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THE IMPACT OF CORPORATE GOVERNANCE ON RISK MANAGEMENT: EVIDENCE FROM THE BANKING SECTOR OF PAKISTAN

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ABSTRACT

This study evaluates the impact of corporate governance on bank risks that are capital risk, credit risk, and liquidity risk of twenty commercial banks that are listed on the Pakistan Stock Exchange throughout 2009-2018. Data was collected from Annual reports and accounts of the sampled banks. Random-effect GLS regression technique used to analyze data. The empirical results found that different CG dimensions impact differently on bank risks. In the context of Pakistan, the results reveal that board independence, gender diversity on board and audit committee have a significant effect on bank risks, while board size and CEO turnover have an insignificant effect. As the fundamental purpose of any company is to create and deliver long-term sustainable value in line with its commitments as a responsible corporate citizen, it is recommended that the Bank, therefore, does not view corporate governance as an end in itself but as a critical factor in creating long-term value for all stakeholders. To raise the level of influence of corporate governance on banking risk to a higher level in Pakistan's banking industry. The independence of the audit committee needs to be increased. This allows management to protect the interests of all stakeholders, not just their interests.

Keywords: Risk Management, Corporate Governance, Bank risk, CEO Turnover, Gender diversity, capital risk, credit risk, liquidity risk
JEL Codes: E50, G20

I. INTRODUCTION

This research is about the impact of corporate governance (Mathew et al., 2018) on risk management (RM) in the case of listed banks in the Pakistan stock exchange (PSX). According to research for World Bank, (Kirkpatrick, 2009; Quang Trinh, 2022) found that failures in the CG structures are the main reason behind the latest global financial crisis. He further said that CG didn't help in extreme risk-taking and it concluded a large number of bad debts hence affecting banks' risk. The banking industry has been providing facilities to users and companies for years. Ongoing improvement and struggle in the financial sector and the new players have permitted for a much broader range of banking products and facilities for wholesale and retail banking clients (Nisar et al., 2021; Aslam et al., 2021; Quang Trinh, 2022). These comprise outdated activities such as "accessing financial information, obtaining loans and opening deposit accounts, as well as relatively new products and services such as electronic bill payment services, personalized financial 'portals,' account aggregation and business-to-business market places and exchanges". (Syaepullah, 2022) banking sectors there are too many problems generated, the customer who is failed to return the loans is the main problem and as a result, the bank is called non-performing. Banks verify their customers before giving them a loan through the procedure of RM (Mathew et al., 2018). They make sure are their customers have the capacity and intention to pay the loan in the future or not? The State Bank of Pakistan (SBP) tries hard to minimize the risk and they have done this through RM. Some managers responded to this by dragging back from hazards in such a way that they avoid accepting the transactions in which they see that the risk is mandatory they also avoid excessive risk by compromising on financial institute's value. The winners are separated from the losers on the base of excessive risk acceptance and avoidance by placing the firm at appropriate point (Sajjad et al., 2019; Rashid, 2022). This study follows the agency theory perspective. CG means how the firms are being run and controlled. These characteristics can impact various strategic decisions of the firms according to many existing studies. Hence there is a requirement to study the role of CG on RM. This research examines the role of CG and the financial risks of listed banks in PSX from 2009 to 2018. The motivation of this study

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is to identify the impact of CG on the RM of listed banks in Pakistan. Several CG mechanisms can affect the bank risks. In this study, we are going to find out the current CG mechanisms that will help to reduce the specific bank risks. Various elements are found to affect a bank's risk. These elements are related to various aspects of banks. However, there is still a gap concerning the role of CG mechanisms in Pakistani-listed banks on the risks faced by banks. Study purposes are to examine the role of CG on "capital risk", "credit risk" and "liquidity risk". The objective of this study is to examine the impact of CG on bank risk.

- To examine the role of board size on "Capital Risk, Credit Risk, and Liquidity Risk".
- To inspect the role of board independence on "Capital Risk, Credit Risk, and Liquidity Risk".
- To study the role of gender diversity on board on "Capital Risk, Credit Risk, and Liquidity Risk".
- To examine the role of CEO duality on "Capital Risk, Credit Risk, and Liquidity Risk".
- To inspect the impact of audit committee independence on "Capital Risk, Credit Risk, and Liquidity Risk".

