Board Committee Characteristics, Firm Financial Performance and Solvency Risk Moderating Role of Capital Structure in Crises

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ABSTRACT

The basic purpose of this study is to investigate the impact of Board Committee Characteristics (BCC) on Financial Performance (FP) and Solvency risk moderating effect of Capital Structure (CS) in Pakistan. BCC is measured through Board Size (BoS), Diversity, and Duality. FP is measured through Return on Assets (ROA), Return on Equity (ROE), Earnings per Share (EPS), Operating Profit Margin (OPM), and Net Profit Margin (NPM) while solvency risk as measured by time interest earned ratio. 52 non-financial firms listed on the Pakistan Stock Exchange (PSX) from 2019 to 2021 were chosen to study this relationship in crises COVID-19. Panel data techniques are used to test the relationship between the variables under consideration. The empirical results show that BoS and diversity has a negative significant effect on FP in this era. Duality has positive significant effect on FP. CS moderates the relationship between BoS and EPS, as well as the relationship between control variables. This study has some implications for business management, stakeholders, and researchers. It is clear that in this crisis BoS and Diversity is also affected. Larger BoS and diversity will not increase FP. They raise the firm's costs and decrease its profitability. Management, regulators, and investors must consider BCC in order to recover the corporate sector after a crisis. The study also includes some recommendations for future research, such as a larger sample size, other CG variables, and the financial sector.

Keywords: Board Committee Characteristic, Capital Structure, Financial Performance, Pakistan.

INTRODUCTION

An economic crisis of 21st century also known as (COVID-19) has affected all of the economies across worldwide (Farwis *et al.*, 2021; Kells, 2020 and Mether, 2020). Firms are facing different issues (decreased

demand, supply chain disruptions, cancellation of export orders, raw material shortages, transportation disruptions, and solvency risk) with a certain degree of losses of business (Hanefah *et al.*, 2020). Countries all over the world have taken strict measures to fight the disease, including shutdowns, which have caused massive disruptions in work, life, and the economy.

Major victims of Novel coronavirus are non-financial sector of Pakistan due to lockdown. However, banking sector of Pakistan has continued their working in this era with social distancing and special instruction from health department. While non-financial sector stop their operations due to banned on transport and all other activities. Telecommunication sector introduced work from home and other sectors also start their operations with preventive measures of health department. COVID-19 has changed the way people interact, think, and work.

Pakistani Governments has implemented a variety of economic, fiscal, and monetary policies to mitigate the negative impact of the COVID-19-caused economic crisis on non-financial and financial sector because non-financial sector of Pakistan is major contributor in GDP approximately 12% (World Bank, 2021). At the same time, the COVID-19 pandemic has raised the role of BCC. Because BCC direct and control firms in order to reduce the risk of insolvency and increase FP. In this study, we look at how BCC can help firms to deal with the negative consequences of the COVID-19 crisis; sustain their performance and mange solvency risk. CS also moderates the relationship between BCC and FP and also effect on solvency risk.

Few studies have been conducted to date to investigate the impact of COVID-19 on corporate characteristics such as FP, CG, and CS. However, there has been very little research into the impact of BCC on FP and solvency risk moderating role of CS in COVID-19. This study, however, differs from others in that it first assesses the impact of BCC on FP in the era of COVID-19 and then assesses how BCC can be used to manage solvency risk. It also looked at how CS affected the relationship between BCC, FP, and solvency risk. In this era many firms shutdown their operations and then they default. So in this duration board play an important role to increase their FP and manage risk. We used sample data from 52 listed firms on the PSX from 2019 to 2021 to assess the relationship between these variables.

