EFFECT OF CORPORATE GOVERNANCE ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS LISTED IN THE NAIROBI SECURITIES EXCHANGE (NSE)

BY

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DECLARATION

This research project is my original work and has not been presented anywhere to the best of my knowledge. No part of this proposal may be reproduced without the prior permission of the author.
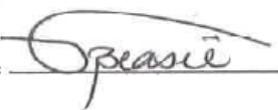
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DEDICATION

I dedicate my thesis work to my family and many friends. A special feeling of gratitude to my loving daughter Victoria Wanjiru who has truly inspired and motivated me throughout the writing

of this thesis. I also dedicate it to my loving parents, Godffrey and Charity Karanja whose words of

encouragement and push for tenacity ring in my ears.

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ABBREVIATIONS AND ACRONYMS

2SLS	Two Stage Least Squares
ARCH	Autoregressive Conditional Heteroscedasity
BAK	Board Audit Committee
BGD	Board Gender Diversity
CBK	Central Bank of Kenya
CCG	Centre for Corporate Governance
CEO	Chief Executive Officer
CMA	Capital Market Authority
GDP	Gross Domestic Product
LM	Lagrange Multiplier
NED	Non-Executive Director
NSE	Nairobi Stock Exchange
OECD	Organization for Economic Cooperation Development
OLS	Ordinary Least Squares
ROA	Return on Assets
ROE	Return on Equity

ABSTRACT

This study investigates the effect of the corporate governance on firm performance of commercial banks listed in the Nairobi Securities Exchange (NSE) and unlike a number of researches conducted in the past, this research will use sophiscated statistical and some econometric tools to explore the relationships in more detail with the objective of getting a clearer indication of the relationships between the variables under sturdy in the Kenyan context. This study primarily employs four corporate governance mechanisms: Board size, Gender Diversity, Independent directors/board composition and Chief Executive Officer (CEO) Duality to establish effect of corporate governance and firm performance. This research has adopted a panel data analysis approach comprising of 11 financial institutions (banks) Listed at the NSE with four variables of data for each bank spanning a period of 8 years (2006-2013).The researcher used descriptive statistics and panel multiple regression analysis. The collected data was coded and analyzed using the descriptive statistics, to describe each variable under study, by the use of STATA.The result obtained from the correlation result showed that the board size was found to be positively associated with ROA and ROE of banks listed in the NSE. A unit change on Board size would positively enhance ROA and ROE. On board independence, results showed that higher ratio of independent directors were positively related with ROA and ROE. The result also revealed that, at a 95% significant level, there was a positive relationship between the proportion of female board members and ROA and ROE. The findings are in line with the research by Konrad et al., (2008) that Female directors are more likely to ask questions rather than nodding through decisions they are also more inclined to make decisions by taking the interests of multiple stakeholders into account. Finally on CEO duality, the result showed a positive relationship between firm performance and non-CEO duality. The study recommends that stakeholders in banks listed companies should take in to account the corporate board structure variables i.e. gender, board size, board independence and board committee when electing board of directors. The study recommends that corporate board structure should be based on skills, experience and professional qualifications to steer managerial functions. The study also recommends that policy makers should set an index on corporate governance to act as a base to all banks listed at the NSE so that the efficiency of governance committees can be enhanced. Based on the study research findings, the study recommends that; Special attention should be taken upon when dealing with the number of board members. The size of the board should match with the size of the firm

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter introduces the pertinent issues related to this study which sought to undertake a survey of the corporate governance practices within commercial banks in Kenya taking the commercial banks listed on the Nairobi Stock Exchange (NSE) as a case of the study. This chapter therefore presents the background of the study, statement of the problem, research questions, significance of the study, scope and limitations of the study, presents the conceptual framework of the study and finally how the entire study is organized.

1.1 Background of the Study

Corporate Governance has been the subject of much debate by policymakers at various levels: international, transnational and national. One reason is that there is a clear link between corporate governance, investments and economic growth, and performance (Willekens & Piet, 2005). Corporate governance has become a popular discussion topic in developed and developing countries. The widely held view that corporate governance determines firm performance and protects the interests of shareholders has led to increasing global attention. However, at varying levels of agency interactions, market institutional conditions that reduce informational imperfections and facilitate effective monitoring of agents impinge on the efficiency of investment. Likewise, corporate governance has assumed the centre stage for enhanced corporate performance (Korir & Cheruiyot, 2014). This brings us to the question, what is corporate governance? Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. It provides the structure through which the objectives of the

company are set, and the means of attaining those objectives and monitoring performance are determined (Organization for Economic Cooperation Development (OECD, 2015).

The global financial crises of 2007-08 that led to the collapse of corporate giants like Enron, Lehman Brothers Holdings WorldCom among others provided many illustrations of the collapse of corporate governance and, consequently, international regulators are hard at work to influence appropriate regulatory controls.

A lot of researchers have argued that the erosion of investor confidence Kenya was brought about by the country's poor corporate governance standards and a lack of transparency in the financial system. This is evidenced by the collapse of firms listed in the NSE such as Uchumi and many stock brokerage firms in a period of just less than ten years. Therefore, the restoration of confidence in the economy by investors will rely on improvements in corporate governance standards, including the adoption of transparency as an important strategy in corporate management (Korir & Cheruiyot, 2014).

In their study on the Determinants of the Performance of Firms Listed at the Nairobi Securities Exchange; Ayako, Kungu, & Githui(2015) concluded the that board size had a significant effect on firm performance. Hence, firms with big board sizes are more likely to report higher return on assets compared to firms with small board sizes. Korir & Cheruiyot (2014) recommends that the country therefore needs to strengthen policies to improve firm-level corporate governance in order to attract such investors and bolster overall growth. They also agree that firms' performance is highly influenced by the board size.

Companies in the Nairobi Securities Exchange have different mechanisms through which boards and directors are able to direct, monitor and supervise the conduct and operation of corporations and their management in a manner that ensures appropriate levels of authority, accountability, stewardship, leadership, direction and control different governance structures (Kigotho, 2014). The

main issue is to establish if there is any relationship between corporate governance and firm performance in Kenya; specifically, commercial banks listed in at the Nairobi Securities Exchange.

There are 56 quoted companies divided into 8 categories depending on the economic activity of each company with the banking category having eleven (11) banks (Nairobi Securities Exchange, 2016). This study examines whether the performance of banks listed in Nairobi Securities Exchange is affected by the corporate governance practices put in place.

1.1.1 Corporate Governance in the Banking Industry

Corporate governance is about building credibility, ensuring transparency and accountability as well as maintaining an effective channel of information disclosure that would foster good corporate performance. It is also about how to build trust and sustain confidence among the various interest groups that make up an organisation. Indeed the outcome of a survey by Mckinsey in collaboration with the World Bank in June 2000 attested to the strong link between corporate governance and stakeholder confidence (Mark, 2000). The board of directors is expected to play the oversight role within organizations including commercial banks to ensure that corporate governance principles are observed.

Corporate Governance affects banking institutions by ensuring that strategic goals and corporate values are in place and communicated throughout the bank. These goals must be transparent with the objective of ensuring proper lines of accountable responsibility, appropriate oversight by senior management, segregation of audit and control functions, effective risk management procedures are in place and Board members are properly qualified and do not place undue influence upon management.

Effective Governance practices are one of the key prerequisites to achieve and maintain public trust and, in a broader sense, confidence in the banking system. Poor Governance increases the likelihood of bank failures. Bank failures may impose significant public cost, affect deposit

insurance schemes, and increase contagion risks. Sound Corporate Governance can create an enabling environment that rewards banking efficiency, mitigates financial risks, and increases systematic stability.

Corporate governance of banks in developing countries is important for several reasons. First, banks have an overwhelmingly dominant position in developing economy financial systems, and are extremely important engines of growth (King and Levine, 1993a, b; Levine, 1997). Second, as financial markets are usually underdeveloped, banks in developing economies are typically the most important source of finance for the majority of firms. Third, banks in developing countries play a major role in the payment system and are the main depository for the economy's savings. Finally, liberalization has reduced the role of economic regulation. Consequently, managers of banks have greater freedom on how they run their banks.

According to Centre for Corporate Governance of Kenya (CCG) (2004), focus on corporate governance in the financial sector is crucial mostly because the banking industry became highly exposed to scrutiny by the public and many lessons were learnt because of the risks involved including adverse publicity brought about by failings in governance and stakeholder relations for instance, the collapse of banks such as Euro bank, Trust bank and Daima bank just to mention a few cases (CCG, 2004). Corporate governance in the banking sector in Kenya largely relates to the responsibility conferred to and discharged by the various entities and persons responsible for and concerned with the prudent management of the financial sector (Central Bank of Kenya, 2006). The corporate governance stakeholders in the banking sector include the board of directors, management, shareholders, Central Bank of Kenya, external auditors and Capital Markets Authority (CCG, 2004).

In Kenya, the Central Bank of Kenya has established corporate governance mechanisms within the CBK Prudential Guidelines (CBK/PG/02). The Board of Directors is the main custodian of prudent

corporate governance in organizations including the commercial banks. This is executed either directly or through its various sub committees. The Board Audit Committee (BAC) is key in ensuring adherence to set guidelines and standards. The findings contained in the CBK supervisory reports of 2010 and 2011 on incidences of non compliance to set guidelines may be an indicator of ineffective corporate governance

1.2 Statement of the Problem

Although the concept of corporate governance has in recent years become a prioritized policy agenda in financial institutions of many developing countries, the promises of practicing this concept, such as improved firm performance does not appear to adequately manifest itself in the Kenyan banking sector, as evidenced by an alarmingly expanding number of banks that are either performing dismally or have completed failed in the past two decades. The period ranging from 1984 to 2010 witnessed the failure of no less than 35 banks (Upadhyaya, 2011). This poor performance as identified by a number of empirical investigations points a finger at poor corporate governance practices. It is therefore clear that unless the practice of corporate governance vis-à-vis firm performance is well researched and emerging problems addressed, more bank failures are likely to occur. Bank failures or closures can have a wide ranging impact on the socio-economic well-being of the country including loss of client deposits, loss of jobs, reduced contribution to GDP, and general loss of public confidence in the banking system.

Therefore when the status of performance in the Kenya banking sector in the past two decades is critically analyzed, it can be argued that even though there is awareness and existence of corporate governance mechanisms, there is need to empirically review and strengthen the practices. This argument may be reinforced by the fact that we cannot overemphasize the importance of a healthy financial sector's role in driving Kenya's economic growth. Whereas a small number of recent researches carried out in Kenya have also investigated aspects of the relationships between corporate governance and bank performance, their findings have been inconclusive or even

contradictory. While Mang'unyi (2011), did not find any significant relationship between a bank's partnership structure and financial performance, Nyarige (2012) found board size and board interdependence to have a negative and positive impact on market performance of commercial banks listed at the NSE, respectively. These contradictions in findings lend a strong hand to the need to continue the empirical investigation that can address the query of whether corporate governance impacts on the performance of commercial banks in Kenya.

