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The Underlying Impact of Risk Management Practices on Banks Financial Performance: An Empirical Analysis on Financial Sector of Pakistan

Tanveer Bagh[1]*, Muhammad Asif khan[2], Sadaf Razzaq[3]

[1]Finance Scholar, Department of Business Administration, Kotli, University of Azad Jammu and Kashmir Muzaffarabad, (UAJ&K), Pakistan & Management Trainee Officer at Allied Bank limited.
[2]Assistant Professor at UMS&T Kotli, Pakistan, PhD Finance Scholar, School of Economics, Huazhong University of Science and Technology, China.
3MSC, (HRM) M.Phil/MS, Department Public Administration, UMS&T Kotli, Pakistan.

***Corresponding Author:** Tanveer Bagh , Finance Scholar Department of Business Administration, Kotli, University of Azad Jammu and Kashmir Muzaffarabad, (UAJ&K), Pakistan, lecturer at Indus Group of college, Punjab University & Management Trainee Officer at Allied Bank limited Email:tanveerbagh01@gmail.com, cell No +92 343 5886188.*

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ABSTRACT

The Risk management (RM) is springing up every day in banking industry owing to growing volatile economic environment. In spite of the game changing role of banks in the country's development the governing bodies of these institutions are confronting diverse risks. RM is considered to be the vital yardsticks for ascertaining success and failure of any financial institution. Therefore, the main purpose of this paper is to demonstrate the underlying impact of RM practices on FP of selected listed commercial banks of Pakistan. The study sample size was 18 top performing banks covering a period of 2004-2016, classified into three groups i.e. large, medium and small commercial banks on the base of market share. The data for analysis was taken from the annual published audited financial reports of banks under study. Return on equity (ROE) is defined as a proxy of dependent variable i.e. financial Performance whereas risk management practices were taken as an independent variable, five proxies have been operationalized to investigate risk management i.e. CAR represents capital adequacy ratio, OP operational risk, NPL designates non-performing loans to measure credit risk, IRR denotes interest rate risk, LR stands liquidity risk to gauge risk management practices and five hypothesis were framed. The quantitative research design Inferential, Descraptive statistics and E.Views software has been applied. The study results demonstrated risk management practices have significant impact on financial performance of small, medium and large banks. Based upon results, banks should fully concentrate on the loan assessment procedure, polices and quality of loans and liquidity management. Pakistani banking industry should inculcate a balance risk management culture to mitigate risks and shocks. There should be risk based strategy formulation and mature corporate governance framework. There should be proper implementation of Basel accord II and III. This study will contribute in literature and will be beneficial for academic, social and managerial deportment.

Keywords: *Risk Management, Financial Performance, Pakistan Stock Exchange, Commercial Banks*

INTRODUCTION

Background of the Study

We have no future because our present is too volatile. We have only risk management (William Gibs).According to Khan and Ahmed (2001) risk is an unexpected and un-clear future event that could impact in achieving organization objectives. This state of affairs may occur because of multifarious causes i.e. lack of information, ambiguity and world economic spillover etc. Consequently, it includes both negative and positive effect on organization objectives. However, all businesses confront uncertainty but in particular financial instituations experience specific types of risks depends on their nature of operation. Selma et al. (213) reported in recent, fast moving economic world environment, risk management has become a typical standard area of business practices. It is a key factor in order to ascertain the condition of banks, effectiveness of management as well as future performance.

Virtually, in the last couple of decades, financial risk management has experienced explosive development. According to Njogo (2012) risk management is one of the major areas in the global financial crisis in the last decades among the financial institutions. Risk management is characterized by identification, assessment as well as prioritization of risks in conjunction with the coordination and an economical application of available resources in order to minimize, control, and monitors the prospect or impact of unfortunate as well as unwanted events pertaining to a business. What is more, over the last couple of decades, financial sector plays a striking role in the advancement and growth of almost every economy in the world regardless of size, temperament and nature of economy. It has been observed from the facts that the banking industry is flourishing tremendously. The banking sector is considered to be a momentous important source of finance because the mainstream of business financing is done through banks.

Moreover, Dei and Amoh (2016) Stated in present days of world economy risk management is regarded to be one of the resilient and important tools for financial institutions. The mainstream of the financial needs of the world leading companies are fulfilled with the help of banks. Moreover, the banking industries have critical role to performance in the economy of almost every county in one way and the world economy at large other way around. Besides, According to Arif and Anees (2012) it has experienced, many changes occurred in the last decade due to a large scale bankruptcies as for as financial institutions are concerned. The classic, example of bankruptcies is Lehman-Brothers. Failure of one Company has a spillover effect one or other way around. Therefore, the issue of risk management has become sizzling concern and most important fundamentals in the recent epoch. According to Sovemi et al.(2014) in the Current finance arena review of literature it is concluded that the risk is regarded as a significant as well as inevitable phase in almost every business activity particularly in the market economy. The business growth is greatly depends on risk. It is widely accepted phenomena, the greater the risk in the business world, the higher the returns so by believing on this concept the business units must strike a trade-off between the risk and return. Carey (2001) claimed that financial risk management is so vital for all sorts of financial institution and opened up new research avenues in the realm of risk management.

