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Impact of Non-Performing Loans and Capital Ratio on the Profitability of Banks: Evidence from Banking Sector of Pakistan

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Abstract

This research expresses how non-performing loans hoists the profitability of the banks. The deductive approach has been used in this study and profitability used as explained variable. The non-performing loans and capital ratio used as explanatory variables and proxies by seven key ratios. Five years data were used ranges from the year 2010 to 2014.This study used fixed effect model for estimating the regression among variables. The statistical results show that the non-performing loans may increase the profitability of banks in some cases but normally showers the adverse effect on profitability. The outputs of the study suggest that bank should enhance the more loans because it may cause the more profitability instead of thinking about non-performing loans as default loans. Because, non-performing loans just passes from the stage of performing loans which are the main source of earnings for banks. They should keep an optimistic thought about loans. This research is an initiative which highlights the dynamic effects of non-performing loans in determining the profitability of banks specifically in Pakistanand shows the positive side of non-performing loans.

Keywords: Non-performing loans, capital ratio, profitability

Introduction

Mostly previous researches which are related to non-performing loans, and firm profitability have a pessimistic thought about non-performing loans that this loan becomes non-performing or non-earning (Chang, 2006). Financial institutions play a major role in every economy. In every country, there are some healthy, sounds, and strong financial institutions who can

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bear the heavy economic jolts and maintain the economic system (Aburime, 2009). There are different types of decisions regarding their functions which have to decide carefully in order to maintain the growth and profitability. But a decision which is very important for the banks, that is lending decision because this decision decides what do banks get in future. In contemporary era, mostly banks select those customers which are credit worthy and have ability to repay back the loans and hesitate to advance the loans to less credit worthy customers. This factor may shrinks their sale volume and results in low profit.

From last few decades, the issueof non- performing loans got more attention of the researchers. Bad debts are not increasing only developing, under developing but also increasing in developed countries (Akter & Kumar, 2017). There is no irrational decision behind the default loan. Alton and Hazen (2001) defines non- performing loans which have been paid to customers for specified period and could not receive with in specific period. Adebisi and Matthew (2015) describes about non-performing loans are those loans which are not able to make profit. Khan and Ahmad (2017) defines NPLs are those loans which are not create profit for long time.

If a bank considers loan as a strength of a bank than that bank can increase its profitability. Mostly studies e.g. Akter and Kumar (2017) describes performing loan as bad debt or performing loan will become non-performing loan after time of maturity. In this competitive era, banks cannot ignore anything because instead of all these things, they cannot survive in the market. Michael (2006) examines that NPLs affects the entire performance of the banks and gives a clue about solvency. Fofack (2005) describes that NPLs is the main cause of economic crisis in African countries banks. NPLs increasing means increasing level of credit risk. With the reference of World Bank, the ratio of NPLs in Pakistan was 14.87% between years 1997- 2016. Pakistan was at the 24th position at that time among 119 countries. And Pakistan once again ranked was 7th in 2008. With the reference ofState Bank of Pakistan (2013), the 585 billion is total non-performing loan out of NPLs 69% account for private sector banks balance sheet and 27% is from public sector banks.

Capital Adequacy defines as an avoiding the different kind of risks which may be exposed by the commercial banks from its operation. Capital

Adequacy ratio tells about the soundness of the bank and it measures the capacity to repay its liabilities and it also informs about losses of the business that may occur in future. In other words, an increment in capital adequacy means to save or protect depositor's money. Capital Adequacy ratio helps to mitigate the risk of crisis and bankruptcy costs. Capital Adequacy ratio informs about stability and measurement of a financial soundness. Nwokoji (2013) discusses about banks capital adequacy ratio (CAR).

Sometime banks keep the ability to absorb the losses from the earnings. But there may be unexpected losses which cannot be faced by normal earnings. In this function capital introduces the function of insurance. This kind of capital boosts the confidence of bank and it provides confidence and financial console to the customers, regulatory authority and the public. Confidence to the depositor means to safe his money and confidence to the public means bank is in good position or bad position and confidence to the regulatory authority means that these banks will maintains its existence in future.