II. LITERATURE REVIEW

II.I. CORPORATE GOVERNANCE

CG involves the guidelines and regulations which are necessary to run the firm on shareholders' goals. Also, identify the rights of directors and managers and helps understand the actions taken by owners to influence the firm's decisions. (Sajad Nawaz Khan & Ali, 2018; Kurawa & Ishaku, 2014) "CG is an emerging field and performing a vital role in the overall enactment of a corporation. It can be simply defined as an association between shareholders, top management", BOD's which has the alignment towards the organizational success (Mathew et al., 2018; Wheelen & Hunger, 2011). "CG is a group of association between all stakeholders; management, board of directors, shareholders, employees, customers and investors" (Elbahar, 2016; Ltifi & Hichri, 2021). Effective CG exists to offer checks and balances between stockholders and administration and thus to alleviate agency difficulties. Hereafter, companies with good governance quality should bear fewer agency problems (Jiraporn, Kim, & Kim, 2011; Nakpodia & Olan, 2022).

II.II. RISK MANAGEMENT

RM is "a process of identifying, assessing, and prioritizing risks of different kinds". When the risks are recognized, the risk manager then generates a strategy to lessen or abolish the influence of adverse events (Altaf, Ayub, Shabbir, & Usman, 2021; Elbahar, 2016). The RM is aligned with the credit administration department that's why banks don't have any RM unit (Haneef et al., 2012; Munawar, Mojtahedi, Hammad, Kouzani, & Mahmud, 2022). For the stability of a long-lasting investment environment, risk management practices and mitigation policies play a key role. Nobody wants to lose their money or any investment that's why every investor remains conscious. (Polinkevych, Khovrak, Trynchuk, Klapkiv, & Volynets, 2021) The RM practices of firms and businesses will depend on the strategies of the management has, so the trust of the investor stays on the remedy measures being accompanied there (Bessis, 2011; Mathew et al., 2018).

II.III. BANK RISKS

Banking risks collapse into four classifications: "financial, operational, business, and event risks". Financial risks include two risk types, "*Pure risks* - including liquidity, credit, and solvency risks - can result in a loss for a bank if they are not properly managed. *Speculative risks*, based on financial arbitrage, can result in a profit if the arbitrage is correct or a loss if it is incorrect. The main categories of speculative risk are interest rate, currency, and market price risks," (Elbahar, 2016; Polinkevych et al., 2021).

III. INDEPENDENT VARIABLES

III.I. BOARD SIZE

(Elbahar, 2016; Raheja, 2005) stated that best board size is a "function of the directors' and the firm's characteristics". For Pakistani firms, it is estimated that a positive relationship existed between FR and BS as shared information of the associates of the boar. Board size is positively related to firm risk (Alam & Ali Shah, 2013). According to (Mathew et al., 2018; Nakano & Nguyen, 2012), larger boards are related with lower risk, and with minor board size risk is high. The past literature supports there is a negative relation between FR and BS. (Sajad Nawaz Khan & Ali, 2018; Nakpodia & Olan, 2022) founded that FR and BS are related significant.

H1: Board size is inversely related to firm risk.

III.II. BOARD INDEPENDENCE

A study by (Sajjad et al., 2019; Koerniadi et al., 2014) viewed that BI is positively linked with risk-taking. (Mathew et al., 2018; Minton et al., 2011) examine how U.S. financial institutes' RM is associated with the BI and financial experts of the BODs; they certified that BI is negatively related to total risk. (Christy et al., 2013; Sajad et al., 2018) found that in large companies, a board with a greater number of NEDs creates positive benefits in the form of lower capital risk. Another study found a positive relation between the number of NEDs on the board and FR (Sajjad Nawaz Khan, Hussain, Maqbool, Ali, & Numan, 2019; Maher & Aquanno, 2022).

H2: Board independence is negatively related to firm risk.

