UNIVERSITY OF GHANA

EXECUTIVE COMPENSATION, OWNERSHIP STRUCTURE AND LOAN QUALITY OF BANKS IN GHANA

BY

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JULY, 2014

DECLARATION

I hereby declare that this work is solely produced out of my own effort. It is not the work of any one or copied or submitted for award of any kind. All references used in the work have been fully acknowledged. I take responsibility for any error or omission thereof.

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CERTIFICATION

We hereby certify that this thesis was supervised in accordance with procedures laid down by the University

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DEDICATION

I thank God for having brought me this far and dedicate this dissertation to my family, whose support, patience and encouragement made this work successful.

ACKNOWLEDGEMNENT

First and foremost, I would like to thank the Almighty God for giving me the strength to go through the course and to completing successfully. The completion of this work has made possible through the contributions of many people in various ways. I wish to express my profound gratitude to Prof Abor and Dr. Amidu, my supervisors for the friendly and brotherly guidance in which they treated me and the corrections and suggestions they made to bring this work to the present standard. Special thanks, also goes to Dr. Elikplimi Agbloyor for the support and guidance; I have really learnt a lot from him and I say a big thank you and wish him God's blessing.

ABSTRACT

Motivated by the need to analyze the effect of effective corporate governance mechanisms on the enhancement of the loan quality of banks in emerging economies, this study aims to analyze the effects of executive compensation and ownership structures of Ghanaian banks on the quality of loans. It also examines the moderation effect of ownership structure on the relationship between compensation and loan quality. The study uses a panel data on 26 Ghanaian banks over the period, 2003-2011.The ratio of non-performing loans to gross loans and advances which served as a measure of loan quality is the dependent variable while executive compensation and various ownership structures are the main independent variables. The findings of the study reveal that management is efficient when director shareholding is very prominent in banks. Institutional ownership and public listing of banks are also found to enhance loan quality through better monitoring and governance while lag of NPL, exchange rate depreciation and increases in net interest margins are as well seen to improve loan quality. No significant relationship is found between the interaction terms and non-performing loans, hence, loan quality in Ghana is not sensitive to the relationship between executive compensation and ownership structures.

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LIST OF ABBREVIATIONS

CFA -	French Speaking African Countries
DFIs –	Development Finance Institutions
DMB –	Deposit Money Banks
GDP –	Gross Domestic Product
GMM –	Generalized Method of Moments
GMM SYS –	Systems Generalized Method of Moments
GSE –	Ghana Stock Exchange
IMF –	International Monetary Fund
LTIPs –	Long-term Incentive Plans
MENA –	Middle East and North Africa Countries
Non-CFA -	Non-French Speaking African Countries
NPL –	Non-Performing Loans
NPV –	Net Present Value
OLEM –	Other Loans Especially Mentioned
PVSOs -	Performance-Vested Stock Options
S&P 500 –	Standards and Poor 500
SOB –	State Owned Banks
STI –	Short-term Incentives
TSOs -	Traditional Stock Options

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This Chapter sets out the background to the study and the problem statement. It subsequently presents the research objectives and research questions, the significance of the study and then, a layout of the study's organization.

1.1 Background to the Study

Loan portfolio management is a key activity of banks considering the fact that the quality of loans is crucial to the overall success of a bank. Loans usually constitute the greatest proportion of banks' assets with equivalent imminent risks to their capital and this makes it pertinent for stakeholders to attach maximum efforts and attention to effective management of the loan portfolio. Asset quality has been found to be a statistically significant predictor of insolvency, since almost all banking institutions that failed over the years usually recorded high rates of loan impairments preceding their failure (Barr & Siems 1994; Demirguc-Kunt, 1989 & Whalen 1991). Knowing that managers' ability to attract quality loans and effectively monitor the loan portfolio is essential to a quality loan portfolio, and consequently the maximization of shareholder value, management quality clearly, becomes indispensable to loan quality (VanHoose, 2011).

In efforts to enhance performance, corporate governance mechanisms are usually employed by most institutions including banks to aid in aligning managers' interests to that of shareholders to ensure quality asset management and improved performance. Most existing studies have assessed these performance relationships; however, attention is mostly on the qualities borrowers

possess which enable them attract low interest debts thereby qualifying as quality loans. Others focus on macroeconomic and other determinants of loan quality and often ignore the factors that influence the decisions of the loan managers in underwriting quality loans (Louzis et. al. 2011; Fields, 2012; Alhassan, 2014).

Through their loan officers, however, managers are expected to have the most accurate information about a borrowing firm's business prospects and the greatest influence on a firm's actions which puts them in a better position to determine the quality of loans extended (Dezso & Ross 2012). DeYoung (1997) & Peristiani (1996) both indicate that measured cost efficiency is positively related to examiners' ratings of bank management quality while the former further postulates that banks' management ratings are more strongly related to their asset quality ratings amongst all other forms of examination ratings. This makes it necessary to examine factors that influence the managers' ability to ensure quality loan portfolios. Two of such factors are examined in this study and they include executive compensation and ownership structure of banks.

Valued compensation motivates people to put in their best effort in performing their duties and encourages them to work harder since good incentives give an indication that their services are valued by their employers. This results in higher productivity, low turnover and higher efficiency in production which is the main expectation of every investor. Many studies in the developed world (Jensen & Meckling 1976; Gomez-Mejia, 1994; Barkema & Gomez-Mejia, 1998; VanHoose, 2011) have shown that compensation influences the performance of managers and also determines the management qualities they bring on board to ensure the maximization of

shareholder value. This study seeks to determine whether this applies in the developing and emerging economies by examining the influence of compensation on the performance of bank managers in their portfolio management.

Moreover, the ownership structure of a bank may determine the level of influence owners exert on managers to ensure efficient management of resources and asset quality. Majority of banks in Ghana have concentrated ownerships and foreign banks have considerable shares of most banks. Following the recent crisis in the global financial sector in 2008, Ghana's financial soundness indicators showed signs of the contagion mainly through exposure to counterparties in the form of nostro (foreign accounts of domestic banks held in other countries) balances and placements with some of the affected banks abroad. Deposit money banks' (DMBs') nostro balances at the end of December 2008 was 55.46% of the net worth of banks, an increase on 48.12% in 2007. Similarly, placements constituted 26.0% of net worth of banks compared with 23.9% in September 2008, but this is no cause for alarm for the central bank since the figures are within the internationally acceptable prudential limits, except that these placements, nostro balances and borrowings are overly concentrated with a few international banks and thus require close monitoring (ISSER, 2009).

This has become pertinent because fifty-one percent of Ghana's banking sector market share is held by subsidiaries of foreign banks (*CEPA, 2012)* whose large nostro placements has the effect of reducing the capital base of the subsidiaries and subsequently producing high lending rates which mostly precipitates non-performing loans especially in times of financial crisis. The rates of non-performing loans in state-owned banks also keeps soaring owing directly or indirectly to

the government‘s accumulation of domestic arrears. The Central Bank’s policy which saw an increase in capital adequacy requirement to GHS 60 million after the crisis and subsequently to GHS120 million in 2013 is a step in the right direction but it has not necessarily solved the problem of increasing rates of non-performing loans in Ghanaian banks.

The Financial System Stability Update on Ghana by IMF asserts to the fact that as at 2011, though, “the banking system was liquid, profitable and highly capitalized in aggregate, but nonperforming loans (NPLs) were very high and a significant segment of the banking industry was fragile” (IMF, 2011). Ownership structure can therefore be an influential factor on the performance of the loan portfolio in Ghana and is worth studying.

1.2 Problem Statement

The relationship between compensation and firm performance has received much attention since the study of Jensen & Meckling (1976) which postulates that manager’s incentives should be aligned to the performance of firms in order to mitigate agency costs. The agency problem in the lending process emanates from the separation between the lending decision (made by the loan officer or manager in case of large amounts), and the capital used (of the lender), and due to the fact that the lending decision depends on information that is neither observable nor verifiable by the lender who are mostly bank owners and depositors (Ben-David, 2011). Contrary to the prediction of Jensen & Meckling (1976), managers develop the tendencies to extend high-risk loans or manipulate earnings in the short-term to make higher perquisites since owners and creditors are the ones who bear the consequence of high risk investments (Levine 2003).

Although the problem can be mitigated by aligning incentives to ensure effective monitoring and supervision by loan officers and mitigate the risk-shifting incentive (e.g., by loan officers having an equity stake in the transaction, Sufi 2007; John & John, 1993), in practice, compensation of most bank executives in Ghana is some combination of fixed salary and a bonus based on booked volume due to the dormant nature of the stock exchange. Meanwhile existing literature dwells mostly on linking executives' pay to performance through options (Morck et al. 1988; Gomez-Mejia, 1994; Barkema & Gomez-Mejia, 1998; VanHoose, 2011; Dezso & Ross 2012). Coupled with the fact that there is hardly any study on compensation of banking institutions in Ghana, this study seeks to find empirical evidence on the effect of executive compensation on quality of the loan portfolio since the severity of the agency problem differs around the world due to differences in regulation enforcement and legal protection of shareholder rights (Levine, 2003).

The degree of ownership concentration also influences executive and board compensation (Bebchuk & Fried, 2003). With the separation between lenders and the lending decision makers, concentrated owners are more likely to mitigate the effect of the agency problem through controlling compensation schemes and other means and this makes it imperative to study ownership structure and compensation alongside. Recent studies on ownership structure by Shehzad et al. (2010) shows for a sample of 800 banks from 50 countries that concentrated ownership has a negative effect on NPLs ratio at least if ownership is above 50% of a bank's shares. Shehzad et.al (2010) however considered only conglomerates, ignoring other forms of ownership structures. This study examines the impact of various types of ownership structure of

banks on non-performing loans in Ghana where shareholder protection and regulatory control is somehow weak (Levine, 2003).

The probability of ownership influencing executive compensation motivates this study to examine, the moderation effect of ownership structure on the relationship between executive compensation and loan quality. This study therefore seeks to contribute to literature in the following ways: firstly, it provides empirical work on executive compensation in Ghana which appears to be scarcely available and examines the effect of bank executives' compensation on the quality of their loan portfolio. Secondly, it assesses how different forms of ownership structures affect loan quality in contrast to assessing the overall impact of concentrated and diversified ownerships on loan performance as documented in existing literature. Thirdly, this study examines the moderation effect of ownership structures on the relationship between compensation and loan quality in the Ghanaian context where regulations and their level of enforcement differ.

1.3 Objectives of the Study

The main objective of this study is to examine the relationship between ownership, executive compensation and loan quality of Ghanaian banks. Specifically, the study seeks;

i. to examine the effect of executive compensation on bank loan quality.

ii. to ascertain the effect of ownership structure on loan quality.

iii. to evaluate the sensitivity effect of ownership structure on the relationship between compensation and loan quality

1.4 Research Questions

This study subsequently seeks to answer the following questions;

i. Does executive compensation affect bank loan quality?

ii. What is the effect of ownership structure of banks on loan quality?

iii. What is the moderation effect of ownership structure on the relationship between compensation and loan quality?

1.5 Significance of the Study

The purpose of this study is to examine whether executive pay and bank ownership structure has an effect on the quality of loans administered by the banks in Ghana. Empirical results from the study provides literature on compensation, ownership and loan quality of banks in Ghana which aims to aid policy decisions as well as inform banks on how executive compensation and ownership structure affect the directives of banking institutions.

Banks play a critical role in industrial expansion, credit allocation and corporate governance of other firms in every economy. This makes it pertinent to ensure that the management of banks face sound corporate governance practices so as to make it more laudable for them to enforce good governance over other firms and ensure effective allocation of funds for the overall growth of the country. Increasing competition in the growing banking sector of Ghana warrants the need to determine whether executive pay is a determinant of loan quality in order to inform banks on the design of executive pay to enhance efficient asset management and overall banking success.

Moreover, increased level of foreign ownership of Ghanaian banks makes it essential to regulate ownership and control of banks due to its implications for the economy. The government needs

to ensure that it holds significant share of the banking industry to enable it regulate the economy and implement its policies more easily. This study offers insights to stakeholder's interest on the implications of ownership and compensation on loan quality, laying bare its short-comings and suggesting to future research to design more efficient compensation schemes as well as adopt ownership types that enhance the performance of the banking industry.

1.6 Limitation of the Study

The main limitation of this study was the difficulty in getting complete information on total compensation received by bank executives due to the opaqueness of the banks in Ghana. The study therefore relied on only emoluments and fees which are made available by the banking institutions in their final statements.

1.7 Research Organization

The rest of the research is organized as follows;

Chapter two provides stylized facts about compensation, ownership and loan quality in Ghana while Chapter three provide more insight into the area of study by reviewing existing literature on the chosen field of study to help identify the existing gaps that need to be filled. Chapter four defines the scope and methodology of the research by introducing the models and statistical procedures to be used as well as the sample frame and data collection tools to be used to carry out the research. The fifth chapter presents the analysis of the study and discusses the results to lay bare the findings of the study as well as its implications. The sixth Chapter presents a summary of the study and draw conclusions about the findings of the study and ultimately make recommendations for the benefit of policymakers, academicians and future researchers.

1.8 Chapter Summary

We have delved into the background and motivation for this study, objectives of the study as well as the organization of this work. In this chapter, we noted that, loans form the greatest proportions of banks' assets base and serve as the main source of value creation for stakeholders of banks. However, the increasing rate of non-performing loans still remains a force to reckon with as it poses high risks of insolvency to banks in the Ghanaian economy. Research has attempted to link borrowers' qualities, macroeconomic and other factors to increasing rates of non-performing loans. This study presents a contribution to literature by examining the effect of various forms of ownership structures as well as executive compensation on non-performing loans. It also investigates the interactive effect of ownership structures and executive compensation on loan quality. The next chapter is an overview of non-performing loans in Ghana's banking industry.

CHAPTER TWO

OVERVIEW OF BANKING IN GHANA

2.0 Introduction

This chapter presents current trends of executive compensation in the banking industry as well as issues pertaining to non-performing loans and forms of ownership structures in Ghana. The chapter discusses the changing trends in executive compensation in relation to observed changes in non-performing loan levels and the trends in ownership forms.

2.1 Executive Compensation

Executive compensation generally consists of financial compensation and other non-financial rewards received by an executive of a firm. Typically, it is a mixture of salary, bonuses, shares of and/or call options on the company stock, benefits, and perquisites, that are ideally configured to take into account government regulations, tax law, the desires of the organization as well as that of the executive, and rewards for performance (Ellig, 2002). Executive pay forms an important aspect of corporate governance, and is often determined by the board of directors of a company. Fundamentally, there are six basic components of compensation namely: salary, short-term incentives (STIs) - sometimes known as bonuses, long-term incentive plans (LTIPs), employee benefits, paid expenses (perquisites) and insurance (Ellig, 2002).