This study attempts to establish the effect of corporate governance on financial performance of commercial banks listed in the NSE by measuring corporate governance using the following variables (1) board size; (2) board composition; (3) CEO duality and (4) independent (outside) directors. In addition, a firm's performance is measured by the return on Equity, known as the ROE ratio.

1.3 Research Questions

The research questions in this study are:

i. What is the correlation between the board size and the financial performance of commercial banks listed at the NSE?

ii. How does gender diversity relate to financial performance of commercial banks listed at the NSE?

iii. what is the correlation between the independence directors and financial performance of commercial banks listed at the NSE?

iv. What is the correlation between the CEO duality and financial performance of commercial banks listed at the NSE?

1.4 Significance of the Study

The study will be useful to the following groups:

The government through the Capital Market Authority and other policy makers can hopefully use the findings of the study to formulate and implement proper policies regulating financial institutions in Kenya.

All levels of managers: The findings and recommendations in this study would be useful to all levels of managers in the various corporate organizations to better manage their firms by providing good corporate governance factors that they need to adopt in their organizations. The findings will be a guide in setting up corporate governance systems within the organizations.

The researcher and future researchers: The study would contribute to the available pool of knowledge on corporate governance by providing research data from commercial banks in Kenya. The academicians and students of, Finance, Economics, Management, Marketing, HRD and Organizational Development will find this study thought provoking for further research in this area.

Through the resultant interaction between the researcher and the respondents, the researcher's knowledge, skills and understanding of research may improve.

1.5 Scope and Delimitations of the Study

This study investigates the effect of corporate governance and financial performance banks listed at the NSE. Corporate governance is the independent variable while financial performance is the dependent variable. The size and age of the firm are the control variables. The rationale for using commercial banks listed at the NSE is due to the fact that they are public companies whose data is easily accessible as it is a statutory requirement for publicly listed firm to publish this information.

The study was carried out in Nairobi at the head offices of the selected banks. This due their proximity to Nairobi and also the fact most of the information required being strategic in nature can only be located at the head offices. The study focused on the period 2003-2014 since a period of 10 years is enough to give a reliable trend.

1.6 Conceptual Framework

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┌─────────────────────────┐                    ┌─────────────────────────┐
│ Corporate Governance    │                    │ Financial Performance   │
│ • Board Size            │                    │ • Return on Equity      │
│ • Gender Diversity      │─────────────┐      │ • Return Assets         │
│ • Independent Directors │             │─────▶│ • Profit before tax     │
│ • CEO duality           │             ▲      │ • Earnings per Share    │
└─────────────────────────┘             │      │ • Price to earnings ratio│
                                        │      └─────────────────────────┘
                          ┌─────────────────────┐
                          │ • Firm Age          │
                          │ • Firm size         │
                          └─────────────────────┘
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Independent Variable   **Control Variables**   **Dependent Variable**
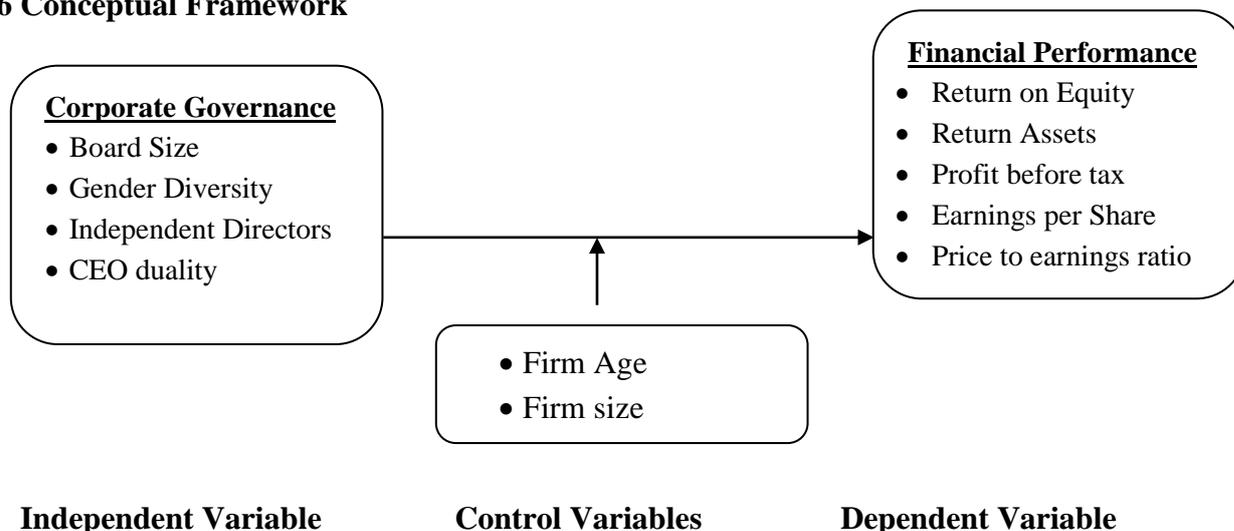
Source: Adapted from the literature

The framework looks at the relationship between corporate governance mechanisms (board size, Gender Diversity, independent directors and CEO Duality) on firm financial performance as measured by Return on Equity Return Assets Profit before tax Earnings per Share Price to earnings ratio amongst other measures based on previous studies on the same subject matter such as Aduda and Musyoka (2011) and Wanyama and Olweny (2013).

1.7 Organization of the Study

The reminder of the study will be organized into four chapters. Chapter 2 provides a critical review of findings from past studies in this area of study. It includes an assessment of the methodologies used in these studies, theoretical and conceptual framework and the relationship or differences between this researchers study and study reviewed. Chapter 3 gives details regarding the methodologies used in conducting the study. This includes the population, sample and sampling techniques, the research design and description of instruments used to collect the data. Chapter 4 presents discusses and interpret the empirical results. The basic principles in presenting results is to give all the evidence relevant to the research objectives and questions (Mugenda & Mugenda, 2003). This will be through use of graphs charts, tables and other visual presentations.

Chapter 5 will provide a summary of the key findings, conclusions and recommendations. It will also provide the limitation of the study and suggest areas of further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the existing theoretical and empirical literature on corporate governance. Specifically, it attempts to offer a review of the existing theoretical and empirical literature that tries to link CG structure to firm performance. This chapter is presented as follows: theoretical literature review, empirical literature review and finally the research gap which will draw existing research gap(s) for this and future studies on this topic.

2.2 Theoretical Literature

Corporate is the process and structure used to direct and manage business affairs of the company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholders long-term value while taking into account the interest of other stakeholders. (CMA Act, 2002). According to According to Imam and Malik (2007) the corporate governance theoretical framework is the widest control mechanism of corporate factors to support the efficient use of corporate resources. Maintaining proper compliance with all the applicable legal and regulatory requirements under which the company is carrying out its activities is also achieved by good practice of corporate governance mechanisms (George & Bagshow, 2014). There are a number of theoretical perspectives which are used in explaining the impact of corporate governance mechanisms on firms" financial performance. The most important theories are the agency theory, stakeholders" theory and resource dependency theory (Maher & Andersson, 1999).

2.2.1 Agency Theory

Agency theory refers to a set of propositions in governing a modern corporation which is typically characterized by large number of shareholders or owners who allow separate individuals to control and direct the use of their collective capital for future gains. Agency Theory is based on the idea

that in a modern corporation, there is a separation of ownership and management, resulting in agency costs associated with resolving the conflict between the owners and the agents (Berle & Means, 1932).

Jensen and Meckling (1976) regarded corporate governance as a mechanism where a board of directors is a crucial monitoring device to minimize the problems brought about by the principal-agent relationship. In this context, agents are the managers, principals are the owners and the boards of directors act as the monitoring mechanism (Mallin C. A., 2004). The separation of ownership from management can lead to managers of firms taking action that may not maximize shareholder wealth, due to their firm specific knowledge and expertise, which would benefit them and not the owners; hence a monitoring mechanism is designed to protect the shareholder interest (Jensen & Meckling, 1976).

Proponents of the agency theory argue that a firm's top management becomes more powerful when the firm's stock is widely held and the board of directors is composed of people who know little of the firm (Mulili & Wong, Corporate Governance Practices in Developing Countries:The Case for Kenya, 2011). The theory suggests that a firm's top management should have a significant ownership of the firm in order to secure a positive relationship between corporate governance and the amount of stock owned by the top management (Mallin C. A., 2004). The problems arise in corporations because agents (top management) are not willing to bear responsibility for their decisions unless they own a substantial amount of stock in the corporation.

Donaldson and Davis(1991) argue that managers will not act to maximize returns to shareholders unless appropriate governance structures are implemented to safeguard the interests of shareholders. Therefore, the agency theory advocates that the purpose of corporate governance is to minimize the potential for managers to act in a manner contrary to the interests of shareholders which in this case is maximization of shareholders' returns.

2.2.2 Stakeholder's Theory

The stakeholders' theory holds that corporations are social entities that affect the welfare of many stakeholders where stakeholders are groups or individuals that interact with a firm and that affect or are affected by the achievement of the firm's objectives (Donaldson & Preston, 1995). It is this interaction that Donaldson and Davis (1991) concludes that shareholder interests are maximized by shared incumbency of the roles of the various stakeholders in a company and according to them stewardship theory is superior to agency theory.

Stakeholder theory argues that the parties involved should include governmental bodies, political groups, trade associations, trade unions, communities, associated corporations, prospective employees and the general public. In some cases competitors and prospective clients can be regarded as stakeholders to help improve business efficiency in the market place. Stakeholder theory has become more prominent because many researchers have recognized that the activities of a corporate entity impact on the external environment requiring accountability of the organization to a wider audience than simply its shareholders (Yusoff & Alhaji, 2012)

Jensen (2001) critiques the Stakeholder theory for assuming a single-valued objective (gains that accrue to a firm's constituency). The argument of Jensen (2001) suggests that the performance of a firm is not and should not be measured only by gains to its stakeholders (Jensen, 2001;Yusoff & Alhaji, 2012).

According to stakeholders theory for any firm to improve on its financial performance it must take into account interest of all stakeholders and not just those of management and owners of the firm.

2.2.3 Stewardship Theory

In contrast to agency theory, stewardship theory presents a different model of management, where managers are considered good stewards who will act in the best interest of the owners (Donaldson

& Davis, 1991). The fundamentals of stewardship theory are based on social psychology, which focuses on the behaviour of executives. The steward's behaviour is pro-organizational and collectivists, and has higher utility than individualistic self-serving behavior and the steward's behavior will not depart from the interest of the organization because the steward seeks to attain the objectives of the organization (Davis, Schoorman & Donaldson, 1997).

