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The Impact of Risk Management Factors on Banks Performance of Pakistan

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ABSTRACT

Risks usually affect the overall profitability/financial performance of any corporate sector. Various techniques of risk mitigation are important dealing with downturns in Pakistani economy regarding pandemic, unstable political situations in Pakistan and different time to time policies of state banks regulation which consist of BASEL amendments. Data of fifteen banks had been selected for the period 2012-2018 and analyzed by using certain statistical techniques which are descriptive statistics, correlation, and regression analysis. As from analysis we found that Credit risk and Liquidity risk has positive significant effect on financial performance of bank, which is measured by ROA, ROE, Tobin's Q. Further, one of the risk factors which is operational risk diverts from hypothesis which shows significant negative effect on financial outcome of Pakistani banks. The results of this study will help the management of banks to find better solutions to enhance the performance. Further, the policy implication of this study advises that banks should follow BASEL regulations and risk disclosures strictly to cope with market.

Key words: Risk, Banks, Credit, Operational, ROA, ROE, BASEL, Tobin's Q

1. INTRODUCTION

The banking sector is considered one of the most important financial institutions in the world. In the last few decades there have been a number of changes in the management of the banking industry due to the high level of liquidity in banking institutions such as Lehman-Brothers and Bear Stearns.

The financial crisis of the 1980s prompted central G-10 banks to implement effective financial risk management measures. The Capital Commission has resolved the necessary plans of the Basel capital for its credit risk drive due to the need for exposure

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to market risk.

The Basel Accords were reviewed by the 1997 Asian Disaster Relief Framework for a Comprehensive Expenditure Framework, and Basel 1 of 1988 focused that how good management of risk related to debt is carried out. Basel 2 had three segments namely i.e. least amount of financial requirements, regulatory oversight and market behavior. Segment one is consist of these 3 main risks such, operational, credit, Market. As all financial and banking sector had to meet its financial requirements using basic regulatory principles. It is important in part 2 (pillar) that banks get assistance in their setups when state regulators require banks to conduct a test on setups that is implemented when state required banks to perform an inquiry about disclosure to get to know that funds it held matched with interest rate risk. It further explains the unexpected because its let the manager to deviate from the main financial requirements. During financial transactions, economic savings increase and provide better delivery, and the risk facing rescuers is reduced by varying degrees. In the financial crises of 2007-2009 the regulator introduced the Basel 3 to empower banks so that they can withstand any financial problem in future and also shed light on different risk management techniques such as credit, liquidity and market risk. (Gillen et al. (2019).Also, banks pulls the economy upwards by increasing the capacity and productivity of investment activities Falconer, B. (2009). Developing countries Such as Pakistan, where mobility of funds is low, banking sector play an important part in diverting money between all small and medium business to active households so that money circulation is smooth which will positively affect the economy Campbell, A. (2016).Therefore, importance of this objective is enhanced and must be done in an efficient way to expand the economic growth of country.

However, (Chijoriga 2019) Figured out that all small, medium, large size banks work or operate in environment that is unstable and fragile and faces many risks that may come in way and which may lead to closure of commercial business i.e., financial obligations if not fulfilled. According to (Robert & Grey 2019). Three different types of risk are present in financial system i-e Business risks, Operational Risks, Financial risks. Moreover, this also examined by (Heiney 2020) this disclosure of risks has made banks a risky business, which is why good risks mitigation is important for the growth and

existence of all commercial and retail banks. Banks as financial institutions plays a key role in development and growth of overall economy in different ways.

Disaster risk management issues intensified over the past year. Good risk mitigation techniques are a defined way to identify and evaluate the lost liability identified in an entity using effective debt management strategies. Pakistan's banking center has faced a number of risk such as bankruptcy, exchange rate risk, credit risk exposure, employment risk, interest rate risks & many other risks due to the unpredictable and uncertain nature of country & due to this developing economy like Pakistan is under severe pressure to cope with current needs that are required.

Financial performance is a measure to assess that how well an organization is utilizing its current and fixed assets though different management strategies to mitigate risk. According to (Wernz, J. 2014) financial performance act to gauge an income bank in its total equity. The bank's financial performance is measured by the credit rating, the performance of the loan, and the cost. Profitability is a guide to the activities and outcomes of the total results initiated by commercial banks and maintains its stability and growth. (Giesecke 2004).

There are multiple techniques to evaluate and identify the performance and profitability of a bank or a financial institution. Most of effective way is measurement by ROA, ROE, Tobin's Q. Risk management has shifted focus from modeling financial instruments and ensuring compliance rather gains that comes out financially. According to (Jagelka 2020) he figured out that if a three is a good management and controlling of financial risk available than it will affect the market value of firm or a bank or financial institution. Therefore, their main function is to lessen the financial risks that is harmful and affect the profitability of banks. Companies make good and stable forecasts for inflows and outflows as they reduce future uncertainty.

