Corporate Governance Mechanisms and Financial Performance of Commercial Banks in Kenya

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Abstract: The role of effective corporate governance mechanisms as key components of prudent financial management has become an issue of global significance and has received new urgency due to various corporate scandals and failure. This study seeks to examine the impact of corporate governance mechanisms (audit committee size, board gender diversity and board size) on banks’ profitability based on the annual reports of forty two banks in Kenya in the period 2014. The study controls for the effect of bank size and capital of the banks. The study utilized a correlational research design and was based on the agency theory. Using multiple regression as a method of estimation, the results reveal that audit committee size, board gender diversity and bank capital have no significant effect on bank profitability in the selected sample. The regression results indicate that board size negatively influences financial performance; whereas bank size is positively associated with financial performance. The study suggests that banks with effective corporate governance mechanisms may improve financial performance depending on the measure used although not all corporate governance mechanisms are significant. The study is significant because it can aid the policy makers in the formulation of policies, which can be effectively implemented for better and easier regulation of banks. The findings of the study have significant managerial and theoretical implications.

Keywords: Board mechanisms, bank profitability, board size, audit committee, Kenya.

I. Introduction

The importance of corporate governance is the distinguishing feature of the new economy. As economies are becoming knowledge and technology based, the corporate governance mechanisms elements are becoming fundamentals determinants of a firm’s current and future performance as well as firm value and growth. One of the major developments within today’s business practice is the increasing interest in corporate governance. The improvement of corporate governance practices is widely recognized as one of the essential elements in strengthening the foundation for the long-term economic performance of countries and corporations (Ibrahim et al., 2010). Corporate governance has received new urgency because of global financial crisis and major corporate failures that shock major financial centers of the world (Imam and Malik, 2007).

Corporate governance can be defined as the mechanisms connecting (i) the interests of the company’s owners and other stakeholders and (ii) the way its board of directors and management exercise their functions (OECD, 2004). It is a frame work that protects stakeholder’s rights by illustrating an effective board of directors, efficient internal control and audit in addition to reliable financial reporting and disclosure. Melvin and Hirt (2005) described corporate governance as referring to corporate decision-making and control, particularly the structure of the board and its working procedures. The separation of ownership and control in modern corporations leads to an agency problem where the agent operates the firm in line with their own interests, instead of shareholders (Jensen and Meckling, 1976). The need for corporate governance arises from these potential conflicts of interest among stakeholders such as shareholders, board of directors and managers in the corporate structure. According to Imam and Malik (2007) these conflicts of interest often arise from two main reasons. First, different participants have different objectives and preferences. Second, the participants have imperfect information as to each other’s actions, knowledge, and preferences. Corporate governance is intended at reducing divergence of interest and monitoring of controlling interests of the firm, the absence of which firm value is declined (Nanka-Bruce, 2009).

There are different mechanisms adopted that safeguard the interests of the stakeholders. Such corporate governance mechanisms include board size, board gender diversity, size of audit committee, and board of directors’ educational qualification and experience. (Sanda et al., 2005). Many researchers have studied the impact of corporate governance mechanisms on firms’ performance from different perspectives in different environments using a number of variables of interest (Sanda et al., 2005; Abu-Tapanjeh, 2006; Aljifri and Moustafa, 2007; Ibrahim et al., 2010; Al-Hawary, 2011; Khabat et al., 2011). The researchers found mixed results on the relationship between corporate governance mechanisms and firms’ performance. According to Abu-Tapanjeh (2006) good corporate governance is a fundamental necessity to keep on running a firm successfully. It has long played a crucial role for enhancing the long-term value of stakeholders in the business
environment. Corporate governance provides a structure that works for the benefit of the firm and can help in increasing firm’s performance by reducing agency problem (Khan et al., 2011).

According to Lupu and Nichitean (2011) corporate governance of banks in developing economies is of even greater importance given the dominant position of banks as providers of fund. In developing economies banks are typically the most important source of finance for the majority of firms. A sound financial system is based on profitable and adequate capitalized banks. Effective corporate governance practices are essential to achieving and maintaining public trust and confidence in the banking system, which are critical to the proper functioning of the banking sector and economy as a whole. Poor corporate governance may contribute to bank failures, which can pose significant public costs and consequences due to their potential impact on any applicable deposit insurance systems and the possibility of broader macroeconomic implications (Basel Committee on Banking Supervision, 2006).

Despite the importance of good corporate governance practice and policies, little attention has been paid to the research of corporate governance mechanisms in less developed economies in general and particularly in Kenya. The commercial banking sector was deliberately chosen in this study for two reasons; firstly, even though information asymmetries exist in all sectors it is larger in banking industry since banks are generally more opaque than non-financial firms (Levine, 2003). This greater informational asymmetry between insiders (bank management) and outsiders (shareholders and depositors), and the opacity of their assets and activities in banking sector amplifies the agency problem. Thus, it requires giving special attention for banks corporate governance mechanisms. Secondly, banks are corporations which activate different areas of business. Banks have a dominant position in developing economic financial systems, and are important engines of economic growth (Levine, 1997). Hence, banking failure would affect the entire financial system and economy. The commercial banks in Kenya are licensed and regulated pursuant to the provisions of the Banking Act and the regulations and prudential guidelines issued by the Central Bank of Kenya.

According to the CBK (2013), the banking sector comprised 43 commercial banks, 1 mortgage finance company, 2 deposit taking microfinance institutions, 2 representative offices of foreign banks and 126 foreign exchange bureaux. In Kenya the corporate governance of banks is directed and supervised by the Central Bank of Kenya. The Central Bank of Kenya monitors and controls the banking business and functions as regulators of the country’s money supply. Accordingly, CBK issues directives on the size, composition and competence of board of directors. According to Banking Act, the CBK is responsible to issue directives on the qualification and competency to be fulfilled by directors; the minimum number of directors in the membership of the board of a bank; the duties, responsibilities and good corporate governance of the boards of directors of bank; the maximum number of years a director may serve in any bank.

The Kenyan banking system is well regulated with the CBK conducting off-site and on-site surveillance. Over the last few years, the Banking sector in Kenya has continued to growth in assets, deposits, profitability and products offering. The growth has been mainly underpinned by; (i) an industry wide branch network expansion strategy both in Kenya and in the East African community region; and (ii) automation of a large number of services and a move towards emphasis on the complex customer needs rather than traditional ‘off-the-shelf’ banking products. Players in this sector have experienced increased competition over the last few years resulting from increased innovations among the players and new entrants into the market.

