Moderating Effect of Firm Size on the Relationship between Corporate Governance and Corporate Bankruptcy

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Dedicated to my Ammi and Baba

Without whom none of my success would be possible

(Acceptance by the Viva Voice Committee)

of Thesis: "Relationship Between Corporate Governance and Firm Bankruptcy: The Moderation Role of Firm Size."

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ABSTRACT

This study focuses on investigating the relationship between corporate governance and corporate bankruptcy especially when firm size acts as a moderator by using Common effect model. The data for the study is extracted from annual reports of the companies being used for the study. A random sample of 100 companies listed at KSE is used and sampling period ranges from 2007 to 2013. The data has been tested for econometric problems including normality, stationarity and multicollinearity by using Skewness, kurtosis, Augmented Dickey Fuller test and Correlation matrix. Results show that the data is normal, stationary at first difference and that there is no relation among the independent variables. Panel regression has been used to test the said relationship. On the basis of F-statistics value, common effect model has been chosen. Results of common effect model suggest that governance plays a significant role in moving a firm either towards or away from bankruptcy. As far as the moderating variable is concerned firm size (moderator) has been found to significantly moderate the relationship between governance variables and corporate bankruptcy. Board independence and board size relationship with bankruptcy gets a bit weakens after the addition of the moderator variable i.e. firm size whereas CEO-duality and ownership concentration gets stronger with corporate bankruptcy when the moderator is introduced. In short firm size was found to have considerable effect and moderates the said relationship of the study.

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DECLARATION

I hereby declare that this thesis, neither as a whole nor as a part thereof, has been copied out from any source. It is further declared that I have prepared this thesis entirely on the basis of my personal effort made under the sincere guidance of my supervisor. No portion of the work, presented in this thesis, has been submitted in support of any application for any degree or qualification of this or any other university or institute of learning.

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CHAPTER # 01

INTRODUCTION

1.1 Background and Purpose of Study

The relationship between corporate bankruptcy and governance characteristics is one of the central issues of concern in the field of research. Daily and Dalton (1994) regarded it an important perspective for examining and investigating the strategic management of an organization. The concept of corporate governance evolved basically with the emergence of some financial scandals or corporate issues that bring a revolution in the entire business world[1]. This gives rise to the emergence of a new phenomenon called bankruptcy that led manager and researchers to determine the relationship between corporate governance and firm bankruptcy in order to investigate the possible causes for it.

A number of researchers thereby have worked on the determination of possible relationship between corporate governance and bankruptcy (Shleifer &Vishney, 1997). Gilson (1990) found firm's bankruptcy risk to be significantly associated with different governance variables. While studying board composition and structure variable Daily and Dalton (1994) reported in their study that a relationship exists between governance variables and bankruptcy. They concluded that organizations in which the CEO also serves the role of board chairperson are more inclined to bankruptcy. The rationale was to avoid the dominance of a single individual in corporate boards and ensuring a higher degree of the company's board supervision with the introduction of more and more

[1]For example: Enron scandal 2001, Lehman Brothers scandal 2008, Dynergy scandal 2012, respectively in America, Taj company scandal in Pakistan and many more.

independence (McColgan, 2001).

Firm size has been found to moderate the relationship between corporate governance and firm's bankruptcy risk. Fama and Jensen (1983) suggested that the structure of a firm largely depends upon the complexity of its operations as big and complicated processes lead to larger hierarchy firm. So is the case with board size as the firm grows its board size also increases because it requires more and more members in the board for overseeing its functions (Boone et al. 2007). Furthermore larger firms need more and more independent directors on the board for its effective monitoring and the separation of role of Board Chairperson and the CEO (Bathula, 2008). Whereas as the firm grows in size the cost of getting a percent of ownership moves up and so make negative relation with ownership concentration (Samuel, 2013). Jensen and Meckling (1976) argued that as the firm grows in size, the associated agency costs also moves up as larger scope of activities needs more supervision and additional cost for efficient management (Bathula, 2008). Similarly Lehn et al. (2003) also reported that growing firm size lead towards increasing agency costs and may increase the possibility of bankruptcy for a firm (Samuel, 2013).

Platt and Platt (2012) also reported the relation between corporate board and risk of bankruptcy. Consistent with the result of Darrat et al (2010) they found that firms having larger boards, less number of outside directors, a large number of members serving as the CEOs of other organization have lower bankruptcy risk. Pourkazemi and Abdoli (2012) while studying the impact of non-executive board and ownership concentration on bankruptcy found a negative relation between non-executive board,

ownership concentration and bankruptcy. Robinson et al (2012) reported a positive relationship between less number of outside director and bankruptcy while negative when the opposite is true. Nakano and Nguyen (2012) while searching the relationship between corporate board size and the corporate risk taking found that firms having larger board size not only suffer from lower performance volatility but also low bankruptcy risk. Furthermore they also added that the effect of board size is less significant when an organization have more investment opportunities.

The most recent work on the relationship between these variables has been reported by Mokarami and Mote-fares (2013). Using Cox regression methodology, the study reported significant results for some variables and insignificant for other. The governance variable (CEO change) has been reported to have a significant relation with bankruptcy while board size, ownership and percentage of non-Executive directors have been found to have no relation with bankruptcy. However, Pourkazemiand Abdoli (2012) had found that a significantly negative relation exists among independent non-Executive board, ownership concentration and corporate bankruptcy while working on companies listed on the Tehran stock exchange.

The study therefore focuses on investigating the relationship of corporate governance attributes including board variables (board size, CEO duality and Board independence or outside directors) and ownership concentration with corporate bankruptcy where firm size acts as a moderating variable. The study uses board variables (including board size, board independence and CEO duality) and ownership concentration as proxy for measuring corporate governance consistent with Daily and

Dalton (1994); Pourkazemi and Abdoli (2012); Mokarami and Motefares (2013); Robinson et al (2012).

1.2 Research Gap and Rationale of the Study

Byreviewing literature on corporate governance parameters and corporate bankruptcy the researchers has found that although large amount of work has been done on the relationship between corporate governance variables and a firm's bankruptcy risk (Mokarami & Motefares, 2013; Pourkazemi & Abdoli, 2012; Platt & Platt, 2012; Darrat et al, 2010; Daily & Dalton, 1994;). But the gap identified by the researcher is that up to the knowledge of the researcher very less amount of work has been done on the association specifically when firm size is used as a moderating variable. In most of the studies firm size has been used as control variable (Hitt et al, 1997; Lu & Beamish, 2004; Hsu et al. 2013; De-Massis, 2013; Garcia-Ramos & Garcia-Olalla, 2011; Bliss et al. 2011; Mashayekhi & Mohammad, 2008; Bhabra, 2007; Kim et al. 2007). Furthermore in Pakistan most of the researchers have concentrated either on the bankruptcy by estimating different models for prediction of firm bankruptcy (Adnan & Aziz, 2006; Abbas & Rashid, 2011) or either on corporate governance by focusing on its relation with other firm variables as firm performance, profitability and so on (Hameed et al., 2013; Dar et al., 2011; Iqbal, 2013; Cheema & Din, 2013). So this research would be a contribution to the literature.

