Impact of Corporate Governance on Credit Rating, Comperative study of Financial and Non Financial Sector of Pakistan

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CERTIFICATE OF APPROVAL

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This thesis includes no material which has been already accepted for the award of any other degree or diploma in any university and confirms that to the best of my knowledge the thesis includes no material previously published or written by another person, except where due reference is made in the text of the thesis.

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This is to certify that **Mr. Muhammad Zeeshan** bearing Registration No. MMS151023 has incorporated all the observations made by thesis supervisor. The title of the thesis is: **Impact of Corporate Governance on Credit Rating, Comperative study of Financial and Non-financial sector of Pakistan**

Forwarded for necessary action

Dr. Arshad Hassan

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All errors in this thesis are my sole responsibility.

Dedication

To Almighty Allah who has created us as crown of creation and enable us to learn. This thesis is dedicated to my parents, brothers, sisters, and friends who always appreciate me in every step and to my teachers who help me at all stages of study**.** This journey would not have been possible without your loving support and encouragement.

Table of Contents

Chapter # 03

DATA DESCRIPTION AND METHODOLOGY

List of Tables

Abstract

This study is aimed to investigate impact of corporate governance on credit rating in Pakistani firms. Empirical analyses are conducted on a sample of 32 Companies which consists of 21 commercial banks from financial sector and 13 non-financial companies by using panel data analysis and least square dummy variable analysis. Panel data analysis of financial sector shows that CEO duality is negative but significant relationship with Credit rating. Firm Size in financial sector has positive and significant relationship with Credit rating. Panel data in case of non financial sector reports that Board Independance is positive and significant relationship with Credit rating. Firm operating loss has negative and significant relationship with Credit rating.Lower firm operating loss is associated with higher Credit rating. Audit Committee is negative and significant relationship with Credit rating. The study concludes that dummy variable analysis finds no difference between financial and non financial sector of Pakistan.

Chapter 01

Introduction

1.1 Corporate Governance

In corporate existence, Corporate Governance plays a vital role. Separated ownership and control is the intrinsic feature of the organization. Although corporate governance has been scrutinized for only about 30 years. In the nearly 18th century, the origin of present time corporate governance can be attributed to Adams Smith's (1776) "The Wealth of Nation", where the author conclude a person an entrust of others peoples cannot take provision by money as they own. This concept of ownership separation and the other thing is control is reconceptualized by Barley and Means (1934) in the well-known paper "The modern corporation and private property" Another concept is closer to the corporate governance is the modern theory which was presented by Jensen and Mackling (1976).

Corporate Governance has many definitions nowadays. According to Shliefer and Vishny (1997), it is concerned with the ways that corporations ensure to get a return on the investment by the supplier of finance. Cadbury gives a wide definition of corporate governance as "The corporate governance is directed and controlled by the system". (Cadbury Committee 1992). However, Corporate Governance creates a relationship between its management team and company's board of directors, its shareholder and another stakeholder (O.E.C.D 2004) and it is headed that attenuate the parties of interested which were a confliction of interests.

It is hard to overestimate the importance of corporate governance. How easily a company can attract external financing and on what conditions, how perfectly resource can be allocated to the organization and how its profit can be divided among the parties which are involved. McKinsey and company (2002) conduct a survey."when evaluating investment decisions ,financial indicator with par value are determind by investors. Investors with high governance standards are wiling to pay a premium for companies The averages of premium are 30% in Eastern Europe and 12%-14% in North America and Western Europe. The major factor of corporate governance is to determine the value of the firm. It examines the use of shareholder governance structure-managerial incentive scheme-to maximizes their value in the product market competition. Therefore, it is evaluated that product market structure are based on the governance structure.

Shareholders to increase the value in the competition of product market include the ownership stock of managers and firm governance power. When governance power increases then it means that its firm's value in the market is high and is profitable but its ownership value decreases.

Corporate governance depends upon three stage process Its contract implicit and explicit between firms' stakeholder and distributor surrounded by responsibility, rewards and rights. A brooder's mapping of the stakeholders includes suppliers, communities, shareholders and others. Secondly, the conflict arises between the owner's and management. John et al (1998) report that corporate governance is a separate entity from ownership and control because of arising conflicts. Griffith (2001) propose that ownership separation arises conflict so that an owner's and managers don't perform their duties well and not monitor the activities. Third, proper check system in organization to balance the interest of management and owners. In an organization, management and owner's face different type of problem. Rediker and Seth (1995) report that

when the managerial decision making gives negative consequences, then the conflict between the management and owner arises. Berle and Means (1932) report that agency problem is discussed between agent and principal. The main issue of corporate governance, finance and administrative incentives is agency problem. Tirole (2006). Keasey, Wright and Hall (1999) report that agency problem in the firms increases by the high level management ownership.

Skaif et al. (2006) explain three aspects. First, Firm's with strong corporate governance obtain a better credit rating, Second, if poorly governed then it is the excess interest cost. Third, Additional financing are incurred by poor firms. The agency problem has a number of solutions offered by researcher between shareholder and managers which fail under the categories of incentive arrangement, monitoring and discipline. Rewards or reasons for doing something of managers and shareholders can be matched up through practices such as stock option or other market based payment Fama and Jensen (1983). Supervision by an independent and committed board of directors promises that managers to react for the best interest of institutional investors. Fama and Jensen (1983). Shareholder interest is addressed by the concerned board of directors when Chief executive officer fails to maximize. The return of equity provider is applicable when the value of shareholder neglected in a firm and disciplined by the market. Jensen and Rubak (1983).

The Security Exchange Commission of Pakistan permulgates corporate governance in beginning of 2002. Those significant about implementation incorporate changes in top managerial staff in place will make it responsible for the great part of shareholders. Furthermore, superior revelation, including progressed inside what's more outer audit for recording organization. However, the code's set procurement around director's freedom remain voluntary also give

acceptable, no direction, looking into inner controls, danger administration also tables payment approaches.

1.2 Credit Rating

Pessimistic and optimistic are the two types of creditors. Pessimistic creditors worry about the failure of the firm's project investment more than optimistic creditors do. Pessimistic attitude towards the risk is more when the creditors with weak financial status or information disadvantage on firm-related issues. Credit worthiness of the company is based on the qualitative information as well as quantitative by the credit rating agencies which is based an ability to pay the amount or likelihood of default. Credit rating agencies have a major criticism that is a lack of timeliness in making credit changes. Literature of finance displays that equity markets are projected through credit rating changes. (Norden and Weber 2004). The deep rooted problem of rating agencies is to convey timely default information to the market. Rating is used to get maximum effort (Cheng and Neamitiu 2009). Second, the rated companies, periodically change in credit ratings. As a result, changes in financial position might be unavoidable, which are reflected in a lag of credit rating. Third, the continuous variable is a default probability, but credit rating is the indication of default likelihood are discrete.

1.3 Credit Rating Agencies in Pakistan

There are two credit rating agencies are working in Pakistan first one is PACRA (Pakistan Credit Rating Agency) and the other one is JCR-VIS. The firstly nominated credit rating agency entrenched in Pakistan is PACRA. IFC (International Finance Corporation) and IBCA

(International Credit Rating Agency), LSE (Lahore Stock Exchange) and Fitch rating were signed a joint venture agreement on June 15, 1994. JCR-VIS is providing an independent rating service in Pakistan and it is a full service rating company, which is approved by the Securities Exchange Commission of Pakistan and State Bank of Pakistan. It is a joint venture between Japan's Premier Rating agency, Vital Information Services Limited, Karachi Stock Exchange and Islamabad Stock Exchange.