Problem Statement

Selma et al. (213) stated that in the last couple of decades, the risk management is typically recognized as a technical discipline. Moreover, it has become a distinctive standard area of business practice in the recent arena of economic world. They also stated strong risk management practices in the banking industry are paramount important for both economic sustainability and financial stability as well. Furthermore, in the world of finance, risk is a major component attracted lot attention from researcher.

Furthermore, According to Shafiq and Nasr (2010) Pakistani banking industry has confronted multiple risks including market risk, credit risk, foreign risk, operational risk, interest rate risk , capital adequacy risks and many more because of political instability, volatile economic environment of county as well. To that respect, Bagh, et al. (2017) stated that severe economic meltdown on both home and International forums is another shock because of unskilled public sector, prices hiking, governance crux, natural upheaval, pathetic associations, corrupt managerial practices and policies, low per capita income, tremendous increase in population growth rate, power distance, un- equal distribution of wealth, poor management, lack of funds, lack of quality of education, poor law and order state of affairs and Dearth of merit accordingly these all factors are accountable for wretched state of affairs. Therefore, the problem statement is to be addressed "The Underlying Impact of Risk Management Practices on Banks Financial Performance: A case of Pakistan Financial Sector".

Study Objective

This research tailored to address following objectives;

- To explore the underlying impact of risk management practices on financial performance of large, medium and small listed commercial banks of Pakistan.

- To offer suggestions on the basis of study findings for the prosperity and improvement of large medium and small listed commercial banks of Pakistan.
- To examine major types of risks faced by large medium and small listed commercial banks of Pakistan manage risk?

Research Questions

The study research questions are presented below.

- What is the underlying impact risk management practice on financial performance of large, medium and small listed commercial banks of Pakistan?
- What are the major types of risks faced by large medium and small listed commercial banks of Pakistan manage risk?

Significance of the Study

The key findings of this study will be beneficial to the financial institutions of Pakistan. This study provides a good insight for the policy makers and after studying this study, they will be able to develop understanding regarding general risk management practices. Moreover, they will be also enabling to know, how the risk management practices influences the FP of banks. This study will be of great beneficial for the manager especially at the time of framing risk management strategies. Apart from these, this study will be of great useful for academia by adding information in existing body of literature.

Literature Review

Introduction

This section is divided into two heads i.e. theoretical underpinning and empirical review. These segments of the study consorts with theoretical underpinning, risk management, financial performance, empirical literature review, research model/ conceptual framework, hypothesis of the study and finally research gap.

Theoretical Underpinning

This part of literature discusses theoretical underpinning on risk management, financial performance and relationship between risk management and financial performance.

Risk Management-(RM)

Rejda (2011) defined risk management (RM) in his book Principles of Risk Management and Insurance, it a process by which the identification as well as assessment of loss exposures faced by an entity and the adoption of best possible techniques and strategies to deal with these risk exposure. According to Buttimer and ott (2008) RM is expressed as the process that a banks execute to control its financial losses and exposures. Moreover, in the business dictionary financial risk management may be defined as the forecasting and evaluation of financial risk in conjunction with the identification procedures to be used to minimize or avoid risk. (http://www.business dictionary .com/definition/risk-management. html). In the words of finance, risk management states as the practice of identifying, anticipating risk, envisioning and analyzing them and then taking defensive stride to curb the risk (http:// economictimes.Indiatimes.com/definiti on/risk-management).

Theoretical Review

This phase of literature review provides theoretical review on risk management. Some important theories are presented below.

Modern Portfolio Theory-MPT

MPT was championed by Harry Markowitz. In his research paper "portfolio selection'" published IN journal of finance in 1952. According to Markowitz (1952) Investors focused on assessing the risks and rewards of individual securities in constructing their portfolios.

New Institutional Economics Theory

"New institutional economics (NIE) is an economic perspective that attempts to extend economics by focusing on the social and legal norms and rules (which are institutions) that underlie economic activity and with analysis beyond earlier institutional economics and neoclassical economics". (https://en. wikipedia.org/wiki/New_institutional_economics).

Financial Economic Theory

Financial economics employs economic theory to evaluate how time, risk (uncertainty), opportunity costs and information can create or craft incentives or disincentives for a *specific* decision. (https://en.wikipedia.org/wiki/New_institutional_economics).

Financial Performance

Financial performance (FP) is a "subjective measure of how well a firm can use assets from its primary mode of business and generate revenues" (Shoukat and Nadeem and Bagh et al. 2017). Different measures are used to gauge financial performance, in finance and financial accounting like return on equity return on assets, and capital employed etc. " (Shoukat and Nadeem and Bagh et al. 2017).

