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Corporate Governance, Risk Management, and Bank Performance: Does Type of Ownership Matter?

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Abstract

This research explains the correlation between corporate governance, risk management, bank performance, and ownership structure. The research has used a set of independent variables related to revelation and precision. The data from 39 banks working in Pakistan have been used for the time period of 2010 to 2015. Two variables are used for risk management including VAR (Value At Risk) and CAR (Capital Adequacy Ratio). Family ownership, managerial ownership, and ownership concentration are used as instrumental variables for ownership structure. Board independence, the board size, CEO, and audit committee are used as proxy variables for corporate governance, whereas, dummy variables are used for bank performance. The results indicate that three types of bank ownerships are the same; therefore, they cannot affect VAR type of bank ownership and compare as a whole with risk management. The regression consequences display that family ownership has an unconstructive outcome on VAR and CAR that show a negative association between the variables. While managerial ownership and concentration ownership show a positive association between VAR and CAR. The results indicate that board size and audit committee has a negative effect on VAR and CAR that means there is a negative relationship between the variables, whereas board size and CEO have a positive relationship with VAR and CAR. Firm size, firm profitability, and growth opportunities represent a variety of bank

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performance. The results reveal that firm size, firm profitability and growth opportunities have a positive effect on CAR and VAR. The results also indicate that corporate governance has a positive effect on bank performance that means if a bank can adopt good corporate governance rules, the performance will be excellent. The result emphasizes that risk management has a positive correlation with bank performance that means if a bank manages risk, the performance of that bank will be increased. But in Pakistan, the rules and regulations are the same for all types of banks including private, public, and foreign, therefore, the ownership structures of all banks are the same.

Keywords

Corporate Governance, Bank Performance, Risk Management and Ownership Matter

1. Introduction of the Study

1.1. Research Background and Main Issue

In 1997, a big financial crisis hit on most the Asian countries including Pakistan. Due to this crisis, some Pakistani firms went to bankruptcy but some firms faced financial difficulties. It is very difficult for these firms to convert debt into common stock. The Pakistani banking sector is the main part of these firms. Pakistani government invests huge amounts in banking sector to protect depositor's money and save it from insolvency.

Why government gives more priority to banking sector than others? There are several reasons:

1) Depositors of a bank cannot protect them easily because they do not have sufficient information.

2) Bank asset is strangely not clear and lacking transparency as well as liquidity.

3) The insecurity of a bank will lead to affect the financial system and economy of the country.

(Ciancanelli & Gonzales, 2000) stated that the market structures of banks are different. Actually, they had not convinced by the basic assumption of agency theory. According to them, the bank managers and owners give more focus to regulations that plays an important role in the public interest. Regulation symbolizes external corporate governance. The owners give more attention to manage the bank risk and maximize return, because the owners are interested in return on investment and return shows banks' performance.

Internal corporate governance problem is created by the separation of ownership and control while managers and employees who work for self-interest, manager interest are different from the interests of consumers, which lead to the agency problem. If the owner of the bank gives compensation and incentive to managers only then he will work for collective interests of the bank and agency problems will be solved. The owner of the bank must select that aboard of directors who has the ability to work for the mutual interests of the bank. This mechanism will pertain to internal corporate governance, according to that, the owner must have to expect the manager to work for the same goal and same direction. But the owner of the bank is interested in bank return; therefore he gives more attention to risk and enchanting risk mechanism.

Practically, the association of corporate governance and bank performance is disparate. (La Porta et al., 2002) calculated that if a firm performance is high the shareholder will be protected. (Klapper & Love, 2002) stated that better corporate governance has positively association with better performance. (Black et al., 2003) argued that there is an optimistic association among corporate governance and performance. (Drobetz et al., 2003) fined the connection amid the company stage corporate governance and company recital. They also recommend that if a firm can adopt good corporate governance rules the value of that firm will be high.

The type of bank ownership has a reasonable relationship between corporate governance, risk management, and bank performance. Its structure can be dividing on the basis of power and control. The main owner has an authority to control and select the management (Patrick, 2001). The type of bank ownership can be classified on the basis of private banks, public banks and foreign-owned banks. (Deutsch & Pinter, 2018) calculated that there is an unconstructive association between performance and ownership concentration.

These studies are also connected to manage the efficiency of private-owned banks versus state-owned banks. (Mester, 1993) stated that public-owned banks have a small profit and cost advantage over private-owned banks. (Altunbas et al., 2001) reported that private-owned banks are more competent than state-owned banks. (O'Hara, 1981) suggested that the supervision of state-owned banks is less proficient than the supervision of private-owned banks.

(Claessens & Fan, 2003) analyze that agency problem arose due to the ownership structure. Corporate governance mechanisms are not only sufficient to reduce this problem but firms apply additional mechanisms to decrease it, because firms apply good auditor systems. The crony capitalism system indicates that the government involvement and weak corporate governance mechanisms are not only risky for the investors but also risky for bank performance and for overall economic growth. Agency theory anticipates that the conflict between the manager and shareholder can spoil the firm value. Agency theory stated that the conflict of interest between the manager and owner are created by the separation of ownership. Agency theory and ownership structure will reduce the conflict between the manager and owner. The manager has an important quantity of ownership in a firm that is suitable for the shareholder because there is no gap between the manager and shareholder interest.

Dispersion level of ownership plays a significant role in the implementation of good corporate governance dispersion ownership decrease the agency problems.

(Shleifer & Vishny, 1997) stated that the spreading stage of right has a strong impact on corporate governance instrument. They also suggest that the opinionated expenditure and gratis rider problem are related to concentration level of ownership. Concentration ownership means shareholder has more power to control the manager. Therefore the ownership structure plays a very important role in the mechanism of corporate governance.

In portfolio situations indicate that the investor prefers risk speculation because risk is linked to returns so the investor calculates our portfolio. They select the efficient portfolio which gives a higher return with a presumption level of risk. Therefore it shows that there is a mutual relationship between the risk and return on investment.

1.2. Problem Statement

The main role of the financial management of a bank is to mitigate risk through different strategies. This study has established to find the fact that how ownership structure and corporate governance practices play a role in mitigating risk. Furthermore, how the practice of risk management, ownership structure, and corporate governance affect financial performance.

