	174	0.628	0.259	0.060	1.389
BSIZE	169	8.876	1.585	5	13
BIND	166	0.618	0.253	0	0.9
BgDIV	167	0.154	0.113	0	0.5
BEXP	145	0.313	0.340	0	1
RkC	165	0.733	0.444	0	1
INSTI	153	0.315	0.290	0	92
STATE		151	0.0808	0.176	0	53
BANKSZE	177	20.82	1.281	13.69	22.981
BANTYP	178	0.607	0.489	0	1
BANAGE	179	34.017	30.269	1	121

Source: Field Survey (2019)

Note: LIDRK refers to Liquidity Risk, CAPRK refers to Capital Risk, BSIZE is board size, BIND is board independent, BgDIV is board diversity, BEXP is board expert, RkC is the presence of risk management committee, INSTI refers to institutional ownership, LSTATE is state ownership, BANKSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

Table 3 shows that on average CAPRK is lower compared to LIDRK. The mean value of CAPRK is 0.146 and standard deviation 0.099 with a minimum and maximum value of 0.000 and 0.973 respectively. This shows that on average Ghanaian banks are able to manage 14.64 percent of their equity on their Total Asset; that is 14.6 percent of their total asset can cover

their total equity in case of bankruptcy or wind up. The mean of 0.146 compared with the standard deviation of 0.099 suggests that the panel has a closely observed performance when it comes to CAPRK.

LIDRK is significantly higher than CAPRK. LIDRK has a mean value of 0.628 and standard deviation of 0.259. LIDRK seems spread around the mean given that the minimum and maximum observed for all the banks are 0.016 and 1.389 respectively. This implies that on average, banks are able to manage 62.8 percent of their total loans on their total deposit; that is, 62.8 percent of their total asset can cover their total equity in case of bankruptcy or wind up.

In terms of board characteristics, board size (BSIZE) recorded a mean of 8.876 with a standard deviation of 1.586. This indicates that on average 9 directors serve on boards of banks in Ghana, whereas the minimum number of directors who serve on board is 5 and the maximum is 13. Also given mean value of 8.876 with a standard deviation of 1.585 suggests that the panel has a closely observed performance when it comes to BSIZE. Non-executive directors or board independent (BIND) recorded a mean of 0.618 and a standard deviation of 0.253 with minimum and maximum values of 0 and 0.9 respectively. This implies that on average 61.8 percent of banks directors in Ghana are non-executive. This is an indication that on average, the executive directors serving on banks boards in Ghana are less than the total number of directors on the board. Moreover, given a mean value of 0.618 with a standard deviation of 0.253 suggests that the panel has a closely observed performance when it comes to BIND.

The average BgDIV of the banks is 0.154 with a standard deviation of 0.113 suggesting a widely dispersed observation for the Board Gender Diversity of banks in the panel used for the study, whereas the minimum number of female's directors who serve on board is 0 and the maximum is 0.5. The mean value of 0.154 means that on average Ghanaian banks have 15.36 percent of directors being female. This is an indication that, on average, the female's directors serving on banks boards in Ghana are less than the total number of directors on the board. BEXP ranged between a minimum of 0 and a maximum of 1. The average BEXP of the sampled banks is 0.313 with a standard deviation of 0.340 suggesting a widely dispersed observation for the BEXP of banks in the panel used for the study. Board expert on the board on average is 31.34 percent which could lead to poor risk management due to the fact that they are not enough to compare to those that are not expert.

The present of the risk management committee (RKC) ranged between a minimum of 0 and a maximum of 1. The mean of 0.733 and standard deviation of 0.444 show the spread of individual banks risk management committee (RKC) away from the mean. The mean value 0.733 indicates that almost all banks in Ghana have a risk management committee.

In terms of ownership structure, institutional ownership (INSTI) ranged between a minimum of 0 and a maximum of 99. The average INSTI of the sampled banks is 0.315 with a standard deviation of 0.290 suggesting a close dispersed observation for the INSTI of banks in the panel used for the study. The mean value of 0.315 indicates that on average 32 percent of the ownership structure of banks in Ghana are owned by institutions. State ownership (STATE) also ranges between a minimum of 0 and a maximum of

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53, indicating that on average 53 percent of the ownership structure of banks in Ghana are owned by the state. The mean of 0.081 and standard deviation of 0.176 suggesting a widely dispersed observation for the STATE of banks in the panel used for the study. In Table 3, the ownership structure variables result support previous empirical studies that found that banks in Ghana are highly concentrated.

In terms of control variables, the average BKSZE of the sampled banks is 20.824 with a standard deviation of 1.281 suggesting a closely dispersed observation for the BKSZE of banks in the panel used for the study. BKSZE ranged between a minimum of 13.692 and a maximum of 22.981. Bank type (BANTYP) has a minimum of 0 and a maximum of 1. A mean of 0.607 and standard deviation of 0.490 are observed. The indication is that BANTYP seems to spread away from the mean. Also, the mean value of 0.6067 indicates that most of the banks in Ghana are owned by foreigners.

Lastly, Banks age (BANAGE) ranged between a minimum of 1 and a maximum of 121. The mean of 34.017 and standard deviation 30.269 show the spread of individual banks age (BANAGE) away from the mean. The mean value of 34.0168 shows that on average Ghanaian banks are 34 years old.

Test of Multicollinearity

Before proceeding with the regression analysis there is the need to conduct correlation analysis in order to test for the presence of multicollinearity among the regressors. The correlation coefficients represent the linear relationship between two variables. For the purpose of this study, the threshold for the correlation matrix is 0.50. Table 4 below provides the results of the correlation matrix.

Table 4, shows the correlation between the explanatory variable and control variables. The result confirms some level of correlation between the dependent variables (CAPRK and LIDRK) and the independent variable (INSTI, and STATE) as well as the control variables (AC, BAKSZE, BANTYP, and BANAGE).

From table 4 correlation results, there is a negative weak -0.133 correlation between capital risk (CAPRK) and liquidity risk (LIDRK). The correlation is not significant with a p-value which is greater than ($p > 0.05$) significance level.

The correlation between foreign ownership (FORN) and CAPRK is positive 0.109 but not statistically significant. This suggests that as banks increases foreign ownership, capital risk does not change since there is no relationship. Meanwhile, the correlation between foreign ownership (FORN) and LIDRK is negative -0.535 but statistically significant. This suggests that as banks foreign ownership increases liquidity risk also decreases.

