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Impact of Credit Risk Management on Financial Performance of Commercial Banks of Pakistan

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Abstract

This study is conducted to test the relationship between credit risk management and financial performance of commercial banks of Pakistan that are listed in KSE. For this purpose ten banks have been selected as representing the whole banking sector of Pakistan. A statistical model had been designed to measure this relationship, the study exposed that the credit risk management impact on financial performance of the commercial banks of Pakistan as calculated by ROE and ROA, where the indicator of credit risk management were non performing loan and capital adequacy ratio. Data has analyzed by using panel regression model. On the basis of results, the study conclude that the factor of credit risk management have significant impact on financial performance of commercial banks of Pakistan. On Bases of findings, the researcher recommends banks to develop their credit risk management to achieve more profits. Banks in Pakistan need to should establish appropriate credit risk management strategies and polices by implementing sound credit estimation before lending loans to customers, and banks should established efficient and effective credit risk management system, and credit providing system should be strict by proper monitoring, through complete information of customer , their purpose and capability to repay loans; operating under a secures system of credit granting process and by maintaining an adequate management. Banks should put and develop strategies that will not only limit the banks exposition to credit risk but will develop competitiveness and performance of the banks.

Keywords: *Credit Risk, Non Performing Loan, Capital Adequacy Ratio, Ron Equity, Return on Assets.*

Introduction

Economic development of the country is disturbed, if banking system collapsed because it has vital contribution in development of a country (Das and Ghosh, 2007). However, banking sector is considered basic unit of any country's financial system (it provides an organized market place to lender and borrower for fund exchange) because this sector plays an important part in the financial and economic growth of a country.

When a financial institution of a country face hurdles in financial, managerial and operational activities, such situation is known as financial distress (Adeyemi, 2011). Inappropriate government policies, political instability, incompetent human resource and inflation are the general reasons of financial distress (Avramov and Chordia, T., 2013). An entity which offers monetary services, such as lending money, issuance of money in different appearance, get loan from customer and processing transactions which relates to credit is known as commercial bank or financial institution (Campbell, 2007). Since sixty four years several variations occur in Pakistani financial industry, which are rapid technical modification, enlarged competition and entry of more commercial banks in industry with investment solidness has added pressure on banks to enhance their performance. In 2014, 6 Government, 2 specialized bank, 5 Islamic banks, 4 foreign banks, 1Development Finance Institution, 13 Microfinance Banks and 16 commercial

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banks operate their business in Pakistan**i** aggressive banking situation and in this segment appreciable increase seemed in performance (Abdullah, Khan and Nazir, 2014).

Many arranged process for the recognition and estimation of clear loss exposure that any entity faced and the main and suitable technique adoption to accommodate such exposure (Redja, 1990). To reduce the negative impact of uncertainty concerning probable losses, the rational activities which are classified as risk management (Schmist and Roth, 1990). Shimpi, (2001), described risk management as, it is the livelihood of each business and organization officers to deal with it positively as it comes out from anywhere.

To be competent to deal with the various types of risk, one need to understand them before one tries to manage them. Risk related to uncertainty in repayment of credit, Solvency Risk, Liquidity Risk, Interest Rate Risk, Market Risk and Foreign Exchange Risk are most related risks with banks operations (Campbell, 2007). There are several causes of these risks , such as interest rate variation, customer defaults, changes in prevailing market conditions, etc. (Campbell, 2007).

Bessis (2002) suggested about credit risk that it is very dangerous because bankruptcy can be occurred, due to the failure of payment of a small number of imperative clients which can lead to great losses. The probability of loss due to debtor's failure to pay advance or other line (the principal and interest) of credit is classified as credit risk (Campbell, 2007).

According to Chijoriga (1997), credit risk effects have additional importance as compared to other risks because it directly leads towards solvency of financial institutions that is why credit risk is considered very dangerous risk in financial institutions.

Khan, Nazir & Abdullah (2012), asserted Credit Risk is a kind of misfortune because of the default of loan of bank. Suitable administration of credit is basic necessity for banking sector, removing overall complexity of investment portfolio. Initiation of advances framework has high importance hence it is requirement to do appropriate investigation of lender financial soundness.

Problem Statement

Depending on literature reviewed up to now, present study adopted definite methodology, it can be said that till now the impact of Credit Risk Management of banks working in Pakistan has not examined by any of the researcher in statistical form (numerical form). Generally, studies on Credit Risk Management of banks have focused on theoretical problems rather than accurate statistical estimation which based on experimental work. The experimental work relied on descriptive statistics (Numerical data), which is the major problem.