Financial risk management to prevent financial hardship and costs (Falconer (2001). According to Basel Committee on Banking Supervision, (1999) a good risk management is of vital importance that will reduce or lessen the danger of financial hardships and associated costs. Thus it create a room for financial industry that there must be some good business practices and regulatory functions to view a risk

management as a broad concept and to cope with challenges that are necessary for to meet desired timeframe.

The study will cover Pakistan's banking sector due to the high rate of debt growth, which could raise the main concerns regarding financial system stability. Second, Pakistan attracts banks and investors around the world, making Pakistan an economic, financial and political risk. Financial institutions operating in Pakistan need significant improvements in this regard therefore if to benefit a banking industry in Pakistan there must be awareness of its importance and its impact on risk mitigation techniques that are required.

With regard to the merger between the bank's risk management benefits, no strong studies have been found investigating the effect of managing risk on bank profit earnings ratios in Pakistan. A recent example which are the two main categories of cash flows and credit risk includes (Andersson et al. (2016). According to studies carried out by Akhtar, Ali, & Sadaqat (2019). Ahmad and Ariff. 2018. Iqbal, 2012; Arif, & Anees. (2018), Shafiq & Nasr, 2019). In all of these research studies, however, credit risk and income risk were well analyzed. This research is important for stakeholders as well as educators to continue to improve their understanding on managing multiple risks and their effect on the functioning of banking sector. This research will also contribute and adds in literature that strong relation between Effective risk management and their impact on banking profits in Pakistan. It also provides insight into investors, policy makers and the financial market research sector. Thus, due to poor liquidity and credit management it's important for banks to hinge upon some theories just as Liquidity Management theory which says that if there is lot of withdrawal of money by depositors than which in order to maintain the customer confidence it's important to maintain adequate liquidity. Arif & Anees, A. (2018). As according to survey report of Global bank 2010 outlook 2021 banks risk ratings may fall and some facilities may default in coming quarter because of COVID-19 waves and several good risk mitigation strategies may be needed for leverage ,squeezing bank profit margins and needed some structural changes to streamline the fixed cost (S&P Global 2021)

1.1. Research Gap

As, if there is risk is managed efficiently by commercial banks in its portfolio than still there is need to update amendments and policies and further testing should be done with different variables to cope with .So in according to reviewed literature it's found that further extension in field of risk mitigation is required by adding Tobin's Q variable and checking its effect on Pakistani commercial banks by using different combination's and timeframe .According to reviewed literature and BASEIII of banking regulation there is more tight regulations and it's also says that several other factors will also be needed for risk mitigation ,Because tighter loan regulation and credit facilities and changing market conditions make its importance more. So, changing Business models with respect to risk strategies are needed and several other researchers also highlighted the fact, but I had used the new combination of proxies for risk mitigation and tried to find out the combination with different dependent variables in Pakistani context banking data. As in Pakistan there is lot of ambiguity about market conditions so it's important to test the relations with different proxies and to update business model.

1.2. Problem Statement

As according to my gathered research on literature it is proved that if a risk is managed in positive way this will improve the financial performance of banks or financial institutions. After the financial crises of 2007-2009 role of mitigation of risk is considered more important than before. After the launch of BASEL 3 several, strict targets had been set so far with respect to low interest rates, several new ways had introduced to protect the balance sheet of banks, and many serval methods had introduced for new regulations related to how to manage assets and regulations related to financial and way to manage the risky behavior and over indebted. The strict rules by regulators & changes with respect power and markets have emerged more and more financial institutions or banks have dwindled, & the types of businesses have shifted from commercial and sophisticated construction to less expensive jobs. The result was that the profits of the World Bank declined due to low interest rate and risk taking. Moreover, this was due to the recession of many economies at the time. Therefore, this result leads to the question of research that how managing risk of micro and macro level had affected

emerging economic banking sector of Pakistan. So, it's important to study how banks are managing the border financial and other risks.

This study will also help to figured out any inconsistencies and will add to brief textbook. Commercial banks use a variety of risk management measures determined by bank ownership (private, foreign, public), risky banking policies, banking regulation and banking management standards. It is important to study how banks manage broad financial and other risks. Therefore, the research questions raised in this study are:

- 1. How credit risk influences on banks performance?*
- 2. How operational risk influences on banks performance?*
- 3. How financial credit risk influences on banks performance?*

1.3. Objectives of this research

Analyzing the credit risk reaction/result, financial risk, and operational risk on banking institutions operating in Pakistan.

1.4. Significance of Study

This study will be helpful for bank manger's and policy makers as a good guidelines in risk mitigation matters. This will lead to private investor to think and take better decisions. As according to my gathered research on literature it is proved that if a risk is managed in positive way this will improve the financial performance of banks or financial institutions.