According to the regression results, BoS has a negative effect on ROA, ROE, OPM, and NPM. Diversity has a negative impact on FP, whereas duality has a significant positive impact on FP. A Debt to Equity (DE), Debt to Total Assets (DTA) variable of CS is to test a moderation effect between BCC variables and FP as well as risk. The relationship between BoS and EPS is moderated by DE. In simple regression, no relationship was found, but when DE was included as a moderator, BoS had a negative and significant effect on EPS. Companies with a higher BoS are thus unable to improve management decision control and monitoring

functions, and as a result, these characteristics do not increase FP in this pandemic. Diversity has a negative impact on FP, whereas duality has a positive impact. Results demonstrate that BCC in Pakistan in the form of risk decision control and monitoring, which has the potential to increase company FP. A company's FP can be increased with the presence of a small board and an optimal CS. Managers can make CS decisions to avoid risky debt, resulting in an increase in FP. Managers in Pakistan frequently act in their own self-interest, i.e. empire building, causing debt. If leverage is high then first step is to pay off the loan's interest and principal, which reduces managerial opportunism and increases the company's value by increasing BCC monitoring.

There are several limitations to this study that may have an impact on the findings. Because BCC in this study is only one component of the CG, future researches should focus on other variables of CG (audit committee characteristics and structure of ownership) to test the impact on FP. This is due to the fact that BCC influence varies depending on the political, judicial, social, and economic systems.

The remainder of this study is organized as follows. The second section summarises the literature review. Section three discusses the study's sample and methodology. Sections four and five present the empirical results, limitations, and recommendations for future studies, respectively.

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

The pandemic is one of the most major challenges of the twenty-first century. Despite the fact that the world is still facing fourth wave of this epidemic, it significantly effect on whole environment, business, and economy. It is also a concern of health as well as economy. Countries have been severely impacted, and because COVID-19 is highly contagious, the government has imposed lockdown measures. Lockdown and banned on the transport have a substantial negative impact on the economy. Policies such as limited movement of peoples, banned on transport and the closure of unnecessary businesses have had a significantly influence on economy as well as FP.

While researchers warn that estimating the true impact of this crisis is premature, the number of published studies addressing the impact of this pandemic has increased (Khatib & Nour, 2021; Eroglu, 2021; Liu *et al.*, 2020; Qin *et al.*, 2020; Slater, 2020; and Salisu, 2020). However, little attention has been paid to the impact of CG on FP (Guney et al., 2020) and Solvency risk moderating role of CS in this pandemic.
In this section, we reviewed BCC and FP during the crises.

BCC and FP

According to agency theory, the governance attribute of supervision and advice improves firm efficiency in many areas, including agency cost reduction (Al Amosh, H., & Khatib, S. F. 2021; Guney, 2020; and Jensen & Mackling, 1976). This economic crisis highlighted the role of the Board's oversight to reducing the risk of uncertainty. This pandemic raises the possibility of risk, forcing board of directors to restructure their CS and strategies to mitigate the effect of this crisis (Croci, 2020; Khatib S. F., 2020). The board should help to develop disaster preparedness programmes, such as creating a plan for dispersed employee continuity. Boards would consider new developments, executive pay constraints, and any future changes in response to new market realities. Some boardroom structures (size, diversity, and duality) are more beneficial than others in terms of firm resilience during times of crisis. As a result, we anticipate that the governance system will change as a result of shareholders' inability to adequately manage the firm during this crisis.

Furthermore, the spread of this virus has presented new challenges to boards of directors, such as frozen liquidity, the transaction inability to execute and processes, and failure in infrastructure. Throughout the crisis, the board of directors has played an important role in increasing the company's value. The structure, composition, and characteristics of the board determine the scope and effectiveness of its interventions (Croci, 2020). As a result, flexible boards postpone traditional activities and allow management to focus on current. Regardless of the effect of the current crises on BCC and firm efficiency, we continue to expect well-governed companies to outperform their peers. To mitigate the pandemic's negative consequences, boards should assist modern organisations in connecting with the outside world and facilitating access to services (Song, 2021). In fact, an effective and productive board of directors requires a strong board mechanism, manifested in the form of qualified board members. We hypothesise the following based on literature (Tran, 2020; Waheed, A., & Malik, Q. A., 2019; and Surachai, 2019).

H1a*: BoS positively significantly effect on FP.*

H1b: *Diversity positively significantly influences FP.*

H1c: *Duality has positive impact on FP.*

BCC and Solvency Risk

Risk management committees have been identified as a critical CG component for risk management during crises (McNulty et al., 2013). However, risk committees with more independent directors are beneficial for firms, which are especially important during a crisis (Robinson, J., & Yeh, E., 2011). For example, Van Essen et al., (2013) discover that nomination

committee independence has a positive effect on FP during a crisis situation. The presence of independent directors on risk committees, according to Robinson, J., and Yeh, E., (2011), can help companies better deal with financial crises because they are more independent and have access to more information during downturns (Jebran and Chen 2020). Thus we hypnotized as follows.