The correlation between institutional ownership (INSTI) and CAPRK is negative (-0.0843) and not significant. But the correlation between INSTI and LIDRK is positive 0.546 but statistically significant. This implies that the higher the level of institutional ownership (INSTI), the higher the level of banks capital risk (CAPRK). INSTI is negatively (0.1268) correlated with FORN and statistically significant.

State ownership (STATE) is negatively (-0.0775) correlated with CAPRK but not statistically significant. But it is positively statistically significant with LIDRK. This is an indication that the higher the level of State ownership (STATE), the higher the level of banks liquidity risk (LIDRK).

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There is a positive significant association between STATE and INSTI (0.305). And also a negative significant association between STATE and FORN (-0.527).

The correlation between bank size (BKSZE) and other variables CAPRK (-0.137), LIDRK ((-0.134), FORN (0.0178), INSTI (-0.0051) and STATE (-0.544) are not significant. BANTYP is positively statistically significant with CAPRK (0.276) and FORN (0.747). The correlation between BANTYP and CAPRK indicate that, the higher the level of bank type (BANTYP), the higher the level of banks capital risk (CAPRK). More so, BANTYP is negatively statistically significant with LIDRK (-0.314) and INSTI (-0.59). The correlation between BANTYP and LIDRK implies that the higher the level of bank type (BANTYP), the lower the level of banks liquidity risk (LIDRK). But it is negatively not statistically significant with BKSZE.

BANAGE is statistically not significant with CAPRK (-0.103) and LIDRK (0.0759). But statistically significant with INSTI (0.244), STATE (0.244) and BKSZE (0.355).

Table 4: Correlation Matrix for Ownership Model

	CAPRK	LIDRK	LINSTI	LSTATE	BANKSIZE	BANTYP	BANAGE
CAPRK	1						
LIDRK	-0.133	1					
LINSTI	-0.0843	0.546***	1				
LSTATE	-0.0775	0.221*	0.305***	1			
BANKSIZE	-0.137	-0.134	-0.00510	0.0546	1		
BANTYP	0.276**	-0.314***	-0.59***	-0.544***	-0.0491	1	
BANAGE	-0.103	0.0759	0.244**	0.244**	0.355***	-0.162	1

Source: Field Survey (2019)

LIDRK refers to Liquidity Risk, CAPRK refers to Capital Risk, LINSTI refers to lag of institutional ownership, LSTATE is lag of state ownership, BANKSIZE is bank size,

BANTYP is bank type and BANAGE is bank age.

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The correlation results presented in Table 4 reveals that the correlation between most of the variables is low. That is some are high but correlation only explains the relationship between the variables but does not guarantee the existence of multicollinearity that is collinearity condition due to the combined effects of two or more variables (Hair, Black, Anderson, & Tatham, 2006).

Therefore, it is important to test for signs of multicollinearity among the explanatory variables, to avoid the problem of multicollinearity. The study further relied on a variance inflation factor (VIF) test to test for signs of multicollinearity among the explanatory variables. Variance inflation factor measures how much the variance of the estimated coefficient is inflated as a result of multicollinearity. Table 5 presents the results of the VIF values of the variables based on the test. In testing for multicollinearity, the rule of thumb is that any value above 5.00 shows high multicollinearity (Nachsheim, Neter, & Kutner, 2004). Table 5 presents the result of the test. From the table 5, the maximum VIF is 2.11 and the mean VIF is 1.53. Therefore, there is no unacceptable level of multicollinearity in the current study.

Table 5: Result of the Variance Inflation Factor (VIF) Test for Ownership Structure

Variable	VIF	1/VIF
BANTYP	2.11	0.474
LINSTI	1.59	0.631
LSTATE	1.55	0.647
BANAGE	1.26	0.794
BANKSIZE	1.155	0.871

Mean VIF | 1.53
Source: Field Survey (2019)
Note: LINSTI refers to lag of institutional ownership, LSTATE is lag of state ownership, FIRMSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

Table 6, shows the correlation between the explanatory variable and control variables. The result confirms some level of correlation between the dependent variables (CAPRK and LIDRK) and the independent variable (BSIZE, BIND, BgDIV, BEXP, and RKC,) as well as the control variables (AC, BAKSZE, BANTYP, and BANAGE). From table 6 correlation results, there is a negative -0.120 correlation between capital risk (CAPRK) and liquidity risk (LIDRK). The correlation is not significant with a p-value which is greater than $(p > 0.05)$ significance level.

The correlation between board size (LBSIZE) and CAPRK is negative -0.0055 but not statistically significant. This suggests that as board size increases capital risk does not change since there is no relationship. Meanwhile, the correlation between board size (LBSIZE) and LIDRK is positive 0.346 and statistically significant. This suggests that as banks board size increases liquidity risk also increases.

The correlation between board independent (LBIND) and CAPRK is positive (0.154) but statistically not significant. But the correlation between board independent (LBIND) and LIDRK is positive 0.253 but statistically significant. This implies that the higher the level of board independence, the higher the level of banks liquidity risk (LIDRK). LBIND is positively (0.745) correlated with LBSIZE and statistically significant.

Board Gender Diversity (LBgDIV) is positively correlated with CAPRK 0.00350 and with LIDRK (0.130). But both are statistically not significant with board diversity. Also, there is a positive significant association between LBSIZE (0.450) and LBIND (0.343).

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The correlation between bank expert (LBEXP) and CAPRK (0.00665) is positive but statistically not significant. But the correction between bank expert (LBEXP) and other variables LIDRK (0.290), LBSIZE (0.378), LBIND (0.207) and LBgDIV (0.189) are positive and significant. The presence of the risk management committee (LRkC) is positive but not statistically significant with CAPRK (0.0418) and LIDRK (0.163). The correlation between LRkC other variables LIDRK (0.290), LBSIZE (0.480), LBIND (0.270), LBgDIV (0.336) and LBEXP (0.275) is positive and statistically significant.

FIRMSIZE is statistically not significant with CAPRK (0.0833), LIDRK (-0.142), LBSIZE (0.137) and LBIND (0.0211). However, statistically significant with LBgDIV (0.425), LBEXP (0.293) and LRkC (0.0660). Also BANTYP is statistically significant with CAPRK (0.273) and LIDRK (-0.304) but statistically not significant with the other variables. Finally, BANAGE is statistically not significant with CAPRK (-0.0077), LIDRK (0.00354), LBSIZE (0.0380), LBIND (-0.0737) and BANTYP (-0.0586). However, statistically significant with LBgDIV (0.319), LBEXP (0.185), LRkC (0.213) and BANKSIZE (0.349).