2. LITERATURE REVIEW

Managing risk do not have one unique definition. Many authors have defined the risk management in many ways even some of them pointed the same definition. There are a number of controlled methods to manage risk in journal's and books as (Anderson & Hair 2018) viewed the risk management as an effective form of corporate governances that's aligns the BOD (board of directors) with business principles and risk mitigation to the satisfaction of available stakeholder entities .Therefore, Kolapo et al. (2020) states that risk mitigation can be considered as the task of monitoring board to direct risk strategy and to set out the risk thresholds that are clearly defined across the organizations. Cassidy & Gray (2019) states as risk management operates in such a fashion in which the

(BOD) board of director's reports & monitors risks internally in the organizations. Morgan (2020) also said that this risk managements are primarily related with board policies, top board management & risks mitigation functions. According to (Rose 2019) the board committee must keep on reviewing risks information and guidelines and kept on analyzing disclosures so that solid risk mitigation decisions should be carried out. Most certain among these definition's, management impart the board with a platform for monitoring risks & to convey risk mitigation problems to all stakeholders. According to (Felix & Claudine (2008) there was a comparison done by them between countries that are considered developed and countries those have some good emerging economies to find out the main determinants credit risk.. As now numerous ways are carried out to study how interest and market forces had a parity with risk factors included and how we can predict it in positive or negative way. (Jorda and Taylor 2020)

There may be internal and external risk associated with banking as due to more digitization of services in Pakistan. According to reviewed literature of several researcher's credit risk which according to (Felix & Claudine (2008) has positive and significant effect in developed countries in Europe in Asian developing countries it showed the significant negative relations with financial performance indicator as ROE. As according to (Al-Khour, R. (2011) to banking supervision committee (BASEL) it's important to mitigate risk if a beneficiary becomes unable to repay debts. (Deng & Quigley 2020) tested the relation between NPLS, CAR with ROA ROE and found unfavorable association between credit risk proxies and performance indicators.

Credit risk factors leads to liquidity risk when the financial obligation is not fulfilled and cuter is unable to pay its debt in any foam which create lope holes and makes important for banks of make policies on this risk mitigation According to (Fadun, O.2013). liquidity risk relation with Tobin's Q showed negative association and same relation is shown by (Abbas et al. (2019) .which showed positive relation and he further added that bank size also matters' loan to deposit ratio is commonly used as proxy by several researcher in other countries ,Whereas in Pakistan this relation with Tobin's Q is not tested yet .This relation is further extended towards operation risk and market risk factors that several researcher worked to check these relation and basically the basically

performance indicator Tobin's Q is modern concept with respect to ROA, ROE. As (Ekinici and Poyraz (2019)) tested the relation between risk enterprise management and Tobin's q and showed insignificant result. If Tobin's q value is high it means that firms stock is more valuable than its replacement cost of its assets

To manage risk, there is a need to anticipate or measure its risk. Risk measurement strategies such as Value at Risk (VaR) are modern systems that include tasks to calculate the amount of losses caused by various types of investments due to market insecurity. (Abdullah Mamun, M. K. (January / March 2005).) Banks protect themselves from market risk by using computer viruses on multiple investment portfolios at various times to measure asset prices and to assess the adequacy of the funds required to mitigate uncovered risks. As per BASEL banking committee of supervision 1999, Switzerland major BASEL amendment was there which inherited by most of developing countries. In addition, VAR is a practice used to compensate for potential losses in portfolios and investments based on market volatility (Ghosh, 2019).

In 2009 the Basel committee announced an important risk measurement tool used by RM departments in a banking system that plays a key role in Basel II's financial satisfaction strategy (Francis, 2019). These tests assist RM by providing risk assessment data, providing internal and external communications, financing and payment systems and recommended risk-taking rates, improving risk elimination and setting up other programs. Khalid & Amjad, (2012) proposed 5 steps for mitigation of risk. Steps should well planned & followed according to level of need in uncluttered manner and this also leads to very effective results (Tan et al., 2017). This means a systematic approach to the application of advanced and advanced RM strategies that include continuous review and risk assessment (Khalid & Amjad, 2012).

Businesses (i.e., senior executives, managers and employees) in the banking industry need to understand the concepts of risk within banking processes and the risks that threaten investment and its operations. (Brandt et al. 2020) .Similarly, a complete understanding of risk and RM performance can demonstrate the effectiveness of banks in risk management over time and have a positive impact on other risk management strategies Ruziqa (2013). Given the above evidence, there is a tendency for a clear idea of

different risks and RM can increase the performance of banks. Risk identification is the process of initiating actions; creating awareness, common sense, and commitment; and clarification of expectations. Board risk management committee if not carried out correctly will lead to future defaults (Sahyouni and Wang 2019).