1.3. Research Questions

The main objective of this study is to solve the research question which can be described as following:

- What is the impact of ownership structure on risk management?
- What is the impact of risk management on bank performance?
- What is the impact of corporate governance on risk management?
- What is the impact of corporate governance, ownership structure and risk management on bank performance?

1.4. Research Objective

The main objective of this research is to investigate the following relationships.

- To investigate the relationship of ownership structure on risk management.
- To investigate the relationship of risk management on bank performance.
- To investigate the relationship of corporate governance on risk management.
- To investigate the relationship of ownership structure, corporate governance and risk management on bank performance.

1.5. Research Contributions

The finding of this study is to understand the practices of corporate governance in Pakistan banking sector, and also learn about the main factors that improve corporate governance in this sector. The study provides some indicators of corporate governance that are valuable for regulators and business people. If the policies and regulations are made in accordance with these indicators and the banks follow them, the performance of the banks will boost up and vice versa.

1.6. Research Significance

This study is helpful for the business people and banking sector of Pakistan. The research finds out some factors that help to improve corporate governance. The research has tried to investigate the factors that create the problems of corporate governance in the business and banking sector and also tried to find their solutions. The study gives surety to the shareholders and the depositors that their fund can be better employed to make a profit and the government as a regulator, is dependent on shareholder's and depositor's money. The study also highlights the agency problems and makes some possible solutions to resolve them. The study will help to control bank risk and management risk for increasing return.

2. Literatures Review and Theoretical Framework

2.1. Agency Problem in Banking Sector

Agency problem can be started with the separation of ownership and management manager work for self-interest not for the owner interest. (Jensen & Mackling, 1976) stated that agency problem gives a chance for manager to use the firm resource for self-interest not for the owners. The conflict areas not only limited to the manager and owner but there are several conflict areas such as shareholder through manager vs. bondholder and major shareholder vs. minor shareholder. Agency theories recommend that agency problem can be decrease if a firm uses some gadget just like supervisory enrichment, bonding mechanisms and dividend mechanisms decrease supervisory intention to build over investment decision.

There are abnormal agency problem in banking sector. More than two parties are engaging the conflict area of banking sector. Bank shareholder invest their capital by more than compulsory regulator 12% in this case the shareholder protect their interest easily by other supplier of fund. But supplier of fund invest their capital little portion in the bank just like individual and institutional depositor they cannot protect himself easily they have no adequate power to control and monitors the bank because information incommunicable are very costly. (Bhattacharya, Boot, & Thakur, 1998) argued that manager and owner are failed to control the external market structure of the bank. For this reason the government play role to control the external market structure of bank for various reason.

Banking sector play a very vital role within the country financial system bank stability and unsteadiness will direct to affect the good and bad economy and financial system of a country. Banking sector of a country use as a tool of a public they support certain industry. In banking sector the competitive environment is less challenging than other sector of economy (Llewellyn & Sinha, 2000). Financial economist stated that corporate governance mechanisms are suitable for product and service competitive market. If a firm has a scarce management that firm out in the market but if a firm have a better management they will compete to other firm and stay in the market. On the other hand the banking sector has a less competitive environment as compare to other firm because information is incommunicable (Barth et al., 2001). The abnormal agency problem in banking sector decrease the competitive pressure therefore bank requires good corporate governance mechanisms as compare to other firm.

2.2. Corporate Governance in Banking Sector

Corporate governance mechanisms give surety to the shareholder that the manager will perform in their interest. (Shleifer & Vishnay, 1997) describe that corporate governance is the way in which the supplier of finance are ensure that they will earn some return on behalf of their investment if manager can manage the investor fund accurately. The working of corporate governance in banking sector is different as compare to additional sectors. (Macey & O'hara, 2003) stated that in banking sector there should have a better scrutiny adopted of corporate governance. Why because the bank mechanisms of corporate governance should attract more depositor as well as shareholder.

2.2.1. External Corporate Governance Mechanisms

In general situation the depositor belief on government because government dependent on depositor money. They attract more depositor and agent to deposit money into bank because the significant part of moral hazard cost and risk are assured by the government. If government may clearly offer deposit insurance the bank manager may be motivated and increase risk taking but it will tolerate the government expense. To use financial regulation such as asset limitation interest rate ceiling, and reserve requirement to restored the moral hazard problem. With the help of this regulation to bound the skill of bank manager to issue over liability and divert asset into high risk venture. For this purpose the banking sector not only requires good corporate governance mechanisms but also require government involvement to manage and supervise the bank.

The literature of a bank stress on regulation represents to keep the wholeness of market system. The current study gives more focus on the function of government in financial sector. Government play role as intermediaries in financial sector such as government involvement in pricing allocating and government are control regulating and supervising the financial sector. Regulation is related to solve the market breakdown. (Ciancanelli & Gonzales, 2000) argue that regulation and regulator of bank symbolize the external corporate governance mechanisms. The literature of corporate governance shows that agent can be control by the external domination force.

2.2.2. Internal Corporate Governance Mechanisms

Government are guaranteed for the depositor to save the depositor money if bank gone to insolvency side. The saving procedure require more time during this time the depositor lost the value of money and chance of investment. Therefore they select that bank which can efficiently manage the depositor money. For this reason the depositor not only belief on the external corporate governance mechanisms but they also know about the bank manager that they can implement good corporate governance mechanisms in bank. The internal side is more important than external side. Internal corporate governance mechanisms are related to control and monitoring the bank (Llewellyn & Sinha, 2000).

The board of director and management of the bank have main responsibility to implement good corporate governance rules. (Nam, 2004) stated that structure, function, activity and compensation are the responsibilities of board of director.

2.2.3. Corporate Governance and Bank Performance

For increasing reliability of market the owner of the bank and manager gives more focus to apply good corporate governance. Later they will accumulate fund at lesser cost and lesser risk therefore superior corporate governance will lead to high performance. Some previous study gives back up to this statement. (Black et al., 2003) examine the association corporate recital and corporate governance. They locate proof that the corporate recital and corporate governance is positively correlated if firm can implement good corporate governance rules the performance will be high of that firm.