According to Smallman (2004) where shareholder wealth is maximized, the steward's utilities are maximised too, because organisational success will serve most requirements and the stewards will have a clear mission. He also states that, stewards balance tensions between different beneficiaries and other interest groups. Therefore stewardship theory is an argument put forward in firm performance that satisfies the requirements of the interested parties resulting in dynamic performance equilibrium for balanced governance.

Stewardship theory sees a strong relationship between managers and the success of the firm, and therefore the stewards protect and maximize shareholder wealth through firm performance. A steward who improves performance successfully, satisfies most stakeholder groups in an organization, when these groups have interests that are well served by increasing organizational wealth (Davis, Schoorman & Donaldson, 1997). When the position of the CEO and Chairman is held by a single person, the fate of the organization and the power to determine strategy is the responsibility of a single person. Thus the focus of stewardship theory is on structures that facilitate and empower rather than monitor and control (Davis, Schoorman & Donaldson, 1997). Therefore, stewardship theory takes a more relaxed view of the separation of the role of chairman and CEO, and supports appointment of a single person for the position of chairman and CEO and a majority of specialist executive directors rather than non-executive directors (Clarke T. , 2004)

Thus, for enhanced financial performance, a firm should ensure that the structures in place that managers are empowered and well facilitated to attain objectives of the firm and therefore meeting his own objectives in the process.

2.2.4 Resource Dependency Theory

Resource dependence theory is based on the notion that environments are the source of scarce resources and organizations are dependent on these finite resources for survival. A lack of control over these resources thus acts to create uncertainty for firms operating in that environment. Organizations must develop ways to exploit these resources, which are also being sought by other firms, in order to ensure their own survival. It argues that the key to organizational survival is the ability of the firm to acquire and maintain resources (Pfeffer & Salancik, 1978). Thus, boards of directors are an important mechanism for absorbing critical elements of environmental uncertainty into the firm. Environmental linkages could reduce transaction costs associated with environmental interdependency.

The implication of this theory is that corporate Boards will reflect the environment of the (Pfeffer, 1972) and those corporate directors will be chosen to maximize the provision of important resources to the Firm. Each director may bring different linkages and resources to a Board. Board composition will thus theorize to reflect a matching of the dependencies facing an organization to the resources acquisition potential of its Board members (Hillman, Cannella, & Paetzold, 2000).

From the foregoing discussion, Resource Dependency Theory advocates that the board of directors should be composed of people with diverse recourses from which a firm can tap to improve its financial performance.

2.3 Corporate Governance and Financial Performance

2.3.1 Board Size

Hermalin and Weisbach (2013) argued the possibility that larger boards can be less effective than small boards. When boards consist of too many members agency problems may increase, as some directors may tag along as free-riders. They argued that when a board becomes too big, it often moves into a more symbolic role, rather than fulfilling its intended function as part of the

management. On the other hand, very small boards lack the advantage of having the spread of expert advice and opinion around the table that is found in larger boards.

Vafeas (2010) reported that firms with the smallest boards (minimum of five board members) are better informed about the earnings of the firm and thus can be regarded as having better monitoring abilities. Echoing the above findings, Mak and Yuanto (2013) reported that listed firm valuations of Singaporean and Malaysian firms are highest when the board consists of five members. Bennedsen, Kongsted and Nielsen (2011), in their analysis of small and medium-sized closely held Danish corporations reported that board size has no effect on performance for a board size of below six members but found a significant negative relation between the two when the board size increases to seven members or more. In an attempt to compare the effects of board structure on firm performance between Japanese and Australian firms, Bonn, Yokishawa and Phan (2011) found that board size and performance (measured by market-to-book ratio and return on assets) was negatively correlated for Japanese firms but found no relationship between the two variables for its Australian counterpart. However, contrary to the Japanese firms the ratios of outside directors and female directors to total board numbers have a positive impact in the Australian sample (Bonn *et al.,* 2011).

Contrary to the above findings, a positive impact on performance was recorded with larger board size by Mak and Li (2011) and Adams and Mehran (2011); however, in examining 147 Singaporean firms from 2014 data, Mak and Li (2011) support the argument that board structure is endogenously determined when the results of their OLS indicate that board size, leadership structure and firm size have a positive impact on firm performance but their 2SLS regressions do not support this result. Adams and Mehran (2011) found a positive relationship between board size and performance (measured by Tobin's Q) in the U.S banking industry. Adam and Mehran's results suggest that such performance relationship may be industry specific, indicating that larger boards works well for certain type of firms depending on their organizational structures. A meta-analysis based on 131

studies by Dalton and Dalton (2011) revealed that larger boards are correlated with higher firm performance.

Boards with a large number of directors can be a disadvantage and expensive for the firms to maintain. Planning, work coordination, decision-making and holding regular meetings can be difficult with a large number of board members. Generally, Empirical evidence on the relationship between board size and firm performance provide mixed results .While, Ahmadu *et al*. (2011) and Mustafa (2011) found that larger boards are associated with poorer performance, Beiner *et al*. (2011), Bhagat and Black (2012) and Limpaphayom and Connelly (2011) found no significant association between board size and firm performance.

2.3.2 Gender Diversity

In very recent times, researchers began to look at how board diversity might enhance corporate governance and firm performance (Fields & Keys 2013). In probably the first research of its kind, Carter *et al*. (2013), in a study of Fortune 1,000 firms, find significant evidence of a positive relationship between board diversity, proxied by the percentage of women and/or minority races on boards of directors, and firm value, measured by Tobin's Q. Adams and Ferreira (2012), in using U.S. data, find that gender diversity of corporate boards provides directors with more pay-for-performance incentives and that the boards meet more frequently. Notwithstanding above, empirical studies on the relationship between board diversity and firm performance remain sparse to date. One explanation is insufficient development of testable theory.

2.3.3 Independent Directors/ board composition

Another corporate governance mechanism that is anticipated to affect corporate governance is board composition. Boards mostly compose of executive and non-executive directors. Executive directors refer to dependent directors and non-Executive directors to independent directors (Shahadat, 2011). At least one third of independent directors are preferred in board, for effective

working of board and for unbiased monitoring. Dependent directors are also important because they have insider knowledge of the organization which is not available to outside directors, but they can misuse this knowledge by transferring wealth of other stockholders to themselves (Beasly, 2014). A board composed of members who are not executives of a company, nor shareholders, nor blood relatives or in law of the family (Gallo, 2011).

An independent board is generally composed of members who have no ties to the firm in any way, therefore there is no or minimum chance of having a conflict of interest because independent directors have no material interests in a company. Mak and Yuanto (2013) saw Jacobs (2011) stating that independent directors are important because inside or dependent directors may have no access to external information and resources that are enjoyed by the firm's outside or independent directors (for example, CEOs of other firms, former governmental officials, investment bankers, Social worker or public figures, major suppliers). Moreover, for advice/counsel inside or dependent directors are available to the CEO as a function of their employment with the firm; their appointment to the board is not necessary for fulfillment of this function.

Staikouras *et al* (2013) found that board composition does not affect firm performance although its relationship with performance was found to be positive. These findings were similar to those of Adusei (2010) who found no relationship between board composition and bank performance in Ghana although board composition was found to have positive effect on bank efficiency. At the same time, Alonso and Gonzalez (2011) studied 66 banks in OECD countries from 2014 to 2013. They established an inverted U shaped relation between the measures of bank performance (Tobin's Q, ROA, the annual market return of a bank shareholder) and board size which they posit justifies a large board but imposing an efficient limit on size. According to Rhoades *et al.* (2010), boards dominated by outsiders or NEDs may help to mitigate the agency problem by monitoring and controlling the opportunistic behavior of management.

The results of previous studies that investigated the relationship between board composition and firm performance are inconsistent. Dehaena *et al* (2011), Omar (2013) and Rhoades *et al*. (2010) found that NED has a positive relationship with financial performance. For example, Krivogorsky (2011) and Limpaphayom and Connelly (2011) also found a positive relationship between board composition (the proportion of independent directors on the board) and firm performance. Hasnah (2009) showed that Non-Executive Directors is significantly related to firm performance that is measured by ROA. On the other hand, Coles *et al*. (2011) demonstrated that there is a negative impact of outside directors on firm performance.

Erickson *et al*. (2011) also found a negative relationship between greater board independence and firm value. However, Bhagat and Black (2012) and De Andres *et al*. (2011) found no significant relationship between the composition of the board and the value of the firm. Based on above discussion and in the light of the agency theory, the following hypothesis can be empirically tested.

It is suggested that higher proportion of non-executive directors in the board helps to reduce the agency cost. Kee *et al*. (2013) and Hutchinson and Gul (2013) support this view by showing that that higher levels of non-executive directors on the board weaken the negative relationship between the firm's investment opportunities and firm's performance. However, Weir *et al*. (2012) dispute it by stating that there is no significant relationship between non-executive directors' representation and performance. In contrast, in the U.K., Weir *et al*. (2010) find a negative relationship between non-executive director representation and performance.

In addition, Yermack (2014) present that small board has a higher market valuation. Stronger support for the positive impact of non-executive directors comes from event study analysis. The studies by Shivdasani and Yermack (2011) show that the appointment of non-executive directors increases company value.

2.3.4 CEO Duality

Another aspect of corporate governance board mechanisms that can affect performance is duality of the role of the chairman and chief executive officer (thereafter CEO). This is known as CEO duality. CEO duality is a corporate governance mechanism that can affect performance. The previous research into this area looked whether CEO duality will lead to better or worse performance. There are three views concerning CEO duality. The first view supports that of non-CEO duality and the agency theory. Those who support non-CEO duality believe the best option is for the roles of chairman and CEO to be separated since it will help the board to be in a better position to monitor management opportunism. Evidence on this area tends to be in line with the prediction that CEO duality is harmful for firm performance.

Yermack (1996) found that non- CEO duality could have a positive effect on stock returns. Sanda et al. (2003) also found a positive relationship between firm performance and non-CEO duality. Further to this Lam and Lee (2008) found non-CEO duality is good for family controlled firms. CEO duality occurs when a CEO is also the chairperson of the board. Since one of a board's primary functions is to monitor the top executives, CEO duality may lessen its monitoring effectiveness. Scholars have investigated the effects of CEO duality on different aspects of organizational performance.

Splitting the posts of CEO and board chairman is considered to be an effective checks-and-balances arrangement to avoid CEO dominance on the board. This splitting is designed to provide a better environment for nurturing an effective board (Chau and Leung, 2006) and the development of better corporate governance, leading to higher firm value.

2.3 Empirical Review

Past studies have proxied the financial performance of firms by Return on Assets(ROA), Return on Equity (ROE), Return on Investments (ROI) and Tobin's Q (Tobin, 1956). These studies remain

inconclusive on which of these proxies is theoretical and/or empirically the best measure of a firm's financial performance. Consequently, like previous, previous studies have employed all or some of these proxies of the firm's financial performance (Ayako, Kungu, & Githui, Determinants of the Performance of Firms Listed at the Nairobi, 2015).