1.3 Significance

1.3.1 Practical Significance

The study is of great significance to investors and creditors since they will be the parties that will be more affected if a company gets bankrupt. Further they can well

predict whether the company will run into bankruptcy or not after scrutinizing the financial performance of an organization. This study would therefore help firms in adapting their decisions processes to their business environment. In particular they should try to adapt their board size to the investment opportunities available to it, decide whether a dual structure would be better or not and that outside independent directors should be included in the board or not. Furthermore the study would also help organization in maintaining optimal ownership concentration in order to safeguard firm from bankruptcy.

1.3.2 General Significance

Thecorporate governance code being developed in Pakistan has gain great significance in the developing world especially after the financial crises being faced by Asian nations in 1997. Initially the code of governance was developed in 2002 by the Central Bank of Pakistan which has been amended in 2012. Although the emphasis on governance structures have been increasing but companies still are facing problem especially in their control and monitoring mechanisms. The study would help Pakistani firms in investigation and evaluation of the ability of different governance attributes in predicting bankruptcy apart from the traditional models which were basically based on firm attributes and accounting ratios. Since a firm mostly file for bankruptcy when it became less profitable and moves in losses, so this study would therefore make Pakistani firms capable of understanding the explanatory power of different governance variables apart from the traditional accounting ratios approach. No doubt these ratios are good at predicting the current performance of organizations, the governance variables would help in providing a framework for firms within which they can operate and therefore can posit effects that are long lasting.Although great deal of work has been done on the

relationship between the variables but less work has been reported in Pakistan, this study intends to fill in the gap.

1.4 Theoretical Foundation

The impact of governance variables with bankruptcy has been studied by a number of researchers (Daily & Dalton, 1994; Pourkazemi & Abdoli, 2012; Mokarami & Motefares, 2013; Platt & Platt, 2012; Nakano & Nguyen, 2012). The relationship between corporate governance and firm bankruptcy has been reviewed by practitioners under different theoretical frameworks which gives different perspectives discussed as;

The agency theory reflects that there exist a relation between governance attributes and bankruptcy. This theory is likely shared by shareholders (principal), managers (agents) and board participants or members for understanding the governance of an organization (Ghoshal, 2003; Sundaramurthy & Lewis, 2003; Albrecht et al., 2004). The theory argues that there are agency relationship between the principal shareholders and another party that is elected by them to carry out some sort of services on their behalf. In other words it is a contract between one or more persons (principal shareholder) and another party (the agent/s), according to which the agents execute some authority of the principal and perform some services on his/her behalf. Now if the agent is utility maximizers and works in the best interest of the Principal (s) the firm as well as shareholders value increases. Otherwise if the agent works only in his interest then conflict of interest will arise between the Principal and him and may lead the firm towards bankruptcy (Jensen & Meckling, 1976). The theory posited that there is a clear demarcation of management and ownership in an organization, so if the manager (agents) acts in his own interest and don't try to maximize shareholders (principal) value then

serious agency problems will arise and will seriously affect the performance of the firm (Eisenhardt, 1989; Bathula, 2008).

According to Jensen and Meckling (1976), bankruptcy occurs when the firm is not able to fulfill all its debt claims or when the firm violates one or more provisions of its debt indentures. Bankruptcy causes a lot of cost to firms and to the potential purchasers of different types of fixed claims since the existence of bankruptcy risk will automatically reduce the future returns to them. Therefore the price that buyers of such claims will willingly pay would be negatively related to bankruptcy costs. On the other hand if there were no costs associated with the risk of bankruptcy neither would the parties associated with firm suffer nor it would have any negative effect on the firm's market value but in practical it does causes unbearable and unavoidable costs to the affected firm (Jensen & Meckling, 1976).

In addition the institutional and agency theory argues that size of the firm matters and affects its performance (Jonsson, 2007; Pervan & Visic, 2012). The principal-agent theory or agency theory argued that as there is a demarcation between ownership and control, managers (agents) start acting in their self-interest and might expand the firm (more or less) in order to boost up their own profits or benefits foregoing that of the shareholders. Similarly, institutional theory also suggested that "bigger is better" i.e. the larger the firm the more profitable it is and that the conception of business growth is embedded in an organization's institutional environment and so causes firms to comply with this environment (Pervan & Visic, 2012).

The study mainly focuses on the agency theory because it not only explains the

relation between governance attributes and corporate bankruptcy but also support the notion that firm size matters and not only affects the relationship between governance variables and firm bankruptcy but also have an impact on the performance of organizations (Jonsson, 2007; Pervan & Visic, 2012). According to the proponents of agency theory the separation of ownership from control might lead self-centered actions by managers (agents) and so they may take decisions to expand the firm (more or less) as the processes become complex over time for boosting up their own profits and benefits foregoing that of the principal owner (Jonsson, 2007).

Two important governance mechanisms that are used for the purpose of investigating its relationship with corporate bankruptcy are the board characteristics and ownership concentration. Board has been considered as a low-cost phenomenon as compare to takeover etc. (Fama, 1980; Bathula, 2008). In this paper the literature has mainly focused on governance variables such as board size, board independence, CEO duality and ownership concentration consistent with Dalton et al. (1998), Coles and Hesterly (2000), Daily et al. (2003), Bathula (2008) and Pourkazemi & Abdoli (2012) with an aim to check their possible relation with firm bankruptcy (Daily & Dalton, 1994; Darrat et al., 2010; Platt & Platt, 2012; Pourkazemi & Abdoli, 2012; Bathula, 2008). According to agency theorists

1.5 Problem Statement

Bankruptcy has become an important research area for researchers and practitioners as it significantly affect the performance of organization and can incur great losses to investors and practitioners. Numerous factors might be responsible for leading a

firm towards bankruptcy, the governance characteristics may be one of them. This study therefore intends to determine relationship between corporate governance attributes (specifically board variables and ownership concentration) and corporate bankruptcy when firm size acts as a moderating variable.