(La Porta et al., 2002) stated that if a shareholder is well protected the firm performance will be high. (Klapper & Love, 2002) apply the company level data and suggest that if a firm can implement good corporate governance rules the performance will be high so corporate governance is positively interconnected with firm performance they also concluded that corporate governance is more important for that country which has a weak legal environment.

2.2.4. Corporate Governance in Pakistan

Corporate governance is very important for financial development. With the recent financial crisis many developing country feel the importance of corporate governance. For this purpose in 1999 the OECD established the corporate governance principle. Corporate governance is very important for banking sector because banking sector is related to the country's economy. Therefore SBP issued guidelines to governing and controlling commercial bank. (Khalid & Hanif, 2005) stated that the development of banking sector can be measure by corporate governance.

Securities and Exchange Commission of Pakistan issue the rules of corporate governance in March 2002 this is the most important step to reform the rules of corporate governance in Pakistan. The major areas of these rules are board of director, who is responsible for the entire shareholder. It also include the internal and external auditor but these code are limited to the director they must provide guidance about internal control, risk management and board policies. The main objective of this code is to better transparency and protect the interest of shareholder.

In August 2002 SECP start a project of corporate governance with the partnership of UNDP and economic affair of government of Pakistan. The main purpose of this project is to implement the rules and code of corporate governance in Pakistan. In 2007 SECP, international financial corporation IFC and institute of corporate governance Pakistan conduct a survey to check the code of corporate governance in Pakistan. In this survey include local listed large and non-listed companies. The result of this survey is to create knowledge in board of director about the code of corporate governance that the board of director can understand and implement the code of corporate governance. Furthermore the security and exchange commission of Pakistan develop a board and conduct many workshops for the objective of understanding corporate governance and duties of board of director.

The previous study of corporate governance shows that good corporate governance practice will lead to high value of firm high productivity and lower risk. (Brown & Caylor, 2004) study based on the institutional shareholder they find proof that better corporate governance is comparatively profitable and precious for the firm and firm give more money to shareholder.

In past few years, corporate governance has become an important research area in Pakistan. (Cheema et al., 2006) stated that corporate governance is more valuable for Pakistan they attract foreign investor. The main objective of corporate governance in Pakistan is to raising fund from the external capital market. (Nishat & Shaheen, 2007) study the rating of corporate governance base on annual report they find proof that good governance will lead to raise the value of firm. (Javid & Iqbal, 2010) use panel data and concluded that there is positive relationship among the firm level of corporate governance and performance.

2.3. Relationship between Type of Bank Ownership Bank Performance and Risk Management

Some of the bank is similar into the type and structure but some are different. Kind and constitution of bank explicate the controlling parties of bank. The shareholder can be control on the basis of bank ownership structure. While type of bank ownership is related to organizational culture such as private, state, and foreign owned banks. The culture, attitude and behavior of these three types of bank are different therefore the nature of management of this bank is different and also the risk behavior and performance are different of these banks.

According to the Principal agent theory (Jensen & Mackling, 1976) is broadly explicated that closely held firm has better perform than public owned firm. They further suggest that there is a low capital market of public owned firm therefore they perform weak. Controlling manager and low capital market is cost for the firm therefore with the view of agency theory there is an association among the ownership structure and financial performance the cost of controlling make close held firm more efficient than public owned firm.

The agency problem of private owned firm of banking sector is move from the conflict of manager vs owner and manager vs supplier. (Boot & Thakur, 1993) suggest that agency problem start in banking sector those time in which the interest of the bank manager is opposite from the government regulation. The manager have an own schedule which cannot maximize the value of bank. The shareholder want that manager take more risk therefore shareholder encourage the manager to give incentives and compensation to take more risk. But the bank regulators want that manager to take less risk for the stableness of financial system. Therefore they discourage the manager that the compensation scheme is too risky for the bank.

In several developing economies the corporate governance of bank is more complex when political involvement are operate in banking system These are include public owned bank. (La Porta et al., 2002) stated that this statement is related to the history of a country economy They also conclude that if a private firm of a country are survival good in financial market the economy of that country will be better recognize in financial market.

In public owned bank the severances of the clash amid the depositor and manager are depend upon the credibleness of government. When wide of state owned bank in an economy the corporate governance problem can be arise the divergence amid the administration and taxpayer and manager and bureaucrats are started. The manager of state owned bank are receiving incentive therefore they cannot work for the interest of taxpayer. (Shleifer & Vishny, 1997) stated that manager is more concentrated to improve their in political region. Manager are less risk averse as compare to shareholder therefore the manager accept less risk as compare to shareholder which accept more risk and manage their portfolio State owned bank play important role in many economic sector just like agricultural and small medium enterprise. But if manager not receiving incentive they will take advantage from the taxpayer.

2.4. Risk Management and Bank Performance

Increasing return of shareholder and maximizing bank performance is the main goal of a bank. For the completion of this objective the cost of risk can be arise. Therefore bank faces various types of risk such as interest risk, market risk, and credit risk, off balance risk, technology risk, operational risk, foreign exchange risk, country risk, liquidity and insolvency risk. Bank can manage and control the risk because risk is able to make the bank deficit. The issue of risk management system is not only important for banking sector but also important for the overall country financial system. (Tai, 2004) document that the past return shock emanating from banking sectors not only the effect of up and down of foreign exchange and stock market but also on their prices. They also suggest that bank can be more affected during financial crisis. In January 2006 central bank announce the risk management rules. These rules consist of 11 chapters and 21 articles the main objective of these rules is implementation and controlling the risk these rules also force the bank to make report about the risk management. This action of central bank gives help to banking sector to reduce their risk. Which of the bank implement risk management rules it may have some advantage. It may increase the reputation of the bank and creates opportunities to attract more customers and collect a huge pool of fund .It increases efficiency and productivity.

2.5. Conceptual Framework and Hypothesis

Figure 1 shows the conceptual framework of the study that explains the relationship of corporate governance, risk management and bank performance. The figure explains that performance of corporate governance persuades in two ways directly and indirectly that influences the performance. It also highlights that the type of bank ownership affect the corporate governance, risk management, and bank performance.

The model can be dividing into three parts. First model shows that the corporate governance practices can be guided by ownership structure. Second model also shows the association of risk management and bank performance; and corporate governance and bank performance. Third, kind of bank rights conveys dissimilarity in the stage of gaps inside this model.