H2a*: BoS significantly influences solvency risk.*

H2b: *Diversity positively significantly influences solvency risk.*

H2c: *Duality has positive impact on solvency risk.*

CS as moderator between BCC and FP

Board committee is primarily concerned with maintaining a balance of interests among firm stakeholders. This reduced the agency problem between different firm stakeholders. When the market is inefficient and there is information asymmetry, managers act in their own and shareholders' best interests, ignoring the best interests of debt holders. The selection of a CS focused on corporate value frequently conflicts with the interests of the parties involved, as shareholders value equity and debt holders value debt. Managers can act in their own self-interest while disregarding the interests of shareholders. Furthermore, managers may act in the best interests of shareholders while harming debtors through poor investment decisions. Managerial opportunism can be reduced in the presence of BCC in order to make optimal investments and increase firm value. To date, most studies have looked at the effects of BCC and CS on FP separately. CS has a significant positive effect on profitability, according to Jahanzeb et al. (2015). The Gallegos (2020) study, on the other hand, discovered no significant relationship between CS and FP. Chinaemerem (2012) also claims that the firm's CS has a negative impact on FP. They demonstrate that high leverage has a negative effect on FP. Several studies have shown that the relationship between CS and FP produces inconsistent results. As a result, the authors include CS as a moderating factor to help clarify the relationship.

H3a*: CS fully moderates the relationship between BoS and FP.*

H3b: *CS moderates the relationship between Diversity and FP.*

H3c: *CS moderates the relationship between Duality and FP.*

CS as a moderator between BCC and Solvency Risk

According to Ullah et al., (2019), Governance mechanism i.e. BCC is primarily related to CS and has a significant impact on firm risk. Okiro (2015) discovered an inverse relationship between these variables. They

demonstrated that well-managed companies strive for lower CS debt levels. Companies prefer lower debt in CS to attract more investors because low-leveraged firms are less risky for investors. Sound board enable firms to access funds at the lowest possible cost, lowering the total cost of debts (Goel, P., 2018). Managers strive for low debts as a result of good board practices and concluded that increasing board size, diversity and duality reduce corporate CS debt levels and ultimately risk level reduced. Masnoon & Rauf 2013 discovered a negative relationship between BCC and CS. They contended that a larger board size, if properly functioning, will result in a firm's strict monitoring of corporate matters, as well as managers borrowing less to reduce company risk and create corporate worth. According to Abedin, M. J., and S. Arif (2015), a well-managed board will result in the company financing assets with equity rather than debt in order to reduce company risk and build goodwill. According to Okiro (2015), firms with good BCC do not need to borrow additional funds and can use retained earnings to meet the company's operating and asset requirements. Their study not only expands on the impact of BCC on corporate FP, but it also emphasises the importance of BCC in CS. Existing literature indicates that well-governed firms prefer equity over debt. Companies all over the world select optimal CS to meet their operating and asset needs, thereby minimizing risk. Because of effective control over the company's operating and financial matters, good BCC keep firms from taking risks. From 2019 to 2021, the current study investigates the relationship between BCC and risk, as well as the moderating effect of CS, for non-financial firms listed on the PSX.