The interactive process of Credit rating is counted on information and interaction with rater. The symbols used in PACRA and JCR-VIS both are same as big three. The symbols used by PACRA are a plus and minus sign for rating categories. These signs are not used in long term rating category "AAA" and to below categories "CCC". The evaluation is the role of the credit rating committee and their benchmark is properly pursued. The credit rating agency has approach to the information which are including merger and acquisition plans.

1.4 Problem statement.

The current study examines the Credit Ratings are affected by the Corporate Governance mechanisms of a financial and non-financial sector of Pakistan. The financial sector of Pakistan plays an important role as well as non-financial in the growth of economy of a country. Kumar and Gulati (2008), recommend that the banking system is linked direclty to the yield of the country economy.

1.5 Research question

The exploration questions of the study are:

- What is the impact of corporate governance on credit rating?

- Is there any comparison between impact of corporate governance on credit rating in financial and non-financial sector of Pakistan?

1.6 Research objective

This interrogate the impact of corporate governance on credit rating. This study explains that governance is beneficial for higher credit rating. Furthermore, it investigates that comparison of effect of corporate governance on credit rating in financial and non-financial sector of Pakistan.

1.7 Significance of the study

The study is motivated from the point-of-view that corporate governance practices has impact on credit rating and this is comparison of impact of corporate governance on credit rating of financial and non-financial sector of Pakistan. In the case of agency effect, corporate governance is considered as a value- destructive strategy; hence, the emphasis is likely to be on improving corporate governance on credit rating mechanisms to ensure that managers focus on their firms' core competencies to increase the value.

The current study also provides evidence that firm-specific characteristics could be useful in determining corporate governance on credit rating and the likelihood of improvement in investment grade. This finding may be of interest to those academic researchers who wish to discover the quality of corporate governance practices in a developing market such as Pakistan and its impact on credit rating, across of the financial and non-financial sector.

There are several significant roles of the corporate governance such as performance measures and incentives planning for the accomplishment of business objectives, for the equal distribution of resources corporate governance mainly focus on the accountability and transparency.

1.8 Plan of the study

The study is arranged in 5 chapters. Chapter 2 describes the literature on the relationship among credit rating and corporate governance. Chapter 3 consists of methodology adopted and data employed. Chapter 4 consists of results.Chapter 5 Concludes the study of recommendation policy,conclusion and direction for future research.

CHAPTER 02

Literature Review

2.1 Corporate Governance Attributes

Earlier studies on attributes of the governance are focused by the corporate governance. Governance attributes have a broad set and are protected by stakeholder claims. Sengupta (1998); and further research are done by Bhojraj and Sengupta, (2003) and also Hermalin and Weisbach, (1991),and there one another researcher who said like that whose are Bhagat and Black, (2000,). Firm credit scores are determined with the aid of rating organizations' checks of the chance distribution destiny of bondholders to cash flows, which in reply, relies upon in the future cash flows to the firm. Credit worthiness of the firm's are decided by using or assessing the chance that its debt service expenses and predominant bills are covered and its future cash flows are sufficient. Because the implication of the firm's future cash flow and its distribution shifts downward or it increases the fate of his variance, then its credit rating will decline when the possibility of default increases.

Business idea enterprise framework of Jensen and Mackling (1976) represents that the company stakeholders and bondholders generally have two types of problem and that problem will lessen the price of their privileges and increase the possibility of default. The conflict between the management and agent arises due to agency problem and also affect outside stakeholders. Disengagement of possession and control in company businesses heads to records imbalance problems among independent stakeholders and executives. In corporate Information dysentery creates an ethical danger hassle while managers have lot of benefits to go after their personal

interests at the price of independent stakeholders. The second enterprise which is bondholders conflict is the conflict of shareholders. Shareholders in debt financing firms have lot of incentives to commence actions which in turn the wealth to shareholders against bondholders. That wealth switch can take numerous affects and the deviation of the firm's and its future cash flows. For instance, if owners of the shares predicted the payout of firms assets rather than assisting supervisor's investments in real price tasks, then the firms value and cash flow distribution would be lower. The discount in a companies predicted that future cash outflow will come the bondholders in danger because its effect increases. When the managers according to the decision of shareholders invest in riskier project then there wealth of cash distribution results in default hazard. In this two types of instance, bondholders have a risk because it is no longer be paid on their contractual fixed claims.

It contemplates that confliction between managers and all others which have owned shares like shareholder, bondholders and outside stakeholders arise due to the fact that firm governance capabilities affect credit rating and its enterprise value are controlled by the business. Functions of corporate governance are designed in such a way that control or reduce the agency conflict between managers and stakeholders. Bhojraj and Sengupta (2003) Due to bad decisions of management, firm cost increase and ceased the opportunistic control behaviour and this cause bring the decrease in firm value and all this happen due to mechanism of governance which offer unbiased tracking and in other scenario mechanism of governance sell excellent managerial skills and their selection and restrict opportunistic control that benefit to outside investors. Contrariwise, it postulates that companies cash flow distribution will shift downward if the governance is defenseless and in case of new efficient management it would be reversed. It causes to down the rating if resolve increase the possibility of default. For appliances, it explains

over with the character which governance performs in the lessen the firms conflict among control and all the outside stakeholders as the control broadening. The interest of both bondholders and shareholders are aligned when they have excellent monitering and control over the firms. There is another obscure effect of positive factors of governance on bondholders. Fitch Rating (2004), for instance shareholders can assert their power to achieve the milestone of other outside stakeholders with implementation of the excellent governance. Dan and Deaanglo (1983). Therefore, shareholders with their voting power can succeed in building up the control and bring up investment in the firms or there is an interaction among bondholder and shareholders but with the reference of shareholders they can damage the interest of bondholder. credit rating of firms is lower if the project initiative is riskier and heads to the chances of default. Shareholder rights are protected if good governance is applied and to increase the wealth of bondholders and shares owned persons. Sometimes features of governance is hazardous for bondholders while in case of shareholders it is beneficial. Another problem of analysis is that governance attributes are also present as substitute when governance is protected the claims of shareholders. Therefore, assumptions are drawn from the perspective of the analyzing the governance which is overlooked and bring trouble among variables. Whereas an encyclopedic framework is used to cover the governance attributes which are board size, ceo duality, institutional investor. These attributes bring awareness in corporate that doubtlessly effect on companies' credit score. Governance four aspects are used to every measurement which are discussed under.

2.1.1 CEO Duality

Corporate governance and CEO duality are addressed from different perspective. Kholeif (2008) conclude that CEO duality is negatively affected by corporate performance but positively affect the institutional investor. Petra and Dorata (2008) studies that there is a link between performance based incentive and corporate governance structure. The study that presence of CEO duality decreases the management risk for their benefits and to lower the distinguished performance. The material information and board agenda is also control by CEO. (Gomeez-Mejia et al,(2011); Jianng and Peng, (2011). When CEO has the authority over board, he has control over the entire management and board of directors, it is difficult to alter the decision of CEO for board of directors. In emerging Asian economies, CEO duality is commonly found in family firms. (Chien et al, (2005); Tamm and Tan, (2007). Family owned business work for their needs and to safeguard themselves. (Gomeez-Mejia et al, (2011); Beerrone et al, (2012). For the purpose of sustaining family wealth there is a strategic decisions of CEO for inclination of their family owned business. Carney, (2005). CEO has power and jurisdiction to actuate the firm resources to promote maximum corporate performance. Doonaldson and Daivis, (1991); Hernaandez, (2012). In the context of CEO has a control over the firm that allows him to force the decision making with clear jurisdiction and liability, in this addition steward theory suggests that firm performance is positively affected by CEO duality. Daivis et al, (1997); Hernanndez, (2012). Thus, with the maximization of shareholders' wealth CEO's Utility will also be maximized.