Table 6: Correlation Matrix for Board Characteristics Model

	CAPRK	LIDRK	LBSIZE	LBIND	LBgDV	LBEXP	LRkC	BANKSIZE	BANTYP	BANAGE
CAPRK	1									
LIDRK	-0.120	1								
LBSIZE	-0.0055	0.346***	1							
LBIND	0.154	0.253**	0.745***	1						
LBgDIV	0.00350	0.130	0.450***	0.343***	1					
LBEXP	0.00665	0.290***	0.378***	0.207*	0.189*	1				
LRkC	0.0418	0.163	0.480***	0.270**	0.336***	0.275**	1			
BANKSIZE	0.0833	-0.142	0.137	0.0211	0.425***	0.293***	0.0660	1		
BANTYP	0.273**	-0.304***	-0.0636	-0.0213	-0.149	-0.0585	0.141	-0.114	1	
BANAGE	-0.0077	0.00354	0.0380	-0.0737	0.319***	0.185*	0.213*	0.349***	-0.0586	1

Source: Field Survey (2019)   * $p<0.05$ ** $p<0.01$ *** $p<0.001$

Note: CAPRK is capital risk, LIDRK is liquidity risk, LBSIZE refers to lag of board size, LBIND is lag of board independent, LBgDIV is lag of board diversity, LBEXP is lag of board expert, LRkC is lag of the presence of risk management committee, FIRMSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

The correlation results presented in Table 6 reveals that the correlation between most of the variables is low. The study further relied on the variance inflation factor (VIF) test to test for signs of multicollinearity among the explanatory variables.

Table 7 presents the results of the VIF values of the variables based on the test. The Variance Inflation Factor (VIF), Groebner, Shannon, Fry, and Smith (2005) indicates there is no problem if the VIF is less than 10, others suggest that the value of 5 can be used as a rule of thumb (Groebner et al.; 2005). From the table 7, the maximum VIF is 1.59 and the mean VIF is 1.39. Therefore, there is no unacceptable level of multicollinearity in the current study.

Table 7: Result of the Variance Inflation Factor (VIF) Test for Board Structure

Variable	VIF	1/VIF
LBgDIV	1.59	0.627
BANKSIZE	1.54	0.651
LRkC	1.38	0.723
LBEXP	1.38	0.725
LBIND	1.131	0.761
LBSIZE	1.28	0.780
BANAGE	1.28	0.781
BANTYP	1.23	0.812

Source: Field Survey (2019)
Mean VIF | 1.39
Note: LBSIZE refers to lag of board size, LBIND is lag of board independent, LBgDIV is lag of board diversity, LBEXP is lag of board expert, LRkC is lag of the presence of risk management committee, BANKSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

Ownership structure and banks risk management

The general least square (GLS) panel regression used for investigating the relationship between Ownership structure and banks risk management

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were estimated using panel data from the financial reports of sampled banks in Ghana. Before conducting the panel regression analysis, there was a need to determine whether to use a fixed effect or random effect model. Therefore, the model was subjected to Hausman Specification Test (1978) specification test to determine the most appropriate model for the study. The null hypothesis of the Hausman test states that random effect model is the more appropriate model. In testing this hypothesis, the rule of thumb is that when the probability value is less than the alpha (i.e. $p < 0.05$), reject the null hypothesis in favor of the alternative hypothesis, which states that the fixed effect is more appropriate.

From Table 8, model 1, the result of the test shows the probability value (P-value) of 0.162 which is greater than the alpha ($p > 0.05$). Therefore, the study does not reject the null hypothesis that random effects model is the most appropriate model, and rejects the alternative hypothesis, indicating that, fixed effect model is not the most appropriate model for the study. Also, from that same table but model 2, the result of the test shows probability values of 0.007 which is less than the alpha ($p < 0.05$). Therefore, the study rejected the null hypothesis that random effects model is the appropriate model, and accepted the alternative hypothesis, indicating that fixed effects model is the most appropriate model for the study. Table 8 below presents the regression results for accessing the relationship between Ownership structure and banks risk management.

Table 8: Regression results for board structure using LIDRK and CAPRK

VARIABLES	(1) LIDRK Random effect	(2) CAPRK Fixed effect
LINSTI	0.374***	-0.113
	(0.110)	(0.0689)
LSTATE	0.298	0.124
	(0.261)	(0.444)
BANKSIZE	-0.0205	-0.0459**
	(0.0208)	(0.0219)
o.BANTYP	0.0169	
	(0.0991)	
BANAGE	-0.000287	0.0142**
	(0.00153)	(0.00612)
BANTYP		
Constant	0.904**	0.700**
	(0.436)	(0.304)
Observations	129	129
R-squared	0.327	0.068
Number of id	16	16
Chi2	0.0038	
F- Statistics		
p- value		0.0018
	0.162	0.007

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Fieldwork, Adams (2019)
Note: In model (1) – the dependent variable is LIDRK refers to Liquidity Risk, and in model (2) – the dependent variable is CAPRK refers to Capital Risk, LINSTI refers to lag of institutional ownership, LSTATE is lag of state ownership, BANKSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

Table 8, model 1, presents the results of the random effects panel regression model that tests the relationship between Ownership structure and banks risk management, specifically liquidity risk. The R-square for the model

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is 0.327; this indicates that the explanatory variables explain 32.7 percent of the variations in banks risk management (RM). From Table 8, model 1, all the variables except FIRMSIZE and BANAGE are positively related to the dependent variable (**LIDRK**). The relationships are insignificant except for LINSTI. On the other hand, model 2 on that same table presents the results of the fixed effects panel regression model that tests the relationship between ownership structure and banks risk management using capital risk (CAPRK) as the dependent variable. From the capital risk (CAPRK) model, the R-square for the model is 0.068. This shows that the explanatory variables explain 6.8 percent of the variations in banks risk management (RM).

The models are significant with a p-value of 0.01, 0.05 and 0.1 significance levels. This suggests that the models are fit for the study. Similar to the results reported in model 1, all the variables in model 2, except BANKSIZE and LINSTI recorded a positive relationship with the dependent variable (CAPRK). The relationships are not significant for all the variables except BANKSIZE and BANAGE.