III.III. GENDER DIVERSITY

(Adams & Funk, 2012; Sajad et al., 2018) showed in a study of Swedish females that females take more risks than males, which are grown from the bottom level of the firm and now in the panel of directors. However, females are bound to follow the guidelines of the firm which lessen the firm risk level. They recommend that there need not lead to taking risk-averse decision having females on the board. (Berger et al., 2014; Mathew et al., 2018) conclude from the study of German banks, the number of women on board and FR is positively associated. (Kyere & Ausloos, 2021) They further clarify that females have an important impact on the CG of banks and are not demoted by men-dominated board culture. Gender diversity inboard is also related to lower FR (Green & Homroy, 2018; Perryman et al., 2016).
H3: Gender diversity on board is positively related to firm risk.

III.IV. CEO TURNOVER

CEO turnover means a CEO is fired or he resigns from the firm. CEO turnover is when a CEO left the company and the other CEO takes its place (Mathew et al., 2018; Saeed & Saeed, 2018).
H4: There exists a relationship between CEO turnover and firm risk.

III.V. AUDIT COMMITTEE INDEPENDENCE

The value of audit committees was emphasized when the 2008 financial crisis arose. In 2009, Klynveld Peat Marwick Goerdeler (KPMG) tested the response of members of the audit committee to the financial disaster. According to the study, many members of the audit committee responded that they had improved their "direct interaction" with management due to the financial disaster, stating that they proposed changing the nature and extent of their inaccuracy to improve the firm's RM systems (Sajad et al., 2018; Sun & Liu, 2014). (Alawaqleh & Almasria, 2021; Kyere & Ausloos, 2021) based on options theory, investors motivate bank management to finance high-risk projects. This may result in management taking the risk of profiting from underperforming investment projects that fail to provide the high returns that are predicted given the high level of risk. (Maher & Aquanno, 2022) Audit Committee independence is expected to influence management decisions through risk assessment and RM inaccuracies. If ACI discovers a project with a high risk but low rate of return that management plans to raise, BOD can reject management's proposal (Alawaqleh & Almasria, 2021). High-quality ACI can discourage high-risk/low-profit projects and maintain high-risk/high-profit projects. Bank performance is likely to be more positively associated with the risk-taking of banks with high ACI efficiency than with banks with low ACI efficiency. Effectiveness of ACI (Saeed & Saeed, 2018; Sun & Liu, 2014).
H5: Audit committees' independence is negatively associated with the RM.

IV. DEPENDENT VARIABLES

IV.I. CAPITAL RISK (CAR)

It is defined as, "the risk that investors may face when they are exposed to the risk of losing all or part of the total amount invested. Capital Risk is used as a proxy variable for RM" (Elbahar, 2016). It is also defined as "the ratio of equity capital to total assets. This ratio is a good measure of capital risk because a decline in equity funding relative to assets suggests increased exposure of shareholders" (Maher & Aquanno, 2022).

IV.II. CREDIT RISK (CRR)

It is defined as, "the risk arises when a borrower defaults on the loan repayment agreement. Banks whose borrowers default on their repayments may face cash flow problems, which directly affect their liquidity," (Elbahar, 2016; Ullah, Qayyum, Thaheem, Al-Turjman, & Sepasgozar, 2021). "Credit risk is defined as the probability that some of a bank's assets, especially its loans, will decline in value and possibly become worthless. Because banks hold little owners' capital relative to the aggregate value of their assets, only a small percentage of total loans need to go bad to push a bank to the brink of failure. Thus, management of credit risk is very important and central to the health of a bank and indeed the entire financial system" (Maher & Aquanno, 2022; Mathew et al., 2018).

IV.III. LIQUIDITY RISK (LIR)

It is defined as, "the bankability to have enough liquid assets that can be easily liquid to make new investments or pay any kind of financial or contractual obligation. Banks will be exposed to liquidity risk when they do not have enough liquid assets that can be used to compensate any expected and unexpected obligation," (Elbahar, 2016; Mathew et al., 2018). "Liquidity risk consists of Funding Risk, Time Risk, Call Risk, and Market Liquidity Risk. Funding risk is the need to replace net outflows due to unanticipated withdrawal/non-renewal of deposit" (Kyere & Ausloos, 2021; Maher & Aquanno, 2022).

