Financial Risks and Financial Performance Nexus with Moderating Role of Bank's Capital: Evidence from Commercial Banks of Pakistan

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Abstract: In this study, financial risks and financial performance have been empirically explored in relation to the moderating function of a bank's capital. In panel data sets during a time period (2010-2020), the generalised Method of Moments (GMM) dynamic model has been used to provide results that are resistant to bias in the context of heteroskedasticity, autocorrelation, cross-sectional dependency, and temporal dependence.. After controlling bank-specific factor efficiency, The empirical results show a substantial correlation between the financial performance of commercial banks listed on the Pakistan Stock Exchange and financial risk indicators, including liquidity risk, market risk, and credit risk Furthermore, the influence of financial risks on financial health is moderated by the Bank's capital. Alternative measures of financial performance are selected to robust the results. The study's findings imply that policymakers should incorporate all the financial risks while designing strategies for improving financial performance, especially with raising funds for investment.

Keywords: Financial Risks, Financial Performance, Bank's Capital, Efficiency, Generalized Method of Moments (GMM)

I.0 Introduction

Economic development and the country's stability are inbuilt into the financial environment of its banking sector (Batten & Vo, 2019). It is a common observation that investors rely upon banks for financing their upcoming projects. The availability of credit in all financial institutions has created competition among them at national and international levels. Banks are vulnerable to several kinds of risks while doing transactions with customers. Risks that adversely impact banks' performance include inefficiencies in the operating process, poor systems, and contradictory working practices. These undesirable events result in the loss of business opportunities and loss of customers. Therefore there is

a need to understand the different types of risks banks face during their operation that affect their market performance. In general, risks may be divided into two categories: financial and non-financial. Non-financial risks are operational risks that firms come across, such as reputational risk, legal risk, and behavioral risk. Risk associated with the financial system, arising from variations in credit, market, and liquidity conditions, is known as financial risk. These risks never exist alone. One risk is the result of another.

According to Ekinci & Poyraz (2019), the primary source of income in a financial institution is the loan granted by banks for different projects. So the bank is exposed to credit risk when the loan is not received on time. The bank's marginal cost of debt and equity increases due to an increase in credit risk. Since banks do not have sufficient capital for financial crises that lead to the origin of liquidity risk. Moreover, the banking sector's earnings are affected by market conditions fluctuations including asset price, interest rate, exchange rate, and market liquidity. The uncertainty in market conditions that affect all the companies develop market risks that cannot be diversified.

The financial health of banks gets affected by financial risk's components including liquidity, credit, and market risks. Since credit risk causes a change in the total value of assets when a counterparty fails to meet its responsibilities under a contracted responsibility, it is seen to have the most significant effect on the bank's performance. (Folajimi and Otitolaiye 2020). Credit risk hit the cash flows of the bank and ultimately its liquidity position is affected. The change in interest rate fluctuate the loan's cost of bank. Conversely, depreciation and fluctuations in the value of home currency are linked to currency risk. The depreciation of home currency in terms of foreign currency may subject the bank to giant exposure of default risk.

The bank's capacity to expand its operations and increase productivity is gauged by the bank's financial performance. The bank's production and profitability might be used to evaluate financial success. Several ratios are employed as measures of financial success, including the debt ratio, the yield on equity, and the return on assets (Saeed and Zahid,2016). Increased bank capital could result in better debtor inspection, which would reduce credit risk and boost bank profitability. Additionally, the banks with high capital channel the funds into productive projects that increase future cash flows and make high profits (Abbas et al., 2019). Similarly, banks with high capital levels may adopt hedging strategies to mitigate the interest rate and exchange rate volatility that lead to financial stability and performance. Therefore, bank capital may have a moderating effect on the relationship between financial risks and the financial success of banks. The link between credit and liquidity risks on the profitability of commercial banks was the subject of earlier studies (Pracoyo and Imani, 2018; Chiaramonte and Casu 2017; Ozili 2017; Folajimi and Ototolaiye 2020) focused on the relationship between credit and liquidity risks on the profitability of commercial banks. The current study is new in that it examines the relationship between financial risks and Pakistani commercial banks' performance that is moderated by bank capital. The study also determines how financial concerns, such as credit, market, and liquidity risk, affect banks' overall financial health

The current study is to investigate how bank capital moderates financial risks and bank financial performance. The study makes several contributions to the body of literature. First of all, it illustrates the unexplored moderating function of capital between various financial risks and bank performance.

