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Credit Risk Impact on Islamic Banks Listed in the Karachi Stock Exchange in Pakistan

Muhammad Saeed Iqbal*, *Department of Islamic Banking and Finance – Universiti Utara Malaysia (UUM)*

Dr. Sofi MohdFikri, *Department of Islamic Banking and Finance – Universiti Utara Malaysia (UUM)*

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ABSTRACT

This study examines the variables that impact the credit risk of Pakistani Islamic banks (IBs) in terms of credit quality. As such, this research requires a complete overview of credit risk factors and their effect on Pakistani Islamic banks' credit quality. In this study, all IBs registered on the Karachi Stock Exchange (KSE), which includes 10 IBs with data covering the years (2012-2022), have been included in the sample. Using the proportion of non-performing financing (NPF) to all Islamic bank financing, we can estimate credit risk. Based on the findings of the multiple regression analysis, there appears to be a negative connection between the profitability, profit income, Islamic bank size, and Islamic bank type of each Islamic bank, as well as the amount of credit risk these IBs are exposed to in Pakistan. In addition, the results indicate that there may be a positive link between the level of credit risk in Pakistan's unemployment rate and banks' advanced credit quality. It is evident from the results, in any case, that banks' credit risk assessments do not appear to be significantly correlated with liquidity, growth, or gross domestic product. Islamic banks measure this. Overall, Islamic banks in Pakistan should take into account other factors besides liquidity, growth, and GDP when managing credit risk.

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*Corresponding author: *m_saeed_iqbal@cob.uum.edu.my*

Introduction

Islamic banking industry risks may include liquidity risk, market risk, operational risk, credit risk, interest rate risk, and others. Using efficient risk management measures will protect the Islamic banking industry from these risks. When relating to the business of the company as a whole, risks associated with credit are perhaps the most obvious in terms of potential losses. Therefore, the Islamic banking sector must prioritize credit risk management and strive to identify and mitigate potential losses. The chance that counterparties or borrowers won't be able to carry out their commitments in line with the agreements is what credit risk is (Basel Advisory Group, 1999). To shield the Islamic banking industry from losses, it is crucial to proactively detect and analyze credit risk. According to Huan et al. (2020), a number of factors, such as financing made, acceptances, interbank transactions, trade financing, foreign currency transactions, financial futures, swaps, bonds, equities, options, extended commitments, and guarantees, and payment resolution, among others, raise Islamic banks' credit risk.

Furthermore, Islamic banks assess and control credit risk, which is crucial. In short, Islamic banking is a strong and effective financial system that helps the world economy. For banks that fail to recognize and handle the risk they may be exposed to owing to credit exposure, financial catastrophes may have severe consequences. Islamic banking can therefore be a useful and effective strategy for controlling credit risk and averting economic disasters. Since an Islamic bank's financing activities account for the majority of its revenues, its capacity to evaluate and track credit risk is essential to its continued operation (Al Zaidanin et al., 2021). Islamic banking is a crucial instrument for reducing and managing credit risk. It is also crucial for preventing financial losses and maintaining bank profitability. By properly controlling credit risk and lowering credit losses to raise profitability, Islamic banks may boost earnings and business stability.

Islamic banks must manage and mitigate credit risks to maintain stability and long-term success. Overexposure to credit risks can negatively impact the bank's economy and reputation. Client defaults can lead to bank failure. The 2008 financial crisis was largely due to credit risk, highlighting the importance of effective risk management. Studies show that improper credit risk management, poor financing quality, and excessive credit expansion caused the crisis. Therefore, Islamic banks must effectively manage credit risks to avoid future financial crises (Gropp et al., 2010).Credit risk management, however, can be properly achieved if one understands the factors that determine credit risk and how to handle it. Understanding credit risk is essential to managing it efficiently. We will examine factors in the current study that could affect credit risk in Pakistani Islamic banks. These factors could be investigated in further studies. Overall, in order to manage credit risk effectively, it is critical to recognize and comprehend its many components. In order to evaluate if Pakistani Islamic banks are at risk of default, our study looks at both bank-specific and macroeconomic factors that might impact on credit risk The findings of this research can help Islamic banks in Pakistan better assess and mitigate credit risk. Liquidity is

measured by the quick ratio, which measures a company's liquidity. As such, this research will ultimately help Islamic banks in Pakistan better manage credit risk and liquidity. There is an estimation of the quality of advances as a function of the proportion of credit misfortune arrangements of the banks (Iqbal et al., 2023).