Risk Management and Financial Performance

According to Banks (2004) the chief emphasis of risk management has predominantly been on controlling as well as for regulatory compliance, as contrasted only boosting profitability. However, this risk management ultimately leads organization towards higher performance. Cebenoyan and Strahan (2004) stated that RM enhances reputation efficiency and profitability of banks by building their portfolio of funds resources. Apart from this Rehman et al. (2015) stated that Risk management is portfolio of business activities especially designed to improve performance as wel as to reduce the possible losses faced by organizations.

Empirical Literature Review

Selma et al. (2011) studied the risk management practices and financial performance with respect Tunisian banks. They reported that the banks operating in Tunisia analyzed their study understand the risk management importance in picking up financial performance. Oluwafemi et al. (2013) did a research on the subject of risk management and financial performance in case of Nigerian banking sector and found significant association between RM and FP. Miller and Noulas (1997) revealed negative relationship between credit risk management and performance by studding theme of portfolio mix and large banks in USA. To that respect, Hussain et al. (2016) conducted research on the subject of risk management and banks performances in Pakistan. To do so, they categorized Pakistani commercial banks into two head on the basis of market capitalization. One is headed large banks and other is headed as small banks. Likewise, to measures risk management they employed five proxies i.e. Capital Adequacy Ratio, Operational Risk, Credit risks (Non – Performing loans, Interest Rate risk and Liquidity Risk. While to measures financial performance one key ratio i.e. return on equity (ROE) worked out. By considering a sample size of ten listed in Pakistan stock exchange correlation and regression analysis were used and found significant association between risk management and financial performance.

Additionally, Yu (2000) observed a positive liaison between liquidity, capital adequacy in case of Taiwan banks. Another important study is performed by Jafari et al. (2011) they found that there is positive and significant liaison between total risk management and financial performance. Rehman et al. (2015) conducted research in selected Pakistani banks on the theme of relationship between information sharing and RM practices with FP. They done sampling on the base of assets and found there is positive and significant association between information sharing and RM practices with FP. Githinji (2010) carried out a research in Kenya. The purpose of his study was to analysis credit risk management and profitability of banks. By taking data from 2004 to 2008 the study results demonstrated non-performing loan has no relationship with profitability but other variables have impact on banks profitability. Liyugi (2007) studied the profitability determinants and their implications on RM practices with United Kingdom prospects. By employing regression analysis period covering from 1999 to 2006 found there is no relationship between determinants of profitability and risk management practices. The variables include inflation, growth rate and interest as external determinants of profitability while liquidity credit and capital used as an internal determinants.

Research Model/ Conceptual Framework

The theoretical framework presented below developed as a result of detailed literature review.

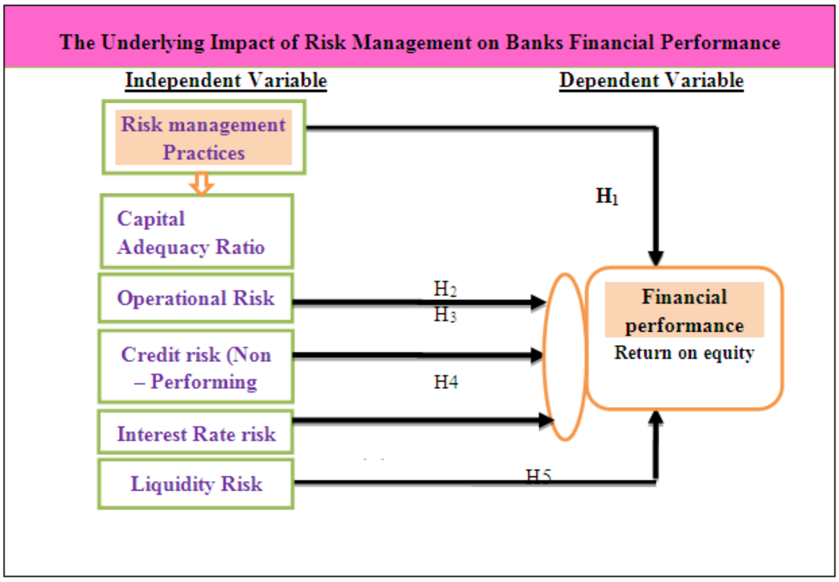

Figure2.1. *Research Model/ Conceptual framework – A Diagramed view*

The theoretical framework in diagram depicts the dependent variable and in independent variable as used by Hussainet al. (2016) to study risk management and financial performance. Where risk management is measured by using five proxies Capital Adequacy Ratio, Operational Risk, Credit risks (Non – Performing loans, Interest Rate risk and Liquidity Risk. While to measures financial performance one key ratio i.e.6return on equity (ROE) worked out.