The result from model 1 shows a significant positive relationship between institutional ownership (LINSTI) and risk management (LIDRK) at 1 percent significance level. The coefficient of LINSTI 0.374 indicates that a 37% increase in LINSTI leads to a 37% increase in banks risk management (RM). The effect seems very big, and this could have a greater impact on banks risk management. The positive relationship between LINSTI and risk management suggests that institutional ownership can increase banks risk management by virtue of their large shareholdings, also they have the incentive to collect information and monitor management because they reap

greater benefits than smaller investors from monitoring the organization (Callen& Fang, 2013).

This result supports the argument by the agency theory that, in agency setting institutional ownership can increase banks risk management especially in cases where sophisticated institutions with large shareholdings tend to monitor and discipline managers to ensure that the firm's investment strategy is consistent with the objective of maximizing long-term value, rather than meeting short term earnings goals (Monks & Minow, 1995).

Apart from the agency problem, the results also confirm the argument that institutional ownership can potentially increase banks risk management because Institutional investors with a large investment in a firm have a direct incentive to seek more comprehensive information on the risk-management practices of their portfolio firms and to respond through exit or engagement (Ho, 2010). These large institutional investors influence the firm directly through ownership in the investee firm or indirectly by trading their shares in the firm (Hutchinson, Seamer & Chapple 2015; Gillan & Starks, 2003).

This result supports prior studies like Hutchinson, Seamer, and Chapple (2015); Callen and Fang (2013) who found a positive relationship between corporate governance and banks risk management (LIDRK). In contrast, Lotfi and Mohammadi (2014) found no relationship between institutional ownership and banks risk management; Mathew, Ibrahim, and Archbold (2016) found a negative relationship between institutional ownership and banks risk management.

On the contrarily, model 2 result shows that institutional ownership (LINSTI) is negatively related to banks risk management (CAPRK) and is not

significant with a p-value greater than (p < 0.1) significance level. The estimated coefficient of LINSTI 0.113 indicates that an 11% increase in LINSTI will cause 0% reduction in risk management. Comparing the results with the initial results recorded in model 1, an inconsistent negative relationship between institutional ownership and banks risk management are recorded; that is whereas there is no significant relationship between institutional ownership and capital risk, there is between institutional ownership and liquidity risk. This confirms the findings of Lotfi and Mohammadi (2014) who found no relationship between institutional ownership and banks risk management.

In terms of state ownership, from Table 8 model 1 the coefficient of LSTATE is positive but not statistically significant (p-value > 0.1). The result suggests that there is no significant relationship between LSTATE and banks risk management (RM). The result is consistent with prior studies like Lestari (2018) who found no significant relationship between state ownership and bank risk management. This is because every bank has its own policy to decide the degree of bank risk-taking.

Similarly, from Table 8 model 2 the result shows that LSTATE is positive and not significant with a p-value which is greater than (p < 0.1) significant level. Thus, the estimated coefficient of LSTATE 0.124 shows that a 12% increase in LSTATE leads to a 0% rise in CAPRK. Comparing the results with the initial results recorded in Table 8 model 1, a consistent positive but insignificant relationship is recorded between LSTATE and banks risk management.

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These results support the argument that increased or decreases in state ownership does not have any significant relationship on risk management. These findings are consistent with prior studies like Lestari, (2018) who found no relationship between state ownership and banks risk management. On the contrary, El-Masry, Abdelfattah and Elbahar (2016); Dong, Meng, Firth and Hou (2014) and Boateng, Liu and Brahma (2018) found positive relationship between state ownership and banks risk management whereas Shaban and James (2018) and Braham, Belkacem, and Peretti, (2018) found a negative relationship between state ownership and banks risk management.

In terms of the control variables, the results in Table 8 model 1 indicate that BANKSIZE and BANK AGE are negatively related to bank risk management (RM), but not statistically significant with a p-value greater than 0.1. This implies that the SIZE of a bank regardless big or small does not have a significant effect on bank risk management. Likewise, the AGE of a bank whether old or young has no significant effect on bank risk management. These results contradict existing literature.

Unlike the result in model 1, the coefficient of BANKSIZE is negative and statistically significant in model 2. This suggests that there is a significant relationship between BANKSIZE and banks risk management (CAPRK). The results do not confirm the results recorded in model 1. Thus, the estimated coefficient of BANKSIZE 0.0459 shows that a 4% increment in CAPRK leads to a 4% fall in CAPRK. The reason for the negative relationship could be that as banks grow they become reluctant to managing risk because they think they have arrived. It could also be that management uses the growth in the bank for

their own gain by not managing risk properly. These findings contradict existing literature.

Also from model 2, the coefficient of BANAGE is positive and statistically significant. This suggests that there is a significant relationship between BANAGE and banks risk management (CAPRK). The results do not confirm the results recorded in model 1. Thus, the estimated coefficient of BANAGE 0.0142 shows that a 1% increase in CAPRK leads to a 1% increase in CAPRK.

From model 1, the coefficient of BANTYP is positively related to risk management (RM), but not statistically significant (p-value > 0.1). This implies that there is no significant relationship between bank type and bank risk management (RM). Indicating that both foreign and local bank has no relationship with risk management.

The results recorded in table 8 partially do not support hypothesis H1a that predicts no relationship between institutional ownership and banks risk management. But do support hypothesis H1b that predicts no relationship between state ownership and banks risk management.

1. H1a: there is no relationship between institutional ownership and banks risk management.

2. H1b: there is no relationship between state ownership and banks risk management.

The hypotheses were tested at 99%, 95% and 90% confidence levels with an expected error of 1%, 5%, and 10%. The rule of thumb is that the null hypothesis is rejected when the p-value is less than the threshold alpha of 0.1 (i.e. $p <, 0.1$). From Table 8, the p-value for institutional structure and banks

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risk management (LIDRK) in model 1 is less than 1 percent significant level. This is below the threshold alpha of 0.05 level of significance, but greater than 1 percent significant level in model 2. Therefore we partially reject the null hypothesis which states, "There is no relationship between institutional ownership and banks risk management."

Also from table 8, the p-value for state ownership and banks risk management (LIDRK) in model 1 and model 2 are greater than 1 percent significant level. This is above the threshold alpha of 0.1 level of significance. Therefore the study supports the null hypothesis which states, "There is no relationship between state ownership and banks risk management."