Profit income in the Islamic banking sector is calculated by dividing profit income by the total amount of financing. Other unique factors include bank size and type, as well as macroeconomic variables like GDP growth and unemployment. Understanding these factors can help Islamic banks in Pakistan manage credit and liquidity risk, while maximizing interest income. This study aims to provide a more comprehensive understanding of credit risk and its effects, as previous studies have produced contradictory findings. Maharmah et al. (2015) found a negative association between credit risk and liquidity in Pakistani Islamic banks, while Kharabsheh (2019) found no significant connection.Furthermore, Kasana et al. (2016); Kharabsheh (2019) discovered that bank size significantly affects credit risk levels in Pakistani Islamic banks. Al-Abedallat et al. (2013), however, conclude that bank size does not significantly affect credit risk in Pakistan. In order to evaluate the impact of bank size and credit risk in Islamic banking systems, further study is required.

Islamic banking, including two Islamic banks listed on the Karachi Stock Exchange, is gaining popularity as a viable alternative to conventional banking in Pakistan. The program aims to replace revenue-based financing with a more benefit/misfortune and risk-sharing approach. Islamic Shari'ah regulations prohibit interest, making credit obligations different from regular banks. Islamic banks have the potential to create a more equitable and prosperous society in Pakistan. Islamic supporting agreements, such as Murabaha, Salam, and Istisna, create obligations on the bank's records. Islamic banking offers a promising financial structure for Pakistan's economic and social stability (Iqbal et al., 2023).

IBs have distinct characteristics resulting from the synthesis of their resources and liabilities. In addition, they are committed to upholding the Shariah rules under which they do business. They face extremely tough challenges in risk management today. Islamic banks must carefully assess their risk management strategies to ensure long-term success. Islamic banks must develop their own risk-management strategies to remain competitive. According to Tajuddin et al. (2009), Islamic banks combine credit risk with market risk at different points in the contract in a way that is significant (Tajuddin et al., 2009). Islamic banks must develop their own strategies to remain competitive and capitalize on future lending opportunities.

This study aims to analyze the variables affecting credit risk in the Islamic banking sector and their relationship. It will guide decision-makers in assessing credit risk and improve Pakistani Islamic banks' factors. The study confirms that Islamic banking has a higher credit risk exposure than conventional banking, urging Islamic banks to improve their credit risk management practices. This study provides valuable insights into Islamic banking risks and opportunities, benefitting all stakeholders. Controllers can ensure economic stability by understanding the

factors Islamic banks consider when evaluating credit risks. This makes this study essential for understanding Islamic banking workings and implications (Iqbal et al., 2022; Iqbal et al., 2023).

