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Determinants of Non-Performing Assets and the Performance of Islamic Banks in Pakistan

Abdul Rehman ¹ Sana Rubab ² Asma Abdul Khaliq ³

Abstract: These days non-performing assets have been essential factors in terms of the banking sector's profitability and sustainability. This study aims to weigh factors that may affect the surging level of non-performing assets in Pakistani Islamic banks. The study uses the Financing-to-deposit ratio (FTDR), Bank size, Return on assets (ROA), Inflation rate, and interest rate as the determinants of non-performing assets as banks' internal and external factors, respectively. The performance of Islamic banks is measured using Tobin's Q ratio. Panel data from 2012 – 2022 was extracted from unconsolidated financial statements of Islamic banks and the World Bank database. Descriptive statistics, correlation, and panel least square regression analysis were used to find the relationship between non-performing assets (independent variable) and banks' performance (dependent variable). Data analysis is done through the EViews application software. The findings of this study revealed that there is a significant impact of different factors of non-performing assets on the performance of Islamic banks in Pakistan. The results of the analysis concluded that banks' performance can be increased by reducing the level of non-performing assets. The study will benefit the management of Islamic banks in considering these factors to improve their performance by controlling the level of NPAs.

Key Words: Non-performing Assets (NPAs), FTDR, ROA, Tobin's q Ratio, Bank Performance, Unconsolidated Financial Statements, Panel Least Square Regression

Introduction

The NPA classifies it as a non-performing asset, which focuses on assets and loans. When a resource loan concludes to generate income from the association, it becomes a non-performing asset (Aniket Pundir et al., 2021). Non-performing assets (NPAs) are any credit where interest and rules of installments are over 90 days late (Jameel, 2014). A non-performing Asset (NPA) is a credit or advance for which head or interest installment stays late for ninety days. It is named an unacceptable asset, unrealistic asset, and adversity asset (Alamelu & Chandran, 2018).

NPAs reflect the presentation of banks. A raised level of non-performing assets recommends that the huge number of credit defaults impact banks' advantage and total assets. The banking system sector has a very vital position in a country's economic system. A bank gives out cash straightforwardly and secures pay all through a period of the responsibility of a lender to repay. When advances are not repaid, the bank loses two of its revenue sources, as well as its capital (Karunanidhi & Pillai, 2020).

The financial business has gone through a sea of changes after the critical period of capital progression in 1991. The banking sector serves as the basis of the capital region, storing surplus unit assets as stores, distributing them as loans to components that are experiencing a shortfall, and making advances to other areas, including rural, industrial, individual, and state-run organizations. Banks' loans and advance policies help companies satisfy their short- and long-term financial obligations under contracts. The financial business is presented with unlike dangers, for example, credit risk, liquidity risk, premium bet, market risk, functional bet, and the board. Besides these dangers, the urgent bet is credit recovery. The

¹ Undergraduate Scholar, Department of Management Sciences, University of Loralai, Balochistan, Pakistan.

² Lecturer, Department of Management Sciences, University of Loralai, Balochistan, Pakistan.

³ Lecturer, Department of Management Sciences, University of Loralai, Balochistan, Pakistan.

[•] Corresponding Author: Abdul Rehman (abdul_rehman@gamil.com)

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most common way of loaning conveys a bet called credit risk, which issues from the disappointment of the lender. (Duraisamy, <u>2016</u>)

Non-performing assets indicate advances that increase the risk of default. Whenever the lender has failed to make interest or rule of installments for 90 days, then the acknowledged total is seen as a Non-Performing Asset. Credit is one of the primary assets of banks. (Duraisamy, 2016)

The banks are the protectors and suppliers of the country's fluid assets. Preparing citizens' savings by borrowing money from the public is thus an important function of a banking system. The banker shall be the public's trustee for surpluses. Prepayment prepares to promote economic success by controlling the circulation and canalizing for development and productive purposes. Prepayment preparation suitable for different segments of the population is carried out by commercial banks. The funding of banks comes from prepayments in combination with other sources, such as capital, reserves, and loans. The bank's financing and investment activities are based on the sources of funding (Jaya Sheela G, 2016).

Banks have different types of assets in their books, such as cash on hand and balances with other banks, investments, loans and advances, fixed assets, or foreign exchange. Loans advance investments control the concept of NPAs. As long as the asset generates the expected income and does not disclose any unusual risk other than normal commercial risk, it is treated as a performing asset, and if it does not generate the expected income, it becomes a non-performing asset (Jaya Sheela G, 2016).