1.6 Research Question

Corporate governance has been given importance by researcher after the major business world collapses like Enron and so on. Different researchers worked on the various attributes of corporate governance in order to check their relationship with variables like firm performance, leverage, dividend payout, profitability, earning management, capital structure etc. (Brickley et al., 1999; Bhagat et al., 1999; Hermalin&Weisbach, 2003; Dar et al., 2011; Cheema & Din, 2013). In the following years researchers attention diverts towards another important area i.e. bankruptcy after these collapse and worked on different governance attributes to determine whether they are responsible for dragging a firm towards bankruptcy or does there exist some other factors that are responsible for such bankruptcies (Gilson, 1990; Daily & Dalton, 1994; Darrat et al, 2010; Pourkazemi & Abdoli, 2012; Platt & Platt, 2012; Mokarami & Motefares, 2013). This paper also tries to investigate some of the governance attributes including board size, board independence, CEO duality and ownership concentration, to determine their relation with firm bankruptcy when size of the firm acts as a moderating variable. The study therefore addresses the following question;

Does governancestructure of an organization lead it towards bankruptcy when firm size acts as a moderating variable?

1.7 Objectives of the Study

The paper intends to analyze the relationship between different components of corporate governance (including specifically board variables and ownership concentration) and firm's bankruptcy. Specific objectives of the study are as under;

- To determine the relationship between board size and corporate bankruptcy.
- To study the association between non-executive committee and firm bankruptcy.
- To find the relation between CEO-chairperson duality and corporate bankruptcy.
- To determine the linkage among ownership concentration and corporate bankruptcy.
- To evaluate the moderating effect of firm size on the relationship between the specific corporate governance variables (examined in this study) and corporate bankruptcy.

1.8 Plan of Study

The report includes four other chapters. Chapter 2 discusses the literature on the said topic in detail and shed light on the hypotheses of the said relationship. Chapter 3 shed light on the methodology being used in the study. It includes the population, sample of the study, the model being used to test the said hypothesis and the different measures that are used to calculate individual variables of the study. Chapter 4 includes analysis and results of the study. The last chapter i.e. 5 is the conclusion of the study that includes an overview of the overall results of the study, limitations of the study, implications for

investors and future direction.

CHAPTER # 02

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The increase in financial distress around the world is among the many reasons including market-based investments, financial markets and transactions, advancement in technology, the privatization process, the capital transition from personal ownership to corporate, a rising trend in financial integration, WHY corporate governance has been emphasized (Renders et al., 2010; Derek &Zhein, 2011). Corporate governance variables have been studied against firm performance, earning management, firm leverage ratio, firm profitability, corporate risk, capital structure and so on by a number of researchers. Some of them found a significant relationship among these variables while others reported insignificant results. Bhagat and Bolton (2008) found a significantly positive relationship between variables like: CEO-chair separation and share ownership by board members, and the operating performance of an organization. Bhagat et al (1999); Brickley et al. (1997); Hermalin and Weisbach (2003); Bhagat and Black (2002); Dar et al. (2011) and Cheema and Din (2013) all reported significant relation among governance variables and the performance of a firm (Bhagat & Bolton, 2008).

A company having good governance was supposed to have better performance than the one with bad performance moving a firm towards bankruptcy. Corporate governance has been found to be closely related to the operating performance of a firm which gives an idea about whether a firm is going to be bankrupt or not. Bankruptcy therefore represents an important event in an organization's business life and affects the parties having direct and indirect relationship with a defaulting company. It negatively affects the share prices of an organization because of a substantial direct and indirect cost

associated with it as reported by Maksimovic and Titman (1991) and Andrade and Kaplan (1998)in their studies on firm bankruptcy. Altman (1969) found that bankruptcy announcement by an organization is associated with negative stock returns. Dichev (1998)in his study also found that there is a relation between the risk of bankruptcy and stocks return i.e. more is the risk of bankruptcy lower will be the stock return and lower the risk higher will be the return on stock (Lyandres& Zhdanov, 2008).

Large amount of literature exists explaining the relationship between governance variables and a number of other firm related variables but with the emergence of the issue of corporate failures or corporate bankruptcy during the 1990's diverted financial analysts, practitioners and researchers attention towards this issue. It has now been considered an important issue that affects investors, competitors, legal firms, management and firm's stability. The issue of bankruptcy has led them not to merely emphasize the benefits they are getting from an organization but to improve the quality of earnings. Causes of bankruptcy therefore can be considered an important area of financial management to study because it will help corporate managers in identifying bankruptcy causes and to find solutions so that the company can be protected before it get collapsed (Agarwal & Richard, 2008; Eliezer & Fich,2008; Pourkazemi & Abdoli, 2012). Daily and Dalton (1994) found that a relation exists between governance variables (board composition, CEO-board chairperson structure and composition) and bankruptcy. Using logistic regression methodology they found a significant relationship between these governance variables and bankruptcy. Nakano and Nguyen (2012) reported in a study conducted on Japanese firms that companies having larger boards suffered from lower corporate performance and bankruptcy risk as well. Hambrick and D'Aveni (1992) found

in their study that CEO's who were strong and dominates the company's board were more likely to be associated with the organizations bankruptcy as compared to the weak CEOs. However in a study of twenty one retailing firms, the researchers found that there was no coordination between board composition and corporate bankruptcy (Chaganti et al. 1985; Daily & Dalton, 1994).

Prediction of corporate bankruptcy therefore is important in order to forecast the future condition of an organization. Mostly the investors and creditors of an organization can well predict whether a firm is going to be bankrupt in future or not because in case of corporate bankruptcy they will be the parties who will bear most of the bankruptcy cost (Beaver, 1966; Hajiha& Abedin, 2005; Barzegar& Abedin, 2009; Pourkazemi & Abdoli, 2012). With the passage of time researchers introduced many different models for predicting bankruptcy. The first Model for predicting bankruptcy was introduced by Altman in 1968. The researcher evaluated the analytical quality of financial ratio and suggested that the traditional ratio analysis can no longer be considered an effective analytical tool rather if they are analyzed within a multivariate environment they will significantly work in sequential ratio comparison. Furthermore, the researcher finds out that the discriminate ratio model can accurately predict bankruptcy up to ninety-four percent. This model has several theoretical and practical implications including credit assessment of business, internal control and investment procedures (Altman, 1968).

Altman and Mc Gough (1986) also propose a Multivariate bankruptcy prediction Model. Using financial ratios as independent variable, the authors sought to estimate bankruptcy of corporation by applying Multiple Discriminate Analysis (Altman & Mc Gough, 1986; Mokarami and Motefares, 2013). This model is known as the Z- model

used by many researchers for predicting bankruptcy. Ohlson (1980) was also the first to use Logit regression methodology in the domain of predicting bankruptcy. He estimated three models for bankruptcy prediction, these models were best in predicting bankruptcy for one to three years with an accuracy of 85, 87 and 82 percent respectively. His study was regarded as the most comprehensive work in the area of bankruptcy at that time.

Adnan and Aziz (2006) in their study compare various bankruptcy prediction model and found by analyzing the findings of nearly forty-six (46) studies that Multiple discriminate analysis and Logit regression models are mostly used, the AIES (Artificial intelligent expert system model) is a new technique and the theoretical models are mostly uncommon. Kumar and Kumar (2012) also reported a study in which they compare three other bankruptcy model including Z-score, O-score and Zmijewski's model. They found that these models not only have the capacity to predict the probability that a company may be declared bankrupt within two years analyzing its financial performance but can also recommend measures for the distress status of a company.

