DO NON PERFORMING LOAN AFFECT BANK PERFORMANCE? EVIDENCE FROM LISTED BANKS AT KARACHI STOCK EXCHANGE (KSE) OF PAKISTAN

Arfan Ali*

Dr. Hazoor Muhammad Sabir**

Muhammad Sajid (Corresponding Author)***

Muhammad Taqi*

ABSTRACT

The objective of this paper is to examine the relationship between the Non-performing loans and efficiency of the Banks in the Pakistan under the period of 5 years (2006-2011). To investigate the objective of this study Regression model is used. NPL to gross advances shows the percentage of Nonperforming loan as compare to gross advances that a bank given. The results show of this study that the provisions negatively affect on the financial performance of the bank through reduction in loan interest income, profits and lending funds. It is also investigated that on performing loan has significant impact on the efficiency of banks. It has inverse effect on the performance of banks.

Keywords: ROA, ROE, EPS, Non-performing loans

* Department of Banking and Finance, Government College University, Faisalabad Pakistan

** Chairman, Business Administration, Government College University, Faisalabad, Pakistan

*** Lecturer, Department of Banking and Finance, Government College University, Faisalabad, Pakistan

1. Introduction

1.1 Background of the Study

Banks are main financial institutions of different types and sizes with different types of customer in order to know sell or buy its stock, deposits, withdraw or open different accounts. Strong banking sector has great importance of well-functioning financial services in all over the world. Banks improve growth in the economy around the globe day by day. Banking sector is the main source of financial intermediation. The important role of the bank in the world is provides capital for the companies and the help for payment system. Integration of the banking markets are increased in different countries.

A sound and proper functioning of banks is necessary for economic stability of any country. In Pakistan since 1971 the government's main focus is on the developing commercial banks and different institutions. Due to nationalizing of banks in 1971-1990 the private sector banks almost closed. The governments control the banks during this period. In the few last years the financial institutions in Pakistan have appeared great change due to diversification. Since 2000 different transactions between banks and non-banks are executed. In the report of financial development 2009 the Pakistan get 49th position out of 55th countries due to different factors and policies. Pakistan has been ranked 48th in financial stability, 50th in business environment and 52th in institutional environment. Banking sector of Pakistan has showed radical changes during the period of 63 years. Today the Pakistan banking unit has significant impact in the economic growth of the country. Non-performing loans are those loan in which principal and interest payment are more that 90 days. The Nonperforming loan percentage has increased overtime. In different banks different terms are used for the contract and period of non-performing loan. Non-performing loan issue started in America after the very large financial crises. To avoid these crises the America government make the corporation Federal Saving and loan Insurance Corporation (CFSLIC), but due to many worst losses the corporations do not overcome these crises.

1.2 Problem Statement

Loan portfolio is the largest source of income for banks. Banks generate huge income by their loan portfolio, if that huge portion of banks goes bad then it has a great impact on the financial performance of these institutions usually in the world the classification of advances of the banking industry indicates that the bad loan in the losses category increased as compared previous year. The Nonperforming loan (NPLs) increases the bank crisis and collapse of some institutions. NPLs have huge impact on the banks performance so it is necessary to minimize the problem due to this NPL increase. In PAKISTAN banking industry plays an important role in the development of the economy. In view of the above it is important to find out the impact of bad loans on bank performance and identify the cause of bad loans of banks in Pakistan.

1.3. Objectives of the Study

- To checks the impact of bad loans on the performance of banks.
- The impact of NPL on the efficiency of banks in the last five years
- The impact of NPL provision on the profit and performance of bank

1.4. Research Questions

- What is the factors due to these the non performing loan increase and has an inverse effect on the banks efficiency?
- Which specific areas of the banks are affected due to Nonperforming loans?
- What is the response of management to Nonperforming loan?

1.5. Significance of the Study

The bad loan also called non performing loan that inversely affect the banks performance. If there is less number of NPLs then it is healthy sign and good effect on the efficiency of banks. The study would contribute significantly to the development of the banking industry which plays a pivotal role in the development of the economy.