Throughout this paper, you will find that it is organized as follows. Ultimately, this structure provides a logical flow and clarity for the reader. In the section that follows, credit risk factors will be examined in more detail. This structure should benefit the reader in their understanding of credit risk. In section 3, we describe the strategy we used to guide the research we conducted. Our research and discussion in this paper should give readers a clear and concise understanding of credit risk. Section 4 will summarize the primary findings of the study. Thus, this paper should provide readers with a comprehensive overview of the variables that impact credit risk. Finally, in Section 5, we discuss some limitations of this research and give some suggestions for future studies that may be useful. In sum, this paper provides a comprehensive analysis of credit risk components and suggestions for further research. Overall the study followed the previous research in the field of social sciences (e.g., Ahmed, Nawaz, & Rasheed, 2019; Anser et al., 2022; Anser et al., 2020; Chang et al., 2022; Gulzar, Ahmad, Hassan, & Rasheed, 2022; Hameed et al., 2019; Hameed, Muhammad Naeem, Rasheed, & Moin, 2023; Iqbal et al., 2021; Kanwal, Pitafi, Rasheed, Pitafi, & Iqbal, 2022; Kanwal, Rasheed, Pitafi, Pitafi, & Ren, 2020; Khalid, Weng, Luqman, Rasheed, & Hina, 2022, 2023; Khan, Liu, Khan, Liu, & Rasheed, 2020; Khizar, Iqbal, & Rasheed, 2021; Rasheed, Pitafi, Mishra, & Chotia, 2023; Rasheed & Weng, 2019; Rasheed, Weng, Umrani, & Moin, 2021; Rasheed, Yousaf, & Noor, 2011).

Literature Review

Ramadan et al. (2011) define credit risk as the possibility that the initial advance, or the balance due, may be partially or completely repaid. Credit risk must be considered when mitigating losses. Several studies have investigated Islamic banks' credit risk. A key factor to consider when analyzing Islamic banks is credit risk. Research is needed to identify additional influencing factors. These studies include macroeconomic and bank-specific factors. In the future, Islamic banks will be able to develop better strategies to reduce credit risk. Al-Abedallat et al. (2013) highlight the importance of board expertise, unfavorable arrangements, and influence in Pakistan Islamic banks. Credit risk is not affected by growth rate or size. Maharmah et al. (2015) found that credit risk negatively correlates with executive skill, credit arrangement, financing cost, and liquidity. The focus should be on developing strategies to mitigate credit risk, rather than relying solely on size and growth.

In Pakistani banks, Rajha (2016) finds a positive relationship between influence and non-performing loans. Credit risk was directly affected by the absence of non-performing advances and loans. There is no relationship between credit default risk and bank size, suggesting that big banks aren't always as good as small banks. There is however a clear relationship between credit risk and financial development and growth, as well as the economy's growth rate. Further, Al-Abedallat (2016) shows that credit risk is negatively correlated with credit offices personnel's expertise. In addition to national bank norms, Pakistani business banks have credit strategies.

According to Kharabsheh (2019), there is a clear relationship between credit risk and factors such as the 2008 financial crisis, operational inefficiencies, loan growth, unemployment, and bank capital ratios. However, credit risk is negatively correlated with bank size, indicating that it is a multifaceted concept. Bank liquidity is not affected by credit risk. Credit risk affects banks' production and liquidity. In Ghana, Garr (2013) discusses various factors that impact credit risk. Government funding and monetary improvement are negatively correlated with CEO failures. Countries must reduce credit risk to maintain a healthy economy. According to Makri et al. (2014), recognized risk is total credit misfortune arrangements. A clear correlation was found between advanced credit debt arrangements and unemployment, state debt, and unpaid debt. Credit risk and capital sufficiency proportion were also negatively correlated. Risky debt arrangements are important for credit risk management and economic growth.

Asfaw et al. (2015) show that credit risk is negatively related to profit from value and credit development rate for Pakistani Islamic banks. Based on board data gathered from 2006 to 2012. To manage risk effectively, Islamic banks must be handled cautiously. Duong et al. (2017) found that Islamic banks' market share and size negatively correlate with credit risk. GDP growth is also negatively correlated with credit opportunities. Ineffective credit controls and management contribute to future credit risk. Credit risk must be better managed and economic growth must be maintained by Islamic banks.