2.1.2 Board Independence

The essential internal corporate governance instrument for regulators is commonly regarded as Board of directors. To the protection of shareholder interest in the firms, they appoint as a representative on the board. Firm management discipline and monitoring is the legal responsibility of the board of directors. FCCG, (2000); OECD, (2004); Demise, (2006). For maximizing the firm value corporate governance is an important mechanism for board of directors. Therefore, the configuration of national institution the effeciency of corporate governance is largely unforeseen. Aguillera and Jacckson, (2003); Vann Essen et al, (2012). Which explains that corporate governance effectiveness is good practiced. Eventually, an independent status shows that a director is self-sufficient of management and free from conflict of interests. For the interest of shareholders' independent judgment exercise which are expected from independent directors. Studies of Hanniffa and Huddaib, (2006); Rammdani and Witteloostuijjn, (2010); Wahaab et al, (2011); Vann Essen et al, (2012) show that independent directors have no significant impact on corporate performances.

2.1.3 Audit Committee

Audit committee roles in corporate governance are directly or indirectly related to audit committee responsibilities and activities. The corporate governance is correlated to the competencies, expertise composition of audit committees. Klein (2002) reports that audit committee and accruals are negative to each other. She also searches that consecutive two or more losses will bring decrease in audit committee independence and firms growth opportunities. On the behalf of board of directors' audit committee is responsible for financial reporting. For

the purpose of effective monitoring audit committee independence assessment is crucial and it is negative relationship between the audit committee independence and earning management.

2.1.4 Institutional Investors

Shleifer and Vishnay (1986) conclude that institutional investors have great voting power. By virtue of this power, They take corrective action because they have greater benefits and also would have incentives to monitor corporate performance. Jarrel and Poulssen (1987) and Bricckley, Leease, and Smiith (1988) formulate that vote against catastrophic modification which reduce the shareholders' wealth are more likely by institutional owner. Aggrawal and Mandellker (1990) present that shareholders wealth effect and institutional owner are positive to each other. McConneell and Serrvaes (1990) find a positive liason between productivity and institute shareholding which is calculated by TOBIIN" S Q. Others said that to monitor the management action there is limited incentives. Fama and Jensen (1983) argue that if corporation performance is poor the outside directors bear reputation costs.

2.1.5 Ownership structure

Normally, Shareholders want to guard their claims and they demand a good governance where they are scattered in publicly traded companies. The system of governance which is set as a mechanism control and screen out the moves of the management and restrict to opportunistic behaviour and further they conduct the protect of shareholders and as likely as bondholders. To align the interest of shareholders and bondholders governance system is set and bondholders and shareholders interest would be opposed. For instance, shareholder with their power can influence the management to to tackle more unstable investment and collect the incentives of all hit effects.

While in the case of bondholders he should bear the disproportionate share of screw ups. Therefore, the exertion and influence of shareholders on management is a key function to align the interest of shareholders and bondholders and governance is the critical instrument of corporate because of shareholders and institutional create a positive effect with each other. Jensenn (1993), Sheleifer and Vishnny (1997) suggested that block holders or institutional owner have self-financial interest in the firm and they view the management to control in unbiased manner and also if they function well in the organization their interest is aligned because they have equity post in the organization. Shareholders look self-serving then they put pressure on management and they have power to control and take their benefits in an unbiased way. Persistent with this argument, Gorrdon and Pounnd (1993) conclude that some activists may then target corporate shareholders' proposals (poor) for example where a high proportion of all shareholders decided to vote against management on non-routine issues. Out of the doors blockholders and establishments (while institutional ownership is exceptionally full bodied align with the recommendation sponsor and those who oppose the shareholders backed recommendation align with strategically management which are inside and all other outside directors, they have significant stock positions. Nessbit (1994) conclude that firms through California Public Employees Retirement system are targeted which in turn make stock returns.Oppler and Sokobin (1997) argue that with the aid of Council of Institutional owners firms even being targeted enjoy over market performance. This effect concludes that block holders and as well as energetic shareholders heads toward the more high performance of monitoring the management and show a less management opportunistic behaviour which bring incentive for stakeholders. This is the management disciplining the position of governance which explains the relationship of blockholders and institutional owners that is based on quality which

measure the credit rankings. There is another challenging view of literature which focused on shareholders and blockholders which undue the influence on management and in case of low proportion of shareholder and blockholders bring adverse situation because of minority Sheleifer and Vishnny (1997) and Bhojjraj and Senguptaa (2003) Instances are focused proportion repurchases and greenmail (Dan and Deaanglo (1983).There is negative relationship between blockholders and institutional shareholders variables because of wealth distribution speculation the number of blockholders increases which also increase proportion of shares held by establishment and the chance of shareholders to influence the effect of wealth transfer also increases. It is captured the three variables. The dependence of ownership size variables and companies credit rating are speculated not more than concentrated ownership or any other incentive full for bondholders. Insider with their voting power can increase the resources of firms to gain interest themselves and backed up the recommendations actions. Goordon and Pounnd (1993) each of which can be probably to cause extra company risks for bondholders.

Credit companies are worried with governance due to the fact that financial position will go downward if the weak governance is impaired that leads to debt stockholders. Fitch Ratings (2004). For the purpose of structuring of evaluation, we covenant a framework of Standard and Poors (2002) for determining the practices and governance structure. Standard and poors (2002) groundwork specializes governance of four addictive ownership structure, financial transparency, board size and tactics. For the promotion of powerful decision making, the components are structured in to examine governance attributes to monitor the management moves that will reduce the conflict between the stakeholders and shareholders and also restrict the behaviour which is opportunistic. However, this is what impact it on credit ratings.

2.1.6 Financial Stakeholders rights and relation:

Management and stakeholders create a balance strength between them to protect the rights of stakeholders. Company in the form of governance keeps a degree to manage and whether it's not the changes that might increase the shareholders value. Shareholders have greater power to adjust the control in addition to possession manipulate and not important to make bondholders more fortunate. (Fitchh Ratings 2004). For instance, Asquiith and Wiz-man (1990) and Wargga and Wellch (1993) conclude that in levered firms bondholders go through wealth losses in pre-buyout.

2.1.7 Financial Transparency

Asymmetry in the firms create opportunistic behaviour therefor it is fact between capital providers and asymmetry which financial reporting is important to decrease. We stand with this argument that financial transparency bring extra monitoring of management moves which less the control that is opportunistic. Senguptaa (1998) hypothesize that firms with lower probability of detering price relevant negative records. he important characteristics of firms is board size that influence information asymmetry between managers and investors.

2.1.8 Board Size

Researchers Lein et al (2009), Phillips and Sipahioglu (2004) says that board size is positive related to firms. because larger boards are practicing best monitoring and accessibility of capital markets and debt financing. Further, man and Nguyen (2013) studies that only board size has influence on credit rating among different firm structure variables. Jensen (1993) studied that larger board size tend to be too large but not more than 8. The important functions of board of directors are mainly based on two functions which are advising and monitoring. (Raheeja 2005, Adamms and Feireera (2007). larger board size effect on firm performance that will lead the firm higher performance Dalton et al., (1999). Larger board size also brings problems in the form of coordination and free rider. According to Chuggh,Meeadow and Kumaar (2011), size of board means that the convenience are greater and maximum resources are available. Coleman (2007) says that if board size is larger it means that it has greater corporate governance. Arguments of Chenng Wu, Chiaang Lin, I_Cheng and Feing Lai (2005) are there is a significant and negative relationship between firm performance and board size. This element offers such things of corporate governance 1; Board length and formation of shares of internal, external and associate administrator. 2; committee structure and board management 3; how board contributors are equipped and engaged. 4; whether or not number of outside directors which represent stakeholders and how those directors are dispensed the throughout the numerous committees. 5; Even if or not board contributors are indemnified and encouraged the in ways to make sure that term of the fulfillment of corporation. The movement of the management and stakeholders are accountable in sense of its overall performance. The committees are made to control the system of the organization like investment, finance, audit reimbursement, nominating or governance. These are made up of the subset of the board participants. Committee independence, board and firm performance have a nice relation among them according to previous researches. For