V. CONTROL VARIABLES

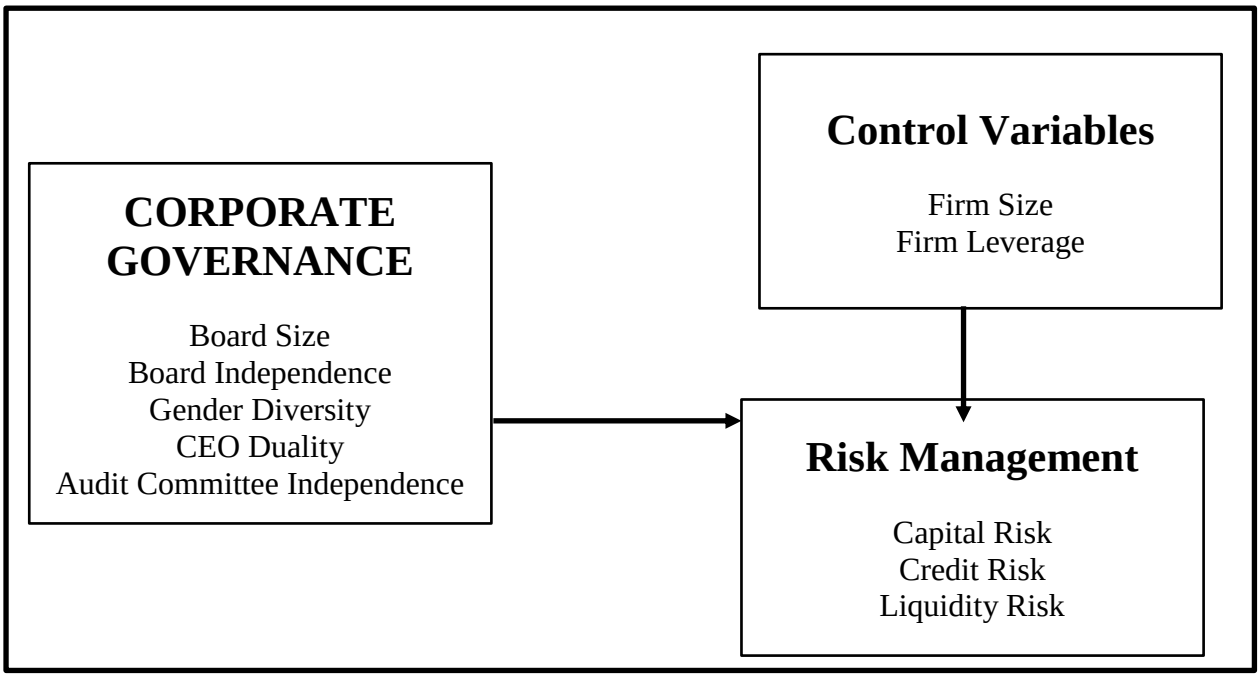
V.I. FIRM SIZE

(Sajad et al., 2018; Kyere & Ausloos, 2021) said the net asset value of a company is the amount through which total assets exceed overall liabilities. In commercial enterprise net asset cost is used to assess the profitability, credit score repute, and solvency position of a company. The net asset is decided via net worth of assets and contemporary assets and subtracting cutting-edge liabilities. The net assets also can be used to degree the net worth of the commercial enterprise, even though other elements can contribute to the price of a firm. (Sajad et al., 2018; Ltifi & Hichri, 2021) added that assets signify the economic funds for businesses.

V.II. FIRM LEVERAGE

Leverage is a financing strategy that uses borrowed money. In particular, the use of various economic devices or borrowed capital to increase the potential return on investment (Anderson & Reeb, 2003; Ali, 2018; Ali & Ahmad, 2014; Ali & Bibi, 2017; Ali & Audi, 2016; Ali & Audi, 2018; Ali & Rehman, 2015; Ltifi & Hichri, 2021). Leverage can also refer to the quantity of debt a company uses to finance belongings (Sajad Nawaz Khan & Ali, 2018; Pandey, 2004).