The financial liberalization reform of 1995 allowed the participation of private financial institutions in the economy. Private Banks’ participation has increased and hence the share of their banking assets to total commercial banking assets increases. The banking environment in Kenya has, for the past decade, undergone many regulatory and financial reforms. These reforms have brought about many structural changes in the sector and have also encouraged foreign banks to enter and expand their operations in the country (Kamau, 2009). Kenya’s financial sector is largely bank-based as the capital market is still considered narrow and shallow (Ngugi et al, 2006). Banks dominate the financial sector in Kenya and as such the process of financial intermediation in the country depends heavily on commercial banks (Kamau, 2009).

Mwega (2011) describes the banking sector in Kenya as the bond that holds the country’s economy together. Sectors such as the agricultural and manufacturing virtually depend on the banking sector for their very survival and growth. Kenya’s financial sector is large, diversified and dynamic relative to her level of economic development. The intermediation industry can be characterized broadly into “mainstream” and “alternative” intermediation. Key banking sector policy developments which have taken place include the introduction of credit reference bureaus, Islamic banking, agency banking and licensing of deposit taking microfinance institutions (CBK 2010). As in most developing countries, financial sector policy in Kenya aims at achieving more effective intermediation, and improving soundness and depth (Mwega 2009). According to Mwega (2009) the Kenyan authorities have chosen to pursue these goals within a distinctive strategic framework for the financial sector, and emphasize the importance of further strengthening corporate governance and accountability of financial institutions, and boosting the capacity of financial sector professionals. Ensuring better corporate governance of corporations, financial institutions and markets is increasingly recognized as a pre-condition for
the countries development. Keeping this in view and the potential contribution of the banking industry to the economy of developing countries, this study is conducted to measure and analyze the impact of corporate governance mechanisms on firms’ financial performance using commercial banks in Kenya.

This paper seeks to examine the impact of corporate governance mechanisms on financial performance of commercial banks in Kenya. The analysis is based on the following premises: (i) board size is negatively related to financial performance; (ii) board gender diversity is positively related to financial performance; and (iii) size of audit committee is negatively related to financial performance. It is hoped that the knowledge gained from this study will lead to proper understanding of those factors responsive to corporate governance policy. The result of this study will contribute to commercial banking firms by identifying relevant corporate governance mechanisms and how these governance mechanisms affect financial performance. The result of this study contributes to the existing literature by providing evidence on the relation between corporate governance mechanisms and banks' financial performance. The empirical results would also be the general indicators of corporate governance mechanisms useful for regulators, policy makers, managers and business people in making policies and decisions. It can serve as a stepping stone for future researchers who want to conduct study on related topic.

Statement of Problem

The proliferation of accounting scandals has prompted the need to improve the relevance of accountability by setting up good governance structures. The relationship between corporate governance and firm performance has been strongly debated in the context of developed countries. It is only recently that attention turned to the study of governance and financial performance in emerging countries. Hence this paper sought to determine the relationship between corporate governance mechanisms (board size, board gender diversity and audit committee characteristics) and financial performance measured by the return on assets. It is hoped that the knowledge gained from this study could lead to proper understanding of those factors responsive to policy. In particular, the information is to company managers who are in the financial reporting process, and especially to the Capital Market Authority of Kenya whose main objective is fair and orderly functioning of the markets and protecting the rights of investors. The study results should serve as points of reference for further research in corporate governance, such empirical studies could assist in designing regulation regarding the scale and scope of corporate governance for companies in Kenya.

Objectives of the Study

General Objective

The main objective of the study is to establish the effect of corporate governance mechanism on the financial performance of commercial banks in Kenya.

Specific Objectives

i). To examine the association between board gender diversity and commercial banks performance in Kenya

ii). To investigate the relationship between board size and commercial banks performance in Kenya

iii). To investigate the relationship between audit committee size and commercial banks performance in Kenya

iv). To examine the association between organizational factors and commercial banks performance in Kenya

II. Literature Review

Theoretical framework

Kim and Rasia (2010) assert that corporate governance is the relationship among shareholders, board of directors and the top management in determining the direction and performance of the corporation. It includes the relationship among the many players involved (the stakeholders) and the goals for which the corporation is governed. Various theoretical perspectives are used in explaining the impact of corporate governance mechanisms on firms’ financial performance. The main theories are the agency theory, stakeholders’ theory and resource dependency theory (Maher and Andersson, 1999).

Agency theory

The agency theory by Alchian and Demsetz (1972) and further developed by Jensen and Meckling (1976) has been the workhorse of management theorists for the past four decades. The agency theory is based on the principal agent relationships. The separation of ownership from management in modern corporations provides the context for the functioning of the agency theory. In modern corporations the shareholders (principals) are widely dispersed and they are not normally involved in the day to day operations and management of their companies rather they hire managers (agent) to manage the corporation on behalf of them (Habbash, 2010). The agents are appointed to manage the day to day operations of the corporation. The separation of ownership and controlling rights results conflicts of interest between agent and principal. To solve
this problem or to align the conflicting interests of managers and owners the company incurs controlling costs including incentives given for managers. According to agency theory the agent strive to achieve his personal goals at the expense of the principal. Mangers are mostly motivated by their own personal interests and benefits, and work to maximize their own personal benefit rather than considering shareholders interests and maximizing shareholders wealth. To reduce agency problem there must be better monitoring and controlling mechanisms which helps to ensure that managers pursue the interests of shareholders rather than only their own interests. The concept of corporate governance promotes a fundamental tension between shareholders and corporate managers (Jensen and Meckling, 1976). While the objective of a corporation’s shareholders is a return on their investment, managers are likely to have other goals, such as the power and prestige of running a large and powerful organization, or entertainment and other perquisites of their position. Managers’ superior access to inside information and the relatively powerless position of the numerous and dispersed shareholders, mean that managers are likely to have the upper hand (Fama and Jensen, 1983).

Therefore, shareholders monitor and controls managers through their representatives such as board of directors. Boards of directors are considered as an important device to protect shareholders from being exploited by managers and help to effectively control managers when they try to maximize their self interest at the expense of the company’s profitability. Fama and Jensen (1983) argues that in order to minimize agency problem that emanates from the separation of ownership and control the corporations need to have a mechanisms that enables to separate the authority of decision management from decision control. This would reduce agency costs and ensures maximization of shareholders wealth by effectively controlling the power and self-centered decisions of management. The agency theory provides a basis for the governance of firms through various internal and external mechanisms. Corporate governance mechanisms are designed to align the interest of owners and managers, constrained the opportunistic behaviors of managers and protect shareholder interests, generally to solve agency problem (Habbash, 2010).