.Secondly, the study deals with the data from Pakistan after the financial crises from January 2010–December 2020 and Pakistan ranks far behind the developed countries and remains unexamined. Finally, the findings of the study enable the regulating agencies and policymakers in strengthening banking regulation and supervision.

2.0 Theoretical and Empirical Literature of the study

Ningrum & Sholihah, (2023) discussed the financial distress theory that is linked to financial risks including liquidity, credit and market risk.

Financial distress refers to the financial instability of banks that may be due to a large number of illiquid assets (liquidity risk), the sensitivity of revenues to economic downturns of the economy (market risk), and default in debt payments from the clients (credit risk). The catastrophic financial state that indicates a company's or bank's inability to make its agreed-upon payments of debt is known as financial distress. A company's financial crises might be caused by an increase in non-performing loans (Marsenne etal., 2023).

According to Socol & Sinitin, (2021) the banking industry's non-performing credit portfolios are on the rise, which has led to their financial difficulties. Clients who are unable to pay their debts to banks result in nonperforming loans, which can cause insolvency and have a negative impact on profitability. In a similar vein, Yusditasari et al., (2023). investigate how credit risk affects a bank's profitability extensively. Investors are therefore very concerned about credit risk and profitability.

Noomen & Abbas (2018) discuss that credit risk is a very critical financial aspect that must be supervised and monitored to minimize the default rate. The study suggests that level of non-performing loans decreases when the debts are paid, and it causes an increase in profitability. Al-Shakrchy (2017) asserts that credit risk management is crucial to the bank's profitability and even to the banks 'sustainability. The results of Munangi and Bongani's (2020) analysis also demonstrate that credit risk and bank profitability are negatively correlated in South African banks. Additionally, the analysis shows credit risk to be a reliable indicator of the bank's financial performance..

Using the profit parameters ROA and ROE, Islam et al. (2019) looked at the financial performance of 23 commercial banks in Bangladesh. The study concludes that credit risk and profitability are negatively correlated. Conversely, Saiful & Ayu (2019) found that there is a positive correlation between credit risk and profitability in their comparative analysis of Indonesian Islamic and conventional banks. In the same line, Ali & Dhiman (2019) evaluate Indian commercial banks from 2010 to 2017 and come to the conclusion that ROA and credit risk are positively tied.

According to Abbas et al. (2018), opportunity cost (benefit) is connected to owning more liquid assets. When compared to banks with more liquid assets, banks that choose to retain less liquid assets can make more money. Thus, research suggests that bank profitability and liquidity have an inverse link

To determine the relationship between a bank's profitability and its liquidity risk, Chen et al. (2018) looked at a panel data set of banks in industrialized nations. They examined negative relationship between liquidity risk and ROAA and ROAE. In a similar vein, Mohanty and Krishnankutty's (2018) study showed that profitability and liquidity risk exhibited a reverse relationship. Yakubu and Musah (2017) concluded that a key factor influencing banks' profitability is liquidity. Based on the findings, there was a significant association between asset returns and liquidity from 2007 to 2016. To determine

the significance of bank capital and liquidity in commercial banks in developed Asian countries and banks in the United States, Faisal, Shahid, and Bilal (2019) carried out a comparative study. According to the study, the connection between profitability and liquidity is negative in US banks and a positive one in Asian banks.