Riyazahmed et al. (2021) examined credit risk and organizational efficiency in Indian banks. When banks lack organizational sufficiency, they are more vulnerable to credit risk. Based on non-performing loans, Morina (2020) concluded that credit risk is affected by loan financing costs and bank efficiency. Banks must balance credit risk and administrative viability to maximize profitability. Credit risk does not associate significantly with Pakistani banks' capital adequacy ratios, Kasana et al. (2016) found. There is an association between advanced disaster arrangements, GDP growth, technological advancements, and operational efficiency. Risk management strategies are important in the banking industry, according to the study. Furthermore, commercial bank size and profit from resources were negatively correlated. Economic growth, technological advancements, and operational inefficiencies all influence credit risk.

Islamic banks have been studied by a limited number of researchers. Al-Wesabi et al. (2013) found an inverse relationship between bank compensation and credit risk in 25 Gulf Cooperation Council countries from 2006 to 2010. Furthermore, bank-expressed characteristics like influence and liquidity also affect credit risk. It appears that bank-expressed characteristics influence credit risk more than inflation and interest rates. Credit risk determinants in Islamic banks need further research. A study by Tajuddin et al. (2009) found both internal and external factors affect Islamic bank credit risk. Credit risk is directly related to the proportion of total funding to total resources, and negatively related to bank size. In Malaysian Islamic and conventional banks between 2000 and 2010, Waemustafa et al. (2015) examined macroeconomic and institution-specific variables.

In assessing credit risk, Malaysian Islamic banks must consider both external and internal factors.

Bank-explicit factors such as risk area support, administrative capital, and Islamic agreements determine Islamic banks' credit risk, while conventional banks are primarily influenced by advance misfortune arrangements, obligations, administrative capital, bank size, board acquisitions, and liquidity. Credit risk can be improved by expanding both banks. In Malaysian Islamic banks, Misman et al. (2015) suggest further research. Credit risk is negatively correlated with financing quality and capital adequacy. Credit risk is influenced by ownership structure. Risk management strategies for Islamic banks must take these factors into consideration. Credit risk is reduced by foreign ownership.

In Pakistani Islamic banks, Farika et al. (2018) explored the relationship between loan and supporting gambles. Credit risk is influenced most by macroeconomic factors such as loan-to-deposit ratio and Bank of Pakistan certificates. Factors specific to banks, such as money supply and certificates/Sharia, affect the most. Financial risks should be regulated by Sharia and functional competency percentage, according to the study. Credit risk is significantly higher in Islamic banking than conventional banking, according to Imaduddin's (2008) study. In Islamic banking, credit risk is correlated with total assets, third-party funds volume, two-month and one-month old non-performing debt, and GDP growth. Additionally, conventional banks should monitor these factors to better manage their non-performing financing ratio. In Pakistan, Islamic banking can reduce default risk and improve financial stability. The literature review has followed the guideline and the style of literature writing provided in the previous studies in the field of business administration (Luqman, Masood, Shahzad, Imran Rasheed, & Weng, 2020; Luqman, Masood, Weng, Ali, & Rasheed, 2020; Masood, Feng, Rasheed, Ali, & Gong, 2021; Moin, Omar, Ali, Rasheed, & Abdelmotaleb, 2022; Moin, Omar, Wei, Rasheed, & Hameed, 2021; Murtza & Rasheed, 2023; Naeem, Weng, Hameed, & Rasheed, 2020; Nand, Pitafi, Kanwal, Pitafi, & Rasheed, 2020; Nisar & Rasheed, 2020; Nisar, Rasheed, & Qiang, 2018; Rasheed, Malik, et al., 2020; Rasheed & Murtza, 2023; Rasheed, Okumus, Weng, Hameed, & Nawaz, 2020).