Significance of the Research

The policies of risk management till now in developing phase in Pakistani banking industry. This study will be a vital contribution for banking sector of Pakistan. It helps manager and top level management to well aware about the credit risk policies according to their loan portfolio and shareholder investment because it provide a quantity impact of credit risk management. It helps the banks that which types of credit policy should adopt and what procedure should adopt for loan recovery, which is a big issue of low performance. It also facilitates the banks to limit amount of advances according to their loan portfolio.

Research Questions

1. What is the impact of Credit Risk Management on Financial Performance of Commercial Banks in Pakistan?
2. What is the impact of Non-Performing Loans on Financial Performance of Commercial Banks in Pakistan?

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3. What is the impact of Capital Adequacy Ratio on Financial Performance of Commercial Banks in Pakistan?

Objectives of Study

Investigate the impacts of Credit Risk Management on Financial Performance of Commercial Banks of Pakistan.

- To investigate the impact of Non-Performing Loans on the Financial Performance (ROE, ROA) of Commercial Banks in Pakistan.
- To investigate the impact of Capital Adequacy Ratio on the Financial Performance (ROE, ROA) of Commercial Banks in Pakistan.

Literature Review

This part provides the literature relevant to this study. It can be divided into two parts. First part provides the literature regarding to credit risk, credit risk management, credit policies, risk management, international approaches of risk management. The second part includes empirical studies relevant to impact of credit risk management on financial performance of banks.

The previous incidents prove that one of the main reasons of bank's suffering is attention of credit risk in asset portfolios, examined by Basel Committee on Banking Supervision, (2006). It is asserted by Robert and Gary (1994), that an important and clear trait of unsuccessful banks is a raised level of non-performing advances in unsuccessful banks have usually been linked with national macroeconomic harms. Hosna, Manzura & Juanjuan (2009) asserted a statement about the credit risk management effects on performance which is generally measured through Return on Equity, which is majorly used for performance measurement; They also recognized the indicators of non performing advances.

According to Umoh (2002), even in existence of a country's State Bank which is considered as last lender, when creditor extract funds, banks lose financial strength and in the lack of liquidity support, they are compelled to close their doors. However a small number of banks are able to hold up a persistent run in such situation. Hence, risks faced by banks internally are related with business of banking (unsystematic risk), at the same time as others are external to the banking system (systematic risk).

Nazir, Daniel and Nawaz (2012), described that unsystematic and systemic risks are two major kinds of risks that are generally found in market. Through the diversification in portfolio of investment, the total risk that is probable to investor who is going make investment can be minimized and is done through buying of various types of assets (real estate, stocks, securities, bonds, etc). Not only this but also buying bonds and stock from different industries or companies, not from one industry or company. Though, by such act risk can be minimized up to certain limit but cannot be completely diversified because major changes in markets affects prices of all assets and stock (Barealey, 1986). As a conclusion, it is said that there are two component of rate of return or total risk variation. The first one showing movement of price of assets of specific industry or company caused by such elements that is only related with them not to the whole market and the second one showing the movement of prices that is result of variation in whole market condition. The first one is classified as "unsystematic" risk (diversifiable risk) and the second one can be classified as "systematic risk" (Brealey, 1986).

Credit Risk

As credit risk is generally linked with lending, which is the major activity of banking business, therefore it is dangerous threat to profitability of commercial banks (Kaaya, and Pastory. 2013). Credit risk is generally found in all of activities in which success based on issuer, borrower or counterparty performance. When bank funds are invested extended or remain uncovered by authentic or implied contractual agreements, during such time credit risk management can take place any time (Abiola and Olausi, 2014).

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According to the definition stated by State Bank of Pakistan (2004), financial risk in banking sector can be described as "chance of occurrence that is result of such an event or activity that could raise bad impacts". Hence, risk is verified by factor irrelevant with the bank such as political issues, debtors' manner, changing socio-economic conditions, and broad unemployment levels (Abiola and Olausi, 2014). The management and acceptance of risk is inborn to banks and banking business.

One of the major risks that is generally face by financial intermediaries and banks is credit risk (Cassidy & Gray , 1997). Although, the financial intermediaries majorly faced troubles from many years due to a huge number of causes, the most important reason that lead to huge crisis in banking industry was the continuance of direct linking with careless standards of credit for counterparties and borrowers, bad and incapable management of risk related with portfolio of investment or deficiency of concentration of variation in monetary or other conditions which can guide to declining in the credit status of counterparties of bank (Basel, 1999).