Banks play a major role in the economy of a country. Rajan (1998) worked between wellbeing of the banking sector and growth of the economy. Capital adequacy promotes the financial sector profitability which is not only important for the managers of the banks, but it also important for different stakeholders, central banks, banks associations, governments and different financial authorities. There is very hard to survive without profit and call outside investor to complete investment target in this competitive environment. Profit of the banks can attract the depositors to invest their money and take advantage. Minimum capitalization of the banks in Nigeria are less able to finance the economy. Asediolen (2004) examines that banks can face financial distress due to capital adequacy and it affects profitability. Asediolen (2004) discusses recapitalization may raise short term liquidity to ensure good profitability.In contemporary economic system; there is dynamic role of financial system to facilitate the economics operation. The output of the real sector is totally depending on how the institutions which are related to finance perform as a financial intermediation function. There is transferring role of banking

system to transfer the fund from saving units to investing units (Saona, 2011).

Babakova (2013) noted that the axial purpose of every bank management is to enhance bank profit. Udom & Onyekachi R (2018) describes that there are three principals to monitoring regulations, the first one is safety, 2nd profitability and 3rd liquidity. Capital of the bank shows the soundness and safety of an individual bank. It hoists the public confidence and it also supports future growth in the bank. Capital creates capacity to give good services to customers and to save bank from future unexpected losses (Furlong, 2008). Capital is the main issue of any bank (Torbira & Zaagha, 2016). Financial performance is an indicator which shows the financial condition of the banks (Torbira & Zaagha, 2016). Some prior researches describe that capital adequacy helps in measurement of financial performance of businesses in particular banks and in general banks.

In 2013, Ghana banking review shows that almost all commercial banks in Ghana are facing non-performing loans. The situation is considered severe because main banks of Ghana are facing same problem (TENGEY2, 2014). There is no problem for the banks in this era because they can measure the ability of a business by using capital adequacy ratio. This ratio tells the soundness of the business. If banks take high risk than banks can get high return. Banks take a specific amount from the public on low rate of return and then lend on high rate to their customers. Because banks want to increase their capital. There are good intentions behind this loan taking or lending process. In this contemporary world, almost all businesses use loans to run the business operations. Before considered this loan as a non-performing loan, it was performing loan. Mostly bankers think that this type of loan always become non-performing loans.

Problem Statement

The banks normally consider the non-performing loans as loss of banks. The non-performing loans which came into existence after passing the stage of performing loans which causes the more interest earnings for banks. The concept that "*High risk, High return*" clarify the concept of non-performing loans and their contribution in banks. The banks which have more non-

performing loans may have more profitability, but the banks always consider it as loss. To resolve this ambiguity of banks, it was necessary

"To find that, are non-performing loans have any role in determining the profitability of banks?"

Objective of the Study

The basic bank functioning moves around two actions i.e. accepting the deposits and lending the loans. The banks often in search to enhance their profitability by offering the more loans to customers (Abreu, 2001). A bank indeed has more bad debt (non-performing loans) which offers the more loan. The banks which offers the voluminous loans have more return (Abreu, 2001). And have more non-performing loans. So, the objective of this study is

"To find out the relationship between these non-performing loans and profitability of banks"

Research Questions

In this research, the following questions will be answered

> ➢ Is there any impact of non-performing loans on bank profitability?
> ➢ What is relationship between the capital ratio and bank profitability?
> ➢ What is the linkage between the size of banks and profitability of banks?
> ➢ Does liquidity ratio effect the profitability of banks?
> ➢ What is the impact of deposit ratio on profitability of banks?

Significance of the Study

Prior studies describedthat non-performing loans and firm profitability have negative impact on each other and consider that this loan becomes bad debt after some time (Chang , 2006). If study focuses about developing countries, then these countries have very worst situation then the developed countries. Dash (2010) finds the association among NPLs, macro variables and bank specific variables and this study shows that banks which are having high aptitude to take risk have a high level of non-performing loans. But this study will come with new idea that mostly banks considered performing loan as default loan. Previous literature focused only one side of the non- performing loans. But when banks give loan to their customer

and the attention of this loan to earn more profit because high riskier banks can earn high return. This study will try to find out that can banks be utilised the performing loans for the proftability? The theoretical significance of this study is to describe the variables of non- performing loans, capital ratio and profitability of the banks and this study contributes in previous literature. This work will add the new thought and idea that banks can give loans to everyone because this study comes with optimistic approach of non-performing loans that higher risk higher return. Thisresearch has a practical importance that it helps the manager to manage all the operations of financing without any fear of loss and give performing loans with the intensions of profitability.