excellent credit rating, firm performance is higher which bring incentives to all the stakeholders. Board and composition of committees have a relationship according to studies which the overall firm performance is mixed. The various researcher point of view like Baysinger and Buttler (1985) and also Hermaalin and Weisbach (1991) argue that there is no significant relationship between outside directors and firm performance. Bhaggat and Blackk (2000) stated that there is no significant relationship among independence board and firm four measure of performance.. They also state there is negative relation between composition of the board and the firm performance. Klein (1998) precedes the research in the form of board composition and firm performance and she researches the board composition of committees and firm performance and concludes that there is no significant relationship between composition of board and firm performance. She also concludes that there is no association of committee of independence and audit. Therefore, she only further conclude that there is an association between investment committees and percentage of inside administrators on overall performances. According to Bhajraj and Senguptaa (2003) stated that bondholders have little bit danger from management in an enterprise due to this cause the debt cost lower rather than bond ratings. Persistency of this statement firms with higher percentage of outside directors' relish and their bond rating increase and lower the bond yields. Immhoff (2003) stated that when ceo is the board member and chair-person of the firm then board governance is significantly be compromised. This is because of ceo subsequently units the boards schedule.it brings troubles earlier then board. Therefore, CEO has serve the firm as chair-person and have direct influence at the ballot of applicant which the new appointee will not be unbiased of control despite the fact that they be externals. Therefore CEO has a negative impact on credit ranking.

2.2 Why Corporate Governance Affect Credit Rating

Ashbaugh Skaiff et all observe that excellent bond rating is related to the excellent corporate governance and also conclude that chances of likelihood of default and credit score are controlled by corporate governance mechanisms. Ashbaugh Skaiff et all (2006) used four dimensions which are ownership structure and financial stakeholders which was measured by Gomppers also famous as Gomppers index for 24 characteristics and financial disclosures, board size and decision making. The credit scores are excellent for firms which are characterized by way of excessive accruals and independence of board but for ceo authority and stakeholders right it is lower. Research has located comparable outcomes using diff erent surrogates to measure corporate governance. We name the first dimension "employer chance." This increases the risk of management which it might perform with itself and it deviate from firm fee maximization and cause a danger zone for incapable managers. It will arise agency conflict of shareholders and creditors and management shrink the incentive of minority shareholders and creditors. Jenseen and Mecklinng (1976) take movements that increase return DeAanglo and Rice (1983): Dechouw and Sloun (1991); Murphy and Zimmermen (1993) with the objective of increase firm size make doubtlessly unprofitable and its investment probably overall reimbursement. Murrphy (1985); and Jenscen (1986). Firm with good governance must be related to high caliber bond rankings and decrease yield if the governance mechanisms decrease the organization risk. Ajenkiya, Bhajraj and Senguptaa (1999) evidence that normal corporate disclosure practices of a pattern of firms is definitely related to the institutional investors which is composed of outside directors, while Heally, Huttan and Palepo (1999) document that institutional ownership is done by the sustained increase in the credit ratings. Further Beasleey ((1996) conclude that opportunity of financial assertion fraud is negatively related to the board that is composed of outsiders. Moreover, Senguptaa (1998) suggest that there is advantageous relationship among

disclosure governance and bond ratings it result that it is not directly yield the bond ratings and it is effected by corporate governance mechanisms. Various researchers along with Famaa (1980) and Famaa and Jensen (1983) argued that if the performance is poor and negative then outside directors have to pay a recognition price and therefore they attentive decision making take responsibilities as compare to other directors. Rosentain and Wyat (1990) evidenced that out of the board increase can increase the wealth of the shareholders' wile Cottar, Shivdasai and Zenner (1997) also suggested that out of the director shareholders wealth increase. But the fact is that the outside directors may be ineffective both may be appointed with the aid of corporation. board lifestyle alarms the conflict. Maace (1996); and Jensenn (1993) Constant with the arguments. Yermackk (1996) and Bhaggat and Black (1997) states that there is no significant relationship between out of directors which are independent and firm overall performance. Coombess and Watson (2000) conductes the three surveys to know how shareholders evolve and rise markets with the value of corporate governance. three surveys show the result that there is minimum effect of board practice on overall firm performances. Majority of the buyers told that they pay premium for property ruled firms. Dilly and Mahlmann (2010) argued that for lower investment chance and transparency they should use a mechanism of corporate governance. Nordberg (2011). Ranking in this regard clear up most important agent troubles. Gonzalees et all (2004). In opposite, issuers get entry in debt market and decrease the capital costs, increase of score decrease yeild spread to a threat to loose investment. Gonzalees et all (2004). Banks and capacity buyers for their evaluation use ranking as benchmarks for comparison. Empirical research on credit rating which is divided into three line of research. Two of them are measure the record content material of credit scores in different ways. Credit score and company default are measured. Zhuo (2001) and johrion and Zhanng 2007). The second measure record content

material of rating on capital markets. Some financial facts of which the rating are measured and have impartial variables. (Ederington 1985). Corporate governance traits Bhajraj and Senguptaa (2003) and macroeconomic factors. Amatoo and Fourfine (2004). In addition, studies on Altmen and Rejinkan (2006) determine the element of rating chances.

Chapter No 3

DATA COLLECTION AND METHODOLOGY

3.1 Population

The population consists of 21 commercial banks for financial sector and 13 companies for non-financial sector.

21 Commercial banks according to PACRA

13 Companies according to PACRA

3.2 Sample

The sample is selected on the basis of availability of data according to PACRA and JCR-VIS Credit Rating for financial and non-financial sector of Pakistan.

3.3 List of Variables for Corporate Governance

- **Board Size**

  Board Size is measured by total member of board/directors.

  $H_{1:}$ Board size has significnt positive impact on Credit Rating.

- **Board Independence**

  BI are measured by Non-executive directors/ total number of directors according to Kee et.al (2003).

  $H_{2:}$ Firms with Board Independance is associated with Credit Rating.

- **Audit Committee**

Audit committee is calculated total member of audit committee/total number of directors according to Forker's (1992).

H_3: Firms with lower audit committee is associated with Credit Rating.

- **Institutional ownership**

Institutional ownership is measured by shares held by institutional owner/total number of shares according to Lei (2005).

H_4: Firms with higher institutional is associated with Credit Rating.

- **CEO Duality**

CEO duality is measure as a dummy variable if CEO is chairman of board then it is given 1 otherwise 0.

H_5: Firms with negative significant CEO duality is associated with Credit Rating.

3.2.1. Firm's operating loss (LOSS)

When a firm incurs operating losses, the chances of paying off creditors diminish (Ashbaugh-Skaife et al., 2006). This is measured as a dummy variable representing 1 if the net income before extraordinary items is negative in the current year; 0 otherwise. The coefficient of LOSS is expected to be negative.

H_1: There is significant negative relationship between operating loss and Credit rating of firm.

3.2.2. Firm size (SIZE)

This is included as a control variable because smaller-sized firms are assumed to have greater default of risk than larger firms (and vice versa) (Bhojraj and Sengupta, 2003). We expect a positive relationship between SIZE and credit ratings. Firm size is measured as the natural log of total assets.

H_2: This is significant positive relationship between firm size and credit rating.