In their study on the Determinants of the Performance of Firms Listed at the Nairobi Securities Exchange Ayako, Kungu, and Githui (2015) adopted an explanatory non-experimental research design and a census of all firms listed at the Nairobi Security Exchange from year 2006-2012 was the sample. They concluded that firms with big board sizes are more likely to report higher return on assets compared to firms with small board sizes. In addition, big board sizes influence return on equity positively.

Aduda, Chogii, and Magutu (2013) conducted an empirical test of competing corporate governance theories on the performance of firms listed at the nairobi securities exchange and concluded that that the independent variables of board size, outside directors, inside directors, and CEO duality are important predictors of firm performance. The study found a strong positive correlation between firm size and size of the board. Large firms therefore tended to have large sizes of the board while smaller firms had smaller sizes of the board. In another study Korir and Cheruiyot (2014) on Board Demographics and Financial Performance of Firms Listed in NSE, Kenya found out that executive directors are more familiar with the firm's activities and therefore in a better position to monitor top management while the non executive directors' act as professional referees to ensure that competition among the insiders stimulates actions consistent with shareholder value maximization.this is consitent with the agency theory.

Khan and Awan (2012) concluded that companies heaving independent directors in their board composition will show greater firm performance in their study on the effect of board composition on firm's performance of pakistani listed companies. They used the ROE, ROA and tobins Q to

measure the performance of the firm. However their study only focuces in the independence of board members while there are other aspect of board composition such as the CEO duality, size of the board, Board Gender Diversity among others.

In his study of the relationship between corporate governance and firm performance Coleman(2007) concluded that corporate governance particularly board independence has a positive impact on economic growth through firm performance. He notes that for enhanced performance of corporate entities, it is important to separate the positions of CEO and board chair and also to maintain and operate with relatively independent boards and audit committees. Further, the study reaffirms the rather hazy principle that board diversity with women in dominance is paramount for enhanced performance of microfinance institutions.

Major notorious accounting failures the world over have dented investor confidence and have raised several questions on the effectiveness of a firm's internal control system and governance structures. Indeed, the theme making the headlines for the past years is corporate governance.

The Central Bank of Kenya supervisory reports of 2010 and 2011 contain incidences of non-compliance with the Banking Act and CBK Prudential Guidelines which serve to enhance prudent corporate governance safeguarding stakeholder's interest. The incidences included failure to meet the minimum statutory capital requirement of Kshs. 500 million; some banks advancing credit facilities to single borrowers in excess of 25 percent of their core capital; advancing unsecured credit facility to insiders; investing in land and buildings in excess of 20 percent of core capital; and lack of qualified internal auditor i.e. with ICPAK membership (Central Bank of Kenya, 2010; Central Bank of Kenya, 2011).

Regardless of efforts made to streamline the banking sector, many banks have been liquidated or put under receivership, the most recent ones being Emperial bank and Chase bank. The collapse was due to weak internal controls, poor governance and management practices. Various reasons were given that may have contributed to the collapse of banking institutions in Kenya. The Centre

for Corporate Governance, (2004) outlined the following reasons as being major contributors to this phenomenon; insider lending and conflict of interest, weaknesses in regulatory and supervisory systems, poor risk management strategies, lack of internal controls and weak corporate governance practices. This followed by the Central Bank of Kenya to outline more bold and elaborate measures to curb these problems and also to strengthen its arm of supervisory role it plays in the industry.

2.4 Research Gap

A lot research has been conducted both locally and internationally to establish the relationship between corporate governance and a firm financial performance. However, results from findings are mixed with no clear indication of the impact of corporate governance on bank performance. Ashwin (2015) researched on the relationship between Corporate Governance and financial performance of firms listed on the JSE Ltd, while Lekaram (2014) conducted a study on the relationship of Corporate Governance and financial performance of manufacturing firms listed in the NSE, Mwangi (2013) investigated the effect of Corporate Governance on the financial performance of firms listed in the NSE, and Siele (2013) looked into the effect of Corporate Governance on the performance of Micro Finance Instituitons in Kenya. None of the above studies has focused specifically on the relationship between Corporate Governance and financial performance of listed commercial banks in Kenya.

Therefore , unlike a number of researches conducted in the past, this research will use sophiscated statistical and some econometric tools to explore the relationships in more detail with the objective of getting a clearer indication of the relationships between the variables under sturdy in the Kenyan context. While many researches have focused on only one governance mechanism on performance, this research will employ more maesurements of corporate governance (four) with the hope of coming out with a more informed analysis of the relationshisp between corporate governance and bank performance. In addition, employing a panel data analysis approach comprising of 11 financial

institutions (banks) with five variables of data for each bank spanning a period of 8 years, it is hoped that this research will be rich in its findings as opposed to a number of resrachers in the past that have focused their analysis on single point in time without incorporating variables that capture the dynamic nature of principal-manager relationships over a period of time.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the design of the study indicating the methodology that was used to undertake the study, as well as the factors that were involved in setting it up. The chapter starts by outlining the research design, then the. After that, the sample design procedures are outlined, followed by the data collection instrument and procedures. The chapter closes with the data analysis procedures to be used.

3.2 Research Design

This study adopted an explanatory non-experimental research design to investigate the effect of corporate governance on the financial performance of commercial banks listed at the Nairobi Securities Exchange, Kenya. Explanatory research seeks to establish causal relationship between variables (Saunders, Lewis, & Thornhill, 1997). Kerlinger and Lee(2000) described an explanatory non-experimental research design is appropriate where the researcher is attempting to explain how the phenomenon operates by identifying the underlying factors that produce change in it in which case there is no manipulation of the independent variable.

3.3 Target Population

Target population in statistics is the specific population about which information is desired. According to Mugenda and Mugenda (2003), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. The study populations were all the 11 commercial banks listed Nairobi Securities Exchange in Kenya indicated in appendix 1.

3.4 Data Collection Instrument and Procedures

The study used secondary panel data to analyze the relationship between corporate governance and financial performance. Secondary data was obtained from corporate governance statements and financial statements for the 11 Commercial banks as published by NSE. The panel data covers 2006 to 2013. While inclusion of more current data covering the periods of 2014 to 2017 would have been desirable, unavailability of all the data variables for the banks in this period limited this research to using the fully available data for the period 2006 to 2013. The data collected included: - number of directors, number of executive and non-executive directors, proportion of women directors, CEO duality, while financial data included total assets, capital employed and net revenue.

3.5 Data Presentation and Analysis

The researchers used descriptive statistics and panel multiple regression analysis. The collected data was coded and analyzed using the descriptive statistics, to describe each variable under study, by the use of STATA. The coding process for this study involved reading through the annual reports of each of the 11 banks selected for the study and coding the information according to pre-defined categories of corporate governance indicators as shown in appendix 2. This study used Visual Techniques such as graphs, charts and tables to present its findings. This allowed patterns to emerge and help in identifying trends.

In addition, a regression model was applied to determine the relative importance of each of the four variables with respect to performance. Regression method is used due to its ability to test the nature of influence of independent variables on a dependent variable. Regression is able to estimate the coefficients of the linear equation, involving one or more independent variables, which best predicted the value of the dependent variable (Coben, 2010). The study also tested for the adoption of either a random or fixed effects model for ROA and ROE using the Hausman Test. The

following analytical model was used in analyzing the relationship between the dependent and independent

Variables:

The following panel regression models were estimated;

$$ROA_{it} = \alpha_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 CEOD_{it} + \varepsilon_{it} \ldots\ldots\ldots.. \text{ Equation 1}$$

$$ROE_{it} = \alpha_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BED_{it} + \beta_4 CEOD_{it} + \varepsilon_{it} \ldots\ldots\ldots.. \text{ Equation 2}$$

Where;

ROA_{it} = Return on Assets of firm i at time t

ROE_{it} = Return on Equity of firm i at time t

BS_{it} = Board size of firm I at time t

BI_{it} = Board Independence of firm i at time t

BGD_{it} = Board gender Diversity of firm i at time t

$CEOD_{it}$ = CEO Duality in firm i at time t

α_0 = Constant term

β's = Coefficients of the explanatory variables

ε_{it} = composite error term

BS=this is the number of members serving on a firm's board; BI=the board composition is the ratio of outside directors to the total number of directors (i.e. number of outside directors divided by total number of directors), BGD= the ratio of female directors to total number of directors (i.e. number of female directors divided by total number of directors), CEO=this is a dummy variable which takes the value of 1, if the CEO combines as the board chairman and 0 if there are different people occupying the two positions of CEO and board chairman

$$\textbf{ROA} = \frac{\textbf{Earning Before Interest \& Tax(EBIT)}}{\textbf{Ave.Total Assets}}$$

The return on assets ratio measures how effectively a company can turn earn a return on its investment in assets. In other words, ROA shows how efficiently a company can covert the money used to purchase assets into net income or profits. It is most useful for comparing companies in the same industry as different industries use assets differently.

$$\textbf{ROE} \ = \frac{\textbf{Earning Before Interest \& Tax(EBIT)}}{\textbf{Capital Employed}}$$

Return on equity measures how efficiently a firm can use the money from shareholders to generate profits and grow the company. Since every industry has different levels of investors and income, ROE can't be used to compare companies outside of their industries very effectively. For the both measures of performance the higher the ratio the better.

CHAPTER FOUR:

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the research. The objective of this study was establish the effects of corporate governance on financial performance of commercial banks listed in the Nairobi securities exchange, the study period was between 2006-2013.

4.2 Descriptive Statistics

This section explains the characteristics of corporate governance factors that affects the financial performance of banks listed in (NSE). Some demographic variables including, duality of the CEO, size of the board of the directors, board independence and gender diversity of the board of directors of the banks listed in NSE were tested using ANOVA.

Table 4.1: Descriptive statistics

Years				Board		CEO
	ROA	ROE	Board size	Independence	BGD	Duality
2006	0.052	0.621	13.625	0.498	0.148	0.178
2007	0.051	0.238	10.250	0.470	0.183	0.119
2008	0.049	0.245	11.125	0.589	0.223	0.241
2009	0.050	0.198	9.125	0.579	0.214	0.263
2010	0.044	0.283	9.875	0.384	0.361	0.270
2011	0.033	0.248	9.125	0.504	0.398	0.216
2012	0.021	0.591	8.114	0.549	0.374	0.283
2013	0.020	0.697	8.065	0.679	0.474	0.323

Secondary data was collected from the banks' financial statements and report for the years between 2006 and 2013. The study collected data on Return on Assets which was measured as amount of net income returned as a percentage of total assets, Return On Equity which was measured as the amount of net income returned as a percentage of shareholder equity, the various independent

variables were Board Size which was measured by the number of directors, Gender diversity was measured using the percentage of women on board. Board independence which was measured using Board proxies such as number or proportion of non-executive directors. CEO Duality which was measured as dummy variable 1 if CEO and Chairman are the same person; 0 if CEO and Chairman are different persons

4.3 Diagnostic Tests for Regression Assumptions

The preferred regression model was subjected to a number of diagnostic tests to evaluate the validity of the model. The diagnostic tests included: Breusch-Pagan test for heteroskedasticity and White Heteroskedasticity Test (LM) for constant variance of 36 residual over time, the ARCH (Autoregressive conditional heteroscedasticity) test which detects the problem of heteroscedasticity and Ramsey RESET test for the specification of the regression. Further regression and correlation analysis were used to establish the relationship between the independent and the dependent variables.