Literature Review

Committee (2001) defined Non-performing loan is that loan which is not recoverable with in 90 days or more than 90 days. SBP (2010) described the different categories of loan which are following as:

1. Substandard: A loan will be substandard when interest rate or principal amount is not recover with in 90 days or more than 90 days than this loan will called as substandard loan. A provision of 25% will be done from the books of the banks as non-performing loan.
2. Doubtful: A loan will be doubtful when installment of the loan is not recover with in 180 days or more than 180 days as per SBP prudential regulations the bank will do 50% provisioning of that outstanding amount as NPL.
3. Loss: A loan will be a loss when installment is not recovered with in one year or more than one year as per SBP prudential regulations the bank will do 100% provisioning of that outstanding loan as NPL.

Basically business cycle determines how banks and other financial institutions prepare non- performing loan in respondent country. Structure of non- performing loans clear the country cyclicality of credit risk and business failure (Williamson, 1987). Morris (1987) worked on non-performing loan, his study counter balanced the net charge off rate with loan losses with in a country. There is no impact of non- performing loans on economic crises but participtes in it (Keeton, 1999). Brownbridge (1998) claimed that the basic reason of bank failure is an increment ratio of non-performing loans. If the banks do not take action against this than the banks

assets will not be able to produce more revenue for the banks. Adebola (2011) described that non- performing loan draws bad impression on the economy of a country. Furthermore identification of non- performing loan factors are very important for the country. Saba (2012) examined that it is approachable to study non- performing loan, maybe it will lead to economic crisis in form of minimum per capita income and decrease profits.

Dash (2010) noted that there is strong effect of micro economic variables on increasing level of non- performing loans. Hu (2004) explained that there is negative affinity between size of the bank and non- performing loans. Godlewski (2004) determined that there exist a relationship between return on asset and non- performing loans. If the return on assets is lower than the non- performing loans will increase and vice versa. Ahmed (2013) noted that there is positive relationship between return on asset and non-performing loans. Further more, Boudriga (2009) described that there exist negative relationship between return on asset and non- performing loan and also noted that decreasing the return on assest leads to banks in more riskier investment that will hoist the level of non- perfoming loans. Makri et al. (2014) showed a negative relationship between return on equity and non-performing loans. Capital adequacy ratio shows the capacity to face abnormal losses (Dusabe & Mulyungi, 2018). Makri et al. (2014) elaborated that in crisis timing the capital adequacy ratio tells the strenght and stability of an organization. Makri et al. (2014) further described that there is negative relationship between non- performing loans and capital adequacy. Constant (2012) examined that a capital adequacy and non- performing loans have positive relationship.

Makri et al. (2014) showed that loan to deposit ratio shows the ratio of amount that is given or advanced as loan out of deposits. When the ratio of loan to deposit ratio will high than the risk of the bank will high in non-peforming loans and vice versa (Rajan, 2003). Sahir (2007) noted that there is significant relatioship between ROA, ROE and non- performing loan. There is a positive relationship between rapid growth of loans and non-performing loans (Keeton, 1999). Return on assets is the determination of bank profitability and return on equity is also the determination of bank profitability and net interest margins. Return on assets depends on the bank

policy decision in any bank. Many researchers believe that return on assets is the best measurement of bank profitability (Hassan, 2003).

There is negative relatioship between gross domestic product (GDP) and non- performing loan. If real economy improves then it means lower the non- performing loans. Researcher found that charging of higher interest rates and then lend it to general public on very high interest rate then it means level of non- performing loan is increasing (Hassan, 2003). A failure/default is not irrational decision. Weak banking system critically reflects on an investment portfolio and loan lending policy (Sinkey, 1991; Dash, 2010). The reason of non- performing loans is often attributes with lack of supervision, monitoring, minimum effective lenders, weaknesses and lack of debt recovery skills (Adhikari, 2007). There exist non linear effect of non- peforming loans on banks lending behavior (Yixin, 2001).