Board Structure and Banks Risk Management

To investigate the relationship between Board Structure and Banks Risk Management, there is the need to establish whether to use random effect or fixed effect model. Table 9 below includes the Hausman test results.
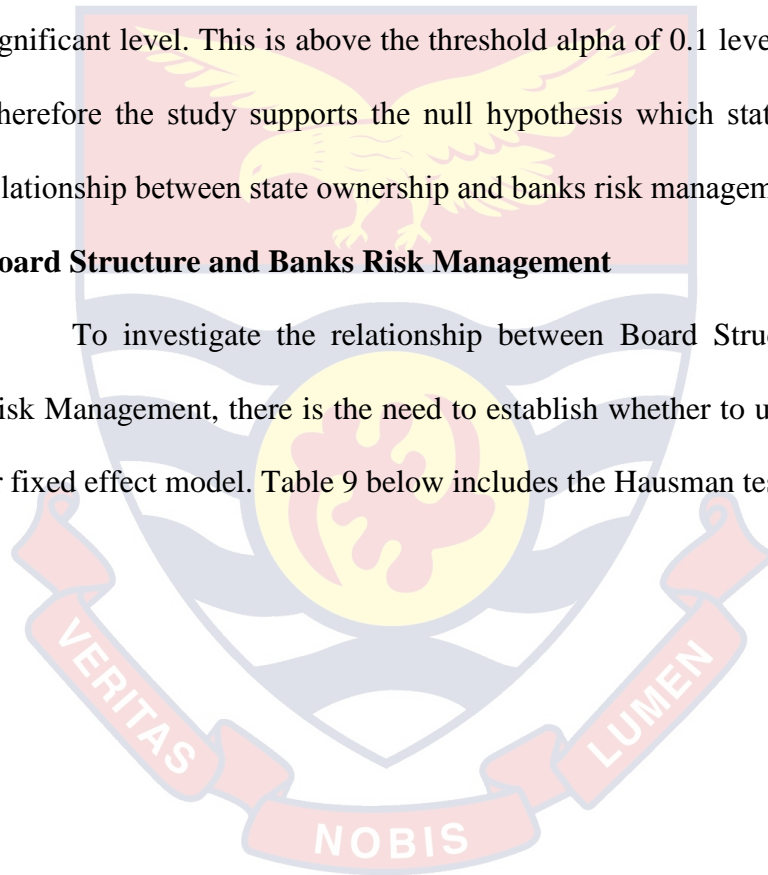
Table 9: Regression results for ownership structure using LIDRK and CAPRK

VARIABLES	(3) LIDRK Random effect	(4) CAPRK Fixed effect
LBSIZE	0.0416***	0.000669
	(0.0118)	(0.00291)
LBIND	0.0527	-0.00781
	(0.0722)	(0.0175)
LBgDIV	0.112	0.0419
	(0.194)	(0.0486)
LBEXP	0.163*	-0.0741***
	(0.0853)	(0.0259)
LRkC	-0.0966	0.0597***
	(0.0589)	(0.0161)
BANKSIZE	-0.0192	-0.00906**
	(0.0152)	(0.00452)
BANTYP	-0.101	
	(0.0796)	
BANAGE	-0.000214	0.00115
	(0.00132)	(0.00174)
.BANTYP		-
Constant	0.704**	0.261**
	(0.316)	(0.0741)
Observations	137	137
R-squared	0.253	0.164
Number of Bank	18	18
Chi2	0.0021	
F-Statistics		0.0000
P- values	0.3226	0.0000

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Fieldwork, Adams (2019)

Note: In model (3) – the dependent variable is LIDRK refers to Liquidity Risk, and in model (4) – the dependent variable is CAPRK refers to Capital Risk, LBSIZE refers to lag of board size, LBIND is lag of board independent, LBgDIV is lag of board diversity, LBEXP is lag of board expert, LRkC is lag of the presence of risk management committee, BANKSIZE is bank size, BANTYP is bank type and BANAGE is bank age.

From Table 9, the result of the test in 3 shows probability values of 0.3226 which is greater than the alpha (p > 0.05). Therefore, the study did not reject the null hypothesis that random effects model is the most appropriate model, and reject the alternative hypothesis, indicating that, fixed effect model is not the most appropriate model for the study. Also for model 4, the result of the test shows probability values of 0.0000 which is less than the alpha (p < 0.05). Therefore, the study rejected the null hypothesis that random effects model is the appropriate model, and accepted the alternative hypothesis, indicating that, fixed effects model is the most appropriate model for the study.

Table 9 presents the result of both random and fixed effects panel regression models used to investigate the relationship between Board Structure and Banks Risk Management. The R-square for the model 3 is 0.253. This indicates that the explanatory variables explain 25.3 percent of the variations in banks Risk Management (LIDRK). But the R-square for the model 4 is 0.164. This indicates that the explanatory variables explain 16.4 percent of the variations in banks Risk Management (CAPRK). The models are significant with a p-value of 0.01, 0.05 and 0. 1. This suggests that the models are fit for the study.

From Table 9, 3, the result shows that the coefficient of LBSIZE is positive 0.0416 and significant at the 0.01 significance level. This indicates that a 4% increase in board size (LBSIZE) leads to a 4% increase in liquidity risk (LIDRK). The effect seems very small, but this could have a greater impact on banks risk management. The positive relationship between LBSIZE and risk management (LIDRK) suggest that board size can increase banks risk

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management by virtue of their large size, also the reason is that a larger board is more likely to be alert to the agency's problems, because, more people will supervise the work of the management.

When the board size is greater, it is likely to have more independent members with valuable expertise. The reason is that the number of board is considered an important factor in the effective performance of supervisory duties. It can be proved that by increasing the size of the board of directors, there is proper risk management. These findings are consistent with prior studies like Malgharn and Lotfi (2013) who found a positive significant relationship between board size and banks risk management.

Also from the agency point of view, one could argue that a larger board size is more likely to be alert to the agency problems. Because, more people will supervise the work of the management (Kiel, & Nicholson, 2003; Malgharn and Lotfi, 2013). On the contrary El-Masry, Elbahar and AbdelFattah, (2016) found a negative relationship between board size and banks risk management.

On the contrary, from Table 9, 4, the result shows that the coefficient of LBSIZE is positive 0.000669 but not significant. This indicates that a change in board size (LBSIZE) leads to no change in risk management (CAPRK).