2. Literature Review

(Zaini et al., 2008) Analyzed in the study that the relationship between bank performance and non-performing loans. He used the stochastic cost frontier function, and cost efficiency in the Tobin simultaneous equation to found the effect of non-performing loan on bank performance. The result showed that the lower cost efficiency enhances the non-performing load, economic stability and growth of economies also affected by Nonperforming loan. The management might be affected in maintaining the loan portfolios. **(**Lu et al., 2005) examined the lending activities of different banks and non-performing loans. In this article took a panel data of listing companies in the banking sector of China. He showed that state-owned Enterprises (SOEs) took large number of loans as compared to other firms and other things are balanced. This article studied different factors to bank inefficiency in the Chinese economic system. In this empirical study different sources in the china economy for the bank efficiency are used. Increase non-performing loan affect the bank management.

(Kolapo et al., 2012) the study carried out to the quantitative effect of credit risk for the period of eleven years of different commercial banks. Five commercial banks were taken for eleven years on a cross sectional basis. The variable return on asset was used for the ratio of non-performing loan and total deposits and classified loans to measure of credit risk. Profitability of banks reduced due to non-performing loan and loan loss provision. On the other side the total loan and advances enhance the profitability. In Nigeria regulatory authority paid more importance to banks to prevents the provisions. (Altunbas et al., 2001) the paper identified the different factors of risk and quality by using stochastic frontier to evaluate the inefficiencies. The sample was taken of Japanese banks between 1993 and 1996. It was found that the financial capital had great influence on the bank efficiency. Two variables different risk and quality variables were calculating and provision studied on Japanese banking system. (Haneef et al., 2012) disclosed the effect of risk management of non-performing loan and performance of bang system in Pakistan. The data were used in the secondary form and five banks were selected. Due to less risk management increase the non-performing loan threats the performance of banks. This study showed that there is no adequate process to access the risk management in the Pakistan banking sector. Different risk management techniques were used to identify the risk in the banks. In Pakistan the major risk that the banks faces are liquidity risk, market risk, operational risk, and credit risk. (Ranjan Rajiv and Dhal S. Chandra, 2003) provide an analysis the non-performing loan with bank indicators of India public sector banks. The empirical study found that non-performing assets are influenced due to three major reasons bank factor, size of asset and innovation in the financial orientation. Panel regression model were used. The study found that the non-performing loan were affected by credit variables the issues were raised due to security based were carefully analyzed due to growing services in banking sector. (Berger N. Allen and Deyounge Robert, 1997) addressed a relationship between loan problem and the performance of banks. It showed that the bad loans reduced the cost efficiency and also reduced the capital. If the non-performing loan percentage increases then it decrease the cost efficiency of banks. Large numbers of bad loans affect the banking efficiency due to careful monitoring, working more and recovering cost also.

3. Data and Research Methodology

3.1. Data

In order to fulfill the objectives of study secondary data acquired from financial statements of banks. Time period is taken from 2007, 2008, 2009, 2010, and 2011. The sample size is 22 banks listed in the Karachi stock exchange. We use panel data from individual bank's balance sheet to empirical assess whether non-performing loans will negatively affect bank's lending behavior. Basic balance sheet data is used for the measurement of these variables.

3.2. Research Methodology

In order to fulfill the objectives of study secondary data acquired from financial statements. In the model the performance of bank was taken a dependent variable while NPLs were used independent variable. In the model the panel data of 22 banks selected on convenient sample method and available data, used for estimation of model. Bank performance was taken dependent variable and NPLs as independent variable. Descriptive statistics is the description of a selection of a data. Its aim to summarize a sample not uses the data of whole population. Measuring a central tendency including mean, median, mode and dispersion include range, standard deviation and variance.

3.3. Tools of Measurement

Ratio analysis is used to analysis the financial performance of the firms. Ratio analysis is used to calculate the relationship between various variables. Ratio analysis is very useful to evaluate the firm's financial position and operations, by using these ratios making the comparison with previous years and further investigate easily.

Dependent variables are for bank performance

ROA, ROE and EPS

For the Nonperforming loans the independent variables are

NPLs writ-off, NPLGA, PANPLGA, NPLSE, NPLPTNPL

3.4. Explanation of Variables

3.4.1 Dependent Variable

It dependent on the change in the independent variables if any change occurs in the independent variable it also shows the change in the others. The dependent variable is bank performance is used Return on asset (ROA), Return on equity (ROE), and Earning per share (EPS). ROA measure the firm ability to generate profit by utilizing its assets. Profit compare with the asset that how much an asset generate the profit. ROE calculate the return to the shareholders. It shows that how much a company generates profit which is invested by the stockholders, high return on equity shows that the company uses the money in efficient way which is invested by investors. Earnings per share (EPS) provides information about the price of shares to make analysis as compared to other investments

3.4.2 Independent Variable

The independent variable is a variable that is varied and changed by the researcher. Any changes in the independent variable also show the changes in dependent variable. There are five independent variables namely Non performing loan (NPLs) to gross advances, Provision against non performing loan and gross advances, Non performing loan (NPLs) to equity, NPL provision to NPL, NPLs to write-off to NPL provision. NPL to gross advances shows the percentage of

Nonperforming loan as compare to gross advances that a bank given, NPL to equity indicates that how the non performing loan have adverse effect to shareholder, Provision against NPL and gross advances measure the quality of advances against the classified loan, NPL write-off shows that the write-off nonperforming loans and its impact on the performance of banks.