Table 4.2: Diagnostic Tests

Test	F-statistics	Probability
Ramsey RESET Test:	1.760507	0.163014
White Heteroskedasticity Test:	2.125333	0.079932
ARCH Test:	1.185552	0.324352
Breusch-Pagan Test for Heteroskedasticity LM Test:	1.12472	0.573265

Parameters of the regression analysis were stable and the model can be used for estimation at 5 percent confidence level. The Ramsey RESET Test for model specification, ARCH Test and White Heteroskedasticity Test for constant variance of residuals and Breusch-Godfrey Serial Correlation LM Test for serially correlated residuals used the null hypothesis of good fit (specification, heteroskedasticity, and non-auto correlated against the alternative hypothesis of model mis-specification, heteroskendasticity, and auto correlated respectively. All the probability values were

less than F-statistics coefficients at 5 percent level of significance and therefore the null hypothesis was not rejected. The diagnostic test outcomes were therefore satisfactory

4.4 Effect of Board Independence, Board Gender Diversity and CEO Duality on ROA

4.4.1 Pearson Correlation Analysis

After the descriptive analysis, the study conducted Pearson correlation analysis to indicate a linear association between the predicted and explanatory variables or among the latter. It, thus, help in determining the strengths of association in the model, that is, which variable best explained the relationship between board characteristics; board size, board independence, board gender diversity and CEO duality firm performance in Nairobi securities exchanges

Table 4.3: Correlations Matrix ROA

		ROA	Board Size	Board Independence	Board Gender Diversity	CEO Duality
ROA	Pearson Correlation	1				
	Sig. (2-tailed)					
Board Size	Pearson Correlation	.011	1			
	Sig. (2-tailed)	.000				
Board Independence	Pearson Correlation	.473	.340	1		
	Sig. (2-tailed)	.000	.003			
Board Gender Diversity	Pearson Correlation	.533	.310*	.389	1	
	Sig. (2-tailed)	.001	.028	.007		.
CEO Duality	Pearson Correlation	.071	.443	.104	.662	1
	Sig. (2-tailed)	.009	.001	.001	.001	

Source , Survey data (2016)

The researcher conducted a Pearson moment correlation. From the finding in the table above, the study found a weak positive correlation coefficient between ROA of banks listed at NSE and board size, as shown by correlation factor of 0.011, this strong relationship was found to be

statistically significant as the significant value was 0.000 which is less than 0.05, the study found a positive correlation between ROA of banks listed at NSE and board independence as shown by correlation coefficient of 0.473, this too was also found to be significant at 0.000 level. The study also found strong positive correlation between ROA of banks listed at NSE and board member education diversity as shown by correlation coefficient of 0.533 at 0.001 level of confidence and finally the study also weak positive correlation between ROA of banks listed at NSE and CEO duality as shown by correlation coefficient of 0.071 at 0.009 level of confidence.

This finding concurs with the study findings by (Goldratt, 2004). Larger board are less effective than smaller boards because, increase in board's size occurs with Increase in agency problems, further concurs with (Waters, 2006). Chopra, (2007) that the more diversified the board members education the poor an organization financial performance thus board should be composed of members having homogeneous skills.

4.4 Data Analysis and Key Findings

A summary of the key findings from the data analysis output from the research follows. For the output computer software analysis, refer to Appendix III

Since the p-value obtained from the Hausman's test is less than 0.05, at 0.0404, therefore, reject the null hypothesis that the difference in coefficients is not systematic. This implies that there is correlation between the bank's specific factors and the predictor variables and therefore the fixed effect model should be used for the analysis.

From the fixed effect model used to analyse variables that influence return on assets over time assuming correlation of the individual bank factors with the predictor variables, since p-value of 0.000 is less than 0.05, then, the model is reliable for interpretation and that all the coefficients in the model are different from 0.

A rho of 0.348 implies that 34.8% of the variance is due to differences across banks.

Since the p-value for board size is less than 0.05 this implies that it has a significant influence on return on assets while all other variables are not significant. A coefficient of 0.022 for board size implies that a unit increase in the board size over time will cause the return on asset to increase by 0.022. In addition, board independence has a coefficient of 0.0015. This implies that a unit increase in board independence across time will cause a corresponding increase in return on assets by 0.0015. Board gender diversity has a coefficient of -0.055. This implies that a unit increase in board gender diversity causes a decline in return on assets by 0.055. Finally, CEO duality was found to have a coefficient of 0.0041. This meant that a unit increase in ceo duality over time resulted in a simultaneous increase in return on assets by 0.0041. The correlation coefficient between the errors and the predictor variables were found to be -0.4321. This implies that within each individual bank there are factors that impact or bias the predictor or outcome variables to an extent of 0.4321 in correlation.

4.4.3 Regression Diagnostics
 Testing for cross-sectional dependence using Pasaran CD test

Since the p-value is less than 5% we reject the null hypothesis that there is no cross-sectional dependence between the banks. This implies that there is cross-sectional dependence between banks and hence we regress with Driscoll and Kraay's standard errors in developing the fixed effect model as proposed by Hoechle.

Based on this regression, the model is found to be reliable as the p-value is found to be 0.0016 which is less than 0.05. Additionally, board size and board gender diversity are found to significantly influence variations in return on assets as their p-values were less than 0.05 at 0.033 and 0.005 respectively. Board independence and CEO duality were found not to significantly influence variations in return on assets as their p-values were greater than 0.05.

Since the p-value obtained is greater than 0.05 we do not reject the null that the data is homoscedastic. This implies that the data has constant variance or it is homoscedastic.

Testing for Time Specific Effects

Since p-value is less than 0.05 therefore we reject the null hypothesis that the coefficients for all the years are jointly all equal to zero, therefore time fixed effects are needed in this case

In 2007, the model is found to be significant with a p-value of 0.0001 which implies that it was reliable for analysis. However, no predictor variable was found to significantly influence return on assets at 5% level of significance.

In 2008, the model is found to be significant with a p-value of 0.0001 which implies that it was reliable for analysis. However, only board size was found to significantly influence return on assets at 5% level of significance. Board independence, board gender diversity and CEO duality were found not to significantly influence return on assets.

In 2009 the model is found to be significant with a p-value of 0.0001 which implies that it was reliable for analysis. However, only board size was found to significantly influence return on assets at 5% level of significance. Board independence, board gender diversity and CEO duality were found not to significantly influence return on assets.

In 2010, the model is found to be significant with a p-value of 0.0000 which implies that it was reliable for analysis. However, predictor variable was found to significantly influence return on assets at 5% level of significance.

In 2011 the model is found to be significant with a p-value of 0.0000 which implies that it was reliable for analysis. However, only board gender diversity was found to significantly influence return on assets at 5% level of significance. Board size, board independence and CEO duality were found not to significantly influence return on assets.

In 2012, the model is found to be significant with a p-value of 0.0001 which implies that it was reliable for analysis. However, only board size and board gender diversity were found to significantly influence return on assets at 5% level of significance. Board independence and CEO duality were found not to significantly influence return on assets.

In 2013, the model is found to be significant with a p-value of 0.0000 which implies that it was reliable for analysis. However, only board size was found to significantly influence return on assets at 5% level of significance. Board independence, board gender diversity and CEO duality were found not to significantly influence return on assets.

4.5 Effect of board independence, board gender diversity and CEO duality on ROE

4.5.1 Pearson Correlation Analysis

The study also conducted Pearson correlation analysis to indicate a linear association between the predicted and explanatory variables or among the latter. It, thus, help in determining the strengths of association in the model, that is, which variable best explained the relationship between board characteristics; board size, board independence, board gender diversity and CEO duality firm performance in Nairobi securities exchanges

Table 4.3: Correlations Matrix ROE

		ROE	Board Size	Board Independence	Board Gender Diversity	CEO Duality
ROE	Pearson Correlation	1				
	Sig. (2-tailed)					
Board Size	Pearson Correlation	.099	1			
	Sig. (2-tailed)	.001				
Board Independence	Pearson Correlation	.422	.419	1		
	Sig. (2-tailed)	.000	.013			
Board Gender Diversity	Pearson Correlation	.394	.471	.298	1	
	Sig. (2-tailed)	.000	.028	.007		.
CEO Duality	Pearson Correlation	.126*	.016	.247	.042	1
	Sig. (2-tailed)	.002	.003	.000	.000	

The researcher conducted a Pearson moment correlation. From the finding in the table above, the study found a weak positive correlation coefficient between ROE of banks listed at NSE and board size, as shown by correlation factor of 0.099, this strong relationship was found to be statistically significant as the significant value was 0.001 which is less than 0.05, the study found a positive correlation between ROE of banks listed at NSE and board independence as shown by correlation coefficient of 0.422, this too was also found to be significant at 0.000 level. The study also found strong positive correlation between ROE of banks listed at NSE and board member education diversity as shown by correlation coefficient of 0.394 at 0.000 level of confidence and finally the study also found a weak positive correlation between ROE of banks listed at NSE and CEO duality as shown by correlation coefficient of 0.126 at 0.002 level of confidence.

Since the p-value obtained from the Hausman's test is greater than 0.05, at 0.1162, therefore, we fail to reject the null hypothesis that the difference in coefficients is not systematic. This implies that there is no correlation between the bank's specific factors and the predictor variables and therefore the random effect model should be used for the analysis.

4.5.4 Diagnostics

Testing for random effects: Breusch-Pagan Lagrange multiplier (LM)

Since the p-value of 0.501 is greater than 0.05 therefore we failed to reject the null hypothesis and conclude that random effects is not appropriate. This is, no evidence of significant differences across the banks, therefore we can run a simple OLS regression.

Ordinary Least Squares Regression

The p-value for the model is found to be 0.2017 which is greater than 0.05. This implies that the model variables do not significantly influence return on equity and therefore the model would not

be reliable for further interpretations. An analysis of other factors ought to be investigated that affect return on equity.