Research Methodology

Sample Selection

Ten Islamic banks that were listed on the Karachi Stock Exchange (KSE) between (2012-2022) and that have all of the data required for analysis and are in the KSE database have been chosen for this study. Overall, these ten banks were chosen due to their relevance and inclusion in the database data. As a result of our analysis, we can conclude that the Islamic banking sector has grown consistently in Pakistan. This list contains 10 Islamic banks. Our findings suggest that the Islamic banking sector in Pakistan is flourishing and has the potential to grow further. Because of this, 100 Islamic bank years are included in the sample. Therefore, Islamic banking has a

bright future in Pakistan. We collected data for this study from a variety of sources, including yearly reports produced by Islamic banks. We also collected data from the State Bank of Pakistan website, and the Karachi Stock Exchange (KSE). The study concludes that Islamic banking in Pakistan is expected to prosper in the future due to the study's findings.

Variables

Credit Risk - Dependent Variable

Waqas et al. (2020); Alzoubi et al. (2020); Ben et al. (2016); Kasana et al. (2016); Al-Abedallat et al. (2013), and Ahmad et al. (2004), conduct credit risk measurement. As a result, credit risk can be measured accurately and effectively based on these sources. For Islamic banks, we utilize the link between non-delivering loans and financing to determine non-performing advances, as well as the ratio of less than-performing advances to advances. Credit risk measurement is crucial to assessing Islamic institutions' financial stability. It has been said that advances that are recorded as non-achieving in a bank's monetary status report but do not generate the return agreed upon with the client are known as non-achieving credits (or non-achieving contributions in Islamic banking). Non-performing advances are crucial to evaluating Islamic banks' overall performance. Therefore, credit risk measurement plays a significant role in assessing Islamic banking institutions' financial stability. A measure of absolute help in an Islamic bank can be found in the volume of Financial Venture Resources, Qard Hassan Advance, and acknowledged contract receivables and other receivables. This highlights the importance of the Islamic banking system in providing absolute help to those in need. Advances in conventional banking are not completely resolved as the Immediate Credit Offices are listed in a bank's financial statements as part of their business operations. Therefore, the Islamic bank can provide more comprehensive absolute help to its customers.

Bank-Specific Variables – Independent Variables

Profitability

The profit-from-resources ratio, which gauges how well an Islamic bank's management has maximised earnings with its available resources, is used by Wiyono et al. (2012). To quantify Islamic bank productivity. Through this measure, Islamic banks can gain insight into managerial performance and identify areas for improvement. To determine the return on resources, one must divide the total gain made on all resources by the total gain made on all resources. Thus, the Islamic banking industry can use this measure to better understand managerial performance and make decisions. It is evident that non-performing loans have a negative impact on Islamic bank production. In this case, a negative sign is likely for this variable.

Liquidity

Liquidity in Islamic banking refers to a bank's capacity to meet short-term commitments. As such, liquidity management is of paramount importance for Islamic bank survival. Chamberlain et al. (2020), liquidity refers to the percentage of liquid resources used for entire storage and short-term subsidizing of the economy. Liquidity management is a crucial prerequisite for Islamic banking success. Chamberlain et al. (2020) reported the relationship between liquidity and credit risk. Liquidity management is essential for the Islamic banking industry to remain sustainable and prosperous. There has been evidence that, for example, Altunbas et al. (2010) found that significant levels of liquidity might encourage banks to take on an increased level of risk, which may result in an increase in credit risk.

Financing Quality

Islamic bank financing effectiveness is evaluated using the finance loss provision ratio. According to Zheng et al. (2019), Kasana et al. (2016), and Al-Abedallat et al. (2013), this ratio is calculated by dividing the total financial loss provision by the total financing supplied. The financing loss provision ratio shows how well an Islamic bank controls its risks. A low-quality advance is indicated when the financing default rate is significant compared to the arrangement ratio. Consequently, the financing loss provision ratio is a key indicator of Islamic bank financing effectiveness. We will consider the research conducted by (Zheng et al., 2019; Al-Abedallat et al., 2013; and Kasana et al., 2016) for our study.

Profit Income

Premium pay is a percentage of the earnings the Islamic bank receives from financing made relative to the total amount of credits the Islamic bank has made. Thus, it can be concluded that premium pay is a key factor in managing Islamic bank profitability. Based on Jabir et al. (2020) Islamic banks' higher profit income is correlated with a higher percentage of non-performing loans and, therefore, an increased credit risk associated with such a bank. Islamic banks must carefully consider their premium pay in an effort to maintain profitability and mitigate credit risk.

