The Impact of Credit Risk Management on Nonperforming Loans and Bank Financial Performance: Evidence from the Pakistani Banking Sector

Sidra Attique[1], Dr. Abdul Rasheed [2], Farzana[3]*

Abstract

As the credit crisis affects Pakistan's banking industry, the study intends to examine the influence of credit risk management on commercial banks' financial performance and nonperforming loans. The study used a deductive research strategy to target 20 commercial banks, all with data covering 10 years from 2011 to 2020, and using a secondary data regression analysis model. Findings, The ROA, ADR, and CAR of private commercial banks were significantly higher than state-owned commercial banks. NPL has a statistically significant effect on ROA. Lending is a major function of commercial banks, and this is especially true of developing economies such as Pakistan, where large markets are still developing. However, borrowing has been a challenge because corporate organizations, on the one hand, complain about the difficulty of obtaining credit and the extremely difficult situations imposed by banks, whereas banks, on the other hand, continue to undergo huge damages on NPLs'. The primary goal is to economically and sustainably transfer cash from the surplus sector to the deficit sector. In summary, the findings of the study show that Nepal's commercial banks employ excellent credit risk management, as indicated by the study's substantial results for CAR, LLP, CR, and NPLR. Overall, credit risk management was found to be a major predictor of bank financial success, showing that a bank's profitability is dependent on risk management.

Keywords: CRM, FP, Nonperforming Loan; Commercial Banks

1. Introduction

Throughout a few years, banks have been critical to the country's economic success (Ali et al., 2011). Financial institutions are required for economic and financial growth. Their function as financial middlemen facilitates rapid economic expansion. Financial institutions are fundamental to the economic growth of any country, much as blood arteries are to humans since they channel monetary assets from those who have them to those in need. The primary goal is to economically and sustainably transfer cash from the surplus sector to the deficit sector. Interest on credits and loans is the major source of income for a profitable bank; by making loans, banks expose themselves to many types of risk (Kari 2011). Our major emphasis is the CR incurred by a bank as a result of loan origination. If a financial institution in the country is having problems operating in finance, management, or operations, this is considered a financial crisis. (Adeyemi, 2011). Inadequate gov. policies, political irregularity, and inept human resources are the most common causes the economic pain (Abramov and Chordia, T., 2013). CR gained focal importance in recent years because of significant international financial organizations (Nikolaou & Vogiazas, 2014). Subsequently, the financial disaster, financial institutions, especially the commercial banking division, have occupied unusual methods to reduce any future financial damages initiated by the cause negligence of credit and repayment. Sixty-four years ago, many variations occurred in Pakistan's financial sector: rapid technological change, increased competition, and more commercial banks in the industry with strong investments would stress financial institutions to improve their performance.

[1,2]Institute of Business Administration, Khwaja Fareed University of Engineering and Information Technology Rahim Yar Khan, sidraattique000@gmail.com
[3]Emerson University Multan, za.farzana53@gmail.com

In the year 2014, 6 Governments, two specified banks, 5 Islamic banks, four remote banks, one Development Finance Institution, thirteen Micro-finance Banks, and sixteen commercial banks operating in the banking conditions of Pakistan, and this increase commendable seems to work (Abdullah, Khan and Nazi, 2014). Pillai et al. (2010), effective management of credit risk leads to an increase in the stability, profitability, and optimal allocation of funds. Credit risk/probability that the interest rate or income on loans may be lower than the expected interest rate or profit. Many studies suggest the concept of CR; a study by Avery et al. (1996) explained that when a borrower cannot repay his debt relatively or entirely within the stipulated time, it means that a debt risk.RM policies these days are evolving stage in Pakistani banking industry. This research will significantly support the Pakistani banking sector (Wachira, 2017). It assists management and quality management warning regarding credit risk laws in their credit collection and investment because it provides CRM (Wachira, 2017).