The gap can be defined on the bases of role and interest among the parties. This gap obviously look in the operations of the bank owing to the agency problem and asymmetric information this mock-up presume that: 1) the owner of the bank are related to maximize their wealth and return on investment in the bank; 2) and business people are risk averse.

2.5.1. Ownership Structure as a Key Determinant of Risk Management

According to Agency theory the dispersion level of ownership play a vital role in controlling the firm this theory concluded that every party maximize their self-interest. (Shleifer & Vishnay, 1997) say that attentiveness stages of rights are the most important component for attracting more shareholders to control the manager for the performing of good corporate governance mechanisms. They also suggest that the concentrated shareholder have more authority to control the firm as compare to disperse shareholder. Disperse share have a less power to control and monitoring the firm.

H1: There is association between ownership structure and risk management.

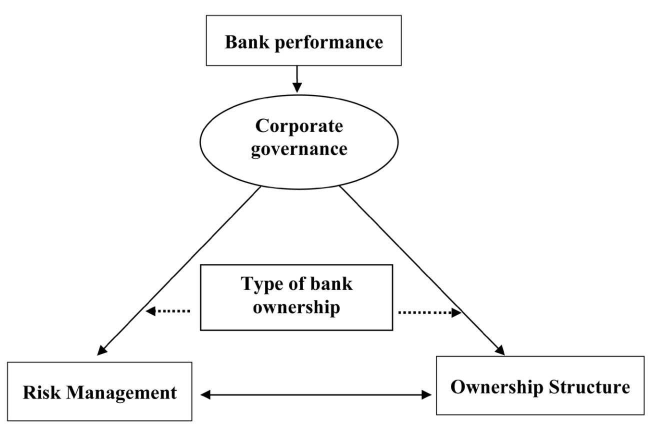

Figure 1. Conceptual framework: the gap model.

2.5.2. Relationship between Corporate Governance and Risk Management

Bank as an attention mediators and be helpful to clarify the connection among the corporate governance and risk management. The involved parties are not simply connected to higher return on their investment. But also related that how bank minimize the risk and divided risk among the parties. Therefore we concluded that better corporate will lead better return and better risk management. In banking sector risk management can be calculated by the corporate governance mechanisms. The market has no sufficient power to control the operation of the bank. Therefore the government may want to play vital role for controlling and supervising the bank and the regulator have a main objective to work for the public interest. Regulator and regulation are the external corporate governance mechanisms which are related to control the bank and improving risk management process.

H2: Better corporate governance will lead to better risk management.

2.5.3. The Interrelationship between Bank Performance and Risk Management

The implementation of good corporate governance depends upon the risk management and bank performance. If bank can manage risk properly it will take advantage to increase return and return shows the bank performance. Better risk management show the bank can operate their activities at lower risk and lower conflict of interest between the parties. The greater bank performance increases the character of the bank with the eyes of public. They attract more shareholders and collect a huge fund with lower cost so it is opportunities for the bank to increase the productivity of asset and increasing bank return. (Cebenoyan & Strahan, 2004) and (Tandelilin et al., 2007) concluded that there is a casual unconstructive connection amid bank recital and risk management. They find proof that risk management mechanism increases the bank performance.

H3: There is negative inter-relationship between risk management and bank performance.

2.5.4. The Sensitivity of Triangle Gap Model Relationships on Type of Bank Ownerships

Three hypotheses symbolize to test the required condition whether the bank implement good corporate governance. For the implementation of good corporate governance the first hypothesis is not enough. It's required more verification and exploration to fulfill adequate situation to terminate that corporate governance is capable when the parties join role and interest.

The owner and manager of the bank are struggling to implement of good corporate governance for the purpose of market reliability. Then reliability of the bank increase the confidence of investor more of the depositor and investor deposit their fund into bank. The confidence of elongated tenure investor is extremely significant for banking region. Bank makes good relationship with long term investor. Moreover the lack of information and breakability in banking business raise the consciousness to choose noise bank and invest fund therefore sound bank accumulate more money at lower cost and risk.

The owner of the bank plays vital role to promote their bank and apply excellent corporate governance rules. With stare to the separation of rights and manage the owner of a bank are not capable to decide the management process of bank but they try to control and decide the manager for risk taking decision which is relative with their return on investment. The style of owner is to control and decide the manger in order to coordinate the owner interest.

Agency theory proposes that the conflict of interest between the manager and owner can be decrease if owner have a sufficient power to control the bank. Power of owner depends upon the quantity of share. The power of control looks in private owned bank as compare to extensively bank in mounting countries public bank usually survive. According to agency theory the state owned are ideal than widely owned bank. But other type of ownership also found in developing countries according to the previous study (Goldberg et al., 2000) and (Havrylchyk, 2003) concluded that overseas bank implement good corporate governance mechanism as compare to domestic owned bank.

In the banks of Pakistan, type of ownership can be classified into three groups: private domestic owned bank, state owned bank, and foreign owned bank. Private domestic owned also include scheduled and non-scheduled banks. The ownership of scheduled and non-scheduled banks are concentrated the small number of shareholder have a controlling power. But state owned bank symbolize completely discrete ownership. The public have fewer authorities to manage the bank therefore the scheming rights are completely move toward from the agent. And foreign owned are proscribed by more disperse rights than family rights.

(DeAngelo & DeAngelo, 1985) and (Zingales, 1995) document that major controlling shareholder will lead the owner to properly manage and supervise the bank asset and maximize their interest. Therefore the foreign owned bank adopts to apply good corporate governance as compare to domestic owned banks. The controlling shareholder maximizes their interest by properly managing and supervising the bank asset. But domestic owned banks face problem in implementing good corporate governance and state owned bank have multi agent they have no authority to manage the banks. Here are three sight to clarify the association of state owned bank and performance. Political perspective conclude that government are interfere within state owned firm for the increasing the political status (Bonin et al., 2003) suggest that the performance of state owned bank is less than domestic owned bank.

According to the culture differences the state owned bank has a different uniqueness from domestic owned bank. The experience of state owned may be more and they supervise more banks they know about the attitude and behavior of different country banks therefore they implement a good corporate governance practices and they take advantage on technology and services. This discussion shows that different type of ownership may have a different objective and power to implement good corporate governance. The foreign owned bank implements good corporate governance as compare to domestic owned banks and state owned banks. Therefore the hypothesis 5 and 6 can be stated as follow.