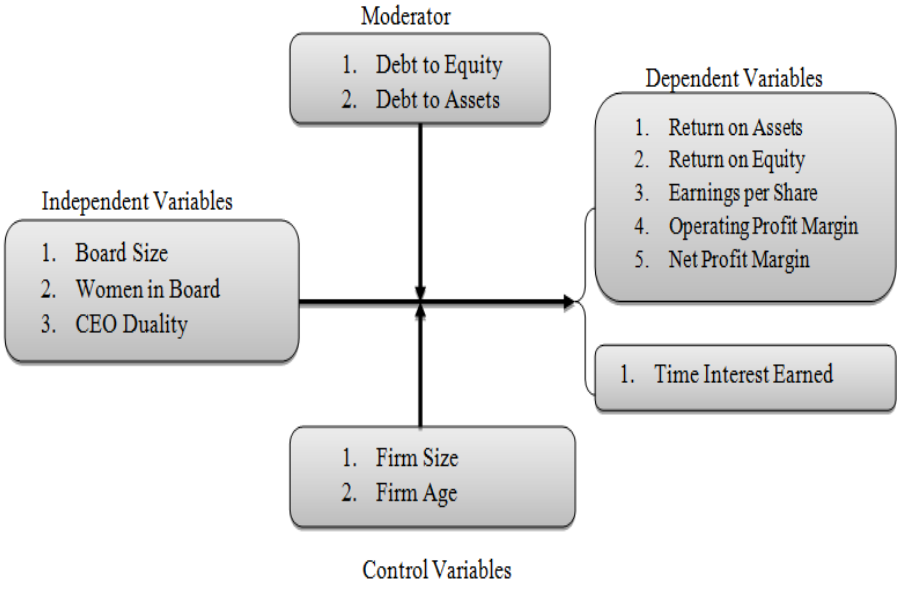
***H4a**: CS fully moderates the relationship between BoS and solvency risk.*

***H4b:** CS moderates the relationship between Diversity and solvency risk.*

***H4c:** CS moderates the relationship between Duality and solvency risk.*

Theoretical Framework:

The theoretical framework of the present study is mentioned below.



In the following section, we will discuss research methodology, including population and sample size, variable measurement, model specification, etc.

METHODOLOGY

Sample

Annual reports of companies from 2019 to 2021. After excluding cases with incomplete data, our sample included information on 52 companies. Industry wise sample description is given below Our research sample included PSX-listed companies. The information was gathered from in table.

Table I: Summary of Variables

Sr.	#Industrial Sector	*Total Listed Firms	**Final Sample	% of Sector	% of Sample
1	Automobile and Parts	18	8	44.4	15.3
2	Cement	17	7	41.1	13.4
3	Chemicals and Fertilizers	23	6	26.0	11.5
4	Food and Personal Care products	22	9	40.9	17.3
5	Sugar and Allied Products	25	3	12.0	05.7
6	Technology and Communication	15	4	26.6	07.7
7	Textile	76	15	19.7	28.8
	Grand Total (Non-financial)	196	52	27.0	100

Measurement of Variables

Variables and their measurement are given below in table II.

Table II: Description of variables and data sources

Name	Symbol	Description	Source
		Independent variables	
Board Size	BoS	Measures by total number of directors in board	Annual Report
Women in Board	Women in board	Measures by number of woman director in board.	Annual Report
CEO Duality	CEO-D	Measures by 1 in case of duality; 0 otherwise	Annual Report
		Dependent variables	
Return on Assets	ROA	Net income / total assets	Income Statement and Balance Sheet
Return on Equity	ROE	Net income / shareholder equity	Income Statement and Balance Sheet
Earnings per Share	EPS	Earnings available for common shareholders/No of Shares outstanding	Income Statement
Operating Profit Margin	OPM	Operating Profit / Sale	Income Statement
Net Profit Margin	NPM	Net Profit / Sale	Income Statement
Solvency Risk	SR	EBITDA / Interest Expense	Income Statement
		Moderator	
Debt to Equity	D/E	Total Debt / Total Equity	Balance Sheet
Debt to Total Assets	D/TA	Total Debt / Total Assets	Balance Sheet

Control variables			
Firm Size	Size	Log of total assets	Balance Sheet
Firm Age	Age	Present year -firms listing year in PSX	Annual Report

3.3 Model Specification

The association between CG and FP has been measured through this model:

$ROA_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Boar}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(1)

$ROE_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(2)

$EPS_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(3)

$OPM_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(4)

$NPM_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(5)

The association between CG and Solvency Risk has been measured through this model:

$SR_{it}= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4 (Size_{it}) + \alpha_5(Age_{it})$……(6)

Moderating effect of CS between CG and FP has been measured through this model:

$ROA= \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board CS}_{it}) + \alpha_6(\text{CEO-D CS}_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……..(7)