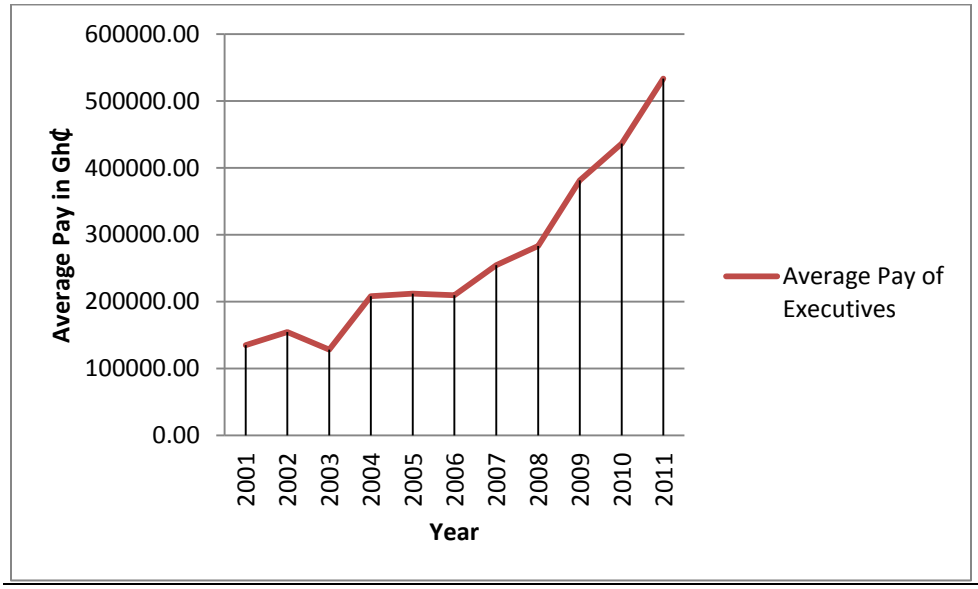
The CEO and other top executives in modern corporations are often paid salary plus short-term incentives or bonuses, a combination which is often referred to as total cash compensation. Whereas bonuses are often discretionary, short-term incentives usually are formula-driven with some performance criteria attached depending on the role of the executive. For instance, a CEO's pay could be based on incremental profitability and revenue growth. Executives may also be

compensated with a mixture of cash and shares of the company which are almost always subject to vesting restrictions (a long-term incentive). To be considered a long-term incentive, the measurement period must be in excess of one year (3–5 years is common). The vesting term refers to the period of time before the recipient has the right to transfer shares and realize value. Vesting can be based on time, performance or both. This form of payment is usually practiced in the developed world where stock markets are more efficient. Other components of an executive compensation package may include perks such as generous retirement plans, health insurance, a chauffeured limousine, an executive jet, and interest-free loans for the purchase of housing (Ellig, 2002).

2.1.1 Trends in Executive Compensation of Ghanaian Banks

The compensation of executives in Ghanaian banks typically consists of cash and bonuses or other performance based incentives. The figure below shows the trends in the compensation of executives over the period 2001 to 2011.

Figure 2.1: Executive Compensation of Banks in Ghana



Source: Authors Analysis using Bank of Ghana Data, 2014

Average fees of directors from the financial statements of banks over the period of 2001-2011 show as indicated on Figure 2.1 that director's pay fluctuated over the period 2001 to 2007 and rose steadily thereafter reaching a peak of about Gh₵ 520,000 in 2011 from about Gh₵ 210,000 in 2007. This indicates that pay levels keep rising over the years but it cannot be emphatically stated that the increases is singularly associated with the need to motivate executives with higher compensations to enhance their performance; considering the fact that inflation and other economic factors has induced increases in general pay levels over the years to reflect the prevailing economic conditions. However, it is likely to be the case, considering the fact that NPL rates declined as pay levels rose between 2010 and 2011.

2.2 Bank Ownership Structure

There is interplay of varied forms of ownership structure in the Ghanaian banking industry lately. These have evolved in recent times as efforts are being made to move from the former system whereby government ownership was the order of the day to a more liberal ownership style that allows banks to have institutional, foreign ownership, private/public ownership, individual ownership or a combination of a number of them.

2.2.1 Evolution of Bank Ownership in Ghana

As mentioned earlier, state banks have dominated over time, but financial reforms have led to an open economy whereby entry of new banks is easy and flexible. Extensive government intervention characterised the financial sector of Ghana in the post independence era, with basically, all of the banks set up between the early 1960s and the late 1970s being wholly or majority owned by the public sector. Meanwhile the government also acquired minority shares in the two already established foreign banks in the mid-1970s; that is Barclays Bank and Standard Chartered Bank, (Amoafo, 2012).

Prior to the economic and financial sector reforms, interest rates were administratively controlled by the Bank of Ghana and a variety of controls were also imposed on the asset allocations of the banks, such as sectoral credit directives. These policies were motivated by the market imperfections and the state of the financial system as inherited from the colonial period which the country believed could not be supported without extensive government intervention in financial markets. These policies sought mainly to raise the level of investment and quicken the pace of development, to change the sectoral pattern of investment, and to keep interest rates both

low and stable (Gockel, 1995). But to the contrary, they resulted in severe financial repression coupled with steeply negative real interest rates and one-sided financing to the public sector.

In order to fill the perceived gaps not served by the commercial banks, especially for long-term finance, three development finance institutions (DFIs) were set up: the National Investment Bank in 1963 to provide long-term finance for industry; the Agricultural Development Bank in 1965; and the Bank for Housing and Construction in 1974, to provide loans for housing, industrial construction and companies producing building materials. The government also acquired 40 per cent equity stakes in the two foreign banks—Barclays Bank and Standard Chartered Bank - following an indigenisation decree enacted in 1975 (which was applied to all large scale industries) rather than nationalising them (Amoafo, 2012).

After many decades of government domination of the banking sector, some problems became paramount. The service standards of the public sector banks began to decline. Their profitability declined and the efficiency of the staff became suspect. Non-performing assets of these banks began to rise. As part of the structural and economic reforms and financial sector liberalisation in the 1980s, the government allowed the setting up of new banks in the private sector. The new generation private banks have now established themselves in the system and have set new standards of service and efficiency. These banks have also given tough but healthy competition to the remaining public sector banks (CEPA, 2012).

Unfortunately, even though the number of banks in Ghana has increased significantly, their capital size does not allow them to lend to big ticket projects mostly in the industrial,

infrastructure and service sectors. Big ticket projects must be wholly or mostly financed by foreign banks. On the other hand, the medium and small enterprises whose credit needs for expansion and working capital needs are not as huge can be adequately met by these new private banks (Amoafo, 2012).

2.2.2 Types of Ownership Structures

The main types of ownership structures of the banking institutions in Ghana include; government ownership, foreign ownership, institutional ownership, public ownership, managerial shareholding and block ownership. Over the period of the study, the government of Ghana had key ownership in five banks namely; Ghana Commercial bank, Agricultural development bank, National Investment bank, The Trust Bank and Merchant Bank, totally owning some of them and sharing ownership with some individuals and institutions in others. Thirteen of the banks, as at 2011 were foreign-owned (where foreign owned means at least 50% ownership by foreigners). Foreign and local ownership are characterized by a mixture of individual and institutional owners.

As at the end of 2010, there were twenty six commercial banks representing 75.1% of the total assets of the financial system. First-Capital Plus obtained their license early 2013, taking the number of banks to 27. Out of the 26 banks, 13 are subsidiaries of foreign banks with a market share of 51% of total commercial banks' assets. The combined share of banks from the African continent – especially from Nigeria and Togo is largest though British banks dominate in general (CEPA, 2012).

2.2.3 Non-Performing Loans (NPLs) in the Banking System

Banks dominate the financial system of Ghana, with bank loans being the primary source of external financing for domestic firms. The issue of non-performing loans (NPLs) in the banking systems of many emerging economies has gained increasing attention in the past couple of decades since NPLs of many economies have been known to lead to bank failures. Previous studies on the causes of bank failures reveal that asset quality is a statistically significant predictor of insolvency, and that failing banking institutions always have high levels of non-performing loans prior to failures.

2.2.4 Definition of Non-performing Loans

According to the CEPA, (2012), anon-performing loan (NPL) can be simply defined as a loan that is not earning income and for which either full payment of principal and interest is no longer anticipated. That is, the principal or interest is 90 days or more delinquent; and/or the maturity date has passed and payment in full has not been made.

Following international practice, Ghana‘s non-performing loans are classified in three differentiated constituent categories:

1) substandard — loans whose interest or principal payments are longer than three months in arrears if lending conditions are eased;

2) doubtful — full liquidation of outstanding debts appears doubtful and the accounts suggest that there will be a loss, the exact amount of which cannot be determined as yet; and

3) virtual loss and loss (unrecoverable) — outstanding debts are considered not collectable, usually loans to firms which apply for legal resolution and protection under the bankruptcy laws.

Credit loss expense is thus calculated using the Bank of Ghana Model which has 5 Categories as follows:

- Current - 1%
- Other Loans Especially Mentioned (OLEM) - >30 days - 10%
- Substandard > 90 days – 25%
- Doubtful > 180 days – 50%
- Loss >360 days – 100%

In cases where there is objective evidenceof impairment, the (IFRS) – IAS 39 S58 -59 prescribes the following steps for the treatment of credit loss expense:

a) Specific provision for all loans 90 days past due

- Assess repayment source to determine whether repayment will be from income or collateral
- Compute NPV based on expected cash flow or collateral; using the contractual interest rate
- Impairment: Loan Outstanding (Principal +Unpaid Interest + accrued interest) - NPV

b) Sensitive or Watchlist

Criteria

- Usually for accounts which may require some attention
- Accounts past due beyond 30 days
- Significant decrease in revenue / strong depreciation in asset values
- Substantial decline in earnings before interest

- Sudden increase in financial debt
- Macroeconomic issues
- Collaterals are usually not taken into account
- Percentage adopted could be based on the past loan loss ratios of the bank

Total Impairment = Specific + Sensitive

Banking sector data for Ghana show that unrecoverable loan losses increased during and after the period of the credit crunch in the United States from GH¢205 million at the end of December 2008 to GH¢937.6 million at the end of December 2010 and have typically taken the dominant share of total NPLs in Ghana. At end-May 2011, the share of unrecoverable loan losses in total NPLs amounted to 61.6 percent, followed by doubtful loans with a share of 22.7 percent of total NPLs, while sub-standard loans made up for the remainder share of 15.7 percent (see Table 2.1).

Figure 2. 2: Non-Performing Loans and its Differentiated Constituents (GH¢ million)

	Dec-08	Dec-09	Dec-10	Feb-11	May-11
Total Non-Performing Loans (GH¢ million)	**458.2**	**1,121.2**	**1,445.6**	**1,230.2**	**1,278.5**
Sub-Standard Loans	124.0	322.8	265.7	267.1	200.5
Doubtful Loans	129.2	321.3	242.3	220.4	290.3
Loan Loss	205.0	477.1	937.6	742.7	787.7
Percentage Shares in Total NPLs					
Sub-Standard Loans	27.1	28.8	18.4	21.7	15.7
Doubtful Loans	28.2	28.7	16.8	17.9	22.7
Loan Loss	44.7	42.6	64.9	60.4	61.6

Source: Based on data from Bank of Ghana Financial Stability Reports, February 2010-July 2011 editions

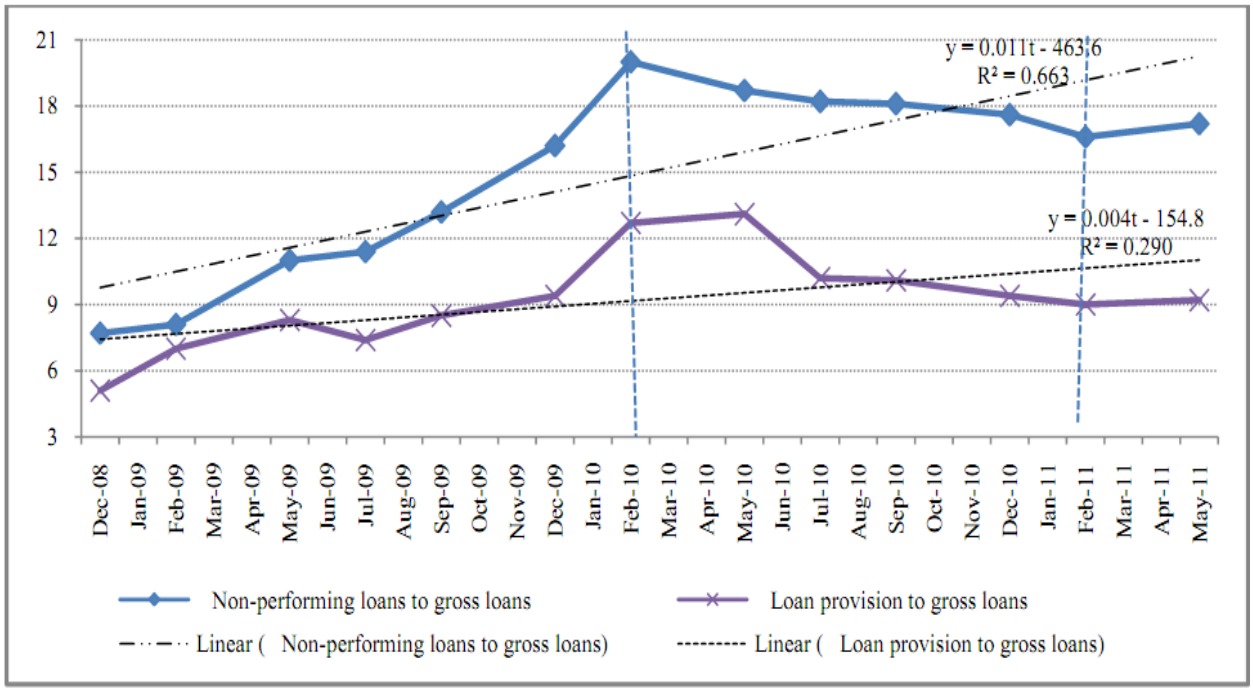
2.2.5 Measures of Non-Performing Loans (NPL)

Reports from the CEPA (2012) shows two main measures of non-performing loans used in Ghana and their measures as follows:

Non-Performing Loans (NPL) ratio — calculated by using the value of NPLs as numerator and the gross value of the total loans portfolio (including NPLs, and before deduction of specific loan-loss provisions) as denominator; and

Loan provisions to gross loans ratio — also referred to as the ―valuation allowance. This ratio reflects the non-cash expense set aside by banks to cater for future losses on loan defaults. It is measured as the cumulative provision balances of banks at a particular due date to gross loans and advances. The ratio measures the extent to which a bank has provided buffers' against the troubled part of its loan portfolio and therefore guarantees a bank's solvency and capitalization if and when loan defaults occur. The loan loss provision allocated each month or year increases with the riskiness of loans that banks make. Thus a bank making a small number of risky loans will have a low loan-loss provision compared to a bank taking higher risks. Figure 2.2 presents the trajectory of the two indicators often used to identify and gauge the quality of banks' loan portfolios in Ghana:

Figure 2.2 Non-Performing Loans and Loan-Loss Provisions to Gross Loans in the Banking System (%)



Source: Based on data obtained from Bank of Ghana Financial Stability Reports (February 2010-July 2011 editions)

As depicted in Figure 2.2, the NPL ratio increased sharply from about 7.7 percent of gross loans at the end of December 2008 to reach a peak of 20 percent by February 2010; thereafter it had been on a steadily declining path, reaching a trough of 16.6 percent in February 2011 but had since risen to 17.6 percent two months later in May 2011. The second indicator — the loan-loss provision to gross loan ratio — also followed a similar upward trend path as the NPL ratio, even though at a slower pace. It reached a peak of 13.1 percent in May 2010 but declined steadily to 9.2 percent a year later. Comparing the pattern of change compensation from 2008 as shown in Figure 2.1 to the pattern of change in non-performing loan levels (Figure 2.2), it can be observed that though compensation levels kept increasing consistently, non-performing loan levels did not increase over the whole period. NPL level increased steadily from 2008 to 2010 where it reached its peak and started declining as compensation levels kept rising throughout the period. All

things being equal, it can be said that the decreasing rates in NPL may be associated with the increases in compensation levels though there may be other influencing factors.

2.2.6 Some Empirical Facts on NPLs

A study by the IMF (2011) observed that while on aggregate the NPL ratio has witnessed a decline, it had been much higher than most peer-group countries. Ghana is ranked third among twenty peer countries in Africa with very high NPL ratios — with Nigeria and Senegal being the only two counties with higher NPL ratios than Ghana‘s. The study also suggested that several banks in Ghana — including systemically important domestic banks and subsidiaries of reputable international banks — reported high NPL ratios in the range of 20 percent to 40 percent. This state of affairs reflects the interplay of several factors, one of the most important being the state‘s involvement in bank‘s operations. It is argued, for example, that the state has controlling interests in five banks, which together account for 29 percent of the banking system assets. The performance of these state-owned banks (SOBs) has however been poor, due to lending practices that focus on objectives other than prudential considerations.