Credit Risk Management

Credit risk management is a planned approach to lessening of risk by using administrative resources, managing uncertainties through risk measurement and enlargement of strategies to control it, can be classified as credit risk management. But the significance of credit risk management towards the banks could not be highly emphasized because it is only one component of loan procedure (Poudel, 2012).

Credit Policies

Credit policy is base of management of every loan; the responsibility of formulation of credit policy is headache (responsibility) of board of directors and top level management of bank. It is the foundation for determining which kind of credit facilities to be provided to clients.

Credit policy is a plan which contains guidelines for management used by a lot of banks officers for managing the application of credit. Its purpose is to give business direction by a well standard system that is generally derived from bank's operational significance, in fulfilling the need of customer relevant to credit but with complete awareness of the government prohibited fiscal and monetary instructions (Nwankwo, 1980). Adekanye (2010), recognized three fundamental kinds of credit policy. First one is restrictive credit policy, second one is liberal credit policy and third one is moderate credit policy. The restrictive credit policy is implemented by those banks which have no blue prints to develop at such a rate which is more than minimam. Such banks do not desire for taking risk more than minimum one and like to carry out business with those customers whom habits of paying installments never differ from rules and regulations. The liberal credit policy is categorized as a policy which has higher risk because it has high chances of huge loss of receivable. The danger of bankruptcy also exists for those banks which adopted this policy because they are generally in the problem of liquidation and subject to undercapitalization. The third one policy, a combination of liberal and restrictive policy is known as moderate credit policy. It is liable to collect receivable to grant sufficient cash flow. Therefore, to increase lending and minimize risks, the policy for loan must state a certain limit for the various kinds of loans and also state the amount of loan.

Risk Management

The process of risk management contains recognition, measurement and management of control. Management of risk is a human bustle that combines risk identification, risk estimation, enlargement of policies to control uncertainty, and reduction of it by utilizing administrative sources or chances of loss can be occurred if the borrower fails to repay loan (Appa, 1996).

To be competent to deal with the various types of risk, one need to understand them before one tries to manage them. Risk related to uncertainty in repayment of credit, Solvency Risk, Liquidity Risk, Interest Rate Risk, Market Risk and Foreign Exchange Risk are most related risks with banks operations (Campbell, 2007). There are several causes of these risks , such as interest rate variation, customer defaults, changes in prevailing market conditions, etc. (Campbell, 2007).

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Risk management is usually supposed that it does not reduce risk; relatively its objective is considered to maximize the return for the risk which is probable to business (Williams and Boundewijn et al, 2006). Gostineau (1992), described credit risk, due to credit events, the chance of losing the outstanding loan in parts or totally (default risk) or borrower unsuccessful to pay a contractual obligation. Credit risk is a probability that in accordance with agreed terms an obligor (which is liable to pay to bank) of bank or counterparty will be unsuccessful in fulfillment of its agreement (Basel Committee on Banking Supervision, 1999). It has been stated by Heffernan (1996), the risk related to an asset or an advance turn into written off in due to full failure of repayment or chances of tardy (delay) in loan payment.

International Approaches for Risk Management

There are three approaches that are globally adopted by commercial banks for risk management. First one is, the Basic Indicator Approach (BIA) which describes that a portion of 15% of financial institution, Gross Income should be kept as capital for operational risks. Generally, gross income is the total of fee income, interest margin and some other incomes. But on international level banks that are in strong financial condition are powerfully suggest that they will not adopt such a simple model.

Second one, the Standardized Approach (SA) purifies the Basic Indicator Approach to some extent because it quantifies capital for the operational risk on basis of split of gross income per business. However, on the basis of activity performed, the regulators differentiate between two various levels of operational risk. The portion of gross income changes for estimation of capital changes from 12% for those business which are classified as they have very minor risk (for example, assets management, retail banking), it change and goes up to 18% for those business which are classified as they have very high risk (for example, settlement and trading), for other groups it have an intermediary level of 15% of the gross income (i.e., corporate banking).

In last, according to the Advanced Measurement Approach (AMA), banks have complete freedom of developing any model which they like for the assessment of the regulatory capital through which operational risk of their business can be covered with confidence interval of 99.9%. The regulator gives guidelines to international banks to act in accordance with the Advanced Measurement Approach, and rapidly adapt their risk exposure theoretical modeling, statistical validation and quantitative data (Chapelle et al, 2004).