$ROE = \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board } CS_{it}) + \alpha_6(\text{CEO-D } CS_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……...8)

$EPS = \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board } CS_{it}) + \alpha_6(\text{CEO-D } CS_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……..(9)

$OPM = \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board } CS_{it}) + \alpha_6(\text{CEO-D } CS_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……. (10)

$NPM = \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board } CS_{it}) + \alpha_6(\text{CEO-D } CS_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……... (11)

Moderating effect of CS between CG and Solvency Risk has been measured through this model:

$SR = \alpha_0 + \alpha_1(BoS_{it}) + \alpha_2(\text{Women in Board}_{it}) + \alpha_3(\text{CEO-D}_{it}) + \alpha_4(BoSCS_{it}) + \alpha_5(\text{Women in Board } CS_{it}) + \alpha_6(\text{CEO-D } CS_{it}) + \alpha_7(Size_{it}) + \alpha_8(Age_{it})$……... (12)

Where;

ROA_{it} = Return on Assets for firm i for time t;

ROE_{it} = Return on Equity for firm i for time t;

EPS_{it} = Earnings per Shares for firm i for time t;

OPM_{it} = Operating Profit Margin for firm i for time t;

NPM_{it} = Net Profit Margin for firm i for time t;

BoS_{it} = Board Size for firm i for time t

$\text{Women in Board}_{it}$= Women in board for firm i for time t

CEO-D_{it} = CEO Duality for firm i for time t

CS =Capital Structure for firm i for time t

SR = Solvency Risk for firm i for time t

$Size_{it}$ = Size of firm for firm i for time t

Age_{it}= Firm Age for firm i for time t

α_0= Intercept for firm i for time t

To conclude the findings, the following section presents data analysis, including descriptive, correlation, regression analysis and Moderating effect.

RESULTS

This section divides the data analysis into five subsections.

Descriptive Result

Table III: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	156	.074	.175	-.9	.97
ROE	156	.159	.435	-2.265	2.363
EPS	156	54.231	138.705	-110.33	811.53
OPM	156	.066	.17	-1.52	.29
NPM	156	.044	.166	-1.61	.29
BoS	156	8.288	1.255	6	11
Diversity	156	.051	.221	0	1
Duality	156	3.712	.916	3	7
Risk	156	3.25	28.255	-147	247
DE	156	2.385	7.169	.01	80.62
DTA	156	.522	.206	.01	1.06
Age	156	45.506	21.9	15	161
Size	156	8.164	1.383	5.99	10.99

Descriptive results are extremely beneficial in providing information about trends in study data. As a result, in Table III of the study, both measures of mean, minimum, maximum, and standard deviation are covered. The findings show that the total number of observations (N) for each of the study items for independent, dependent, and moderating variables is 156, indicating clear evidence for valid and usable responses, as explained earlier in Table III of the study. In addition, the mean score for each study item has been provided. It is observed that the mean score of ROA is .074 which shows that firm's gets average return from their assets is 7.4%. Mean of ROE is .159 means that firms received average return on their equity is 15.9% approximately 16%. EPS mean is highest 54.231. Mean value of OPM and NPM is .066 and .044 respectively. Average operating profit and net profit earned this era is 6.6% and 4.4% respectively. According to descriptive result average BoS is 8 of firms in this tenure. Average 5.1% diversity is found in non-financial firms of Pakistan in this era. Mean of the duality is 3.712 which means that approximately after 4 firm's duality is found and also average risk paying ability is 3 times. Descriptive results are of moderator is also given. Mean of D/E is 2.385 and D/TA is .522.