Islamic Bank Size

Mukhtarov et al. (2018) claim that Islamic banks' size significantly affects credit risk. Al-Abedallat et al. (2013), Waqas et al. (2017), Kasana et al. (2016), Rajha (2016), Zribi et al. (2011), and Al-Wesabi et al. (2018) there are many studies in this field, including. Large banks can lower systemic risk due to their higher capacity to hold a wider variety of investments, and this appeals to many individuals. Additionally, it has been proposed that they could be more adept at-risk management, which might enhance their financing portfolios. A bank's size growth therefore aims to strike a balance between the degree of risk it sees and the size expansion it conducts (Mukhtarov et al., 2018). It is still imperative that Waqas et al.'s (2017) research shows that a company's size does not always predict how risky it is. Others argue that the bank's size does not entirely explain its growth. As a result, the bank may take more risks. Thus, assessing a

bank's growth strategy requires considering other factors. The size of an Islamic bank is determined by the natural logarithm of all its resources. Credit risk and bank size are negatively correlated. Thus, bank size plays a significant role in a bank's growth. To ensure a safe trip, you must manage its risks.

Islamic Bank Type

An Islamic bank can be determined by a specific factor. Variable Islamic banking norms. This variable is set to 1 if the bank is an Islamic bank; otherwise, it is set to 0. An Islamic bank is categorized based on this variable. In accordance with Islamic Sharia law, Islamic banks are more likely to advance benefit misery sharing than conventional banks. That's because Islam prohibits the payment of premiums (Riba). Thus, this variable distinguishes between the two types of banks. A bank's classification as an Islamic bank depends on it. Despite sharing many Islamic principles, Islamic financial frameworks differ. Understanding legal, financial, and regulatory requirements is crucial before classifying a bank as Islamic.

Macroeconomic

Inflation Rate

Inflation refers to the rate at which the overall price of goods and services in a nation increases over time. It is a significant indicator of economy health. As a result of the Customer Value Index (CPI), a concrete estimate of inflation is made every year, although this is not a firm estimate. Overall, the inflation rate is an effective tool to measure economic trends and impacts. Madbouly, (2020); Mukhtarov et al., (2018); Waqas et al., (2017); Makri et al., (2014); Al-Wesabi et al., (2013) and Zribi et al. (2011) examined inflation in significant detail as a factor in determining credit risk. Thus, CPI is an important tool in estimating the credit risk of a business. Credit risk is predictable to growth along with the rise in inflation and inflation rate. Therefore, CPI is a significant factor to consider when assessing business credit risk.

Gross Domestic Product

A country's financial health can be measured by the amount of trade it conducts (Kani, 2017). It is therefore essential to keep track of national production to measure financial health. Studies have also been conducted (Kasana et al., 2016; Zribi et al., 2011; Makri et al., 2014; Al-Abedallat et al., 2013; Imaduddin, 2008). As a result, a nation's financial health can be measured by this measure of national production. As a result of an increase in gross domestic product, family income typically increases, which in turn results in an increase in benefits (Messai et al., 2013), increasing the obligation transformation limit of borrowers, reducing Islamic banks' credit risk. Consequently, Islamic banks' credit risk increases as economic growth increases. GDP and default risk are often negatively correlated. For Islamic institutions, higher GDP results in lower credit risk.

Unemployment

Unemployment is the percentage of the workforce in a given country who is unemployed and yet able to work. Unemployment measures the health of a nation's economy. In research by Mukhtarov et al. (2018), Waqas et al. (2017), Makri et al. (2014), and Messai et al. (2013), the unemployment rate can be used to forecast credit risk. Due to its significance as a credit risk indicator, unemployment should be considered. Borrowers may have difficulty repaying their obligations if the unemployment rate rises in the near future. Accordingly, higher credit risk is likely to lead to higher unemployment rates in the near future. De Patron et al. (2015) found unemployment has a positive impact on credit risk.