According to Ayam & Ahinful (2015) risk identification means identifying the sources of risk and the activities involved in that risk. The major contribution in field of risk factors where macroeconomic variable effect the risk mitigation techniques is of the (Zaidi, 2005)

As per study (Francis, 2013) risk mitigation is a method which reduce the impact that is negative and any unforeseen situation that may occur with customers. It also shed light on the matter that how management can sustain good optimal capital structure. As when good risk mitigation techniques are followed than it will create more opportunities for investors, and this also will minimize insolvency cost. (Batten and Vo 2019).It also caters financial support in term of reducing taxes and variations in profitability. It helps to increase the rate of return in the unpredictable market situation. This will also help in increasing the required rate of return for investor and will also help banks to achieve good profit margins. The entities or company which invest in research and development actively in risk management will gain good market. According to Nazir, Daniel, & Nawaz (2012) two major risk factors are majority found in market which is unsystematic and systematic. As through portfolio diversification of these risk factor can minimized .he further added that more by following regulated risk mitigation techniques this risk can be converted for profit generation by following the customer due diligence and country central bank regulations.

Experts studying risk in the banking industry have stated that risk identification is the first step in the development of RM (Jabnoun and Hassan Al-Tamimi, 2003; Amandla et al., 2007) and is important and effective in mitigation and controlling of risk managing process useful in managing and controlling risk processes. According to Abdullah, Khan & Nazir (2012). Risk mapping, and Risk analysis are factors that need to be considered during risk analysis and testing include economic, legal, environmental and social factors. Effective risk analysis and evaluation process helps decision-makers in commercial banks

to set future plans, technically enabling them to measure.

Liquidity risk occurs when financial institutions achieve their target to meet their lending commitment or take an advantage that may support their available credit base. Now another is debt risk is a loan payment which are made when due and could not be available in event of any error. (Akhtar, Ali. & Sadaqat (2011) Market risk is that when there is volatility in market conditions and rapid changes then it may affect the market value of bank or firm & financial institution. (Basel I, 1996). Mitigation of risk is a Streamlined process of application of the organization's comprehensive procedures for identifying, evaluating, managing, and monitoring risks such as integrated data is used to evaluate (protection), extract, and value-building (Foundation of Europe for Quality Management, 2005).

Credit risk theory was introduced by Melton 1974, Borrowers can be government, individuals and corporations while drivers for default can be different. As it is known from financial crises of 2008-2009 credit risk is major factor involved in risk management process. Credit risk refers to the debt that is in default and if borrower failed to make desired payments than we can say there is risk of credit loss. As more risk mitigation techniques are important for creditors and partners associated with them, different borrowers has different capacity to repay the loan so credit history must be checked. (Bhutta, Fuster & Hizmo 2019) This will affect the lender which includes a lost interest and head payments. Thus, if to lessen risk of creditors, lenders can assess credit to potential borrowers, requires the borrowers to take out suited insurances, which contains property insurances or seek security or third-party related guarantees. As in general we know that when the risk is high than more interest rates for creditors who will be required to pay off debt (Owojori, Akintoye and Adidu, 2011).

Several researchers tested the relationship between these variables and found different results in terms of significant effect and non-significant effects. One of recent study on these variables were study on Nigerian banks of researcher (Ally, 2014) conclusion was that Credit risks, liquidity risks showed positive and significant effect on Non-performing loans, ROA, ROE. One of other researcher in 2019 recently checked the relation of these variables and figured out that that credit risk factors effect is significant

but negatively on ROE and negative insignificant effect on ROA. While Liquidity and operational risk has no significant effect on performances of banks financially. One more recent study of 2019 to check relationship between these two variables was of Ghaith, Etian & Tareq figured out that CR ,LR,OR has significant negative impact on ROA, ROE. Furthermore, in past studies several risk factors showed insignificant behavior with ROA, ROE and showed significant results with financial performance variables, while credit risk, operational risk showed significant results with performance. (Wernz (2014).

This study shed light on a multiple risk factor for risk expenditure. However, there is little research done in Pakistan to find out how broad mitigation of risk effects the financial performance of banks in Pakistan. According (Sleimi 2020) to research analysis has shown good mitigation measure for risk strategies and thus shown positive supportive effect on commercial banks and also showed how risk strategies helped managers for handling situations related to risk and profitability.

2.1. Hypothesis

H₁: *Performance of banks is significantly influenced by credit risk.*

H₂: *Performance of banks is significantly influenced by operational risk.*

H₃: *Performance of banks is significantly influenced by liquidity risk.*

3. RESEARCH METHODOLOGY

There are at least 34 banks operate in Pakistan in different dimensions which include commercial agricultural and foreign banks and data excess of some banks are limited due to their internal policy, or some partial data is available for public so due to unavailability of whole population data it is difficult for researcher to evaluate on whole population. The sample that is chosen from 34 is 15 commercial banks of Pakistan that has high asset base. The period that has chosen for analysis which is from 2011-2018 is period in which there was tremendous growth, challenges and competitive environment.

The annual data extracted from financial statement of selected banks also extracted from state bank of Pakistan website and economic data base research. Manual Variable calculation is also done through excel for finding different ratios. The expected relationship of IV's wit DV can be viewed in the light of below research papers.