In addition, government domestic arrears have been a recurring source of banking system vulnerability as they undermine capacity of providers of services to government to repay their bank loans in a timely manner. The IMF has estimated that 46 percent of the NPLs at end-March 2010 were directly or indirectly caused by the government‘s accumulation of domestic arrears and were heavily concentrated in state-owned banks. Government-related NPLs is largely made up of the high and rising informal debt‘ — estimated at about 9 percent of GDP at the end of 2010 — comprising: impaired assets due to the non-payment to contractors, vendors and

suppliers of goods and services to the government, delays in the transfers to statutory funds — such as the District Assemblies Common Fund, Ghana Education Trust Fund, the Road Fund, and liabilities to the Social Security and National Insurance Trust; and NPLs by energy related state-owned enterprises — including the Tema Oil Refinery and the Volta River Authority — that had not received subsidies for the under-recoveries on petroleum products at the directive of government (CEPA, 2012).

Furthermore, since short-term deposits are benchmarked to Treasury bill rates, high fiscal deficits affect banks' funding costs, contribute to high lending rates, and erode capacity of contractors to service their obligations to banks. It is estimated that default rates on bank loans — measured by the proportion of loans impaired for each sector of activity — are more pronounced in the Mining and Quarrying, Agriculture, Forestry and Fishing, Manufacturing, and Commerce and Financial Services sectors. These sectors had shares of non-performing loans in excess of 20 percent as at end-May 2011 All the other sectors of economic activity — namely, Construction, Services, Transport and Communications, and Electricity, Gas and Water — accounted for less than 20 percent of the total NPLs in the banking sector (CEPA, 2012).

2.3 Chapter Summary

In this chapter, our overview of the banking industry has indicated that non-performing loans (NPL) are loans that are not earning income and for which either full payment of principal and interest is no longer anticipated. That is, the principal or interest is 90 days or more delinquent; and/or the maturity date has passed and payment in full has not been made. We noted that several banks in Ghana (including systemically important domestic banks and subsidiaries of reputable international banks) reported high NPL ratios in the range of 20 percent to 40 percent

between 2008 and 2011.This state of affairs was said to reflect the interplay of several factors, some of the most important being the state‘s involvement in bank‘s operations, government domestic arrears and high fiscal deficits.

Next is a review of literature which would immensely help to estimate our model as well as the methodology for this study.

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

This chapter reviews existing theories in literature relating to executive compensation, ownership structures of firms and the determinants of the quality of bank loans. Empirical works are equally reviewed to establish the arguments in literature on how pay, ownership and loan quality tend to be related.

3.1Theoretical Perspectives

The theory that forms a yardstick for explaining the alignment of managers' interests to performance as well as ownership effects on firm performance is the agency theory. The information asymmetry theory which also evolves from the agency theory further elucidates the link between managers' interests and the enhancement of firm value. The theoretical underpinnings are explained below;

3.1.1 Agency Theories

The separation of ownership and control of firms which is explained by the Agency theory usually results in conflicts of interest by agents in the course of performing their duties in the bona fide interest of the principal. Agency conflicts arise because managers do not always take decisions that are in the best interest of shareholders. They may divert corporate assets to themselves through outright theft, dilute outside investors-through share issues to the insiders, take excessive salaries, sell assets to themselves or other corporations they control at favorable prices, or make transfer pricing with other entities they control (Shleifer & Vishny, 1997).

Alternatively, insiders can use corporate assets to pursue investment strategies that yield them personal benefits of control, such as growth or diversification, without benefiting outside investors (Baumol, 1959; Jensen, 1986). The agency problem in the lending process emanates from the separation between the lending decision (made by the loan officer or manager in case of large amounts), and the capital used (of the lender), and due to the fact that the lending decision depends on information that is neither observable nor verifiable by the lender who are mostly bank owners and depositors (Ben-David, 2011).

The agency theory has its foundations from information economics and has been developed along two major lines over the years though the common unit of analysis still remains as the contract between a principal and an agent. The lines of thought are the positivist and principal-agent approaches (Jensen, 1983).

Positivist Agency Theory

Proponents of the positivist approach have focused on identifying situations of conflict of interest between the principal and agent and describing the governance mechanisms that limit the agent's self-serving behavior. The focus of these researchers is mainly on the relationship between owners and managers of large, public corporations (Berle & Means, 1932). The major proponents include Jensen & Meckling, (1976) who examined the ownership structure of the corporation in terms of how equity ownership by managers aligns managers' interests with those of owners. Fama (1980) also discussed the role of efficient capital and labor markets as information mechanisms that are used to control the self-serving behavior of top executives. Fama & Jensen (1983) further described the role of board of directors as an information system

that the stockholders within large corporations could use to monitor the opportunism of top executives. Together with another researcher, (Jensen & Rucback, 1983), Jensen extended these ideas to controversial practices, such as golden parachutes and corporate raiding.

According to Eisenhardt, (1989), the governance mechanisms identified in the positivist stream are captured by two propositions. The first proposition is that, outcome-based contracts are effective in curbing agent opportunism. They argue that agency contracts co-align the preferences of agents with those of the principal because the rewards for both depend on the same actions, thereby reducing the self-interest between the principal and agent. This is seen in the work of Jensen & Meckling (1976) which describes how increasing firm ownership of managers decreases managerial opportunism. This proposition is summarized as follows;

Proposition 1: when the contract between the principal and agent is outcome based, the agent is more likely to behave in the interests of the principal.

In this sense, the relative balance of power between the principals and agents are argued to influence the outcome of the contract and therefore influence the level and structure of executive pay. However, the managerial power approach to agency problems does not exclusively see pay design as a "tool" to alleviate agency problems. Managerial power theory argues that because of principal agent relations, agents are in the natural position to use their discretion to set their own pay. Pay design is not a solution to agency problems but is seen as part of the same problem; it is an agency problem in itself (Bebchuk et al., 2002). Executives are in the position to use their power to influence those decision making authorities especially designed to keep them in check (i.e. the board of directors; Fama, 1980; Fama & Jensen, 1983).

The second proposition stipulates that information systems also curb agent opportunism. Proponents of this proposition argue that, since information systems inform the principal about what the agent is actually doing, they are likely to curb agent opportunism because the agent will realize that he or she cannot deceive the principal. Fama (1980) described the information effects of efficient capital and labor markets on managerial opportunism while Fama & Jensen (1983) described the information role that boards of directors play in controlling managerial behavior. In formal terms:

Proposition 2: When the principal has information to verify agent behavior, the agent is more likely to behave in the interests of the principal.

Principal-Agent Research

This approach is comparatively abstract, mathematical and less accessible to organizational scholars, moreover it has more testable implications with a broader focus and greater general theoretical interest. However, the two theories are complementary; positivist theory identifies various contract alternatives and principal-agent theory indicates which contract is most efficient under varying levels of outcome uncertainty, risk aversion, information, and other variables (Eisenhardt, 1989). Principal-agent literature focuses on determining the optimal contract, behavior versus outcome, between the principal and the agent. The simple model assumes goal conflict between principal and agent, an easily measured outcome and an agent who is more risk averse than the principal. In this case, risk averse agents are agents who are unable to diversify their employment and principals who are unable to diversify their investments are also expected to be risk neutral. A number of extensions to this model are possible but this study focuses more on the positivists' views of agency to organizations.

In contrast to the complete contracting theory, natural relationships between principals and agents and the consequent possible use of discretion are considered as real possible behavior; as indicated by the managerial power theory (Grabke-Rundell & Gomez- Mejia, 2002). In the perfect contract approach, discretion is effectively ruled out, as managers are expected to behave according to the contract, because of the incentives they receive for upholding this contract. In this sense, discretion is not considered as a possible behavior, but only as a cost (Grabke-Rundell & Gomez-Mejia, 2002).

A theory that extends managerial power theory is class hegemony theory. This theory argues that executives within a firm and executives from other firms share a commonality of interests. Where managerial power theory stops at the boundaries of firms, class hegemony theory extends managerial views beyond these boundaries (Gomez-Mejia, 1994). Shared interests and objectives create bonds between executives that extend beyond a single organization. These bonds form relationships which in turn form a class across different organizations. By using (shared) power the executives can protect their privileges and the wealth of their class. Although primarily executives' input is used to legitimize high executive pay, setting high pay is also a token of executives' power to protect shared interests and objectives (Gomez-Mejia, 1994). Setting executive pay is thus a result of the social managerial class's power to protect their interests and objectives that are at potential risk.

3.1.2 Information Asymmetry Theory

The agency theory is augmented by the information asymmetry theory which evolves out of the agency problem. The agency problem in banks results in two forms of information asymmetry.

Firstly, unequal information between the shareholders and managers whereby managers' actions in monitoring and supervising loans affects the quality of the loan book and consequently determines firm performance (VanHoose, 2011). Diffuse shareholders may exercise corporate governance directly through their voting rights and indirectly through the board of directors but due to large information asymmetries between small shareholders and managers; they are hardly able to influence decisions. Small shareholders mostly lack the expertise and funds needed to monitor managers and board of directors hardly support the views of minority shareholders. In some countries also, the problem is exacerbated because legal systems do not protect the rights of minority shareholders (Levine, 2003).

In the case of concentrated shareholders, there is less asymmetry since this group has the incentive to obtain information and monitor managers. Concentrated owners often elect their representatives to the board of directors and thwart managerial control of the board of directors. Comparatively an ownership structure dominated by small, uninformed investors will be less effective at exercising their voting rights unlike large shareholders. Also, well-informed, large shareholders can more effectively negotiate managerial incentive contracts that align owner and manager interests than poorly-informed small shareholders whose representatives – the board of directors – can be manipulated by management (Levine, 2003). However, critics argue that concentrated ownership is not always an ultimate solution for effective corporate governance because of certain disadvantages they pose. Large investors may pay themselves special dividends and exploit business relationships with other firms they own that profit themselves at the expense of the corporation or bank. Generally, large shareholders can be said to maximize

their private benefits of control at the expense of small investors (DeAngelo & DeAngelo, 1985; Zingales, 1994).

The second form of asymmetry relates to unequal information between borrowers and lenders which usually explains the performance of loans. According to Stiglitz & Weiss (1981), information is not always equal between borrowers and lenders, and this result in the tendency of granting credit to defaulting borrowers who actively seek for loan and are less considerate of the harsh lending conditions; that is adverse selection. The second aspect of this theory is the moral hazard phenomenon whereby borrowers do not use funds for the agreed upon purpose but rather divert funds into activities that may not generate the needed funds to repay the loan granted.

Financial institutions therefore make efforts to overcome the adverse selection and moral hazard problems that make loan defaults more likely. The attempts of financial institutions to solve these problems help explain a number of principles for managing credit risk: screening and monitoring, establishment of long-term customer relationships, loan commitments, collateral, compensating balance requirements, and credit rationing. Bank executives are tasked to perform these duties diligently for the overall success of the firm. It is therefore reasonable to ensure that they are rightly motivated and monitored possibly through appropriate compensation and direct supervision in order achieve desired results actions (Jensen & Meckling, 1976; Fama 1980; Eisenhardt, 1989).

3.2 Empirical Literature

This section explores empirical works on the relationships that exist between executive compensation, ownership of banks and loan quality. It also looks at the effects of other bank-specific and macroeconomic variables on loan performance.

3.2.1 Compensation and Loan Quality

Executive compensation has a number of components and each has distinctive features and effects on the performance of executives in the management of their loan portfolios. The first component analyzed is cash bonus. This mostly refers to short-term performance target like earnings per share. As indicated by Duru et al., (2005), a target of this kind can result in managers decreasing certain investments in order to lower short-term expenditures and thereby increase the reported profit. The tendency to focus on short-term profitability and generate positive and stable cash flows to be able to meet the performance target is another probability for managers when it comes to bonus incentives. Hence, awarding relatively higher proportion of cash bonus compensation to CEOs would provide more risk-avoiding incentives, which may benefit firm's debt holders while decreasing the tendencies of extending high-risk loans.

According to Kabir et al., (2013), pensions are a special form of compensation since it is deferred and can only be accessed upon retirement. Similar to the Ghanaian, there are three basic types of pension arrangements in the UK: the public social security system, occupational pension and private pension plans. The occupational pension category consists of defined benefit (DB) and defined contribution (DC) pension schemes. In the DB pension scheme, the amount of money an employee is expected to receive upon retirement is often ''defined'' in advance.

Benefits are based on the number of years of the employee's service and the final salary when he or she retires. British firms make a minimum pension contribution to an independent trust, just like the three tier system in Ghana (in practice, many of the trustees are also insiders, so their independence may be compromised)and the firm's contributions are, with certain limits, tax deductible. Contributions from this stream are not taxable to the employees until the funds are withdrawn in retirement. Defined benefit pension plan for executives may induce increased managerial risk-avoiding incentives primarily due to the consequence of falling equity prices, lower interest rates and improvements in life expectancy.

Existing literature on executive compensation holds the view that compensation by means of stock options generates strong incentives for risk-increasing investments (Jensen & Meckling, 1976; Guay, 1999). This emanates from the fact that options have a convex payoff structure: the expected payoff will be zero as long as the share price is below the exercise price, but it can be quite high if the options are in-the-money. According to Johnson and Tian (2000), executive stock options come in two forms, that is, performance-vested stock options (PVSOs) and traditional stock options (TSOs). The difference between the two is that, PVSOs have performance targets as a vesting condition, while TSOs have no such targets. This difference provides differential incentives to top managers.

Firstly, PVSOs are more likely to motivate managers to undertake more risky investments because they cannot exercise these options without achieving the performance benchmarks. Secondly, earnings per share which is usually used as the main performance benchmark of PVSOs can motivate managers to engage in opportunistic behavior.

Restricted shares and stock options are popular vehicles firms use in aligning interests of shareholders and managers but have few distinctive features. Kabir et al., (2013) explains that share ownership directly links CEO's personal wealth to the stock price. Compared to stock options, the relation between CEO's wealth invested in firm's shares is a linear function of stock price rather than a convex one. Thus, the wealth of a CEO with more share ownership might be more sensitive to the decrease of share price compared to the wealth of a CEO with large option holdings. Therefore, as high risk investments may lead to increased stock return volatility, high level of share ownership may reduce CEO's risk-taking behavior as his or her wealth exposure increases.

According to Levine (2003), developing countries have greater information asymmetry between insiders and outsiders of banking institutions and this makes banking operations quite impervious for equity holders and debt holders to strictly monitor the operations of bank managers. For this reason, managers whose incentives are aligned to the performance of the firm are likely to increase the bank's risk profile by venturing into risky investments since they benefit from the upside of risky investments but debt holders tend to suffer from the downside risk when the firm is unable to cover its debts but they do not benefit from the upside potential of risk-taking.

Morck et al. (1988) provides evidence to this effect by showing that increased inside ownership increases firm value due to incentive alignment; however as the inside ownership continues to increase, firm value falls due to the entrenchment effect associated with insider voting (Demsetz 1983; Fama & Jensen 1983). This is in line with the evidence in McConnell & Servaes (1990) who show a positive relationship between managerial equity ownership and firm value as long as

the total proportion is below 50%. Bondholders protect themselves from anticipated increased risk-taking tendency of managers arising out of incentive pay by charging a higher borrowing rate to compensate for any future loss. Bondholders may also impose stricter governance and debt covenants to mitigate higher risk investments by managers (King & Wen, 2011).