Empirical Studies

For the measurement of lending decision quality or credit risk of the banks, the earlier studies, (Berger & DeYoung, 1997; Samad, 2004; Kolapo et al, 2012; Dhal & Rajan, (2003) uses different proxies such as the ratio of Non-Performing Loan to Gross Loan (NPLGL) as indicators of credit risk. It calculates the percentage of gross loans that are doubtful or Non Performing Loan in loan portfolio of banks. It is regarded as one of the most significant indicator of loan quality and credit risk of the bank. Lower ratio is the signal of minor doubtful loan and improved asset quality and lower credit risk. Another point of literatures such as Samad (2004); Kolapo et al. (2012); Boahene et al. (2012) apply loan loss reserve ratio (LLRGL) as indicators of credit risk. This ratio (loan loss reserve ratio) calculates the percentage of Gross Loan which until now not charged off that has been only set aside. Historically higher the ratio is the signal of poor loan portfolio, management quality and huge credit risk**.** Loan Loss Reserve to Non Performing Loan Ratio (LLRNPL) also apply for measurement of prudent management of credit and assets quality of banks, which is clear from the findings of Samad et al. (2004); Kolapo et al. (2012); Boahene (2012). It measures the proportion of the reserve put against impaired loan or the Non Performing Loan. Higher the ratio is the signal of the low credit risk and better management quality of asset.

Basel Accord (1998) recommended Capital Adequacy Ratio (CAR) for judgment of asset quality and appropriate Credit Risk Management. It is the ratio of total capital to risk adjusted assets of the bank. The higher the ratio is the sign of better assets quality and bank Capital Adequacy and low credit risk. Many studies have been embarked to focus on profitability of banking sector particularly external and internal

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determinants regarding both single country and cross country. The primary group includes Perera et al. (2013); Masood and Ashraf (2012); Athanasoglou et al. (2008) and Francis (2013).

The second group consist of Athanasoglou et al. (2008); AL-Omar and AL-Mutairi (2008); Fu and Heffernan (2008). The second group majorly held their research based on those economies which are in developing stage. Where, various measures were used for different studies as profit proxy by Perera et al. (2013) ; Fu and Heffernan (2008); Athanasoglou et al. (2008); Francis (2013) considered, ROAA, henceforth, Return on Average Assets that is the ratio of Net Profit to Average Assets. It is also a good indicator of managerial efficiency and financial performance of a bank. The Net Profit to Average Assets ratio is representing as a percentage of total average assets. This ratio shows how assets of company are efficiently utilized. Furthermore, Ashraf and Masood (2012), considered Return on Average Equity, till this time forth, Return on Average Equity that is ratio of the net profit to average equity of share holders. For the managerial efficiency and financial performance of banks, it is a good indicator. It shows how the equity of shareholders is used by competent management for generating Net Profit.

According to Heiney (2010), in time period of 2000 to 2005, there was a rising trend in ROA and a decreasing trend in ROE in the banks of United States. According to the results of a study made to banks senior managers, there were three major factors that have huge contribution in financial crises that are inappropriate risk governance, poor risk culture, and remuneration policies and unproductive incentive (Hashagen et al, 2009).

A study held by Kaaya and Pastory. (2013)., showed that performance of banks can be enhanced if there exist an efficient credit risk management. A number of strategies are developed for credit risk management to minimize or completely mitigate the bad impacts which effect the bank performance arises as result of credit risk. However, a good framework for credit risk management is basic necessity for survival of bank and growth of their profits (Oke, et al, 2012). Bobakovia (2003) declares that Banks performance is mainly based on their capability of forecasting and monitoring.

Kolapo et al. (2012) found a negative relationship among performance and Credit Risk of five commercial banks of Nigeria during year 2000 to 2010**.** Ruziqa (2013), in another study examined the combined impact of liquidity risk and credit risk upon the profitability of Indonesian big banks and found positive effects of liquidity risk and negative effects of credit risk on the profitability. As concerning the effect of credit risk on the banks profitability, lot of research does not reach at any definite evidence. In addition, most of the researches wrap African and Europe countries and no study found which is related to Bangladeshi banking sector as the best of the knowledge of the researchers which support us to examine the credit risk effects on profitability of banks in Bangladesh.

According to study of Morgan, (1984) the importance of capital adequacy have high importance for commercial banks. He further stated that Commercial banks have a legal responsibility to retain the sufficient capital adequate ratio. In addition, it must be noted that the major task of the bank is to make available sufficient funds required to absorb potential future losses because it show financial strength of financial institution.