Corporate governance is a mechanism through which shareholders are assured that managers will act in their best interests and it limits agency problems. Agency theory suggests that there are a number of mechanisms to reduce the agency problem in the company such as choosing appropriate board composition (in terms of size, gender, experience and competence), effective audit committee, and the threat of firing (Tandellin et al., 2007). From agency theory view point, corporate governance improves corporate performance by resolving agency problems through monitoring management activities, controlling self-centered behaviors of management and inspecting the financial reporting process (Habbash, 2010).

Moreover, corporate governance is able to alleviate agency costs by aligning the conflicting interests of management and shareholders through monitoring management and using different corporate governance mechanisms. Therefore, corporate governance mechanism such as boards of directors and audit committees enables shareholders to closely monitor the activities of managers. Ineffective board and audit committee may give confidence for managers to pursue their own interests but effective board and audit committee can reduce deceptive behavior of managers by detecting fraudulent financial report and actively monitoring. According to the assumptions of agency theory corporate governance mechanisms affect financial performance. As a consequence, enhancing corporate governance mechanisms should result in improved financial performance. This study is based on the agency theory and the study variables were identified with the aim of examining the relationships between corporate governance mechanisms and financial performance. Board structure has relied heavily on the concepts of agency theory, focusing on the controlling function of the board (Habbash, 2010). The corporate governance mechanisms considered in this research include board size, board gender diversity, educational qualification of board members, general and industry specific experience of board members and audit committee size.

**Stakeholder Theory**

According to Freeman et al. (2004), stakeholder theory assumes that values are necessarily and explicitly a part of doing business. It requires managers to articulate the shared sense of the value they create, and what brings its core stakeholders together. Furthermore, it compels managers to be precise and clear on they want to do business, specifically what kinds of relationships they want and need to create with their stakeholders to deliver on their purpose. The purpose of the firm therefore is to serve and coordinate the interests of its various stakeholders such as shareholders, employees, creditors, customers, suppliers, government, and the community. Stakeholder theory is an extension of the agency theory, focusing on shareholders interest and the interests of diverse groups and individuals, including interest groups related to social, environmental and ethical considerations (Freeman et al., 2004).

Habbash (2010) asserts that stakeholder refers to any one (external or internal) whose objectives have direct or indirect connections with the firm and influenced by a firm or who exert influence on the firms goal achievement. These include local community, employees, clients, suppliers, government, political parties and management. The stakeholders in corporate governance can create a favorable external environment which is
Conducive to the realization of corporate social responsibility. In addition, the stakeholders in corporate governance will enable the company to be considerate about the customers, the community and social organizations and can create a stable environment for long term development. The benefit of the stakeholder model emphasis on overcoming problems of underinvestment associated with opportunistic behavior and in encouraging active co-operation amongst stakeholders to ensure the long-term profitability of the business firm (Maher and Andersson, 1999).

According to Kyereboah-Coleman (2007) management receive capital from shareholders, they depend upon employees to accomplish the objective of the company. External stakeholders such as customers, suppliers, and the community are equally important, and also constrained by formal and informal rules that business must respect. According to stakeholders theory the best firms are ones with committed suppliers, customers, and employees and management. Recently, stakeholder theory has received attention than earlier because 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 (Kyereboah-Coleman, 2007). Companies are no longer the instrument of shareholders alone but exist within society. It has responsibilities to the stakeholders. However, the stakeholder theory has not been subjected to much empirical study. The main criticisms of stakeholder theory is on how to align the stakeholders conflicting interests since the difficulties arise how to administer different stakeholders with various needs and demands. It is not possible to treat all stakeholders equally (Habbash, 2010). Moreover, it is not practical for all stakeholders to be effectively represented in corporate governance recommendations as this may undermine the welfare of company (Habbash, 2010). The other critique of the stakeholder model is that managers or directors may use “stakeholder” reasons to justify poor company performance (Maher and Andersson, 1999).

Resource Dependency Theory

The resource dependency theory emphasises the role of board directors in providing access to resources needed by the firm (Abdullah and Valentine, 2009). According to this theory the primary function of the board of directors is to provide resources to the firm. Directors are viewed as an important resource to the firm. Therefore, when directors are considered as resource providers, various dimensions of director diversity clearly become important such as gender, experience, qualification and the like. According to Abdullah and Valentine (2009), directors bring resources to the firm, such as information, skills, business expertise, access to key constituents such as suppliers, buyers, public policy makers, social groups as well as legitimacy. Boards of directors provide expertise, skills, information and potential linkage with environment for firms (Ayuso and Argandona, 2007).

The resource based approach notes that the board of directors could support the management in areas where in-firm knowledge is limited or lacking. The resource dependence model suggests that the board of directors could be used as a mechanism to form links with the external environment in order to support the management in the achievement of organizational goals (Wang, 2009).

The agency theory concentrated on the monitoring and controlling role of board of directors whereas the resource dependency theory focus on the advisory and counseling role of directors to a firm management. Recently, both economists and management scholars tend to assign to boards the dual role of monitors and advisers of management. However, whether boards perform such functions effectively is still a controversial issue (Ferreira, 2010). Within a corporate governance framework, the composition of corporate boards is crucial to aligning the interest of management and shareholders, to providing information for monitoring and counseling, and to ensuring effective decision-making (Marinova et al., 2010). The dual role of boards is recognized. However, board structure has relied heavily on agency theory concepts, focusing on the control function of the board (Habbash, 2010).

Agency theory has received the most attention from academics and practitioners. According to Habbash (2010), the influence of agency theory has been instrumental in the development of corporate governance standards, principles and codes. Mallin (2007) provides a comprehensive discussion of corporate governance theories and argues that the agency approach is the most appropriate because it provides a better explanation for corporate governance roles (Habbash, 2010).

This study is based on agency theory to test the hypothesized relationships between corporate governance mechanisms and firms' financial performance. The agency theory framework has the ability to explain corporate governance mechanisms and the expected association between corporate governance mechanisms and financial performance as shown in figure 2.1 below in the conceptual framework section.

Conceptual Framework and Hypotheses Development

Conceptually, the study was based on the premise that corporate governance mechanisms (board gender diversity, board size and audit committee size) influence the banks' financial performance but this influence is intervened by a number of organizational factors, namely: bank size and bank capital in the
organization. The conceptual framework and hypotheses explaining the relationship among these study variables is depicted in Figure 2.1 and described in subsequent sections.