3.2.3. Market value of equity (MVBV)

The greater the market value of equity relative to book value, the higher the probability of default risk (Bhojraj and Sengupta, 2003). This is because firms with higher MVBV represent high-growth firms that could be associated with greater risk. Thus, we expect a negative relationship between MVBV and credit ratings. This variable is measured as the market value of stock multiplied by the number of shares outstanding divided by the book value of equity at the end of a period.

H_3: Firms with lower MVBV are associated with higher Credit Rating.

3.2.4. Firm's capital intensity (CAPINTEN)

The firm's capital intensity is included to control for differences in the firm's asset structure where firms with lower capital intensity are stated to have higher risk of default and thus lower credit ratings, and vice versa (Ashbaugh-Skaife et al., 2006). This is measured by the gross book value of property, plant and equipment divided by total assets.

H_4: Firms with higher CAPINTEN are associated with higher Credit Rating.

3.2.5. Firm performance (ROA)

Generally, lower performing firms are associated with higher levels of default risk, (Ashbaugh-Skaife et al., 2006; Bhojraj and Sengupta, 2003). Firm performance is measured by return on assets which is the net income before extraordinary items divided by total asset.

H_5: Firms with higher performance are associated with higher Credit Rating.

3.4. Data Collection

Secondary data is used for this study. Corporate governance data ais collected from annual reports, and credit rating data are collected from PACRA website. In this research sample is composed of financial and non-financial sector and sample pertaines to the period June 2008 to June 2015.

3.5: Data Analysis

Table 3.5

In this table 3.5 the credit rating is discussed in this context. Credit rating weightage are assigned in this scenario which are given in table.

Ratings	Weightage
AAA	1
AA+	0.95
AA	0.9
AA-	0.85
A+	0.8
A	0.75
A-	0.7
BBB+	0.65
BBB	0.6
BBB-	0.55
BB+	0.5
BB	0.45
BB-	0.4
B+	0.35
B	0.3
B-	0.25
CCC	0.2
CC	0.15
C	0.1
D	0.05

AAA:

Credit quality is highest because of risk factor is negligible.it is more than risk free government of Pakistan's debt.

AA+, AA, AA-

It has also high credit quality where protection factors are strong but because of economic condition risk is the modest but may vary slightly from time to time.

A+, A, A-

It has good credit quality where its protection factors are adequate, risk factors are varying from changes in the economy.

BBB+, BBB, BBB-

In this category, Credit quality is adequate as factors which protect are enough and reasonable. In case if there is any change in the economy risk factor consider as a variable.

BB+, BB, BB-

It seems like obligation like to be consider as factor of production have capacity of weakening in case if there is any change in the economy.

B+, B, B-

Obligation seems to be fulfill if factor of production has capacity to have flexible in case if there is any change in the economy. In this category there is a chance of upward or downward movement.

CCC

In this category there is high level uncertainty towards its obligation where factor of production is risky.

CC

There is high chance of default risk.

C

Very risky

D

It looks towards bankruptcy.

3.6 Descriptive Statistics

The statisticall behaviour of the data is captured by the descriptive statistics. The companies' corporate governors' attributes and credit rating and other variables for a period of 2008 to 2015 are examined. Out of 32 companies, 13 pertains to non-financial sector and rest of the companies' comprises of financial sector. Descriptive statistics include mean median mode, skewness, minimum and maximum point of the data.

3.7. Correlation analysis

Correlation is used to identify the strength of relationship among different variables. The coefficient of variable indicates negative and positive relationship among different variables. It ranges from -1 to +1. High correlation among two variables indicate high chance of multi collinearity.

3.8 Panel Regression

This study uses panel data to explain the impact of financial and non-financial sector on credit rating. Data is comprising of eleven variables for each company. Few assumptions are based on slope coefficient, intercept and error term to measure the panel regression model.

3.9 Fixed Effect Model

In fixed effect model slope coefficient are constant but intercept vary from industry to industry. It assumes that there may not be any temporarily effect in series but study may carry cross sectional effect.

3.10 Redundant Fixed Effect Model

This test describes among the common and fixed effect model. If cross section F-stat and Chi-square are less than 0.05 then fixed effect model is used and if the p-value is insignificant then common effect model is applied.

3.11 Random Effect Model

In random fixed effect model intercept is considered as error term and it has nothing to do with sectors. This model explains the variation among different companies. It has following benefits.

- With comparison of fixed effect method, it has few restrictions.
- It gives the luxury for additional independent variable with same number of observation in a group.

3.12 Huasmen Test

To decide between from fixed and random effect model, hausmen test is used and if p-value is less than 0.05 then fixed effect model is applied where as if it is insignificant then random effect model is applied.

3.13 Panel Data

The OLS technique is used in order to explain the Credit rating. Data consists of eleven variable. The Credit rating is the dependent variable and for each company credit rating is acquired from PACRA. Other variables include independent Board size, institutional ownership, CEO duality, Audit committee, Firm capital intensity, firm size, firm performance, firm operating loss, market value of equity.

The equation is used to explain the governance variables

Credit rating = f (corporate governance attributes, firm characteristics)

Common Effect Equation:

Credit rating=$\beta_0 + \beta_1(AC)i_t + \beta_2(B.I)i_t + \beta_3(BS)i_t + \beta_4(CEO)i_t + \beta_5(FCI)i_t + \beta_6(F.P)i_t + \beta_7(FOL)i_t + \beta_8(ISO)i_t + \beta_9(MVBV)i_t + \beta_{10}(Size)i_t$

Random Effect Equation:

$$Cradit\ Rating_{i,t} = \beta_0 + \beta_1(AC)i,t + \beta_2(B.I)i,t + \beta_3(BS)i,t + \beta_4(CEO)i,t + \beta_5(CFI)i,t + \beta_6(F.P)i,t + \beta_7(FOL)i,t + \beta_8(ISO)i,t + \beta_9(MVBV)i,t + \beta_{10}(Size)i,t + (V_i + \mu_{i,t})$$

Fixed Effect Equation:

Credit rating=$\beta_0 + \beta_1(AC)i_t + \beta_2(B.I)i_t + \beta_3(BS)i_t + \beta_4(CEO)i_t + \beta_5(FCI)i_t + \beta_6(F.P)i_t + \beta_7(FOL)i_t + \beta_8(ISO)i_t + \beta_9(MVBV)i_t + \beta_{10}(Size)i_t + a_i + u_{i,t}$

Chapter 04

4.1 Descriptive Statistics:

Table 4.1 represents the descriptive statistics of financial sector comprises of21 commercial banks. Descriptive statistics consists of mean, median, maximum, minimum, standard deviation, skewness and kurtosis. To calculate the average of the data, mean is used. Uncertainty is described by the standard deviation and to find out the asymmetry in the data minimum and maximum uses.

Table 4.1

reports that descriptive statistics for financial sector for the period of 2008-2015.

Descriptive Statistics for the Financial Sector period of 2008-2015

	CR	AC	BI	BS	CEO	FCI	F.P	FOL	ISO	MVBV	SIZE
Mean	0.87	0.42	0.75	8.60	0.35	0.02	0.09	0.14	0.79	4.83	19.4
Median	0.90	0.41	0.75	8.00	0.00	0.02	0.01	0.00	0.86	0.86	19.5
Max	1.00	0.85	1.00	13.0	2.00	0.11	0.19	1.00	1.00	216	21.5
Min	0.60	0.25	0.18	4.00	0.00	0.00	-0.09	0.00	0.24	0.00	16.7
Std.	0.09	0.10	0.12	1.69	0.49	0.01	0.02	0.35	0.19	27.7	1.01
Skew	-0.61	1.08	-1.50	0.76	0.78	2.22	0.81	2.03	-1.14	7.11	-0.31
Kurt	2.557254	4.828930	6.347434	3.572531	2.021159	10.86637	18.03612	5.124405	3.124721	51.79975	2.644102

In table 4.1 the mean value of Credit Rating is .87000 and its standard deviation is .095858 for the period of 2008-2015.the minimum and maximum are .6000 and 1.0000.