Furthermore, since January, 2010 it has been became a regulatory requirement to imply Basel Accord II, between the banks operating in Bangladesh (Shahabuddin e t al ., 2013); but up to now it did not discover whether Basel II Accord implementation have great influence at profitability, which is required for reorganization of reforms of the regulatory policy. Hence, to achieve the objective of deduction in literature gap many studies justify for achieving two objectives, which are the effects of the Basel II Accord implementation on profitability and credit risk effects on profitability of the Bangladeshi banking sector.

As study held by Epure and lafuente (2012) in Costa-Rican banking sector, Kargi (2011) conducted study in Nigera, Ara, Bakaeva and Sun (2009) in banking sector of Sweden and one other held by Felix and Claudine (2008). These researchers have found a negative relation between Non-Performing loan ratio and Return on asset. It can be concluded from previous researches NPLR is a financial indicator that demonstrates the quality of bank loans. Commercial banks showed themselves to the risk of default or

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delay in payment of borrower of loans. The core activity of commercial banks is to generate loans. Banks generate money from a series of activities of deposit and borrowing. NPL is considered as losses when happens. Higher NPLR means higher losses, which adversely influence the banks' available capital and assets for further borrowing. Hence, the efficiency of banks' investment is affected, further influencing the profitability. In contrast lower NPLR is linked with the lower risk and deposit rate, meaning a positive impact on banks' operations. Similarly, higher NPLR led toward negativity in profitability of financial institution.

Furthermore, Tefera (2011) study which was held in Ethiopia on impact of credit risk management on financial performance of commercials banks, Samy and Magda (2009) conducted study in Egypt. These researches found positive relationship among CAR and Financial Performance (ROA) of commercial banks. Moreover, there are several studies that have shown the importance of capital in the banking sector. According to study of Morgan, (1984) the importance of capital adequacy have high importance for commercial banks. He further stated that Commercial banks have a legal responsibility to retain the sufficient capital adequate ratio. In addition, it must be noted that the major task of the bank is to make available sufficient funds required to absorb potential future losses because it show financial strength of financial institution. This is predetermined in Basel II Accord, which is implemented on banks that is about how much minimum capital (10%) they need to place aside to show against these kinds of operational and financial risks that they generally face (Gottschalk, 2007).

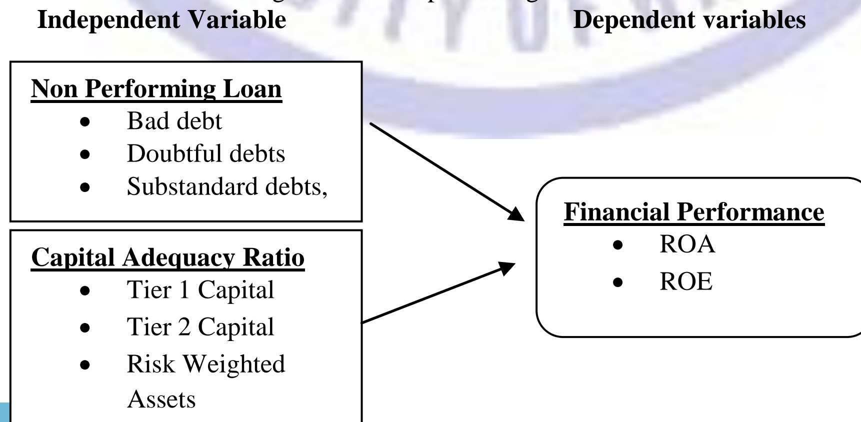
Mekasha (2001) examined credit risk management and its impact on performance of Commercial Banks of Ethiopia. For this study, 10 years panel data from the targeted commercial banks was used by the researcher to observe the relationship between loan provision, non-performing loans, and, ROA and total assets. The study exposed that there is an important relationship between credit risk management and bank performance.

A study held by Macaulay (1988), he suggested that management of credit risk is most appropriate measure for banks and more than 90 percent banks in USA implemented this best measure**.** Inappropriate credit policies are major cause of complex problem in the banking industry that's why efficient credit risk management has achieved an augmented interest during last decade. The key part of an efficient credit risk management policy must be that bank's risk adjusted rate of return should be maximized by maintaining credit exposure up to adequate levels. In addition, banks need to control credit risk in individual credit transactions as well as total portfolio.

Theoretical Framework:

Here the Figure 1.1 represents the conceptual model of the study showing Credit Risk Management and Financial Performance of commercial banks of Pakistan. Non Performing Loan Ratio (NPLR) and Capital Adequacy Ratio (CAR) are indicators of Credit Risk Management and Return on Asset (ROA) and Return on Equity (ROE) are indicators of Financial Performance.