Towards this end, Vanhoose (2011) examined the effects of placing binding restraints on rates of compensation that banks are allowed to pay when management teams differ in relative rates of compensation required to elicit varying efficiencies in providing loan-monitoring services. Using data on developed countries, Vanhoose concludes that with or without binding capital requirements, imposing binding restraints on the allowed rate of performance-based compensation results either in lower bank efficiency or in a reduced fraction of monitoring banks and, hence, lower aggregate loan quality.

Using firms in the S&P 500, S&P Midcap 400, and S&P Smallcap 600, for the period 1992 to 2002, Coles et al. (2006) find that managerial equity-based pay is linked with risk-taking activities such as investments in research and development, higher leverage and less corporate diversification. Wu & Tu (2008) equally provide evidence that stock option compensation encourages higher R&D investments by firms. Chen et al. (2006) analyze option-based compensation in the banking industry and show that increased use of options induces managerial risk-taking. Meanwhile, Low (2009) show that higher sensitivity of equity-based compensation to stock return volatility encourages managerial risk-taking behavior hence, the more option compensation CEOs receive, the more aggressive investments they undertake.

3.2.2 Ownership and Loan Quality

The ownership structure of banks influences the level of oversight on banking operations and this influences the quality of service and the performance of banks' portfolio. This section looks at some ownership types and how they affect bank performance and the loan book.

I. Government/ Private Ownership of Banks

Government ownership of banks serves as an essential policy tool for influencing economic planning and national development and is therefore common and pervasive in all economies. According to La Porta et al. (2002), the average share of equity of the ten largest banks held by governments in countries around the world was 42 percent in 1995. Using micro-level data to compare public and private sector banks in Italy and Pakistan respectively, Sapienza (2004) finds that public sector banks lend at lower interest rates, and with a bias towards poorer areas, compared to private banks, and that some lending appears to be politically motivated. Khwaja & Mian (2005) also finds that government-owned banks are more likely than private banks to lend to firms whose directors or executives have political affiliation, and less likely to collect on these loans.

Cole (2006) further demonstrated that nationalized banks grew less quickly than private banks in the 1990s, and described evidence that they lent more to agriculture, rural areas, and the government, at the expense of credit to trade, transport, and finance. These characteristics are evident still in most national banks in emerging economies around the world. Basu (1998), shows that in countries where governments were the main shareholders, a sizable share of impaired loans was owed by the state and government agencies and institutions. This attribute

was more common across Sub-Saharan Africa during most of the 1980s and 1990s where commercial banks were heavily involved in the financing of government fiscal deficits and loss-making public enterprises. In Ghana, the Agricultural Development Bank, a government bank, is in business to take care of the agricultural sector financing needs. So are the National Investment Bank and Ghana Commercial bank (one of the largest banks in terms of coverage and assets) also in business to support the government and then the populace.

Other explanations provided by Basu (1998) for the rise in impaired loans in the 1990s include: the chronic fiscal deficits and balance of payment difficulties in numerous countries, the mismatch between the maturities of assets and liabilities, which led numerous banks and financial institutions to resort to highly-priced short-term financing in the form of interbank loans. This is known to have exacerbated the crisis and resulted in further accumulation of impaired loans.

Evidence from Middle East and North Africa (MENA) countries shows that in most countries, state banks still dominate, entry of new banks is difficult and a few large local banks control most of the banking assets. The financial markets in the region thus continue to lag far behind Asia and Latin America. The banking sectors in more than half of the countries remain highly concentrated, with assets of the three largest banks accounting for over 65 percent of total commercial bank assets. Even though the overall condition of the current banking sectors in MENA countries is not optimal, there are positive steps being taken. Governments in the region are continuing their efforts to promote financial reform, privatize state banks and give commercial banks greater freedom to expand their activities (Kobeissi, 2013).

Boubakri et al. (2005) suggested three arguments in favor of state over private ownership of banks, following from the 2002 World Development Report. They argued that private banks are more prone to crisis, that excessive private ownership may limit access to credit for many sectors of society and finally that the government is more fitted to allocate capital to certain areas of investment (Boubakri et al., 2005). Two additional theories, namely, the development view and the political view have also been advanced for government participation in the financial market. The development view suggests that in some countries where the economic situations are not well developed, government ownership of strategic economic sectors such as banks is needed to jumpstart both financial and economic development and foster growth. The political view posits that governments acquire control of enterprises and banks in order to provide employment and benefit to supporters in return for votes, contributions and bribes. This approach is more common in countries with underdeveloped financial systems and poorly developed property rights. Under the development view, the government finances projects that are socially beneficial and desired. In both views, the government is seen to finances projects that would not get privately financed (La Porta, et al., 2002).

While such arguments have some validity, recent evidence points to the costs of government ownership of banks, suggesting that state ownership has a depressing impact on overall growth (La Porta, et al., 2002**)**. There is a strong negative correlation between the share of sector assets in state banks and a country's per capita income level. Even government residual ownership is likely to have an effect on performance (Boubakri, et al., 2005). The majority of research indicates that private ownership of banks is associated with superior economic performance (Lang & So, 2002; Creane, et al., 2004).Theoretically this is consistent with the agency

relationship hypothesized by Jensen & Meckling (1976). State ownership is deemed inefficient due to the lack of capital market monitoring, which, according to the Agency theory, would tempt managers to pursue their own interest at the expense of the enterprise. Managers of private banks will have greater intensity of environmental pressure and capital market monitoring punishing inefficiencies and making privately owned firms economically more efficient (Lang & So, 2002).

From the above findings with regard to private and state banks, and considering that state banks still dominate in most West African countries with high government intervention in credit allocation, losses and liquidity problems and wide interest rate spreads (Creane, et al., 2004), it is expected that private banks will be found to have superior performance levels compared to state banks.

II. Foreign Ownership

From the perspective of developing nations, foreign banks usually have more resources, higher technology and talent compared to local banks. They are also more likely to be better managed since the local subsidiaries follow the corporate governance practices of their parent firms. The literature suggests that foreign banks usually 'cherry pick' the most creditworthy customers. They are therefore less likely to suffer from bad debts. According to Unite & Sullivan (2003) foreign bank entry corresponds more generally with improvements in operating efficiencies.

Studies in the developed world mostly provide evidence to the fact that foreign banks are, on average, less efficient than domestic banks (DeYoung & Nolle, 1996; Hasan & Hunter, 1996;

Chang et al., 1998). A more recent cross-border empirical analysis of France, Germany, Spain, the United Kingdom and the United States found that domestic banks have both higher cost efficiency and profit efficiency than foreign banks (Berger et al., 2000). It is worth noting however that emphasis has been on advanced countries.

Studies that do not use the United States as the host nation in their analysis report that foreign banks have almost the same average efficiency as domestic banks (Vander, 1996; Hasan & Lozano-Vivas, 1998). Meanwhile, studies that compare industrialized and developing countries show that while foreign banks have lower interest margins, overhead expenses and profitability than domestic banks in industrialized countries, the opposite is true in developing countries (Claessens, et al., 2000; Demirgüç-Kunt & Huizinga, 1999). Claessens et al. (2000) reported that in many developing countries (for example Egypt, Indonesia, Argentina and Venezuela) foreign banks actually report significantly higher net interest margins than domestic banks and in Asia and in Latin America foreign banks achieve significantly higher net profitability than domestic banks.

Diverse explanations have been given to justify the relatively lower performance of foreign banks compared with domestic in industrialized countries. These include the different market, competitive and regulatory conditions between industrialized and developing countries (Claessens et al., 2000); home field advantage of domestic banks (Clarke et al., 2001); and for within the United States, valuing growth above profitability (DeYoung & Nolle, 1996). Within developing countries, the justification offered for the improved performance of foreign over domestic banks includes exemption from credit allocation regulation and other restrictions,

market inefficiencies and domestic use of out-moded banking practices that allow foreign banks to outperform them (Claessens, et al., 2000). Considering that Ghana is more likely to have characteristics similar to developing countries, it would be expected that the performance of their banking sector would echo those of developing countries as well.

III. Institutional Ownership of Banks

Concentrated owners are usually able to monitor the activities of a firm more adequately than dispersed owners who mostly have small percentage ownership. Most governments restrict the level of concentrated ownership as well as external ownership of banks; in that there are regulations that streamline the extent of outside ownership and concentrated ownership in the banking industry. "These restrictions may arise due to concerns about concentrations of power in the economy or about the type of people who control a bank. These restrictions are put into effect usually by requirements that purchasers of bank stock have to alert government officials as their holdings increase above a certain level, and may need regulatory approval above some proportion" (Levine, 2003). For instance, using the database of bank regulation and supervision, Barth et al. (2003) shows that out of 107 countries, 41 have a limit on the percentage of bank capital owned by a single entity that is less than 50% and 38 have limits less than 25%. Additionally, there may be constraints on who can own banks, such as the prohibition on ownership by nonbank firms, or by securities firms or insurance companies in some countries (such as the United States till recently).

Despite the restrictions and efforts to avoid very high proportions of concentrated ownership of banks, it has been observed that institutional shareholders and block holders are mostly in a

better position to monitor management compared to individual investors who may not have the time, resources and sufficient clout to monitor managers. Agency problems are therefore minimal in firms with large block shareholders that are able to monitor management activities (Shleifer & Vishny, 1986). Blockholder monitoring is expected to be more intense in the presence of institutional block holders with large holdings in the firm. Shehzad et al. (2010) present empirical evidence that ownership proxied by three levels of shareholding (10%, 20% and 50%) has a positive impact on the NPL ratio when the level of ownership concentration is defined at 10% but a negative impact when the level of ownership concentration is defined at 50% using a data set comprising 500 banks from 2005 to 2007. They suggest that sharing of control may have adverse effects on the quality of loans extended up to a level, but in cases of a strong controlling owner, bank's management becomes more efficient leading to lower NPLs".

Moreover, Azofra & Santamaria (2011) find that high levels of ownership concentration benefit both the bank's profitability and efficiency for a sample of Spanish commercial banks. Louzis et al. (2011) therefore concludes that higher ownership concentration tends to promote prudent risk taking through tighter control of the bank's management.

IV. Public Listing of Banks

The stock exchange acts as a control mechanism through the various requirements institutions have to meet in order to qualify them to list on the exchange. According to Liu (2011) banks undertake reforms in share structure, financial structure and corporate governance when preparing for the IPO. Liu also indicates that even though NPL strip-off was mainly carried out in the state-owned banks as a financial restructuring measure, joint stock banks and commercial

banks also reorganized their ownership structure to improve corporate governance and financial conditions. The listing of banks is therefore a conduit through which corporate governance could be enforced in the banking industry.

3.2.3 Other Determinants of Loan Quality

Though our main interest is on the effect of ownership and executive compensation, certain factors have been found in literature to have significant effects on loan quality. Macroeconomic factors, regulatory and firm specific factors altogether have varying effects on the quality of loan portfolio. We examine amongst others the what literature recounts about the effect of equity ratio, management efficiency, bank size, Herfindahl-Hirschman Index (HHI), gross domestic product, inflation and lending rate on loan quality.

I. Equity Ratio

Ezoeha (2011) provides evidence of a positive relationship between the ratio of equity capital to total assets and interprets this to mean that increase in bank's capitalization has the tendency of building wrong confidence in bank management and reducing their sensitivity to portfolio risk. Large banks take excessive risks by increasing their leverage under the 'Too big to fail' presumption and therefore have more NPLs (Louzis et. al. 2011). This variable is captured by the equity ratio (EQR) measured as the ratio of equity to total assets. Over the study period, Ghanaian banks are required to meet a new capital requirement of 10% from 6% as well as increase their capital base from GH₵ 7 million to GH₵ 60 million hence the need to examine the effect of equity on bank asset quality. Equity will be measured as the ratio of bank equity to total assets.

II. Size

The empirical evidence relating to the impact of bank size on NPLs appears to be mixed. For instance, some studies report a negative association between NPLs and bank size arguing that large banks have better risk management strategies that usually translate into more superior loan portfolios vis-à-vis their smaller counterparts, (Rajan & Dhal, 2003; Salas & Saurina, 2002). The other proponents provide evidence of a positive association between NPLs and bank size (Rajan & Dhal, 2003).

III. Management Efficiency (EFF)

Skimping on the resources devoted to underwriting and monitoring loans in order to bear the consequence of greater loan performance problems and the possible costs of dealing with these problems in the future is expected to have a negative relationship with loan quality and so is bad management. Berger & De Young (1997) found that worsening cost efficiency is associated with increases in problem loans. This could be because inefficient managers are less able to distinguish good quality credits and identify when loans are going bad and take remedial action. It may also be that inefficient banks are more likely to engage in riskier lending, a view which found empirical support in Kwan & Eisenbeis (1997).

IV. Herfindahl-Hirschman Index (HHI)

The Herfindahl–Hirschman Index (HHI) is used as a proxy for the level of competition in the banking industry. It is employed often to study the impact of the competitive dynamics of markets on the quality of the loan portfolio of banks (Presbitero & Zazzaro, 2011). Conventionally, concentration of market power translates into reduced credit availability but

critics argue that banks in highly concentrated markets are more likely to extend credit to lower-quality firms at discounted rates (Petersen & Rajan (1995). HHI is measured as follows;

V. Net Interest Margin

Net interest spread (NIM) captures the spread between interest income and interest expense measures the return on banks' assets from its lending activities. Increases in net interest ratio indicate higher lending rates and intermediation cost by banks. According to Louzis et al., (2011), an increase in NIM is expected to worsen the quality of loans as higher debt-servicing costs make it difficult for borrowers to honour their debt. Furthermore, higher interest rates may result in adverse selection of borrowers, with only the riskier ones left on the market. Fofack (2005) found a negative but insignificant relationship between this variable and non-performing loans on a study Sub-Saharan CFA and non-CFA countries. The widening spread in the banking industry provides a strong support to test whether higher lending rates lead to adverse selection and moral hazards in the Ghanaian credit market

VI. Exchange Rate

Literature provides evidence of a positive association between NPLs and real effective exchange rate. Fofack (2005) reveals that changes in the real effective exchange rate have a positive impact on NPLs of commercial banks that operate in some Sub-Saharan African countries with fixed exchange rate regimes. The author argues that this result is due to the large concentration of loans to the export-oriented agriculture sector, which was adversely affected by the appreciation in the currency of these countries during the 80s and early 90s.

VII. GDP Growth

Among macroeconomic variables, the most frequently used in the literature is the economic growth rate proxied by GDP (Salas & Saurina, 2002). The relationship between the 'state of the economy' and the riskiness of the loan portfolio is expected to be strongly negative. Fofack (2005) provides evidence of a negative association between real GDP per capita and nonperforming loans expressed as a percentage of loans loss provision in nonperforming Sub-Saharan African banks, showing that falling per capita income are associated with rising scope of loans. In consistence with literature (Gonzalez-Hermosillo, 1999), Fofak (2005) indicates that changes in per capita income as a proxy for changes in economic growth has a negative association with nonperforming loans and may reflect the impact of cyclical output downturns on the banking sector. The sign of the coefficient is consistent across state and private banks, though the magnitude of the correlation is stronger for state banks and financial institutions.

VIII. Inflation

Investigating the association between inflation and non-performing loans, Fofak (2005) shows in the context of Sub-Saharan African countries that though the magnitude of the coefficient of correlation between inflation and nonperforming loans is low, the sign is negative; unexpected rise in inflation under cyclical downturns is likely to negatively affect the performance of the banking sector and recovery of loans to private operators and investors. In the extreme case, hyper-inflation may erode banks assets and equity and weaken banks position through the interest rate channel. However, the magnitude of the coefficient is relatively low, and may reflect the general context of declining inflationary pressures in the nineties, especially in the sub-panel

of CFA countries. In effect, creditors are worse off with inflation since it erodes the value of their capital.