Also referred to as non-performing loans are the assets that do not perform. It shall be issued by a bank or finance company for whom the refund or interest installments are not due on time. A loan is a bank's asset because it generates cash flows through interest payments and refunds of principal. The bank's profit is derived from interest payments. If the assets are not maintained for some time, banks typically classify them as non-performing. When payments are made late for a short time, the loan is marked as past due, and once it has become overdue, usually 90 days in most cases, the loan can be classified as non-performing. A sign of the problem may be a high level of NPAs compared with other lenders (Jaya Sheela G, 2016).

Non-performing assets are typical fundamental traits that were first brought to attention in the USA in 1980. The retail banking region went up against the rising pattern of rising costs. The State Bank of Pakistan allowed the rising mass destruction of destroyed credits as a reason for the problem for the Pakistan banking industry for many years. The rising NPLs could be shapeless for the financial aspects of the economy. This mounting design does not block the productivity of Pakistani banks, yet it also shows the weakness of the financial condition in the state (Jameel, 2014).

Banking and financial development around the world examine the NPL issue. It is required to be familiar with checking systems to follow the borrower's exercises. For creating economies, the two banks and borrowers need to know the significance of credit risk on the board. The presentation of financial organizations, especially banks, is unfavorably impacted by worldwide financial emergencies. The unlucky administration of advances in each nation was extraordinarily unbalanced. Such innumerable elements impact NPL proportions, like offer cost, loaning financing cost, and other gambling factors (Sana et al., 2019).

Classes of NPAs

Banks categorize non-performing assets into three main groups based on how long they have been non-performing:

Unacceptable Assets

A resource is known as an unacceptable asset when the credit or advance has been non-performing for not exactly or equivalent to a year and a half.

Suspicious Assets

An asset is known as a suspicious asset when it has been non-performing for over a year and a half. They have a higher level of risk than an unacceptable asset.



Misfortune Assets

An asset is known as a misfortune resource when the bank or inner or outside examiners or the investigation by the required business performance (finance) distinguishes the misfortune. However, it has not been discounted.

Scope of Research

This research aims to look at the performance of Islamic banks in Pakistan in light of their financial performance, product service comparison, and client view of Islamic banking. The basic purpose of this research is to assess the progress of Islamic banking when different from regular banks. Islamic banking is a seriously old idea; however, it has shocked many observers. Likewise, the speed with which Islamic banks have come up and the rate at which they have created an economic boom makes it important to scientifically concentrate on them. Islamic saving money with its underlying blast is proposed to develop as it is constantly developing. Many regular banks have likewise begun working their different branches committed to Islamic money.

Problem Statement

NPAs play a very important role in the growth of banks as the banking sector increasingly performs the role of an intermediary body for trade and business transactions. The financial stability and risk of a bank are very much dependent upon its NPAs. Unrecovered loans become a major obstacle in a bank's credit cycle. In many countries, NPA has been stated as the cause of distress in sectors ultimately for the wealth of the economy of a country(Senthil Arasu et al., 2019). This study will help bankers identify the important factors that may help Islamic banking to get an advantage over non-performing assets.

Significance of the study

This study is intended to add value to the body of knowledge regarding financial systems and banking. This study conceptualized the impact of both external and internal factors of NPAs on bank performance to include all possible factors. It is designed to provide insight into the banking sector, which will help them improve their performance. Moreover, 'The study could recommend measures for the banks to avoid future NPAs and decrease existing NPAs. The study could help the government create and implement new strategies to control NPAs. The study will help in choosing proper strategies for managing NPAs and encourage action plans to explore the improvement of NPAs.

Purpose of the Study

This study is conceptualized to examine the internal & external factors of non-performing assets affecting the bank performance of Islamic banks of Pakistan to provide a complete view of Pakistan's banking sector. "The purpose of this study is to identify what impact NPAs have on banks' profitability and performance."

Research Gap

Earlier studies have shown the impact of external and internal factors separately. Moreover, the model is conceptualized to examine factors for Islamic banking. Bank performance of conventional banks has been studied up to some extent, but Islamic banking has not been examined yet.

Research Questions

The following research questions were devised to help the study accomplish its goal.

RQ1: Is there an association between the financing-to-deposit ratio and bank performance?

RQ2: Is there an association between bank size and bank performance?

RQ3: Is there an association between return on asset and bank performance?

RQ4: Is there an association between inflation rate and bank performance?

RQ5: Is there an association between the unemployment rate and bank performance?

RQ6: Is there an association between interest rate and bank performance?