Figure 2.1: Conceptual Framework

Source: Author, 2015

Board gender diversity and Financial Performance

According to OECD principles of corporate governance (2004), one of the responsibilities of board of directors is ensuring the integrity of the corporation’s accounting and financial reporting systems, including the independent audit, and that appropriate systems of control are in place, in particular, systems for risk management, financial and operational control, and compliance with the law and relevant standards. In order to fulfill their responsibilities, there is need for gender diversity in the composition of the board. Gender diversity is part of the broader concept of board diversity. Boards are concerned with having right composition to provide diverse perspectives. Greater female representation on boards provides some additional skills and perspectives that may not be possible with all-male boards (Boyle and Jane, 2011). Board diversity promotes more effective monitoring and problem-solving. Boyle and Jane (2011) argue that female board members will bring diverse viewpoints to the boardroom and will provoke lively boardroom discussions. The management may be less able to manipulate a more heterogeneous board to achieve their personal interests. Gender diversity is associated with effectiveness in the oversight function of boards of directors which may be more effective if there is gender diversity in board which allows for a broader range of opinions to be considered. Greater female representation on boards is supported by different theoretical perspectives. Agency theory is mainly concerned about monitoring role of directors and emphasize that representation from diverse groups will provide a balanced board so that no individual or group of individuals can dominate the decision-making of the board (Erhardt et al., 2003).

According to Erhardt et al. (2003), diversity of the board of directors and the subsequent conflict that is considered to commonly occur with diverse group dynamics is likely to have a positive impact on the controlling function and could be one of several tools used to minimize potential agency issues. Bathula (2008) examined the association between board characteristics and firm performance. Board characteristics which were considered in the research included board size, director ownership, chief executive officer duality, gender diversity, educational qualification of board members and number of board meetings. Firm age and firm size were used as control variables. Firm performance was measured by return on assets. He used a sample of 156 firms listed on New Zealand stock exchange over a four year period data from 2004 to 2007. The study used Generalized Least Squares analyses. The results indicated that board characteristics such as board size, chief executive officer duality and gender diversity were positively related with firm performance, whereas director ownership, board meetings and the number of board members with PhD level education was found to be negatively related. Firm age and firm size did not have significant influence.

According to the stakeholders’ theory, diversity also provides representation for different stakeholders of the firm for equity and fairness (Keasey et al., 1997). From resource dependency perspective, the board is a strategic resource, which provides a linkage to various external resources (Walt and Ingle, 2003). This is facilitated by board diversity. Conversely, Rose (2007) revealed insignificant association between number of women directors on the board and firm performance. However, many researchers now believe that an increase in board diversity leads to better boards and governance on the ground that diversity allows boards to tap on broader talent pools for the role of directors (Bathula, 2008). However, as he stated in corporate world women representation on boards is very limited. Therefore, it is expected that commercial banks in Kenya, with board gender diversity are likely to have superior financial performance, thus the following hypothesis is formulated: Ha1: There is a significant positive association between board gender diversity and financial performance

Board Size and Financial performance

According to AbuGhazaleh et.al (2012), board size affects the quality of deliberation among members and ability of board to arrive at an optimal corporate decision. Kiel and Nicholson (2003) argue that board size is crucial to achieving the board effectiveness and improved firm performance. Therefore, identifying the
appropriate board size is essential because size can be detrimental to corporate governance effectiveness beyond optimal level. However, determining an ideal size of the board has been an ongoing and controversial debate in corporate governance literature (AbuGhazaleh et.al, 2012). Whether large or small board help improve firm performance and internet financial reporting it is debatable issue and researchers found mixed result about the relation between board size and firm performance.

Lawal (2012) argues that board size affects the quality of deliberation among members and ability of board to arrive at an optimal corporate decision. Kiel and Nicholson (2003) argue that board size is crucial to achieving the board effectiveness and improved firm performance. Therefore, identifying the appropriate board size is essential because size can be detrimental to corporate governance effectiveness beyond optimal level. However, determining an ideal size of the board has been an ongoing and controversial debate in corporate governance literature (Lawal, 2012). Whether large or small board help improve firm performance it is debatable issue and researchers found mixed result about the relation between board size and firm performance.

A study carried out by Amran (2011) analyzed the association between corporate governance mechanisms and company performances using 424 public listed Malaysian Companies (233 family controlled firms and 191 non-family controlled firms) over the period 2003 to 2007. Board size, board independence, director’s qualification, director’s professional qualification, leadership structure were used as a corporate governance mechanisms, debt, firm age and firm size were used as a control variable while Tobin’s Q were used as a measure of company performance. Panel data methodology with generalized least square estimation method was used to test the hypothesis. The analysis has been done by classifying the sample as family controlled firm and non-family controlled firm. The researcher revealed that director’s qualification measured as the percentage of directors with degree and above divided by total directors helps to enhance the performance of non-family controlled firms but insignificant for family controlled firms. Board size and leadership duality was a significant negative influence on family controlled firms performance but insignificant for non-family controlled firms. Firm age was a significant negative and positive association between the performance of family controlled and non-family controlled boards respectively. On the other hand, there was a significant negative relationship between firm size and performance of both family controlled and non-family controlled firms. The other variables such as board independence and director’s professional qualification were insignificant for both classes of firms.

Babatunde and Olaniran (2009) using panel data based on a sample 62 firms listed on the Nigerian Stock Exchange for a period of five years from 2002 to 2006 analyzed the effects of internal and external governance mechanism on performance of corporate firms in Nigeria. The researchers found a positive and significant relationship between board size, leverage and the dependent variable Tobin’s Q. However, the study revealed an inverse relationship between director’s shareholdings, firm size, independence of the audit committee and the numbers of outside directors on board. When the return on asset was used as the dependent variable significant positive relationship of board size, block holders and leverage with return on asset was found. However, there was a negative relationship between the number of outside directors on board, director’s shareholdings, independence of the audit committee, firm size and the return on asset. In addition, the study found that the measure of performance matter for analysis of corporate governance studies. In some cases different result were obtained based on the measure used.

Adusei (2011) empirically analysed the relationship between board structure and bank performance with panel data from the banking industry in Ghana by using pooled OLS regression. A total sample of 17 out of 26 universal banks was used in the study in this study. The researcher used return on asset and cost income ratio as dependent variable of the study and board size and board independence as independent variable of the study. Bank age, bank size, funds, and ownership structure and listing status was used as a control variable of in the study. The results showed that as the size of a bank’s board of directors decreases its profitability increases. In addition, board independence has a negative, but statistically insignificant correlation with bank profitability. No significant relationship between the size of a bank and its financial performance was found. He recommended that banks seeking some improvement in their performance should constitute small sized boards of directors composed of few independent directors.