The main reason of increasing of non- performing loan is lack of risk management, which alerts the profitability of banks. Study suggested that banks can save their self by adopting procedures suggested by the central bank of any country (Haneef, 2012). There is significant impact of real GDP, per capita, inflation and total loans on non- performing loans ratio. Banks should apply strictly their credit advancement policy to minimize the ratio of non- performing loans (Saba, 2012; Dash, 2010).

Goldstein and Turner (1996) expressed that non- performing loans are occurred due to many reasons such as economic downturn, moral hazard, macro economic instability, high interest rate and insider borrowing. Bad debts occur due to lack of interest of debtors and failure of debtors with in maturity time period (Aballey, 2009). Lack of interest of debtor effects very adverse on financial condition of creditors (Aballey, 2009; Okoli, 2013).

Table 1

Showing the Category, Provision Rate and Its Expiration Period

No.	Category	Provision Rate (%)	Expiry Period
1	Loss	100%	360 and above
2	Doubtful	50%	180 less than 360 days
3	Substandard	25%	90 less than 180 days
4	OLEM	10%	30 less than 90 days
5	Current Loss	1%	Less than 30 days

Source: Section 53(1) of Banking Act 2004

Ahmad (1997) noted that there are some important reasons of loan defaults i.e lack of intensions to repay loan, negligence improper guidance of credit officer. Felsovalyi (1998) and Kwakwa (2009) examined that risk of failure increases when gross domestic product decreases and there is direct impact of exchange rate depreciation on payback capacity of borrowers. Balogun (1988) identified the basic reason of loan default i.e small farm size, high interest rate, age factor, weak supervision and government encroachment. Further more Akinwumi (1990) concluded that size of the farm, size of the family, scale of operation and daily expenses of family were basic reasons that create some problem in the repayment system of the loan. Researchers have been pointed out the main factors of loan defaults. Okorie (1986) described that the nature, bad supevision, profitability, time of disburesement are the main causes of loan default.

Other causes are i.e type of the loan, terms of the loan, interest rate on the loan, weak credit history, low borrower income and transaction cost of the loans. Weak academic progress is the basic reason for loan default bacause staff departure the student before the completion of degree (Volkwein, 1998). Merritt (2009) expressed that curtialment in income or salary (36%), high number of obligations (19%), unemployment (8%), and illnes due to serious disease (6%) are the main causes of failure in loan return. Okpugie (2009) indicated that micro finance banks charge high interest rate from the customer and that is the main reason of loan default. Micro finance banks give amenities in shape of loans to their customers who have a small or sales of goods and services. Gorter (2009) pointed out that number of wrong economic decions are the cause of bad debts. Under these conditions holder of the loan can spread risk of loan default by using insurance. Mostly loan defaults areoccurred due to bad management procedure (Kohansal, 2009). Onoalapo and Olufemi (2012) reveals that, there is no relationship between capital adequacy ratio and profitability of banks represented by ROA, return on capital employed and percentage of profit before tax.

According to their work there are many factors which can cause the loan default i.e rate of interest, monoply, high transaction cost and moral hazard problems. Ikpefan (2013) expressed the ralationship among capital adequacy, management and performance of the banks from years 1986 to

2006 in Nigeria. His study also found that there is negative impact of capital adequacy ratio on earnings of the banks. Researchers found the negative correlation among efficiency of the management, operational expenses and return on capital. Almazari and Alamri (2017) found positive relationship among capital adequacy, capital, leverage and banks profitability.

Literature Gap

Previous studies worked onmacro economic variables and non-performing loans (Adebola, 2011; Dash, 2010). They have suggested that non-performing loans may causes the defaults and also results in insolvency of banks.But the non-performing loans which were converted from performing loans may enhanced the profitability due to high interest margin on performing loans (Almazari & Alamri, 2017). The most of the studies just discussed the non-performing loans as tumor for company profitability (Akter & Kumar, 2017). But, the literature on non-performing loans and their impact on profitability is still silent. In lirerarture, very short studies were found in this directions. So, this study try to investigates this effect and comes up with new idea that how non-performing loans may causes the more return.