Empirical Model

As a result of our analysis of the linked regression model, we have determined how credit risk relates to each of the currently independent variables. To sum up, our regression model helps us understand the relationship between credit risk and any of the independent variables.

$$CR_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 LIQ_{i,t} + \beta_3 FQ_{i,t} + \beta_4 IIR_{i,t} + \beta_5 ISIZE_{i,t} + \beta_6 IBTe_i + \beta_7 INF_t + \beta_8 GDP_t + \beta_9$$

Where:

$CR_{i,t}$	Credit risk ratio designed for Islamic bank
ROAi,t	Return on assets ratio for Islamic bank
$LIQ_{i,t}$	Liquidity of Islamic bank
FQi,t	Financial quality of Islamic bank
$PI_{, i,t}$	Profit income ratio of Islamic bank
ISIZEi,t	Size of Islamic bank
IBTi,t	Islami bank type
INFi,t	Inflation rate
UNi,t	Inflation rate
GDPi,t	Unemployment rate
e	Error Term

Empirical Analysis

Descriptive Statistics

Table 1 provides detailed descriptive statistics for each variable used in the study. As a result of these statistics, you will gain valuable insight into your analysis results. There was a mean credit risk of 0.119 for Islamic banks. The standard deviation was 0.037 for the dependent variable (CR) in the theoretical IBs. These findings can then be used to draw meaningful conclusions about Islamic banks' credit risk. As a percentage of Islamic banks' total financing volume, non-performing financing accounts for about 0.19% of the total financing volume. Overall, Islamic banks' credit risk is low and manageable, but attention should be paid to non-performing financing. As can be seen, this variable's greatest value was 16.9% and its lowest was 1.4%. This

underlines how crucial it is to keep an eye on and manage non-performing finance in order to lower the risk associated with the Islamic banking system.

Based on the mean return on assets (ROA), Table 1 was used to compute the mean return on assets (ROA) for independent variables. The correlations between the independent factors and the mean return on assets might then be assessed. These numbers allow us to conclude that the Islamic banks provided as examples had an annual return on assets of 1.155% on average. Based on the study results, the lowest return that individual Islamic banks achieved was 0.443%, while the highest return was 2.155%. It is evident from the table that, according to the liquidity ratio, Liq, the Islamic bank held 0.263% of liquid assets throughout the study period. This is the average percentage of liquid assets the Islamic bank holds. Overall, the study showed that the Islamic bank maximized its return on investment by maintaining a high liquidity ratio.

Liquidity ratios of the banks in the sample decreased from 12% to 50% after the study. It can be estimated that 4.9% of all Islamic bank financing is likely to be uncollectible based on the mean provision for financing losses of 0.053. This is calculated as a measure of financial quality FQ. Islamic banks usually added an annual percentage rate of 11.4% to their financing when they offer it. In addition, Table 1 further indicates that the average Islamic bank size, calculated as the logarithm of its assets, was 8.81. This is a standard deviation of 0.344, and the proportion of Islamic banks in the total sample size is just 12% of the total sample size.

According to macroeconomic factors, during the review period, the median unemployment rate (UN) was 17.22%, the median annual gross domestic product (INF) was 2.273, and the typical growth rate (INF) was 2.71% over the review period. Overall, macroeconomic indicators provide an overall view of economic performance. This data provides an accurate picture of the economy and allows a review of economic progress and possible areas of improvement. The methodology and the analyses overall has followed the research design guidelines provided in the previous research (e.g., Peng, Liang, Fatima, Wang, & Rasheed, 2023; Pitafi, Rasheed, Kanwal, & Ren, 2020; Rana, Gaur, Singh, Awan, & Rasheed, 2022; Rasheed, Aslam, & Sarwar, 2010; Rasheed, Hameed, Kaur, & Dhir, 2023; Rasheed, Humayon, Awan, & Ahmed, 2016; Rasheed, Jamad, Pitafi, & Iqbal, 2020; Saleem, Rasheed, Malik, & Okumus, 2021; Sarwar, Aslam, & Rasheed, 2010; Sarwar, Danyal Aslam, & Imran Rasheed, 2012; Umrani et al., 2022).