Jensen (1993) argues that a larger board leads to less effective monitoring due to coordination and process problems inherent in large board size. Larger boards can be less participative, less cohesive, and less able to reach consensus. Coordination, communication and decision-making problems increasingly impede company performance when the number of directors increases (Udiale, 2010). Al-Manaseer et al. (2012) also argues that boards with too many members lead to problems of coordination in decision making. Small board size was favored to promote critical, genuine and intellectual deliberation and involvement among members which presumably might led to effective corporate decision making, monitoring and improved performance (Lawal, 2012). On the other hand, Klein (2002) suggested that larger boards able to promote effective monitoring due to their ability to distribute the work load over a greater number of observers. Thus, board size can influence the financial performance of firms. The relevant hypothesis derived from the above discussion is:
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Ha2: There is a significant negative relationship between board size and financial performance

Audit Committee Size and Financial Performance

The audit committee is empowered to function on behalf of the board of directors by assuming an important oversight role in the corporate governance intended to protect investors and ensure corporate accountability. According to Jensen and Meckling (1976) the audit committee plays a significant role in the monitoring process carried out by the directors of the firm and auditing is used by firms to reduce agency costs. In addition to that they revealed that most essential board decisions originate at the committee level, and this includes the audit committee. Audit committees thus, represent another internal governance mechanism whose impact is to improve the quality of financial management of a company and hence its performance. Lin et al (2006) found significant positive association between audit committee size and occurrence of earnings restatement. It was explained that a certain minimum number of audit committee members may be relevant to the quality of financial reporting. Kyereboah-Coleman (2007) reported a significant positive relation between size of the audit committee and firm performance. Kyereboah-Coleman (2007) describe that size of the audit committee could be an indication of the seriousness attached to issues of transparency by the organization. In addition, Aldamen et al. (2011) reveals that smaller audit committees with more experience and better educational qualifications are more likely to be associated with positive firm performance. The relevant hypothesis derived from the above discussion is:

Ha3: There is a significant negative relationship between size of audit committee and financial performance

Organizational Factors and Financial performance

Organizational factors can significantly affect organizational performance. This study expects that organizational factors, namely, bank size and bank capital affect the relationship between the firm’s corporate governance and financial performance.

Bank Size

The size of the bank is included as a control variable to account for size related economies and diseconomies of scale. Financial intermediation theory predicts the efficiency benefits related to bank's size, due to economies of scale. This could imply lower cost for larger banks that they may retain as higher profits if they do not operate in a very competitive environment (Flamini, et.al 2009). Moreover, Gul, et.al (2011) suggest that large banks have grater loans and greater product diversification and accessibility to asset markets, which may not be available for smaller banks. The relevant hypothesis derived from the above discussion is:

Ha4a: There is a significant positive relationship between the banks’ size and financial performance

Bank Capital

The amount of capital a bank has in its balance sheet determines the soundness and healthiness of the bank and its ability to protect its lenders from the uncertainties of the economy. Capital plays a vital role in supporting safety and soundness of banks. Banks with higher capital to the assets ratio could be considered relatively safer in the event of loss or liquidation. Guru et al. (2000) asserts that capital adequacy requirement would increase the capital assets ratio and thus reduce the risk. This may induce banks to absorb more risk in their investment in the hope of maximizing return. Moreover, Naceur and Goaied (2001) suggest that the higher capital to assets ratio, the lower the need for external financing and therefore, higher profitability. This study, therefore, uses the ratio of total capital to risk weighted assets as a proxy of bank capital ratio. The relevant hypothesis derived from the above discussion is:

Ha4b: There is a significant positive relationship between the banks’ capital and financial performance

III. Research Methodology

Research Design

The study utilized correlational research design as it sought to describe and establish the associations among the key study variables, namely, corporate governance mechanisms, financial performance and organizational factors.

Study Population: The population of the study comprised all the commercial banks operating in Kenya as at 31 December 2014. A complete list of the commercial banks in Kenya obtained from Central Bank of Kenya indicates that there were 43 registered banks. Data was successfully collected from 42 out of the 43 banks; a response rate 97 percent.
Data Source and Collection Methods
The data for this study was collected from secondary sources. The secondary sources of data were the audited financial statements of the sample commercial banks for the year ended 31 December 2014. Data for the study were extracted from the annual reports of the 42 banks. The website of each of the banks was visited to collect necessary data for the study. In all, 42 observations were obtained and were used for the study.

Measurement of Variables
An extensive review of existing conceptual and empirical studies related to corporate governance and firm performance produced the measures for each variable. The dependent variable was financial performance which was measured by return on assets. In line with the studies of Ibrahim et al., 2010; Adusei, 2011; and Al-Manaseer et al., 2012) Return on Asset (ROA) as a proxy for firm performance measures the overall efficiency of management and gives an idea as to how efficient management is at using its assets to generate earnings (Al-Manaseer et al., 2012). ROA is defined as profit after tax divided by total asset. Three measures were used as proxy measures for corporate governance namely; board gender diversity, audit committee size and board size which were the independent variables. Board gender diversity was measured as the percentage of number of female directors divided by the total number of board members. The audit committee size was measured as the proportion of audit committee members to the total number of board members. The control variables were bank size and the bank capital. The bank capital is measured as the ratio of total capital to overall weighted assets while the size of a bank is calculated as the natural logarithm of the net assets (Anderson and Reeb, 2003; Carter et al., 2003; and Barontini and Caprio, 2006). The description of the study variables is presented in Table 1.

Table 1: Description of variables

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<th>Variables</th>
<th>Description</th>
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<tr>
<td>Measures of Internet financial reporting (IFR) (dependent variable)</td>
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<tr>
<td>Return on Asset (ROA)</td>
<td>Profit after tax/Total Assets</td>
</tr>
<tr>
<td>Measures of Corporate Governance Mechanisms (independent variable)</td>
<td></td>
</tr>
<tr>
<td>Board Size</td>
<td>The total number of directors serving on the board of directors</td>
</tr>
<tr>
<td>Board Gender Diversity</td>
<td>The proportion of female directors to the total number of directors</td>
</tr>
<tr>
<td>Audit Committee Size</td>
<td>The proportion of members serving on the audit committee to the total number of directors</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
</tr>
<tr>
<td>Bank Size</td>
<td>The natural logarithm of net assets</td>
</tr>
<tr>
<td>Bank Capital</td>
<td>Total Capital/Overall risk weighted assets</td>
</tr>
</tbody>
</table>

Source: Author’s construction, 2015

Model Specification
To estimate the impact of corporate governance on commercial bank’s financial performance in Kenya the following general empirical research model was developed

\[ Y_{it} = \beta_0 + \sum \beta_K X_{it} + \epsilon_{it} \]  \hspace{1cm} (1)