VII. Policy Rate

Higher interest rates may result in adverse selection of borrowers, with only the riskier ones left on the market. Higher policy rates translate into higher lending rates by banks and this variable is expected to be positively related to policy non-performing loans. It is measured by the average annual rate.

3.2.4 Studies on Determinants of Loan Quality

Using both dynamic and static panel regression models, the factors that explain increases in loan-loss provisions for the major United Kingdom banks; considering both bank specific and macro-economic variables were examined by Pain (2003). The panel regression estimates indicated that aggregate variables such as GDP growth, real interest rates and lagged aggregate lending growth as well as bank-specific factors such as the composition of the loan portfolio influenced the loan loss provisioning of the major United Kingdom banks studied.

Keeton (1999) further analyzed the impact of credit growth and loan delinquencies in the US using data from 1982 to 1996 and a vector autoregression model to show evidence of a strong relationship between credit growth and impaired assets implying that rapid credit growth, which was associated with lower credit standards, contributed to higher loan losses in certain states in the US. To assess the impact of state and nation-wide macroeconomic variables on the quality of different types of loans (agricultural, commercial, industrial and residential), Gambera (2000)

used US quarterly data for 1987–1999 to report that the unemployment rate, farm and non-farm incomes, bankruptcy filings and car sales, among various explanatory variables, were significant predictors of bank asset quality.

Using a dynamic model and a panel dataset covering the period 1985-1997 to investigate the determinants of problem loans of Spanish commercial and saving banks, Salas & Saurina (2002) reveal that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power explain variation in NPLs. Furthermore, Jimenez & Saurina (2005) examine the Spanish banking sector from 1984 to 2003; they provide evidence that NPLs are determined by GDP growth, high real interest rates and lenient credit terms. This study attributes the latter to disaster myopia, herd behaviour and agency problems that may entice bank managers to lend excessively during boom periods.

Meanwhile, studies in other parts of the world apart from the US and Europe equally find similar determinants of loan quality. Rajan & Dhal (2003) utilise panel regression analysis to report that favourable macroeconomic conditions (measured by GDP growth) and financial factors such as maturity, cost and terms of credit, banks size, and credit orientation impact significantly on the NPLs of commercial banks in India. Louzis et al. (2011) also used dynamic panel data methods to examine both macroeconomic and bank-specific determinants of non-performing loans in the Greek banking sector. Their studies reveals that macroeconomic variables such as the real GDP growth rate, the unemployment rate, the lending rates and public debt have a strong effect on the level of non-performing loans. Two bank-specific variables, performance and efficiency were identified to possess additional explanatory power when added into the baseline model thus

lending support to the 'bad management' hypothesis linking these indicators to management quality. Additionally, the empirical results indicate that the quantitative effects of the various non-performing loans determinants depend on the category of loans. Particularly, consumer loans are the most sensitive to changes in the lending rates and business loans to the real GDP growth rate, while mortgages are the least affected by macroeconomic developments.

Rinaldi & Sanchis-Arellano (2006) analyze household NPLs for a panel of European countries and provide empirical evidence that disposable income, unemployment and monetary conditions have a strong impact on NPLs. Berge & Boye (2007) find that problem loans are highly sensitive to the real interest rates and unemployment for the Nordic banking system over the period 1993–2005. Boss et al. (2009) examine the coupling of credit risk of the main Austrian corporate sectors with the business cycle.

Using granger-causality analysis, Fofack (2005) identifies inflation, real interest rate, growth rate of GDP per capita, net interest margins, return on assets, interbank loans as possible determinants of non-performing loans in Sub-Saharan African countries. Granger-Causality results were further corroborated with a pseudo panel analysis which highlights the preeminence of macroeconomic volatility in explaining the proportional variance of NPL loans. This indicates that real exchange rate, interest rates and growth rate of GDP per capita are particularly robust and significant in determining NPLs in Sub-Saharan African countries. Credit risks also tend to be particularly high during episodes of sustained economic downturns but inflation does not appear to be particularly significant in explaining the dynamics on nonperforming loans,

especially in the sub-panel of CFA countries, in spite of post-devaluation inflationary pressures of the mid-1990s.

Using a VAR methodology to stress test the Ghanaian banking system, Amediku (2006) estimates the changes in some macroeconomic variables on the Non-Performing Loans (NPL) ratio of the banking industry. The study used quarterly data from 1995-2005 and found that following an adverse output shock and a rise in inflation, the banks' NPL ratio increase after eight quarters following an unexpected increase in output gap but after nine quarters following an unexpected increase in inflation. Also, an unexpected increase in the prime rate also leads to a significant increase in the NPL ratio with the maximum after six quarters. The result further depicts that the most likely outlook for the quality of the banking sector's loan portfolio is that, up to the end of 2007, the NPL ratio will follow a slightly downward trend below double-digit rates. Unfortunately, this prediction has failed since the NPL ratio rose sharply from about 7.7 percent of gross loans at the end of December 2008 to reach a peak of 20 percent by February 2010; thereafter it had been on a steadily declining path, reaching a trough of 16.6 percent in February 2011 but had since risen to 17.6 percent two months later in May 2011 (Ghana Economic Review and Outlook, 2012).

A strand of the literature also analyses the effect of bank-specific characteristics on problem loans. Berger & DeYoung (1997) dwells on the links between bank-specific characteristics and focus on efficiency indicators and problem loans. Specifically, Berger and Young formulate possible mechanisms, namely 'bad luck', 'bad management', 'skimping' and 'moral hazard', relating efficiency and capital adequacy. They test the derived hypotheses for a sample of US

commercial banks spanning the period from 1985 to 1994 and discover that decreases in measured cost efficiency generally lead to increased future problem loans.

In line of this research, Podpiera & Weill (2008) examine the relationship between efficiency and bad loans in the Czech banking industry from 1994 to 2005 and provide empirical evidence in favor of a negative relationship between decreased cost efficiency and future NPLs. Both papers focus solely on bank-specific determinants. Finally, Breuer (2006) examines the influence of a very wide range of institutional variables on NPLs.

3.3 Chapter Summary

Non-performing loans is a major research area that continues to attract many questions. The theories of agency have attempted to explain the corporate mechanisms and economic factors that influence the performance of the loan portfolio with many empirical evidences to support.

Executive pay and organizational ownership forms have been shown to influence performance directly or indirectly in diverse ways. A review of other determinants of loan quality reveals that, GDP growth, real interest rates and lagged aggregate lending growth as well as bank-specific factors such as the composition of the loan portfolio influenced the loan loss provisioning of the major United Kingdom banks studied (Pain, 2003). In like manner, Salas and Saurina (2002) reveal that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power explain variation in NPLs in Spanish commercial and saving banks. Fofack (2005) also identifies inflation, real interest rate, growth rate of GDP per capita, net interest margins, return on assets, interbank loans as possible determinants of non-performing loans in Sub-Saharan African

countries. However, studies in the Ghanaian banking system by Amediku (2006) that estimates changes in some macroeconomic variables finds output shock, inflation and prime rate to be having impact on the Non-Performing Loans (NPL) ratio of the banking industry between 1995-2005.

This study intends to investigate the effects of ownership structure and executive pay on loan quality in the Ghanaian banking industry building on that foundation of Amediku (2006) and extending to include governance variables and bank-specific variables

CHAPTER FOUR

METHODOLOGY

4.0 Introduction

In this chapter, we explain our sample and variables, the sources of data, the tools used in collecting and analyzing data for this study, as well as the estimated model.

4.1Sources of Data and Sample

The population of study is the universal banks in Ghana whose basic functions include taking deposits and extending loans. Our sample consists of 26 banks which are licensed by the Bank of Ghana to conduct banking business.

The study utilized secondary data covering the period 2003-2011. Financial statements of the twenty-seven (26) universal banks in Ghana constitutes the main data collection tools and sources. The registrar of banks is our source of data on the ownership variables whiles data on the firm-specific variables will be obtained from financial statements on the selected banks. Data on macroeconomic variables was collected from Ghana Statistical Services. The characteristics of the data allows for the employment of panel data methodology which involve the pooling of observations on a cross-section of units over the nine (9) year period and provides results that are simply not detectable in pure cross-sections or pure time-series studies. A general model for panel data that allows the researcher to estimate panel data with great flexibility and formulate the differences in the behaviour of the cross-section elements is adopted. The dataset is an unbalanced panel consisting of six (6) governance variables, four (4) firm specific variables and one (1) macroeconomic variable over the period, 2003 - 2011. The analysis aims at covering periods before, during and after the credit crunch in 2008 in order to ascertain the contagion

effect of the crisis on the financial system of emerging economies like Ghana. With this, we examine how corporate governance could be of help in mitigating the effect of financial instability by estimating the effect of ownership structure and executive compensation on levels of non-performing loans.

4.2 Empirical Model

This study adopts a dynamic model approach that accounts for the time persistence in the NPL structure. The general model is as follows:

$$Y_{it} = \alpha Y_{it-1} + \beta(L)X_{it} + \delta_i + \varepsilon_{it}, \qquad \alpha < 1, i = 1, \ldots..N, t = 1 \ldots \ldots..T \ldots \ldots.. (1)$$

where the subscripts i and t denote the cross sectional and time dimension of the panel sample respectively, y_{it} is the change in the NPLs, $\beta(L)$ is the $1\times k$ lag polynomial vector, χ_{it} is the $k\times 1$ vector of explanatory variables other than y_{it-1}, η_i are the unobserved individual (bank specific) effects and ε_{it} is the error term.

The formulation of the regression model is as follows with the subscript *is* representing the cross-sectional dimension and *t* representing the time series dimension.

$$NPL_{it} = \beta_1 NPL_{it-1} + \beta_2 ExCOMP_{it} + \beta_3 OWN_{it} + \beta_4 EQR_{it} + \beta_5 MEFF_{it} + \beta_6 NIM_{it} + \beta_7 EXRTE_t + \eta_i + \mu_t + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(2)$$

$$NPL_{it} = \beta_1 NPL_{it-1} + \beta_2 ExCOMP_{it} + \beta_3 OWN_{it} + \beta_4 (ExCOMP_{it} * OWN_{it}) + \beta_5 EQR_{it} + \beta_6 MEFF_{it} + \beta_7 NIM_{it} + \beta_8 EXRTE_t + \eta_i + \mu_t + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(3)$$

With $i = 1,\ldots..,26$ and $t = 1,\ldots..9$ for both equations

Where; NPL_{it} is the ratio of non-performing loans of bank i in time t, NPL_{it-1} is the lag of non-

yynyy

performing loans of bank i in time t, $ExCOMP_{it}$ represents executive compensation of bank i in

time t, OWN_{it} is the ownership structure of bank i in time t, $(ExCOMP_{it} * OWN_{it})$ is the interaction between executive compensation and ownership for bank i in time t, EQR_{it} is the capitalization level of bank i in time t, $MEFF_{it}$ represents management efficiency of bank i in time t, NIM_{it} is the net interest margin of bank i in time t, and $EXRTE_t$ is the exchange rate in time t. η_i is the bank-specific unobserved effect, μ_t is the time invariant unobserved effect and ε_{it} is the error term.

4.2.1 Measurement Variables

This section provides information on the variables included in the model for the data analysis. It provides definition of the variables, the proxies for the variables and the justification for their inclusion in our model.

Dependent Variable

The dependent variable is loan quality (NPL) and it is defined as the ratio of non-performing loans to gross loans and Advances recorded by the banks. A low ratio indicates higher asset quality and vice-versa. This ratio equals loans that are either past due at least 90 days or in nonaccrual status divided by total loans for bank i in year. NPL is the most commonly agreed-upon definition of problem loans in both the research literature and the trade press, and has the benefit of being subject to less managerial discretion than are other measures of loan quality, such as loan loss provisions and charge-offs.

Explanatory Variables

I. Compensation

In this study, total director cash compensation (ExCOMP) will be employed as a proxy for director compensation. It includes pay, meeting fees, salary, bonus and other cash benefits. The reason is that cash compensation can reflect compensation depending on past and current performance. The analysis will be in the natural log form of total director cash compensation to help mitigate the difference in total director cash compensation across firms and hence reduce heteroskedasticity. We expect a negative relation between compensation and non-performing loans.

II. Ownership (OWN)

Different measures are employed as proxies for ownership. We define ownership in terms of publicly listed (a dummy variable taken the value of 1 if a bank is publicly listed and 0 otherwise), foreign ownership (a dummy variable taken on the value of 1 if the ownership of the bank is more than 50% owned by foreigners and 0 otherwise), government ownership (a dummy variable taken on the value of 1 if the ownership of the bank is more than 50% owned by government and 0 otherwise), institutional ownership (percentage of shares held by institutions), and the percentage of shares held by directors. Foreign banks are expected to have more resources, better technology and more highly skilled staff to handle the loan portfolio and thus foreign ownership is expected to be positively related to loan quality. We expect a positive relation between loan quality and institutional ownership. This is because a more concentrated shareholding structure suggests that shareholders have a larger share and can therefore reduce

agency conflicts. Due to inefficiencies in management of government banks, we expect a negative relationship between loan quality and government ownership.

Bank Specific Variables

III. Equity Ratio

Ezoeha (2011) provides evidence of a negative relationship between the ratio of equity capital to total assets and loan quality and interprets this to mean that increase in bank's capitalization has the tendency of building wrong confidence in bank management and reducing their sensitivity to portfolio risk. Large banks take excessive risks by increasing their leverage under the 'Too big to fail' presumption and therefore have more NPLs (Louzis et. al. 2011). This variable is captured by the equity ratio (EQR) measured as the ratio of equity to total assets. Over the study period, Ghanaian banks are required to meet a new capital requirement of 10% from 6% as well as increase their capital base from GH₵ 7 million to GH₵ 60 million hence the need to examine the effect of equity on bank asset quality. Equity will be measured as the ratio of bank equity to total assets.

IV. Management Efficiency (EFF)

Skimping on the resources devoted to underwriting and monitoring loans in order to bear the consequence of greater loan performance problems and the possible costs of dealing with these problems in the future is expected to have a negative relationship with loan quality and so is bad management. Berger and De Young (1997) found that worsening cost efficiency is associated with increases in problem loans. This could be because inefficient managers are less able to distinguish good quality credits and identify when loans are going bad and take remedial action.

It may also be that inefficient banks are more likely to engage in riskier lending, a view which found empirical support in Kwan & Eisenbeis (1997).

Management efficiency = operating expenses/ operating income.

V. Net Interest Margin

Net interest spread (NIM), which captures the spread between interest income and interest expense measures the return on banks' assets from its lending activities; an increase in net interest ratio indicates higher lending rates and intermediation cost by banks. An increase in NIM is expected to worsen the quality of loans as higher debt-servicing costs make it difficult for borrowers to honour their debt. Furthermore, higher interest rates may result in adverse selection of borrowers, with only the riskier ones left on the market. Fofack (2005) found a negative but insignificant relationship between this variable and non-performing loans on a study Sub-Saharan CFA and non-CFA countries. The widening spread in the banking industry provides a strong support to test whether higher lending rates leads to adverse selection and moral hazards in the Ghanaian credit market

Macroeconomic Variables

VI Exchange Rate

Literature provides evidence of a positive association between NPLs and real effective exchange rate. Fofack (2005) reveals that changes in the real effective exchange rate have a positive impact on NPLs of commercial banks that operate in some Sub-Saharan African countries with fixed exchange rate regimes. The author argues that this result is due to the large concentration of loans to the export-oriented agriculture sector, which was adversely affected by the appreciation

in the currency of these countries during the 80s and early 90s. We therefore expect a negative relationship between exchange rates and loan quality.