In summing up, scholarly theoretical contribution as wel as empirical literature review clearly demonstrates that risk management practices and financial performance of businesses have an important bearing. In spite of these facts presented in the literature, that the researchers studied risk management practices and financial performance of banks in case of Pakistan. Yet, these studies are not sufficient. Literature review exhibited that Lack of empirical evidence on the impact RM practices and FP of banks in case of Pakistan. Literature review section also made clear RM and FP are important topic to be addressed.

Hypothesis of the Study

Corresponding to literature aforesaid on the subject risk management on firm's financial performance of banks we put forward following hypothesis.

H_1: Capital Adequacy Ratio has significant impact on return on equity.

H_2: Operational Risk has significant impact on return on equity.

H_3: (Credit Risk) Non-Performing Loans has significant impact on return on equity.

H_4: Interest Rate Risk has significant impact on return on equity.

H_5: Liquidity Risk has significant impact on return on equity.

Research Gap

Although, different studies have been done so far in field of risk management but the main focuses of these research were on credit risk and there little work have been done on other practices of risk management. Secondly, new empirical testing to this debate is required. So there is a lack in literature and requires enhancement and appraisal on the underlying impact of risk management on Banks financial performance: A case of Pakistan Financial Sector. This study is tailored to fill this gap by justifying the knowledge gap and offer valuable recommendations to banking sector practitioners and risk management policy makers.

More specially, the main objectives of the study are;

To explore the underlying impact of risk management practices on financial performance of large, medium and small listed commercial banks of Pakistan.

To offer suggestions on the basis of study findings for the prosperity and improvement of large medium and small listed commercial banks of Pakistan.

To examine major types of risks faced by large medium and small listed commercial banks of Pakistan manage risk?

RESEARCH METHODOLOGY

Introduction

The objectives of this study is to explore the underlying impact of risk management practices on financial performance of listed commercial banks of Pakistan and to give recommendations that may in turn beneficial in improving financial performance. This section presents methodology / philosophy/ logic used in order to attain research objectives. How the research is to be carried out. This includes research design, sampling size data collection methods, variable discretion and finally econometrics model and hypothesis are to be presented.

Research Design

The study was sought to explore the underlying impact of risk management on financial performance of listed commercial banks of Pakistan. For the purpose of comparison listed commercial banks of Pakistan have been classified into three groups: large commercial banks having market share more than 6%, medium banks market share ranging between 3% to 6% and small banks has market share less than 3%. It is important to mention that this classification has been done as per the state banks of Pakistan as well as JCR-VIS credit rating Company limited 2016. The population of the study was 38 listed commercial banks working in Pakistan. The sample size of the study was 18 top performing commercial banks of Pakistan and the banks under study are being presented in the table 3.1 of the methodology section. The analysis was built on 6 small, six medium and six large commercial banks of Pakistan. To analyze data E.Views software is applied.

Table3.1. *Pakistan Credit Rating Company Limited Website of State Bank of Pakistan.*

Large Commercial Banks				Medium Commercial Banks				Small Commercial Banks			
S#	Names of banks	Market Share	Credit Rating	S#	Names of banks	Market Share	Credit Rating	S#	Names of banks	Market Share	Credit Rating
1	Habib Bank Limited	14.1%	AAA/A-1+	7	Meezan Bank Limited	04.7%	AA/A-1+	13	Soneri Bank Limited	01.6%	A+/A-1
2	National Bank Limited	13.1%	AAA/A-1+	8	Bank Al-Habib Limited	04.1%	AA/A-1+	14	Bank Islami	01.501%	A+/A-1
3	United Bank Limited	08.6%	AAA/A-1+	9	Askri Bank Limited	03.9%	AA/A-1+	15	JS Bank Limited	01.4%	A-/A-1
4	Allied Bank Limited	06.7%	AA	10	Bank Of Panjab	03.6%	AA	16	NIB Limited	01.3%	AA/A-1
5	MCB Limited	07.3%	A	11	Habib Metropolitan Bank Ltd.	03.4%	AA	17	Dubai Bank Limited	01.2%	A-/A-2
6	Bank Alfalah Limited	06.6%	AA+	12	Standard Charted Bank Litd.	0.30%	AAA	18	The Bank Of Khyber	00.9%	A/A-1

Source: http://www.jcrvis.com.pk/ratingSect.aspx?type=ft

Source of commercial banks of Pakistan by JCR-VIS Credit Rating Company limited 2016

Table 3.2 *Variable of the study*

S#	Variables	Description			
	Dependent variable	Proxies		Abbreviations	How to Measures
1	Financial Performance (FP)	i	Return On Equity	ROE	Net Profit /Total Equity
	Independent variable	Proxies			
2	Risk Management Practices	i	Capital Adequacy Ratio	CAR	Total capital/risk weighted assets
		ii	Operational Risk	OP	Operating Expenses /Operating Income
		iii	(Credit Risk) Non-Performing Loans	NPL	Non-Performing Loans /Total Loans
		iv	Interest Rate Risk	IRR	Interest Rate Sensitive Asset /Total Assets
		v	Liquidity Risk	LR	Grosses Loans And Advances /Total Deposits

Variable Description

This part of the study discuss dependent and independent variable used in detail.