Where:
- \( Y_{it} \) represents the dependent variables for time period \( t \).
- \( \beta_0 \) is the intercept
- \( \beta_K \) represents the coefficients of the \( X_{it} \) variables
- \( X_{it} \) represents the explanatory variables
- \( \epsilon_{it} \) is the error term

Therefore, the data model relating of corporate governance mechanisms and financial performance was stated as:

\[ ROA_{it} = \beta_0 + \beta_1(BGD_{it}) + \beta_2(BSIZE_{it}) + \beta_3(ASIZE_{it}) + \beta_4(BNSIZE_{it}) + \beta_5(CAPR_{it}) + \epsilon_{it} \]  \hspace{1cm} (2)

Where:
- \( ROA \) = Return on Assets
- \( BGD \) = Board Gender Diversity
- \( BSIZE \) = Board Size
- \( ASIZE \) = Audit Committee Size
- \( BNSIZE \) = Bank size
- \( CAPR \) = Bank Capital

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Validity and Reliability Tests

Validity and reliability of the regression model was tested using the Variance inflation factors (VIF) which measures how much the variance of the estimated regression coefficients are inflated as compared to when the predictor variables are not linearly related. It indicates the extent to which multicollinearity (correlation among predictors) is present in a regression analysis. Multicollinearity is problematic because it can increase the variance of the regression coefficients, making them unstable and difficult to interpret (Carter et al., 2003). The VIF ranged from 1.3 to 2 (Appendix 3) indicating moderate correlation which may not interfere with the validity of the model. VIF values greater than 5-10 suggest that the regression coefficients are poorly estimated due to severe multicollinearity (Carter et al., 2003). The model therefore was valid.

The reliability of the study measures and model was assessed by computing correlation Coefficients using correlation matrix(Appendix 2) which is used to assess the internal consistency or homogeneity among the variable measures (Sekaran, 1992). Correlation coefficients ranged from -0.210 to 0.577 revealing a low degree of multicollinearity. Since all the Coefficients results were less the 0.8 level (Bagozzi and Yi, 1988; Sekaran, 1992; Hair et al., 1998), the internal consistency reliability of the measures used was considered to be sufficiently high and to have adequately measured the study’s variables.

The Durbin Watson Statistic which is number that tests for autocorrelation in the residuals from a statistical regression analysis was also used. The Durbin-Watson statistic for the model was 2.04727 (Appendix 3). A value of 2 means that there is no autocorrelation in the sample. Values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation (Carter et al., 2003).

Data Analysis

Descriptive and inferential statistics (correlation multiple linear regression) data analysis method were employed analyze data collected. The descriptive statistics was used to quantitatively describe the important features of the variables using mean, maximum minimum and standard deviations. The correlation analysis was used to identify the relationship between the independent, dependent and control variables using Pearson correlation analysis. The correlation analysis shows only the degree of association between variables and does not permit the researcher to make causal inferences regarding the relationship between variables (Marczyk et al., 2005). Therefore, multiple linear regression analysis was also used to test the hypothesis and to explain the relationship between corporate governance variables and financial performance measures by controlling the influence of some selected variables. Minitab 17 software was used for analysis and the results were presented using tables.

IV. Results And Discussion

This section presents the results of the study, analysis and interpretation. It presents the descriptive statistics that reveal the information on the variables; inferential statistics, Pearson (r) correlation and regression tests to show the relationships between corporate governance mechanisms and financial performance.

Descriptive statistics

Appendix 1 presents the descriptive statistics of the corporate governance mechanisms that influence the performance of commercial banks in Kenya. The results show that the mean of board size is approximately 9.2 with a maximum of 23 members and a minimum of two members. The mean of board gender diversity is 14.68%, while the maximum and minimum are 42.68% and 0% respectively which means that some companies have no female representation in the board of directors. In regards to the board size and board composition, the Guidelines on Corporate Governance Practices by Public Listed Companies in Kenya require that the board of directors should consist of at least three directors and 22 directors as a maximum. Further, that one third (33.33%) of the board of directors or three members of them should be independent directors. The mean of Audit Committee size is 45.20%, while the maximum and minimum are 100% and 17.39% respectively. The Audit Committee size should have a minimum of three members (33.33%) in Kenya. Therefore, it is clear that the Audit Committee in the listed banks in the Nairobi Securities exchange have more than three members on average. Results reveal that the mean of ROA was approximately 3.01% with a maximum of 7.7 % and a minimum of -0.75%. According to Flamini et al. (2009.) the average ROA in Sub-Saharan Africa,(SSA) was about 2%. Thus, the average ROA of listed Kenyan banks is above average of the SSA.

Pearson’s correlation Analysis

Correlation is a statistical measurement of the relationship between two variables. Pearson’s correlation co-efficient was used to assess the strength of relationship between the data. Correlation was used to quantify association, and to assess the strength and direction of the relationship between pairs of the variables in the study. The findings are shown in Appendix 2. Where the probability of correlation is less than 0.05 the correlation is considered statistically significant; whereas if the probability is greater than 0.05 then the
relationship is not statistically significant.

The results summarize the correlation between the independent variables and dependent variable. It displays that board size, board gender diversity, audit committee size and bank capital are not related to the bank profitability (ROA). Furthermore, Appendix 2 also presents the correlations between the independent variables to each other. It shows that there exist relationships between board size, audit committee size, audit committee composition and board composition. The Board size has a positive significant relationship with audit committee size, board gender diversity and bank size, which means that the size of board of directors plays a significant role in determining the board composition as well as the audit size. In other words, large board size leads to larger board composition. However, board size has a negative significant relationship with audit committee size, which means that the board size is significant in determining the audit committee size. This implies that large board size leads to smaller audit size this could due to the fact the large board is already involved in this monitoring function hence no need for replication of roles. Besides, the results also show that audit committee size has negative relationship with board size and bank size. Meanwhile, bank size plays a significant role in determining the bank capital and board size composition.

Multiple Linear Regression Analysis

To assess the impact of corporate governance mechanism on firm performance, the dependent variable ROA was regressed on the independent variable (board size, audit committee size, board gender diversity, bank capital and bank size). Appendix 3 shows the results. The analysis indicate that the overall effect of the explanatory variables on the bank’s profitability is statistically significant (overall p-value=0.000). This means that the independent variables determine 43.3% of the ROA variance (R-Sq(adj)). The results show that there is no statically significant relationship between independent variables namely board gender diversity, audit committee and bank profitability (ROA).