4.6 Interpretation of the Findings

The main objective of the study was to establish the effects of corporate governance on financial performance of commercial banks listed in the Nairobi securities exchange, From the regression result above, all the explanatory variables are statistically significant ($P < 0.05$) at 5% in causing the variation in financial performance of banks listed at NSE. On average, ROE of banks listed at NSE will register negative performance of -1.716 units if the explanatory variables (board size, board independence, board gender diversity and CEO duality) were excluded in the estimation model. This implies there are other control variables that financial performance of banks listed at NSE which were never considered in the study.

4.6.1 Board Size

Results obtained from correlation results showed that board size was found to be positively associated with ROA and ROE of banks listed in NSE. Regression results also predict that a unit change on board size would positively enhance return on asset and return on equity. In descriptive instances, the study established that board with a smaller number of members is more efficient, smaller board can efficiently monitor the, management. The findings are in line with the research by Yesuf and Mesut (2014) that board size is an important component of corporate governance among quoted companies.

Further the study revealed that ROA and ROE ratios decrease as a board's size increases. Eisenberg, Sundgren, and Wells (1998) similarly discovered that an increase in board size can be associated with a decrease in firm value. Board size may reflect the complexity of a firm's environment which is inherently challenging. Board size also influences it cohesiveness although large boards may increase the quality of decision-making since they offer a broader array of

perspectives, their size may hinder the ability to reach a consensus, large boards are less involved in strategic decision-making and make it difficult to make strategic changes (Golden & Zajac, 2001).

4.6.2 Board Independence

Results obtained from correlation results showed that higher ratio of independent board directors was positively related with ROA and ROE of banks listed in NSE. Regression results also showed that increase in level of independency to board directors would promote ROA and ROE of banks listed in NSE. The findings are in line with the study by Muravyey, Talavera and Weir (2014) investigated the effects of appointment on new non-executive directors in board to UK corporate boards and found that presence of non-executive directors had a positive significance on accounting performance, therefore Banks should aim at increasing the ratio of executive directors for they will not have mixed interests. Increasing the level of the proportion of independent directors should simultaneously increase firm performance, as they are more effective monitors of managers

Further the study noted that it is possible that the inclusion of independent directors might not achieve its effect if non-independent directors outnumber them. This happens when the existing directors respond to the statutory requirement that the board include non-executive directors by appointing non-executive directors who will not challenge the existing directors. This could have a far-reaching corporate governance implication because the board of directors would fail to effectively execute its oversight mandate over management. The findings are in support of the research by Olatunji and Ojeka (2011) that showed a negative significant relationship between non-executive directors and return on equity. The inverse relationship could be attributed to limited time which non-executive directors are involved in specific company's activities owing to their full time commitment.

4.6.3 Board Gender Diversity

From the regression model it can be observed that observed that the linear effects of ROA and (independent variable) female board members) are significant at 95% confidence level. There was a positive relationship between the proportion of female board members and ROA. As the number of female board members increased the performance of the firm increased as it was measured by ROA. This was evident from the few banks that had female members in their boards. The findings are in line with the research by Konrad et al., (2008) that Female directors are more likely to ask questions rather than nodding through decisions they are also more inclined to make decisions by taking the interests of multiple stakeholders into account. At the board level, where directors are compelled to act in the best interest of the corporation, this quality makes women more effective corporate directors.

Those banks recorded an increase in the performance of the banks when compared to those years that they did not have any female board member .The role of women, as board directors and top corporate executives in driving firm performance has become a very topical issue. The findings are in line with the research by Rechner and Sundaramurthy (2000) the higher ratio of female to male directors enhanced corporate performance and that when such boards were dominated by female executive directors, it further enhanced firm value.

The study also noted that hat diversifying their boards with women can lead to more independence, innovation, and good governance and maximize their banks performance. The findings concur with the research by Hermalin and Weisbach (2013). Broadening the composition of the board increases the size of the candidate pool and, more importantly, helps expand perspectives at the top. Women directors tend to use cooperation, collaboration and consensus-building more often – and more effectively. Women also tend to consult others in the decision-making process, leading to a more cooperative feeling in the firm. It can be concluded from the results that the banks should try to

have gender balance in their banks as it has been evidenced that female board members lead to an increase in the banks' performance

4.6.4 CEO Duality

Regression results show that Results obtained on CEO duality show that various aspects of CEO duality positively influenced the financial performance of banks listed in NSE as measures in ROE and ROA. The findings are in line with the research by Yermack (2006) found that non- CEO duality could have a positive effect on stock returns. The study also established that separation of the post of CEO and Chair can ensure optimal performance. The findings concur with the study findings by Sanda et al. (2003) also found a positive relationship between firm performance and non-CEO duality.

Further the research noted that the separation of the position of CEO and Chair will encourage efficiency in decision-making mechanisms. This will also serve as a monitoring mechanism to ensure that the agent does not indulge in opportunistic behavior. The findings concur with Lam and Lee (2008) found that non-CEO duality is good for family controlled firms.

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the study findings, conclusion and recommendations. The objective of this study is to find out the effect of corporate governance on the financial performance of commercial banks listed at the NSE, covering a period 2006-2013

5.2 Summary of the Findings

The main objective of the study was to establish the relationship between board characteristics and performance of banks listed at NSE , all the explanatory variables are statistically significant ($P < 0.05$) at 5% in causing the variation in financial performance of banks listed at NSE. Board size was found to be positively associated with ROA and ROE of banks listed in NSE. Regression results also predict that a unit change on board size would positively enhance return on asset and return on equity.

Correlation results showed that higher ratio of independent board directors was positively related with ROA and ROE of banks listed in NSE. Regression results also showed that increase in level of independency to board directors would promote ROA and ROE of banks listed in NSE.

There was a positive relationship between the proportion of female board members and ROA.As the number of female board members increased the performance of the firm increased as it was measured by ROA. This was evident from the few banks that had female members in their boards.

Various aspects of CEO duality positively influenced the financial performance of banks listed in NSE as measures in ROE and ROA.

5.3 Conclusions

Thus the study concludes that an increase in board size can be associated with a decrease in firm value, Board size influences it cohesiveness and that large boards may increase the quality of decision-making since they offer a broader array of perspectives. Therefore the study concludes that Board size, may have negative or positive effect on the financial performance of banks listed at Nairobi securities exchange depending firm size.

Thus the study concludes that higher ratio of independent board directors   was positively related with ROA and ROE of banks listed in NSE, Increasing the level of the proportion of independent directors should simultaneously increase firm performance, as they are more effective monitors of managers.

The study concludes that higher Board gender diversity had a positive relation with ROE and ROA, as the number of female board members increased the performance of the firm increased as it was measured by ROA. however   very   high ratios of Diversity without cohesion can result to cacophony of voices, therefore board members must be able to draw upon a certain foundation of deep business experience and judgment and, more important, must be chosen in ways that align with the strategic needs of the Bank.

From the findings on effects of CEO duality on the financial performance of Banks listed Firms; the study found that various aspect of CEO duality positively influenced the financial performance of bank listed to great extent. Thus the study concludes that separation of the role of CEO and Chair positively influenced the financial performance of bank listed to great extent.

5.4 Policy Recommendations

The study recommends that stakeholders in banks listed companies should take in to account the corporate board structure variables i.e. gender, board size, board independence and board

committee when electing board of directors. That is the body should have equal distribution in terms of gender, board size, board committee and board independence to minimize stakeholders conflicts and improve on overall firm performance.

The study recommends that corporate board structure should be based on skills, experience and professional qualifications to steer managerial functions as opposed to 48 genders as it is insignificant in explaining firm's financial performance. Requirements for one to be elected to the board of directors should be well stipulated in terms of gender balance. This will facilitate satisfaction in management and therefore improved management of the banks listed in NSE in Kenya.

The study also recommends that policy makers should set an index on corporate governance to act as a base to all banks listed at the NSE so that the efficiency of governance committees can be enhanced. This will create a management momentum among the committees mandated for corporate governance issues.

There should be continuous revision of policies governing the committees on the corporate governance boards so that the ineffective clauses can be improved since the governance index keep on changing as a result of prevailing economic conditions. This will enable policy makers in the banks listed in NSE to decide on the possible best guidelines that will enhance the overall management issues as far as corporate governance is concerned.

Based on the study research findings, the study recommends that; Special attention should be taken upon when dealing with the number of board members. The size of the board should match with the size of the firm to avoid scenarios of having too small boards which will be overburdened with the firm's work which will lead to underperforming, and at the same time boards should not be too large as the inefficiency of large boards will also lead to underperforming of the board members.

Banks should ensure that both the genders are well represented. Since most of the boards in

the analyzed banks are male dominated boards then the banks should ensure they have the

female representatives since the few banks which had female members were showing a progressive

improvement in their performances and hence banks should aim for a gender

balance in their boards.

5.5 Limitations of the Study and Suggestions for Further Research

The study was limited by the fact that the financial performance is influenced by other economic

variables such as the inflation rate, the interest rate, the level of the stock market and the exchange

rate. Therefore, the analysis of the relationship between corporate governance on financial

performance of listed commercial banks in the NSE is more comprehensive when the mediation

effects of other variables affecting corporate governance and financial performance are included in

the study.

The study was also limited to secondary data. The findings may be more comprehensive if primary

data is collected to complement the secondary data. This would ensure a more comprehensive

evaluation of the relationship between corporate governance on financial performance of listed

commercial banks in the NSE.

The time available to conduct the research was limiting. The findings could have been more

comprehensive if time was enough to collect primary data through interviews, questionnaires etc.

A similar study to this research could be conducted in banks not listed in NSE. A similar study on

this research could be conducted but looking at different variables of managerial composition. A

comparative study of the performance of both listed and unlisted banks in NSE

In addition a similar study on this research could be conducted but using both primary and

secondary data so that the difference (if any) can be established. Another area of further research is

on key success factors that would maximize the contribution of corporate governance to financial performance of Commercial Banks in Kenya.