Independent Variable

The independent variable of the study is presented in coming discussion;

Risk Management

Risk management is used as an independent variable. Rejda (2011) defined risk management in his book principles of risk management and insurance, it a process by which the identification as well as assessment of loss exposures faced by an entity and the adoption of best possible techniques and strategies to deal with these risk exposure. Following are the important risk management practices i.e. capital adequacy ratio, OP operational risk, NPL designates non-performing loans to measure credit risk ,IRR denotes interest rate risk LR stands liquidity risk to gauge the risk management impact on financial performance are employed.

Capital Adequacy Ratio

Muriithi, J. G. (2016) Capital adequacy ratio is used in order to measure bank's capital. It is expressed as Total capital/risk weighted assets. Akhtar, S. (2007) and Akhtar, S. (2006) Basel Committee on Banking Supervision (BCBS) finalize Capital Adequacy framework universally recognized as Basel II. The Basel I had a number of pitfalls and flaws. For example, it provided "one size fit all". On the other front, Basel II offers complete guidelines for computation of minimum regulatory capital adequacy ratio. Moreover, the allocation of capital as per Basel II is more risk sensitive and widespread and its execution would result in amended risk management at banks. Basel II Accord; Pillar I, which is about minimum capital requirement.

Operational Risk

Operational risk OR is one of the most impactful risks. Rejda (2011) operation risk may be defined as the prospect of loss due to inappropriate policies and procedures and any other affair that upsets business processes. It can be expressed as Operating Expenses /Operating Income.

Credit Risk

Muriithi, J. G. (2016) Credit risk may be interpreted as a risk of default that may arise when borrower unable to make payments at maturity. It can be expressed as Non-Performing Loans /Total Loans.

Interest Rate Risk

Rejda (2011) Interest Rate Risk means changes in interest rate because of market fluctuating. it can be reffered as Interest Rate Sensitive Asset /Total Assets

Liquidity Risk

Muriithi, J. G. (2016) Liquidity Risk is defined a bank's ability to pay its short term debit obligation as and when become due without incurring unacceptable costs or without disturbing normal business operation. It can be calculated as Interest Rate Sensitive Asset /Total Assets.

Dependent Variable

Financial Performance

Financial performance is a "subjective measure of how well a firm can use assets from its primary mode of business and generate revenues" (Shoukat and Nadeem and Bagh et al. 2017)

Return on Equity

Return on equity expressed as Net Profit /Total Equity. It is important measures of financial performance and widely used measure (Shoukat and Nadeem, 2014).

Regression Model

Following regression model is employed to probe the underlying impact of risk management practices on financial performance of selected commercial banks of Pakistan.

$X = \beta 0 + X_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots + \acute{\varepsilon}$

$ROE = \beta 0 + \beta_1 CAR + \beta_2 OP + \beta_3 NPL + \beta_4 IRR + \beta_5 LR + \acute{\varepsilon}$

Where, in the above mentioned model a risk management practices is independent variable of the study. Five proxies have been operationalized i.e. CAR represents capital adequacy ratio, OP operational risk, NPL designates non-performing loans to measure credit risk ,IRR denotes interest rate risk LR stands liquidity risk for to gauge risk management practices ,whereas financial performance is dependent variable to measure financial performance one indicators is used i.e. ROE stands for return on equity and έ indicates error terms.

Table3.3. *hypothesis to be tested.*

Hypothesis	Statements
H_1	Capital Adequacy Ratio has significant impact on return on equity.
H_2	Operational Risk has significant impact on return on equity.
H_3	(Credit Risk) Non-Performing Loans has significant impact on return on equity.
H_4	Interest Rate Risk has significant impact on return on equity.
H_5	Liquidity Risk has significant impact on return on equity.

Results and Discussion

In order to acquaint with a brief overview of data descriptive statistics of variables under study is presenting in the table 4.1.

Descriptive Statistics

Table 4.1 depicts the comparison of return on equity (ROE) of large, medium and small commercial banks of Pakistan. The minimum ROE for large, medium and small commercial banks of Pakistan is 0.00, 0.89 and 0.062 respectively. This tendency indicates that the large commercial banks under study have earned zero profits while on the other front small and medium banks have not produced zero profits under study period.