Development of Hypotheses

Development of hypotheses depend on the relationship between dependent variables and independent variables. With the help of prior literature, this study develops hypotheses about variables. This study assumes the affinity of variables and develop hypotheses.

Non-Performing Loans

Non- performing loans has a negative relationship with profitability of bank (Akter & Roy, 2017). There is positive association between non-performing loans and net profit margin along with the condition that the other things especially other independent variables remain same (Fan, 2004).With the help of previous literature of non-performing loans, this study develops hypothsis

H_1: There is positive relationship between non-performing loans and net profit margin.

Deposit Ratio

Major activity of the banks is using the funds with very efficiently. Loan deposit ratio dealings with liquidity as well as bank profitability. This ratio is calculated by dividing the total amount of loans, by total amount of deposits. There is positive impact of loan deposit ratio on profitability (Rengasamy, 2014). Devinaga R (2010) described that there exist positive association between loan deposit ratio on profitability (ROA). Profitability ratio has a negative association with liquidity ratio.

H_2: **There exist positive association between loan deposit ratio and profitability.**

Liquidity Ratio

Basically liquidity is a process of changing assets into cash. Whenever an organisation is needed to complete its financial liabilities than organisation converts current assets into cash to fulfill its obligation at maturity date. To fullfil the obligations of debtors, bank useses its current assets to pay the liabilities.There is negative relationship bwteen profitability of the firm and liquidity of the firm (Malik et al., 2016).

H_3: **There is negative relationship between liquidity ratio and net profit margin.**

Size

Structure of bank can attract the investors to invest their money. Size of the bank matters for the stakeholders because trust of the stakeholders can make a strong and good relationship with bank without any hurdles (Arif et al., 2013). There exist positive but insignificant association between bank size and bank profitability (Arif et al*.,* 2013).

H_4: **There is positive relationship between size of the bank and net profit margin.**

Capital Ratio

Ikpefan (2013) found that there exist negative impact of capital adequacy ratio on earnings of the banks. Researchers found the negative correlation among efficiency of the management, operational expenses and return on

capital. Almazari and Alamri (2017) described that there is positive association among capital adequacy, leverage and banks profitability.

H_5: **There is positive relationship between capital adequacy ratio and profit margin.**

Research Methodology

This chapter describes the tools and techniques whichwere used to complete the objective of this research.

Data and Sample Size

The financial information of banks was obtained from the published report of The State Bank entitled "Financial Statement Analysis" for financial sector. This was the most reliable source of financing and have detail financial information. The study analyzes the 5 years data ranging from years 2010 to 2014. The population size consists on all the banks and investment companies registered at The State bank, but sample size incorporates with only scheduled banks.

Selection of Variables

This study has two independent variables, three control variables and one dependent variables. This table shows name of variables, measurements of variables used as and source of variables.

Table 2

Overview of Variables

Variables name	Used as	Measurement	References
Non-performing loans	Independent variable	=Advance non-performing/Gross advances =(Advances-non-performing/classified)/ (Total equity) = (Provisions and write-offs)/ (Provision against advances)	Makri et al. (2014)

		=(Provision against advances)/(Advances-non-performing/classified)	
Capital ratio	Independent variable	Total equity/ Total assets	Nwokoji (2013)
Liquidity ratio	Control variable	Cash equivalent Cash/Current liabilities	(Malik *et al.* 2016)
Size of bank	Control variable	Log of total assets	(Arif *et al*. 2013).
Deposit ratio	Control variable	Banks's loan amount/ total amount of deposit	(Rengasamy, 2014).
Return on assets	Dependent variable	Profit after taxation/ total assets	(Goddard, 2004)
Return on equity	Dependent variable	Profit after taxation/ total equity	(Goddard, 2004)
Net interest Margin	Dependent variable	Total interest income-total interest expense/total assets	(Silaban, 2017)

Discussion of Variables

Non-Performing Loans

Lack of risk management is a cause of non-performing loan which threatens the net profit margin of the banks. Performing loans become non-performing loans due to some reasons but it doesn't mean that a bank stopped to lend loans. If a bank can save it's self from the non-performing loans than the bank should follow the instructions given by central bank of perspective country (Haneef, 2012).