4.3 Estimation Strategy: Dynamic Panel Model Approach

We consistently estimate the equations using the Generalized Method of Moments (GMM) as proposed by Arellano & Bond (1991) and generalized by Arellano & Bover (1995) and Blundell & Bond (1998). The GMM estimation of Arellano and Bond is based on the first difference transformation and levels. As pointed in Roodman (2007), the system GMM estimator combines the standard set equations in first-difference with a suitable lagged level as instruments, and an additional set of equations in levels with suitably lagged first differences as instruments. Generally, linear difference and system GMM estimators have one–and–two step variants. Two-step System GMM, Windmeijer (2005) correct standard error, small-sample adjustments, and orthogonal deviation are employed. The two step variant uses residuals from the one-step estimates and is asymptotically more efficient than the one-step. The following tests were conducted:

Sargan specification test

This is implemented to test the overall validity of the instruments. Under the null hypothesis of valid moment conditions, it is asymptotically distributed as chi-square (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998).

Serially uncorrelated errors

The fundamental assumption of serially uncorrelated errors ε_{it} is assessed by testing the hypothesis that $\Delta\varepsilon_{it}$ are not second order autocorrelated. Rejection of the null hypothesis of no second order autocorrelation of the differenced errors implies serial correlation for the level error term and thus inconsistency of the GMM estimates.

Hansen Test

A one-step version of the GMM-SYS estimator, corrected for heteroscedasticity, is adopted because the efficiency gains of using the two-step version are quite small (Bond et al., 2001). The validity of the set of instruments is detected by the standard Hansen test of over- identifying restrictions (Arellano & Bover, 1995; Blundell & Bond, 1998), even though the proliferation of instruments can seriously weaken this test and overfit the endogenous variables (Roodman, 2007). Furthermore, the validity of the additional set of instruments used in GMM-SYS is tested by using the Difference Hansen statistic (Blundell & Bond, 1998, 2000; Bond et al., 2001).

4.4 Chapter Summary

In this chapter, we have set the sample and model with which we aim to achieve the objectives of this research. The model is a regression model with ten (10) explanatory variables which consist of governance, macroeconomic and bank specific variables. We adopted a narrative and descriptive analysis approach in discovering and presenting the findings of this research.

CHAPTER FIVE

ANALYSIS AND DISCUSSION OF FINDINGS

5.0 Introduction

This chapter contains the analysis and discussion of the results. It is made up of three subsections. The first sub-section consists of the trend analysis of non-performing loans in Ghana over the period 2003-2011, and descriptive statistics of the variables that are examined. The second sub-section describes the correlation amongst the selected variables. The third sub-section presents system Generalized Method of Moments regression results derived from our analysis and the forth sub-section presents a sensitivity analysis which serves as an examination of the interaction effect of the governance variables.

5.1 Descriptive Statistics

Table 5.1 shows the trend of NPL over the study period while Table 5.2 presents the descriptive statistics of the variables used.

Table 5.1: Trends Analysis of Non-Performing Loans

Years	NPL Ratio	Loss Ratio
2003	0.156	-
2004	0.131	-
2005	0.130	0.566
2006	0.078	0.525
2007	0.064	0.474
2008	0.077	0.447
2009	0.149	0.426
2010	0.161	0.634
2011	0.142	0.622

Source: Bankscope data, Bank of Ghana. The data comprises of 27 banks over the period 2003-2011. (-) means Data is Unavailable

Table 5.1 shows the industry performance of the loan portfolio in terms of the ratio of non-performing loans and the loss ratio over the years. The defaulting ratio declined considerably over the period between 2003 and 2007 when the financial crisis set in. It can be seen that the impact was not felt immediately but with time, the following years' figures depicted the impact. In 2009, the ratio of NPL was about 94% increase on the 2008 figure. This was followed by 8% increase in the year after and then an approximately equivalent 8% decrease in the subsequent year too. The loss ratio exhibited a similar trend but the peak of default was realized in the year 2010.Though the increasing trend in the crisis period may can be attributed to the contagion effect of the global financial crisis, other internal factors may have also contributed to the increases. We therefore examine whether governance mechanisms form part of the contributory factors.

Table 5.2: Descriptive Statistics

	Mean	Median	SD	Max	Min	N
Loan Quality						
NPL	0.112	0.083	0.096	0.49	0	192
Governance Variables						
ExCOMP in GH₵	766217.8	211000	1743144	1060000	4600	175
DIRSH	0.024	0	0.094	0.614	0	126
INSTI	0.836	0.92	0.201	1	0.329	163
FORCTRL	0.493	0	0.501	1	0	203
GOV	0.239	0	0.428	1	0	188
PUB	0.31	0	0.464	1	0	199
Bank Specific Control Variables						
EQR	0.151	0.12	0.115	0.843	0.04	195
MEFF	0.504	0.372	0.657	7.934	0.092	195
NIM	0.066	0.065	0.022	0.138	0.017	198
Macroeconomic Indicators						
EXRTE of US$	1.106	0.94	0.25	1.51	0.87	243

Table 5.2 presents summary statistics on selected bank-specific and macroeconomic variables. Non-Performing loans is a measure of loan quality as discussed in section 4.3.1. The level of Executive Compensation (ExCOMP) is proxied by the log of total cash emoluments paid to directors. Directors' Shareholding (DIR) represents the percentage of shares held by directors. Institutional Ownership (INSTI) measures the percentage of shares held by institutions whiles Foreign Ownership (FORCTRL) measures the percentage of shares held by foreign owners. Government Ownership (GOV) represents banks with more than 50% government ownership. Public Listing (PUB) indicates whether a firm is publicly listed or not. Ratio of Equity to Total Assets (EQR) measures the leverage of banks showing the level of total assets covered by shareholders equity. Ratio of Operating Expenses to Operating Income (MEFF) measures the efficiency of banking operations. Real Exchange Rate of US$ (EXRTE) is used as a measure of the performance of the Ghanaian currency and its economic impact. Net Interest Income to Total Income (NIM) measures how successful the firms' investment decisions are compared to debt situations.

Source: Bankscope and author's own calculation

Table 5.2 shows descriptive summary statistics for the key variables used in this study. The table depicts that non-performing loans (NPL) of Ghanaian banks stands at an average of 11% for the period, 2003 - 2011; indicating that on the average, 11% of gross loans and advances are non-performing. Amongst governance variables examined, executive compensation (ExComp) averaged GH₵ 766,217.8. The percentage of shares owned by directors (DIR) averaged 2%, indicating that director shareholding is very limited in Ghanaian banks. On average, there is about 84% institutional ownership stakes in banks in Ghana. This shows that ownership

concentration is a common practice, with institutional ownership being very dominant amongst the banks. Banks with 50% or more foreign ownership (FORCTRL) also averaged about 49%; indicating that foreign investors are very active in the banking industry. Government (GOV) owned about 24% of banks during the period of the study with the majority of bank ownership being held by private individuals and institutions. About31% of banks are publicly listed (PUB) on the Ghana stock exchange, this is an indication that majority of the banks remain unlisted. The ratio of equity to total assets (EQR) shows that 15% of total assets is financed by equity, thus, banks in Ghana are highly leveraged. The ratio of operating expenses to operating income (MEFF) which measures efficiency of management operations indicates that management is able to cover its expenses halfway (50.4%) with its operating income. Exchange rate (EXRTE) averaged approximately GH₵ 1.11 per the US dollar with a minimum of 0.87/$ and a maximum of 1.51/$ - this indicates 74% depreciation in the cedi over the nine (9) year period. Net interest margin (NIM) averaged 7% meaning that the spread between lending and deposit rates of banks in Ghana is high. This is consistent with the findings of Mensah & Abor (2013), who found the same rate of NIM over the period, 1999-2011 in Ghana.

5.2 Correlation Matrix

Table 5.3 shows the correlation matrix for the variables in the regression model, as defined in the previous section. According to Kennedy (2008), correlation coefficients below 0.70 indicates that weaker relationships exist among the independent variables, hence the avoidance of any potential multi-collinearity problems in the regression estimates. The correlation coefficients among the explanatory variables used are quite small and as such signify the absence of multicollinearity; thus no need to drop any of the explanatory variables.

The correlation analysis in Table 5.3 shows a significantly positive relationship between executive compensation and public listing of banks. This indicates that, with the adherence to strict regulations and transparency of publicly listed banks, managers are better compensated, as they increase performance. Higher exchange rates are also seen to translate into higher values of compensation to executives to reflect the increased prices of executives' expenses accordingly, thus a positively significant relationship between the two variables. Government ownership of firms and efficient management practices are seen to be significantly negatively related to executive pay. Lastly, the positively significant correlation between foreign controlled banks and equity ratio signifies that foreign controlled banks usually put in large equity into the banks and makes them highly immunized against risk and thereby reduce the tendencies of extending high risk loans to make up for short-falls in capital needs.

Table 5.3: Pearson Correlation Matrix

	EXCOMP	DIRSH	INSTI	FORCTRL	PUB	GOV	EQR	MEFF	EXRTE	NIM
EXCOMP	1									
DIRSH	0.076	1								
INSTI	-0.095	-0.152	1							
FORCTRL	0.099	-0.181*	0.066	1						
PUB	0.189*	0.147	-0.064	-0.155*	1					
GOV	-0.258*	-0.173	0.1971*	-0.532*	0.084	1				
EQR	-0.084	-0.128	0.098	0.263*	-0.051	-0.081	1			
MEFF	-0.163*	-0.055	-0.093	0.079	-0.121	-0.012	0.036	1		
EXRTE	0.382*	0.206*	0.021	0.093	-0.014	-0.098	0.257*	-0.119	1	
NIM	-0.019	-0.101	0.132	-0.059	0.450*	0.255*	0.133	-0.004	-0.076	1

ExCOMP= Executive Compensation, DIRSH = Director's Shareholding Percentage, INSTI = Institutional Shareholding Percentage, FORCTRL = 50% or more Foreign Controlled Banks, PUB = Publicly Listed Banks, EQR= Equity/Total Assets, MEFF = Operating Expenses/Operating Income, EXRTE = Exchange Rate of the US Dollar, NIM = Net Interest Income / Total Income.

denotes significance levels of 5%,

Source: Bankscope, BOG and author's own calculation

5.3Regression Results

Table 5.4 presents the results of the empirical estimation using the NPL as our measure of Loan quality whereby a high ratio indicates worsening loan quality and vice-versa. The Hansen J and Arellano-Bond test results are for the validity and robustness of the systems Generalized Method of Moments (GMM) estimator respectively. They provide ample evidence of the reliability of the estimated coefficients in all the estimations. The Hansen J statistics test the null hypothesis that the over-identifying restrictions are valid. The test results for the models does not reject the null hypothesis of valid instruments (because prob> χ^2 are all greater than 0.05). A consistent GMM estimator, according to Arellano & Bond (1991) must not exhibit second order autocorrelation. Although all the models exhibit first order autocorrelation, the null hypotheses of no second order autocorrelation could not be rejected.

The results presented in Table 5.4 as per estimations of two-step system Generalized Method of Moments provides no evidence in support of the fact that executive compensation proxied by the log of total cash emoluments of directors of banks explains the level of non-performing loans in Ghana. This shows that the compensation system among Ghanaian banks do not necessarily align performance to outcomes. However, we recognize the fact that this results could be influenced by the level of data used to capture executive compensation since the emoluments alone do not make up the whole amount of incentives given to executives. However, since incentives are not directly linked to performance unlike the advanced countries whereby executives' pay is linked to performance through options, the agency problem is likely to continue to perpetuate since executives have a free-will to decide to put in their best or not to since they are assured of a certain level of their pay. This tends to affect the risk attitude of

executives which can have diverse consequences for the firm. This is in line with the work of Low (2009) who found that higher sensitivity of equity-based compensation to stock return volatility (vega) encourages managerial risk-taking behavior hence, the more option compensation CEOs receive, the more aggressive investments they undertake.

With regards to ownership variables, the results indicate a negative and significant relationship between directors' shareholding and non-performing loans. This means that non-performing loans decreases as inside ownership increases, suggesting that when directors of a bank have ownership stakes in the bank, they tend to exercise vivid control and monitor loans more efficiently in order to reduce the level of defaults and ultimately enhance shareholder value. They are partakers of profits and losses and therefore, they tend to be extra vigilant since they have interest in the performance of the firm. As shown in the first regression results (1), management efficiency is significantly negatively related to NPL in the presence of director ownership. This finding is consistent with the findings of Morck et al. (1988) and McConnell & Servaes (1990) who found that increased inside ownership increases firm value due to incentive alignment.

The results provide no evidence of a relationship between foreign ownership and NPL. However, institutional ownership is found to have a negative and significant relationship with NPL. Institutional ownership dominates the ownership structure of banks in Ghana. Institutional owners are able to provide better monitoring and management practices to firm operations compared to diffused owners as they tend to have the time, resources and clout to monitor managers as compared to individual investors. Hence, with superior monitoring skills and

efficient management of banks, institutional owners tend to induce managers to reduce the level of non-performing loans in their portfolio and develop strategies to attract quality loans. This finding is consistent with the findings of Shleifer & Vishny (1986) who indicates that agency problems are minimal in firms with concentrated ownership due to the ability to monitor management activities.

Though, no significant relationship was found between foreign ownership and NPL, the efficiency brought about by institutional ownership is partly attributable to foreign ownership since majority of the institutional ownership are by foreign institutions mostly from Nigeria and Togo with the minority from Britain and India. It can therefore be argued that the operational efficiencies brought about by institutional ownership is as a result of the implementation of good governance practices of the parent firms by these subsidiaries. As indicated by Unite & Sullivan (2003), foreign bank entry corresponds more generally with improvements in operating efficiencies. Foreign banks usually have more resources, higher technology, more competent staff and better credit management systems compared to local banks and they usually 'cherry pick' the most creditworthy customers. They are therefore less likely to suffer from bad debts.

Furthermore, publicly listed firms are shown to have a negative and significant relationship with NPLs, meaning that listing of firms enhances the performance of the loan book. Due to compliance with Ghana Stock Exchange (GSE) rules and regulations as well as monitoring of publicly listed banks, their performance is mostly enhanced as managers of these firms tend to put off their best in order to enhance performance and attract investors and customers to invest and transact business with the bank respectively.

The results of the study show a highly positive relationship between NPL and its lag in all the regressions at 1% significance level, thus, indicating the deteriorating nature of the loan book in subsequent periods. From the coefficient of the lag of NPL (between 0.539 and 0.684), we observe that a unit increase in previous year's non-performing loans results in about 60% increase in the subsequent year's non-performing loans, hence, a deteriorating effect on loan quality. The write-off of previous years loans do not contribute significantly to reducing the ratio of non-performing loans in preceding years; significant growth in loans is however evident in Ghanaian banks. Though contrary to the finding of Louzis et al. (2011) who found that increases in previous non-performing loans leads to a decrease in current years non-performing loan ratio in the Greek banking sector, our finding is consistent with the findings of Alhassan, et al. (2014), who found a positive relationship between NPL and its lag in the Ghanaian banking sector and thus confirms the persistence nature of non-performing loans.

Apart from the fifth regression with public listing of firms as the ownership variable, equity ratio had a significantly negative relationship with NPL in all the regressions. This means that, increases in equity capitalization leads to reduction in the tendency of extending risky loans to make up for the shortfalls in equity contribution towards the banks' assets. Larger capital immunizes banks against risks and enables them to finance huge loans and advances without generating liquidity problems for the bank. It therefore helps to expand banking business to make it more lucrative and highly competitive. This result is however contrary to evidence provided by Ezoeha (2011) who found a positive relationship between the ratio of equity capital to total assets and interprets this to mean that increase in bank's capitalization has the tendency of building wrong confidence in bank management and reducing their sensitivity to portfolio risk.

Louzis et al. (2011) similarly found results consistent with Ezoeha (2011), interpreting that, large banks take excessive risks by increasing their leverage under the 'Too big to fail' presumption and therefore have more NPLs.