3.5. Hypotheses Formation

Ho_1 Non performing loan has a significant impact on the bank performance.

Ho_2 None performing loan has no significant impact on the bank performance.

Ho_3 There is a negative relationship between the Non performing loan to gross advance and banking performance.

Ho_4 There is a positive association between the provision against non performing loan to gross advances and the banking performance.

3.6. Empirical Models

Regression analysis is a technique for calculating the relationship between various variables. In regression analysis various method and technique are used for determine the various variables. By using regression analysis we find out the relationship between many variables, one is dependent and other is one or more independent variable. Change in the independent variable also influences the value of dependent variable while the other variables changed or not. It tells what relationship between dependent and independent variable and forecasting. Many techniques are used for regression analysis the most famous methods are linear analysis and least square method Panel data is used in the regression analysis model. Panel data are used to measure one or more variable. Panel data consist of number of observations with the time period T. Multiple regression models:

$$\boldsymbol{ROAit = \alpha 0 + (\beta 1 + NPL\,writ - off\ it) + (\beta 2 + NPLGA\ it) + (\beta 3 + PANPIGA\ it) + (\beta 4 + NPLSE\ it) + (\beta 5 + NPLPTNPL\ it) + \mathrm{E}it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(i)}$$

Where Return on asset (ROA) is a dependent variable which change due to change in independent variables

ROA = Net profit tax / Total asset

NPL writ-off = is an independent variable which indicate the non performing loan write-off to non performing loan to provision ratio of bank in time period t.

NPLs writ-off = NPLs write-off / NPLs provision

NPLGA = it is an independent variable which indicate the non performing loans to gross advances of bank in time period t.

NPLGA = NPLs / Gross advances

PANPLGA = it is an independent variable which indicate the provision against non performing loan and advances of bank in time period t.

PANPLGA = Provision against NPLs / Gross advances

NPLSE = it is an independent variable which indicate the non performing loans to equity ratio of bank in time period t.

NPLSE = NPLs / Total shareholder equity

NPLsPTNPLs = independent variable - non performing provision to NPLs ratio

NPLsPTNPLs = Provision for NPLs / NPLs

The second equation describes the result of return on equity.

$$\boldsymbol{ROE\ it} = \boldsymbol{\alpha 0} + (\boldsymbol{\beta 1} + \boldsymbol{NPL\ writ - off\ it}) + (\boldsymbol{\beta 2} + \boldsymbol{NPLGA\ it}) + (\boldsymbol{\beta 3} + \boldsymbol{PANPIGA\ it}) + (\boldsymbol{\beta 4} + \boldsymbol{NPLSE\ it}) + (\boldsymbol{\beta 5} + \boldsymbol{NPLPTNPL\ it}) + \mathrm{E}\boldsymbol{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\boldsymbol{ii})$$

ROE = return on equity as an independent variable

ROE = Net profit tax / Total shareholder equity

The third equation describe the result of EPS

$$EPSit = \alpha 0 + (\beta 1 + NPL\,writ - off\;it) + (\beta 2 + NPLGA\;it) + (\beta 3 + PANPIGA\;it) + (\beta 4 + NPLSE\;it) + (\beta 5 + NPLPTNPL\;it) + \mathrm{E}it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(iii)$$

EPS = earnings per share

EPS = Net profit after tax / No of ordinary shares

4. Results and Discussion

A multiple regression technique is used to analysis the impact of Nonperforming loans. The result shows that provisions against the non performing loans decrease the profits of the firms. If the NPLs increase the efficiency of banks also decrease. NPLs have a negative effect on the performance of firms. The result shows the descriptive statistics, correlation and regression. Following measuring is obtained from regression analysis.