Correlation Matrix

Table IV: Matrix of Correlations

Variables	BoS	Diversity	Duality	Risk	DE	DTA	Age	Size
BoS	1.000							
Diversity	0.248	1.000						
Duality	0.348	-0.181	1.000					
Risk	0.056	0.007	0.080	1.000				
DE	-0.042	-0.045	-0.096	-0.106	1.000			
DTA	0.073	-0.073	-0.019	-0.078	0.429	1.000		
Age	0.061	-0.107	0.156	-0.003	0.055	-0.043	1.000	
Size	0.013	0.203	-0.304	-0.088	0.094	0.051	-0.284	1.000

The correlation matrix and multicollinearity diagnostics are shown in Table IV. The relationship between the independent, moderator, and control variables is represented by the matrix. Variables have both positive and negative correlations with one another, according to the findings. BoS is negatively correlates with D/E and positively with all other variables. Diversity positively with duality and firm size while negatively related with all other remaining variable. Duality negatively relates with all variables. Risk is also negatively related with CS and control variables. DE exhibits positively with other variables. DTA is positively relates with control variables.All the values are below 0.7 so there is no multicollinearity issue exists in concerned variables (Khatib & Nour, 2020; Shahwan, 2015 and Hair *et al.,* 2014).

Regression Result

Table VI: Regression results

Variables	**Firm Performance**					**Risk**
	ROA	**ROE**	**EPS**	**OPM**	**NPM**	
BoS	-0.137***	-0.303***	-24.66	-0.0885**	-0.0846**	3.533
	(0.038)	(0.072)	(15.700)	(0.039)	(0.037)	(7.588)
Diversity	0.155	-0.896***	218.4***	-0.578***	-0.620***	11.01
	(0.112)	(0.216)	(46.860)	(0.116)	(0.111)	(22.640)
Duality	0.0658*	0.197***	31.23*	0.0908**	0.0903**	-1.923

	(0.039)	(0.075)	(16.210)	(0.040)	(0.038)	(7.835)
Age	0.000445	0.0376	11.47**	-0.00104	-0.00215	-1.397
	(0.012)	(0.024)	(5.169)	(0.013)	(0.012)	(2.498)
Size	-0.06	-0.261***	-25.4	-0.0124	-0.0153	-3.461
	(0.037)	(0.072)	(15.660)	(0.039)	(0.037)	(7.570)
Constant	1.451**	2.408*	-193.5	0.69	0.709	88.81
	(0.724)	(1.396)	(303.000)	(0.751)	(0.717)	(146.400)
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Random effect
Obs.	156	156	156	156	156	156
R-squared	0.177	0.44	0.273	0.34	0.379	0.036
No. of Coid	52	52	52	52	52	52

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table V: Hausman test Results

Variables	**ROA**	**ROE**	**EPS**	**OPM**	**NPM**	**Risk**
Chi2(6)	28.36	79.36	25.52	33.62	39.12	1.33
Prob>chi2	0.0001	0	0.0003	0	0	0.977
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Random effect

To investigate the relationship between independent and dependent variables, panel data techniques are used. Which test fixed and random effect tests is appropriate is decided on the basis of Hausman test. The regression analysis results for these models are shown in Table V below. We used ROA, ROE, EPS, OPM, NPM to assess FP and solvency risk. The study discovered that BoS is negatively significantly related with ROA, ROE, OPM and NPM. These results are aligned with (Linck *et al.*, 2008 and Guest, 2010). A larger board is not suitable for FP due to agency problems. They work for their own interest instead of owners in these crises.

According to Hausman test random effect model is suitable for these concerned variables. Board diversity is significantly negatively effect on ROE, OPM and NPM while positively on EPS. These results are consistent with (Farwis, M., 2021; Khatib & Nour, 2020; and Brick *et al.*, 2006). More

divers' board gives preference to their interest as like BoS due to their incompetency and low knowledge to deal this crisis. Duality is positively significantly effect on all concerned variables without solvency risk in this pandemic. These results are consistent with (Wicaksono, A. P. N. 2022; Chang *et al.*, 2019; and Wijethilake *et al.*, 2019). In this era management has to take quick decision due to uncertainty when duality was exist in firms those firms perform very well.

However, because of the pandemic, the findings of this study are contentious. As a result, these variables address physical interaction and in-person interactions among board members. However, due to the COVID-19 pandemic, physical interaction was not possible. As a result, BCC has not been contributing to the FP and solvency risk in an efficient manner.