Research Objectives

The main objective of this study is to examine the impact of non-performing assets on the performance of Islamic Banks in Pakistan.

RO1: To examine the relationship between financing to deposit ratio and bank performance.

RO2: To identify the association between bank size and bank performance.

RO3: To examine the relationship between return on asset and bank performance.

RO4: To identify the association between inflation rate and bank performance.

RO5: To examine the relationship between the unemployment rate and bank performance.

RO6: To identify the association between interest rate and bank performance.

Hypothesis Development

The hypotheses to describe the effect of internal and external factors on bank performance are as follows.

H1: There is a significant relationship between the financing–to–deposit ratio and bank performance.

H2: There is a significant relationship between the return on asset ratio and bank performance.

H3: There is a significant relationship between bank size and bank performance.

H4: There is a significant relationship between inflation rate and bank performance.

H5: There is a significant relationship between the unemployment rate and bank performance.

H6: There is a significant relationship between interest rate and bank performance.

Relationship between Financing-to-deposit Ratio (FTDR) and Bank Performance (TQ Ratio)

The financing-to-deposit ratio (FTDR) is a fundamental element for the maintainability of a banking company. This ratio is utilized to gauge the number of deposits, request stores, investment funds, and others used to satisfy client credit applications. Sources of assets that come from the more extensive local area are outsider assets (Apriyanti et al., 2021).

FTDR= Bank's Total Amount of Loan / Total Amount of Deposits Relationship between Return on Asset ratio (ROA) and Bank Performance (TQ Ratio)

The Return on Assets of an organization decides its capacity to use the Assets utilized in the organization proficiently and really to procure a decent return. The proportion estimates the rate of benefits obtained per dollar of Asset and hence is a proportion of the ability of the organization to produce benefits on its Assets. (Shah et al., 2012)

Return on Assets= Net Income / Total Assets

Relationship between Bank Size (Log of Assets) and Bank Performance (TQ Ratio)

Bank size has differential effects on NPLs; a higher pace of interest expands the NPLs and view of the development of credit, better credit culture and positive macroeconomics, and business conditions lead to lower NPLs (Garg, 2020). Bank size is estimated by taking the regular logarithm of all our resources.

Tier 1 Capital Ratio= Tier 1 Capital / Risk-Weighted Assets Relationship between Inflation Rate and Bank Performance (TQ Ratio)

The inflation rate is characterized by an overall upward trend in the cost of labor and products. Inflation rates shall be estimated in the purchaser's costs file to correspond with an annual rate change of expenditure by ordinary purchasers, who receive a basket of goods and products that can be fixed or adjusted at specified intervals. (Bolat & Isik, 2016)

Inflation rate= Consumer Price Index (Annual %)

Relationship between Unemployment Rate and Bank Performance (TQ Ratio)

Unemployment refers to the portion of the workforce that is without work yet accessible for and looking for a business. Various examinations have seen a two-way expansion in joblessness. To start with, at the customer level, expansion in the unemployment rate (UR) would diminish incomes. Second, at the peculiar level, an expansion in UR would prompt diminishing creation and use of products and administrations.



Accordingly, as the degree of joblessness increases, then the degree of defaulter additionally increases, and the other way around. (Chaibi, 2016)

Unemployment Rate= Total (%) of the Total Labor Force Relationship between Interest Rate and Bank Performance (TQ Ratio)

The interest rate is characterized as the loaning rate adapted to expansion as estimated by the Gross domestic product deflator, which observed that the loaning rate has a positive and huge effect on NPLs. (Waqas et al., 2019) Interest rates have emphatically corresponded with a recurrent part of past-due credit. The reality of such a solid relationship is seen and proposed speculation that an expansion in interest rate prompts an expansion in default risk. (Waqas et al., 2019)

Interest Rate= Real Interest Rate (%) Research Methodology

The methodology is the philosophical structure in which the investigation is carried out or the place where the investigation is based. (Mohanty et al., 2018) The Research methodology section of an exploration portrays research techniques, approaches, and plans exhaustively, featuring those utilized throughout the review, supporting my decision by depicting the benefits and disservices of each methodology and configuration considering their pragmatic materialness to our research. (Boru, 2018) The methodology of the research should fulfill the following criteria:

Firstly, the methodology should be the most appropriate to achieve the objectives of the research. Secondly, it should be made possible to replicate the methodology used in other research of the same nature.