Summary of relationship of IV's with DV			
	Researcher's	Risk proxies	Results
1	Noor (2019)	Credit, liquidity, exchange rates risk	The +ve relationship between financial stability and risk
2	Matayo & Muturi in 2018	Market operations and Sensitive Risk	The results show that there is significant relation on firm's financial performances
3	Balungio 2018	Measurement of Credit risks	A +ve Correlation between NPL,s (credit risks) & financial performances
4	Olamide, Uwalomwa, and Ranti, (2015)	NPL ratios, , loan to Deposit Ratios and risks disclosures	Equity Management, loans, risk disclosure and net assets have shown a non-significant relationship, while financial risk indicates a non-refundable relationship.
5	Muteiti 2014	Liquidity risks ,Credit risks, exchange rate risks	The results or relations were not significant and shown negative behavior between liquidity ,credit risks to financial performance
6	Mwangai 2015	All related risk components available	Significant relation between independent and dependent variable
7	Shetty and Yadav 2019	Exchange risk and interest rate risks	Inverse Relation Between both of them

3.1. Dependent Variables.

ROA: It is good financial measure to check how well firm is performing with respect to some risk factors and formula is:

$$\text{Net of total income} / \text{Total available assets}$$

ROE: It is most widely used financial measure of firm and many researcher as reviewed in literature has worked on it to show performance of firm (Shoukat & Nadeem 2014).

$$\text{Net of total income} / \text{Total available equity}$$

Tobin's Q: It is ratio of financial measure which was introduced by Nicholas Kaldor in 1996 and later modified and worked by James Tobin. I can be calculated by

following formula.

$$\text{Total of Market value of company} / \text{Total value of Asset of company}$$

3.2. Independent variables

Liquidity-risk: It appears when the firm is unable to pay off its debt and failed to fulfill its obligation, thus adversely affect the firm's profitability. The proxy used for this measure is Loan to deposit ratio. According to (Giesecke, K. (2004), Demirgüç-Kunt, A., & Huizinga, H. (1999)) they figured out that liquidity risk negatively affect financial performance. The positive role of variable is shown by (Iqbal, A. (2012)). Most of researcher had make use of it as risk factors in their studies. It can have measured by following formula

$$\text{Total commercials bank loans and advances} / \text{Total deposits}$$

Credit Risk: According to BASEL when beneficiary do not fulfill its financial obligations that this results in credit loss, according to (Joaquim, P., & Marques, S. (2007) customer deposit their saving and money in banks and offer credit services which make them vulnerable to credit risk. The proxy for credit risk used is Non-Performing Loans, NPL, s i-e substandard, Doubtful Loss. This is measured by following formula

$$\text{Non-performing loans} / \text{Total Loans}$$

Operational Risk: Operation risk a new emerged concept after the regulatory board action 1n 1998 and considered as important variable of risk factors, the proxy used for operation risk is Capital Adequacy ratio

3.3. Econometric Model

$$ROA = \beta_0 + \beta_1 \text{Credit risk} + \beta_2 \text{liquidity risk} + \beta_3 \text{operational risk} + u \text{-----Eq 1}$$

$$ROE = \beta_0 + \beta_1 \text{Credit risk} + \beta_2 \text{liquidity risk} + \beta_3 \text{operational risk} + u \text{-----Eq 2}$$

$$\text{Tobin_Q} = \beta_0 + \beta_1 \text{Credit risk} + \beta_2 \text{liquidity risk} + \beta_3 \text{operational risk} + u \text{-----Eq 3}$$

4. RESULTS AND DISCUSSION

It includes results and discussion of study which are descriptive statistics & regression analysis which is obtained by software E VIEWS.

4.1. Descriptive Statistics

The below explains the results of descriptive stats of variable and proxies used

for different risk i-e Operational Risk (RWs), Credit Risk (NPLs), Liquidity Risk (LCR) and one, s are Tobin's Q, ROA, ROE

Table 1. Descriptive Statistics						
Variables	OPRSK	LIQRSK	CRRSK	ROA	ROE	TBQ
Mean	0.126756	1.563281	0.074415	0.015289	0.115704	0.008111
Maximum	0.193000	3.302000	0.163000	0.157000	9.650000	0.043000
Minimum	0.069000	0.015000	0.023000	-0.022000	-12.32000	0.000000
Std. dev	0.026820	0.834761	0.034651	0.030173	1.360435	0.004584

The mean value of OPRSK is 0.126756 which is 12.6%.The Minimum value of OPRSK is 0.069000 which is 6.0000% and the maximum value is 0.193000 which is 19.3% .The spread between minimum value and maximum value is 6.7% which shows that risk weighted assets in operational risk contribute only 6.7% of total other assets of different risk from period (2011-2019) and this is less than 5% which is according to State bank of Pakistan prudential regulations .However OPRSK standard deviation is 0.02680 which is 2.68% from mean which proves that operational risk is more controlled in sample data banks and just affecting a little on financial performance of banks

The mean value of LIQRSK is 1.563281 which is 156.3%.The maximum value of LIQRSK is 3.302 and the minimum value is 0.015 which is 15.0% which shows only fluctuation of 11.3% between minimum & maximum value .As in the context of fluctuation which is low as compared timeframe is good but as Std..dev which is deviation from mean is which is also on satisfactory level according to State bank of Pakistan (BRD, Circular 8,2016) .As according to this circular banks should maintain minimum 100% LCR for their short term obligation .

