

Strathmore
UNIVERSITY

**THE RELATIONSHIP BETWEEN EXECUTIVE REMUNERATION AND CREDIT
RISK OF BANKS LISTED IN KENYA**

**KINYANJUI BRENDA WANGECHI
067166**

**Submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Business Science-Finance at Strathmore University**

**School of Finance and Applied Economics
Strathmore University
Nairobi, Kenya**

November, 2015

**This Research Project is available for Library use on the understanding that it is
copyright material and that no quotation from the Research Project may be published
without proper acknowledgement.**

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

© No part of this Research Project may be reproduced without the permission of the author and Strathmore University

KINYANCUI BRENDA [Name of Candidate]

BBUK [Signature]

15.11.2015 [Date]

This Research Project has been submitted for examination with my approval as the Supervisor.

MERCY KANO [Name of Supervisor]

16/11/2015 [Signature]

..... [Date]

School of Finance and Applied Economics

Strathmore University

ABSTRACT

The collapse of the financial system in 2008 brought into light the strong impact that executive remuneration had in the management of credit risk in banks in the United States. The relationship of agency looks at executive pay as a mode of linking the interests of shareholders to that of management. This study attempts to reveal the relationship between the measures of credit risk and executive remuneration and give an overall assessment of the impact of executive remuneration on credit risk in Kenyan banks. It will enable shareholders be able to know to what extent they can use executive remuneration to control credit risk in banks. It can also be used by the government to ensure proper credit risk management in banks for the sound health of the financial system. A panel data from eleven listed commercial banks in Kenya covering a seven year period (2008-2014) was analyzed within the random effects framework. The results from this study find a positive but insignificant relationship between credit risk and executive remuneration. The study can be extended to include the structure of executive remuneration especially with the introduction of a derivatives market in Kenya and the possibility of the inclusion of share options in the pay structure of management.

Key words: Credit risk, Executive remuneration, Agency, Banks, Kenya,

TABLE OF CONTENTS

1. Introduction.....	- 5 -
1.1 Background.....	- 5 -
1.2 Problem Statement.....	- 7 -
1.3 Research Objectives.....	- 8 -
1.4 Research Questions.....	- 8 -
1.5 Significance of the Study.....	- 8 -
2. Literature Review.....	- 9 -
2.1 The Agency Problem.....	- 9 -
2.2 The Executive Remuneration Solution.....	- 9 -
2.3 Empirical Studies.....	- 12 -
2.4 Credit Analysis Measures.....	- 16 -
2.5 The Knowledge Gap.....	- 17 -
2.6 Conceptual Framework.....	- 17 -
3. Methodology.....	- 18 -
3.1 Research Design.....	- 18 -
3.2 Population and Sample.....	- 18 -
3.3 Data Collection Methods.....	- 19 -
3.4 Data Analysis.....	- 19 -
4. Data Analysis and Findings.....	- 22 -
4.1 Descriptive Statistics.....	- 22 -
4.2 Correlation Analysis.....	- 24 -
4.3 Regression Analysis.....	- 24 -
4.3.1 Loans and Advances.....	- 25 -
4.3.2 Non Performing Loans.....	- 26 -
4.3.3 Net Charge Off.....	- 27 -
5. Discussion, Summary and Conclusion.....	- 29 -
5.1 Discussion.....	- 29 -
5.2 Conclusion.....	- 31 -

References.....- 32 -

LIST OF TABLES

Table 1: Descriptive statistics of the main variables.....	- 22 -
Table 2: Correlational matrix.....	- 24 -
Table 3: Loans and advances regression table.....	- 26 -
Table 4: Non performing loans regression table.....	- 27 -
Table 5: Net charge off regression table.....	- 28 -

CHAPTER ONE

1 INTRODUCTION

1.1 Background

It is in the wake of the 2008 financial crisis that the link between executive remuneration and credit risk management became more visible. A survey by KPMG in 2009 found that 52% of senior managers at large financial institutions believed that incentives and remuneration contributed the most to the credit crisis that was the mark of the financial crisis of 2007-2008 (KPMG, 2009).

Banks like other firms have managers that run the day to day activities of the company on behalf of its owners. This makes the managers agents of the shareholders. The relationship of agency is one of the oldest and commonest codified modes of social interaction. (Ross S. , 1973).

Jensen and Meckling describe the agency relationship as a contract under which the principal engages the agent to perform some service on their behalf (Jensen & Meckling, 1976). They noted that the agent does not always work to maximize the welfare of the owners. It is difficult and very expensive for the principal to monitor what the agent is doing. Eisenhardt later came up with a solution to solve the problem on control-the principal could reward the agent based on outcomes such as profitability (Eisenhardt, 1985). In comes executive remuneration where executive pay was structured initially to create value for owners by enhancing credit risk taking in managers. (Shapiro, Mehran, & Morrison, 2011).

Due to the nature of the business of the banking industry, Banks in Kenya face a myriad of risks in their operations more than other companies in the country. They face significant liquidity risk as they need to offer their customers instant access to their deposits-they should be able to withstand the pressure from having many customers asking for their money back at the same time. They also face interest rate risks as their profit margin is largely dependent on the movement of interest rates in the country. Additionally, they face significant exchange rate risk as a significant number of banks are multinational corporations hence exposing themselves to exchange rate movements that may adversely affect them especially with the weakening shilling. The banks also face business risk due to the nature of their business and operational risk that has

damaging effects should any operational processes fail. Credit risk is one among the many risks that banks face.

Credit risk is the oldest form of risk in financial markets that dates back as far as 1800 BC (Caouette, Altman, & Narayanan, 1998). Credit risk is the risk of an economic loss from a failure of a counterparty (the borrower in the case of a bank) to fulfill its contractual obligations (Jorion, 2003). Provision of credit remains the primary business of every bank in the world. Ineffective credit management is a major cause of serious banking problems. Credit quality is for this reason considered to be a primary indicator of financial soundness and health of banks. (Boahene, Dasah, & Agyei, 2012).

Due to the severe consequences of improper credit risk management Central bankers from around the globe came up with a set of guidelines that would govern credit risk management in banks by setting up minimal capital requirements. Capital in banks is used to shield the bank from credit risk as it offers a buffer against defaults in loans.

Management of credit risk has been complicated by the existence of information asymmetry between the borrower and the bank. The presence of information asymmetry leads to adverse selection where potential bad credit risks are the ones who actively seek out the loans (Mishkin, 2010). This increases the bank's problem as it has to do rigorous screening in order to determine which borrower to give credit and which borrower not to. Effective credit management is what determines which bank will be successful in coping with adverse selection and which bank will make losses.

The evolution of the financial markets has led to the creation of more advanced financial instruments all in a bid to customize the needs of participants in the market. Banks have not been left behind with regard to credit risk. Asset backed securities such as the Collateralized Debt Obligation which are securities backed by a diversified pool of corporate bonds and loans have enabled banks to repackage their debt obligations and transfer risk to other investors (Jorion, 2003). While these have been great in the management of credit risk, mismanagement of the financial instruments can have catastrophic events. A combination of mismanagement of CDOs and adverse selection was one of the causes of the financial crisis.