The mean value of Audit Committee is .421192 and standard deviation is 0.101467. Its minimum and maximum is .25000 and .857143. The results indicate that the minimum audit committee size is 25% and maximum is 85.7%.

BI mean value is .751791 and standard deviation is 0.126362. Its minimum point is .181818 and maximum point is equal to 1.0000. The results indicate that the average number of independent duration is 75%.

Board size has a mean value of 8.606250 and its standard deviation is 1.697563. Its minimum and maxima is 4.000 and 13.0000. The results show that the minimum board size is 4 and maximum is 13.

Mean value of CEO is .35000 and standard deviation is 0.491436. Minimum and maximum value is 0.0000 and 2.00000.

Mean value of FCI is .028199 and standard deviation during the period is 0.016099. Also it has minimum and maximum values are .005986,.115448.

Firm performance mean value is .009337 and standard deviation is 0.026511. values of minimum and maximum are -.09089,.190318.

Mean value of FOL is .143750 and standard deviation is .351938 and also it has minimum and maximum values are 0.0000 and 1.0000.

Institute shareholding mean value is .792339 and it has standard deviation is 0.199718. It has minimum value is .241000 and maximum is 1.00000.

Market value of equity has a mean value of 4.837097 and its standard deviation level is 27. 75002. It has minimum and maximum values are .009896,216.2842.

Firm Size mean value is 19.42879 and it has standard deviation is 1.017469. It has minimum and maximum values are 16.76460 and 21.52006.

Table 4.1.2

Reports the descriptive statisitics for non fiancial sector for the period of 2008-2015

Descriptive Statistics of Non-Financial Sector for the period of 2008-2015

	CR	AC	BI	BS	CEO	FCI	FOL	ISO	MVBV	PERFORMANCE	SIZE
Mea	0.78	0.46	0.45	8.42	0.20	0.69	0.10	0.18	2.89	10.40	14.5
Med	0.8	0.42	0.44	8	0	0.60	0	0.20	0.98	8.4	15.4
Max	1	0.87	0.57	12	1	5.86	1	0.40	87.0	42.7	19.8
Min	0.05	0.25	0.28	5	0	0.00	0	0.00	-7.02	-9.93	6.70
Std.	0.18	0.16	0.08	1.67	0.40	0.79	0.30	0.11	9.14	10.17	3.90
Ske	-2.46	1.10	-0.19	0.58	1.48	4.12	2.56	0.02	7.67	1.28	-0.3
Kurtosis	10.67056	3.547957	2.011835	2.257349	3.205393	25.13826	7.572825	1.974314	70.25727	4.386123	1.74485

In table 4.1.2 the mean value of Credit Rating is 0.788462 and its standard deviation is 0.095858 for the period of 2008-2015.the minimum and maximum are 0.05 and 1.0000.The result show that the minimum credit rating is D and the maximum credit rating is AAA.

The mean value of Audit Committee is 0.461679 and standard deviation is 0.16557. Its minimum and maximum are 0.25 and 0.875. The results indicate that minimum size of audit committee is 25% and maximum is 87.5%.

BI mean value is 0.453737 and standard deviation is 0.088734. Its minimum point is 0.285714 and maximum point is equal to 0.571429. The results show that average number of independent duration is 45.3% and its minimum independence director is 28.5% and maximum is 57.1%.

Board size has a mean value of 8.423077 and its standard deviation is 1.670372. Its minimum and maxima is 5 and 12.0000. The results indicate that average 8.4 number of directors in board and its minimum size is 5 and maximum is 12. Mean value of CEO is 0.201923 and standard deviation is 0.403379. Minimum and maximum value is 0.0000 and 1.00000.

Mean value of FCI is 0.694543 and standard deviation during the period is 0.793533. Also it has minimum and maximum values are 0.000487, 5.861943.

Firm performance mean value is 10.40933 and standard deviation is 10.17191. values of minimum and maximum are -9.93, 42.7.

Mean value of FOL is 0.105769 and standard deviation is 0.309031 and also it has minimum and maximum values are 0.0000 and 1.0000.

Institute shareholding mean value is 0.181159 and it has standard deviation value is 0.119163. It has minimum value is 0.00962 and maximum is 0.400051. The results show that there are 18% shares are held by institution.

Market value of equity has a mean value of 2.894998 and its standard deviation level is 9.149124. It has minimum and maximum values are -7.0264, 87.00229. Firm Size mean value is 14.52005 and it has standard deviation value is 3.903965. It has minimum and maximum values are 6.705394 and 19.8414

4.2 Correlation Analysis: This table represent the correlation analysis of financial and non-financial sector of Pakistan for the period 2008-2015.

Table 4.2

Correlation Analysis of Financial and Non-Financial Sector for the period of 2008-2015

	CR	AC	BI	BS	CEO	FCI	FP	FOL	Iso	Mvb	size
CR	1										
AC	0.083	1									
BI	0.286***	-0.082	1								
BS	0.037	-0.545***	-0.013	1							
CEO	0.306***	0.063	0.155***	-0.044	1						
FCI	-0.231***	0.159***	-0.391***	0.028	-0.208***	1					
FP	-0.244***	0.095***	-0.498***	0.048	-0.185***	0.363***	1				
FOL	-0.225***	-0.108***	0.055	-0.034	-0.144***	-0.004	-0.046	1			
ISO	0.167***	-0.282***	0.675***	0.073	0.183***	-0.512***	-0.557***	0.136***	1		
Mvb	0.073	-0.006	0.087	0.082	-0.079	-0.028	-0.027	-0.047	-0.079	1	
size	0.356***	0.097	0.509***	0.06	0.171***	-0.379***	-0.440***	-0.189***	0.570***	0.037	1

Table 4.2 demonstrates the correlation among different variables. Result indicates there is positive but statistically insignificant relationship among audit committee and market value of equity with credit rating. Board Independence has a positive and statistically significant relationship with Credit Rating. Board Size has a positive but statistically insignificant relationship with Credit Rating. CEO Duality has an insignificant but positive relationship with Credit Rating. Firms Capital Intensity have a negative but significant relationship with Credit Rating. Firm Performance also has significant but negative relationship with Credit Rating. Furthermore, Firm Operating Loss has negative but significant relationship with Credit Rating. Institutional shareholding has positive but insignificant relationship with credit rating. Firm Size has positive and significant relationship with Credit Rating.

Board Independence has negative and insignificant relationship with Audit Committee. Board Size has negative and significant relationship with audit committee. COE Duality and Firm size has positive and insignificant relationship with audit committee. Firms Capital Intensity and Firm Performance both have a positive and significant relationship with audit committee. Firm Operating loss and Institutional shareholding both are significant and negative relationship with audit committee. Market value of equity has negative but insignificant relationship with credit rating. Board Size has negative and insignificant relationship with Board Independence. Cheif executive officer, institute shareholding and Firm Size have a positive and significant relationship with Board independence. Firm capital intensity and Firm performance both are negative but significant relationship with Board Independence. Firm Operating loss and market value of equity are positive but insignificant relationship with board independence.

Firm operating loss and cheif executive officer have a negative but insignificant relationship with Board Size. Firm capital intensity, firm performance, institute shareholding, market value of equity and firm size have a positive but insignificant relationship with board size.

Firm capital intensity, Firm performance and firm operating loss are negative but significant relationship with cheif executive officer. Institute shareholding are positive and significant relationship with cheif executive officer. Market value of equity has a negative but statistically insignificant relationship with cheif executive officer. Firm size has a positive but significant relationship with cheif executive officer.