Management efficiency had a significantly negative relationship with NPL in the first regression only but no evidence in the remaining regressions. This tells us that efficient management skills are brought to bear in the presence of director shareholding in the bank. When directors' incentives are tied to the outcomes of the firm, their operations are more efficient than in other ownership situations. Consistent with this finding, Berger & De Young (1997) postulated that worsening cost efficiency is associated with increases in problem loans because inefficient managers are less able to identify good quality credits and determine when loans are going bad in order to take remedial action. Kwan & Eisenbeis (1997) also discovered that it may also be that inefficient banks are more likely to engage in riskier lending, thus a negative relationship between management efficiency and non-performing loan ratios.

There is a significant and positive relationship between Exchange rate of the US dollar and NPL in all models. This means that depreciation of the cedi results in increases in bad loan rates. As found and interpreted by Fofack (2005) in Africa," a possible transmission channel in this context could run from balance of payments problems to banking crisis, possibly through problems loans accumulated from exports promotion to a depressed agricultural sector confronted with falling exports as a result of exchange rate appreciation, and coupled with terms of trade deterioration. Also critical are expectations formulated by economic agents in the face of sustained balance of payments crises and overvalued exchange rate. In anticipation of exchange

rate devaluation, runs on banks could be exacerbated by increased capital flights and massive outflow of funds from a country (Miller, 1995).

There was no significant evidence in support of the relationship between Net interest margin and non-performing loans, except in the fifth regression where we found a positive relationship between the two variables. Thus, public listed banks provide evidence of declining loan quality in the presence of high net interest margin. In line with the findings by Fofack (2005), increases in net interest margin leads to high rates of bad loans. The high spread could be as a result of high lending rates, which precipitates more bad loans due to adverse selection.

Table 5.4: Systems GMM Results

	(1)	(2)	(3)	(4)	(5)
NPL_{t-1}.	0.662***	0.684***	0.606***	0.561***	0.537***
	(0.200)	(0.066)		(0.199)	(0.169)
ExCOMP	-0.014	-0.009	-0.007	-0.003	-0.002
	(0.020)	(0.011)	(0.009)	(0.012)	(0.010)
DIRSH	-0.142**				
	(0.062)				
INSTI		-0.001*			
		(0.000)			
FORCTRL			-0.008		
			(0.015)		
GOV				0.022	
				(0.024)	
PUB					-0.035**
					(0.020)
EQR	-0.189**	-0.141**	-0.144**	-0.141*	-0.139
	(0.084)	(0.066)	(0.069)	(0.075)	(0.094)
MEFF	-0.018**	-0.001	-0.010	-0.013	-0.014
	(0.009)	(0.007)	(0.007)	(0.010)	(0.012)
EXRTE	0.132**	0.110***	0.113***	0.100***	0.101***
	(0.058)	(0.030)	(0.034)	(0.033)	(0.034)
NIM	0.321	0.485	0.458	0.365	0.835**
	(0.349)	(0.334)	(0.305)	(0.308)	(0.394)
Constant	-0.018	-0.014	-0.053	-0.054	-0.070
	(0.092)	(0.077)	(0.053)	(0.082)	(0.060)
AR(1): p-values	0.09	0.163	0.121	0.128	0.122
AR(2): p-values	0.795	0.403	0.213	0.228	0.221
Hansen J	12.61	15.97	17.39	21.36	21.34
P-values	1.000	0.996	0.992	0.955	0.955
Sargen chi	69.56***	80.44***	87.97***	84.84***	87.47***
Observations	104	133	154	149	154

Table 5.4 presents the Systems Generalized Method of Moments (GMM) Regression results of bank loan quality. The dependent variable is Non-Performing Loans (NPL) for all models. The independent variables include executive compensation, ownership variables and other bank-specific and macroeconomic variables. The ownership variables include Director's Shareholding Percentage (DIRSH), Institutional Shareholding Percentage (INSTI), 50% or more Foreign Controlled Banks (FORCTRL), 50% or more government ownership (GOV) and Publicly Listed Banks (PUB). Ratio of Equity to Total Assets (EQR) measures the leverage of banks showing the level of total assets covered by shareholders equity, Ratio of Operating Expenses to Operating Income (MEFF) measures the efficiency of banking operations, Exchange Rate of US$ (EXRTE) is used as a measure of the performance of the Ghanaian currency and its economic impact and Net Interest Income to Total Income (NIM) measures how successful the

*firms' investment decisions are compared to debt situations. The lag of NPL is treated as endogenous and the equation specifies lags 2 and deeper for the transformed equation and lag 1 for the levels equation, which is the standard treatment for endogenous variables. Exogenous regressors ordinarily instrument themselves. The parameters are estimated with small sample adjusted standard errors in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level respectively. P-value of f-test takes into account the significance of identifying instruments.*

5.4 Sensitivity Analysis

Table 5.5 presents the results of the empirical estimation using NPL as a measure of Loan quality in order to test the interaction effect of executive compensation and ownership structure on loan quality. The Hansen J and Arellano-Bond test results are for the validity and robustness of the systems Generalized Method of Moments (GMM) estimator respectively. They provide ample evidence of the reliability of the estimated coefficients in all the estimations. The Hansen J statistics test the null hypothesis that the over-identifying restrictions are valid. The test results for the models does not reject the null hypothesis of valid instruments (because prob> χ^2 are all greater than 0.05). A consistent GMM estimator, according to Arellano & Bond (1991) must not exhibit second order autocorrelation. Although all the models exhibit first order autocorrelation, the null hypotheses of no second order autocorrelation could not be rejected.

The results presented by this second GMM estimations show no significant relationship between the interactions of ownership variables with executive compensation and NPL. This shows that, the level of compensation given to executives may not necessarily be influenced by the nature of a bank's ownership type. However, lag of non-performing loans and exchange rates maintained their relationships and significance in both estimations. Equity ratio also maintained a significantly negative relationship with NPL in the regression whereby director shareholding, foreign control and government ownership were the ownership variables of interest. Hence, higher capitalization of banks with these ownership types leads to reduced rates of Non-

performing loans. Management efficiency is significantly negatively related to NPL in the presence of directors' ownership and public listing of firms. NPL significantly increases with increases in net interest margin in the fifth regression which has public listing of banks as the ownership variable. There is a significant and positive relationship between Exchange rate of the US dollar and NPL in all models. This means that depreciation of the cedi results in increases in bad loan rates. With Ghana being an import dependent economy, exchange rate appreciation against the cedi goes a long way to affect general prices in the whole economy, ultimately translating into high inflation which contracts the expenditure of households and reduces business sales, thereby resulting in increased rates of defaults in loan payments.

Table 5.5 Sensitivity Analysis

	(1)	(2)	(3)	(4)	(5)
NPL_{t-1}.	0.678***	0.757***	0.537**	0.526***	0.563***
	(0.138)	(0.111)	(0.218)	(0.197)	(0.199)
ExCOMP	-0.022	0.113	-0.059	0.001	-0.005
	(0.023)	(0.120)	(0.046)	(0.013)	(0.010)
DIRSH	-3.565				
	(5.115)				
COMP*SH	0.616				
	(0.915)				
INSTI		0.007			
		(0.007)			
COMP*INSTI		-0.001			
		(0.001)			
FOR*CTRL			-0.375		
			(0.270)		
COMP*FRCTRL			0.070		
			(0.050)		
GOV				0.263	
				(0.283)	
COMP*GOV				-0.046	
				(0.053)	
PUB					-0.187
					(0.131)
COM*PUB					0.028
					(0.025)
EQR	-0.181***	-0.099	-0.150*	-0.175**	-0.117
	(0.050)	(0.064)	(0.083)	(0.081)	(0.094)
MEFF	-0.021***	-0.002	-0.011	-0.015	-0.015*
	(0.007)	(0.006)	(0.010)	(0.012)	(0.009)
EXRTE	0.137***	0.010***	0.112***	0.121***	0.091***
	(0.038)	(0.028)	(0.039)	(0.039)	(0.0366)
NIM	0.438	0.416	0.519	0.569	0.791*
	(0.427)	(0.277)	(0.327)	(0.353)	(0.402)
Constant	0.008	-0.672	0.226	-0.108	-0.047
	(0.104)	(0.649)	0.244	(0.076)	(0.066)
AR(1): p-values	0.07	0.138	0.127	0.132	0.122
AR(2): p-values	0.716	0.368	0.23	0.233	0.215

Hansen J	11.58	12.12	21.40	21.03	19.83
P-values	1.00	1.00	0.954	0.96	0.975
Sargen chi	70.67***	80.34***	85.58***	85.17***	87.31***
Observations	104	133	154	149	154
Instruments	43	43	43	43	43

*Table 5.5 presents Systems Generalized Method of Moments (GMM) Regression results of bank loan quality. The dependent variable is Non-Performing Loans (NPL) for all regressions. The independent variables include executive compensation, ownership variables such as Director's Shareholding Percentage (DIRSH, Institutional Shareholding Percentage (INSTI), 50% or more Foreign Controlled Banks (FORCTRL), 50% or more government ownership (GOV), Publicly Listed Banks (PUB) and the interaction term of each ownership variable moderated by ExCOMP, Each model therefore has ExCOMP, one ownership variable and its interaction term and the following independent variables; Ratio of Equity to Total Assets (EQR) which measures the leverage of banks showing the level of total assets covered by shareholders equity, Ratio of Operating Expenses to Operating Income (MEFF) measures the efficiency of banking operations, Real Exchange Rate of US$ (EXRTE) is used as a measure of the performance of the Ghanaian currency and its economic impact and Net Interest Income to Total Income (NIM) measures how successful the firms' investment decisions are compared to debt situations. The lag of NPL is treated as endogenous and the equation specifies lags 2 and deeper for the transformed equation and lag 1 for the levels equation, which is the standard treatment for endogenous variables. Exogenous regressors ordinarily instrument themselves. The parameters are estimated with small sample adjusted standard errors in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level respectively. P-value of f-test takes into account the significance of identifying instruments.*

5.5 Chapter Summary

This chapter tests the effect executive compensation and ownership structures of Ghanaian banks have on the quality of loans. Two models are designed, with both models having NPL as the dependent variable; the first model has the various ownership variables together with executive compensation and other control variables as the independent variables whiles the second model has the executive compensation and ownership variables as well as their interactions, and other control variables. Due to the endogenous nature of non-performing loans, the systems Generalized Method of Moments estimation method is used to analyze the data and the following findings came to bear. Management is found to be efficient when director shareholding in very prominent in the bank, thus, the more executives' have ownership interests in the bank, the higher the efforts they put in monitoring operations and reducing the level of loan defaults in order to reduce losses and seek the best interests of the bank. Institutional ownership is also

found to have significantly negative relationship with non-performing loan. In the face of institutional ownership, equity ratio contributed significantly to the reduction of non-performing loans. Institutional ownership, thus contributes to the enhancement of loan quality due to the control and monitoring exerted by institutional owners in ensuring that management perform their operations efficiently. Public listing of banks also had a significantly negative relationship with non-performing loans. This indicates that strict regulation of publicly listed banks go a long way to ensure that managers manage their loan portfolio more efficiently in order to send good signals to potential investors and customers who wish to invest and transact business with the banks respectively. In the second model whereby executive compensation and ownership is interacted, no significant relationship is found between the interaction terms and non-performing loans. This tells us that the ownership structure of banks do not influence the level of pay of executives and consequently the performance of the loan portfolio.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary of findings of the study as well as conclusions and recommendations made by the researcher in respect of the study.

6.1 Summary

This study analyzes corporate governance practices and the performance of loan portfolios in Ghana. Specifically, the study seeks to examine the extent to which executive compensation and ownership type influence the quality of loans in Ghana. The study also investigates the moderation effect of ownership structure on the relationship between compensation and loan quality. An overview of the Ghanaian banking sector in chapter two brings to light that several banks in Ghana (including systemically important domestic banks and subsidiaries of reputable international banks) reported high NPL ratios in the range of 20 percent to 40 percent between 2008 and 2011. Non-performing loans in the Ghanaian context is described as loans for which the principal or interest is 90 days or more delinquent; and/or the maturity date has passed and payment in full has not been made. It is noted that the soaring rates of non-performing loans reflects the interplay of several factors; some of the most important being the state‘s involvement in bank‘s operations, government domestic arrears and high fiscal deficits.

Literature on the subject area in chapter three however revealed that, theories of agency have attempted to explain the corporate mechanisms and economic factors that influence the performance of the loan portfolio with many empirical evidences to support. Executive pay and

organizational ownership forms have been shown to influence performance directly or indirectly in diverse ways. A review of other determinants of loan quality reveals that, GDP growth, real interest rates and lagged aggregate lending growth as well as bank-specific factors such as the composition of the loan portfolio influences the loan loss provisioning of the major United Kingdom banks studied (Pain, 2003). In like manner, Salas and Saurina (2002) reveal that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power explains variation in NPLs in Spanish commercial and saving banks. Fofack (2005) also identifies inflation, real interest rate, growth rate of GDP per capita, net interest margins, return on assets and interbank loans as possible determinants of non-performing loans in Sub-Saharan African countries. However, studies in the Ghanaian banking system by Amediku (2006) that estimates changes in some macroeconomic variables finds output shock, inflation and prime rate to be having impact on the Non-Performing Loans (NPL) ratio of the banking industry between 1995-2005.This study investigates the effects of ownership structure and executive pay on loan quality in the Ghanaian banking industry building on that foundation of Amediku (2006) and Alhassan, (2014), extending their studies by examining the impact of governance variables on non-performing loans.

The study employs a sample of universal banks in Ghana over the period between 2003and 2011. The Ghanaian banking industry has 27 banks but only banks with a minimum of three (3) years data points are considered for the study. Hence, the sample is made up of 26 banks. Secondary data is the main source of data and estimations are done using the Generalized Methods of Moments in STATA. These are explored in chapter four. Chapter five looks at the analysis and discussion of findings derived from the mentioned estimations. The findings of the study reveal

that management is efficient when director shareholding is very prominent in Ghanaian banks. Institutional ownership and public listing of banks are also shown to be significantly negatively related to non-performing loans while the lag of NPL, exchange rate depreciation and increases in net interest margins are seen to have a negative effect on loan quality. No significant relationship is found between the interaction terms and non-performing loans. The last chapter deals with the summary, conclusion and recommendations of the study.

6.2 Conclusion

Motivated by the need to analyze the effect of effective corporate governance mechanisms on the enhancement of the loan quality of banks in emerging economies, this study set out to analyze the effect that executive compensation and ownership structures of Ghanaian banks have on the quality of loans. It also examined the moderation effect of ownership structure on the relationship between compensation and loan quality. Due to the endogenous nature of non-performing loans, the systems Generalized Method of Moments estimation method was used to analyze data on Ghanaian banks over the period from 2003-2011 and the following findings came to bear; management was found to be efficient when director shareholding is very prominent in the bank, thus, the more executives' have ownership interests in the bank, the higher the efforts they put in monitoring operations and reducing the level of loan defaults in order to reduce losses and seek the best interests of the bank. Institutional ownership was also found to have significantly negative relationship with non-performing loan. In the face of institutional ownership, equity ratio contributed significantly to the reduction of non-performing loans. Institutional ownership thus contributes to the enhancement of loan quality due to the control and monitoring exerted by institutional owners in ensuring that management perform their operations efficiently. Public listing of banks also had a significantly negative relationship

with non-performing loans. This indicates that strict regulation of publicly listed banks go a long way to ensure that managers manage their loan portfolio more efficiently in order to send good signals to potential investors and customers who wish to invest and transact business with the banks respectively. In the second model whereby executive compensation and ownership was interacted, we found no significant relationship between the interaction terms and non-performing loans. This tells us that the ownership structure of banks do not influence the level of pay of executives and consequently the performance of the loan portfolio.