Kenyan banking system was however poised to withstand the crisis. What we seek to find out is what role executive remuneration plays with regards to credit risk and credit risk management in banks listed on the Nairobi Securities Exchange.

1.2 Problem Statement

Numerous studies have been carried out trying to link the relationship between executive pay and firm performance globally and even in Kenya (Aduda, 2011), (Kipkorir, Aboko, & Bitange, 2014), (Miyienda, Ososro, & Miyogo, 2013). However, the influence that executive compensation has on the attitude of managers towards risk is an area one worth exploring further.

Unlike shareholders, managers are generally risk averse. Shareholders are able to diversify their investments and as such they are risk seeking as they try to maximize their return. Managers on the other hand cannot afford the luxury of taking up excessive risk as they are unable to diversify their pay. This makes them risk averse creating conflict of interest between their wishes and those of risk seeking shareholders (Eisenhardt, 1989)

To eliminate this conflict of interest, it has been observed that executive remuneration can be a tool that shareholders use to encourage risk taking in managers (Diamond & Rajan, 2009) (Shapiro, Mehran, & Morrison, 2011). This is done by linking executive remuneration to company performance. This therefore means that for managers to increase their pay, they need to increase company returns. Increasing company returns may require managers to take up more credit risk than before. This has however made managers blinded by the idea of increased pay so that they are unable to see clearly how much credit risk they are undertaking all in a bid to increase company returns. Managers have been seen to relax credit risk management procedures in banks as they try to attract more borrowers so as to earn higher interest income, improve short term company performance which consequently translates to more pay. This was best observed during the 2007-2008 financial crisis that saw managers of banks who were earning high fees not bother to do a thorough credit analysis on the potential borrowers as they were blinded by the high returns that translated to higher remuneration for them (Mishkin, 2010).

However, Ross (2004) disagrees with this and says that there is no incentive schedule that will make agents more or less risk averse. Holmstrom (1979) too is of this view and goes ahead to say that the notion that risk preference alignment between shareholders and managers is possible via the use of incentives is impossible.

The study explores this in the Kenyan context and tries to find out the relationship that exists between the measures of credit risk and executive remuneration and therefore the impact of executive remuneration on credit risk in banks listed on the Nairobi Securities Exchange.

1.3 Research Objectives

1. To establish relationship between credit risk measures and executive remuneration of managers of listed banks in Kenya.
2. To analyze the impact of executive remuneration on credit risk in listed banks in Kenya.

1.4 Research Questions

1. What is the relationship between credit risk measures and executive remuneration of managers of listed banks in Kenya?
2. What is the impact of executive remuneration on credit risk in listed banks in Kenya?

1.5 Significance of the Study

The first beneficiaries of this research are the owners of banks listed on the Nairobi Securities Exchange. This is because they are the ones that determine the remuneration for managers through the remuneration committee. As such they will be able to know what role the level of remuneration they pay plays with regards to credit risk in their banks. As such they will be able to adjust this appropriately in such a way as to optimize the level of risk that is appropriate for their firms.

The Government of Kenya benefits from this study as they partially own many of the banks listed on the Nairobi Securities Exchange through purchasing of a number of ordinary shares. They do this because they realize that the banking industry is very sensitive and as such requires close monitoring by the government. They would therefore be able to determine to what extent remuneration affects credit risk in banks and use this ensure that banks maintain a healthy amount of credit risk. The government is in charge of monetary policies and they are the ones responsible for the smooth running of the financial system whose main players are banks and their main challenge being credit risk. Good credit management translates to well adjusted banks and subsequently a healthy financial market and a healthy economy at the end of the day.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 The Agency Problem

Shareholders and executives have different attitudes with regards to risk. Shareholders are seen to be risk seeking while executives are risk averse. The difference is brought about by the fact that investors are able to diversify their risk by taking in diversified investments. To maximize their return, shareholders will take up risky investments as the greater the risk, the greater the return (Sharpe, 1970).

However, managers are not able to diversify their remuneration and as such cannot afford the luxury of taking up excess risk in a bid to earn higher returns. Due to the fact that managers are excluded from effectively diversifying employment and personal wealth risk, executives are said to be risk averse (Jensen & Meckling, 1976)

Eisenhardt (1989) is also of the opinion that managers should be risk averse too. The inability of managers to take up investments and diversify their risk is the greatest contributor towards their risk aversion. (Eisenhardt, Agency Theory: An Assessment and Review, 1989)

2.2 The Executive Remuneration Solution

Ideally, executive compensation should be an instrument for combating the agency problem between managers and shareholders. This is the optimal contracting approach (Walker, Bebchuk, & Fried, 2002)

Shapiro, Mehran, & Morrison (2011) in their paper state that conventional wisdom holds that executive pay structure was designed to promote risk taking and create value for shareholders. However, they also add that this does not protect debt-holders.

In light of the above view, Bolton, Scheinkman, & Xiong (2006) have come up with a theory that claims that shareholders have a short-termist view with regard to their investments. And as such, they try to make managers take up a similar view by designing managerial compensation in such a way as to induce CEOs to exploit future investors. This is so much so that the more speculative the market, the more the shareholders align managerial remuneration to the company's performance in that market so as to encourage managers to take up more risk.

An issue comes up where most companies are owned by institutions and as such one may be led to think that institutional shareholders have a long term view and not a short term view as they claim in their theory. They disprove this assumption by citing a survey that was carried out where they noticed that companies owned by many institutional shareholders were observed to reduce their research and development costs and use this money to pump up their earnings. Therefore both individual investors and institutional investors have a short term view to their investments and wish to maximize their returns at the earliest opportunity (Bolton, Scheinkman, & Xiong, 2006).

The Department of Treasury agrees with them and state that compensation design unintentionally encourage excessive risk taking, providing incentives that ultimately put the company in danger. They advise that compensation committees should conduct and publish risk assessments of pay packages to ensure that they do not encourage prudent risk taking.

The Department of Treasury also look at it from a different perspective where they say that some of the decisions that contributed to the financial crisis happened when people were able to earn immediate gains without their compensation reflecting the long term risks they were taking for the shareholders. It made the managers short-termist. (Geithner, 2009)

Bebchuk & Spamann (2010) agree that executive pay is an incentive for managers to take up excessive risk. One factor that induced excessive risk taking in banks is that firms' standard payment arrangements reward executives for short term gains even when these gains are subsequently reversed. Another reason that they give that gave managers motivation to take up excessive risk was that these executives were not exposed to the potential negative effects that large losses from excessive credit risk could have caused the shareholders. Such like compensation agreements made them give insufficient weight to risks of large losses. They also say that it is not sufficient to tie executive payments to long term results in order to curb excessive risk taking but should look at monitoring and regulating compensation structures instead (Bebchuk & Spamann, Regulating Bankers' Pay, 2010)

Diamond & Rajan (2009) address the banking industry in specific. They agree that compensation does encourage risk taking among managers in banks. Due to competition among the banking industry, managers are paid generously based on performance. Many of the compensation schemes are based on short term performance. This gives traders an incentive to take risks not recognized by the system so that the owners view them as having superior abilities and hence

pay them more. The relationship between excessive risk taking and executive remuneration for that reason is greater in the banking industry in comparison to other industries not in the financial sector.