Firm Performance has a positive and significant relationship with firm capital intensity. Institutional shareholding and firm size both are negative but statistically significant relationship with firm capital intensity. Firm operating loss and market value of equity both are negative and insignificant relationship with firm capital intensity.

Firm operating loss and market value of equity both are negative and insignificant relationship with firm performance. Institute shareholding and firm size have a negative but statistically significant relationship with firm performance. Institutional shareholding has a positive but significant relationship with firm operating loss. Market value of equity has a negative but insignificant relationship with firm operating loss and firm size has negative but significant relationship with firm operating loss. Market value of equity has positive but insignificant relationship with institute shareholding and firm size has a negative but significant relationship with institute shareholding. Firm size has positive but insignificant relationship with market value of equity.

4.3 Hausmen Fixed Effect Test for Financial Sector 2008-2015

Table 4.3.1

This table represent hausmen fixed effect test for financial sector for the period of 2008-2015.

Effects Test		Statistic	d.f.	Prob.
Cross-section F		64.27324	-19,130	0
Cross-section Chi-square		374.5932	19	0

The redundancy fixed effect test is used for selection among common effect model and fixed effect model. The value of probability if less than <.05 then wo go towards the fixed effect model. Here the value of probability is less than .05.

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		17.90918	10	0.0565

The Hausmen test is applied to decide between fixed effect and random effect model. The p value is significant indicating that fixed model is applied.

4.4 Panel Data Analysis of Financial Sector 2008-2015

	Common Effect			Fixed Effect			Random Effect		
Variable	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
	Variable	Coefficient							
C	-0.57	-4.5	0	0.3	3.2	0	0.22	2.39	0.01
AC	-0.09	-1.69	0.09	-0.03	-1.38	0.16	-0.03	-1.36	0.17
BI	0.07	2.05	0.04	0	0.1	0.91	0	0.15	0.87
BS	0.004	1.35	0.17	0	0.27	0.78	0	0.5	0.61
CEO	0	0.96	0.33	-0.01	-2.43	0.01	-0.01	-2.12	0.03
ISO	-0.01	-0.59	0.55	-0.01	-0.88	0.38	-0.01	-0.85	0.39
FCI	-0.03	-0.11	0.9	-0.08	-0.43	0.66	-0.03	-0.18	0.85
FIRM_PERFORMANCE	-0.27	-1.31	0.19	-0.07	-0.97	0.33	-0.07	-0.94	0.34
FOL	-0.01	-0.78	0.43	0	0.32	0.74	0	0.37	0.71
MVBV	0	2.49	0.01	0	1.86	0.06	0	2.1	0.03
SIZE	0.07	12.49	0	0.03	6.65	0	0.03	7.77	0
				Effects Specification					
Adjusted R-squared		0.67		Adjusted R-squared	0.96			Adjusted R-squared	0.36
F-statistic		33.88		F-statistic	148.05			F-statistic	10.25
Prob(F-statistic)		0		Prob(F-statistic)	0			Prob(F-statistic)	0

In table 4.4 Fixed effect model the constant value of coefficient is (.309374) and its t-statistic value is (3.208274) and also its p-value is positive and significant with value (0.0017). Audit Committee has a coefficient value is (-0.037745) and its t-statistics with p-value is (-1.388993), (0.1672) which is negative and insignificant. Board independence coefficient value is (0.001891) and its t-statistic value (0.107965) with p-value (0.9142) which is positive and insignificant. Board size has coefficient value (0.00415) where its t-statistic value is (0.275072) with p-value is (0.7837) which is positive and insignificant. Cheif executive officer variable has coefficient value (-0.01251) where its t-statistics is (-2.432004) with p-value (0.0164) which is negative but significant. Institute shareholding shows the result that its coefficient value (-0.016933) with t-statistics value is (-0.880406) and its p-value is (0.3803) which is negative and insignificant. Firm Capital intensity shows the coefficient value (-0.081411) and the result about its t-statistic is (-0.431593) its p-value is (0.6668) which is negative and insignificant. Firm performance coefficient value is (-0.075997) and its t-statistic is (-0.971468) with p-value (0.3331) which is negative and insignificant. Firm operating loss shows the result that it is positive and insignificant with coefficient value (0.00203) t-statistic (0.323867) with p-value (0.7466). Market value of equity also shows the same result with coefficient value (0.000126), t-statistic (1.86201) with p-value is (0.0649) which is positive but insignificant. Firm Size results are Coefficient (0.030441) and its t-statistics (6.651327) with p-value (0) which is positive and significant.

Corporate governance has an effect on credit rating here we use OLS with panel data in which the dependent variable is credit rating and other variables are governance attributes.

The result indicates that the model is statistically significant with p-value (<5%).To start with coefficient of audit committee is negative and insignificant which shows that it does not effect on credit rating. Board Independence also has no effect on credit rating because it is positive but insignificant. Board Size is positive but statistically insignificant and it also does not effect on credit rating. Chief executive officer is negative but statistically significant it means that if CEO performance decrease it effect the credit rating and if their performance increases it increases the firms credit rating. Institute shareholding are negative but statistically insignificant which shows that it has no effect on credit rating. We also have not find the significance in Firm capital intensity but it is negative and it is not associated with credit rating. We find that Firm performance is not associated with credit rating in financial sector which include 21 banks we say that firm performance is negative and has no effect on credit rating. Firm operating loss explains the results that it is positive but insignificant it has also no effect on credit rating. Market value of equity has also a positive but statistically insignificant which shows that it has no impact on credit rating. Firm size has a direct impact on credit rating it has positive but statistically significant because firm size measure credit rating if firm size is greater than it also effects credit rating.

The adjusted R squared value is (0.964057) and its F-Stat value is (148.0563) and its p-value overall is significant. While in Random effect model Audit committee, Board Independence, Board size, Institute shareholding, Firm Capital Intensity, Firm performance, firm operating loss are insignificant and has no effect on credit rating in financial sector

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4.5 Hausmen Fixed Effect Test for Non- Financial Sector 2008-2015

Table 4.5

This table repesents the fixed effect test for non-financial sector 2008-2015

Effects Test		Statistic	d.f.	Prob.
Cross-section F		43.78031	(12,81)	0
Cross-section Chi-square		209.3552	12	0

The value of probability if less than <.05 then we go towards the fixed effect model. Here the value of probability is less than .05.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	28.54178	10	0.0015

The Hausmen test is applied to decide between fixed effect and random effect model. The p value is significant indicating that fixed model is applied.