H4: Relationship between ownership structure corporate governance and risk management is more sensitive for bank performance.

3. Methodology

3.1. Types of Study

This section describes whether it is exploratory or descriptive research. As we stated earlier, our research is of descriptive nature because as we shall describe corporate governance, risk management, and bank performance: does type of ownership matters. While this study is also investigate cause and effect relationship of the corporate governance with bank ownership structure.

3.2. Population

The population of this study consists of all public owned bank, private owned bank, and foreign owned bank of Pakistan.

3.3. Data and Sample

This study use derived data that are together from the Pakistani banking sector financial statement analysis and annual report for the period of 2010-2015 this research apply with 39 banks which are working in Pakistan. In Pakistan there are 27 private owned bank, 5 public owned bank, and 7 foreign owned banks. Therefore our sample size is 27 private, 5 public, and 7 foreign owned banks.

3.4. Sampling Technique

Based on sample size in this study we will use random sampling technique those bank are include in the sample whose data are available for seven years.

3.5. Statistical Techniques

As mentioned above, the study is based on descriptive statistics and regression result of descriptive statistics shows mean, mode, correlation and standard deviation of the regression variables. Furthermore, on this regression result run the OLS and fixed effect, random effect model for the three equations of corporate governance, risk management, and bank performance.

3.6. Regression Model

This study uses OLS fixed effect and random effect model. This model is developed following the studies of (Jorion, 2002), (Cebenoyan & Strahan, 2004), (Konishi & Yasuda, 2004), (Tandelilin et al., 2007) and (Javid & Iqbal, 2010). The model is executed as following:

$$\begin{aligned} \mathrm{CAR} = {} & \alpha_{10} + \beta_{11}\mathrm{CR} + \beta_{12}\mathrm{CCC} + \beta_{13}\mathrm{SRR} + \beta_{14}\mathrm{LDR} \\ & + \beta_{14}\mathrm{LLP} + \beta_{15}\mathrm{FAI} + \beta_{16}\mathrm{OWN} + £_1 \end{aligned}$$

$$\begin{aligned}VAR = {} & \alpha_{20} + \beta_{21}ROE + \beta_{22}NPL + \beta_{23}BR + \beta_{24}CAR + \beta_{25}D1*CAR \\ & + \beta_{26}D2*CAR + \beta_{27}D3*CAR + \beta_{28}D1 + \beta_{29}D2 + \beta_{30}D3 + £_2\end{aligned}$$

$$\begin{aligned}ROE = {} & \alpha_{30} + \beta_{31}VAR + \beta_{32}NPM + \beta_{33}D3 + \beta_{34}CAR + \beta_{35}D1*CAR \\ & + \beta_{36}D2*CAR + \beta_{37}D3*CAR + \beta_{38}DI + \beta_{39}D2 + \beta_{310}D3 + \beta_{311}CAR2 \\ & + \beta_{312}D1*CAR2 + \beta_{313}D2*CAR2 + \beta_{314}D3*CAR2 + £_3\end{aligned}$$

CR = capital ratio;

NPM = net profit margin;

CCC = cash claim on central bank;

SRR = secondary reserve ratio;

LDR = loan to deposit ratio;

LLP = loan loss provisioning;

FAI = fixed asset and inventory;

OWN = ownership structure;

CAR = capital adequacy ratio;

VAR = value at risk;

NPL = non-performing loan ratio;

BR = business risk;

ROE = return on equity;

D1 = for domestic owned bank;

D2 = 2 for foreign owned bank;

D3 = 3 state owned bank;

α = intercept;

β = coefficient of parameters;

£ = residual error.

3.7. Operational Definition and Measurement of Variable

This research is referring to three constructs: corporate governance, risk management and bank performance. The variables are derived following the studies of (Jorion, 2002), (Cebenoyan & Strahan, 2004), (Tandelilin et al., 2007) and (Javid & Iqbal, 2010). Some proxy variables are used for every construct which are discuss below.

3.7.1. Proxy Variable for Corporate Governance

There are two forms of corporate governance, familial and outside corporate governance. The protection of public, employee, and owner interest is the main function of internal (Familial) and external (outside) corporate governance. External corporate governance can be defined as it is a tool that the government can control the bank operation according to the recent bank regulation. The state bank of Pakistan provides guidelines to calculate the strength of a bank; the bank strength can be calculated by using various financial ratios.

Throughout the period of 1997-2001 the performance of Pakistani banking sector is suffered due to the financial crisis in Asia. For solving of this problem, the central can classify the bank into three categories: A, B, and C categories. A bank which have Capital Adequacy Ratio (CAR) less than −25% are classified into C categories; a bank which has CAR amid −25% and 4% are classified into B categories; whereas a bank that have CAR more than 4% are classified into A categories.

Capital Adequacy Ratio (CAR) can be calculated by capital divided by risk biased middling asset. Capital includes core capital and derived capital central bank ascertains that the bank should reserve the minimum level of CAR at least 8%. CAR shows the function of a bank that bank follow the rules which are related to protect the public interest. Greater CAR shows the relatedness of bank toward the community attention. (Konishi & Yasuda, 2004) documented that better execution of CAR reduce the risk of commercial bank therefore CAR ratio symbolize a superior proxy for implementing good corporate governance mechanisms.

This research uses several financial ratios which are interrelated to CAR. (Tandelilin et al., 2007) develop model and obtain compound price of corporate governance based on bank categories. He uses six variables which are related to evaluate corporate governance. This research follows this variable. These symbolize other capital or asset ratios such as:

- Capital Ratio (CR): $CR = LLP +$ equity ÷ total loan
- Cash Claim on Central Bank (CCC): $CCC =$ central bank account ÷ total deposit
- Secondary Reserve Ratio (SRR): $SRR =$ marketable security ÷ total deposit

Loan to Deposit Ratio (LDR) loan represent total loan in the balance sheet and deposit include demand deposit certificate of deposit, time deposit , saving, issue securities, loan capital and borrowing. This ratio shows the quantity of public contribution in the capital of a bank in the form of loan. Smaller LDR show that the public can support smaller quantity of bank loan. Central bank determines that bank may want to be lower the LDR than 85%. Smaller LDR shows that bank obediently follow rules which are related to protect the public interest therefore this ratio represent a good proxy for external corporate governance mechanisms.