Interestingly, the coefficient LBIND from table 9, 3, is positive 0.0527 but not significant, suggesting that, the inclusion of a higher proportion of non-executive directors on banks board could not significantly increase banks risk management. This result supports the idea that the independent director or member is a dormant board member whose presence in the board of directors

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does not have any impact upon risk management. The result is consistent with prior studies like El-Masry, Elbahar, and AbdelFattah, (2016) and Lotfi and Malgharni (2013) who found no relationship between board independence and banks risk management. On the contrary Ntim, Lindop, and Thomas (2013), and Desender (2007) found a positive relationship between board independence and risk management.

Similarly, the coefficient LBIND from table 9, 4, is negative -0.00781 and not significant, suggesting that, the inclusion of a higher proportion of non-executive directors on banks board could not significantly increase banks risk management. This result confirms the results recorded in table 9, 4, but this has a negative direction.

From table 9, 3, the coefficient of Board Gender Diversity (LBgDIV) is positive 0.112 but not significant. This indicates that an 11% increase in LBgDIV leads to no change in risk management (LIDRK). This result confirms Loukil and Yousfi, (2016) arguments that there is no significant relationship between Board Gender Diversity and the tendency to take strategic or financial risk-taking. The reason could be that, women on the board think that they lack qualities such as ambition and confidence, leadership skills such as decisiveness and the ability to influence behavior, and relevant experience or education level compared to men. On the contrary Sila, Gonzalez, and Hagendorff (2016), Adams and Ragunathan (2017) and Berger, Kick and Schaeck (2014) found a negative relationship between Board Gender Diversityand risk management.

Similarly, the coefficient of Board Gender Diversity (LBgDIV) no table 9, 4, is positive 0.0419 but not significant. This indicates that a 4 %

increase in LBgDIV leads to no change in risk management (CAPRK). This result confirms Loukil and Yousfi, (2016) arguments that there is no significant relationship between Board Gender Diversityand the tendency to take strategic or financial risk-taking. This finding is consistent with the findings in table 9, 4.

The coefficient of bank expert (LBEXP) in table 9, 3, is positive 0.163 and significant at the 0.1 significance level. This indicates that a 16% increase in LBEXP leads to a 16% increase in risk management (LIDRK). This implies that a higher percentage of bank expert on banks board leads to higher or better risk management. This result confirms Yang, Ishtiaq, and Anwar (2018) arguments that, there is a positive relationship between board expert and risk management. These findings are consistent with the findings Ahmad, Abdullah, Jamel, and Omar (2015), and Minton, Taillard, and Williamson (2011) who found a positive relationship between bank expert and risk management (LIDRK). This finding support the resource dependency theory which claim that bank experts bring expertise and knowledge to the firm as a result of their experience in internal decision making in other firms. These directors serve as executives in other organizations, and hence bring a working knowledge of strategic decision making and internal firm operations. As such, they may serve as sounding boards for executives, providing advice and council on internal operations (Mace, 1971). Further, their experience outside the firm permits them to supply alternative viewpoints on internal issues, providing executives with valuable information about how other firms deal with similar problems and concerns.

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But the coefficient of bank expert (LBEXP) on table 9, 4, is negative -0.0741 and significant at the 0.01 significance level. This indicates that a 7% increase in LBEXP leads to a 7% decrease in risk management (CAPRK). This implies that a higher percentage of bank expert on banks board leads to poor risk management. The reason could be that bank expert on the board, lack qualities such as ambition and confidence, leadership skills such as decisiveness and the ability to influence behavior, and relevant experience or education level. Also it could be associated to board member whose presence in the board of directors does not have any impact upon risk management. This result contrast existing literature and the resource based theory.

From table 9, 4, the coefficient of the present of the risk management committee (LRkC) is negative -0.0966 and statistically insignificant. Specifically, the result could be as a result of the existence of higher proportions of executive directors on the risk management committee. Banks that do not separate the positions of chief executive officers and board chairs, lack of board expertise and board in diligence are likely to be the cause of this relationship. This finding is consistent with the findings of Yatim, (2010).

On the other side, from table 9, 4, the coefficient of the present of the risk management committee (LRkC) is positive 0.0597 and statistically significant at the 0.01 significance level. This indicates that a 5% increase in LRkC leads to a 5% decrease in risk management (CAPRK). This implies that the presence of a risk management committee leads to good risk management. This could be associated to the committee having members who have the necessary qualities such as ambition, confidence, leadership skills such as decisiveness and the ability to influence behavior, and relevant experience or

education level. It could also be that, the committee is made of bank experts who are active board member whose presence in the board of directors have an impact upon risk management. These findings are consistent with the findings of Bhuiyan, Cheema, and Man (2017), and Abdullah, Shukor and Rahmat (2017) who found a positive relationship between the presence of the risk management committee (LRkC) and risk management (CAPRK). This support the agency theory.

In terms of the control variables, from table 9, 4, Bank size (SIZE) is negative -0.0192 and insignificant. BANTYP is negative -0.101 and insignificant and BANAGE is also negative -0.000214 and insignificant. This suggests that bank size, bank type, and bank age have no significant effect on Ghanaian banks risk management (LIDRK). From model 4, unlike the result in model 3, the coefficient of BANKSIZE is negative and statistically significant. This suggests that there is a significant relationship between BANKSIZE and banks risk management (CAPRK). The results do not confirm the results recorded in model 3 though both show negative direction. Thus, the estimated coefficient of BANKSIZE -0.00906 shows that a 0.09% increase in CAPRK leads to 0.09% fall in CAPRK. The reason for the negative relationship could be that, as banks grow they become reluctant to managing risk because they think they have arrived. It could also be that management uses the growth in the bank for their own gain by not managing risk properly. These findings contradict the existing literature.

BANTYP and BANAGE are not significant. This suggests that bank type and bank age have no significant effect on Ghanaian banks risk management (CAPRK).

The results recorded in table 9 do not support hypotheses H2a H2e that predict no relationship between board size, the presence of risk management committee and banks risk management respectively, but do support hypotheses H2b and H2c that predict no relationship between board independence, Board Gender Diversity and banks risk management respectively.   But finally do not support hypotheses H2d that predicts no relationship between board expert and banks risk management

1. H2a: there is no relationship between board size and banks risk management

2. H2b: there is no relationship between board independence and banks risk management

3. H2c: there is no relationship between Board Gender Diversity and banks risk management

4. H2d: there is no relationship between board expert and banks risk management

5. H2e: there is no relationship between the presence of risk management committee and banks risk management

The hypotheses were tested at 99%, 95% and 90% confidence levels with an expected error of 1%, 5%, and 10%. The rule of thumb is that the null hypothesis is rejected when the p-value is less than the threshold alpha of 0.1 (i.e. $p <, 0.1$).