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APPENDICES

Appendix 1: Banks Listed at the NSE

1	Barclays Bank Ltd
2	CFC Stanbic Holdings Ltd
3	I&M Holdings Ltd
4	Diamond Trust Bank Kenya Ltd
5	Housing Finance Co Ltd
6	Kenya Commercial Bank Ltd
7	National Bank of Kenya Ltd
8	NIC Bank Ltd
9	Standard Chartered Bank Ltd
10	Equity Bank Ltd
11	The Co-operative Bank of Kenya Ltd

Appendix II: Data Capture Template

FIRM	ROA	ROE	Board size	Board Independence	BGD	CEO Duality
Barclays Bank Ltd						
2006	0.04	3.00	9.00	0.55	0.33	0.08
2007	0.03	0.28	8.00	0.50	0.25	0.13
2008	0.03	0.27	9.00	0.55	0.22	0.12
2009	0.04	0.25	8.00	0.50	0.25	0.21
2010	0.07	0.34	8.00	0.50	0.25	0.17
2011	0.05	0.30	10.00	0.60	0.20	0.18
2012	0.05	0.30	10.00	0.50	0.20	0.26
2013	0.04	0.24	7.00	0.29	0.29	0.27
CFC Stanbic Holdings Ltd						
2006	0.08	0.11	12.00	0.34	0.21	0.08
2007	0.09	0.16	16.00	0.44	0.24	0.05
2008	0.05	0.19	13.00	0.23	0.21	0.06
2009	0.07	0.23	10.00	0.41	0.23	0.12
2010	0.03	0.29	8.00	0.47	0.34	0.13
2011	0.04	0.28	8.00	0.50	0.33	0.16
2012	0.03	0.31	8.00	0.60	0.46	0.18
2013	0.02	0.33	7.00	0.77	0.48	0.17
I&M Holdings Ltd						
2006	0.06	0.12	12.00	0.54	0.25	0.14
2007	0.06	0.14	14.00	0.56	0.19	0.13
2008	0.07	0.17	13.00	0.49	0.17	0.23
2009	0.05	0.24	9.00	0.58	0.23	0.25
2010	0.04	0.31	10.00	0.61	0.31	0.29
2011	0.03	0.37	8.00	0.62	0.33	0.31
2012	0.06	0.20	7.00	0.67	0.41	0.33
2013	0.02	0.41	8.00	0.64	0.45	0.25
Diamond trust						
2006	0.04	0.16	14.00	0.41	0.31	0.26
2007	0.06	0.14	12.00	0.52	0.24	0.22
2008	0.05	0.21	9.00	0.50	0.37	0.28
2009	0.04	0.22	7.00	0.56	0.36	0.24
2010	0.06	0.26	8.00	0.61	0.39	0.29
2011	0.05	0.24	7.00	0.66	0.41	0.24
2012	0.07	0.12	8.00	0.67	0.44	0.28
2013	0.03	0.23	8.00	0.70	0.47	0.29
Housing Finance Co						

Ltd						
2006	0.04	0.18	14.00	0.20	0.18	0.11
2007	0.06	0.20	11.00	0.28	0.17	0.16
2008	0.07	0.21	12.00	0.25	0.24	0.28
2009	0.05	0.26	13.00	0.38	0.36	0.24
2010	0.04	0.34	12.00	0.41	0.40	0.29
2011	0.04	0.37	9.00	0.49	0.56	0.33
2012	0.08	0.33	8.00	0.51	0.50	0.34
2013	0.02	0.37	8.00	0.55	0.48	0.41
Kenya Commercial Bank Ltd						
2006	0.07	0.22	14.00	0.44	0.13	0.15
2007	0.04	0.24	9.00	0.56	0.18	0.14
2008	0.06	0.20	10.00	0.47	0.22	0.13
2009	0.05	0.25	7.00	0.47	0.28	0.18
2010	0.03	0.31	8.00	0.65	0.34	0.21
2011	0.05	0.29	9.00	0.67	0.33	0.29
2012	0.05	0.16	8.00	0.71	0.46	0.31
2013	0.02	0.31	8.00	0.86	0.44	0.32
National Bank of Kenya						
2006	0.08	0.26	15.00	0.36	0.24	0.14
2007	0.06	0.24	11.00	0.34	0.26	0.16
2008	0.04	0.27	12.00	0.36	0.24	0.15
2009	0.03	0.29	10.00	0.37	0.36	0.18
2010	0.02	0.31	9.00	0.39	0.40	0.22
2011	0.02	0.37	8.00	0.54	0.56	0.24
2012	0.06	0.26	7.00	0.64	0.50	0.24
2013	0.03	0.32	8.00	0.77	0.55	0.33
NIC Bank Ltd						
2006	0.06	0.15	11.00	0.54	0.16	0.00
2007	0.08	0.23	13.00	0.55	0.18	0.16
2008	0.07	0.22	9.00	0.57	0.14	0.17
2009	0.05	0.24	7.00	0.62	0.18	0.14
2010	0.06	0.35	8.00	0.64	0.21	0.19
2011	0.03	0.39	7.00	0.67	0.24	0.19
2012	0.06	0.15	7.00	0.64	0.36	0.24
2013	0.04	0.39	8.00	0.71	0.38	0.26
Standard Chartered Bank Ltd						
2006	0.08	0.16	12.00	0.58	0.18	0.18
2007	0.09	0.24	14.00	0.61	0.09	0.17
2008	0.07	0.32	11.00	0.64	0.11	0.24

	2009	0.06	0.34	10.00	0.63	0.36	0.19
	2010	0.03	0.33	9.00	0.67	0.37	0.25
	2011	0.02	0.38	8.00	0.69	0.41	0.27
	2012	0.06	0.29	7.00	0.74	0.44	0.29
	2013	0.03	0.37	8.00	0.70	0.45	0.31
Equity Bank Ltd							
	2006	0.028	0.34	16.00	0.64	0.01	0.11
	2007	0.030	0.13	10.00	0.47	0.02	0.13
	2008	0.049	0.02	12.00	0.57	0.05	0.15
	2009	0.042	0.18	10.00	0.55	0.08	0.16
	2010	0.030	0.26	9.00	0.64	0.10	0.18
	2011	0.030	0.30	9.00	0.76	0.01	0.22
	2012	0.040	0.41	8.00	0.84	0.20	0.24
	2013	0.020	0.44	7.00	0.86	0.29	0.31
The Co-operative Bank of Kenya Ltd							
	2006	0.06	0.36	9.00	0.54	0.11	0.00
	2007	0.04	0.13	10.00	0.61	0.00	0.00
	2008	0.05	0.02	12.00	0.54	0.00	0.16
	2009	0.04	0.18	13.00	0.55	0.08	0.18
	2010	0.01	0.14	8.00	0.66	0.08	0.05
	2011	0.03	0.36	7.00	0.65	0.07	0.22
	2012	0.04	0.21	7.00	0.79	0.15	0.00
	2013	0.03	0.29	8.00	0.84	0.04	0.24

Appendix III: Output computer software analysis

4.4.1 Fixed Effects

```
. xtset firm
        panel variable:  firm (balanced)

. xtreg  roa boardsize boardindependence bgd ceoduality,fe

Fixed-effects (within) regression              Number of obs     =        88
Group variable: firm                           Number of groups  =        11

R-sq:  within  = 0.3064                         Obs per group: min =         8
       between = 0.3994                                        avg =       8.0
       overall = 0.1125                                        max =         8

                                               F(4,73)           =      8.06
corr(u_i, Xb)  = -0.4321                        Prob > F          =    0.0000
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0021852	.0010742	2.03	0.046	.0000444	.004326
boardindep~e	.0015346	.0224773	0.07	0.946	-.0432626	.0463318
bgd	-.0549048	.0282944	-1.94	0.056	-.1112955	.0014859
ceoduality	.0041831	.0325299	0.13	0.898	-.0606489	.069015
_cons	.0388457	.0188768	2.06	0.043	.0012244	.0764671
sigma_u	.01136538					
sigma_e	.01554741					
rho	.34827201	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(10, 73) =     2.25               Prob > F = 0.0235
```

4.4.2 Random Effects

```
. xtreg  roa boardsize boardindependence bgd ceoduality,re

Random-effects GLS regression                  Number of obs     =        88
Group variable: firm                           Number of groups  =        11

R-sq:  within  = 0.2769                         Obs per group: min =         8
       between = 0.0020                                        avg =       8.0
       overall = 0.2120                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(4)      =     24.67
corr(u_i, X)       = 0 (assumed)                Prob > chi2       =    0.0001
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boardsize	.0029178	.0009843	2.96	0.003	.0009886	.0048469
boardindep~e	-.016959	.0159242	-1.06	0.287	-.04817	.0142519
bgd	-.0059216	.0180049	-0.33	0.742	-.0412105	.0293673
ceoduality	.0016496	.0284366	0.06	0.954	-.0540852	.0573844
_cons	.0294597	.0175936	1.67	0.094	-.0050231	.0639425
sigma_u	.00362686					
sigma_e	.01554741					
rho	.05160995	(fraction of variance due to u_i)				

4.4.3 Hausman Test

```
. hausman fixed1 . , sigmamore

                  ———— Coefficients ————
                    (b)           (B)          (b-B)      sqrt(diag(V_b-V_B))
                   fixed1          .         Difference          S.E.
    boardsize      .0021852      .0029178     -.0007326          .000529
  boardindep~e     .0015346     -.016959       .0184936         .0171221
          bgd     -.0549048     -.0059216     -.0489832          .023285
    ceoduality     .0041831      .0016496      .0025334         .0183442

                            b = consistent under Ho and Ha; obtained from xtreg
             B = inconsistent under Ha, efficient under Ho; obtained from xtreg

        Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        10.00
                 Prob>chi2 =        0.0404
```

Testing for random effects: Breusch-Pagan Lagrange multiplier (LM)

```
Breusch and Pagan Lagrangian multiplier test for random effects

        roe[firm,t] = Xb + u[firm] + e[firm,t]

        Estimated results:
                          |      Var        sd = sqrt(Var)
                   roe    |   .0931569          .3052161
                     e    |   .0850447          .2916243
                     u    |   .0017636          .0419952

        Test:    Var(u) = 0
                            chi2(1) =        0.45
                         Prob > chi2 =        0.5010
```

Ordinary Least Squares Regression

```
. reg roe boardsize boardindependence bgd ceoduality

      Source |       SS         df       MS              Number of obs =       88
-------------+------------------------------             F( 4,    83) =     1.53
       Model |   .55576139       4   .138940347          Prob > F      =   0.2017
    Residual |   7.54888862     83   .090950465          R-squared     =   0.0686
-------------+------------------------------             Adj R-squared =   0.0237
       Total |   8.10465001     87   .093156897          Root MSE      =   .30158

         roe |      Coef.    Std. Err.      t     P>|t|    [95% Conf. Interval]
-------------+----------------------------------------------------------------
   boardsize |   -.0097988    .0178057    -0.55   0.584   -.0452136    .0256161
boardindep~e |    .184101     .2789438     0.66   0.511   -.370707     .738909
         bgd |    .5724665    .3100105     1.85   0.068   -.044132    1.189065
  ceoduality |   -.8804807    .5010365    -1.76   0.083   -1.877022    .1160608
       _cons |    .2996367    .3150139     0.95   0.344   -.3269133    .9261866
```

4.4.3 Regression Diagnostics

Testing for cross-sectional dependence using Pasaran CD test

Pesaran's test of cross sectional independence =   4.402, Pr = 0.0000

Average absolute value of the off-diagonal elements =   0.390

. xtscc roa boardsize boardindependence bgd ceoduality, fe