- $LDR =$ total loan ÷ total deposit
- Loan Loss Provisioning (LLP): $LLP =$ allowance for losses ÷ total loan
- Fixed Asset and Inventory to Capital (FAI): $FAI =$ fixed asset and inventory ÷ capital

3.7.2. Proxy Variable for Risk Management

Risk management symbolizes the behavior of manager to take a risk. All the concerned parties are pertaining that how bank supervise their risk cautiously. This research uses VAR value at risk as an endogenous variable and also uses Non-Performing Loan (NPL) and Business Risk (BR) as exogenous variable for the calculation of risk management.

Value At Risk (VAR) can be calculated by the mean value of all individual banks and the mean of all cross section bank bases on sample. Profit and loss 5%

calculated on daily basis. (Jorion, 2002) define that VAR resume that whip defeat above a mark streak up by a certain stage of assurance. Value at risk shows the profit and loss of a project over a target line. In this research using 95% confidence level therefore VAR must want to greater than 5% of the all number of observation VAR can be calculated as below:

Using daily basis data of profit and loss of all banks:

- Calculates arithmetic mean profit and loss on daily basis of all banks. Calculates standard deviation of profit and loss on daily basis.
- Using 95% confidence level.
- VAR of individual bank ÷ mean of cross section VAR.
- Higher VAR shows that the bank face more risk problem and lower VAR shows that bank face low risk.

Nonperforming loan is calculated by nonperforming to total loan. The proportion of nonperforming loan is representing to supervisory risk taking behavior which is related to all organization resources. The higher NPL ratio shows that bank take more risk in their operation and investment. This statement shows that if NPL ratio is high the risk may be high and the public interest cannot be protected therefore central bank determine that if a bank which maintain their NPL ratio less than 5% this bank can be greater perform thus this ratio is related for the variable of risk management.

Business risk is calculated by the standard deviation of return on asset. To use daily basis data for the calculation of business risk. Business risk is unavoidable risk its arise owing the operation of the bank. This variable is furthermore utilized by (Cebenoyan & Strahan, 2004) for risk management.

3.7.3. Proxy Variable for Bank Performance

Bank recital shows the interest of investor. This research use return on equity ROE for the calculation of bank performance return on equity means return on shareholder investment. This research also use net profit margin NPM for the calculation of bank performance the higher NPM ratio shows higher performance of bank and lower NPM ratio shows lower performance of banks the variable equation can be calculated below:

- Return On Equity (ROE).
- ROE = earning ÷ equity.
- *Net* profit margin *NPM*.
- NPM = net income ÷ operating income.

3.7.4. Ownership Structure and Type of Bank Ownership

- Ownership structure (own)

It includes spreading ownership and concentration ownership. Dispersion ownership means that the owner may have a less power to control the bank but concentration ownership have a more power of owner to control the bank. Higher power of owner shows that the owner may have a higher quantity of share. And less power of owner shows that the shareholder may have a less quantity of share. In this study the ownership structure can be determine by the greater percentage of quantity of individual and institutional ownership.

- Nature of bank ownership

Nature of bank rights includes private, public and foreign owned banks. Three dummy variables are used for the calculation of nature of bank risk.

4. Result of Secondary Data

4.1. Summary of Statistics

Table 1 describes the summary of statistics that shows the results of mean, median and standard deviation of the variable. Two instrument variables are used for risk management including Value At Risk (VAR), and Capital Adequacy Ratio (CAR). Family ownership, managerial ownership, and concentration ownership represent ownership structure variable. Board size, board independence, CEO and audit committee represent corporate governance variable. Dummy variable are used for bank performance firm size firm profitability, and growth opportunities represent bank performance variable.

Table 2 and Table 3 show that concentration ownership has a strong effect on VAR and CAR while managerial ownership has a Second order effect on VAR and CAR. But family ownership has a lowest effect on CAR and VAR.

According to Table 2 and Table 3, the board size strongly effect on VAR and CAR. Audit committee has second order effect on risk management. But board independence and CEO have a lowest third and fourth order effect on CAR and VAR, it also shows the effect of bank performance on risk management. For risk measurement VAR and CAR are used as an instrument of variable. Firm profitability has a more effect on VAR and CAR. While board size are the second level effect on risk management, but the growth opportunities have a lowest effect on CAR and VAR. that shows that risk management will lead to better bank performance.

Table 1. Summary of statistics.

VAR	1										
NPL	0.33***	1									
Fam. Osh	0.33***	0.65***	1								
Mgt. Osh	0.33***	(0.65***)	0.65***	1							
Con. Osh	−0.06	−0.09	(0.65***)	(0.36***)	1						
Board. Ind	0.03	−0.38	−0.09	(0.68***)	0.06	1					
Board. Stru	−0.05	−0.08	−0.38	(0.36***)	(0.36***)	0.66***	1				
Duality	0.39***	(0.65***)	−0.08	0.03	0.36***	(0.33***)	(0.38***	1			
Audit. Comit. Ind	0.03	(0.35***)	(0.65***)	0.35***	0.86***	0.86***	0.60***	−0.09	1		
f. Size	(0.36***)	0.03	(0.35***)	(0.36***)	0.08*	0.35***	0.65***	(0.08*)	0.36***	1	
f. Growth	0.30***	0.33***	0.33***	0.36***	(0.39***)	(0.33***)	0.03	(0.38***	(0.36***)	0.08*	1
f. Profit	−0.09	(0.33***)	(0.33***)	(0.36***)	0.35***	0.35***	0.30***	−0.3	0.33***	0.30***	0.39***

Table 2. Regression result (effect of VAR).

Dependent Variable:	**Firm Value at Risk VAR**
Family Control	−0.0222 (−5.02)**
Management. Osh	0.09 (5.62)***
Ownership Concentration	0.0056 (4.12)
Board Independence	−0.0097 (−0.410)
Board Size	0.082 (2.940)
Chairman/CEO Duality	0.098 (12.10)**
Audit Committee Independence	−0.0258 (−3.96)
Firm Size	0.0091 (8.86)***
Growth Opportunities	0.00810 (9.71)***
Firm Profitability	0.0092 (4.02)***
Bank. Dummy	0.00577 (0.988)
F Value	10.76
P Value	0.000
R2	0.24

Table 3. Regression result (effect of CAR).