Figure 1: Conceptual Framework



VI. METHODOLOGY

VI.I. DATA

This research evaluates the effect of CG on the RM of banks that are listed on the Pakistan Stock Exchange. This research is relay on secondary data and the population includes all the banks which are listed on the Pakistan stock exchange. The criterion for sampling is the bank should be listed on or before 2009 and the availability of data. The period of this study is from 2009 to 2018. Random-effect GLS regression technique used for the analysis of data. The population of this study is the total no of banks listed in Pakistan and the sample size of twenty banks selected based on the availability of data.

VI.II. MODEL

i. $CaR= \beta_0+\beta_1 BS_{it}+\beta_2 BI_{it}+\beta_3 GDB_{it}+\beta_4 CEOT_{it}+\beta_5 ACI_{it}+\beta_6 Control_{it}+\mu$
ii. $CrR= \beta_0+\beta_1 BS_{it}+\beta_2 BI_{it}+\beta_3 GDB_{it}+\beta_4 CEOT_{it}+\beta_5 ACI_{it}+\beta_6 Control_{it}+\mu$
iii. $LiR= \beta_0+\beta_1 BS_{it}+\beta_2 BI_{it}+\beta_3 GDB_{it}+\beta_4 CEOT_{it}+\beta_5 ACI_{it}+\beta_6 Control_{it}+\mu$
iv. $CaR= \beta_{0+}\beta_1 CG_{it}+\beta_2 Control_{it}+\mu$
v. $CrR= \beta_{0+}\beta_1 CG_{it}+\beta_2 Control_{it}+\mu$
vi. $LiR= \beta_{0+}\beta_1 CG_{it}+\beta_2 Control_{it}+\mu$

Table 1: Measurements of Variables

Variables	Measures	References
Capital Risk (DV)	"The ratio of equity capital to total assets"	(Tsorhe, Aboagye, & Kyereboah-Coleman, 2011), (Elbahar, 2016)
Credit Risk (DV)	"The ratio of loan loss provision to total loans"	(Tsorhe et al., 2011), (Elbahar, 2016)
Liquidity Risk (DV)	"The ratio of total loans to total deposits"	(Maher & Aquanno, 2022; Pathi, 2017)
Board Size (IV)	"Natural log of total board members"	(Fatima, Mortimer, & Bilal, 2018; Tsorhe et al., 2011)
Board Independence (IV)	Non-executive directors onboard/Total board members	(Elbahar, 2016; Sajad Nawaz Khan & Ali, 2018)
Gender Diversity on Board (IV)	Females' directors onboard/Total board members	(Green & Homroy, 2018; Mathew, Ibrahim, & Archbold, 2016)
CEO Turnover (IV)	Dummy = 1 if CEO is changed and 0 otherwise	(Epure & Lafuente, 2015; Saeed & Saeed, 2018),
Audit Committee Independence (IV)	Number of NEDs on audit committee/Total audit committee members	(Alawaqleh & Almasria, 2021; Elbahar, 2016)
Firm Size (CV)	Natural log of total assets	(Sajad Nawaz Khan & Ali, 2018; Yazid, Razali, & Hussin, 2012)
Firm Leverage (CV)	Total Loans/Total assets	(Sajad Nawaz Khan & Ali, 2018; Pandey, 2004)
Corporate Governance (IV)	CG Index is developed by taking the weighted average of all considered corporate governance variables and weights are assigned based on Principal Component Analysis	(Kyere & Ausloos, 2021; Mathew et al., 2018)

VII. RESULTS

This section exhibits analysis and tools and techniques that are used by the researcher. The methodology and sample are already explained in chapter three. To find out the impact of CG on bank risk in Pakistan, a sample is constructed using banks listed at PSX. The first two sections describe descriptive statistics and correlation matrices. The third section describes the panel data estimation model and describes how to use and evaluate the model.