Moderating Result (DE)

Table VII: Regression results (Moderating effect of Capital Structure) Debt/Equity

Variables	Firm performance					
	ROA	**ROE**	**EPS**	**OPM**	**NPM**	**Risk**
BoS	-0.0891**	-0.209***	-29.13*	-0.0837*	-0.0815*	4.695
	(0.038)	(0.076)	(16.750)	(0.043)	(0.041)	(8.507)
Diversity	0.174	-0.944***	265.5***	-0.574***	-0.620***	12.64
	(0.109)	(0.218)	(47.880)	(0.123)	(0.118)	(24.320)
Duality	0.0673*	0.221***	33.63**	0.113**	0.110***	-0.416
	(0.038)	(0.076)	(16.670)	(0.043)	(0.041)	(8.467)
DE	0.0822**	0.251***	-5.69	0.0505	0.0416	4.218
	(0.041)	(0.082)	(17.880)	(0.046)	(0.044)	(9.084)
BoS*DE	0.000633	0.00141	-0.11	0.00246	0.00238	0.107
	(0.003)	(0.005)	(1.101)	(0.003)	(0.003)	(0.559)
Diversity*DE	-0.138	0.109	-158.8***	0.0165	0.0272	-5.988
	(0.110)	(0.221)	(48.450)	(0.125)	(0.119)	(24.610)
Duality*DE	-0.0223*	-0.0631**	0.962	-0.0221	-0.0194	-1.884
	(0.013)	(0.026)	(5.623)	(0.015)	(0.014)	(2.856)
Age	-0.00124	0.0339	10.50**	0.000287	-0.000679	-1.313
	(0.012)	(0.023)	(5.037)	(0.013)	(0.012)	(2.559)
Size	-0.0727**	-0.303***	-21.33	-0.0159	-0.0181	-3.439
	(0.035)	(0.070)	(15.420)	(0.040)	(0.038)	(7.831)
Constant	1.226*	1.981	-142.2	0.576	0.602	75.57
	(0.672)	(1.348)	(295.700)	(0.763)	(0.729)	(150.200)
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Random effect
Obs.	156	156	156	156	156	156
R-squared	0.338	0.513	0.353	0.364	0.401	0.053
No. of Coid	52	52	52	52	52	52

*Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

Based on regression result of moderator BoS significantly negatively affect on EPS and also with other dependent variables without solvency risk. DE moderates the relationship between diversity and EPS. DE as a moderator negatively significantly affects the relationship between duality and ROA and ROE. In simple regression no effect was found of firm size on ROA but when moderator is influence between these negative significant relationships is found. These results shows that when DE level increased this will results in negative impact of BCC on FP and ultimately solvency risk increases.

Moderating Result (DTA)

Table VIII: Regression results (Moderating effect of Capital Structure) Debt/Total Assets

Variables	Firm Performance					Risk
	ROA	ROE	EPS	OPM	NPM	
BoS	-0.134*	-0.132	-43.04	-0.149**	-0.139**	-3.739
	(0.067)	(0.128)	(29.760)	(0.069)	(0.065)	(14.790)
Diversity	0.249	-1.495***	332.3***	-0.652***	-0.721***	31.28
	(0.187)	(0.358)	(82.840)	(0.191)	(0.182)	(41.160)
Duality	0.0812	0.243*	54.81*	0.197***	0.191***	5.905
	(0.066)	(0.126)	(29.280)	(0.067)	(0.064)	(14.550)
DTA	0.0175	2.297*	-250.8	-0.541	-0.514	-91.31
	(0.688)	(1.312)	(303.900)	(0.700)	(0.667)	(151.000)
BoS*DTA	0.0362	-0.171	42.97	0.195*	0.183*	17.62
	(0.097)	(0.184)	(42.710)	(0.098)	(0.094)	(21.220)
Diversity*DTA	-0.469	2.374**	-437.2*	0.799	0.894*	-55.98
	(0.552)	(1.054)	(244.100)	(0.562)	(0.536)	(121.300)
Duality*DTA	-0.052	-0.24	-49.82	-0.294**	-0.280**	-18.31
	(0.130)	(0.249)	(57.640)	(0.133)	(0.127)	(28.640)
Age	-0.00191	0.0385*	11.08**	0.00256	0.00161	-1.313
	(0.012)	(0.022)	(5.136)	(0.012)	(0.011)	(2.552)
Size	-0.0478	-0.246***	-27.19*	-0.0285	-0.0313	-4.512
	(0.036)	(0.069)	(15.980)	(0.037)	(0.035)	(7.939)
Constant	1.258	0.579	-48.39	0.733	0.734	131.6
	(0.766)	(1.461)	(338.400)	(0.780)	(0.743)	(168.100)
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Fixed effect	Random effect
Obs.	156	156	156	156	156	156
R-squared	0.319	0.546	0.328	0.473	0.507	0.059
No. of Coid	52	52	52	52	52	52

*Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

According to moderating results DTA moderates the relationship between BoS and ROE because in simple regression result negative significant relation was found but in DTA moderation there is no relationship exists. DTA also moderates the relationship between duality and ROA same as like between BoS and ROE. DTA also moderates the relationship between firm age and ROE and also between firm size and EPS. Results demonstrate that when DTA level increased then it will mitigate the negative impact of BoS and diversity on FP.

Hypotheses Summary

Table IX presents the hypothesis summary.

Sr. No.	Hypotheses	Decision
H1a	*BoS significantly effect on FP.*	Accepted
H1b	*Diversity positively significantly influences FP.*	Rejected
H1c	*Duality has positive impact on FP.*	Accepted
H2a	*BoS significantly influences solvency risk.*	Rejected
H2b	*Diversity positively significantly influences solvency risk.*	Rejected
H2c	*Duality has positive impact on solvency risk.*	Rejected
H3a	*CS fully moderates the relationship between BoS and FP.*	Partially Accepted
H3b	*CS moderates the relationship between Diversity and FP.*	Rejected
H3c	*CS moderates the relationship between Duality and FP.*	Partially Accepted
H4a	*CS fully moderates the relationship between BoS and solvency risk.*	Rejected
H4b	*CS moderates the relationship between Diversity and solvency risk.*	Rejected
H4c	*CS moderates the relationship between Duality and solvency risk.*	Partially Accepted

Conclusion and Limitations

We currently investigate the impact of BCC on FP and solvency risk moderating role of CS in Pakistan nonfinancial sector which is mostly influenced by pandemic from 2019-2021. We used publicly traded

companies listed on the PSX. Because there are few studies on publicly traded companies, they were chosen. Finally, this research provides empirical evidence for the effectiveness of boards in Pakistan, as well as policy implications for other emerging market economies. The article employs the fixed effect and random effect regression approaches, as well as listed firms in Pakistan. The current study uses several proxies to measure BCC variables such as (BoS, diversity, and duality), FP measures through ROA, ROE, EPS, OPM, and NPM, and CS measures through D/E and D/TA. Solvency risk measure through Time interest earned ratio. The current study, on the other hand, used some control variables, such as firm size and age. According to finding of this study BoS negatively related with FP. Diversity negatively related with FP while duality positively effect on FP in this era. CS partially moderates the relationship between these variables. Consequently, the findings of this study suggest that larger board and diversity can't play a vital role to increase FP while duality can increase FP because in certain situations some decisions are very quick and management can take those decisions at the spot. This research emphasizes the role of duality in specific situation to reduce cost. It has a wide range of implications for policymakers, business executives, and academics.

This study has some contributions in the literature the first one is, concerned variables are studied in crises. Second is, this study uses CS as moderator to check the relationship between variables varies or not after using debt or equity financing. Hence, this study has novelty as it used empirical analysis in era of pandemic. Third is risk is also studied in this study which past studies lack. However, the current study has the following limitations, which will allow future researchers to work on it. First, our sample size is smaller, and we only looked at publicly traded companies on the PSX, which influences our results. As a result, rather than focusing solely on financial firms, future research should focus on a broader range of firms. Second, the current study's variables are based on old measurements. Future researchers can improve new variable estimation. Because the current study only looks at fixed and random effect regression models, future studies should include GMM and other econometric methods in their analyses. This study also has some limitations that may have an impact on the results. Because BCC in this study is only one component of the CG mechanism, future studies should include a broader range of CG variables to test the impact of CG on FP (audit committee characteristics and ownership structure). This is because the BCC's influence varies depending on the political, judicial, social, and economic systems.

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