Capital Ratio

Capital ratio helps to release from financial crisis (Asediolen, 2004). Through this ratio a bank can determine its financial health and financial soundness. With the help of this ratio a bank can arrange easily for the

defence of scrutiny. Capital ratio divided assets class into three classes. The first one is tier 1, 2nd class tier 2 and 3rd clss is tier 3.

Size of Bank

Size of the bank is matters for the investors because it builds the trust of the investors. Investors will invest more if their trust will strong with bank. This thing can increase the profitability of the banks. Different studies take size of the bank in different shapes such as log of assets and log of sales. But previous research noted that if size will increase then profitability automatically increases (Arif, et al., 2013).

Liquidity Ratio

Short term survival is necessary for the long-term survival. Liquidity is the ability to pay the short-term obligations with the help of current assets. But there is a problem for the banks that if they have liquid assets more than fixed assets than liquid assets can create problem for the banks. There should be a mixture of short-term assets and fixed term assets (Malik et al., 2016).

Deposit Ratio

Rengasamy, (2014) defines that there exist a ratio between banks total loans and total deposits of the banks that is called loan deposit ratio. If the answer is less then one that means bank depends its own deposits and bank can give loan to customers with out any out side borrowing. Deposits of the cash in the bank is the main focus of the banks. They attract the investors by using different motivational tips and tricks.

Profitability

Almost all business has a same goal to enhance its profitability. There are different measures of profitability such as return on assets, return on equity and net profit margin. All investors and stake holders only consult with those businesses that have good profitability. And profitability of the business keeps maintains its reliability (Hassan, 2003).

Econometric Models

This model represents the nature of the variables. Data of different type such as cross sectional, time series and panel are showing explanatory variables in regression model. General equation describes overall association between enplained and explanatory variables and represents the general equation which uses in STATA for estimation.

$$Y_{it} = \beta_\circ + \beta_1 X_{1it} + \beta_2 X_{2it} + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \beta_\circ + \beta_1 NPA_{it} + \beta_2 PNPA_{it} + \beta_3 NPAS_{it} + \beta_4 PNPL_{it} + \beta_5 SIZE_{it} + \beta_6 LR_{it} + \beta_7 DR_{it} + \beta_8 CR_{it} + \varepsilon_{it} \quad (2)$$

$$ROE_{it} = \beta_\circ + \beta_1 NPA_{it} + \beta_2 PNPA_{it} + \beta_3 NPAS_{it} + \beta_4 PNPL_{it} + \beta_5 SIZE_{it} + \beta_6 LR_{it} + \beta_7 DR_{it} + \beta_8 CR_{it} + \varepsilon_{it} \quad (3)$$

$$NIM_{it} = \beta_\circ + \beta_1 NPA_{it} + \beta_2 PNPA_{it} + \beta_3 NPAS_{it} + \beta_4 PNPL_{it} + \beta_5 SIZE_{it} + \beta_6 LR_{it} + \beta_7 DR_{it} + \beta_8 CR_{it} + \varepsilon_{it} \quad (4)$$

Where,

NPA= Non-performing loans to gross advance
PNPA = Provisions against NPLs to gross advances
NPAS = NPLs to shareholders equity
PNPL = Provision against NPLs to NPL
LR = Liquidity ratio
DR = Deposit ratio
NIM = Net interest margin
ROA= Retrun on assets
ROE = Return on equity
SIZE = Size

Reuslt Discussion

Statistical software named as STATA has been used to run the data and ordinary least square (OLS) has been applied.