Bani Yousef et al., (2023) focus the researcher's attention on another financial risk; the market risk that arises due to uncertain conditions of the market and affects all the companies. Market risk is inevitable risk and cannot be diversified. This risk causes due to non-controlling factors including war, unexpected inflation, change in the interest rate and currency rate and political events. Fluctuations in market conditions affect the income of banks that lead to affect their performance. Zolkifli, Samsudin and Yusof (2019) conducted a comparative study in Malaysia and Bahrain to examine the impact of market risk on bank performance during a time frame of 9 years (2008-2016). Panel regression results suggest that interest rate risk is a significant determinant of market risk that significantly affects the performance of banks. Furthermore, Ali and Oudat (2020) investigate the effect of different risks such as exchange rate risk, liquidity risk, capital risk and operational risk. The study's findings show that the ties between Exchange rate risk and a bank's success are found to be quite negligible. Adusei (2022) investigates the effects of financial risk on the financial performance for hybrid financial institutions, providing evidence that credit risk and liquidity risk have a positive effect on these companies' financial success. Very few studies are conducted on market risk. This study has included one of the financial risks as a market risk to extend the literature in this context. Besides it, a bank's capital plays a vital role in the monitoring of debtors that would manage the credit risk and may increase the profitability of the bank. Additionally, the banks with high capital channel the funds into productive projects that increase future cash flows and improve the liquidity of the bank. Similarly, banks with high capital levels may adopt hedging strategies to mitigate the volatility in an interest rate and exchange rate that lead to maintaining financial stability. So Bank's capital may act as a moderating role between financial risks and the financial performance of banks. The primary objective of this study is to discover how a bank's capital moderates the financial risks and bank performance in a moderating way. It empirically investigates how all financial risks in tandem affect financial performance. The conceptual framework for the study is created based on the discussion above.

2.I Conceptual frame work of the study

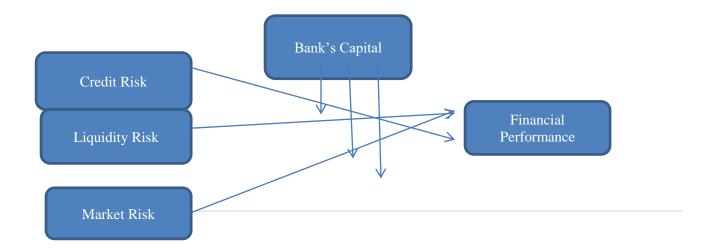


Figure I.Conceptual Framework of the study.

3.0 Data and Methodology:

This research endeavor seeks to investigate the effects of the three financial risks on the financial success of listed financial institutions of Pakistan over the time period of January 2010-December 2020. Moderation analysis is conducted to examine the influence of an interaction variable, the bank's capital on the relationship between the exogenous variables of Financial risks; credit risk ($Cr\sigma$), liquidity risk ($Lr\sigma$), and market risk ($Mr\sigma$) and the endogenous variables of financial performance; assets return (ROA) and return on net worth (RONW) respectively. The control variable in the study is taken as efficiency (E) measured through cost per income. The variables are quantified in table I.

Table I Description of Variables

S.No.	Categories	Variables	Formula
I	Financial Performance	Return on Assets (ROA)	Net Income/ Total
	(Dependent)		Assets
		Return on Net worth	Net income/ Total
		(RONW)	Equity
2	Credit Risk	Crσ	Loan Loss
	(Independent)		Provisions/Loss
3	Liquidity Risk	$Lr\sigma$	Liquid Assets/ Total
	(Independent)		Asset Ratio
4	Market Risk	${ m Mr}\sigma$	Annual T-bill rate
	(Independent)		
5	Bank's Capital	ВС	Equity/Total Asset
	(Moderating)		Equity
6	Efficiency	Е	Cost/Income
	(Controlling		
	(Variable)		

3.I Generalized Method of Moments:

The panel dynamic model, Generalised Method of Moments is used in the study to empirically analyze the link between financial risks and financial success via moderating impact of bank capital.

According to Arellano and Bover (1995) and Blundell and Bond (1998), respectively, the system dynamic GMM estimator of lagged levels and lagged differences of the variables under study is used for the analysis. The GMM technique is employed because it minimizes potential biases and performs a validity diagnostic test, therefore assessing the validity of the instrument. To determine the model's overall significance, the Wald test is used in the current study.

The main aim of the analysis is based on moderation, Baron and Kenny (1986). This approach **659** | P ag e

configures several regression analyses at each step to check the significance of the coefficients of the variables under study.