Culp (2000) links the agency problem to the risk attitude of investors. When monitoring is costly, the manager will not have the incentive to maximize the shareholder's return. The expected utility of a manager's wealth is a convex function of the firm. This will in turn determine the degree to which the manager will fully hedge the firm or simply walk away from risky projects.

Another paper that expounds this further is Coles, Daniel, & Naveen (2006). This paper says that managers are generally risk averse. To mitigate the effect of CEO risk aversion, then the company should consider giving convex payoffs to them to mitigate the effect of CEO risk aversion. However this will only work depending on the managerial utility function. Convexity of the payoff structure can be more than offset by concavity of the utility function of the risk averse manager

Santomero, (1997) is another paper that links the agency problem to risk management is

In his paper, he says that well designed incentive systems align the goals of managers with other stakeholders in a most desirable way. Executive compensation when utilized properly can be used as a risk management tool in itself. The absence of incentive compatibility according to him has caused the most financial debacles. Aligning incentives to risks is less costly than putting up other controls for risk management. The only problem with this he says is that these compensation schemes have to be thoroughly evaluated to determine if they are accurate in meeting the intended goal.

Sundaram & Yermack (2007) have a different approach and to them, the structure of the compensation is what determines the risk attitude of the manager. When top executives receive part of their compensation in debt and part in equity then they are expected to manage the firm in such a way that considers the interests of both the debt and equity investors. Classical agency problems related to risk shifting and excessive payouts should diminish in importance when managers hold large pensions or deferred compensation.

Wiseman & Gomez-Mejia (1999) introduce a new term-risk bearing which refers to the perceived risk to agent wealth that can result from employment risk or taking other threats to the agent's wealth. Risk bearing increases risk aversion by aggravating the overinvestment problem

faced by managers. This means that when forecasts of firm performance are satisfactory then executives expect a gain in their remuneration and consequently act conservatively with regards to risk. When executive performance is insulated from firm performance, no incentive exists to accept risk and executives should exhibit risk aversion

Edmans & Gabaix (2011) have a completely different view from the ones above. They feel that the reaction to increased CEO compensation could go either way. If the CEO affects firm value mainly by consuming perks then increasing his remuneration has little effect on risk and so incentives are weaker but if the CEO creates value by choosing risky projects, incentives are stronger.

Holmstrom (1979) is of a complete contrarian view and in his paper he goes ahead to say that no amount of incentives would make executives risk neutral with regards to the shareholders. Therefore the notion that risk preference alignment between shareholders and managers is possible via the use of incentives is impossible. The only thing that incentives can do is reduce the extent of misalignment but complete alignment between managers and shareholders can never be achieved

Another paper that holds a similar view to the one above is Ross (2004) . In his paper he says that there is no incentive schedule that will make agents more or less risk averse. To make managers more risk averse, there are some conditions that are necessary and have to be met.

2.3 Empirical Studies on Executive Remuneration and Credit Risk

The willingness of managers to take up on risk depends on two things; the rewards for risk taking and the costs management has to bear for any poor performance that results from these risky activities. This means that the lower the manager turnover due to poor performance, the more the incentive to take up risk.

An empirical study carried out using the largest US banking firms between 1980 and 1981 found out that salaries paid to bank managers was less than those paid to non-banking firms. The lower cash compensation could be explained by lower marginal productivity of managers in the banking sector relative to other industries. They also found out that the marginal product of executives is lower in the banking industry than in other industries due to regulation n the banking industry that reduces the managers' investment discretion. They claim that the lower cash compensation is inconsistent with the moral hazard hypothesis. However, their results are

consistent with the contracting hypothesis which predicts that firms with greater growth opportunities will pay higher salaries and rely heavily on incentive compensation. They find out that there is a highly significant and positive relationship between changes in stakeholder wealth and executive compensation. They also found out that the cash compensation of bank executives is more sensitive to stock market performance than firm performance. In the too big to fail banks, the pay performance relationship there was weaker than other banks showing that compensation may not be designed to promote risk taking. In conclusion, there is little evidence that compensation policies in banking are designed to encourage excessive risk taking. The moral hazard problem in banks may not be that severe to the extent that managers are not provided with incentives to engage in risky activities such as low manager turnover due to poor performance. Also, factors influencing compensation and turnover policies are similar to those influencing such policies in other industries. Due to these results it therefore means that any efforts made by regulators to control compensation in the banking industry to curb risk are likely to be ineffective. (Houston & James, 1995)

Bloom & Milkovich (1995) carried out an empirical study where they found out that higher levels of risk and higher variability in pay is associated with lower firm performance. Their results are the direct opposite of their agency-based predictions. They had anticipated that higher levels of business risk would be compensated with higher pay but this was not the case. They found out instead that higher risk is associated with lower pay. They found out that generally high risk firms which rely more heavily on incentive pay are more likely to experience poor performance.

An empirical study carried out in the paper by Cheng, Hong, & Scheinkman (2010) shows that there is a positive relationship between residual compensation and risk. The relationship between pay and risk are related to features of the optimal contract and investor demands. There is little relationship between incentives and risk and probably what explains the relationship is that total pay levels increase in the level of risk because agents must be given a large incentive to join high risk firms. Any effort for regulation of pay should begin with an analysis of the wedge between the interests of the firm and the taxpayer who will bear the loss from too-big-to-fail firms rather than the wedge between shareholders and management.

Bolton, Mehran, & Shapiro (2010) carry out a study that leads them to believe that compensation does indeed influence the risk attitude of the managers. They use a different approach where they

look at ways to reduce a manager's love for excessive risk taking. They say that just as much as linking compensation to stock price returns helps motivate managers to take up risk, debt based compensation curbs the risk loving nature of managers. The market believes that debt like compensation reduces risk taking. Credit Default Swap (CDS) based compensation is more suitable as it is cheaper and easier to implement than other debt like instruments. Optimal risk taking incentives will not be implemented by shareholders because they suffer from a commitment problem that is exacerbated by either the renegotiation of compensation contracts, deposit insurance or naïve debt holders

The empirical study carried out in the paper by Tung (2011) concurs with the one above. They discover that paying bankers with debt may curb their appetite for risk, consistent with the regulator's goal of assuring bank safety and soundness. However, for them, publicly traded subordinate debt may be an ideal form of debt compensation for bankers because market pricing of this debt will offer a continuing referendum on risk taking at the bank as it is more sensitive to downward risk than equity is. This is a more reliable and direct inducement for banks to curb excessive risk taking. This mode of remuneration aligns the managers' interests more closely with relatively risk averse debt holders. It further aligns the regulators' interest in assuring bank safety and soundness to that of the managers. This goes ahead to confirm empirically the proposition by Sundaram & Yermack (2007) where they talk about the structure of executive compensation being the important factor in determining the risk attitude of the manager. The empirical study by Chen, Steiner, & Whyte (2006) also emphasizes the importance of the structure of executive remuneration vis-à-vis risk attitudes of managers. They focus on option based remuneration and discover that there indeed is a relationship between executive remuneration and risk taking in managers. CEO's option based compensation induces risk taking and that there is some evidence that it also enhances shareholder wealth thus aligning the interests of shareholders and managers.