From Table 9, the p-value for board size and banks risk management (LIDRK) in model 3 is less than 1 percent significant level. This is below the threshold alpha of 0.05 level of significance, but greater than 1 percent significant level in model 4. Therefore we reject the null hypothesis which

states, "There is no relationship between board size and banks risk management."

Also from table 8, the p-value for board independence and banks risk management in Table 9 (both 3 and 4) is   greater than 1 percent significant level. These are above the threshold alpha of 0.1 level of significance. Therefore the study supports the null hypothesis which states, "There is no relationship between board independence and banks risk management."

Similarly, from table 9, the p-value for Board Gender Diversity and banks risk management in 3 and 4 are greater than 1 percent significant level. These are above the threshold alpha of 0.1 level of significance. Therefore the study supports the null hypothesis which states, "There is no relationship between Board Gender Diversity and banks risk management."

More so, From Table 9, the p-value for board expert and banks risk management in both 3 and 4 are less than 1 percent significant level but in opposite direction. This is below the threshold alpha of 0.1 level of significance. Therefore the study rejects the null hypothesis which states, "There is no relationship between board expert and banks risk management.

Finally, from table 9, the p-value for the present of risk management committee and banks risk management (LIDRK) in model 3 is greater than 1 percent significant level. This is above the threshold alpha of 0.1 level of significance. But less than 1 percent significant level in model 4. Therefore the study supports the null hypothesis which states, "There is no relationship between the present of risk management committee and banks risk management."

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Chapter Summary

The chapter presented and discussed the results obtained from the analysis. Descriptive statistic for the dependent and independent variables as well as the control variables was presented, followed by the correlation and variance inflation factor (VIF) test which indicated that multicollinearity is not problematic for the models. The Hausman (1978) test for model selection used showed that the fixed effect model and the random effect model were the most appropriate model for the study. In addition, the relationship between the variables were analyzed and discussed. The variables were jointly significant in explaining the risk management of banks in Ghana. The various results were presented in tables.
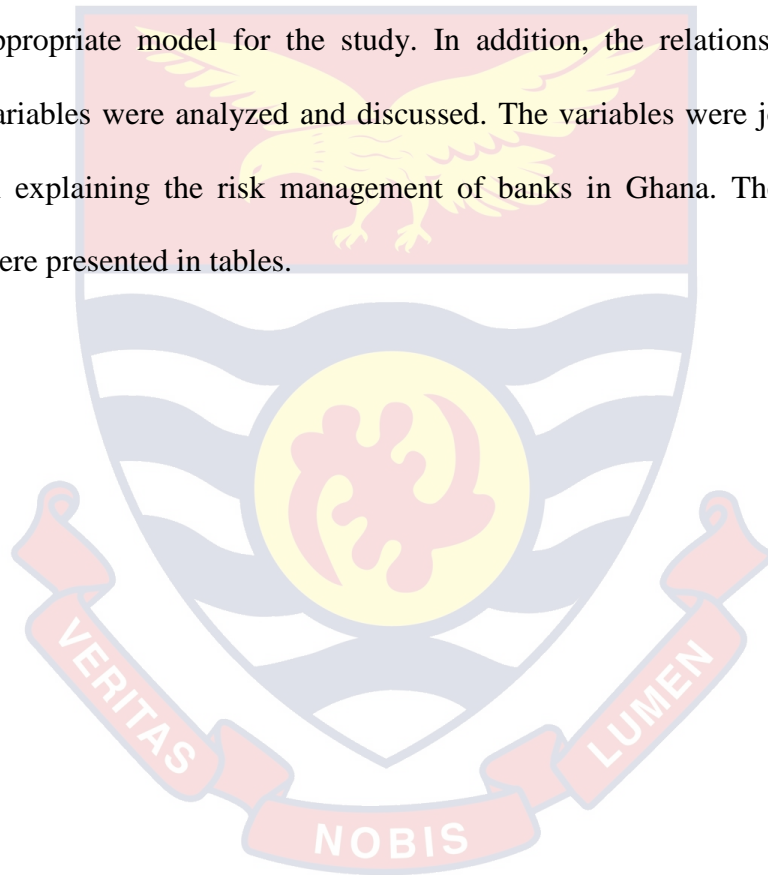
CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the study and draws a conclusion based on the findings. It also provides recommendations to relevant stakeholders on the issue and recommendations for further studies.

Summary

The study sought to investigate the relationship between corporate governance and risk management of banks in Ghana. Risk management activities are carried out with the aim of maximizing shareholders wealth. However, the activities are influenced by corporate governance. As a result, the literature suggests the importance of corporate governance in dealing with risk management. The study investigated the relationship between ownership structure and risk management of banks in Ghana, and also examined the relationship between board structure and risk management of banks in Ghana.

Theoretical and empirical literature relating to corporate governance and risk management were reviewed. Theories underpinning the study were also discussed. The main theories discussed were agency theory and resource dependency theory in relation to corporate governance and risk management. Additionally, the conceptual framework for the study was designed to explain the relationship between corporate governance and risk management.

The study employed a quantitative approach. Panel dataset of individual commercial banks was used for the study. The sample for the study consisted of licensed commercial banks in Ghana. Based on the Hausman (1978) test, fixed and random effects regression models were used for the

analysis. Data was obtained from the Bank of Ghana Supervisory Division covering 18 banks over a period of 11 years (2008-2018). Based on literature a set of variables were used for the study. Risk management as used in the study was measured by capital risk (CAPRK) and liquidity risk (LIDRK). The independent variables include board size, board independence, board diversity, bank expert, and risk management committee. The ownership variables that were used together with the independent variables were the institutional ownership and state ownership. To control for the potential effect of firm-specific factors on bank risk management, the study controlled bank size, bank age, and bank type.