This study has built two cases on the Baren and Kenny moderation approach as described below; Case I

In the first step, a simple regression analysis is conducted between the exogenous variables of Financial risks; credit risk ($Cr\sigma$), liquidity risk ($Lr\sigma$), and market rate risk ($Ir\sigma$), and the endogenous variables of financial performance; assets return (ROA) and return on net worth (RONW). This step is based on the direct approach of testing between the exogenous variables and the endogenous variables respectively.

$$FP_{it} = \beta_0 + \lambda FP_{it-1} \beta_1 Cr \sigma_{it} + \beta_2 Lr \sigma_{it} + \beta_3 Mr \sigma_{it} + \beta_4 E_{it} + \epsilon_{it}$$

FP_{it} is the financial performance of commercial bank measured through ROA and RONW annually. Persistent coefficient is represented by λ and coefficients of exogenous variables are symbolized as β Case 2

In the second step, multivariate analysis is conducted by creating an interaction term of moderation termed as Bank's capital with the exogenous variables of Financial risks; credit risk ($Cr\sigma$), liquidity risk ($Lr\sigma$), and interest rate risk ($Ir\sigma$).

$$FP_{it} = \beta_o + \lambda FP_{it-1} + \beta_1 Cr\sigma_{it} + \beta_2 Lr\sigma_{it} + \beta_3 Mr\sigma_{it} + \beta_4 BC_{it} + \beta_5 E_{it} + \epsilon_{it}$$

Specifically, case 2 comprises two models. Model I is expressed through the financial performance in the form of return on assets as shown below

Model I

$$\begin{split} &ROA_{it} = \beta_o + \lambda \ ROA_{it-I} + \beta_1 \ Cr\sigma_{it} + \beta_2 \ BC_{it} + \beta_3 (Cr\sigma \ xBC)_{it} + \beta_4 E_{it} + \varepsilon_{it} \\ &ROA_{it} = \beta_o + \lambda \ ROA_{it-I} + \beta_1 \ Lr\sigma_{it} + \beta_2 \ BC_{it} + \beta_3 (Lr\sigma \ xBC)_{it} + \beta_4 E_{it} + \varepsilon_{it} \\ &ROA_{it} = \beta_o + \lambda \ ROA_{it-I} + \beta_1 \ Mr\sigma_{it} + \beta_2 \ BC_{it} + \beta_3 (Mr\sigma \ xBC)_{it} + \beta_4 E_{it} + \varepsilon_{it} \end{split}$$

Model 2

$$\begin{split} & RONW_{it} = \beta_o + \lambda \ RONW_{it\text{--}I} + \beta_1 \ Cr\sigma + \beta_2 \ BC + \beta_3 (Cr\sigma \ xBC) + \beta_4 E + \varepsilon_t \\ & RONW_{it} = \beta_o + \lambda \ RONW_{it\text{--}I} + \beta_1 \ Lr\sigma + \beta_2 \ BC + \beta_3 (Lr\sigma \ xBC) + \beta_4 E + \varepsilon_t \\ & RONW_{it} = \beta_o + \lambda \ RONW_{it\text{--}I} \ \beta_1 \ Mr\sigma + \beta_2 \ BC + \beta_3 (Mr\sigma \ xBC) + \beta_4 E + \varepsilon_t \end{split}$$

3.2 Summary Statistics

Table 2 provides the variables' summary statistics. The standard deviation of the return on assets is 0.0I and its mean is 1%. This indicates that throughout the research period, banks in Pakistan generated an average return of 1% on their assets. Similarly, it is observed that the sample banks' mean return on net worth over the research period was II.16%, respectively. The mean values of credit, liquidity and market risks are 8%, 8% and 9% in commercial banks listed on the Pakistan stock exchange. The distributions are positively and negatively skewed indicating data exist around the left or right sides of means. So the probability of extreme values exists in the data. The total number of annual observations is 209 respectively.

Table 2
Summary Statistics

	ROA	RONW	Crσ	Lrσ	Mrσ	ВС	Е
Mean	0.01	0.11	0.08	0.08	0.10	0.08	5.92
Median	0.01	0.11	0.08	0.08	0.10	0.09	3.47
Maximum	0.01	0.16	0.09	0.12	0.13	0.11	26.25
Minimum	0.01	0.03	0.06	0.07	0.06	0.06	2.22
Std. Dev.	0.01	0.04	0.01	0.01	0.02	0.02	6.53
Skewness	0.26	-0.72	-0.49	1.33	-0.26	-0.10	2.71
Kurtosis	1.56	2.90	1.61	4.56	1.86	1.86	8.63
Jarque-Bera	20.29	18.05	25.21	82.59	13.72	11.63	531.31
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	1.82	23.33	16.83	17.61	20.65	17.54	1237.42
Sum Sq. Dev.	0.00	0.32	0.03	0.05	0.12	0.06	8875.84
Observations	209	209	209	209	209	209	209

3.3 Correlation matrix

The correlation matrix for each variable included in the model is shown in Table 3. Table 3 reports that all financial risks and the return on net worth are negatively correlated, although there is a positive association between business capital and return on assets. Correlation findings are with in tolerable limits that mitigated the problem multicollinearity in the study.