Another empirical research that emphasizes the importance of executive compensation structure is the one by Balachandran, Kogut, & Harnal (2011). A research carried out after the financial crisis found out that financial institutions led by executives whose remuneration was heavily weighted in equity are more likely to be marked by extreme risk taking. The problem was that many models of incentives and risk did not scale well to executive compensation. This reinforces further the proposition brought forward in the paper by Santomero (1997) about the execution of

the remuneration being important. If compensation is to incentivize managers, then the large incentive packages of CEOs of financial institutions conform to the belief that top managers experience declines in marginal utility in income, requiring even greater incentives with increasing level of income.

Balachandran, Kogut, & Hermal (2011) recommend that the most suitable way to design compensation contracts would be through the use of debt and equity compensation so as to encourage risk taking but also limit it to a certain extent by the debt compensation. Empirically the paper by Demestz, Saidenberg, & Strahan (1997) finds that the level of risk aversion in managers is dependent on the tendency toward performance based compensation. This goes ahead to confirm empirically the propagation in the paper by Coles, Daniel, & Naveen (2006). The lower the observable tendency toward performance based compensation then the higher the risk aversion. They discover that there is an inverse relationship between the two.

Hall & Liebman (1998) say that one of the solutions to the agency problem is solved by a one-to-one correspondence between firm value and CEO pay. This contract essentially sells the firm to the CEO. This may not be reasonable for firms because firm performance is subject to great variations whose standard deviations they found to be 32% or about \$700million. Making the CEO accept such variations is very costly and hence the CEO becomes risk averse and will not take up any risky projects that will cause variability in returns

Hauswald & Senbet (2009). Carry out an empirical study that includes a different aspect to compensation. They look at the timing of executive compensation as one of the factors that affect the effectiveness of compensation as a tool for shareholders to use to align risk preferences.

Shareholders should improve on contracting outcomes by conditioning their response on ex-ante compensation schemes. They also incorporate bank regulation and say that the need for explicit managerial incentives to induce excessively risky lending reveals information about the balance-sheet quality which allows society to design collusion proof comprehensive regulatory schemes. Another empirical paper that looks at executive compensation but also adds bank regulation into their study is Huttenbrink, Kaserer, & Rapp (2014). While there is a good outcome from bank regulation found evidence that shareholders aim to jeopardize regulation by designing executive remuneration policies with stronger emphasis on performance oriented pay structures that incentivize managers to outperform competitors in a restricted business. This shows that regulation seems to have little positive outcome with regards to curbing risk taking in banks.

Shareholders turn to performance based remuneration to counter bank regulation that tries to curb managers taking excessive risks.

Hilscher, Landskroner, & Raviv (2014) Find that an increase in executive ownership is a necessary but not a sufficient condition for an increase in a financial institution's asset risk. If the regulatory limit on asset risk is above the level which maximizes the public position then the executive would choose that level. Executive ownership is greater than in the case where the regulatory upper bound on asset risk is equal to the level which maximizes the public position. This paper empirically supports the view by Edmans & Gabaix (2011).

An empirical study carried out that has a contrarian view to the ones expressed above is the one by Fahlenbrach & Stulz (2010). They discover that there is no evidence that banks with CEOs whose incentives were not aligned to the interests of the shareholders performed worse during the financial crisis. Banks where CEOs had better incentives performed significantly worse than banks where CEOs had poorer incentives. Cash bonuses did not have an adverse effect on bank performance during the crisis. If CEOs took up risks that were not in line with the wishes of the shareholders then they would have sold their shares which they did not. They too suffered huge losses as a result of the crisis. This empirical study supports the contrarian propagations made in the papers by Holmstrom (1979) and Ross (2004).

2.4 Credit Analysis Measures

Credit risk is traditionally measured as the expected loss on an asset. Expected loss in this case is a function of three variables: the probability that the counterparty will default before the asset matures, the potential exposure of the creditor to a default and the loss that a creditor incurs in the event of a default. Mathematically, this can be expressed by

$$EL=DR \times LIED \times PCE$$

Where DR is the average default rate, LIED is the expected loss on the asset in the event of default and PCE the expected potential credit exposure of the asset. (Culp, 2000). However, measuring the inputs to the formula may require some subjective aspects that may not make it an unbiased measure of credit risk.

Credit risk could also be measured using the CAMEL rating system (Ogilo, 2012). This is an acronym that stands for Capital adequacy, Asset quality, Management quality, Earnings and Liquidity. Federal regulators in the USA developed this rating system to help structure a bank's

examination process to measure the bank's overall financial health (Wirnkar & Tanko). However, it measures overall soundness of a bank but does not address credit risk in particular.

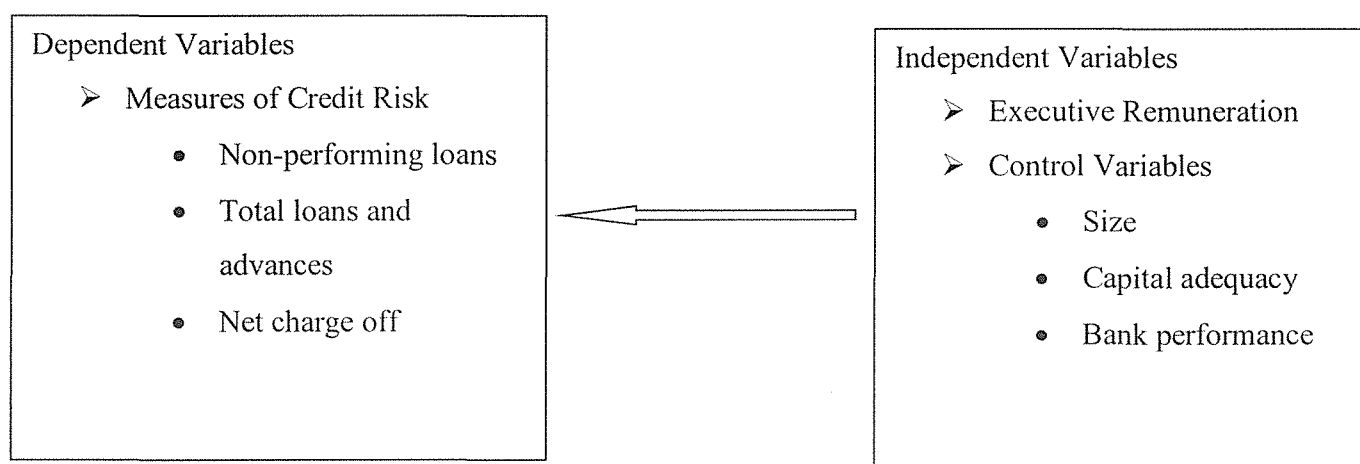
2.5 The Knowledge Gap

So far in Kenya there have been a number of empirical studies carried out trying to link the relationship between executive pay and firm performance (Aduda, 2011), (Kipkorir, Aboko, & Bitange, 2014), (Miyiinda, Ososro, & Miyogo, 2013). In light of all the literature from all over the world discussed thoroughly in the literature review above, the study of the relationship and the influence that executive compensation has on the attitude of managers towards risk and specifically in the Kenyan context, is an area worth exploring further.