A great deal of literature exists supporting the relationship between corporate governance and the operating performance of an organization, since the operating performance of a firm gives an idea about whether the firms will run into bankruptcy or not, whether it would file for bankruptcy or it would get solvent (Darrat et al, 2010). This causes a number of researchers to analyze the potential relationship between governance variables and corporate bankruptcy. Corporate governance variables have been studied separately by many different researchers in order to investigate the possible association between different components of corporate governance and corporate bankruptcy.

2.1 Board Variables and Corporate Bankruptcy

Board within an organization plays a variety of roles and is held answerable for different type of tasks and responsibilities, the most important and critical of which is the obligation and responsibility to save firm from insolvency. The importance of its role became more obvious after the emergence of some of the major business scandals during the early 1990s and the following years which causes firms to either file bankruptcy in the respective courts for safety reasons or might be forced to sell out its assets in order to fulfill creditor's claims (Bennedsen, 2008). Researchers have focused on studying the impact of different attributes of corporate governance in relation with corporate bankruptcy as;

2.1.1 Board Size and Corporate Bankruptcy

Board size plays an important role in not only creating value for the stock holders but also plays a part in affecting the value of an organization. Researchers are of the view that in the developing markets, companies having large boards are successful in creating value for their shareholders (Samuel, 2013). Therefore the size of a company's board of directors significantly affects its value and it is the directors' responsibility to effectively manage the firm in order to improve its value. There are many advantages and disadvantages associated with larger and smaller board size. A smaller board is effective in making corporate decisions because of having a less amount of agency costs associated with it as compare to bigger boards that have an adverse effect on the firm's value because of having more agency costs associated with it (Yermack, 1996; Samuel, 2013). However some of the researchers including Pfeffer (1972) and Zahra and Pearce (1989)

are of the view that companies having large number of directors i.e. bigger board are more effective competent and skilled as compared to one having smaller board size (Samuel, 2013).

Board size create value not only for shareholders but also in creating the value of a firm; larger boards are believed to create value for the shareholders of a firm specifically in the emerging markets, whereas, smaller boards in the developed ones (Samuel, 2013). Since the basic role of the board of directors is the effective management of a firm so that its value can be improved; Pfeffer (1972) and Zahra and Pearce (1989) suggested that firms where board size is big are successful in creating or making skillful and competent jury (Samuel, 2013).

Darrat et al (2010) found that larger boards were usually associated with lower bankruptcy risk. Lipton and Lorsch (1992) also studied the relationship between board size and bankruptcy and found that board size was negatively associated with the firm performance and so with firm bankruptcy (Darrat et al, 2010). Platt and Platt (2012) also concluded that larger boards, smaller number of outside directors and board comprising of old members are associated with lower susceptibility of a firm to bankruptcy risk. Consistent with their work Nakano and Nguyen (2012) while conducting a study in Japan found that firms having large board size suffered from lower performance volatility and at the same time from a lower risk of bankruptcy.

H_1: Board size has inverse relationship with a firm bankruptcy risk.

2.1.2 Board Independence and Corporate Bankruptcy

According to Agency theory (Jensen & Meckling, 1976) an independent board

can efficiently perform the control and supervision role of the board because of facing a minor interest's conflicts (Gabrielsson&Huse, 2005; Garcia-Ramos & Garcia-Olalla. 2011). Fama and Jensen (1983) also support the existence of independent outside directors in the corporate board for making it an effective one. The researchers argued that an efficient board would mostly comprise of outside independent directors who hold important managerial post in other firms (McColgan, 2001). Board having more number of independent outside directors plays a part in not only safeguarding shareholder's interests but also manages and controls the execution of an organization's responsibilities. Thus as far as the monitoring role of board is concerned, there is a positive relationship between board independence and the performance of a firm (Garcia-Ramos & Garcia-Olalla, 2011). So we got our next hypothesis as;

> **H_2:**Firms having large number of outside directors in their board will have lesserchances of bankruptcy.

2.1.3 CEO Duality and Corporate Bankruptcy

CEO-Chairperson duality reflects a situation when a single person (executive) serves both as CEO and Board chairperson at the same time. Daily and Dalton (1994) while studying the impact of board composition (or the ratio of outside members to total members), the CEO and board chairperson structure on corporate bankruptcy found interesting results. Using Logit regression, the authors reported that firms where the CEOs serve simultaneously as board chairperson are mostly found to suffer from bankruptcy. Boyd (1995) suggests that dual structures may have several serious drawbacks for the firm such as some of the CEOs may rule the firm without having

inputs from other members in the board and so can affect information about potential opportunities that might be available to the firm in their respective industry. Bartlett and Ghoshal (1989) also suggest that such excessive centralization might affect a firm's ability to effectively manage different activities and may move towards bankruptcy. Rechner and Dalton (1991) have also found a positive relation between the firm performance and the absence of dual role of CEO and argued that such firms usually have superior performance than one where CEO serves a dual role (Bathula, 2008). Whereas proponents of stewardship theory and other supporters of such structure (Anderson & Anthony, 1986; Charan, 1998; Donaldson & Davis, 1991; Boyd, 1995) argued that dual CEO enhances the performance of an organization (Bathula, 2008). Furthermore some other researchers (Dalton et al, 1998; Weir & Laing, 1999; Abdullah, 2004; Bathula, 2008) reported no significant distinction between performance of firms when they had dual structure and when they do not had.

Theoretician however have not reached at a solution that whether a single person should serve simultaneously as CEO and Board chairperson or whether separate persons should serve these roles and its impact on firm performance. Daily and Dalton (1992) in their study found no significant relationship between CEO duality and the performance of an organization. Rehner and Dalton (1991) on the other hand found that firms where CEO performs dual roles have better and higher performance as compare to those where CEO does not perform a dual role. Furthermore, joint structure has also been supported by Anderson and Anthony (1986:54) who considered the dual role of CEO as focal point for leadership. Such a unified structure may be hazardous for the health of an organization especially when it is revolving in the period of bankruptcy. Hambrick and

D'Aveni (1992) were of the view that such a dual structure might make some of the CEOs dominant which are more likely to be linked with corporate bankruptcies.Agency theorists also are of the view that when a single individual holds the office of both the chair and CEO then owner's interest starts getting sacrificed resulting in agency losses to the organization (Donaldson & Davis, 1991).

H_3: Firms having dual CEO structure will have greater chances of getting bankrupt.