Table 3

Correlation Matrix

	ROA	RONW	$Cr\sigma$	$Lr\sigma$	$Mr\sigma$	ВС	Е
ROA	I	0.50	0.70	-0.35	-0.18	0.39	-0.42
ROE	0.50	I	-0.02	-0.39	-0.54	-0.14	-0.08
$Cr\sigma$	0.70	-0.02	I	-0.17	-0.12	0.41	-0.44
$L_r\sigma$	-0.35	-0.39	-0.17	I	0.23	-0.22	0.05
$Ir\sigma$	-0.18	-0.54	-0.12	0.23	I	0.26	0.46
ВС	0.39	-0.14	0.41	-0.22	0.26	I	-0.51
Е	-0.42	-0.08	-0.44	0.05	0.46	-0.51	I

4.0 Empirical Results and Discussion

Case I is the simplest case that shows the causal effect of financial risks including liquidity risk, credit risk, and market risk on the financial performance of the commercial banks listed in the Pakistan Stock Exchange during the time-frame of January 2011-December 2020. Both the independent and dependent variables are the continuous variables in the study. The results of case I are reported in table 4.

At the 1% level of significance, the findings show that a significant causality exists between the financial risks and the financial performance of Pakistan's commercial banks. The results support the studies conducted by (Olivia et al 2022; Adusei 2022) who explored the significant relationship between liquidity risk and financial performance in Foreign qualified national banks. The findings support the strong influence of financial risks in the prompt functioning of the performance of the banks. Contrary to that Ali & Oudat (2020) found an insignificant relationship between financial risks and financial performance.

Table 4
Empirical Results (Financial Risks & Financial Performance)

	CASE I	
	ROA	RONW
_	0	3.70*
С	(-0.19)	(-13.07)
λ	0.00*	-0.43*
٨	(-2.43)	(-13.07)
	-0.03**	-2.64*
Lr o	(-1.71)	(-14.02)
) (-	0.07*	2.45*
Mr σ	-3.18	-10.19
C -	0.06*	1.00*
Crσ	-6.17	-7.05
	-0.00*	-0.00*
E	(-4.05)	(-10.15)
Pre-Specification Measu Wald Test	res	
F-statistic	2561.385	20840.09
p	0	0
Chi-square	15368.31	125040.5
p	0	0
J-statistic	109.34	146
P (J-stat)	0	0

The value in brackets indicates the t-statistics. The * indicates confidence interval at 1%.

Two models are included in Case 2 to investigate the influence of moderation on the financial risks and the commercial banks' financial performance. In the model, the bank's capital is the moderation of this research study and the study attempts to examine the moderating role of the bank's capital on financial risks and financial performance measured through ROA and RONW respectively. The results of Case 2 are reported in table4

4.I Empirical Results Model I

Model I examines the significant effect of moderation between the variables credit risk, liquidity risk and market risk and the financial performance measured as return on assets. An interaction term is created between the moderator and exogenous variable separately to analyze it. The results are reported in table 5.

If liquidity risk is examined, the moderation effect of banks' capital exists. It strengthens the relationship between one of the financial risks which is the liquidity risk as evident through the Baron and Kenny moderation model with n=210 having the 99% bias/corrected percentile method having P (0.001). The result clearly explores the moderating relationship of the bank's capital on the liquidity risk and the financial performance measured through the return on assets.

If credit risk is examined, the interaction term is statistically significant which supports the moderating effect of the bank's capital with liquidity risk and ROA as evident through the Baron and Kenny moderation model with n =210 having the 95% bias/corrected percentile method having P<0.005. The finding reconnoiters the moderating relationship of a bank's capital on the credit risk and the financial performance measured through the return on assets.

The same results are reported for the market risk by using the interaction term of banks' capital between return on assets and market risk. Therefore, the findings clearly indicate that commercial banks' financial performance in the form of return on assets is influenced by financial risks comprised of liquidity risk, interest rate risk, and credit risk with moderating effect on the bank's capital.