Examining the relationship between ownership structure and risk management of banks in Ghana, it was revealed that, institutional ownership is positively associated with banks risk management specifically liquidity risk (LIDRK). The result supported the proposition that Institutional investors with a large investment in a firm have a direct incentive to seek more comprehensive information on the risk-management practices of their portfolio firms and to respond through exit or engagement (Harper Ho, 2010). The result also supports prior studies like Callen and Fang (2013) and Hutchinson, Seamer, and Chapple (2015) and who found a positive relationship between corporate governance and banks risk management (LIDRK). However, the study revealed that there is no relationship between institutional ownership and risk management (capital risk). This confirms the findings of Lotfi and Mohammadi (2014) who found no relationship between institutional ownership and banks risk management. Suggesting that the higher the number of institutional ownership of banks, the higher the chances of

higher liquidity risk hence proper risk management. On the other hand, changes in institutional ownership do not affect capital risk, hence does not affect risk management.

In addition, state ownership showed no relationship with risk management. That is both liquidity risk and capital risk, suggesting that if state ownership changes it has no effect on risk management. The result is consistent with prior studies like Lestari (2018) who found no significant relationship between state ownership and bank risk management. This is because every bank has its own policy to decide the degree of bank risk-taking.

On the issue of board structure, the results revealed that board size is positively associated with risk management (liquidity risk). This finding is consistent with prior studies like Malgharni and Lotfi (2013) who found a positive significant relationship between board size and banks risk management. The positive relationship between LBSIZE and risk management (LIDRK) suggest that board size can increase banks risk management by virtue of their large size, also the reason is that a larger board is more likely to be alert to the agency's problems, because, more people will supervise the work of the management. But board size has no relationship with capital risk.

It was also discovered that board independence has no relationship with risk management (capital and liquidity risk). Suggesting that, the inclusion of a higher proportion of non-executive directors on banks board could not significantly increase banks risk management. This result supports the idea that the independent director or member is a dormant board member whose presence in the board of directors does not have any impact upon risk

management. The result is consistent with prior studies like El-Masry, Elbahar, and AbdelFattah (2016) and Malgharni and Lotfi (2013) who found no relationship between board independence and banks risk management.

Board Gender Diversity (LBgDIV) has no relationship with risk management. This result confirms Loukil and Yousfi, (2016) arguments that there is no significant relationship between Board Gender Diversity and the tendency to take strategic or financial risk-taking. This could mean women on the board think that they lack qualities such as ambition and confidence, leadership skills such as decisiveness and the ability to influence behavior, and relevant experience or education level compared to men.

It was discovered that Bank expert is positively significant with liquidity risk at 1 percent significant level. This result confirms Ahmad, Abdullah, Jamel, and Omar (2015) arguments that, there is a positive relationship between board expert and risk management. But bank expert is negatively significant with capital risk at 0.01 significant levels. This implies that a higher percentage of bank expert on banks board leads to poor risk management. The reason could be that, bank expert on the board, lack qualities such as ambition and confidence, leadership skills such as decisiveness and the ability to influence behavior, and relevant experience or education level, also it could be that the expert is a dormant board member whose presence in the board of directors does not have any impact upon risk management.

The presence of the risk management committee was positively significant with capital risk at 0.01 significant levels. This implies that the presence of risk management committee leads to good risk management. The

reason could be that, the committee has members who have the necessary qualities such as ambition and confidence, leadership skills such as decisiveness and the ability to influence behavior and relevant experience or education level, also it could be that the committee is made of bank experts who are active board member whose presence in the board of directors have an impact upon risk management. These findings are consistent with the findings of Bhuiyan, Cheema, and Man (2017), and Abdullah, Shukor and Rahmat (2017) who found a positive relationship between the presence of the risk management committee (LRkC) and risk management (CAPRK).

But the presence of the risk management committee showed a negative insignificant relationship with liquidity risk. The result could be as a result of the existence of higher proportions of executive directors on the risk management committee and banks that do not separate the positions of chief executive officers and board chairs, lack of board expertise and board in diligence are likely to be the cause of this relationship. This finding is consistent with the findings of Yatim, (2010).

On the issue of the control variables, Bank size is seen to exhibit a negative significant relationship with liquidity risk suggesting that the increase in bank size leads to poor risk management. On the other side, Bank size is negatively not significant with capital risk. Bank age has a positive significant association with risk management (CAPRK) but has no relationship with liquidity risk. It was concluded that the results do not support hypothesis 1 and 2 which predict that there is no relationship between ownership structure and risk management and board structure and risk management of banks in Ghana respectively.

Conclusions

Firstly, the results found a positive association between institutional ownership and banks risk management specifically liquidity risk (LIDRK). Suggesting that intuitional ownership has a positive influence on banks risk management. The result is consistent with the proposition that, Institutional investors with a large investment in a firm have a direct incentive to seek more comprehensive information on the risk-management practices of their portfolio firms and to respond through exit or engagement (Harper Ho, 2010).

Interestingly, board size is positively associated with risk management (liquidity risk). This finding is consistent with prior studies like Lotfi and Malgharni (2013) who found a positive significant relationship between board size and banks risk management. The study found a positive significant relationship between bank expert and risk management (liquidity risk) This result confirms Berger, Kick and Schaeck (2014) arguments that better-educated executives employ more sophisticated risk management techniques and adjust the business model accordingly. The presence of the risk management committee was positively impact capital risk at 0.01 significant levels. This implies that the presence of a risk management committee leads to good risk management. Therefore, it can be concluded that corporate governance has a relationship with banks risk management.

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Recommendations

Based on the findings of the study, the following recommendations are made to be considered by the banks in Ghana.

Shareholders must review the banks governing board to include more Bank experts to serve as a control mechanism and also enhance risk management. Thus, bank expert can provide useful knowledge and experience from their own industry to help in the bank's risk management.

Institutional shareholders must use their voting right wisely by bring on the board the right people who can help with risk management;

Institutional shareholders must also perform their monitory role well.

BOG should come out with policies that will ensure that growing banks still peruse proper risk management.

Shareholders must establish or strengthen risk management committee to serve as a control mechanism and also enhance risk management. Thus, the risk management committee can provide useful knowledge and experience from their own industry to help in the bank's risk management.

Suggestions for Further Research

The findings of this study provide the following avenues for further studies:

A study that can explore other risk management measures such as credit risk, non-performing loans to further explain the risk management activities of banks in Ghana

A study that will explore other corporate governance variables such as foreign ownership, managerial ownership, ownership concentration, board

compensation, and board activities to further explain the effect of corporate governance on risk management

A study that will focus on identifying the specific activities that are more influential in banks risk management

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