2.2 Ownership Concentration and Corporate Bankruptcy

A study conducted in Iran found that there was a significant negative relationship between ownership concentration and corporate bankruptcy i.e. the higher the ownership concentration; the less will be the chances of corporate bankruptcy. In their study the author reported that most of the firms in Iran have higher ownership concentration and low dispersion of stockholders (Pourkazemi & Abdoli, 2012). Fich and Slezak (2008) found in their study on investigation of the fact that whether corporate governance characteristics can save a distressed firm from getting bankrupt found that companies where greater ownership concentration can effectively avoid the risk of bankruptcy.

H_4: Firms having higher ownership concentration will suffer from lower risk of bankruptcy.

2.3 Moderating Role of Firm Size on the relationship of Corporate Governance and Firm Bankruptcy

Firm size was found to significantly influence the probability of an organization getting bankrupt (Wijn & Bijnen, 2001).The researchers i.e. Wijn and Bijnen (2001) in

their study concluded that insolvency models by explicitly taking the size of the firm into account. Peasnell et al. (2003) and Booth et al. (2002) argued that the governance structure of an organization especially the internal one, largely depends upon the firm size and organizations usually choose a governance structure that is appropriate for them (Bathula, 2008). Fama and Jensen (1983) further suggested that the manner in which a firm is structured depends upon the scope of its processes including production and others for example: large and complex processes leads to large and more hierarchical firms (Boone et al. 2007). So is the case with board size, as the firm size increases its board also go on enlarging as it requires more and more people to monitor the firm operations (Boone et al. 2007). Yermack (1996) and Denis and Sarin (1999) also found in their study that board size have a direct and positive relation with firm size (Boone et al. 2007). Coles et al. (2008), Boone et al. (2007), Jensen (1993) and Lipton and Lorsch (1993) suggested that as the firm size increases it requires larger boards having large number directors for monitoring its complex processes (Bathula,2008). Board size has been found to have an inverse relation with corporate bankruptcy (Darrat et al. 2007; Platt & Platt, 2012; Nakano & Nguyen, 2012). Similarly, Changanti et al (1985) also reported in his study that non-bankrupt firms have larger board as compare to the bankrupt firm (Bathula, 2008).

H_5: Firm size moderates the relationship between board size and corporate bankruptcy.

Along with affecting the board size of an organization, changes in firm size due to the increase in complexity and scope of the firm's operation also has an effect on the composition of corporate boards (including board independence and CEO duality) as well

(Boone et al. 2007). Lehn et al. (2003) had also reported a direct relationship between firm size and board independence in order to alleviate the agency costs associated with increasing or decreasing firm size. Crutchley et al (2003) suggested that as the firm grows in size, its demand for more number of outside directors' moves up due to the increasing agency cost associated with large size. Lehn et al (2003) was of the view that larger firms usually have large number of cash flows and only few large shareholders, both of which substantially increases the agency cost of the firm and may drag it towards bankruptcy that's why it demand for more outside independent directors on the company board (Samuel, 2013). Similarly Coles et al (2004) also argued that as the firm size increases it needs more and more independent outside directors for monitoring its diversified, wider and complex processes and operations (Boone et al. 2007). We arrive at our hypothesis as;

> **H_6:** Firm size moderates the relation between board independence and bankruptcy.

Similarly as the firm increases in size board size also increases as suggested by Lehn et al. (2003). In this situation it is argued that for effective monitoring of board, dual role of CEO must be discouraged and there should be a demarcation in the positions of CEO and Chair. Similarly, Agency theorists also have supported the separation of these positions for the improvement of monitoring by management (Bathula, 2008). Furthermore Fama and Jensen (1983) and Boyd (1995) found in their study that separation of these two position would help in increasing the independence of the board because such a situation will dilute CEO's power and so can improve the ability of a company's board to efficiently and effectively perform its role (Bathula,2007). We get

the hypothesis as;

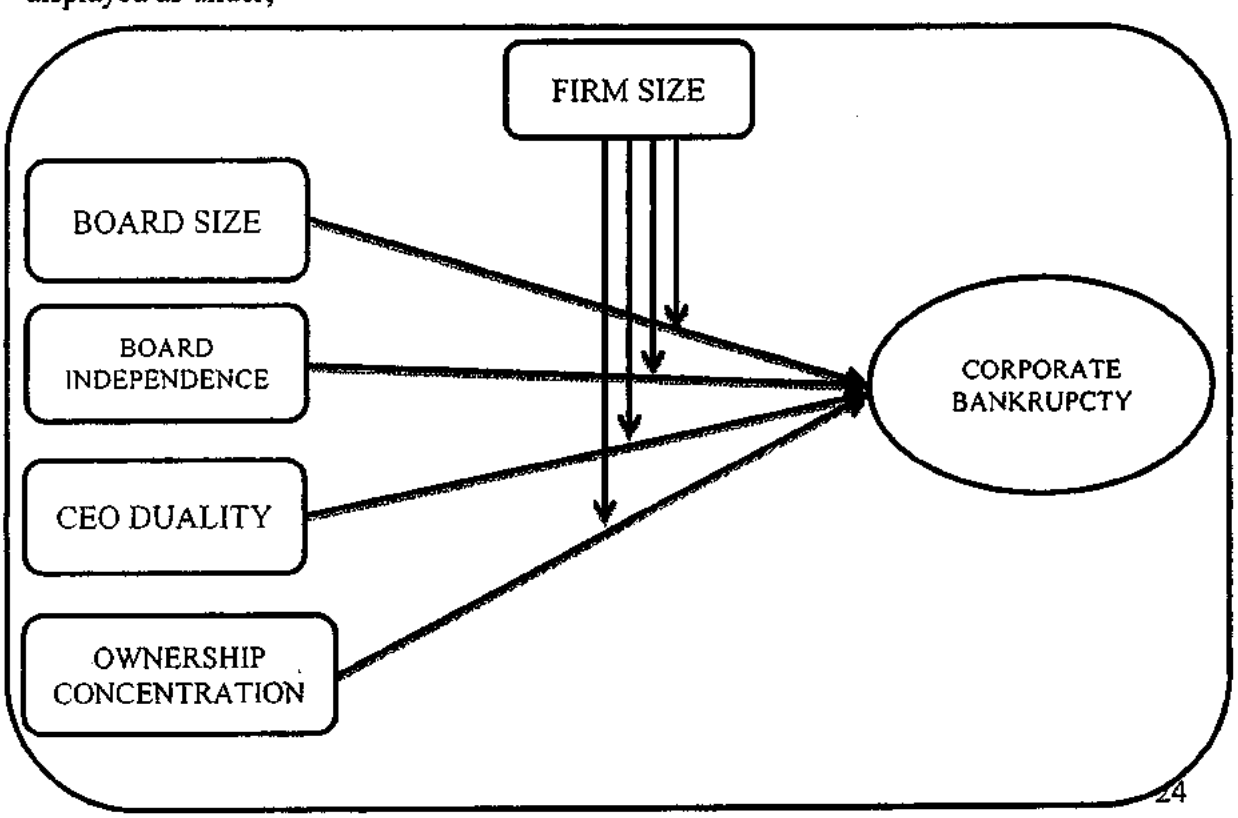
H_7: Firm size moderates relationship between CEO duality and bankruptcy.