4.1. Descriptive Statistics

The mean of dependent variables ROE, ROA and EPS are -0, 0 and 3 respectively. On the other hand standard deviation of these variables is 1, 2 and 7 respectively. Five independent and three dependent variables are used in analyses. The mean of internal variables NPLWRI, NPLGA, PANPLGA, NPLSE and NPLPTNPLR are 39, 12, 5, 251 and 248 respectively. Standard deviation of these variables is 49, 10, 6, 1479 and 1801 respectively. ROE has median is 0, maximum 0, minimum -14. ROA median of 0, maximum value 3 and minimum value is -7.

EPS medians 3.860459, minimum value is -19.02 and maximum value is 24.47 and minimum value is -19. ROA median 0 maximum 3 and minimum is -7. NPLs write-off has mean, median, maximum and minimum is 39, 31, 474 and 0. NPLGA mean 1s 12 median 10 maximum and minimum values are 51 and 0 respectively. PANPLGA has mean 5 median 2 maximum 24 and minimum 0. Standard deviation of NPLSE is 1477 its maximum value is 14256 and minimum value is -1088.

Table 1: Descriptive Statistics

	ROE	ROA	EPS	NPLWRI	NPLGA	PANPIGA	NPLSE	NPLPTNPL
Mean	-0.17	0.1133	3.83	39.5	12.8	5.16	251.9	248.2
Median	0.08	0.77	1.43	31.295	10.36	2.665	55.575	75.645
Maximum	0.37	3.72	24.4	474.99	51.56	27.97	14256	18971.8
Minimum	-14.7	-7.08	-19.	0	0	0	-1088.3	6.14
Std. Dev.	1.48	2.26	7.58	49.2	10.24	6.17	1477.9	1801.7
Observations	110	110	110	110	110	110	110	110

4.2 Correlation Matrix

It is a technique to determine the degree by which variables are related with one another. Nonperforming loan write-off has negative relationship with NPLGA, PANPLGA, NPLSE and NPLPTNPLR. The next variable NPLGA positive correlate with PANLIGA, and positive association with the NPLSE and negative relation with the NPLPTNPLR, in negative association if one variable is increase the other variable is decrease. PANPLGA has positive relation with the NPLSE and negative relation with the NPNPTNPLR. NPLSE has a positive association with the NPNPTNPLR, in positive relationship if one variable is increase then other variable is also increase. NPLGA has positive association with the PANPLGA, and also positive relation with the NPLSE and other hand negative relation with the NPLPTNPLR.

Table 2: Correlation of Coefficient Matrix

	NPLWRI	NPLGA	PANPIGA	NPLSE	NPLPTNPL
NPLWRI	1				
NPLGA	-0.174479	1			
PANPIGA	-0.288724	0.560763	1		
NPLSE	-0.046438	0.065844	0.02046	1	
NPLPTNPL	-0.006811	-0.125742	-0.08331	-0.01684	1

*Shows that significant at the level of 5%

4.3. Regression Results

In regression we have only one dependent variable in our equation. When applying regression analysis to find a relationship between two variables. This model with ROE has F statistic 8.3585. F-Statistics shows the overall significance of the model. Its Constant coefficient is a positive value 0.39614.This model generates the R square & F statistics as compared to ROA model. In Return on equity (ROE) the NPL writ-off and NPLPTNPL has no significant impact on the return on equity. NPLGA has negative significant impact on the ROE its means increase in the nonperforming loans decrease profit of banks. PANPLGA has positive significant impact on the ROE and the profitability of banks. NPLSE has no significant impact on the ROE.

Table 3: Regression Analysis

	Return on Asset		Return on Equity	
Variables	**Coefficient**	**T-Statistics**	**Coefficient**	**T-Statistics**
C	0.39614	1.626276	1.719098	5.150699
NPLWRI	3.39E-05	0.013014	-0.00283	-0.7938
NPLGA	-0.06665c	-4.578731	-0.167751	-8.41065
PANPIGA	0.074356	3.012104	0.12971	3.83482
NPLSE	-0.00035	-4.202455	-0.00012	-1.04803
NPLPTNPL	-5.91E-06	-0.086173	9.70E-05	1.031525
R-squared	0.286659		0.428186	
F-statistic	8.358547		15.57544	
Observations	110		110	

*T-statistics is significant at the level of 5%.

PANPIGA provision against classified loan to gross advances reflects the quality of advances of firms. When the percentage of bad loan portfolio increases it has an inverse impact on profit. Regression model for ROA shows that NPLGA has negative significant impact on ROA of banks. PANPLGA has positive significant impact on the ROA of the banks. NPLSE has negatively significant impact on the performance of banks. In EPS the NPLGA has negative significant impact it means if NPLs increase as compare to gross advances then the profit of banks decrease. PANPLGA has positive correlated with the EPS.