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difficulty of obtaining credit and the extremely difficult situations imposed by banks, whereas banks, on the other hand, continue to undergo huge damages on NPLs' (Richard, 2006). "Non- payment of a slight amount of customers can result in significant damages by the bank" (Gestel &Baesems, 2008

2. Literature Review and Hypothesis Development

CR is mainly significant of the numerous difficulties that banks face, and it significantly impacts their performance (Boughey & Robson, 1995). CR refers to the circumstance in which an investment's actual return falls short of its expected return. A credit risk exists for the lender when borrowers or debtors fail to meet their contractual obligations (Dam, 2010). CR directly impacts a set's profitability, liquidity situation, and cash movements, all of which are listed as the primary reasons for bank failure and the largest threat to a bank's presentation in banking (Van Gruening & Brajovic-Bratanovic, 2009). Furthermore, Bessus (2011) grouped credit risk into the following categories: default danger, movement risk, experience risk, Risks associated with counterparties, recovery, correlation, and concentration Commercial banks have increased in popularity in Pakistan over the years. In the early years following independence, international banks controlled the banking system. Bank offices almost solely concentrate in large cities, and banks specialize in financing international trade and business. The status has shifted dramatically over time, both as a result of deliberate policies aimed at fostering the growth of Pakistani banks and as a result of fundamental economic changes. Banks have consolidated their dominance in branch networks and the scale of banking activities. Regional, semi-urban, and rural areas have benefited from expanding banking services. Their lending activities have become far more diverse, with the share of commerce in total bank credit declining significantly and the percentage of other sectors, particularly manufacturing, increasing significantly.

Commercial banking is the most critical middleman in Pakistan between savings and investors. It mobilizes the community's savings by offering a variety of installments in products. Thus, mobilized resources utilize to lend in several areas of the economy and invest in guarantees and shares. Like other nations' commercial banks, they discount trading bills, offer confirmations, arrange remittances, and give other agency services. Currently, the majority of bank operations are handled on an interest-based basis.

Hypotheses Development

H1: *CRM indicators have a significant impact on the firm performance indicators (FP) of commercial banks.*

H2: *CRM indicators have a positive impact on nonperforming loans (NPLs') indicators of commercialbs*

3. Methodology

Data for this study were obtained from the reviewed yearly reports and all example banks for the time 2011 to 2020. There are only 20 banks comprised of training. The designated 20 although there were 20 banks in Pakistan at the time, the number of banks has fluctuated over time due to acquisitions and mergers.

3.1 Conceptual Framework

This section identifies the variables we used in this study. The following conceptual framework is selected to analyze the impact of credit risk management on the financial performance of commercial banks by studying the journal and article's literature review. This study selects 1 dependent variable, CAR, which indicates banks' financial performance, and 2 independent variables, nonperforming loans (NPL), and FINANCIAL PERFORMANCE, which indicates credit risk. The study selected this variable based on the previous relevant study of journals.

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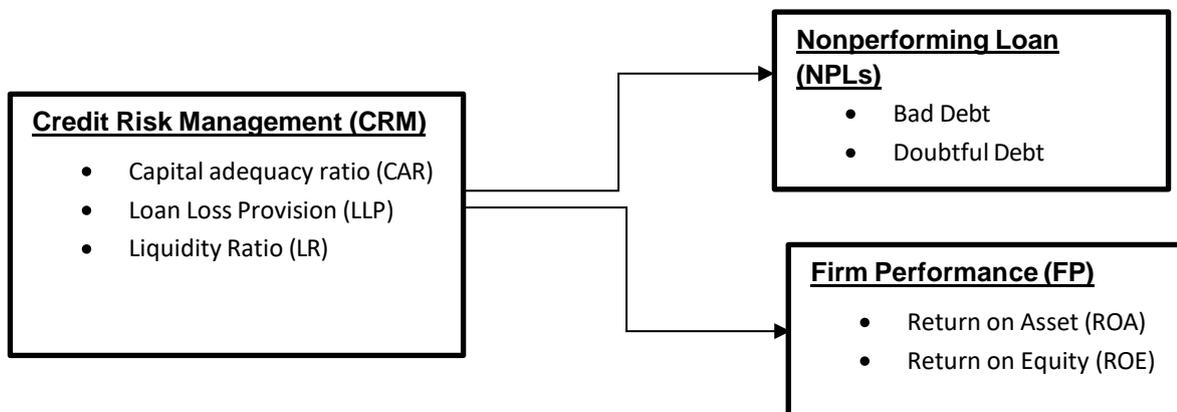
Variables and Measurement Formulas