Dependent Variable	CAR
Family Control	−0.023 (−2.05)**
Management. Osh	0.02 (8.42)***
Ownership Concentration	0.005 (2.31)***
Board Independence	−0.0058 (−0.910)
Board Size	0.092 (3.510)
Chairman/CEO Duality	0.042 (4.210)**
Audit Committee Independence	−0.0826 (−3.96)
Firm Size	0.0097 (9.75)***
Growth Opportunities	0.00410 (9.77)***
Firm Profitability	0.0007 (9.02)***
Bank. Dummy	0.00567 (0.738)
F Value	12.46
P Value	0
R2	0.16

Furthermore, the study analyzes the interrelation amid corporate governance, ownership structure, and bank performance. The research has investigated the interrelation of risk management.

4.2. Regression Result

The results provide three equation analyses of corporate governance, bank performance and ownership structure with the risk management. Two variables are used for risk management VAR and CAR. Family ownership, managerial ownership, and ownership concentration are used as an instrument variable for ownership structure. But board independence, board size, CEO and audit committee are used as variables for corporate governance. Dummy variable are used for bank performance. The results show that three type of bank ownership are same therefore they cannot effect on VAR type of bank ownership as compare as a whole with risk management.

$$\begin{aligned} \mathrm{CAR} = {} & \alpha_{10} + \beta_{11}\mathrm{CR} + \beta_{12}\mathrm{CCC} + \beta_{13}\mathrm{SRR} + \beta_{14}\mathrm{LDR} \\ & + \beta_{14}\mathrm{LLP} + \beta_{15}\mathrm{FAI} + \beta_{16}\mathrm{OWN} + £_{1} \end{aligned}$$

$$\begin{aligned} \mathrm{VAR} = {} & \alpha_{20} + \beta_{21}\mathrm{ROE} + \beta_{22}\mathrm{NPL} + \beta_{23}\mathrm{BR} + \beta_{24}\mathrm{CAR} + \beta_{25}\mathrm{D1} * \mathrm{CAR} \\ & + \beta_{26}\mathrm{D2} * \mathrm{CAR} + \beta_{27}\mathrm{D3} * \mathrm{CAR} + \beta_{28}\mathrm{D1} + \beta_{29}\mathrm{D2} + \beta_{30}\mathrm{D3} + £_{2} \end{aligned}$$

$$\begin{aligned} \mathrm{ROE} = {} & \alpha_{30} + \beta_{31}\mathrm{VAR} + \beta_{32}\mathrm{NPM} + \beta_{33}\mathrm{D3} + \beta_{34}\mathrm{CAR} + \beta_{35}\mathrm{D1} * \mathrm{CAR} \\ & + \beta_{36}\mathrm{D2} * \mathrm{CAR} + \beta_{37}\mathrm{D3} * \mathrm{CAR} + \beta_{38}\mathrm{DI} + \beta_{39}\mathrm{D2} + \beta_{310}\mathrm{D3} + \beta_{311}\mathrm{CAR2} \\ & + \beta_{312}\mathrm{D1} * \mathrm{CAR2} + \beta_{313}\mathrm{D2} * \mathrm{CAR2} + \beta_{314}\mathrm{D3} * \mathrm{CAR2} + £_{3} \end{aligned}$$

First equation shows the relationship of ownership structure with VAR and CAR. The regression consequence display that family ownership has an unconstructive outcome on VAR and CAR that indicates the negative association between the variables. While managerial ownership and concentration ownership shows a positive relationship on VAR and CAR. Therefore, this result does not verify the first hypothesis H1 which describes that ownership structure as a vital factor of risk management.

Second Equation shows the relation of corporate governance on risk management. Board independence board size CEO and audit committee use as an instrument variable of corporate governance. The regression result shows that board size and audit committee has negative effect on VAR and CAR that shows that there is a negative association between the variable. While board size and CEO has a positive relationship on VAR and CAR, therefore the findings confirm the hypothesis H2, stated that improved corporate governance will clue to healthier risk management.

Third equation shows the relationship of risk management on bank performance. Firm size, firm profitability and growth opportunities represent as a variable of bank performance. Regression result shows that firm size firm profitability and growth opportunities have a positive effect on CAR and VAR. that means so as to here is a constructive association amid the risk management and bank recital. Therefore this finding prove the third hypothesis H3, stated that enhanced risk management will direct to enhanced bank performance.

The regression results describe the relation of ownership structure and corporate governance. The result shows that corporate governance have positively effected on bank performance that means that if a bank can adopt good corporate governance rules the performance will be high. The result also shows that risk management have positive correlated on bank performance. It means that if a bank can control and manage a risk the performance of that bank will be increase. But here in Pakistan the rules and regulation is same for all type of bank private, public and foreign therefore the ownership structure of all bank are same. Therefore this finding confirms the hypothesis H4: that is stated that relationship between ownership structure, corporate governance, and risk management is more sensitive for bank performance.

4.3. VAR Random Effect and Ordinary Least Square Regression Model

Table 4 describes the result of first equation that shows the relationship of ownership structure on VAR random and OLS regression model. Three variables are used for the calculation of ownership structure family ownership, managerial ownership and concentration ownership. The result shows that VAR OLS have strongly correlated with family ownership and managerial ownership. While VAR randomly second order correlated with family ownership and managerial ownership. But the ownership concentration is negatively correlated with VAR random and OLS model.

The second equation in Table 4 describes the relationship of corporate governance on VAR random effect and OLS affect model. Four variables are used for corporate governance. Board size, board independence, CEO and audit committee. The result shows that board independence have strongly correlated with VAR OLS model but the slowest relationship of VAR random effect and board independence. While VAR randomly highly correlated with board size. But second order relationship of VAR OLS with board size. CEO has positively correlated with VAR OLS and VAR random effect. While there is an insignificant relationship between audit committee and VAR OLS model. But VAR randomly positively correlated with audit committee. Finally there is a significant relationship between the VAR random effect and corporate governance, while there is an insignificant relationship between the VAR OLS and corporate governance.