The mean value of credit risk is 0.074415 which is 7.04%. The min value is -0.022000 22.1%and the max value is 0.157 which is 15.1%. As negative value indicates that NPLs provision are not smooth as according to BASEL 3. NPLs provision must be 70% of total and gross advances. So there is large amount of loans default occurred during this period and Standard deviation (stdv) value which is 0.030 show that there is lot of fluctuations with respect to mean position. Thus creating hurdles in performance of banks.

The ROA mean value is 0.15% and Mean value of ROE is 1.15% over a period of 15 years. Since the Standard deviation of ROA which is (0.030) small with respect to ROE more dispersion from mean because of large spread between both values.

The mean value Tobin's Q is 0.08 which means that its less than 1, so overall average stock related to banks are undervalued and shows that standard deviation is also not much dispersed from mean that's create a good sign for growth and the spread between minimum and maximum is also nearly equal or nearly to zero.

4.2. Correlation Result

To check the relationship of Iv's with DV's and to address the multicollinearity issue, three correlation analysis are made in three different tables, where IV's are same while DV 's are different.

Table 2. Correlation matrix 1				
	ROA	CRRSK	LIQRISK	OPRSK
ROA	1.000000			
CRRSK	-0.23401	1.000000		
LIQRISK	0.152378	-0.11739	1.000000	
OPRSK	0.208990	-0.09889	0.877050	1.000000

Table 3. Correlation matrix 2				
	ROE	CRRSK	LIQRISK	OPRSK
ROE	1.000000			
CRRSK	-0.23401	1.000000		
LIQRISK	0.152378	-0.11739	1.000000	
OPRSK	0.208990	-0.09889	0.877050	1.000000

Table 4. Correlation matrix 3				
	TBQ	CRRSK	LIQRISK	OPRSK
TBQ	1.000000			
CRRSK	-0.07161	1.000000		
LIQRISK	0.079700	0.075421	1.000000	
OPRSK	-0.10064	-0.06434	0.013317	1.000000

Above correlation matrix shows that correlation coefficient of independent variables are less than 0.80 which is suggested by Gujarati (2003), So therefore no multiple correlation for commercial banks. The correlation matrix 1 & 2 shows that

negative a interrelation between ROE,ROA and credit risk ,the results are consistent with study conducted by (Aduda & Gitonga, 2011, Kaaya & Pastory, 2013) and case with Correlation matrix 3 it shows negative association of operational risk and credit risk with TBQ which are similar to study conducted by (Bateni, Vakilifard, & Asghari, 2017; Gizaw, Kebede, & Selvaraj, 2018; Gul, Irshad, & Zaman, 2011; Olalekan & Adeyinka, 2016).

4.3. Regression Analysis

Prior to proceed for regression analysis, first of all Hausman Test is used for selection of random or fixed effect.

4.4. Results of Hausman Test

Correlated Random Effects - Hausman Test			
Test-cross sections random effect			
Summary Statistic's	Chi-Square.Stat	Chi-Square Degree of freedom.	Probability
Cross-section random	29.197961	4	0.0000

Therefore, when to decide among random and fixed effect a test called Hausman test is applied in which H0 is the preferred or applied model is random alternative as fixed effect. (Green, 2008). It basically tests whether the errors are correlated with the regressors Decision rule is simple as value of probability is less than 0.05 than fixed effect is used and if not use random effect As Hausman test shows significant as P value is below than 0.05. Thus, rejecting hypothesis H0 (null hypothesis) and random effect is visible through analysis of this research.

4.5. Regression Results

The model of regression is used to find out the effect of three independent variables which is operational, credit and liquidity risk on the dependent variables which are Tobin's q, ROA, ROE

Table 6. Regression Analysis: TBQ as DV				
Dependent Variable: TBQ				
Method: Panel EGLS (Cross-section weights)				
Date: 01/11/21 Time: 13:41				
Sample: 2011 2019				
Periods included: 9				
Cross-sections included: 15				
Total panel (balanced) observations: 135				
Linear estimation after one-step weighting matrix				
Cross-section weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CRRSK	0.005117	0.005427	-0.942787	0.3477
LIQRISK	0.000318	0.000303	-1.050338	0.0297
OPRSK	-0.053810	0.011407	4.717337	0.0000
C	0.002168	0.001602	1.353246	0.1786
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.719465	Mean dependent var		0.020613
Adjusted R-squared	0.678704	S.D. dependent var		0.011671
S.E. of regression	0.003569	Sum squared resid		0.001490
F-statistic	17.65063	Durbin-Watson stat		1.784952
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.446225	Mean dependent var		0.008111
Sum squared resid	0.001559	Durbin-Watson stat		2.388048