```
Regression with Driscoll-Kraay standard errors     Number of obs    =        88
Method: Fixed-effects regression                   Number of groups =        11
Group variable (i): firm                           F( 4,     7)     =     14.71
maximum lag: 2                                     Prob > F         =    0.0016
                                                   within R-squared =    0.3064
```

roa	Coef.	Drisc/Kraay Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0021852	.0008237	2.65	0.033	.0002375	.0041329
boardindep~e	.0015346	.0143498	0.11	0.918	-.0323972	.0354664
bgd	-.0549048	.0137894	-3.98	0.005	-.0875116	-.022298
ceoduality	.0041831	.0192511	0.22	0.834	-.0413385	.0497046
_cons	.0388457	.0156223	2.49	0.042	.0019048	.0757866

Testing for Heteroscedasticity

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (11) =   12.38
Prob>chi2 =   0.3357

Testing for Time Specific Effects

```
. xtreg  roa boardsize boardindependence bgd ceoduality i.year, fe
```

Fixed-effects (within) regression   Number of obs   =   88
Group variable: firm   Number of groups   =   11

R-sq: within = 0.5159   Obs per group: min =   8
       between = 0.3372   avg =   8.0
       overall = 0.2786   max =   8

                                   $F(11,66)$ =   6.40
corr(u_i, Xb) = -0.3451   Prob > F   =   0.0000

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0015768	.0011082	1.42	0.159	-.0006357	.0037894
boardindep~e	.0064564	.0218595	0.30	0.769	-.0371876	.0501003
bgd	-.0618614	.0273129	-2.26	0.027	-.1163934	-.0073295
ceoduality	.0493047	.037832	1.30	0.197	-.0262295	.1248388
year						
2007	-.0010881	.0061091	-0.18	0.859	-.0132853	.0111091
2008	-.0043749	.0066994	-0.65	0.516	-.0177508	.0090009
2009	-.0060067	.0074842	-0.80	0.425	-.0209494	.008936
2010	-.0130906	.0082871	-1.58	0.119	-.0296362	.0034551
2011	-.0154076	.0096146	-1.60	0.114	-.0346039	.0037886
2012	.007629	.01038	0.73	0.465	-.0130954	.0283534
2013	-.020759	.0115923	-1.79	0.078	-.0439039	.0023858
_cons	.0414642	.0191091	2.17	0.034	.0033117	.0796168
sigma_u	.0112114					
sigma_e	.01365981					
rho	.40250108	(fraction of variance due to u_i)				

F test that all u_i=0:   F(10, 66) =   2.57   Prob > F = 0.0108

```
. testparm i.year

 ( 1)   2007.year = 0
 ( 2)   2008.year = 0
 ( 3)   2009.year = 0
 ( 4)   2010.year = 0
 ( 5)   2011.year = 0
 ( 6)   2012.year = 0
 ( 7)   2013.year = 0

       F(  7,    66) =     4.08
             Prob > F =    0.0009
```

2007

. xtreg roa boardsize boardindependence bgd ceoduality 2007.year, fe

Fixed-effects (within) regression   Number of obs   =   88
Group variable: firm   Number of groups   =   11

R-sq: within = 0.3082   Obs per group: min =   8
       between = 0.4043   avg =   8.0
       overall = 0.1225   max =   8

                                F(5,72)   =   6.41
corr(u_i, Xb) = -0.4050   Prob > F   =   0.0001

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0021515	.0010831	1.99	0.051	-7.66e-06	.0043107
boardindep~e	.0002564	.0228024	0.01	0.991	-.0451993	.0457122
bgd	-.0525625	.0289802	-1.81	0.074	-.1103335	.0052085
ceoduality	.0070317	.0333895	0.21	0.834	-.0595291	.0735924
year						
2007	.0024	.0056309	0.43	0.671	-.0088249	.0136249
_cons	.038389	.0190137	2.02	0.047	.0004858	.0762921
sigma_u	.01104265					
sigma_e	.01563529					
rho	.33280369	(fraction of variance due to u_i)				

F test that all u_i=0:   F(10, 72) =   2.13   Prob > F = 0.0323

2008

. xtreg roa boardsize boardindependence bgd ceoduality 2008.year, fe

Fixed-effects (within) regression   Number of obs   =   88
Group variable: firm   Number of groups   =   11

R-sq: within = 0.3067   Obs per group: min =   8
       between = 0.3973   avg =   8.0
       overall = 0.1138   max =   8

                                F(5,72)   =   6.37
corr(u_i, Xb) = -0.4290   Prob > F   =   0.0001

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0021853	.0010814	2.02	0.047	.0000296	.0043411
boardindep~e	.0020671	.0228773	0.09	0.928	-.043538	.0476722
bgd	-.0539974	.0290557	-1.86	0.067	-.1119189	.0039241
ceoduality	.003329	.0331903	0.10	0.920	-.0628347	.0694926
year						
2008	.0008668	.0054728	0.16	0.875	-.010043	.0117767
_cons	.0383622	.0192478	1.99	0.050	-7.61e-06	.0767319
sigma_u	.01132465					
sigma_e	.01565228					
rho	.34360498	(fraction of variance due to u_i)				

F test that all u_i=0:   F(10, 72) =   2.18   Prob > F = 0.0287

2009

. xtreg   roa boardsize boardindependence bgd ceoduality 2009.year, fe

```
Fixed-effects (within) regression              Number of obs     =        88
Group variable: firm                           Number of groups  =        11

R-sq:   within  = 0.3064                        Obs per group: min =         8
        between = 0.3987                                       avg =       8.0
        overall = 0.1123                                       max =         8

                                                F(5,72)           =      6.36
corr(u_i, Xb)  = -0.4328                         Prob > F          =    0.0001
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0021928	.0010943	2.00	0.049	.0000114	.0043743
boardindep~e	.0017548	.0231374	0.08	0.940	-.0443688	.0478784
bgd	-.054896	.0284905	-1.93	0.058	-.1116907	.0018987
ceoduality	.0041693	.0327559	0.13	0.899	-.0611284	.069467
year						
2009	.0002385	.005208	0.05	0.964	-.0101435	.0106205
_cons	.038619	.0196413	1.97	0.053	-.0005351	.0777731
sigma_u	.01137291					
sigma_e	.01565478					
rho	.3454539	(fraction of variance due to u_i)				

```
F test that all u_i=0:        F(10, 72) =       2.22               Prob > F = 0.0257
```

. xtreg   roa boardsize boardindependence bgd ceoduality 2010.year, fe

```
Fixed-effects (within) regression              Number of obs     =        88
Group variable: firm                           Number of groups  =        11

R-sq:   within  = 0.3232                        Obs per group: min =         8
        between = 0.4058                                       avg =       8.0
        overall = 0.1269                                       max =         8

                                                F(5,72)           =      6.88
corr(u_i, Xb)  = -0.4155                         Prob > F          =    0.0000
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0019922	.0010782	1.85	0.069	-.0001572	.0041415
boardindep~e	-.0004683	.0224082	-0.02	0.983	-.0451383	.0442017
bgd	-.0544482	.0281463	-1.93	0.057	-.1105567	.0016604
ceoduality	.0034215	.0323622	0.11	0.916	-.0610913	.0679343
year						
2010	-.0067407	.0050503	-1.33	0.186	-.0168082	.0033268
_cons	.0427052	.0189979	2.25	0.028	.0048336	.0805768
sigma_u	.01126997					
sigma_e	.01546485					
rho	.34686316	(fraction of variance due to u_i)				

2010
```
F test that all u_i=0:        F(10, 72) =       2.26               Prob > F = 0.0233
```

2011

. xtreg   roa boardsize boardindependence bgd ceoduality 2011.year, fe

```
Fixed-effects (within) regression              Number of obs     =        88
Group variable: firm                           Number of groups  =        11

R-sq:   within  = 0.3259                        Obs per group: min =         8
        between = 0.3901                                       avg =       8.0
        overall = 0.1184                                       max =         8

                                                F(5,72)           =      6.96
corr(u_i, Xb)  = -0.4454                         Prob > F          =    0.0000
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0019536	.0010783	1.81	0.074	-.0001959	.0041032
boardindep~e	.003952	.022375	0.18	0.860	-.0406517	.0485557
bgd	-.0588775	.0282211	-2.09	0.040	-.1151353	-.0026197
ceoduality	.0099979	.0325412	0.31	0.760	-.0548718	.0748677
year						
2011	-.0075047	.0051984	-1.44	0.153	-.0178674	.0028581
_cons	.0405714	.0187762	2.16	0.034	.0031416	.0780011
sigma_u	.01166491					
sigma_e	.01543323					
rho	.3635764	(fraction of variance due to u_i)				

```
F test that all u_i=0:        F(10, 72) =       2.29               Prob > F = 0.0214
```

```
. xtreg  roa boardsize boardindependence bgd ceoduality 2012.year, fe

Fixed-effects (within) regression          Number of obs    =        88
Group variable: firm                        Number of groups =        11

R-sq:  within  = 0.4843                     Obs per group: min =        8
       between = 0.4237                                     avg =      8.0
       overall = 0.1979                                     max =        8

                                            F(5,72)          =     13.52
corr(u_i, Xb)  = -0.4510                     Prob > F         =    0.0000
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0023967	.0009336	2.57	0.012	.0005355	.0042579
boardindep~e	-.0083524	.0196171	-0.43	0.672	-.0474584	.0307537
bgd	-.0746093	.0248836	-3.00	0.004	-.1242139	-.0250046
ceoduality	.004987	.0282454	0.18	0.860	-.0513192	.0612932
year						
2012	.0237384	.004764	4.98	0.000	.0142416	.0332352
_cons	.0445534	.0164303	2.71	0.008	.0118003	.0773065
sigma_u	.01278741					
sigma_e	.01349946					
rho	.47293231	(fraction of variance due to u_i)				

2012 F test that all u_i=0:   F(10, 72) =   3.63   Prob > F = 0.0006

2013

```
. xtreg  roa boardsize boardindependence bgd ceoduality 2013.year, fe

Fixed-effects (within) regression          Number of obs    =        88
Group variable: firm                        Number of groups =        11

R-sq:  within  = 0.3665                     Obs per group: min =        8
       between = 0.3246                                     avg =      8.0
       overall = 0.1858                                     max =        8

                                            F(5,72)          =      8.33
corr(u_i, Xb)  = -0.3389                     Prob > F         =    0.0000
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
boardsize	.0024415	.0010384	2.35	0.021	.0003716	.0045115
boardindep~e	.0122468	.0220157	0.56	0.580	-.0316407	.0561342
bgd	-.0457759	.0274518	-1.67	0.100	-.1005001	.0089483
ceoduality	.0268343	.0324826	0.83	0.411	-.0379187	.0915872
year						
2013	-.0151499	.0057982	-2.61	0.011	-.0267084	-.0035914
_cons	.0252633	.0188948	1.34	0.185	-.0124028	.0629294
sigma_u	.01048327					
sigma_e	.01496173					
rho	.32928312	(fraction of variance due to u_i)				

F test that all u_i=0:   F(10, 72) =   2.12   Prob > F = 0.0332