Table 4. VAR random effect and ordinary least square regression model.

Dependent Variable:	Value at Risk OLS	VAR Random Effects
Family Ownership	0.0067 (3.45)*	0.003 (0.30)
Management. Osh	0.0091 (0.36)	0.0003 (3.35)**
Ownership Concentration	−0.00003 (−0.36)	−0.0045 (−3.65)**
Board Independence	0.098 (3.53)*	0.037 (0.36)
Board Size	0.031 (3.33)	0.039 (0.33)
CEO Duality	0.038 (3.35)***	0.035 (3.30)**
Audit Committee Independence	−0.009 (−0.33)	0.032 (0.53)
Firm Size	−0.005 (−3.33)***	−0.023 (−0.35)
Firm Growth	0.008 (3.83)	0.024 (3.53)***
Firm Profitability	−0.00005 (−0.33)	0.0009 (0.33)
R4	0.32	0.1
Dependent Variable:	Value at Risk OLS	VAR Random Effects
Family Ownership	0.0067 (3.45)*	0.003 (0.30)
Management. Osh	0.0091 (0.36)	0.0003 (3.35)**

The third equation shows the relationship of bank performance on VAR random and OLS model. Three variables are used for the calculation of bank performance firm size, firm profitability and growth opportunities. The result shows that there is a linear association between firm growth and VAR random and OLS model. But VAR randomly positively correlated with firm profitability while VAR OLS have negatively correlated with firm profitability, while there is a nonlinear association between the firm size on VAR random and OLS model.

4.4. CAR and VAR with Firm Performance, ROA and EPS

Table 5 and Table 6 describe that the firm performance can be measure by ROA return on asset and EPS earning per share. The result shows that CAR and VAR negatively correlated with ROA and EPS. That means if a firm cannot control a risk the return on asset and earnings per share can be decrease.

Table 5. Relationship of CAR with firm performance ROA and EPS.

Dependent Variable:	Firm Performance ROA	EPS
CAR	−0.0179 (−53.677)***	−0.093 (−3.879)*
Family Control	0.0079 (15.353)***	0.0067 (6.701)*
Mgt. Structure	0.000067 (5.3791)*	0.00098 (5.379)**
Ownership Concentration	−0.000053 (−6.779)*	−0.0008 (−17.98)**
Board Independence	0.05353 (7.78)**	0.011 (5.0379)*
Board Size	0.0179 (15.31)**	0.0153 (7.9530)**
CEO Duality	0.0538 (53.678)***	0.0530 (53.530)**
Audit Committee Independence	0.0053 (0.153)	0.093 (0.867)
Firm Size	−0.008 (−53.538)***	−0.001 (−0.797)
Growth Opportunities	−0.008 (1.791)	−0.0053 (53.71)***
Bank. Dummy	0.000097 (0.88)	0.00078 (0.5353)
R2	0.167	0.07

Table 6. Impact of VAR on firm performance ROA and EPS.

Dependent Variable	Firm Performance ROA	EPS
VAR	−0.0134 (−72.677)***	−0.063 (−3.7634)*
Family Control	0.0034 (16.372)***	0.0067 (6.701)**
Growth Opportunities	0.000067 (6.3341)*	0.000676 (6.334)**
Bank. Dummy	−0.000072 (−6.734)*	−0.00076 (−17.676)**
Board Independence	0.07272 (7.776)**	0.011 (6.0334)*
Board Size	0.0134 (16.31)**	0.0172 (7.6720)**
CEO Duality	0.07276 (72.6776)***	0.0720 (72.720)**
Audit Committee Independence	0.0072 (0.1720)	0.0630 (0.7667)
Firm Size	−0.0076 (−72.7276)***	−0.0010 (−0.347)
	−0.0076 (1.341)	−0.0072 (72.71)***
	0.000067 (0.7676)	0.000776 (0.7272)
R2	0.367	0.49

The results show the variable of ownership structure family ownership and managerial ownership have positively affected on ROA and EPS. But ownership concentration has negatively correlated with ROA and EPS. Second equation shows the performance of corporate governance on ROA and EPS board size, board independence CEO and audit committee have positively correlated on ROA and EPS that shows if a firm applies good corporate governance the firm performance ROA and EPS will increase. The results of bank performance on ROA and EPS shows that bank dummy variable have positively correlated on ROA and EPS.

5. Conclusion and Implication

5.1. Conclusion

This research provided the advanced mechanisms of corporate governance, therefore, this study has highlighted three aspects of corporate governance, including risk management, bank performance and ownership structure. The results have analyzed that when there is an interrelation within three constructed variables, the corporate governance will be better implementing. The model used regression results and OLS random effect of regression variables. The results concluded below:

1) Possession arrangement is regarded as a main element of risk management. The first hypothesis does not check the outcome.

2) Superior risk management is due to top corporate governance. The result confirms the second hypothesis.

3) Better risk management will lead to better banking management. The third hypothesis coincides with the result.

4) Relationships between ownership structure, corporate governance, and risk management are profound for bank performance. The outcomes confirm the fourth hypothesis.

5.2. Implication

This study provides several implications. If the manager of a bank implements good corporate governance practices, the performance will be increased and risk will be reduced of that bank as we have described it in the research hypothesis. This study also provides some information to the shareholders so they contain vital responsibility to compel the bank supervision to apply superior corporate governance and also organize the bank management through superior corporate governance mechanism. This study also informs the government that if government promotes banks then banks can implement good corporate governance practices, this will increase the efficiency of banks. If the state bank of Pakistan encourages all banks to implement corporate governance rules & regulations to reduce the risk, this will encourage the investors and depositors to invest more money in banking sector.

Authors' Contributions

The author's contributions in the manuscript are as following:

- (JA) the corresponding author carried out statistical analysis and helped us writing the "results and discussion parts". Supervise and revised the manuscript and also helped us improving the English language as well as collecting the literature and sorting it.
- (SKK) carried out the introduction, literature review, methodology and conclusion, as well as designed, organized, drafted and aligned the Manuscript. Further, YT, the second author revised the whole manuscript twice including "results and discussion part" and we are very thankful to doctor Hamid Ullah, Assistant Professor Islamia College University, Peshawar. All authors who read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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