Furthermore Samuel (2013) argued that there is a negative relation between firm size and ownership concentration i.e. as the firm grows it moves up the cost of getting a percentage of ownership within the organization and thus the growing size of an organization simply reflects wealth constraints for the firm. So we arrive at our next hypothesis as;

H_8: Firm size moderates the relationship between ownership concentration and bankruptcy.

2.4 SchematicFramework

The schematic framework for the study reflecting relationship between governance attributes and bankruptcy where firm size acts as a moderating variable is displayed as under;



Independent variables **Moderating variable** **Dependent variable**

H_1: Board size has inverse relationship with a firm bankruptcy risk.

H_2:Firms having large number of outside directors in their board will have less chances of bankruptcy.

H_3: Firms having dual CEO structure will have greater chances of getting bankrupt.

H_4: Firms having higher ownership concentration will suffer from lower bankruptcy risk.

H_5: Firm size moderates the relationship between board size and corporate bankruptcy.

H_6: Firm size moderates the relation between board independence and bankruptcy.

H_7: Firm size moderates relationship between CEO duality and bankruptcy.

H_8: Firm size moderates the relationship between ownership concentration and bankruptcy.

CHAPTER # 03

RESEARCH METHODOLOGY

This chapter comprises of a description on the methodology being used in the study which covers population, sample, data collection, the model being analyzed and a description of the variables being used in the study.

3.1 Population

The population of the study includes all the firms listed on Karachi Stock Exchange. Presently there are 579 firms listed at KSE.

3.2 Sample

Around 100 manufacturing and non-financial firms make the random sample for the study that has been selected on the basis of availability of data.

3.3 Data

The data for the study has been extracted from the annual reports of the firms listed on Karachi Stock Exchange i.e. KSE 100 index for the period ranging from 2007 to 2012. The main variables of concern in the study are board size, non-Executive members or number of outside directors or board independence, CEO duality, ownership concentration and corporate bankruptcy. Where board size, board independence, CEO duality and ownership concentration are used as proxy for measuring corporate governance.

3.4 Model

The following regression model has been used to test the said hypotheses of the study being used by Daily and Dalton (1994).

BANKRUPTCY= α+ β_1Board size+ β_2CEO duality + β_3 board independence+ β_4 Ownership concentration + β_5 Firm size + $\beta_6$firm size*board size+ β_7 firm size*CEO duality+ β_8 firm size*board independence+ β_9 firm size*ownership concentration

3.5 Description of Variables

The study uses board size, CEO duality, board independence and ownership concentration as proxy for measuring the possible relationship between governance attributes and corporate bankruptcy (Daily & Dalton, 1994; Bathula, 2008; Abdullah, 2004; Shah et al., 2009). Z-score is used as proxy for measuring bankruptcy consistent with Altman (1968); Fich and Slezak (2008). Furthermore firm size is used as a moderator for checking its impact on corporate governance and bankruptcy relationship.

3.5.1 Dependent Variable

The dependent variable used in this study is firm/corporate bankruptcy;

3.5.1.1 Bankruptcy

In order to identify whether a firm is bankrupt or not, the Altman z-score model (Altman, 1968) has been used as a proxy which can be measured as,

$$Z = 0.012x_1 + 0.014x_2 + 0.033x_3 + 0.006x_4 + 0.009x_5$$

Where;

x_1 = Working capital/Total assets

x_2 = Retained earnings/Total assets

x_3 = Earnings before interest and taxes/Total assets

x_4 = Market value of equity/Book value of total debt

x_5 = Sales/Total assets

All those firms whose z-score value is less than the critical value i.e. 1.81 as

suggested by Altman (1968) are considered as bankrupt whereas companies that have z-score value above 2.99 are considered healthy.

3.5.2 Independent Variables

The independent variables used in the study are discussed as under;

3.5.2.1 Board Size

Board size is measured by the number of directors in the board of directors of an organization. The data can be extracted from the annual reports of the selected firms in order to check the possible relationship between board size and corporate bankruptcy. To determine the effect of board size, a number of studies have used the total number of members in the board as a measure of board size (Yermach, 1996; Bhagat and black, 2002; Coles et al., 2008; Bhagat, 2008; Platt and Platt 2012; Shah et al., 2009; Abed et al., 2012).

3.5.2.2 CEO-Board Chairperson Duality

This study uses a dummy variable for the measurement of CEO duality that has been assigned a value "1" if the CEO also serves the role of board chairperson. Otherwise it is valued as "0" consistent with studies (i.e. Boyd, 1995; Muth & Donaldson, 1998; Abdullah, 2004; McIntyre et al., 2007; Weir et al., 2002; Bathula, 2008; Shah et al., 2009; Abed et al., 2012).

3.5.2.3 Board Independence

It can be measured by the ratio of non-Executive members in the Board of Director of a firm to the total number of directors in the board. Pourkazemi and Abdoli (2012); Shah et al (2009); Abed et al (2012) measure board independence by this ratio.

3.5.2.4 Ownership Concentration

Ownership concentration reflects a certain number of stockholders that are controlling management and all the policies of an organization including financial and operational policies. It is calculated as the ratio of percentage ownership oftop-10 shareholders to total number of shares.Claesens &Djamkov (1999), Demestez& Lehn (1985), Pourkazemi & Abdoli (2012) uses this ratio as a measure of the ownership concentration. The ratio is as;

$$OC = \frac{(\%age\ concentration\ top\ 10)}{Total\ number\ of\ shares}$$

3.5.3 Moderating Variable

The moderating variable being used in the study is as;

3.5.3.1 Firm size:

Firm size is used as a moderating variable and is measured by the natural log of total assets consistent with Fich and Slezak (2008); Hsu et al. (2013); De-Massis (2013); Bliss et al. (2011).

3.5.4 Description of Variables

The table below includes the list of variables being studied in the study and the measurements that are used to calculate them.

Table 1: Description of Variables

Variables	Measurement of variable	References
a. GOVERNANCE VARIABLES		
Board size	Natural log of total number of directors in the board	Shah et al (2009)
Board Independence	$= \frac{number\ of\ non\ executive\ directors}{total\ number\ of\ directors}$	Abed et al (2012)
CEO- duality	Dummy variable is created and is assigned value "1" if duality exists otherwise "0"	Abed et al (2012)
Ownership Concentration	$= \frac{(\%age\ concentration\ top\ 10)}{total\ number\ of\ shares}$	Pourkazemi & Abdoli, (2012) Shah et al (2009)
b. BANKRUPTCY	Z-score	Altman (1968)
c. MODERATING VARIABLE		
Firm size	Natural log of total assets	Fich & Slezak (2008), Hsu et al. (2013)

CHAPTER 4

ANALYSIS AND RESULTS

Z-score is used as a proxy for measuring corporate bankruptcy as suggested by Altman (1968). Companies having z-score below the standard limit of 1.81 is regarded as bankruptcy whereas companies having z-score greater than 2.9 are in safe area that is away from bankruptcy.