Research Philosophy

Research philosophy is a conviction about how information about a phenomenon should be gathered, dissected, and utilized. The term epistemology (what is known to be valid) rather than hymn (what is accepted to be valid) includes the examination approach's different reasoning methods. The reason for science, then, at that point, is the most common way of changing things accepted into things known: data to episteme. Two significant exploration ways of thinking have been recognized in the Western custom of science, specifically positivist (once in a while called logical) and interpretivism. (Magout, 2020)

A selected paradigm delivers direction to a researcher in philosophical matters about the research and the tools, trances, contributors, and schemes that should be selected to carry out the research. (Denzin, 2001) Different research paradigms are "positivism (absolute reality perfectly apprehended postpositivism (objective reality imperfectly apprehended able reality), constructivism imagining (a single objective exempt reality, and critical theory (challenge status quays) (Guba EG & Lincoln YS, 1994)

This study followed a positivistic paradigm, as positivism focuses on the confirmation of existing theory in quantities mastery. It focuses on cause-effect associations of presuming that can be deliberated, recognized, and generalized. It follows both nomothetic and enc perspectives. Positivism serves as the primary foundation and anchor for quantitative research.

Research Design

This study tries to investigate and assess the impact of non-performing assets on the benefit of the chosen bank and gives ideas given the assessment. To achieve this objective, a descriptive and analytical research approach has been adopted. It attempts to portray and examine this large number of realities that have been gathered for the review. (Mohanty et al., 2018)

Source of Information: Data Collection

The approach for gathering quantitative data is employed. It is founded on secondary sources of information. The data are collected from the various websites and annual reports of Islamic banks of Pakistan.

Sampling Method

Pakistan consists of four full-fledged Islamic banks, and this research interprets and analyzes the performance of Islamic banks. Four Islamic banks were selected and enlisted in "The Pakistan Stock Exchange" over ten years (2012–2022). Panel data techniques were used, as there were four selected Islamic banks over ten consecutive years. These banks were selected on the following basis:

- 1. Banks of which unconsolidated financial statements are available.
- 2. Banks that are listed on the Pakistan Stock Exchange from 2012 to 2022.

Sample Size

S. NO	Banks Name
1	Bank Islamic limited
2	Dubai Islamic bank
3	Meezan Islamic bank
4	MCB Islamic bank

Econometric Model

The regression model used to examine the relationship between non-performing assets and bank performance is as follows:

TQit = β 0it + β 1 FTDRit + β 2 ROAit + β 3 SIZEit + β 4 INFit + β 5 UNEMPit + β 6 INTit + ϵ it Where:

- TQ = Tobin's Q ratio
- FTDR = Financing to deposit ratio
- ROA = Return on assets
- SIZE = Bank size (Logarithm of total assets)
- INF = Inflation rate
- UNEMP = Unemployment rate
- INT = Interest rate
- ε = Error term
- t = Time period
- i = Banks

The study used panel data. Therefore, a panel least square regression model could be used; a similar regression model was used by (Burro, 2016) and (Saeed et al., 2013).

Tools of Analysis

Descriptive statistics, the regression model, and the correlation matrix are employed to observe the relationship between FIDR, Bank size, ROA, inflation rate, unemployment rate, and interest rate in response to Tobin's Q ratio. (Murali et al., 2017) I used descriptive statistics, regression model, and correlation matrix in the study, "Determinants of non-performing assets and performance of Islamic banks in Pakistan." The results are generated by applying "E-Views" 10.

Table 1Variables of measurement

S. No	Variables	Measurement	Sources
1	Bank performance	Tobin Q ratio = market value of firm / total asset of the firm	(V. J. Khan et al., <u>2018</u>)
2	Financing to deposit ratio	Bank's total amount of loan/total amount of deposits	(Kartika et al., <u>2020</u>).
3	Bank size	Natural logarithm of total assets	(Senthil Arasu et al., <u>2019</u>).



S. No	Variables	Measurement	Sources
4	Return on assets ratio (ROA)	Net income / total assets	(Arsew et al., <u>2020</u>)
5	Inflation rate	Consumer price index (Annual %)	(Thakur, <u>2018</u>)
6	Unemployment rate	Unemployment, total (%) of the total labor force	(Agrawal & Goyal, <u>2021</u>)
7	Interest rate	Real interest rate (%)	(Duraisamy, <u>2016</u>)

Ethical Consideration

The annual reports of the chosen Islamic Banks of Pakistan are utilized in this study, which involved the examination of data that was legitimate and trustworthy. The data is neither inflated nor underestimated because of the reports that are taken by firms to audit financial statements. Values are not overstated, and the findings of other investigations are also covered. The writers are given complete ownership rights and full credit for their ideas and thoughts, and the results are provided without any predisposition. The data is examined statistically and honestly.