Figure.1 Conceptual Diagram



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Research Methodology

This part of study comprised the sampling technique, sample size and its parameter of selection and statistical model and list and abbreviation of variables that use in study to describe the procedure of credit risk management and examines the quantitative impact of credit risk management on performance of commercial banks in Pakistan for the period of (2005 – 2014). However these variables are described by many of researchers (Gizaw, Kebede, and Selvaraj, 2015) described as follow.

Table 1: Name, Abbreviations and formula of Dependent and Independent variables

Name of Variable	Abbreviation	Formula
Independent Variables		
Non Performing Loan Ratio	NPLR	Non Performing Loan to total loan
Capital Adequacy Ratio	CAR	Tier 1 Capital plus Tier 2 Capital to Total Risk Weighted Assets
Dependent Variables		
Return on Assets	ROA	Net Profit to Total assets
Return on Equity	ROE	Net Profit to Total Equity

Population

The population of study is all (16) the commercial banks of Pakistan.

Sampling techniques and Sample Size

A simple purposive sampling method is used for the selection of sample. The sample size for the study is selected based on the following points:

(i) The accessibility of reliable annual financial reports.
(ii) Ten commercial banks were selected on the basis of customer deposit liability. The total customer deposit liability of all (16) commercial banks of Pakistan in 2014, was PKR: 8.081 trillion out of which the selected ten banks customer deposit liability is PKR: 5.82 trillion. However, selected banks were 68.18% of population on the basis of customer deposit liability.
(iii) The selected banks were listed and quoted on the KSE Pakistan.
(iv) The selected banks have huge customer base.

Data Sources

The data has been collected from annual financial reports of the banks by various websites such as KSE official web site, Business Recorder, www.secp.gov.pk, www.opendoors.pk.

Number of observations

Ten banks financial reports have been analyzed for the period of ten years so the number of observation is 100 (10 by 10).

Empirical Model

The panel regression model has been taken in the form of:

$$P_{it} = F(Y_{it}, Z_{it}) + e_{it}$$

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Here P **i t** is representing bank i performance time **t** .**Y i t** is representing first independent variable of bank i at time t. **Z i t** represents second independent variable of bank i at time t. e**it** is the error term.

The empirical frame work for the investigation of the link between credit risk management practices and commercial banks' performance is given as follows:

Pit (ROA, ROE) = β0+β1NPLit + β2CARit + e ι t

Here Pit are representing bank financial performance through dependent variable (ROA, ROE) that is used as indicators of profitability, β0 is constant, β1NPLRit is representing the first independent variable of credit risk management of bank i at time t, whereas β2CARit is representing the second independent variable of credit risk management of bank i at time t. Where e ι t is representing the error term of bank i at time t.

Results and Discussion

This chapter includes result and discussion of the study (Descriptive statics and regression result) which are obtained by application of E Views 7 software on sample of ten commercial banks.

Descriptive Statistics

Table 4, represent the descriptive statistics of the variables of the study which are NPLR(Non Performing Loans), CAR(Capital Adequacy Ratio) , ROA(Return On Equity) and ROA (Return On Asset) for period of (2005-2014) of the commercial banks operating in Pakistan.

Table 2: Descriptive Statistics

Variables	NPLR	CAR	ROE	ROA
Mean	0.095000	0.132276	0.608610	0.015184
Maximum	0.170000	0.221800	0.860280	0.040600
Minimum	0.030000	0.080300	0.016100	0.001200
Std. Dev.	0.034463	0.031609	2.888780	0.008866

The mean value of the NPLR is 0.09500, (9.5%). The minimum value of NPLR is 0.030000, (3.0000%) and maximum value is 0.17000, (17.00%).The spread between the maximum and minimum value is 14 %. It is showing the huge default of loan recovery during year (2005-2014). However the value of NPLR standard deviation is 0.034463.

The mean value of CAR is 0.132276, (13.2276%). The maximum value is 0.221800, (22.1800%) and minimum value is 0.080300, (8.03%).The spread between the minimum and maximum value is 14.15%. However the mean value and maximum value of CAR is more than the 10% which is regulated by State Bank of Pakistan. It means that banks investments are mainly from long term debts or liabilities. However change come in CAR under the reviewed period is 1.76%.The value of standard deviation of CAR is 0.031609.

The mean value of the ROE is 0.608610, 60.8610%.the maximum value is 0.86000, 86.00% and minimum value is 0.16100, 16.100%.There is 69.90% of spread is seen in value of ROE which means there is great diversification in the ROE during the period under review. The value of standard deviation is 2.888780, which shows the deviation of ROE from mean value under the previewed period.