Descriptive Stats

Table 3

Summary of Descriptive Stats

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
NPA	84	.1470	.1065	.0213	.5155
PNPA	83	.0951	.0502	.0253	.2509
NPAS	80	.6443	.3519	.1582	1.488
PNPL	84	.7608	.2626	.3574	1.644
SIZE	90	11.39	.5818	9.712	12.27
LR	90	.0937	.0325	.0416	.2152
DR	80	.5356	.1760	.0530	.7943
CR	85	.0997	.0721	.0203	.4245
ROA	53	.0165	.0057	.0103	.0334
ROE	79	.1589	.0924	.0122	.5690
NIM	85	.0390	.0157	.0113	.0999

The table.3 of descriptive stats varify the overall pattern of results and finely communicate the trend of resopnses of firms. The mean value show the average responses and standard deviation narrates that how far the responses lie from average responses. The minimum and maximum values show the span between the upper and lower limit.

The mean value of NPA is .1470 which shows that many of respondents are in the range of .1470.It means bank will increase gross advances than due to this non-performing loan will decrease. The maximum value is .5155 and minimum value is .0213. These two values represent the upper and lower limit of respondent. The .1065 is the value of standard deviation which describes the dispersion of data from the mean. The mean value of PNPA is .0951 which depicts the average responses range of PNPA. It means due to an increment in gross advances of the bank, the provision against advances will become low. 0502 is the value of standard deviation which represents shows the dispersion of data from the mean. There is .0253 minimum value and .2509 maximum value which shows upper and lower limits of respondent. Mean value of NPAS is .6443 which explains the range of respondent bank. It means shareholders will invest more in shareholder equity. The value of standard deviation is .3519 which describes the dispersion of data from its center. Minimum value is .01582 and maximum value is 1.488.

PNPL has a .7608 mean value which tells about the range of respondents. It means that there is 76 percent provision against 100 percent non-performing loans. PLPL has .2626 value of standard deviation which tells the scattering of data from the mean. PNPL has .3574 lower value and 1.488 maximum value. Size has 11.39 mean value which depicts that mostly variables are in the range on mean value. Value of standard deviation is .5818 which tells that how the data scattered are from mean value. The mean value of LR, DR and CR are .0937, .5356 and .0997 indicates the average of respondents of banks are in the range of these values. Value of CR 0997 indicates that the investment of shareholders is 9 percent in total assets. The value of LR .0937 means that to pay the current liabilities of 1 rupee, bank does not have enough assets to pay.ROA has .0165 mean value which indicates that almost all variables are in the range of 0.165. The value of standard deviation is .0057 which shows that the scattering of data from the mean. ROE and NIM have .1589 and .0390 which indicate that the ranges of these variables between these values.

Correlation

The outputs of correlation table indicate the inter-relationship among the variables. Consequences of this table show that which variable is much correlate with other and which is less correlate with other variables. Below table described the outputs of correlation table.

Table 4

Correlation among Variables

Variables	NPA	PNPA	NPAS	PNPL	SIZE	LR	DR	ROA	ROE	NIM
NPA	1.0000									
PNPA	0.8720	1.0000								
NPAS	0.7657	0.7026	1.0000							
PNPL	-0.7176	-0.4068	-0.5653	1.0000						
SIZE	0.0064	0.2214	0.2462	0.1873	1.0000					
LR	0.3011	0.3362	0.4974	-0.1681	0.1972	1.0000				
DR	0.4158	0.2440	0.5605	-0.4984	-0.0399	0.2184	1.0000			

CR	0.6329	0.4049	0.1209	-0.6221	-0.2433	-0.0451	0.3264	1.0000		
ROA	-0.0254	-0.0555	-0.2084	-0.1388	0.3383	-0.0802	-0.0167	0.3587	1.0000	
ROE	-0.6834	-0.4738	-0.3804	0.5171	0.4368	-0.819	-0.3544	-0.5727	0.4738	1.0000
NIM	0.1064	0.0274	-0.0445	-0.2196	0.0540	0.2041	0.2292	0.5119	0.7026	0.2043	1.0000

The statistical consequences in table. 4 shows that NPA, PNPA, NPAS, PNPL, SIZE, LR, DR, CR, ROA, ROE and NIM have correlation numbers 0.8720, 0.7657, -0.7176, 0.0064, 0.3011, 0.4158, 0.6329, -0.0254, -0.6834and 0.1064 in sequences. These numbers show the degree of affinity with each other. Too much Amalgamation is not good for the independent variables especially. There is high correlation 0.8720 between NPA and PNPA because there is direct relaionship between NPA and PNPA. When NPLs will decrease than gross advances will increase and when provisions will increse against the loan then automatically NPLs will decrease than gross advances will increase. Rest of variables have near about 50% value. It means that there is no correlation among variables.