Findings and Discussions

This study has the purpose of examining the impact of NPL factors (independent variable) on the performance of Islamic banks in Pakistan (dependent variable). Six variables such as FTDR (Financing to deposit ratio), ROA (Return on assets), Size (Natural log of assets), Inflation rate, Unemployment rate and interest rate are used to assess the Non-performing loans, whereas banks' performance is measured by using ROA. Non-performing loans are the pressing problem confronted by the Islamic banking system in Pakistan. The banking sector plays a crucial role in every economy as it is regarded as "the veins of the body" in a country. Thereby, Islamic banks must focus on financing to deposit ratio, return on assets and inflation rate as the determinants of Non-performing loans.

Equating the findings with the research objectives entails significant results. This study aimed to examine the influence of FTDR, ROA, Size, Inflation rate, Unemployment rate and Interest rate on the performance of Islamic banks. Three out of six research objectives were achieved after analyzing that all the aforesaid independent variables significantly influenced the bank's performance.

Summary of Findings Table 2

Hypothesis	Description	Remarks		
H ₁	There is a significant relationship between the financing-to-deposit ratio and bank performance.			
H_2	There is a significant relationship between the return on asset ratio and bank performance.			
Нз	There is a significant relationship between bank size and bank performance.			
H ₄	There is a significant relationship between inflation rate and bank performance.	Accepted		
H ₅	There is a significant relationship between the unemployment rate and bank performance.			
H ₆	There is a significant relationship between interest rates and bank performance.	Rejected		

Study Implications

The results of this investigation have both theoretical as well as operational implications. The study looked at the relationship between financing to deposit ratio, return on assets, bank size, inflation rate, unemployment rate, interest rate and bank performance of four Islamic banks in Pakistan. The present research study has several meaningful concerns for both academics and practitioners.

Theoretical Implications

This study is an attempt to add value to the literature on the Islamic banking system after a thorough analysis of the relationships between financing to deposits ratio, return on assets, bank size, inflation rate, unemployment rate, interest rate and bank performance. Understanding NPAs is essential for borrowers, investors, and financial institutions to handle the difficulties caused by these assets and move towards a stronger and more robust banking system.

Practical Implications

The study has practical and managerial implications, as it will allow bank managers to easily understand the factors increasing the level of NPAs, which ultimately affect the bank's performance. NPAs reduce financial institutions' income because their main source of revenue is from interest payments made by borrowers. Through a loss of interest income and the need to write off the main loan amount, NPAs might destroy banks' profitability. Knowledge of the exact determinants of NPAs will enable the bank managers to establish a system and focus on its development accordingly.

Limitations of the Study

The information was gathered from the yearly reports of the Islamic banks. The study was limited to only one sector, the Islamic banking sector. Furthermore, due to the lack of time, the data were taken annually instead of monthly or quarterly. Amongst many other Islamic Banks in Pakistan, only four banks were selected and analyzed for the duration of 10 years due to the unavailability of data.

Future Directions

For the purpose of future research, the following three areas are suggested to be explored.

- The time span of the study can be enlarged to see its long-term influence by different variables.
- The impact of corporate governance in terms of NPAs factor should be examined.
- In order to contribute to the changing nature of NPAs, institutional factors also need to be taken into account.

Conclusion

The aforementioned findings now clearly replicate the findings of the literature because NPA factors, i.e., interest rate and inflation rate, have a significant inverse/negative relationship with the TQ ratio, which indicates that as the interest rate and inflation rate increases, the borrower's ability to repay the debt decreases. As a result of these findings, interest rates and inflation rates have a major impact on banks' performance. The ability of the borrower to repay the debts is significantly influenced by the high-interest rate and inflation rate, which the government is responsible for controlling. These factors may cause the NPA level to increase, which could trigger a financial crisis that would seriously hamper the performance of the Islamic banking system.

It is concluded that in order to keep the Levels of NPAs within control, the government and the State Bank of Pakistan have to play their roles. Higher NPAs result in lower bank profitability since they diminish interest income and induce capital attrition. To improve the performance of Islamic Banks, a strong role should be played in keeping the financing-to-deposit ratio on the rise. The return on assets ratio has a positive relation with the TQ ratio. The higher the level of ROA, the higher the level of bank performance. On the other hand, bank size needs to be maintained at a proper level and keep the Inflation rate and Unemployment rate low. In this way, sustainable performance can be attained by Pakistan's Islamic banking sector.

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