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- **Capital Adequacy Ratio**

$$CAR = \frac{Capital}{Risk\ Weighted\ Assets}$$

- **Liquidity Ratios**

$$CAR = \frac{Capital}{Risk\ Weighted\ Assets}$$

- **Loan Loss Provision**

$$LLP = \frac{(Pretax\ Income + Loan\ Loss\ Provision}{Net\ Charge - offs}$$

- **Bad Debts**

$$Debt = (Short - Term\ Debt + Long - Term\ Debt) - (Cash + Cash\ Equivalents)$$

- **Doubtful Debts**

$$\frac{Total\ Amount\ Receivable}{Bad\ Debt} * 100$$

- **ROA**

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

- **ROE**

$$ROE = \frac{Net\ Income}{Total\ Equity}$$

3.2 Econometric Models

ROA and ROE were used as profitability indicators for banks. In contrast, CAR, LR, BS, asset quality (AQ), leverage ratio (LER), NPLR, money replacement ratio, and exposure ratio (CR), then the amount of female board members were cast off as credit risk management indicators.

$$NPLs = \alpha + \beta_1 Liq\_Ratio + \beta_2 Cap\_Adq\_Ratio + \beta_3 LossLnProv + \quad (1)$$

$$Financial\_Performance = \alpha + \beta_1 Liq\_Ratio + \beta_2 Cap\_Adq\_Ratio + \beta_3 LossLnProv + \quad (2)$$

Where:

α = Constant

Liquide _Ratio   = Liquidity Ratio CAR = Capital Adequate Ratio

LLP= Loan Loss Provision

β_1, β_2, β_3 = These symbols represent coefficient of the independent variables ε =

       Error Term

Where NPLs are the dependent variable used in equation 1. On the other side, all independent variables are used to measure the nonperforming loans of the firm. Financial performance is also used dependent variable in equation

4. Data Analysis and Results

Secondary information for all of the variable quantities involved in the learning was acquired for the 20 commercial banks from 2011 to 2019. To determine the nature of the dataset, the unit root tests and descriptive statistics were used initially. Descriptive analysis and correlation regression multicollinearity analysis were also used to assess many hypotheses specified for this study. The following sections detail the results of the different tests.

Table 1: Descriptive Stats by using Eviews

	ROA	ROE	BAD_DEBTS	DOUBTFUL _DEBTS	CAR	LR	LLP
Mean	- 150.989	0.11 972	-189000000	49398388	8.4479	0.657 0	300.89
Median	2.97782	0.07 776	-22390694	1360	0.1314	0.050 8	11.38
Maxim um	447.041	17.2 541	1520000000	7800000000	208.93 03	13.74 66	8518.02
Minimu m	- 8690.99	- 14.2 48	-28700000000	-201000000	-0.0789	- 4.094 9	- 8264.32
Std. Dev.	1011.41	1.71 059	2150000000	591000000	38.664 5	2.063 2	1524.93
Skewne ss	- 6.15924	2.35 981	-13	13	4.4758	4.093 9	1.52

Kurtosi s	43.8624	85.5303	174	168	21.2824	21.6046	20.60
Jarque-Bera	13509.3	50682	222001	207782	3073.2900	3064.3440	2366.89
Probabi lity	0	0	0	0	0.0000	0.0000	0.00
Sum	- 26876.1	21.3108	-33600000000	8790000000	1503.7200	116.9517	53558.76
Sum Sq. Dev.	181000000.00	517.9265	820000000000000000000	61800000000000000000	264604.7000	753.4814	412000000.00
Observ ations	178	178	178	178	178	178	178

The standard deviation column indicates how different the variance is in the definition. Here, ROE, and LR have slightly different variations, while ROA, CAR, LLP have standard deviations.

Table 2: Correlation Analysis by using Eviews

	BAD_DEBTS01	CAR	DOUBTFUL_DEBTS	LR	LLP	ROA	ROE
BAD_DEBTS01	1						
CAR	0.012672	1					
DOUBTFUL_DEBTS	0.004565	0.371202	1				
LR	-0.050574	- 0.064262	-0.025003	1			
LLP	0.008607	- 0.043378	-0.01646	0.060629	1		
ROA	-0.014001	0.032742	0.014677	0.082061	0.021067	1	
ROE	-0.012511	0.035321	0.016813	0.124627	- 0.015593	0.351488	1