4.2 Empirical Results Model 2

Model 2 is designed to know business capital act as a moderator between financial risks including credit risk, liquidity risk, and market risk and financial performance or not. RONW is used as another proxy for financial performance for the robustness test.

With the exception of the control variable, which is considered to indicate that efficiency in this research study has a negligible influence on the financial risks of Pakistan's commercial banks, the results are comparable to those reported in Model I. However, the exogenous variables which are the financial risks, and the endogenous variables which are the financial performance taken as a proxy for return on net worth indicate a significant relationship at a 1% confidence interval with a P value less than 1%. The interaction term of bank capital also indicated a strong relationship between the variables with t-statistics significant at 99% with a P value less than 0.01%.

The financial risks including credit risk, liquidity risk, and market risk and the financial performance measured as return on net worth have been found to have a strong moderation effect of banks capital having the 99% bias/corrected percentile method with P<0.01. This shows unequivocally

that, between January 2010 and December 2020, the capital of the banks has a major combined influence on the financial risks and the financial performance of Pakistan's commercial banks

Table 5 Empirical Results (Moderation Impact between Financial Risks and Financial Performance)

MODEL	I ROA	MODEL 2	RONW
	LIQUIDI	TY RISK	
	0.01*	С	0.35*
,	(17.62)	C	(29.52)
	, ,		, ,
-	0.00*	λ	0.08*
	(2.98)	٨	(7.88)
r σ	-0.13*	$\mathrm{Lr} oldsymbol{\sigma}$	-4.98*
	(-9.95)		(-23.29)
C	-0.08*	B_C	-2.99*
	(-6.99)		(-17.69)
r σ _BC	1.43*	LR_BC	71.97*
. 0 _DC	(7.79)	Li(_DC	(2I.24)
	-0.00*	E	-0.00*
,	(-6.83)	L	(-5.53)
re-Specification I	Neggittes		
Vald test	vicasures	Wald test	
-statistic	2561.38	F-statistic	4253.99
	0.00	p	0.00
Chi-square	15368.31	Chi-square	25523.98
•	0.00	р	0.00
	CREDI	T RISK	
	0.00*	С	-0.32*
	(-3.50)		(-4.53)
	0.00*	λ	-0.08*
	(13.60)		(-5.31)
$\mathbb{C}\mathbf{r}\mathbf{\sigma}$	0.22*	Cr o	5.42*

	(11.61)		(5.50)
ВС	0.09* (4.80)	ВС	5.00* (5.36)
Cr σ _BC		CR_BC	
_	-I.70*	_	-60.13*
	(-6.76)		(-4.72)
E		E	0.00*
	-0.00*		
	(-6.40)		(2.06)
Pre-Specification	n Measures		
Wald test		Wald test	
F-statistic	8213.99	F-statistic	679.91
Р	0.00	p	0.00
Chi-square	49283.96	Chi-square	4079.5
p	0.00	p	0.00
	MARKI	ET RISK	
C	-0.00*	С	-0.34*
	(-18.47)		(-36.08
λ	0.01*	λ	0.15*
	(57.28)		(32.43)
$Mr\sigma$	0.23*	$\mathrm{Mr}oldsymbol{\sigma}$	5.81*
1,110	(54.92)	1120	(48.42)
ВС	0.24*	ВС	6.47*
	(56.14)		(55.93)
Mr σ _BC		Mr σ _BC	
1.110DO	-3.22*	1,110 _50	-73.35*
	(-68.70)		(-54.49)
E	-0.00*	Е	-0.00*

Wald test			
F-statistic	57952.5	F-statistic	20840.09
p	0.00	p	0.00
Chi-square	347715	Chi-square	125040.5
p	0.00	p	0.00

The value in brackets indicates the t-statistics. The * indicates confidence interval at 1%

Based on the significant statistical coefficients of the three financial risks and the financial performance, it indicates a strong significant relationship between the variables under study over the time period of January 2010- December 2020. This study is novel in its type as the interaction term of bank capital is scarcely tested in the literature. The link between the financial risks and the financial performance of Pakistan's commercial banks is strengthened by the bank's capital, as indicated by the statistically significant coefficient of the interaction term in this study.