This table shows that figure of R-squared, Adjusted-R-squared and F- test, where dependent variable is TBQ. Regression result shows that value of R-Square 0.719465 which is 71.9% this indicate that variables used for risk mitigation & financial achievement is acceptable & regression model is best aligned/fit with a probability of 72% and remaining 28% is an error term .As Adjusted R-Square value and R-square is 68% and 72% respectively which is favorable .The F test result also proves the data reliability which is applied in the test .As Durbin-Watson also an important and reliable measure so the value of Durbin Watson test is also 2.3 which lies between 1.5 to 2.5 ,so in data there's no autocorrelation .

The predictors' variable under analysis are credit risk, liquidity risk, operational risk. The significance or insignificance of a value is on the basis of probability value and

this also tells that whether to accept or reject of null and alternative hypothesis. If probability value is less or below 0.05 alternative hypothesis will accepted, if probability value is greater than 0.05 the null hypothesis will be accepted. Thus coefficient value & probability value is explained in Table 2 of regression analysis

Non-performing loan value of P is 0.3477 with Tobin's Q. This mean CRRSK is not significant but the positive and negative relation of predictor's variable CRRSK is shown by coefficient. The value of coefficient shows NPLR i-e 0.005117 so this means that positive relation exist among these CRRSK and TBQ. Hence this proves hypothesis that credit risk has positive significant effect on financial performance of commercial banks in Pakistan (Tobin's q).

This also means that when CRRSK of banks in Pakistan is in increasing trend than it will results in decrease in TBQ & 0.005117, so when CRRSK is increased by 1%, it will results in decrease in TBQ by 51.17%. As in light of most of regulators Tobins q is more advance and excellent measure of for the measurements of banks profitability (Hassan and Bashir, 2003). As the P value of liquidity risk is 0.0297 which is less than 0.05. As Coefficient value is 0.000318 which is positive value so significant positive relation exist between liquidity risk and TBQ.

Hence it also proves the second hypothesis that liquidity risk had significant negative on financial performance (TBQ) of banks on Pakistan.

Where operation risk proxy which is RWAs shows significant and contain P value 0.0001 which is less than 0.05 and also positive relation of coefficient because of Value -0.053810 thus showing significant and positive impact. As in case of Hypothesis three, Operational risk shows a major positive significant effect on commercial banks' financial performance. So its null hypothesis will be accepted.

As most of researcher thinks Tobin's q is more modern day approach to check financial performance of entity. As the analyzed results are more similar to a study conducted by (Epure & lafuenta (2019). In banking industry (Kargi-2011) researched in Nigeria Ara, Bakeava &Sun (2017) in banking industry Norway. These all found out negative association among credit risk and Tobin's Q.

Table 7. Regression Analysis, ROA as DV				
Dependent Variable: ROA				
Method: Panel EGLS (Cross-section weights)				
Date: 01/11/21 Time: 13:42				
Sample: 2011 2019				
Periods included: 9				
Cross-sections included: 15				
Total panel (balanced) observations: 135				
Linear estimation after one-step weighting matrix				
Cross-section weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CRRSK	0.016233	0.012420	1.306989	0.0193
LIQRISK	0.000603	0.001584	0.381016	0.0709
OPRSK	-0.074643	0.025435	2.934599	0.0040
C	0.003676	0.005003	0.734728	0.4640
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.717080	Mean dependent var		0.057516
Adjusted R-squared	0.675972	S.D. dependent var		0.050123
S.E. of regression	0.021663	Sum squared resid		0.054906
F-statistic	17.44376	Durbin-Watson stat		1.487087
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.493862	Mean dependent var		0.015289
Sum squared resid	0.061748	Durbin-Watson stat		1.258608

The value of probability of Credit risk is 0.0193 with ROA which is greater than 0.05 it shows significant result and the coefficient also shows the positive value so there is positive significant relation between credit risk and ROA. Its means that when the credit risk exposure of commercial banks in Pakistan is increased by 1% its results decrease in ROA by 16.23%. Hence Hypothesis is accepted that Credit risk has significant negative impact on financial performance (ROA) of commercial banks

Where the Liquidity risk proxy shows the value 0.0709 which less than 0.05 and coefficient value is positive which shows significant positive result that is also aligned with hypothesis. Hence liquidity risk shows significant positive effect on financial

performance (ROA) of commercial banks in Pakistan which is aligned with hypothesis. As Operational risk again diverts from proposed hypothesis and shows negative significant result and contains P-value 0.0040 which is less than 0.05 and coefficient value is -0.074643 thus operational risk hypothesis is rejected in case of ROA and its null hypothesis is accepted

Moreover, similar results were also found by the study conducted by Tefara in Ethiopia, Samy and Magda (2009) performed study in Egypt. These all figured out that operational and credit risk has positive significant effect with ROA which is performance measure of banks. Several other researchers also figured out that several risk factors which also includes operational risk interrelation with performance measure indicators such as (ROA). Similarly there are several studies as well in this regard which makes the banking industry more important.