4.6 Panel Data Analysis of Non-Financial Sector 2008-2015

	Common Effect			Fixed Effect			Random Effect		
Variable	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
C	0.58	3.25	0	0.78	5.97	0	0.82	6.41	0
BI	0.51	2.74	0	0.27	3.09	0	0.25	2.96	0
BS	0	-0.25	0.8	-0.01	-1.17	0.24	-0.01	-1.48	0.14
CEO	0.1	2.33	0.02	-0.05	-1.48	0.14	-0.02	-0.58	0.56
ISO	-0.44	-2.73	0	0.27	1.15	0.25	-0.07	-0.39	0.69
FCI	-0.03	-1.49	0.13	0.01	1.62	0.1	0.01	1.21	0.22
FOL	-0.02	-0.41	0.68	0.11	4.43	0	0.11	4.24	0
MVBV	0	0.36	0.71	0.00E+00	0.07	0.93	0	0.22	0.82
PERFORMANCE	-0.001	-0.82	0.41	0	-0.66	0.5	0	-0.59	0.55
SIZE	0	0.63	0.52	0	0.77	0.43	0.002	1.07	0.28
AC	0.1	0.69	0.48	-0.24	-2.21	0.02	-0.16	-1.53	0.12
				Effects Specification					
Adjusted R-squared	0.21			0.87			Adjusted R-squared	0.19	
F-statistic	3.79			35.11			F-statistic	3.43	
Prob(F-statistic)	0			0			Prob(F-statistic)	0	

In table 4.4 demonstrates that fixed effect model the constant value of coefficient is (0.789353) and its t-statistic value is (5.971081) and also its p-value is positive and significant with value (0.00). Audit Committee has a coefficient value is (-0.24822) and its t-statistics with p-value is (-2.212016),(0.0298) which is negative and significant. Board Independence coefficient value is (0.275625) and its t-statistic value (3.098924) with p-value (0.0027) which is positive and significant. Board size has coefficient value (-0.011115) where its t-statistic value is (-1.177242) with p-value is (0.2425) which is negative and insignificant. Cheif executive officer variable has coefficient value (-0.054618)

where its t-statistics is (-1.483636) with p-value (0.1418) which is negative but insignificant. Institute shareholding shows the result that its coefficient value (0.270226) with t-statistics value is (1.157072) and its p-value is (0.2506) which is positive and insignificant. Firm Capital intensity shows the coefficient value (0.018158) and the result about its t-statistic is (1.626536) its p-value is (0.1077) which is positive and insignificant. Firm performance coefficient value is (-0.000536) and its t-statistic is (-0.662413) with p-value (0.5096) which is negative and insignificant. Firm operating loss shows the result that it is positive and significant with coefficient value (0.116937) t-statistic (4.433985) with p-value (0.000). Market value of equity also shows the same result with coefficient value (6.16E-05), t-statistic (0.079125) with p-value is (0.9371) which is positive but insignificant. Firm Size results are Coefficient (0.001706) and its t-statistics (0.77777) with p-value (0.439) which is positive and insignificant.

The results indicate that in Non-financial sector model is statistically significant (p-value<5%).To start with coefficient of Board Independence is positive and statistically significant it shows that board independence is associated with credit rating which is consistent

with Bhojraj and Sengupta (2003). The study about Bhojraj and Sengupta stated that firm with independence board have a positive impact on rating which decreases the cost of debt in US. Board Size is negative but statistically insignificant which reveals that higher board size are less effective and have no best monitoring which is consistent with the

Eisenberge et al (1998). his study shows that larger board size has arisen the agency problems. Cheif executive officer also negative but statistically insignificant CEO results reveals that it is costly for firms when the CEO has too much control on board of directors. Institute shareholding has positive but statistically insignificant which shows that it has no impact on credit rating. Institute shareholders have large number equity position in an organization so they have great influence in the management. Firm capital intensity is positive but statistically insignificant which shows that it has no effect on credit rating. Firm operating loss is positive but statistically significant which has direct impact on credit rating. Market value of equity is positive but statistically insignificant and has no effect on credit rating. Firm performance is negative but statistically insignificant and it also has no effect on credit rating. Firm size is positive but statistically insignificant and it has no impact on credit rating. The adjusted R squared is 0.87933 which is better predictive power. And its F-stat p-value is significant. While in Random effect model Board size, Cheif executive officer, institute shareholders, firm performance and audit committee are negative and insignificant which shows that it has no effect on credit rating. The adjusted R square is 0.191217 and significance p-value is 0.000724.

4.7 PLS Dummy Variable Analysis of Financial and Non-Financial Sector 2008-2015

Variable	Coefficient	t-Statistic	Prob.
C	0.580332	5.051851	0
AC	0.071159	0.866166	0.3872
BI	0.141467	2.021533	0.0443
BS	0.007495	1.280322	0.2016
CEO	0.068356	3.839816	0.0002
ISO	-0.103337	-2.049262	0.0415
FCI	-0.024559	-1.518414	0.1302
FIRM_PERFORMANCE	-0.001647	-1.32958	0.1849
FOL	-0.055152	-2.199767	0.0287
FS	-0.023129	-0.50869	0.6114
MVBV	0.000167	0.462658	0.644
SIZE	0.007958	2.340198	0.0201
Adjusted R-squared	0.224462		
F-statistic	7.919966		
Prob(F-statistic)	0		

In table 4.7 shows the constant value of Coefficient is (0.580332) and its t-statistic value is (5.051851) and its p-value is (0.000) which is positive and significant. Audit committee is positive but statistically insignificant with coefficient value (0.071159) and its t-statistic value is

(0.866166) with p-value (0.3872) which has no impact on credit rating overall analysis of financial and non-financial sector.

Board Independence is positive but statistically it is significant.it is associated with credit rating. This means that it has positive impact o rating which contributes to decrease the cost of debt. Board size is positive but statistically insignificant which shows that it has no effect on credit rating larger board size arises the confliction of agency problems. Cheif executive officer is positive but statistically significant which shows that it has impact on credit rating.

CEO has main role in leading any organization because it is the cheif of board of directors and has control over it. It should be because it works for the benefit of all the stakeholders. It reduces the default risk. Institute investor is negative but statistically significant it shows that it has higher credit rating is associated with small portion of institutional investors because of they have major portion of shares in an organization they put pressure on management for their interest. Firm capital intensity is negative but statistically insignificant which shows that is has no impact on credit rating. Firm performance is also negative but insignificant it also has no impact on credit rating.it means that performance is not associated with higher credit rating. Firm operating loss is negative but statistically significant it shows that it is associated with credit rating This result provides that credit rating is lower for firms reporting with higher operating loss.

FS is used as a dummy variable between financial and non-financial sector which is negative and insignificant. It is computed as 0 for financial sector and 1 for non-financial sector. Market value of equity is positive but statistically insignificant which shows that it has no impact on credit

rating. Firm size is positive and statistically significant which shows that it has associated with credit rating. The adjusted R squared is 0.224462 and F-stat p-value is 0.000 which is significant.

Chapter 05

5.1 Conclusion

The main purpose of this research is to investigate whether corporate governance has an impact on credit rating. The empirical study consists of 21 commercial banks of financial sector and 13 non-financial companies of Pakistan for the period of 2008-2015 using panel data analysis and least square dummy variable analysis.

The findings are consistent with other researches, indeed the study find that in case of financial sector, CEO duality is negative it means that CEO performance decreases the n it effects the credit rating. Their performance in organization is mandatory because it increases, firms credit rating also increases. Firm size is positive it has direct impact on credit rating. Firm size increment brings increment in credit rating which lower the default risk. In case of Non-financial board independence is positive which is associated with credit rating and it is consistent with Bhojraj and Sengupta (2003). Board Independence decreases the cost of debt and hence likelihood of default risk decreases with increase of credit rating. Firm operating loss (FOL) has positive impact on credit rating which means that it lowers the likelihood of default risk and increase the credit rating. Audit committee is positive and it effect the credit rating.

5.2 Recommendation Policy

As proven from the primary analysis that credit rating is significantly influence from corporate governance system, financial as well as non-financial sector desirous of strong credit rating should implement Corporate governance rules, policies and procedures.

For attracting ever increasing number of investor, both sector financial or non-financial should display strong corporate governance for building investor trust by increasing transparency in investment procedures.

In Pakistan all initiations do not practice good governance because of the general trend of running business in families and agency theory problem. This monopoly of family business should be overtaken by government by providing opportunities to young talent generations to run business according to the changing market trend of strong corporate governance as number of companies. (e.g. PACRA, JCR-IS) have begun to assemble company's corporate governance practices along various dimension.

5.3 Direction for Future Research

This paper provides directions for future research by introducing more other explanatory variables to make it more significant. In addition, the study that conduct should be considered as a preliminary to a more complete study on a larger sample.

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