There has not been much literature on this subject in the Kenyan context and an exploratory study on the same would enable shareholders know how much power they have over credit risk in banks via the use of executive remuneration.

The variables of interest here are executive remuneration and credit risk. The theory underpinning this study is the agency theory as propagated by Jensen and Meckling (Jensen & Meckling, 1976). The relationship between the variables is that executive remuneration has been seen to be a tool that shareholders use to control credit risk. I would therefore like to examine if this relationship holds in the Kenyan context.

2.6 Conceptual Framework



CHAPTER THREE

3. METHODOLOGY

3.1 Research Design

This study adopts a correlational research design. This is because the study is examining the relationship between executive compensation and credit risk in banks listed on the Nairobi Securities Exchange. In this correlational research design, the research approach that is used is a deductive one as it seeks to explain the causal relationship between executive remuneration and credit risk. It also employs the use of quantitative data. The emphasis is on selecting a suitable sample size and making a general conclusion on the nature of the Kenyan banking system with regard to the relationship between credit risk and executive remuneration.

To answer the research questions posed in the first chapter, the study uses explanatory studies whereby it tries to establish a causal relationship between the credit risk determinants and executive remuneration.

The correlational research described in detail above helps in determining the relationship that exists between executive remuneration and credit risk by determining whether the coefficient is positive or negative. The second research question is answered by determining the probability value which enables the strength of the relationship between these two main variables to be determined.

3.2 Population and Sample

The target sample comprises the 11 commercial banks listed on the Nairobi Securities Exchange. These include; Barclays bank Ltd, CFC Stanbic Holdings Ltd, I&M Holdings Ltd, Diamond Trust Bank Kenya Ltd, Housing Finance Co Ltd, Kenya Commercial Bank Ltd, National Bank of Kenya Ltd, NIC Bank Ltd, Standard Chartered bank Ltd, Equity Bank Ltd and The Co-operative Bank of Kenya Ltd (Nairobi Securities Exchange, 2015).

The sample banks chosen are both from the Tier I and Tier II peer rankings that whereby Tier I banks have a balance sheet of more than ksh 150 billion and Tier II have a balance sheet of less than ksh 150 billion but more than ksh 50 billion. Due to the small number of banks in the Kenyan market and the large balance sheets that the top and mid-tier banks hold, this sample of

11 banks is representative of the population of 42 banks in the Kenyan banking industry and the banking sector as a whole.

3.3 Data Collection Methods

The study employs the use of secondary panel data obtained from the published financial statements of the banks listed above for the years 2008-2014.

3.4 Data Analysis

Credit risk here is a function of executive remuneration. To conclusively show the relationship between executive remuneration and credit risk, three measures of credit risk are used. The measures of credit risk in the analysis include; net charge off to total loans and advances, non-performing loans to total loans and, loans and advances to total deposits (Olawale, 2012),(Boahene, Dasah, & Agyei, 2012) (Ganic, 2014).

As a control variable, the study uses Return on Assets given that the probability of paying out bonuses largely depends on the profitability of the bank (Zori, 2010).

Capital adequacy which is measured by the bank's core capital expressed as a percentage of its risk weighted assets is used as another control (Mai & Jaeger, 2011).

Differences in bank size is controlled by adding a variable that measures size as the total assets of the bank.

To analyze this data, a panel data regression technique is used. The justification for this is that the study uses data that spans across time and individuals and hence a panel data regression technique will be the most suitable to capture the dynamic nature of this data.

Two panel data techniques are applicable in this case- the Fixed Effects Model (FEM) and the Random Effects Model (REM). In FEM, the intercept in the regression model is allowed to differ among individuals in recognition that each bank may have some special characteristics of its own. It is appropriate when the bank specific intercept may be correlated with one or more regressors.

In REM it is assumed that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value. This is mainly used when the intercept of each cross sectional unit is uncorrelated with the regressors.

To be able to determine which technique is suitable to use, A Hausman test is carried out. To carry out a Hausman test, there is a null hypothesis stating that the FEM and REM estimators do not differ substantially. If the null hypothesis is rejected then this means that the REM is not appropriate because the random effects are probably correlated with one or more regressors. To carry out the Hausman test and regression analysis, the study employs the use of a general-purpose statistical software package which in this case will be Stata developed by StataCorp.

The models used for the FEM and REM are;

$$LA_{it} = \beta_{1i} + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

$$NPL_{it} = \beta_{1i} + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

$$NCO_{it} = \beta_{1i} + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

Where

$i = (\text{number of banks}) 1, 2, \dots, 11$

$t = (\text{number of years}) 1, 2, \dots, 5$

VARIABLE	DEFINITION
LA	Credit Risk=Loans and Advances= $\frac{\text{Total loans and advances}}{\text{Total deposits}}$
NPL	Credit Risk=Non performing loans= $\frac{\text{Non Performing Loans}}{\text{Total loans and advances}}$
NCO	Credit Risk=Net Charge Off= $\frac{\text{Net Charge Off}}{\text{Total loans and advances}}$
ER	Executive Remuneration (i.e. salaries and short term employee benefits)
ROA	Return on Assets= $\frac{\text{Net income}}{\text{Total assets}}$
CA	Capital Adequacy= $\frac{\text{Bank capital}}{\text{Risk weighted assets}}$
Size	Bank size=Total Assets
ϵ	Error term

A Hausman test is carried out to determine which of the two models is the most appropriate to use.

After determination of the correct model, the appropriate model is ran again and the results stored.

This analysis is done thrice with each of the three determinants of credit risk above i.e loans and advances, non-performing loans and net charge off.