The effect of board gender diversity on commercial banks performance in Kenya

To assess the influence of the banks’ board gender diversity on their performance, aggregate mean scores of the banks’ financial performance measures (dependent variable) were regressed on the aggregate mean scores of their board gender diversity measures (independent variable). The relevant results are presented in Appendix 3.

The regression results in Appendix 3 reveal statistically insignificant negative linear relationship between board gender diversity and financial performance (β=-0.0399, P-value= 0.168). Hence Ha1 is rejected since β ≠ 0 and p-value > 0.05. Hypothesis one predicts that the number of women directors on the board is positively associated with financial performance. The insignificant coefficient of the percentage of women directors does not support this hypothesis. Therefore, this study does not support the view that gender diversity leads to superior banks financial performance. This finding challenges the works of some previous studies documenting a positive effect of the role of women on boards in enhancing the quality of decision making and firm performance (Bathula, 2008; Erhardt et al., 2003). This may be due to the relatively small proportion of board members who are women which does not permit them to be powerful enough to make a difference to monitoring. This result does not necessarily contradict the notion that women's presence on boards may be useful and positive in general. Nevertheless, the low number of women on the boards of sampled Kenyan commercial banks does not give them sufficient monitoring power. The result is not surprising because other studies that examined the association between proportion of women on boards and firm performance also found insignificant relationship (Rose, 2007; Habbash, 2010). Board gender diversity is important since almost half of the country's population is female. But, simply the presence of female directors will not improve banks operation and performance unless they are qualified and competent. Whether gender diversity helps improve banks operation and performance all depends on factors such as experience, education and assertiveness of female directors.

The effect of board size on commercial banks performance in Kenya

To determine the effect of board size on the banks’ performance the aggregate mean scores of their financial performance measure (dependent variable) were regressed on the aggregate mean scores of the banks’ board size measures (independent variable). The research findings are outlined in Appendix 3. The study results show that there is statistically significant negative linear relationship between board size and banks’ performance (β=-0.00300, P-value= 0.014). Hence Ha2 is accepted since β ≠ 0 and p-value < 0.05. Hypothesis two assumes there is a significant negative relationship between board size and financial performance. This finding is inconsistent with some previous studies (Fama and Jensen (1983); Lipton and Lorsch (1992); Yermack (1996); Jensen (1993); Eisenberg et al. (1998); and Cheng (2008). who did not find significant relationship between board size and firm performance Based on the analysis of this study, the argument by Klein (2002) and Andres and Valleldado (2008) that a large board size should be preferred to a small size because of the possibility
of specialization for more effective monitoring and advising functions is not supported. Shakir (2008), argues that the board size does not reflect its effectiveness. If the board has adequate experience and knowledge, it would be a crucial to ensure that the board functions effectively. Guest (2009) points out that the relationship between board size and firm performance may differ due to differences in national institutional characteristics and firm specific characteristics. In the other words, the functions of the boards are different due to differences in institutional backgrounds.

Kyerereboh-Coleman (2007) point out that the size of the audit committee negatively influence performance using Ghanaian sample firms. Further, Sunday (2008) studied the relationship between audit committee composition and firm performance (ROA and profit margin) in 20 non-financial firms listed in Nigeria, and the result could not provide a significant association between them. This study result supports the notion that a certain minimum number of audit committee members may be relevant to the quality of financial reporting and to enhance financial performance. Free-riding and difficulty to reach in consensus in large groups inversely affect financial performance.

The Association between Organizational Factors and Commercial Banks Performance in Kenya

Organizational factors can significantly affect organizational performance. This study expected that organizational factors, namely, bank size and bank capital to influence the banks’ performance. To assess the effect of organizational factors on the banks’ performance, the aggregate mean score of bank performance measures was regressed against the individual organizational factors variables (bank size and bank capital).

Bank size has statistically significant positive relationship with bank performance ($\beta = 0.0161$, P-value = 0.000). $H_4a$ is accepted since $\beta \neq 0$ and p-value $< 0.05$. Hypothesis four assumes there is a significant positive relationship between the banks’ size and financial performance. The findings contrasts previous studies and arguments made in which bank size negatively influences performance (Sanda et al, 2005; Babatunde and Olaniran,2009); Amran, 2011; Al-Manaseer, et al, 2012). Al-Manaseer et al. (2012) found a significant negative relation between bank size and net interest margin but insignificant negative relation was found with return on asset and return on equity. This can be explained as large banks have economies of scale and scope from this point it is supposed to influence bank performance positively. However, at the same time agency problem increases and this may outweigh the efficiencies of large banks achieved through economies of scale leading to bank inefficiencies. Further, banks may not be able to fully control and monitor the business as the companies become larger in size. The result implies size of a bank measured by its asset enhances performance if this is put to efficient use. Therefore, sampled Kenyan banks are utilizing their size to enhance their financial performance.

Bank capital has an insignificant positive influence on bank performance measured by return on assets ($\beta = 0.0142$, P-value = 0.730). $H_4b$ is rejected since $\beta \neq 0$ and p-value $> 0.05$. High cost of funds could be one the factors that have accounted for this. High cost of funds negatively affect profitability if a bank is unable to lend the funds for higher returns after acquiring them. Capital as an important factor of production must be sufficient in business for effective operation of an organization. Commercial banks’ capital adequacy is of paramount significance to stability and allocative efficiency. The Central Bank of Kenya plays an important role providing protection and conferring confidence on all the banks’ depositors and creditors by ensuring banks’ capital adequacy to absorb their losses and financial short comings. This is the main reason behind the new bank reform which emphasized that banks’ capital base should be increased to KES 1 billion for effective performance.

V. Conclusion And Recommendations

The objective of this paper was to examine the relationship between corporate governance mechanisms and bank performance in Kenya. This study did not find any significant association between board mechanisms (audit committee size, and board gender diversity ) and bank profitability (ROA). Similar to Mak and Kusnadi (2005) and AbdurRouf (2011), this study found no association between bank capital and bank profitability. In addition, the study investigated the relationship between bank size and firm performance, and it found a significant relationship between them, which is similar to Mak and Kusnadi’s (2005) and Sunday (2008) in Malaysia and Nigeria respectively. Furthermore, the study did not find evidence about the relationship between bank capital and bank performance, which is consistent to Topak (2011) who could not find a relationship between firm size and firm performance in the Turkish listed companies.