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The mean value of ROA is 0.15184, (15.184%).The maximum value is 0.040600, (4.0600%) and minimum value is 0.001, (0.12%).The spread between maximum and minimum value is 3.9%.

The value of standard deviation of ROA is 0.008866, which shows the deviation of ROA from mean value under the previewed period.

Regression results

Regression model is used to investigate the impact of one variable (Credit Risk Management) on dependent variables (Commercial Banks Financial Performance). However validity of regression model can be checked as in Table 3 stated below.

The value of R-square, adjusted R-square and F-statics of data, where dependent variable is ROA that is shown in Table 3. R-squared shows that relationship among independent variables and dependent variables exist. Regression results show the value of R-squared is 0.808020, (80.8020%), which shows that the variable used for Credit Risk Management and Performance is suitable and the regression model is well fitted with probability of 80.8020% and remaining 19.20% is error term. Value of R-squared is (80%) and adjusted R-squared value is (78%) which is greater than (50%), which is favorable. F-statistic value is 18.26600, which show the reliability of data that is used in the test. The value of Durbin-Watson stat is 1.774598, which shows the accuracy of data because if its value lies among 1.5 to 2.5 then there is no autocorrelation exist among the samples.

The independent variables of the study are NPLR and CAR. The value of probability tells about the significant and insignificant results. On the basis of P-value, the acceptance and rejection of null and alternate hypothesis is explained. The significance level for acceptance of alternate hypothesis is, P-value is below than 0.05, but if P-value is above than 0.05, then null hypothesis will be accepted. Coefficient value and P-value of NPLR and CAR with ROA is shown in Table.5.

Table 3: Effect specification ROA

Dependent Variable: ROA
Cross-section fixed effect Test
Date: 12/28/15 Time: 18:19
Sample: 2005 2014
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.012664	0.007240	1.749113	0.0474
NPLR	-0.114085	0.029651	-3.847581	0.0214
CAR	0.097614	0.045545	2.143268	0.0378

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.808020	Mean dependent var	0.015667
Adjusted R-squared	0.782177	S.D. dependent var	0.011404
S.E. of regression	0.005323	Akaike info criterion	-7.510171
Sum squared resid	0.001473	Schwarz criterion	-7.230925
Log likelihood	233.3051	Hannan-Quinn criter.	-7.400942
F-statistic	18.26600	Durbin-Watson stat	1.774598
Prob(F-statistic)	0.000000		

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Relationship of NPLR to financial performance:

P-value of NPLR is 0.0214 with ROA. Its means NPLR result is significant but the positivity and negativity of relationship of independent variable NPLR is stated by coefficient. The coefficient of NPLR is -0.114085, (-11.4085%), which means that negative relationship exists among NPLR and ROA. It states that when NPLR of commercial banks in Pakistan is increased it results in decrease in ROA and 11.40855 means when NPLR is increased by 1%, it results in decrease in ROA by 11.40855%. Most of regulator considers ROA is the most excellent measure for measurement of profitability of bank (Hassan and Bashir, 2003).

However, the result of study is similar to previous studies, as study held by Epure and lafuente (2012). In Costa-Rican banking sector, Kargi (2011) conducted study in Nigera, Ara, Bakaeva and Sun (2009) in banking sector of Sweden and one other held by Felix and Claudine (2008). These researchers have found a negative relation between Non-Performing loan ratio and Return on asset. It can be concluded from previous researches NPLR is a financial indicator that demonstrates the quality of bank loans. Commercial banks showed themselves to the risk of default or delay in payment of borrower of loans. The core activity of commercial banks is to generate loans. Banks generate money from a series of activities of deposit and borrowing. NPL is considered as losses when happens. Higher NPLR means higher losses, which adversely influence the banks' available capital and assets for further borrowing. Hence, the efficiency of banks' investment is affected, further influencing the profitability. In contrast lower NPLR is linked with the lower risk and deposit rate, meaning a positive impact on banks' operations. Similarly, higher NPLR led toward negativity in profitability of financial institution (Gizaw, Kebede & Selvaraj, 2015).

Relationship of CAR to Financial Performance

The P-value of CAR with ROA is 0.0378, which shows that result of this study is significant because the significance level is 0.05, (5%).The coefficient value of CAR is 0.097614, (9.7614%), which is positive. This value shows that Capital Adequacy Ratio and Financial Performance (ROA) have positive relationship. When Capital Adequacy Ratio will increase by 1%, due to which the ROA is increased by 9.7614%. Most of regulator considers ROA is the most excellent measure for measurement of profitability of bank (Hassan and Bashir, 2003).