Table 4: Regression Analysis

Earnings per Share		
Variables	**Coefficient**	**T-Statistics**
C	6.454347	5.060089
NPLWRI	0.00042	0.030863
NPLGA	-0.376196	-4.935363
PANPIGA	0.39668	3.068688
NPLSE	-0.000343	0.786062
NPLPTNPL	0.000952	2.649063
R-squared	0.254812	
F-statistic	7.112423	
Observations	110	

*T-statistics is significant at the level of 5%

5. Conclusion

In this paper seeks to explain the relationship between non performing loan and bank efficiency, using data of different banks 2007 to 2011. It is analyzed that the provisions negatively affect on the financial performance of the bank through reduction in loan interest income, profits and lending funds. The classification and provision imply that the higher the Nonperforming loan category the higher the provision and charges for such bad loans. Study of the financial statement of banks indicates that bad loan have a direct effect on profitability of banks. Since the banking sector is considered to be the most important sector of the country like Pakistan. These bad loans become cost to banks in terms of their implication on the quality of their asset portfolio and profitability. The result shows that the Non performing loan has significant impact on the efficiency of banks. It has inverse effect on the performance of banks. When the Nonperforming loan increase the profit of banks also affects. On the other side when the number of non performing loan decrease then the efficiency of banks increase. Recovering procedure are adapted to recover these bad loans and the principle or markup is also due and the borrower not pay the charges at time. NPLGA has negative effect on the ROA, ROE and EPS if bad loans increase then return on assets, return on equity and earnings per share decreases due to decrease these dependent variables the profit of bank also decrease. Provision against NPLs to gross advances has direct significant impact on the performance of the banks. Due to these provisions banks cover the amount of nonperforming loans and the performance of banks not affected negatively. In ROA the negative significant impact of NPLSE shows that when the shareholder feels the exposure the NPLs they not invested his money in the banks due to lack of the funds the banks cannot generate the profits so the efficiency of banks decrease.

5.1. Recommendations

The Nonperforming loan during the period has worrisome situations that adversely affect the profitability of banks. A critical review shows that the NPLs reduce the profit. It is important for all stockholders to satisfy them to minimize the problem of Nonperforming loan. The management should recognize the regular training programs for credit staff like credit management and financial analysis. Regular monitoring and supervision are also necessary. Maintain adequate provision for the security of advances thus decreases the non performing loan.

5.2. Limitations of the Study

Time was constrained in the study. As a result of limited time with to complete this work. There is might possible some issue regarding to the peculiar some banks that were not covered in this topic. The data of the banks have a few constraints in view the confidentiality of information in banks. This limitation was minimized by relying on published annual reports and financial statement of banks, both in the print and electronic media. As an important measure to these limitations time and resources were managed to achieve the objective of the study with limited time frame for the completion of work.

References

[1] Altunbas, Y., Gardener E. P. M., Molyneux P., and Moore B. , 2001, Efficiency in European banking, European Economic Review, 45(10) pp 1931-1955.

[2] Berger, A. N., and DeYoung, R., 1997, Problem Loans and Cost Efficiency in Commercial Banks, Journal of Banking and Finance, 21(6), pp 849-870

[3] Haneef S., Riaz T., Ramzan, M., Rana M.A., Ishaq, H.M. & Karim Y., 2012, Impact of risk management on non-performing loans and profitability of banking sector of Pakistan, international journal of business and social science, 3(7), pp307-315

[4] Kolapo T., Funso A., R. k., and Oke, M., 2012 review the credit risk and commercial banks Performance in Nigeria, International Journal of Economics and Finance, 2(02), pp 31-38

[5] Lu D., Thangavelue S.M., and Hu Q., 2005, Biased Lending and Non-Performing Loans in China's Banking Sector, The Journal of Development Studies, 41(6), pp 1071-1091

[6] Ranjan R., and Dhal S. C., 2003, Non-Performing Loans and Terms of Credit of Public Sector Bank in India: An Empirical Assessment, Reserve Bank of India Occasional Papers, 24(3), 81-121

[7] Zaini A. M., Chan S., and Hassan S., 2008, Bank efficiency and non performing loans: Evidence from Malaysia and Singapore, Prague economic papers, 15(2), pp 118-132