4.1 Correlation Matrix

The correlation matrix shows that there is no multicollinearity between the variable as shown in table 2.

Table 2: Correlation Matrix

	BI	BS	CEO	OC	FS
BI	1				
BS	-0.060	1			
CEO	0.180	0.005	1		
OC	0.070	-0.058	0.095	1	
FS	0.030	0.120	0.027	0.012	1

4.2Descriptive Statistics

The descriptive statistics for the companies in the distressed zone are shown in table 3. As shown in the table the mean value for the interactive terms is 15.88

Table 3: Descriptive Statistics

	BI	BS	CEO	OC	FS	Z-SCORE
M	0.560	-2.104	0.183	0.753	15.88	2.434
Med.	0.571	-2.079	0.000	0.795	16.00	2.059
Maxi	1.000	-1.791	1.000	0.985	20.00	50.70
Mini.	0.000	-3.044	0.000	0.000	9.000	-9.674
S. D.	0.283	0.197	0.387	0.179	1.659	2.826
Skew	-0.491	-1.233	1.637	-0.894	-0.641	8.349
Kurt	2.217	4.067	3.681	3.319	5.057	135.0
J.B	45.63	208.6	323.0	95.30	169.6	51181

suggesting that firm size is moderating the relationship between governance variables (including board size, board independence, CEO duality and ownership concentration being used for the study) and corporate bankruptcy. Mean value for the remaining variables is alsogood suggesting a considerable relationship between the dependent and independent variable and the highest value among them is for board size i.e. 2.1 which suggests strongest relationship between board size and corporate bankruptcy especially for the distressed firms.

Standard deviation value for all the variable including interactive terms is low suggesting that there are slight variations in these measures and the reason for such deviations may be the inter-firm or inter-period variations. The use of panel data can also be one of the reasons for such variations. The lowest variation i.e. 0.17 has been noticed in ownership concentration. All the variables used in the study are negatively skewed except CEO duality.

4.3Panel Data Analysis (Common Effect Model)

Before applying regression in order to check the relationship between the variables, augmented dickey fuller unit root test has been applied to check whether the data is stationary at one level or not. The data was found to be stationary at first difference. Panel data regression is then applied to check the relationship between corporate governance and corporate bankruptcy by using data of companies listed in Karachi Stock Exchange from the year 2007 to 2013. Common and fixed effect models are applied on the data where F- statistics is used as criterion for choosing the model that might be best in explaining the said relationship. The F-statistics value was found to be less than the tabulated value i.e. 2 which suggest that Common Effect Model would

bestto explain the variables relationship in the study and so it is an appropriate analysis tool for the study.

4.3.1 Corporate Governance and Corporate Bankruptcy

The model suggests significant relationship between governance variables including board size, board independence, CEO duality and ownership concentration (being used for the study) and corporate bankruptcy as shown in table 4. The results of regression analysis depict that board independence, board size and ownership concentration are positively and significantly associated with corporate bankruptcy whereas CEO dualityhas been found to have negative and significant relationship with corporate bankruptcy. This means that corporate governance plays a role in moving a firm either away or towards bankruptcy (Darrat et al. 2010).

Table 4: Corporate Governance and Corporate Bankruptcy

	Coefficients	T-statistics
Intercept	0.193745	2.600946
BS	0.102488	15.92462
BI	0.416865	9.578480
CEO	-0.053266	-2.734353
OC	1.539772	24.38955
F-statistic	265.1334	
R Square	0.016859	
Adjusted R-Square	0.016795	

4.3.1.1 Board Size and Corporate Bankruptcy

The result of the common effect model accepts the first hypothesis of the study which suggests a negative relationship between board size and bankruptcy in line with the agency theory (Jensen &Meckling, 1976). The result of the study says that as the size of a company's board increases, z-score also increases therefore moving the firm towards safer zone. Many studies have also reported board size to be in negative relation with an

organization's risk of bankruptcy including Zahra and Pearce (1989), Fich and Slezak (2008), Platt and Platt (2012) and Samuel (2013).

4.3.1.2 Board Independence and Corporate Bankruptcy

Similarly the more is the number of outside directors on the board i.e. more board independence the more is the firm on safer side in line with Garcia-Ramos & Garcia-Olalla, 2011. The results of the model being used in the study suggested that as the number of independent directors on the board increases, z-score value also moves up moving the firm towards safer zone and so suggested a negative and significant relationship between independence and corporate bankruptcy.

4.3.1.3 CEO Duality and Corporate Bankruptcy

Using logit regression Daily and Dalton (1994) found in a study that organizations where CEO performs dual role are most likely to suffer from bankruptcy. The results of the study also confirm a significant relationship between such dual role and corporate bankruptcy as depicted by value of coefficients and t-statistics. These results are also in line with Donaldson and Davis (1991).

4.3.1.4 Ownership Concentration and Corporate Bankruptcy

Ownership concentration was found to have negative relationship with corporate bankruptcy. Also the T-statistics value is greater than the tabulated value of 2 suggesting a significant relation between the variables. Pourkazemi and Abdoli (2012) also reported inverse relation between the variables in a study conducted in Iran.

In summary the results of the said study supports all the said hypotheses i.e. H_1, H_2, H_3 and H_4. Furthermore the R-square vale is low due to panel data being used for the study.

4.3.2 Corporate Governance, Firm Size and Corporate Bankruptcy

As depicted in the table 5, firm size was found to have a significant impacton the relationship between the governance variables including board size, board independence, CEO- duality and ownership concentration. As depicted in the table the T- value for

Table 5: Corporate Governance, Firm Size and Bankruptcy (Distress)

	Coefficients without FS	Coefficients with FS	T-Statistics
Intercept	0.193745	-10.14486	-19.36901
BS	0.102488	1.403086	23.27103
BI	0.416865	12.89803	37.58129
CEO	-0.053266	-3.835581	-9.846389
OC	1.539772	-7.145976	-12.78922
FS		0.588958	18.54190
BS*FS		-0.074438	-21.13402
BI*FS		-0.801128	-37.48291
CEO*FS		0.226696	9.190953
OC*FS		0.579952	16.48771
F-Statistics	265.1334	516.4698	
R Square	0.016751	0.069908	
Adjusted R Square	0.016703	0.069773	

firm size is 18.54 that is greater than the tabulated value i.e.2 and the coefficient is also positive, so it means that firm size affects the relationship between governance structure of an organization and its risk of getting bankrupt.