VI. Recommendations

This study examined the impact of corporate governance mechanisms on firms’ performance by taking evidence from selected commercial banks in Kenya. On the basis of the findings and conclusions reached, the following recommendations are forwarded.

i). This study revealed that the boards of banks are male dominated and board diversity is very limited in Kenyan commercial banks. Thus, appropriate feminist policies need to be adopted to improve the balance of boards in Kenyan banks with a great care about their qualification and competency. The board of
directors of every listed company should reflect a balance between independent, non-executive directors and executive directors.

ii). The study recommends the board size of banks to be small in number to optimize firm performance since small boards with better educational qualification are more effective in monitoring managers and improving performance. However, the size of the board should not be too large to undermine an inter-active discussion during board meetings or too small such that the inclusion of a wider expertise and skills to improve the effectiveness of the board is compromised.

iii). Commercial banks should make their audit committee size small to improve their performance. Experienced directors should be assigned in committee based on their practical background to make them to contribute more in promoting good governance. The chairman of the audit committee should be an independent and non-executive director. The audit committee should have adequate resources and authority to discharge their responsibilities.

iv). Commercial Banks should be well capitalized as this provides buffer against losses and thus it ensures safety and soundness of the financial institutions. It is necessary to ensure that the banks have sufficient capital. Capital regulations must be enacted to ensure that the banks meet the minimum capital requirements expected of them.

References


[26]. Ferreira, D. (2010). Board Diversity. London School of Economics. Available at: [27]. hay@io@Fr@E@R@RID@Bo@ard%20D@iversity%20version%201.pdf. [Accessed 19 January 2015].


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Corporate Governance Mechanisms and Financial Performance of Commercial Banks in Kenya

[60]. OECD (2004); OECD Principles of Corporate Governance, Organization for Economic Co-operation and Development.
Appendix 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>StdDev</th>
<th>Minimum</th>
<th>Median</th>
<th>Maximum</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGD</td>
<td>42</td>
<td>0.1468</td>
<td>0.1227</td>
<td>0.0000000000</td>
<td>0.1429</td>
<td>0.4286</td>
<td>0.38</td>
</tr>
<tr>
<td>ASIZE</td>
<td>42</td>
<td>0.4520</td>
<td>0.1527</td>
<td>0.1739</td>
<td>0.4444</td>
<td>1.0000</td>
<td>0.93</td>
</tr>
<tr>
<td>BSIZE</td>
<td>42</td>
<td>9.2144</td>
<td>4.099</td>
<td>2.0000</td>
<td>9.0000</td>
<td>23.000</td>
<td>1.51</td>
</tr>
<tr>
<td>CAPR</td>
<td>42</td>
<td>0.2856</td>
<td>0.0891</td>
<td>0.1089</td>
<td>0.2105</td>
<td>0.4690</td>
<td>0.86</td>
</tr>
<tr>
<td>ROA</td>
<td>42</td>
<td>0.03010</td>
<td>0.02717</td>
<td>-0.07500</td>
<td>0.02850</td>
<td>0.07700</td>
<td>-1.52</td>
</tr>
<tr>
<td>BNSIZE</td>
<td>42</td>
<td>10.509</td>
<td>1.274</td>
<td>7.982</td>
<td>10.076</td>
<td>12.686</td>
<td>0.22</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGD</td>
<td>-0.78</td>
</tr>
<tr>
<td>ASIZE</td>
<td>2.80</td>
</tr>
<tr>
<td>BSIZE</td>
<td>3.27</td>
</tr>
<tr>
<td>CAPR</td>
<td>0.01</td>
</tr>
<tr>
<td>ROA</td>
<td>4.69</td>
</tr>
<tr>
<td>BNSIZE</td>
<td>-1.04</td>
</tr>
</tbody>
</table>

Source: Research Data, 2015

Appendix 2: Correlation Matrix for Corporate Governance Mechanisms and Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>BGD</th>
<th>ASIZE</th>
<th>BSIZE</th>
<th>CAPR</th>
<th>ROA</th>
<th>BNSIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASIZE</td>
<td>-0.210</td>
<td>0.182</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSIZE</td>
<td>0.367</td>
<td>-0.634</td>
<td>0.017</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPR</td>
<td>-0.116</td>
<td>0.176</td>
<td>0.024</td>
<td>0.465</td>
<td>0.879</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-0.114</td>
<td>-0.153</td>
<td>-0.065</td>
<td>-0.259</td>
<td>0.471</td>
<td>0.382</td>
</tr>
<tr>
<td>BNSIZE</td>
<td>0.256</td>
<td>-0.301</td>
<td>0.425</td>
<td>-0.372</td>
<td>0.577</td>
<td>0.102</td>
</tr>
</tbody>
</table>

Cell Contents: Pearson correlation

Source: Research Data, 2015
Appendix 3: Regression Analysis

The regression equation is:

\[ \text{ROA} = -0.08038 - 0.03999 \text{BGD} - 0.0342 \text{ASIZE} - 0.00300 \text{BSIZE} + 0.0142 \text{CAPR} + 0.0161 \text{BNSIZE} \]

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coef</th>
<th>SE Coef</th>
<th>T</th>
<th>P</th>
<th>VIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.08038</td>
<td>0.03845</td>
<td>-2.15</td>
<td>0.024</td>
<td></td>
</tr>
<tr>
<td>BGD</td>
<td>-0.03999</td>
<td>0.02838</td>
<td>-1.41</td>
<td>0.168</td>
<td>1.2</td>
</tr>
<tr>
<td>ASIZE</td>
<td>-0.0342</td>
<td>0.02803</td>
<td>-1.22</td>
<td>0.230</td>
<td>1.6</td>
</tr>
<tr>
<td>BSIZE</td>
<td>-0.00300</td>
<td>0.00116</td>
<td>-2.58</td>
<td>0.014</td>
<td>2.1</td>
</tr>
<tr>
<td>CAPR</td>
<td>0.0142</td>
<td>0.04062</td>
<td>0.35</td>
<td>0.730</td>
<td>1.2</td>
</tr>
<tr>
<td>BNSIZE</td>
<td>0.0161</td>
<td>0.003070</td>
<td>5.25</td>
<td>0.000</td>
<td>1.8</td>
</tr>
</tbody>
</table>

\( S = 0.0204303 \) \( R^2 = 50.2\% \) \( R^2(\text{adj}) = 43.3\% \)

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5</td>
<td>0.0151998</td>
<td>0.0030400</td>
<td>7.27</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Residual Error</td>
<td>36</td>
<td>0.0150519</td>
<td>0.0004182</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>0.0302556</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Durbin-Watson statistic = 2.04727

Source: Research Data, 2015

Appendix 4: Diagnostic Test (Model Assumptions)

![Residuals versus the order of the data](image1)

![Residuals versus the fitted values](image2)

![Histogram of the residuals](image3)

![Normal probability plot of the residuals](image4)

Source: Research Data, 2015