CHAPTER FOUR

4. DATA ANALYSIS AND FINDINGS

4.1 Descriptive statistics

Table 1: Descriptive statistics of the main variables

Variable	Obs	Mean	Std. Dev	Min	Max
Loans and advances	77	0.69822	0.1443352	0.2452861	1.098478
Non performing loans	77	0.0497095	0.0451209	0.0013455	0.27032207
Net charge off	77	0.0114166	0.00757522	0.0002528	0.0404469
Executive remuneration	77	160.2338	295.4569	14	2403
Size	77	137608.7	87464.95	14294	490338
Return on assets	77	0.0428899	0.0151248	0.0136947	0.0735768
Capital adequacy	77	22.39274	7.906101	12.62182	48.7

Table 1 above gives information about the descriptive statistics of the dependent variables, independent variable and control variables. On average, loans and advances take up almost 70% of the total bank deposits over the seven years. This shows that most of the money the bank receives is used to issue loans which is in line with their role of credit transformation. However, out of these loans issued, close to 5% of them are non performing. This is depicted in the table where the average of non performing loans to total loans and deposits comes to 4.97%. net charge off is a lower percentage as only 1.14% loans and advances on average end up being uncollectable at the end of the day.

The risk as shown in the standard deviations of these three dependent variables is greatest in the number of loans and advances issues with a standard deviation of 14.43%. This is seen to reduce with the non performing loans having a standard deviation of 4.51%. This means that there is inherently more risk involved in the number of loans and advances a bank issues in comparison to the number of loans that are non performing within the seven years. This is a good sign as the lower risk in non performing loans shows that the banks' credit risk management practices put in place are quite effective. The standard deviation of net charge off as a proportion of total loans and advances is even lower at 0.76%. This means that banks are able to handle debts that go bad by ensuring proper screening of customers before issuing loans. It also shows that they are able to collect most of the debt that goes bad from the collateral given emphasizing the strength of their risk management policies.

The average executive remuneration is approximately ksh 160 million with a standard deviation of ksh 295 million. There is a huge discrepancy where the lowest value is ksh 14 million and the highest ksh 2.4 billion. This shows that executive remuneration is a highly volatile variable. The high volatility is despite the sample comprising top tier and middle tier banks which makes it relatively homogenous. The volatility could be brought about by changing economic and banking sector conditions in the last seven years.

The average size of the banks measured by the total assets is ksh 137 billion. This shows that the banks listed have a wide asset base. The standard deviation is much smaller than the average unlike was the case in executive remuneration. This goes ahead to reinforce the complexity that is in the huge variance in executive remuneration that is not in tandem with the size of the banks which is relatively homogenous. This paradox is probably explainable by factors outside the control of the bank.

The return on assets as expressed by the ratio of net income to total assets is 4.3%. the standard deviation is 1.5%. It is interesting to note that this is much higher than the volatility of the net charge off. This means that there is more risk in the income of the banks on average than there is in the number of loans that are unrecoverable. This volatility in the net income of banks should be a source of worry for the financial system.

The average capital adequacy comes to 22% with a standard deviation of 7.9%. this shows that banks are generally holding enough capital as a buffer from the risky assets that they have. This is probably due to the strict regulations that banks face as a result of the Basel Accords that

require them to hold sufficient capital as a buffer for their risky assets. This brings out the issue of regulation being an important factor with regards to bank risk. Regulation has enabled banks reduce their credit risk as shown by the capital adequacy average in table 1 below. This is in contrast to the high volatility seen earlier on in the net income in comparison to the net charge off. This shows that banks, if left on their own to manage credit risk with no regulation would take up more risk in their balance sheets than they should. This reinforces the importance of banking regulation in the maintenance of a sound and healthy financial system whose main players are banks.

4.2 Correlation analysis

The Pearson's coefficient was used to verify the extent of correlation among the independent variables. The results are shown in table 2 below. The links between these variables is low showing little evidence of multi-collinearity. This means that we can safely incorporate these variables in the regression analysis.

Table 2: Correlational matrix

	CA	ROA	SIZE	ER
CA	1.0000			
ROA	0.0031	1.0000		
SIZE	-0.2092	0.4444	1.0000	
ER	0.1404	0.4214	0.3029	1.0000

4.3 Regression analysis

Three measures of credit risk were used to determine the relationship between executive remuneration and credit risk.

A combination of fixed effects model and random effects model was used on the three determinants depending on the results of the Hausmann test carried out that determined which of the two models was to be used.

4.3.1 Loans and Advances

The regression equation used is

$$LA_{it} = \beta_{1i} + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

The coefficients β_1 , β_2 , β_3 , β_4 and β_5 were used to measure the sensitivity of the loans and advances to changes in executive remuneration and the three control variables.

Table 3 below shows the results of the regression analysis. Following the Hausman test, the random effects model was determined to be the more appropriate model to use.

The results from table 3 below show a positive relationship between executive remuneration and the amount of loans and advances issued by listed banks in Kenya.

The strength of this positive relationship is however not significant as shown by the probability value of 32.1% that is higher than 5%.

Table 3: Loans and advances regression table

Fixed effects model			Random effects model		
Variable	Coefficient	Probability	Variable	Coefficient	Probability
ER	0.0000416	0.357	ER	0.0000428	0.321
SIZE	3.32x10e ⁻⁷ 0.078		SIZE	2.94x10e ⁻⁷	0.097
ROA	-1.23054	0.0377	ROA	-1.099411	0.391
CA	-0.0009661	0.59	CA	0.0008342	0.622
CONS	0.6769668	0.000	CONS	0.6793763	0.000
R-squared		0.0265	R-squared		0.0238
Prob (F-statistic)		0.3176	Prob (Chi-square)		0.3457
			Wald Chi-square		4.47
Hausman Test					
Chi-square		0.07			
Prob (Chi-square)		0.9658			

4.3.2 Non Performing Loans

The regression equation used for this section was

$$NPL_{it} = \beta_1 + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

The coefficients $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 were used to measure the sensitivity of the non performing loans to changes in executive remuneration and the three control variables.

Table 4 below shows the results of the regression analysis. Following the Hausman test, the random effects model was determined to be the more appropriate model to use.

The results from table 4 below show a positive relationship between executive remuneration and the amount of non performing loans in listed banks in Kenya.

The strength of this positive relationship is however very weak as shown by the probability value of 86% that is higher than the 5% threshold.

Table 4: Non performing loans regression table

Fixed effects model			Random effects model		
Variable	Coefficient	Probability	Variable	Coefficient	Probability
ER	3.89x10e ⁻⁶	0.868	ER	-3.2x10e ⁻⁶	0.86
SIZE	9.31x10e ⁻⁸	0.337	SIZE	1.38x10e ⁻⁷	0.030
ROA	-1.7703020	0.016	ROA	-1.171725	0.002
CA	-0.0013626	0.146	CA	0.0020409	0.001
CONS	0.08169670	0.006	CONS	0.035744	0.091
R-squared		0.3662	R-squared		0.5825
Prob (F-statistic)		0.1891	Prob (Chi-square)		0.0006
			Wald Chi-square		19.59
Hausman Test					
Chi-square		0.07			
Prob (Chi-square)		0.9658			

4.3.3 Net Charge Off

The regression equation used here was;

$$NCO_{it} = \beta_1 + ER_{it}\beta_2 + ROA_{it}\beta_3 + Size_{it}\beta_4 + CA_{it}\beta_5 + \epsilon_{it}$$

The coefficients $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 were used to measure the sensitivity of net charge off to changes in executive remuneration and the three control variables.