6.3 Recommendations

In order to achieve financial stability in the Ghanaian banking industry through improvements on the asset quality of the banking industry, this study provides the following recommendations based on its findings;

Banks should tie directors' interests to the firm as much as possible by ensuring that they gain ownership stakes in the banks so as to ensure that they contribute their best to the management of the loan portfolio since their interests will be at stake as well when they have shares in the banks they manage. Public listing of banks goes a long way to help monitor the activities of banks and put managers on edge to ensure that their performance attracts potential investors and customers. Bank owners and policy makers can therefore convince management to get their firms listed in order to make monitoring and supervision easier and enhance the performance of banks in the industry on the whole. Regulators could therefore make public listing more obligatory while enforcing performance related pay for bank managers using the needed policy instruments.

The executive compensation and ownership structures of banks may therefore serve investors interests by helping to identify banks with better governed structures in place that are likely to enhance the required rate of returns on investments. This makes it more feasible to identify banks with better loan management systems and reduced imminent risk of high non-performing loan ratios. Selective investments based on these amongst other criteria by bank investors will motivate banks to ensure the institution of efficient ownership and compensation structures that help to enhance loan quality in order to help attract investments, thus, improving the loan quality in banks and the overall quality of loans in the banking system in Ghana.

Furthermore, institutional ownership already dominates the bank ownership structure of Ghanaian banks. It helps firms to better control the activities of managers and it should be maintained and encouraged since it gives shareholders stronger authority to steer the affairs of the banks and enforce corrective measures in management and loan monitoring processes whenever the need be.

The study also suggests that measures should be put in place to enhance the value of the country's currency by reducing the level of imports, thereby making the country independent while promoting exports to improve the balance of payment of the country. The study also suggests that future research investigates the extent to which efficient diversification of the loan portfolio could minimize credit-specific risk to the ideal cost of capital of banks in emerging economies.

REFERENCES

Alhassan, A. L., Kyereboah-Coleman, A., & Andoh C. (2014). Asset quality in a crisis period: An empirical examination of Ghanaian banks. *Review of Development Finance, 4(1),* 50–62.

Amediku, S. (2006). Stress tests of the Ghanaian banking sector: A VAR approach. Bank of Ghana Working Paper Series, No. 2. Retrieved from the Bank of Ghana website: (accessed:http://bog.gov.gh/privatecontent/Publications/Staff_Working_Papers/2006/stress%20tests%20of%20the%20ghanaian.pdf)

Amoafo S. O. (2012). The Role of Banks in Ghanaian the Economy. Retrieved from the Money Ghana website: http://blogs.moneygh.com/the-role-of-banks-in-the-ghanaian-economy

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte carlo evidence and an application to employment equations. *Review of Economic Studies, 58,* 277–297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-component models. *Journal of Econometrics, 68,* 29–51.

Azofra, V. & Santamaria, M. (2011). Ownership, control and pyramids in Spanish Commercial banks. *Journal of Banking and Finance, 3,* 1464–1476.

Barkema, H. G., & Gomez-Mejia, L. R. (1998). Managerial compensation and firm performance: A general research framework. *The Academy of Management Journal, 41(2),* 135-145.

Barr, R. & Siems, T. (1994). Predicting bank failure using DEA to quantify management quality. Federal Reserve Bank of Dallas, Financial Industry Studies. *Working Paper* No. 1-94.

Barth, J. R., Caprio, G. Jr., & Levine, R. (2003). Bank supervision and regulation: What works best? *Journal of Financial Intermediation*, forthcoming.

Basu A. (1998). Banking system reforms in Sub-Saharan Africa: Status and Challenges. International Monetary Fund (Unpublished).

Baumol, W. (1959). *Business Behavior, Value and Growth*. New York: Macmillan.

Bebchuk, L. A., Fried, J. M., & Walker, D. I. (2002). Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review*, *69(3),* 751-846.

Bebchuk L. A., & Fried J. M. (2003). Executive compensation as an agency problem. *Journal of Economic Perspectives*, *17* (3), 71-92

Ben-David, I. *(*2011), Financial Constraints and Inflated Home Prices during the Real Estate Boom. *American Economic Journal: Applied Economics 3*(3)

Berge, T.O. & Boye, K. G. (2007). An analysis of bank's problem loans. *Norges Bank Economic Bulletin*, *78*, 65–76.

Berger, A. & De Young, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking and Finance, 21*, 849–70.

Berger, A.N., DeYoung, R. Genay H. & Udell, G.F. (2000). Globalization of financial institutions: Evidence from cross-border banking performance. *Brookings Papers on Economic Activity* 2, 23-158.

Berle, A. A. & Means, G. C. (1932/2004). *The Modern Corporation and Private property* (6 ed.). New Brunswick: Transaction Publishers.

Blundell, R., & Bond, S. (1998). Initial conditions and moment conditions in dynamic panel data model. *Journal of Econometrics 87*, 115–143.

Bond, S. R., Hoeffler, A. & Temple J. (2001). GMM estimation of empirical growth models, *CEPR Discussion Papers* 3048, C.E.P.R. Discussion Papers.

Boss, M., Fenz, G., Pann, J., Puhr, C., Schneider, M. & Ubl, E. (2009). Modeling credit risk through the Austrian business cycle: An update of the OeNB Model. *OeNB Financial Stability Report, 17,* 85–101.

Boubakri, C., & Fisher, (2005). *Ownership structure, privatization, bank performance and risk taking.*

Breuer, J. B. (2006). Problem bank loans, conflicts of interest, and institutions. *Journal of Financial Stability*, *2*, 266–285.

CEPA. (2012). Ghana Economic Review and Outlook. Retrieved from Centre for Policy Analysis website. www.cepa.org.gh/newsinfo.php?id=77

Chang, C.E., Hasan I. & Hunter W.C., (1998). Efficiency of multinational banks: An empirical investigation. *Applied Financial Economics*, *8*(6), 1-8.

Chen, C., Steiner, T. & Whyte, A. (2006). Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry. *Journal of Banking and Finance 30*, 915–945.

Claessens, S., Demirgüç-KuntA., & Huizinga H. (2001). How does foreign entry affect domestic banking markets?. *Journal of Banking and Finance. 25*, 891-911.

Coles, J., Daniel, N., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics, 79,* 431–468.

Cole, S., (2006). Fixing market failures or fixing elections? Agricultural credit in India. Harvard Business School mimeograph

Creane, S., Goyal, R. Mobarak, A. & Sab, R. (2004). Evaluating Financial Sector Development in the Middle East and North Africa: New Methodology and Some New Results. Proceedings of the Middle East Economic Association.

DeAngelo, H., & DeAngelo, L. (1985), managerial ownership of voting rights: A study of public corporations with dual classes of common stock. *Journal of Financial Economics 14*, 33-69.

Demirguc-Kunt, A. (1989). Deposit-institution failures: A Review of the empirical literature, Federal Reserve Bank of Cleveland. *Economic Review*, Quarter 4.

Demirgüç-Kunt, A. & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence. *The World Bank Economic Review13*, 379-408.

Demsetz, H. (1983). The structure of ownership and the theory of the firm. *Journal of Law and Economics*, *26*, 301–25.

DeYoung, R. & Nolle D.E. (1996). Foreign-owned banks in the United States: Earning market share of buying It? *Journal of Money, Credit, and Banking*, *28*(4), 622-636.

DeYoung, R. (1997). Bank mergers, x-efficiency, and the market for corporate control, *Managerial Finance*, *23*(1), 32 – 47.

Dezso C. L. & Ross D. G. (2012). Are banks happy when managers go long? the information content of managers' vested holdings for loan pricing. *Journal of Financial Economics*, *106*, 395–410.

Duru, A., Mansi, S., & Reeb, D. (2005). Earnings-based bonus plans and the agency cost of debt. *Journal of Accounting and Public Policy*, *24*, 431–447.

Eisenhardt M. K. (1989). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57-74.

Ellig B. (2002). *The complete guide to executive compensation*, (1ed), UK: McGraw-Hill

Ezoeha A. E. (2011). Banking consolidation, credit crisis and asset quality in a fragile banking system, some evidence from Nigerian Data. *Journal of Financial Regulation and Compliance, 19*(1), 33-44.

Fama E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*, 288-307.

Fama, E. F. & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26*, 301–325.

Fields L. P., Fraser D. R. & Subrahmanyam, A. (2012). Board quality and the cost of debt capital: The case of bank loan. *Journal of Banking and Finance*, 1536–1547

Fofack, H. (2005). Non-performing loans in Sub-Saharan Africa: Causal analysis and macroeconomic implications. *World Bank Policy Research Working Paper*, No. 3769,

Gambera, M. (2000). Simple Forecasts of Bank Loan in the Business Cycle. *Emerging Issues Series*, 3, 1–27.

Gomez-Mejia, L. R. (1994). Executive compensation: A reassessment and a future research agenda. *Research in Personnel and Human Resources Management, 12*, 161-222.

González-Hermosillo, B. (1999). Determinants of ex-ante banking system distress: a macro-micro empirical exploration of some recent episodes. Washington, D.C.: International Monetary Fund, Western Hemisphere Department.

Grabke-Rundell, A., & Gomez-Mejia, L. R. (2002). Power as determinant of executive

compensation, *Human Resource Management Review*, *12*(1), 3-23.

Guay, W. (1999). The sensitivity of CEO wealth to equity risk: an analysis of the magnitude and determinants. *Journal of Financial Economics*, *53*, 43–71.

Hasan, I., & Hunter W.C.(1996). Efficiency of Japanese multinational banks in the United States. In Andrew H. Chen (Ed), *Research in Finance*, 14, 157-173. Greenwich, CT and London: JAI Press

International Monetary Fund (2011). Ghana: Financial system stability assessment update, *IMF* Country report No. 11/131(www.imf.org/external/pubs/ft/scr/2011/cr11131.pdf).

ISSER (2009). Global financial crisis. Overseas development institute discussion series, Paper 5. Accra, Ghana: Ackah, C. G., Aryeetey E. B., & Aryeetey E.

Jensen M. C. & Meckling W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jensen, M. C., & Ruback, R. S. (1983). The market for corporate control: The scientific evidence. *Journal of Financial Economics*, *11*(1), 5-50.

Jensen, M.C. (1983). Organization Theory and Methodology. *The Accounting Review*, *2*,319-339.

Jensen, M. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review Papers and Proceedings*, *76*, 323–329.

Jiménez, G., & Saurina, J. (2006). credit cycles, credit risk, and prudential regulation. *International Journal of Central Banking*, *2* (2), 65-98.

John, T., & John, W. (1993). Top-management compensation and capital structure. *Journal of Finance*, *48*, 949–974.

Johnson, S. & Tian, Y. (2000). The value and incentive effects of non-traditional executive stock option plans. *Journal of Financial Economics*, *57*, 3–34.

Kabir R., Li, H., & Veld-Merkoulova, Y. V. (2013). Executive compensation and the cost of debt. *Journal of Banking and Finance*, *37*, 2893–2907.

Keeton, W.R. (1999). Does faster loan growth lead to higher loan losses? Federal Reserve Bank of Kansas City, *Economic Review*, Second Quarter.

Khwaja, A., & Mian, A. (2005). Do lenders favor politically connected banks? Rent provision in an emerging financial market. *Quarterly Journal of Economics120*, 1371-1411.

King, T., & Wen, M. (2011). Shareholder governance, bondholder governance, and managerial risk-taking. *Journal of Banking & Finance 35*, 512–531.

Kobeissi, N. (2013). Ownership structure and bank performance: Evidence from the Middle East and North Africa. *Working Paper 0413*

Kwan, S., & Eisenbeis, R. (1997). Bank risk, capitalization and operating efficiency. *Journal of Financial Services Research*, *12*, 117-131.

Lang, L.H.P., & So, R.W.(2002). Ownership structure and economic performance. Working Paper.

La Porta R., Lopez-de-Silanes, F., & Shleifer A. (2002). Government ownership of banks. *Journal of Finance*, *57*, 265-301.

Levine, R. (2003). The corporate governance of banks: A concise discussion of concepts and evidence. *Global Corporate Governance Forum*, *Discussion Paper No. 3.*

Liu, B. (2011). The effects of public listing on the performance of banks in China. *Hong Kong Institute for Monetary Research*, *Working Paper No.07*

Louzis, D. P., Angelos T. Vouldis, A. T. & Metaxas, V. L. (2011). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking and Finance,36*, 1012-1027.

Low, A. (2009). Managerial risk-taking behavior and equity-based compensation. *Journal of Financial Economics, 92*, 470–490.

McConnell, J., & Servaes, H., (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics, 27,* 595–612.

Mensah, S., & Abor, J. (2013). Agency conflict and bank interest spreads in Ghana. *International Growth Centre Working Paper*.

Morck, R., Shleifer, A., & Vishny, R.W. (1988). Management Ownership and Market Valuation: An Empirical Analysis. *Journal of Financial Economics, 20*, 293–315.

Pain, D. (2003). The Provisioning Experience of major UK Banks, A Small Panel Investigation. *paper No. 177,* Bank of England.

Peristiani, S. (1996). Do mergers improve the x-efficiency and scale efficiency of U.S banks? *Federal Reserve Bank of New York*, Research Paper No. 96, 23

Peterson, M. A., & Rajan, R. G. (1995). The effect of credit market competition on lending relationships. *Quarterly Journal of Economics, 110* (2), 407-443.

Podpiera, J. & Weill, L., (2008). Bad luck or bad management? Emerging banking market experience, *Journal of Financial Stability, 4*, 135–148.

Presbitero, Andrea F., & Zazzaro, A. (2011). Competition and Relationship Lending: Friends or foes? *Journal of Financial Intermediation, Elsevier, 20*(3), 387-413.

Rajan, R. & Dhal, S. C. (2003). Non-performing loans and terms of credit of public sector banks in India: An empirical assessment. *Reserve Bank of India, Occasional Papers, 24*(3), 81-121.

Rinaldi, L. & Sanchis-Arellano, A. (2006). Household debt sustainability: What explains household non-performing loans? An empirical analysis.*ECB Working Paper*.

Roodman, D. (2007). A note on the theme of too many instruments. *Center for Global Development*, Working Papers 125,

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research, 22*, 203– 224.

Sapienza, P. (2004). The effects of government ownership on bank lending, *Journal of Financial Economics, 72,* 357-384.

Shehzad, C., De Haan, J., & Scholtens, B. (2010). The impact of bank ownership concentration on impaired loans and capital adequacy. *Journal of Banking and Finance, 34,* 399–408.

Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy, 94*, 461-488.

Shleifer, A., & Vishny, R.W. (1997). A survey of corporate governance. *Journal of Finance 52*, 737-783.

Stiglitz, J.E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review 71*, 393–410.

Sufi, A. (2007). Information asymmetry and financing arrangements: Evidence from syndicated loans. *Journal of Finance, 62*, 629-668.

Unite, A.A., & Sullivan, M. J. (2003). The Effect of Foreign Entry and Ownership Structure on the Philippine Domestic Banking Market. *Journal of Banking and Finance*, *27*, 2323 – 2345.

Vander, V.R. (1996). The Effect of Mergers and Acquisitions on the Efficiency and Profitability of EC Credit Institutions. *Journal of Banking and Finance*, *20*, 1531-1558.

VanHoose D. (2011). regulatory restraints on performance-based managerial compensation, bank monitoring, and aggregate loan quality. *Working Paper*, Network Finance Institute, Indiana State University.

Whalen, G. (1991). A proportional hazards model of bank failure: an examination of its usefulness as an early warning tool. Federal Reserve Bank of Cleveland. *Economic Review*, Quarter 1.

Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics, 126*, 25–51.

Wu, J., & Tu, R. (2008). CEO stock option pay and R&D spending: a behavioral agency explanation. *Journal of Business Research, 60*, 482–492.

Zingales, L. (1994). The value of the voting right: A study of the Milan stock exchange Experience. *Review of Financial Economics, 7,* 125-148.