Conclusively, the financial sucess of the bank is one of the key indicators of the capability of the bank to broaden its operations to improve the bank's productivity. However, the influence of financial risks cannot be ignored when taking long term investment decisions respectively (Yeasin 2022)

5.0 Conclusion

The current study has elucidated the moderating role of Bank capital in financial risks and the financial performance of banks. The study contributes to the literature in different ways. Firstly, it examines the moderating role of capital between different financial risks and the financial performance of commercial banks over the time period January 2010- December 2020. Moderation analysis is conducted to examine the influence of an interaction variable, the bank's capital on the relationship between the exogenous variables of Financial risks; credit risk ($Cr\sigma$), liquidity risk ($Lr\sigma$), and market risk ($Mr\sigma$) and the endogenous variables of financial performance; Return on assets (ROA) and return on net worth (RONW) respectively. The control variable in the study is taken as efficiency measured through cost per income. This study has reported a significant impact of bank capital on the joint relationship between the three financial risks and the financial performance tested through the dynamic model of the generalized method of moments (GMM). Based on the Wald test and the J-Statistic tests, the joint significance of the model is supported by the p-value < 0.01% respectively.

This study implies that the commercial banks of Pakistan after plugging the variable of bank capital indicate a significant positive relationship between the most prominent financial risks termed as the credit risk, liquidity risk, and interest rate risk with the financial performance in the form of return on assets and the return on net worth respectively. The findings of the study supports that a well-capitalized bank can serve as a buffer during periods of elevated risk, reducing the negative impact on financial performance. A larger capital base might indicate a more cautious and strong approach to risk management, which would affect the bank's ability to respond and handle different financial issues. A bank with strong capital position has the potential to boost investor confidence, which in turn may temper negative market reactions to perceived financial concerns. Additionally, financial institutions are more likely to provide a robust and stable financial system if they proactively manage their capital in response to various risk scenarios.

Therefore, for the policymakers, these risks can be considered vulnerable to the financial $666 \mid P \mid ag \mid e$

performance of the banks while making the financial decisions and banks' capital can play a significant role while taking long-term investment decisions. Decisions on where and how to deploy capital to optimize returns while successfully controlling financial risks can be guided by understanding the moderating influence of capital.

References

Abbas, F., Iqbal, S., & Aziz, B. (2019). The impact of bank capital, bank liquidity and credit risk on profitability in postcrisis period: A comparative study of US and .Asia Cogent Economics & Finance, 7(1),1605683. doi:10.1080/23322039.2019.1605683,

Adusei, M. (2022). The liquidity risk–financial performance nexus: Evidence from hybrid financial institutions. *Managerial and Decision Economics*, 43(1), 31-47. doi:10.1002/mde.3357,

Al-shakrchy, E.J. (2017). The impact of credit risk managing on bank profitability an empirical study during the pre-and post-subprime mortgage crisis: The case of Swedish commercial banks. Journal of Business and Finance, 3(1), 31-42. doi: 10.1186/s40854-019-0159-8,

Ali, L., & Dhiman, S. (2019). The impact of credit risk management on profitability of public sector commercial banks in India. Journal of Commerce & Accounting Research, 8(2).

Ali, B. J. & Oudat, M. S. (2020). Financial Risk and the Financial Performance in listed Commercial and Investment Banks in Bahrain Bourse. International Journal of Innovation, Creativity and Change, 13(12), 160-180

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, 68(1), 29-51.

Bani Yousef, A. N., Taha, R., Muhmad, S. N., & Zainul Abidin, A. F. (2023). The impact of market risk exposure on banks' financial performance: evidence from the MENA region. *Management & Accounting Review (MAR)*, 22(2), 229-251.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.

Batten, J., & Vo, X. V. (2019). Determinants of bank profitability—Evidence from Vietnam. *Emerging Markets Finance and Trade*, 55(6), 1417-1428.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of econometrics*, 87(1), 115-143.

Chen, Y.-K., Shen, C.-H., Kao, L., & Yeh, C. Y. (2018). Bank liquidity risk and performance. Review of Pacific Basin Financial Markets and Policies, 21(1), I–40. https://doi.org/10.1142/S0219091518500078)

Chiaramonte, L., & Casu, B. (2017). Capital and liquidity ratios and financial distress. Evidence from the European banking industry. *The British Accounting Review*, 49(2), 138–161. doi:10.1016/j.bar.2016.04.001

Ekinci, R., & Poyraz, G. (2019). The effect of credit risk on financial performance of deposit banks in Turkey. *Procedia Computer Science*, *158*, 979-987.