Table 5 below shows the results of the regression analysis. Following the Hausman test, the random effects model was determined to be the more appropriate model to use.

The results from table 5 below show a positive relationship between executive remuneration and the amount of loans and advances issued by listed banks in Kenya.

The strength of this positive relationship is however not significant as shown by the probability value of 93.6% that is higher significantly than 5%.

Table 5: Net charge off regression table.

Fixed effects model			Random effects model		
Variable	Coefficient	Probability	Variable	Coefficient	Probability
ER	-2.18x10 ⁻⁶	0.527	ER	-2.55x10 ⁻⁷	0.936
SIZE	8.27x10 ⁻¹⁰	0.951	SIZE	1.01x10 ⁻⁸	0.424
ROA	-1.491032	0.163	ROA	-1.1518996	0.065
CA	0.0000426	0.756	CA	0.0001328	0.261
CONS	0.0170863	0.000	CONS	0.6793763	0.000
R-squared	0.0097		R-squared	0.1602	
Prob (F-statistic)	0.4898		Prob (Chi-square)	0.4086	
			Wald Chi-square	3.98	
Hausman Test					
Chi-square	4.73				
Prob (Chi-square)	0.0938				

CHAPTER 5

5.DISCUSSION

5.1 The relationship between credit risk measures and executive remuneration of managers of listed banks in Kenya.

The results from table 3 above show a positive relationship between executive remuneration and the amount of loans and advances issued by listed banks in Kenya.

The positive relationship between executive remuneration and loans and advances issued is in line with (Mishkin, 2010) who studied this relationship after the financial 2008 financial crisis. They observed that the more the executives received in pay, the more loans they were willing to give out. This was all in a bid to make more money for the bank in the short run which would translate to increased bonuses for them. These decisions were beneficial in the short run but the probability of default in the future by these uncreditworthy individuals posed a great risk for banks. This greed was one of the many reasons that brought about the collapse of the financial system in 2008.

The results from table 4 above on the non performing loans and advances show a negative relationship between executive remuneration and non performing loans as a proportion of total loans and advances. This is in line with the classical agency- principal relationship pioneered by Jensen & Meckling (1976) (Jensen & Meckling, 1976). Traditionally shareholders would prefer to invest in a bank where the non performing loans are a small percentage of the loans and advances issued. In this case, this negative relationship between the two signifies that the more the managers are paid, the less risky loans they take. This would ultimately mean that shareholders would have been successful in using executive remuneration to curb the risk taking nature of bank managers.

The results from table 5 above on the net charge off equation show a negative relationship between executive remuneration and net charge off. This is in line with the classical relationship described earlier in explaining the relationship between non performing loans and executive relationship. This is quite in order as net charge off is as a result of non performing loans that become uncollectable later on.

2.0 The impact of executive remuneration on credit risk in listed banks in Kenya.

The results from the regression table 3 above on loans and advances indicate a non significant relationship between loans and advances and executive remuneration.

Executive remuneration has little explanatory power on the loans and advances indicated by the probability value of 32.1% which is greater than the benchmark of 5%. This means that though the relationship is positive, it is not strong enough to conclusively link executive remuneration to the number of loans and advances issued by banks.

The same observation is made with regards to the impact of executive remuneration on non performing loans. The strength of the negative relationship between non performing loans and executive remuneration is quite low as shown by the probability value that is greater than the 5% threshold.

It is interesting to note that the level of non performing loans is explained better by capital adequacy and return on assets as indicated by probability values which are less than 5%.

The strong relationship between net income and non performing loans is in line with Boahene, Dasah and Agyei (2012) (Boahene, Dasah, & Agyei, 2012) whose results from their study found a significant relationship between credit risk and profitability of selected banks in Ghana.

The relationship between capital adequacy and non performing loans is however higher. This indicates the success of banking regulation in Kenya in ensuring that banks have enough buffer capital before taking up additional risk.

The impact of executive remuneration on net charge off is not significant as shown in table 5 above by the probability value that is greater than the 5%.

The weak relationship between the three measures of credit risk above is indicative of the little impact that executive remuneration has on credit risk in general in listed banks in Kenya. This is in line with the view held by Holmstrom (1979) where he says that risk preference alignment between shareholders and managers via the use of incentives is impossible. This weak relationship observed also supports the view by Ross S. A (2004) (Ross S. A., 2004) who states that there is no incentive scheme that can be used to influence the risk attitude of managers.

5.2 CONCLUSION

This study finds a negative non significant relationship between executive compensation and credit risk in listed commercial banks in Kenya. The negative relationship is best brought out by two determinants- non performing loans as a proportion of total loans and advances and net charge off as a proportion of total loans and advances. This appears to suggest that increasing executive remuneration will lead to banks having less non performing loans and bad debts. This will be as a result of the better credit screening for customers before giving loans and generally better credit management systems in banks. This will be in line with agency theory where the owners of banks are able to use remuneration to align their wishes to those of management. This may however not have a large impact in as far as credit management is concerned due to the insignificance of this relationship.

A limitation was that the structure of the executive pay was not incorporated in the study. This is despite numerous literature mentioned in the literature review above where pay structure had a significant link to credit risk. With the introduction of a derivatives market in the country and possible restructuring of executive pay to include share options, the study of the structure of executive remuneration on credit risk is an area that can be studied further in Kenya.

An interesting observation made in this study is the strength of capital adequacy in explaining level of non performing loans of listed banks in Kenya. The area of banking regulation in Kenya and specifically the success of capital adequacy requirements in the control of credit risk in listed banks in Kenya is another area worth exploring further.

REFERENCES

- Abdalla, K. (2008). Principal-Agent Problem. *Region Focus* .
- Aduda, J. (2011). The Relationship Between Executive Compensation and Firm performance in the Kenyan Banking Sector. *Journal of Accounting and Taxation* , 130-139.
- Alfredo Martin-Oliver, J. S. (2007). *Why do banks securitize assets?* Madrid: Banco de Espana.
- Balachandran, S., Kogut, B., & Harnal, H. (2011). *Did Executive Remuneration Encourage Extreme Risk Taking in Financial Institutions?* New York: Columbia University.
- Bebchuk, L. A., & Fried, J. (2003). *Executive compensation as an agency problem*. Cambridge: National Bureau of Economic Research.
- Bebchuk, L. A., & Spamann, H. (2010). Regulating Bankers' Pay. *Georgetown Law Journal* , 247-287.
- Bloom, M. C., & Milkovich, G. T. (1995). *The Relationship Between Risk, Performance-Based Pay, and Organizational Performance*. New York: Cornell University ILR School.
- Boahene, S., Dasah, J., & Agyei, S. (2012). Credit Risk and Profitability of Selected Banks in Ghana. *Research Journal of Finance and Accounting* .
- Bolton, P., Mehran, H., & Shapiro, J. (2010). *Executive Compensation and Risk Taking*. New York: Federal Reserve Bank of New York Staff Reports.
- Bolton, P., Scheinkman, J., & Xiong, W. (2006). Executive Compensation and Short-Termist Behaviour in Speculative Markets. *Review of Economic Studies* , 577-610.
- Caouette, J. B., Altman, E. I., & Narayanan, P. (1998). *Managing Credit Risk: The Next Great financial Challenge*. John Wiley & Sons.
- Chen, C. L., Steiner, T. L., & Whyte, A. M. (2006). Does Stock Option-Based Executive Compensative Compensation Induce Risk-Taking? An Analysis of the Banking Industry. *Journal of Banking and Finance* , 915-945.
- Cheng, I.-H., Hong, H., & Scheinkman, J. A. (2010). *Yesterday's Heroes: Compensation and Creative Risk-Taking*. Cambridge: National Bureau of Economic Research.
- Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Manmanagerial Incentives and Risk Taking. *Journal of Financial Economics* , 431-468.
- Council, T. F. (2014). *The UK Corporate Governance Code*. London: The Financial Reporting Council.