Table4.1. *Descriptive Statistics*

Variables	Large Commercial Banks of Pakistan				Medium Commercial Banks of Pakistan				Small Commercial Banks of Pakistan			
	Min	Max	Mean	Sd	Min	Max	Mean	Sd	Min	Max	Mean	Sd
ROE	0.00	.41	.18221	.102	.089	1.17	.1812	.3588	.062	1.17	.1911	.2588
CAR	.098	.129	.154	.041	.05	.578	.232	.74	.02	.308	.134	.64
OP	.39	.811	.4718	.143	.56	5.03	.7090	.21987	.51	2.03	.8190	.21487
NPL	.10	.199	.2153	.048	.04	.81	.1921	.12136	.09	.691	.2123	.12336
IRR	.21	1.12	.8004	.161	.79	.98	.8273	.16410	.071	.94	.8113	.19510
LR	.39	.73	.4151	.126	.114	.778	.6521	.11098	.414	.678	.5921	.10598

In addition to this descriptive statistics also signifies the standard deviation of ROE for large banks, medium and small commercial banks of pakistan is .102, .3588 and .2588 respectively. Consequently this trend as far as standard deviation is concerned portrays that there is a lot of deviations is observed in small and medium banks the large banks. Similarly, Capital Adequacy Ratio has presented a uniform position for small, medium and large commercial banks. While, Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and Liquidity Risk for small banks is higher than median and large banks. In addition, large banks have confronted less risk than large.

Correlation Matrix

Table4.2. *Correlation Matrix for Large Commercial Banks of Pakisatn*

Variables	ROE	CAR	OP	NPL	IRR	LR
ROE	1					
CAR	-0.401	1				
OP	-0.642	-0.341	1			
NPL	-0.432	0.351	0.342	1		
IRR	0.049	0.189	0.049	-0.128	1	
LR	-0.437	-0.325	-0.637	0.137	0.445	1

Table 4.2 represents correlation matrix for large banks. The Capital Adequacy Ratio Operational Risk, (Credit Risk) Non-Performing Loans, and Liquidity Risk are negatively associated with financial performance of large banks whereas Interest Rate Risk is positively associated with FP of large banks and all values of independent variables are less than 0.80 tit means there is no multicollinerity issue as recommended by Gujatati (2003).

Table 4.3 represents correlation matrix for medium commercial banks of Pakistan. The Capital Adequacy Ratio Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and are negatively associated with financial performance of medium commercial banks of Pakistan banks whereas Liquidity Risk is positively associated with FP of medium size banks and there is no multicollinerity issue.

Table4.3. *Correlation Matrix for Medium Commercial Banks of Pakistan*

Variables	ROE	CAR	OP	NPL	IRR	LR
ROE	1					
CAR	-0.171	1				
OP	-0.091	-0.421	1			
NPL	-0.415	-0.347	-0.081	1		
IRR	-0.481	0.442	-0.782	-0.129	1	
LR	0.481	-0.398	0.148	0.197	0.341	1

Table4.4. *Correlation Matrix for small Commercial Banks of Pakistan*

Variables	ROA	CAR	OP	NPL	IRR	LR
ROE	1					
CAR	-0.287	1				
OP	-0.591	-0.621	1			
NPL	-0.491	-0.298	-0.197	1		
IRR	-0.471	354	-0.601	-0.34	1	
LR	0.482	-401	0.741	-0.275	0.541	1

Table 4.4 expresses correlation matrix for small commercial banks of Pakistan. The Capital Adequacy Ratio Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and are negatively associated with financial performance of small commercial banks of Pakistan banks whereas Liquidity Risk is positively associated with F of small size banks and all values of independent variables are less than 0.80 tit means there is no multicollinerity issue as recommended by Gujatati (2003).

Multiconearity Statistics

Table 4.5 indicating there is no multicollinerity problem among the independent variables i.e. Capital Adequacy Ratio Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and Liquidity Risk as no individual value is greater than the threshold value i.e. 10.

Table4.5.*The Multiconearity Statistics*

	Collinearity Statistics	
	Tolerance	**VIF**
CAR	0.845	1.324
OP	0.438	1.333
NPL	0.783	1.124
IRR	0.671	1.128
LR	0.641	1.371

Regression Analysis

Table4.6. *Regression Analysis for Large Commercial Banks of Pakistan.*

Variables	Coefficient	Std. error	T- Statics	P. Values
C	0.8760	0.0719	2.6101	0.0000
CAR	0.5670	0.2209	2.6711	0.0001
OP	-1.1301	0.1251	-0.4511	0.0000
NPL	-0.8210	0.9013	-2.4822	0.0000
IRR	-0.9610	0.1703	-0.2991	0.0000
LR	-0.3670	0.0071	2.8333	0.0000
R-Squared	0.8101	**F-(statistics)**	28.241	
Adjusted R- Square	0.8001	**Prob. F-(statistics)**	0.0000	
S.E. of regression	1.8733	**Durbin- Watson stat**	1.9101	

Dependent Variable: ROE.