Folajimi, A. F., & Dare, O. E. (2020). Credit risk and financial performance: an empirical study of deposit money banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 8(2), 38-58.

Islam, K.M., Alam, M.B., & Hossain, M.M. (2019). Impact of credit risk management on bank performance: Empirical evidence from Bangladesh. South Asian Journal of Management, 26(2).

Marsenne, M., Ismail, T., Taqi, M., & Hanifah, I. A. (2023). An Analysis of Financial Distress Determinants in Indonesia's Micro and Small Enterprises. *International Journal of Professional Business Review*, 8(11), e03327-e03327.

Mohanty, B. K., & Krishnankutty, R. (2018). Determinants of profitability in Indian banks in the changing scenario. International Journal of Economics and Financial Issues, 8(3), 235.

Munangi, E., & Bongani, A. (2020). An empirical analysis of the impact of credit risk on the financial performance of South African banks. Academy of Accounting and Financial Studies Journal, 24(3), I-I5.doi: 1528-2635-24-3-554

Ningrum, D. T., & Sholihah, R. A. (2023). THE INFLUENCE OF FINANCIAL FACTORS AND LOCAL GOVERNMENT CHARACTERISTICS ON FINANCIAL DISTRESS. *Riset: Jurnal Aplikasi Ekonomi Akuntansi dan Bisnis*, *5*(1), 098-112.

Noomen, N., & Abbes, M.B. (2018). The determinants of credit risk management of islamic microfinance institutions. IUP Journal of Financial Risk Management, 15(1), 7–22.

Olivia, C., Atahau, A. D. R., & Martono, S. (2022). Financial risk and performance of national private foreign exchange commercial bank: Moderating effects of bank size. Jurnal Keuangandan Perbankan, 26(1), 229-246. doi: 10.26905/jkdp.v26i1.6268

Orhan, A., Kirikkaleli, D., & Ayhan, F. (2019). Analysis of wavelet coherence: service sector index and economic growth in an emerging market. *Sustainability*, *II*(23), 6684. https://doi.org/10.3390/suI1236684

Pracoyo, A., & Imani, A. (2018). Analysis of the effect of capital, credit risk, and liquidity risk on profitability in banks. Jurnal Ilmu Manajemen & Ekonomika, 10(2), 44–50. https://doi.org/10.35384/jime.v10i2.80

Saeed, M.S., & Zahid, N. (2016). The Impact of Credit Risk on Profitability of The Commercial Banks. Business & Financial Affairs, 7 doi: 10.4172/2167-0234.1000192

Saiful, S., & Ayu, D. P. (2019). Risks management and bank performance: The empirical evidences from indonesian conventional and islamic banks. *International Journal of Economics and Financial Issues*, 9(4), 90.

Saleh, I., & Abu Afifa, M. (2020). The effect of credit risk, liquidity risk and bank capital on bank profitability: Evidence from an emerging market. *Cogent Economics & Finance*, 8(1), 1814509. doi: 10.1080/23322039.2020.1814509

Socol, A., & Sinitin, N. (2021). Do Non-Performing Loans Influence the Profitability of Banks? Evidence from a European Banking Group. *Ovidius University Annals, Economic Sciences Series, 21*(1), 823-832.

Yakubu, I. N., & Musah, A. (2022). The nexus between financial inclusion and bank profitability: a dynamic panel approach. *Journal of Sustainable Finance & Investment*, I-I4.

Yeasin, H. M. (2022). Impact of credit risk management on financial performance: A study of commercial banks in Bangladesh. *Interdisciplinary Journal of Applied and Basics Subjects, 2*(1), 14-22. Yusditasari, E., Febrianto, H. G., & Kaswoto, J. (2023). The Role Of Credit Risk, Management Risk And Capital On The Profitability Of Indonesian Banks. *International Social Sciences and Humanities, 2*(3), 861-871.

Zolkifli, N. A., Samsudin, K. J., & Yusof, M. B. (2019). Determinants of liquidity and market risk and the effect on bank performance in Bahrain and Malaysia banking. *International Journal of Trade, Economics and Finance, 10*(1), 8-16. doi: 10.18178/ijtef.2019.10.1.630