*P<0.01, **P<0.05 ***P<0.1

Table 3: Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-20029.23	173882.6	-0.115188	0.9084
ROE	-4047640	1.03E+08	-0.039183	0.9688
DOUBTFUL_DEBTS	-0.000656	0.299707	-0.00219	0.9983
C	-1.68E+08	1.83E+08	-0.917612	0.3601
CAR	585267.7	4594810	0.127376	0.8988
LAR	-51619547	80713474	-0.639541	0.5233
LLP	17233.98	108154	0.159347	0.8736
R-square	0.002911	Mean DV		-1.89E+08
Adj. R-squared	-3.21E-02	S.D. DV		2.15E+09
S.E. of regression	2.19E+09	Akaike info criterion		45.88815
Sum squared reside	8.18E+20	Schwarz criterion		46.01327
Log-likelihood	-4077.045	Hannan-Quinn critter.		45.93889

*P<0.01, **P<0.05 ***P<0.1

Table 4: Multicollinearity among Var.

Var.	VIF	1/VIF
CAR	1.17	0.862192
Doubtfulness	1.16	0.862192
LAR	1.03	0.973814
ROE	1.02	0.982063
LLP	1.01	0.994149
Bad_Debts	1	0.997166
Mean VIF	1.06	

Additionally, Table demonstrates that neither model exhibits multicollinearity, as the adjustment rise issue (VIF) is all fewerthan

Summary:

As stated previously, the study's secondary objective is to determine the effect of CRM on the profitability of Pakistan's profitable banks. Chapter 2 summarizes the many studies on the subject conducted in established and developing countries. Appropriate variables for analysis were chosen based on the review. . Additionally, the control method and predictable symbol were deliberated. As dependent variables indicating commercial bank profitability, ROA and ROE were chosen because they stood the most frequently used variable star in the literature. Credit risk management variables include CAR, LR, LLP, NPLR, CAR, bad debt, and

dough full dept. Correlation regression and other tests were used to analyze data from all two hundred commercial banks in Pakistan From 2011 till the present day. Credit risk management and commercial bank financial performance, on the whole, appear to be connected, according to the statistics. In summary, the findings of the study show that Nepal's commercial banks employ excellent credit risk management, as indicated by the study's substantial results for CAR, LLP, CR, and NPLR. Overall, credit risk management was found to be a major predictor of bank financial success, showing that a bank's profitability is dependent on risk management.

Recommendation

As the study's findings indicate, risk organization has a sizable impact on bank presentation. The problem is optional that sets place a greater emphasis on RM. In general, banks should maintain an optimal equal of CAR (or as required by regulation) to ensure that they can meet their financial obligations, protect their depositors' investments, and thus contribute to the financial system's stability. Banks must comprehend that their presentation is also influenced by their size. Additionally, banks should avoid excessive debt financing, as increased financial leverage results in increased liabilities, which negatively affects FP.

5. Conclusion

Credit risk refers to the circumstance in which an investment's actual return falls short of its expected return. When a borrower, counterparty, or debtor fails to meet their contractual obligations, a credit risk exists for the lender. Credit risk management is a multifaceted task that can be approached in a number of different ways. Bangladesh's banking system is afflicted by financial crime. Banks continue to struggle with a significant volume of nonperforming loans. Risk management that is successfully executed may give a substantial advantage to the bank. It is vital to comprehend the impact of credit risk on several sorts of performance measures. The researchers retrieved secondary data from the bank's annual reports and evaluated it using correlation, t-test for mean comparison, and multiple regression analysis. The return on assets, dispute settlement, and interest rate control of private commercial banks are significantly greater than those of state-owned commercial banks.

Limitations and Future Directions:

The study focuses on the Pakistani banking system, which may limit the findings' applicability to other countries with differing banking institutions, regulatory frameworks, and economic conditions. The distinct peculiarities of Pakistan's economy and banking system may not reflect global credit risk management trends. The analysis is based on data from a given time period, which may not account for long-term trends or the impact of important economic shifts, such as global financial crises or post-pandemic recovery periods, on credit risk management and nonperforming loans.

Future research should compare the findings from the Pakistani banking sector with those of other nations, particularly emerging economies, to understand how credit risk management techniques vary across different banking settings and their influence on non-performing loans

and financial performance. The study focuses on the Pakistani banking system, which may limit the findings' applicability to other countries with differing banking institutions, regulatory frameworks, and economic conditions. Expanding the research to include additional aspects of risk management, such as operational, market, or liquidity risk, could provide a more holistic perspective of factors affecting bank performance and nonperforming loans. Future research could examine the function of financial technology (fintech) and digital credit scoring systems in improving credit risk management procedures and reducing NPLs.

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