As per (Morgan 2020) Liquidity coverage ratio holds more importance for commercial banks had legally required to maintain LCR100%. One must know that major functions of banks is to generate sufficient funds to absorb future losses because it's directly related to financial strengths of any financial institutions. This is predefined BASE II accord which is also followed by all the banks that sufficient minimum capital need to be aside to meet costs related to different risks they face time to time.(Gottschalk,2007)

Table 8. Regression Analysis: ROE as DV				
Dependent Variable: ROE				
Method: Panel EGLS (Cross-section weights)				
Date: 01/11/21 Time: 13:42				
Sample: 2011 2019				
Periods included: 9				
Cross-sections included: 15				
Total panel (balanced) observations: 135				
Linear estimation after one-step weighting matrix				
Cross-section weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Probabilt
CRRSK	0.010261	0.344725	-0.029767	0.0473
LIQRISK	0.028764	0.018976	1.515808	0.0133
OPRSK	-0.869402	0.503588	1.726415	0.0269
C	0.038700	0.070784	-0.546732	0.5856
Effect Specification				

Cross-section fixed (dummy variables)			
Weighted Statistics			
R-squared	0.650801	Mean dependent var	1.310920
Adjusted R-squared	0.600062	S.D. dependent var	1.136904
S.E. of regression	0.619389	Sum squared resid	44.88619
F-statistic	12.82660	Durbin-Watson stat	1.799364
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.007340	Mean dependent var	0.115704
Sum squared resid	246.1848	Durbin-Watson stat	2.393437

As Results with ROE is more fluctuating as two of proxies' shows positive significant effect with a value of 0.0473 and 0.0133 respectively which are less than 0.05 and a coefficient value 0.010261 and 0.010261 respectively thus showing positive significant effect. If there is 1 % change in liquidity risk and operational risk there will be 28.7% and 86.9% change in ROE respectively. But operational risk shows negative value of coefficient which is -0.869402 and probability distribution curve value (0.0269) is less than 0.05 so credit risk shows negative significant results. Thus, proposed hypothesis will be accepted.

5. CONCLUSION

As a results or findings related to the study shows that several risk management factors which are key indicators of financial performance of banks with respect to (SBP Brd circular) and these shows that mitigation of risk has positive relationship with performances of bank financially. This study result are closely associated with Fredrick (2010) in Kenya, (Poudel (2012) in Nepal and Mekash (2001) in Ethiopia who investigated the impact risk mitigation factors on financial performance of commercial banks .In this research several factors i-e Credit and Liquidity risk shows more significant results with TBQ and ROE and less significant with ROA. Where the Operational risk results with dependent variable is although shows satisfying results with respect of hypothesis but less significant with TBQ and ROE and more significant with ROA.

Majority of these found negative-significant performance of banks This study contains several risk proxies that are up to date of market conditions and unique i-e credit risk(Non-Performing Loan), Operational Risk (Risk weighted asset), Liquidity risk

(Leverage coverage ratio) and financial performance measure of ROA, ROE and Tobin's This research study propose that if risk mitigation techniques are inadequate to cater risk factors this will adversely affect the financial performance of entity. This practice will lead towards the more defaults and bankruptcy and more operational cost to entity.

Therefore, the results of the study found that poor credit and bad quality loans by a banking institution reduces the efficiency of the banking system. Impact of a risk reduction in the financial performance of financial institutions such as taking the Loan rate to the Deposit ratio. It has been found that LCR and credit risk are factors that affect the performance of banks. The overall results of analysis confirm that the functioning of selected financial institutions in Pakistan is influenced by risk mitigation. Therefore, the results of indicates that risk mitigation is important to financial institutions. According on the analysis and observations, financial institutions must focus on implement prudent risk mitigation strategies to increase bank profit revenue and saves bank from major loss. This ca be attained through the establishment of Efficient internal control systems, sound audit processes, segregation of the hard work of improving assets, maintaining profitability is a challenge, new ways to reduce costs and reduce risk incidence.

5.1. Recommendation

These results would be very useful for the implication of capital requirements and cushion available to commercial banks in Pakistan by policy makers and regulators. Because of numerous new proxies and risk factors, it would be more useful for investors to assess commercial banks' risk profiling and risk strategies when taking investment decisions.

It is also possible to extend this study to foreign countries. Currency risk and interest rate risk and several other factors used by researcher to analyze profitability and risk factors. If there's more time allowed for research work more good results will be obtained. Several problems also occurred in data collection such as some publish limited disclosures and related variable results which makes a research amore challenging job but in future these banks results can also be incorporate in study to obtain more market-oriented results.

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