VII.I. DESCRIPTIVE STATISTICS

Table 2 is showing that the mean of CaR is 0.088534. The mean for CrR is 0.074912; LiR is 0.181462. The mean average of CG dimensions is 0.829428. ACI-audit committee independence mean is 0.97375; board independence is 0.82919; board size is 2.126181; CEOT is 0.19; GDB is 0.02802. The control variables result shows the FS average is 19.65414; LEV is 1.681492. The median statistics shows that ACI is 1; BI is 0.857143; BS is 2.079442; CEOT is 0; GDB is 0; CaR is 0.078882; CrR is 0.030855 and LiR is 1.531071; FS is 19.78197 and LEV is 0.151211. The skew-ness is positively skewed for all except for ACI, BI, BS, and FS.

VII.II. CORRELATION MATRIX

Table 3 provides the correlation of variables Pakistan's listed banks. The CaR has a negative correlation with ACI, BI, BS, FS, and LEV; while a positive correlation with CEOT and GDB. Control variable LEV has a positive correlation with BS and CEOT and with the remaining variables i.e., ACI, BI, FS, and GDB the correlation is negative. The CrR has a negative correlation with all except GDB, FS, and a positive relationship with ACI, BI, CEOT, and GDB. FS as a control variable has a negative correlation with BS and LEV, while positively correlated with ACI, BI, CEOT, and GDB. LiR has a negative correlation with all except BS, CEOT, and LEV.

Table 2: Descriptive Statistics

	ACI	BI	BS	CaR	CEOT	CG	CrR	FS	GDB	LEV	LiR
Mean	0.97375	0.82919	2.126181	0.088534	0.19	0.829428	0.074912	19.65414	0.02802	1.681492	0.181462
Median	1	0.857143	2.079442	0.078882	0	0.812059	0.030855	19.78197	0	1.531071	0.151211
Maximum	1	1	2.564949	0.298122	1	1.097605	1.154285	21.83046	0.5	5.410774	0.854042
Minimum	0.666667	0.428571	1.386294	0.015755	0	0.60823	0.000524	16.98242	0	0.070728	0.022044
Std. Dev.	0.089425	0.097447	0.207717	0.044154	0.393285	0.093486	0.127603	1.073406	0.085254	1.107895	0.132281
Skewness	-3.11549	-2.37612	-0.44231	1.849587	1.580419	0.835366	4.488342	-0.32036	3.996545	0.709793	1.930061
Kurtosis	10.73931	9.783009	4.57988	7.876337	3.497726	3.391465	31.32313	2.569124	20.01957	2.793055	8.219781
Jarque-Bera	822.6842	571.6082	27.32153	312.1879	85.32195	24.53827	7356.505	4.968169	2946.294	17.15042	351.2221
Probability	0	0	0.000001	0	0	0.000005	0	0.083402	0	0.000189	0
Sum	194.75	165.838	425.2363	17.70682	38	165.8856	14.98241	3930.828	5.603918	336.2984	36.29249
Sum Sq. Dev.	1.591354	1.889675	8.586102	0.387959	30.78	1.739199	3.240225	229.2878	1.44637	244.259	3.482167
Observations	200	200	200	200	200	200	200	200	200	200	200

Table 3: Correlation Matrix

	ACI	*BI*	*BS*	*CaR*	*CEOT*	*CG*	*CrR*	*FS*	*GDB*	*LEV*	*LiR*
ACI	1										
BI	0.57747	1									
BS	0.021613	0.156305	1								
CaR	-0.29353	-0.24532	-0.06533	1							
CEOT	-0.00036	0.092767	-0.11304	0.035612	1						
CG	0.338686	0.458705	0.289552	-0.08857	0.832322	1					
CrR	-0.19433	-0.16967	-0.20123	0.013279	-0.04919	-0.16482	1				
FS	0.204599	0.259372	-0.03259	-0.31837	0.160007	0.281605	-0.06945	1			
GDB	0.096961	-0.04251	-0.52874	0.097553	0.120128	0.058188	0.211307	0.374181	1		
LEV	0.053811	0.008693	0.077791	-0.5218	-0.02252	-0.01784	-0.20448	-0.02055	-0.24986	1	
LiR	-0.11441	-0.04163	0.045123	0.031201	0.003233	-0.04239	-0.26519	-0.22503	-0.18966	0.686211	1