However the result of this study is similar to that of Tefera study which was held in Ethiopia, Samy and Magda (2009) conducted study in Egypt. These researches found positive relationship among CAR and Financial Performance (ROA) of commercial banks. Moreover, there are several studies that have shown the importance of capital in the banking sector. According to study of Morgan, (1984) the importance of capital adequacy have high importance for commercial banks. He further stated that Commercial banks have a legal responsibility to retain the sufficient capital adequate ratio. In addition, it must be noted that the major task of the bank is to make available sufficient funds required to absorb potential future losses because it show financial strength of financial institution. This is predetermined in Basel II Accord, which is implemented on banks that is about how much minimum capital (10%) they need to place aside to show against these kinds of operational and financial risks that they generally face (Gottschalk, 2007).

Hypothesis Testing

Hypothesis I:

Ho1: There is no significant impact of Non Performing Loan Ratio (NPLR) on Financial Performance of Commercial Banks in Pakistan.
H1: There is significant impact of Non Performing Loan Ratio (NPLR) on Financial Performance of Commercial Banks in Pakistan.
On the basis of regression results regarding independent and dependent variables, it has found that there is significant impact of Non Performing Loan Ratio on performance (ROA, ROE) of commercial banks in Pakistan which was the first alternate hypothesis of study.

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P-value of NPLR with financial performance (ROE, ROA) is below than 0.05, (5%). which is enough to reject the null hypothesis and accept the alternate hypothesis.

Hypothesis II:

Ho2: There is no significant impact of Capital Adequacy Ratio (CAR) on the Financial Performance of Commercial Banks in Pakistan.
H2: There is significant impact of Capital Adequacy Ratio (CAR) on the Financial Performance of Commercial Banks in Pakistan.
On the basis of regression results regarding independent and dependent variables, it has found that there is significant impact of Capital Adequacy Ratio on the financial performance of commercial banks in Pakistan which was second alternate hypothesis of study.
P-value of CAR with financial performance (ROA) was below than 0.05, (5%), which is enough to reject the null hypothesis and accept the alternate hypothesis.

Conclusion

Finding of this study shows that the Credit Risk Management has positive impact on Financial Performance of Commercial Banks in Pakistan. R-results of the study are similar to Fredrick (2010) in Kenya, Poudel (2012), in Nepal and Mekasha (2001) in Ethiopia who held study to investigate the impact of Credit Risk Management on Financial Performance of Commercial Banks. All of them found sound positive impact of Credit Risk Management on Commercial Banks Financial Performance. This study comprised of two variables which were Non-Performing Loan (NPLR) and Capital Adequacy Ratio (CAR) as determinants of Credit Risk Management. Result shows that when the Credit Risk Management will be improved as a result, there will be increase in Financial Performance (ROA, ROE) of Commercial Banks. On the basis of regression results of the study, an efficient Credit Risk Management can increase performance up to 21% of overall Financial Performance on the basis of independent variables (Non-Performing Loan Ratio, Capital Adequacy Ratio) of this study. Having the significant impact of the credit risk management it is suggested that strictness credit risk management system has huge importance for manager and they are advised to spread the earning activities of their respective bank.

In Pakistan Financial Performance of Commercial Banks is not satisfactory because of poor credit appraisal, moral hazard, inappropriate risk management strategies, substandard loan portfolio and registration of bank with substandard capital. However, all the banks fulfill requirements of Basel accord II, CAR should be 10%, but that is not adequate for all of the banks in Pakistan. Pakistani Commercial Banks heavily rely on long term liabilities, due to which they pay high financing cost that can result in insolvency of banks.

Recommendations

There are following recommendation has provided on the basis of this study:

- First of all, the State Bank of Pakistan should categorize the Banks on the basis of last five years performance in three categories (A Category banks = High performer, B Category banks = medium performer, C Category banks = low performer) and then issue separate guidelines regarding their CAR.
- No new Bank should be registered which cannot fulfill the requirements of State Bank of Pakistan.
- The Commercial Banks in Pakistan need to adopt the appropriate credit risk policies and branch managers in banks need to put more effort on reduction of loans losses.
- Business loans should be granted to those customers whose business plan is competent and capable to repay interest and principal amount.
- Top level management should timely upgrade their risk management system.

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Limitations of Study

The one of the main limitation was the limited time announcement for research, that why only ten commercial banks of Pakistan financial data can be collected for time period of 2005 to 2014. In case, more time allowed for research study than better results can obtain. One other limitation was some banks not properly disclose related variables or not shows them on annual report, due to which problem occurred in collection of research data.

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