Table 4.6 shows the large commercial banks of Pakistan's capital adequacy ratio i.e. 0.8760 having probability 0.00001 which is less than 5% have statistical significant and positive impact on return on equity. In addition to this other proxies of risk management Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and Liquidity Risk has negative and statistical significant impact on ROE. The F-statistics is 28.241 and P-value is

0.0000 is also statistically significant which often clarifies the fitness of the model as well. Moreover, the value of Adjusted R-Squared is 0.80001 percent variant in the dependent variable i.e. ROE. Nevertheless, there are solely no other factors that supposed to be impacting dependent variable.

Table4.7. *Regression Analysis for Medium Commercial Banks of Pakistan*

Variables	Coefficient	Std. error	T- Statics	P. Values
C	0.0919	0.0137	7.5104	0.0010
CAR	-0.0901	0.1361	9.6311	0.0000
OP	-0.1171	0.2961	-0.2591	0.0000
NPL	-0.0912	0.8101	-4.4922	0.0000
IRR	-0.1911	0.1917	-0.8921	0.0000
LR	0.0801	0.1074	2.9123	0.0000
R-Squared	.70390	**F-(statistics)**	21.490	
Adjusted R- Square	.69300	**Prob. F-(statistics)**	0.0000	
S.E. of regression	1.7390	**Durbin- Watson stat**	2.0190	

Dependent Variable: ROE

Table 4.7 shows the medium commercial banks of Pakistan's capital adequacy ratio, risk management Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk (IRR) which are less than 5% have statistical significant and negative impact on return on equity. Liquidity Risk has positive and statistical significant impact on ROE. The F-statistics is 21.490 and P-value is 0.0000 is further statistically significant, which habitually elucidates the fitness of the model as well. Moreover, the value of Adjusted R-Squared is 0.80001 percent variation in the dependent variable i.e. ROE. Nevertheless, there are solely no other factors that supposed to be impacting dependent variable.

Table 4.8 presents the small commercial banks of Pakistan's capital adequacy ratio, Operational Risk, (Credit Risk) Non-Performing Loans, Interest Rate Risk and statistical significant and positive impact on return on equity. In addition to this other proxy of risk i.e. Liquidity Risk has positive and statistical significant impact on ROE.

The F-statistics is 24.440 and P-value is 0.0000 is also statistically significant which often clarifies the fitness of the model as well. Moreover, the value of Adjusted R-Squared is 0.65390 percent variant in the dependent variable i.e. ROE. Nevertheless, there are solely no other factors that supposed to be impacting on dependent variable.

Table4.8. *Regression analysis for small commercial banks of Pakistan*

Variables	Coefficient	Std. error	T- Statics	P. Values
C	0.0112	0.0030	2.6101	0.0001
CAR	-0.0011	0.1163	2.6711	0.0000
OP	-0.0131	0.2261	-0.4511	0.0000
NPL	-0.0410	0.9001	-2.4822	0.0100
IRR	-0.2110	0.1810	-0.2991	0.0000
LR	0.0801	0.0079	2.8333	0.0000
R-Squared	.65390	**F-(statistics)**	24.440	
Adjusted R- Square	.63300	**Prob. F-(statistics)**	0.0000	
S.E. of regression	1.2331	**Durbin- Watson stat**	2.0102	

Dependent variable: ROE

Testing of Hypothesis Summary

The table 4.9 represents the summarise results of hypothesis testing below.

Discussions

From the above-mentioned results it is concluded that financial performance of small, medium and large top performing commercial banks of Pakistan analyzed banks are affected by risk management practices. The results of the study are in compatible with previous research Hussain et al. (2016) and Yu (2000).however these studies are conducted in different environment different countries by taking various sample size and methods.

Table4.9. *Hypothesis to be tested*

Hypothesis	Statements	Banks	coefficient	P value Significant	Decision Status
H_1	Capital Adequacy Ratio has significant Impact on return on Equity.	Large	0.5670	0.0001	Accepted
		Medium	0.5670	0.0000	Accepted
		Small	-0.0011	0.0000	Accepted
H_2	Operational Risk has significant impact on return on equity.	Large	-1.1301	0.0000	Accepted
		Medium	-1.1301	0.0000	Accepted
		Small	-0.0131	0.0000	Accepted
H_3	(Credit Risk) Non-Performing Loans has significant impact on return on equity.	Large	-0.8210	0.0000	Accepted
		Medium	-0.8210	0.0100	Accepted
		Small	-0.0410	0.0000	Accepted
H_4	Interest Rate Risk has significant impact on return on equity.	Large	-0.9610	0.0000	Accepted
		Medium	-0.9610	0.0000	Accepted
		Small	-0.2110	0.0000	Accepted
H_5	Liquidity Risk has significant impact on return on equity.	Large	-0.3670	0.0000	Accepted
		Medium	-0.3670	0.0000	Accepted
		Small	0.0801	0.0000	Accepted