VII. FINDING

Table 4: Random Effect Model of Capital Risk with CG variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.504666	0.061757	8.171797	0
BS	0.012985	0.016304	0.796401	0.4268
BI	-0.0518	0.019729	-2.62537	0.0094
GDB	0.02514	0.032376	0.776518	0.4384
CEOT	0.001213	0.003559	0.340948	0.7335
ACI	-0.02777	0.020361	-1.36384	0.1742
FS	-0.01812	0.003089	-5.86574	0
LEV	-0.01106	0.001798	-6.15058	0
R-squared	0.472451	F-statistic	24.56389	
Adjusted R-squared	0.453217	Prob(F-statistic)	0	

The r-square is 0. 472451 and the adjusted r-square is 0. 453217. It means that approximately 47.24% of the change in the dependent variable that is capital risk is because of the considered independent variables. The overall model is a good fit because the probability value of the F statistic is significant. The results of the regression random effect model for Pakistan's listed banks among CG variables and CaR shows that BI is negatively and highly significantly related to capital risk. By significance, it means that the p-value is less than 5%. The sign is also negative and that is very much relevant to the made hypothesis in this study. According to the hypothesis there exist a negative relationship between BI and capital risk. Hence H2 is accepted, the same results are also concluded by (Alam & Ali Shah, 2013; Sajjad et al., 2019). These are the results of the fixed effect model as stated by the likelihood test ratio. H3 is also accepted, same results concluded by (Berger et al., 2014; Sajad et al., 2018; Ali & Senturk, 2019; Arshad & Ali, 2016; Ashraf & Ali, 2018; Sajid & Ali, 2018; Senturk & Ali, 2021). The control factors FS and LEV are negatively and highly significantly related to CaR.

Table 5: Fixed Effect Model of Capital Risk with CG index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.58241	0.062117	9.376042	0
CG	-0.01674	0.016607	-1.00823	0.3147
FS	-0.02364	0.003335	-7.08874	0
LEV	-0.00911	0.001949	-4.67269	0
R-squared	0.426712	F-statistic		39.84588
Adjusted R-squared	0.417938	Prob(F-statistic)		0

These results are obtained by the average of CG dimensions, which concluded that CG is negatively insignificant to the capital risk. Control variables are also inversely related to the capital risk in this result (Mathew et al., 2018).

The r-square is 0.317919 and the adjusted r-square is 0.21541. It means that approximately 31.79% of the change in the dependent variable that is credit risk is because of the considered independent variables. The results of the regression fixed-effect model for Pakistan's listed banks among CG variables and CrR shows that ACI is negatively and highly significantly related to credit risk. By significance, it means that the p-value is less than 5%. The sign is also negative and that is very much relevant to the made hypothesis in this study. According to the hypothesis there exist a negative relation between ACI and CrR. Hence H5 is accepted, same results are also concluded by (Abbas, 2021; Braiotta et al., 2010). These are the results of the fixed effect model as stated by the likelihood test ratio. H1 is rejected because in Pakistan board size affected positively on bank risk, positive results were concluded by (Alam & Ali Shah, 2013; Sajjad et al., 2019). The control factors FS and LEV is negatively and highly significantly related to CrR.

Table 6: Fixed Effect Model of Credit Risk with CG variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.107238	0.409281	2.705326	0.0075
BS	0.123164	0.109042	1.129508	0.2602
BI	0.130154	0.120821	1.077247	0.2829
GDB	0.239346	0.203491	1.176199	0.2411
CEOT	-0.02016	0.021643	-0.93159	0.3528
ACI	-0.33246	0.124246	-2.67579	0.0082
FS	-0.05249	0.02094	-2.50649	0.0131
LEV	-0.02955	0.011517	-2.56563	0.0111
R-squared	0.317919	F-statistic		3.101366
Adjusted R-squared	0.21541	Prob(F-statistic)		0.000005

Table 7: Fixed Effect Model of Credit Risk with CG index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.168394	0.370887	3.150269	0.0019
CG	-0.08888	0.099157	-0.89634	0.3713
FS	-0.04934	0.019914	-2.47773	0.0142
LEV	-0.02973	0.011636	-2.55533	0.0114
R-squared	0.282919	F-statistic		3.174268
Adjusted R-squared	0.19379	Prob(F-statistic)		0.000011

These results are obtained by the average of CG dimensions, which concluded that CG is negatively insignificant to the credit risk. Control variables also inversely related to the capital risk in this result (Sajjad et al., 2019).