- Culp, C. L. (2000). *The Risk Management Process: Business Strategy and Tactics*. Chicago.
- Demestz, R. S., Saidenberg, M. R., & Strahan, P. E. (1997). *Agency problem and Risk Taking at Banks*. New York: Federal Reserve Bank of New York.
- Diamond, D. W., & Rajan, R. (2009). *The Credit Crisis: Conjectures about Causes and Remedies*. Cambridge: National Bureau of Economic Research.
- Edmans, A., & Gabaix, X. (2011). *The Effect of Risk on the CEO Market*. New York: Oxford University Press.
- Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management* , 57-74.
- Eisenhardt, K. M. (1985). Control: Organisational and Economic Approaches. *Management Science* , 134-149.
- Fahlenbrach, R., & Stulz, R. M. (2010). *Bank CEO Incentives and the Credit Crisis*. Ohio: Columbia Business School.
- Ganic, M. (2014). Bank Specific Determinants of Credit Risk-An Empirical Study on the Banking Sector of Bosnia and Herzegovina. *International Journal of Economic Practices and Theories* .
- Geithner, T. (2009, June 10). *US Department of the Treasury*. Retrieved from US Department of the Treasury: www.treasury.gov
- Gerry Johnson, K. S. (2008). *Exploring Corporate Strategy*. Prentice hall.
- Gichungu Jacinta. (2012). *Strategic positioning as a basis for building sustainable competitive advantage*. University of Nairobi.
- Gujarati, D., & Porter, D. (2009). *Basic Econometrics*. New York: Mc Graw-Hill/Irwin Company.
- Hall, B. J., & Liebman, J. B. (1998). Are CEOs Really Paid Like Bureaucrats? *Quarterly Journal of Economics* .
- Hauswald, R., & Senbet, L. (2009). *Executive Compensation, Supervisory Incentives and Banking Regulation*. Maryland.
- Hilscher, J., Landskroner, Y., & Raviv, A. (2014). *Optimal Regulation, Executive Compensation and Risk Taking of Financial Institutions*. Ramat Gan.
- Holmstrom, B. (1979). Moral Hazard and Obsevability. *Bell Journal of Economics* , 74-91.

- Houston, J. F., & James, C. M. (1995). CEO Compensation and Bank Risk: Is Compensation in Banking Structured to promote Risk Taking? *Journal of Monetary Economics* , 405-431.
- Huttenbrink, A., Kaserer, C., & Rapp, M. S. (2014). *Reeregulation, Compensation and Risk Taking in Banks: Evidence from the Credit Crisis*. Munchen.
- Jensen, M., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics* , 305-360.
- Jorion, P. (2003). *Financial Risk Manager Handbook*. New Jersey: John Wiley & Sons Inc.
- Kipkorir, T., Aboko, B., & Bitange, R. (2014). The Relationship Between Executive Compensation and Financial performance of Insurance Companies in Kenya. *Research Journal of Finance and Accounting* .
- KPMG. (2009). *Never again? Risk management in banking beyond the credit crisis*. Geneva: KPMG International.
- Lambert, R. A., Larcker, D. F., & Keith, W. (1993). The Structure of Organisational Incentives. *Administrative Science Quarterly* , 438-461.
- Miller, F. M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review* , 261-297.
- Mishkin, F. S. (2010). *The Economics of Money and Banking & Financial Markets*. Boston : Pearson Education Inc.
- Miyianda, B., Ososro, C., & Miyogo, J. (2013). The Relationship Between Director Remuneration and Performance of Firms listed on the Nairobi Securities Exchange. *The International Journal of Social Sciences* .
- Nairobi Securities Exchange. (2015, June 29). *Listed Companies: Nairobi Securities Exchange*. Retrieved from Nairobi Securities Exchange Web site: <http://www.nse.co.ke>
- Ogilo, F. (2012). The Impact of Credit Risk Management on Financial Performance of Commercial Banks in Kenya. *Africa Management Review* , 22-37.
- Robichek, A., & Myers, S. C. (1966). Problems in the the Theory of Optimal Capital Structure. *Journal of Financila and Quantitative Analysis* , 1-35.
- Ross, S. A. (2004). Compensation, Incentives and the Duality of Risk Aversion. *Journal of Finance* , 207-225.
- Ross, S. (1973). The Economic Theory of Agency:The Principal's Problem. *American Economic Review* , 134-139.

- Santomero, A. M. (1997). Commercial Bank Risk Management: An Analysis of the Process. *Journal of Financial Services Research* , 83-115.
- Shapiro, J., Mehran, H., & Morrison, A. (2011). *Corporate Governance and banks: What have we learnt from the financial crisis*. New York: Federal Reserve of New York.
- Sharpe, W. F. (1970). *Portfolio theory and Capital Markets*. New York: McGraw-Hill.
- Shyam-Sunder, L., & Myers, S. (1994). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics* , 219-244.
- Stock, J., & Watson, M. (2011). *Introduction To Econometrics*. Boston: Addison-Wesley.
- Sundaram, R., & Yermack, D. L. (2007). Pay Me Later: Inside Debt and Its Role in Managerial Compensation. *Journal of Finance* , 1551-1588.
- Tung, F. (2011). Pay for Banker Performance: Structuring Executive Compensation for Risk Regulation. *Northwestern University Law Review* , 1205-1252.
- Walker, D., Bebchuk, L. A., & Fried, J. (2002). *Managerial Power and Rent Extraction in the Design of Executive Compensation*. Cambridge: National Bureau of Economic Research.
- Welch, I. (2004). Capital Structure and Stock Returns. *Journal of Political Economy* , 106-132.
- Wirnkar, A., & Tanko, M. *CAMEL and Bank Performance. Evaluation: The Way Forward*.
- Wiseman, R. M., & Gomez-Mejia, L. R. (1999). A Behavioral Agency Model of Managerial Risk Taking. *Academy of Management Review* , 133-153.
- Zori, S. (2010). *Executive Compensation and Bank Risk: Empirical Evidence from American Banking System*. Copenhagen: Amsterdam Business School.