SUMMARY CONCLUSION AND RECOMMENDATIONS

Risk management is considered to be the very vital yardsticks for ascertaining success and failure of any financial institution. The main purpose of the paper was to demonstrate the underlying impact of risk management practices on financial performance of selected listed commercial banks of Pakistan. The study sample size was 18 banks covering a period of 2004-2016, classified into three groups i.e. large, medium and small commercial banks on the base of market share. The data for analysis was taken from the annual published audited financial reports of banks under study .This study based on quantitative research design and in the study research model, return on equity (ROE) is defined as a proxy of dependent variable i.e. financial Performance whereas risk management practices were taken as an independent variable, five proxies have been operationalized to investigate risk management i.e. CAR represents capital adequacy ratio, OP operational risk, NPL designates non-performing loans to measure credit risk, IRR denotes interest rate risk LR stands liquidity risk for to gauge risk management practices and five hypothesis were framed. Descraptive statistics, correlation and regression analysis were employed. The study results demonstrated risk management practices have significant impact on financial performance of banks under study. This study also concludes that the financial performance is affected by risk management practices. The study results demonstrated risk management practices have significant impact on financial performance of small medium and large banks. This study will contribute in literature and will be beneficial for academic, social and managerial deportment.

Policy Recommendations

Based upon study results following are the key recommendations must bearing in mind while dealing with risks management;

- It is suggested that commercial banks of Pakistan should fully concentrate on the loan assessment procedure, polices and quality of loans, liquidity management as well as to mitigate the shocks confronted due to interest rate risk.
- Banking companies need to take a critical look at their risk management strategies. Moreover, companies must ensure that they have recognized those risks and vulnerabilities that could washout overall businesses strategies and operations.
- Risk management cannot be a onetime activity. It is an ongoing process. It is also recommended Pakistani banking industry should inculcate a balance risk management culture. There should be risk based strategy formulation.
- There should be mature corporate governance framework having balance of expertise to cope with governance risk. It is crystal clear in developing companies have cruel governance structure. Hence, all banks management must have well thought-out risk mitigation mechanisms. There should be periodic review of risk based strategies as well risk management departments expertise.

- The regulators can also play a very powerful role. In addition, there should be proper meetings among the risk management authorities.
- The strong risk management committee can also insert a vital role in controlling risk confronted by banks. The risk committee must review risk polices.
- The audit committee may put important role in controlling risk because they are independent directors and abstain from "dual-hatting" with the chair of the committee or board as well.
- Another recommendation which is in line with Hutter and Jones (2006) government has a critical role to perform to alleviate risks.
- Historically, credit risk has been considered a major cause of banks losses (Kanwar, 2005). Hence, it is recommended that board of director should formulate well-defined credit policies and must be accountable.

To this end, commercial banks of Pakistan should put in place a strong risk management framework and vigilant team having out of the box thinking to cope with uncertain situation. There should be proper implementation of Basel accord II and III.

Limitations of the Study

This study discussed only five type of risk other type of risk like Regulatory and compliance, governance, natural catastrophes and exchange rate risk, could have been studied in order to substantiate the results of this study. This study only revolves around some of the banking firms. Manufacturing firms and unfavorable political and industrial conditions can also affect the results. The research used relatively sample size and longer periods of time and the Cross country may research could be produce interesting results.

Future Research Options/ Outlook

The Present research opens many new doors for future researchers. They may conduct research by studying Regulatory and compliance, governance, natural catastrophes and exchange rate risk. In addition the automation and cyber risk are supposed to be game changer for banking industries in all over the world so could be taken for future study. Moreover, political, economic and other factors may also be taken in order to derive better results. More statistical techniques and tools could be exercised. This study used relatively small unit of analysis. The future research may be conducted by taking large sample size and longer periods of time. The Cross country may research produce very interesting results.

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AUTHOR'S BIOGRAPHY

Tanveer Bagh, MBA /MS Finance scholar, Department of Business Administration, Kotli, University of Azad Jammu and Kashmir Muzaffarabad, (UAJ&K), Pakistan , lecturer Commerce , Indus group of colleges , affiliated with Punjab University & currently serving as Management Trainee Officer at Allied Bank limited.

Area of research: Finance, Bussiness Administration, Management Science and Engineering.

APPENDIX

List of Bank Examined Listed on Pakistan Stock Exchange (PSX)

S#	Names of banks	S#	Names of banks	S#	Names of banks
01	Habib Bank Limited	07	Meezan Bank Limited	13	Soneri Bank Limited
02	National Bank Limited	08	Bank Al-Habib Limited	14	Bank Islami
03	United Bank Limited	09	Askri Bank Limited	15	JS Bank Limited
04	Allied Bank Limited	10	Bank Of Panjab	16	NIB Limited
05	MCB Limited	11	Habib Metropolitan Bank Ltd.	17	Dubai Bank Limited
06	Bank Alfalah Limited	12	Standard Charted Bank Litd.	18	The Bank 0f Khyber

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