Table 8: Fixed Effect Model of liquidity Risk with CG variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.05101	0.201441	-0.25323	0.8004
BS	0.022409	0.053669	0.417546	0.6768
BI	0.052162	0.059466	0.87717	0.3816
GDB	0.05159	0.100155	0.515104	0.6071
CEOT	-0.00629	0.010652	-0.59086	0.5554
ACI	-0.13063	0.061152	-2.13613	0.0341
FS	0.004751	0.010306	0.460967	0.6454
LEV	0.104163	0.005668	18.37612	0
R-squared	0.693163	F-statistic		36.62309
Adjusted R-squared	0.681976	Prob(F-statistic)		0

The r-square is 0.84625 and the adjusted r-square is 0.823143. It means that approximately 84.62% of the change in the dependent variable that is liquidity risk is because of the considered independent variables. The results of the regression fixed-effect model for Pakistan's listed banks among CG variables and LiR shows that ACI is negatively and highly significantly related to credit risk. By significance, it means that the p-value is less than 5%. The sign is also negative and that is very much relevant to the made hypothesis in this study. According to the hypothesis there exist a negative relation between ACI and LiR. Hence H5 is accepted, the same results are also concluded by (Alawaqleh & Almasria, 2021; Braiotta Jr et al., 2010). These are the results of the fixed effect model as stated by

the likelihood test ratio. The control factors FS and LEV are negatively and highly significantly related to LiR (Sajjad et al., 2019).

Table 9: Fixed Effect Model of Liquidity Risk with CG index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.05665	0.1804	-0.31402	0.7539
CG	-0.03394	0.04823	-0.7037	0.4825
FS	0.00463	0.009686	0.477988	0.6332
LEV	0.104232	0.00566	18.41629	0
R-squared	0.684508	F-statistic		42.91919
Adjusted R-squared	0.679679	Prob(F-statistic)		0

The average of CG dimensions is negatively insignificant to the liquidity risk. Firm size is positively insignificant to the liquidity risk in this result. But firm leverage is positively significant to the liquidity risk (Sajjad Nawaz Khan, Yaseen, et al., 2019; Ltifi & Hichri, 2021).

IX. CONCLUSION AND LIMITATIONS

The study shows that in modern times, businesses may no longer be limited to their basic purpose and responsibility: maximizing shareholder wealth. Beyond these responsibilities, this study shows that companies must also be individually involved in risk management responsibilities. Otherwise, banks may have a low reputation, low profits, and low resources. This study also provides a business, philosophical, and ethical argument that opposes the idea that engaging in banking risk can undermine a company's profitability, but still compete with the company's long-term interests. It can be a way to gain power. The main purpose of this study was to investigate the relationship between corporate governance and risk management of Pakistani banks. For this purpose, use a composite index of CG measures and estimate the bank risks with ratios. For the estimation, we analyzed 20 banks listed in Pakistan Stock Exchange (PSX) for 10 years from 2009 to 2018. The empirical results found that different CG dimensions impact differently on bank risks. In the context of Pakistan, we observed that board size affects positively capital risk and liquidity risk while it negatively impacted credit risk. We also observed that board independence has positively impacted credit risk and liquidity risk. Board independence is also negatively significant to the capital risk in Pakistan. Regarding the gender diversity on board in listed banks of Pakistan, we observed that there is a positive relationship of GDB with capital risk, credit risk, and also positively significant to liquidity risk. This might be due to the reason that government might have some policies to enhance female culture in banks and other firms. A similar observation was found for audit committee independence in Pakistan. ACI inversely impacts the bank risks with different characteristics. It is a negative effect on capital risk, credit risk, and liquidity risk, and is significant to credit risk and liquidity risk. Finally, we observed that the change of CEO also had a positive impact on capital risk and a negative impact on credit and liquidity risk. This is due to the separation of ownership and control due to geographical diversity, and the high market exposure, which results in different knowledge and value for owners.

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