Boone et al. (2007) found in a study that as the firm grows in size it requires more and more people on the board to monitor its operations. In other words the increasing size causes an organization to grow its board size with large number of skillful directors in order to monitor and manage its complex processes (Coles et al., 2008; Bathula, 2008). As depicted from the results the coefficient of interactive term gets negative which reflects that firm size weakens the relationship between board size and corporate bankruptcy.Also the t-value is greater than the tabulated value of 2 showing the significant impact of firm size.

Furthermore as depicted in the results firm size tend to weaken the relationship between board independence and corporate bankruptcy. An increase in size lead organizations for greater board independence in order to alleviate the associated agency costs (Lehn et al., 2003). The growing size of the firm causes them to demand more and more independent directors on the board in order to effectively manage its diversified, wider and complex operations (Cole et al., 2004; Boone et al., 2007).

Where the growth in size of a firm requires it to increase its board size and demand more and more independence on the board for its effective monitoring, at the same time it requires a clear demarcation between the role of CEO and board chairperson (Bathula, 2008).Agency theorists also have suggested that the role of CEO and board chairperson should be demarcated for effective performance of an organization (Bathula, 2008). The results of the study shows that the introduction of firm size strengthens the relationship between CEO-duality and corporate bankruptcy i.e. the more the firm size moves up the role of CEO and board chairperson should be separated in line with Bathula (2008) and Jensen and Meckling (1976). The t-statistics values are also greater than the tabulated value.

Samuel (2013) found a negative association between ownership concentration and firm size i.e. as the firm grows in size the cost of getting a percentage ownership in that firm moves up means the concentration of existing owner decreases as the firm size increases.The results of the study reflect that firm size make the relationship between ownership concentration and corporate bankruptcy stronger.

The R square value is low reflecting that there may be some other variables that might be affecting the dependent variable and in case of panel data it may be due the use

of large number of observation in the study.

CHAPTER 5

DISCUSSION

5.1 Findings and Discussion

The study explores the relationship between corporate governance and corporate bankruptcy with firm size acting as a moderating variable. The results reported a significant relationship between governance variables (i.e. board size, board independence, CEO-duality and ownership concentration being used in the said study)and corporate bankruptcy. The hypotheses H_1, H_2, H_3 and H_4 are found to be significant and in-line with the agency theory (Jensen & Meckling, 1976). Firm size was found to have significant moderating results.

The results of the study show that the relationship between board size and corporate bankruptcy is significantly moderated by firm size. As the firm size increases it demands for more and more directors on the board to manage its complex activities (Fich and Slezak 2008, Samuel 2013).Firm size was also found to significantly moderate the relationship between board independence and corporate bankruptcy. Lehn et al. (2003) reported in his study that organization demands for more independence on the board as the firm size grows up in order to minimize the agency costs linked with increasing firm size. The results of the study indicates that board independence increase significantly as the size of the firm increases and moves it away from bankruptcy as the number of outsider directors increases on the board.

Similarly the association between CEO duality and corporate bankruptcy is also found to be significantly moderated by firm size. It means that as the firm increase in size

the dual role being played by CEO may not be that much prominent because of having large number of directors on the board and so make the organization more vulnerable to bankruptcy.Furthermore ownership concentration was also found to have negative relationship with firm size (Pourkazemi and Abdoli 2012). The result of the study shows that firm size also significantly and positively moderates the relationship between ownership concentration and bankruptcy.

The result of the study therefore confirms that firm size really matters and has a significant impact on the relationship between corporate governance and corporate bankruptcy.

5.2 Limitations of the study

Although the researcher has put great effort in investigating different aspects of corporate governance while studying the moderating effect of firm size on the relationship between governance and corporate bankruptcy. Still the present study has some limitations.

First of all the present study has used Z-score as a proxy for measuring corporate bankruptcyhowever other models like O-score and later on Merton's Distance-to-Default and the 2010 CHS model arefound to be far more better proxies due to their good predictability powers.Secondly simple random sampling has been used on the basis availability of data resulting in a sample of 100 companies; large sample size must be taken into account in futureto have more generalizable results.

The study only have focused on two aspects of corporate governance including board composition and ownership concentration, the other governance mechanism including ownership concentration and executive committee should also be taken into

account. Furthermore firms must also be segregated as big and small in order to have more specific and accurate results regarding the size of firms which are more prone to bankruptcy.

5.3Implication for practitioners

The findings of the study will not only help regulators in proposing an adequate and a standard board composition but also in devising an optimal ownership concentration level that will help organizations in overcoming bankruptcy issue. Furthermore this study has also attempted to discover the impact of firm size on the relationship between corporate governance and corporate bankruptcy which will help managers in maintaining an optimal firm size that will save their organizations from the risk of bankruptcy.

Nonetheless the results of the study suggests that the poor governance structure of an organization shows early sign for any impending bankruptcy and such information would be very useful especially for parties like policy-makers, decision makers and regulators. Similarly governance practices would also be beneficial for investors in an attempt to identify which firm size (big or small) ismore prone to bankruptcy at an early stage.

5.4Future Direction

There remained some limitations in the present study. Z-score was used as a proxy for corporate bankruptcy; in future researchers must focus on other proxies like O-score,Merton's Distance-to-Default and the 2010 CHS model. These models were found to have more generalizable results than the Altman z-score (1968). Secondly, in this study a random sample including 100 companies were used on the basis of availability of

data and shortage of time, in future the sample size should increase in order to have more generalizable results.

Furthermore the firms must also be segregated as small and big firms in order to have in-depth study the effect of firm size. It will give interesting results about the size of firms more susceptible to bankruptcy in relation to studying the relationship governance structure of that firm and bankruptcy. In this study firm size is being measured by natural log of total assets, future researchers might focus on the number of employees in an organization to have accurate results regarding the effect of firm size on the said relationship of the study.

Similarlythe moderating effect of firm size must also be checked by including the other two governance measures i.e. ownership concentration and executive committee while studying the said relationship of the present study so that the overall governance structure of an organization can be evaluated in relation to corporate bankruptcy.

5.5 Conclusion

The study has major significance in bringing the two concepts i.e. corporate governance and corporate bankruptcy while investigating the moderation effect of firm size especially in Pakistani context. The above concepts were being researched independently in many studies with other variables to check their impact on the outcome and firm size specially was treated until now as a control variable. This study makes an attempt to check moderating effect of firm size.The results of the study conclude that the governance structure of an organization plays an important role in giving early signals of an impending bankruptcy and that the firm size should also be taken into account while

devising bankruptcy prediction models so that managers and practitioners may be able to devise accurate governance policies and to maintain an optimal firm size that will reduce the risk of bankruptcy.

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