Regression analysis

The following outputs got which represent the regression among dependent and independent variables.

Table 5

Regression among Variables

	Model 1			Model 2			Model 3		
D.Variable	ROA			ROE			NIM		
	Coeff.	t-stat	Prob.	Coeff.	t-stat	Prob.	Coeff.	t-stat	Prob.
Constant	-.0431	-2.53	0.016	-.5885	-2.97	0.004	-.0308	-1.25	0.215
NPA	-.2218	-3.60	0.001	-1.1142	-1.44	0.155	-.3233	-3.09	0.003
PNPA	.1914	3.79	0.001	.6710	0.92	0.362	.1179	1.20	0.234
NPAS	-.0037	-0.42	0.676	-.0425	-0.62	0.537	.0180	1.95	0.056
PNPL	-.0147	-3.91	0.000	.0126	0.26	0.793	-.0005	-0.09	0.930
SIZE	.0058	4.09	0.000	.0724	4.29	0.000	.0031	1.53	0.133
LR	.0045	0.22	0.824	-.1047	-0.46	0.649	.1049	3.40	0.001
DR	-.0015	-0.19	0.854	-.0361	-0.36	0.721	-.0012	-0.19	0.026

CR	.1405	3.04	0.004	.2000	0.36	0.719	.4348	5.77	0.000
R-square		0.6847			0.6184			0.5697	
Adj. R^2		0.6147			0.5618			0.5083	
F-stats		9.77			10.94			9.27	
Prob.(Stat)		0.0000			0.000			0.00000	

Explanation

The consequences of model 1 which shows in table no. 5 in which return on assets (ROA) used as dependent variables. The values of NPA, PNPA, PNPL, SIZE and CR have significant values. The t-statistics of NPA is -3.60 which depict that non-performing loan has significant relationship but inverse relationship with return on assets (ROA). When non-performing loan will low than the return on assets will increase. The t- value of PNPL is -3.91 which shows that this is significant variable but inverse association with ROA. The value of NPAS, LR and DR are insignificant. These ratios don't affect ROA. The value of adjusted R square is 61 percent which represents there is 61 percent affection between dependent variables and independent variables.

The results of model no. 2 in table no. 05 are as following. The p-value of SIZE is 0.000 which is significant variable. It means that size of the bank has significant and positively relationship with return on equity (ROE). It explains that when size of the bank will increase then the return on equity will increase. The values of all other variables in this model such as NPA, PNPA, NPAS, PNPL, CR and DR have insignificant relationship with ROE. It means that there is no effect of these variables on return on equity. The value of adjusted R square is 0.5618 which means that there is 56 percent effect independent variables on dependent variables.

The outputs of model no. 3 in table no. 05 are as following. The values of NPA, NPAS, LR,DR and CR have significant relationship with ne interest margin. DR and NPA have inverse relationship with net interesr margin. The value of adjusted R saquare is 0.5083 which indicates that 50 percent independent variables effect the dependent variables.

Conclusion

According to our facts and figures, this research maybe the first research in the Pakistan which checked empirically effect. The originality of the study can examine by investigating that how non-performing loans, capital ratio effect of profitability of the banks. The statistical results of this study help finance managers to find out that how non-performing loans may cause high net interest margin. The results of this research also answered the all research questions and also fulfil the research objective. Study can be judged that, according to the quotation "High risk high return'' banks give loans in massive amount to their customers than this activity increases their profitability. Non-performing loans and ROA have significant impact but have an inverse relationship with each other. Capital adequacy ratio has significant impact on net interest margin. Based on results, this study concluded that the first (H_1) is partially accepted and second (H_2) alternate is rejected and third (H_3) partially accepted and fourth (H_4) alternate is accepted and fifth (H_5) is partially accepted.

Limitations and Future Direction

The limitation of this study is only six 5 years data was used due to data constraints. This study has targeted only scheduled banks of Pakistan due to shortage of time.

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