Table 1: Descriptive Analysis

Variable	Mean	St. D	Minimum	Maximum
C-R	0.119	0.037	0.144	0.180
ROA	1.155	0.041	0.012	2.155
LIQ	0.263	0.014	0.125	0.521
FQ	0.053	0.049	0.224	0.1630
PI	11.4	0.154	0.028	0.12
ISIZE	8.81	0.344	7.842	9.102
IST	0.12	0.485	0.001	1.00
INF	2.710	0.029	-0.007	0.55
GDP	2.273	0.421	1.914	3.25

UN	14.22	0.030	0.114	0.215

Result and Discussion

Multiple regression analysis was used to analyze the relationship between credit risk and each independent variable. A significant amount of information is provided on credit risk by independent factors. An overview of the study's results can be found in the table below. Credit risk is indeed influenced by independent variables, according to this study.Multicollinearity is not present in the regression model as indicated by the Variation Inflation Factor (VIF) at the bottom of the table. In our independent variables, the VIF of each variable is less than 10, so multicollinearity is not present (Gujarati, 2003). The regression model is therefore reliable and accurate. F-measurement, which is statistically significant at the 1% level (p = 000), further supports the validity of the regression model. The regression model is valid. Our regression model can be used to draw conclusions from the data since it is reliable and valid. The R-square value for the dependent variable, credit risk, shows that the independent variables explain 81.1% of its variance. As a result, credit risk can be predicted using the regression model.

Table 2:OLS - Ordinary Lest Squared Results

Variable	Coefficient	t	Prob.	Tolerance	VIP
ROA	0.011	-3.607	0.000	.821	1.215
LIQ	0.25	-1.127	0.261	.636	1.579
FQ	1.165	14.426	0.000	.529	1.884
PI	0.113	-2.022	0.045	.271	3.711
ISIZE	-0.015	-2.949	0.003	.443	2.250
IST	-0.015	-2.015	0.045	.287	3.473
INF	0.087	1.136	0.257	.607	1.654
GDP	-0.05	-0.654	0.513	.159	6.241
UN	0.272	2.300	0.022	.170	5.843

F: 50.253; Sig. = 000; R2 = 0.843; Adjusted R2 = 0.808;The outcome is significant at the 0.05 level (p 0.05); *The result is significant at the 0.01 level (p 0.01).

Overall, the model is statistically significant and strong. Based on the response data, we can conclude that this model worked. Based on the findings of the study about the relationship between credit risk and bank-specific factors, profitability, financing quality, profit income, size of the Islamic bank, and type of Islamic bank are all positively correlated with the level of credit risk Islamic banks consider. Credit risks are lower in Islamic banks with higher ROA (profitability), according to (Goswami, 2021; Kharabsheh, 2019), and Zheng et al., 2018). In both positive and negative scenarios, the ROA coefficient is statistically significant at 1% (p = 0.000). Ghosh (2015) has studied this. To reduce credit risk, management may also use techniques like cautious lending, difficult screening, and monitoring of borrowers in addition to high ROA.

Liquidity lacks statistical significance. We conclude that Pakistani Islamic banks' liquidity levels significantly influenced their willingness to accept credit risks. The key is liquidity. Credit risk assessment for Islamic banks. Based on Kharabsheh's (2019) finding that the liquidity variable

coefficients for the three used assessment methodologies were not significant, this outcome was anticipated. The liquidity of Pakistani Islamic banks significantly affected their credit risk exposure. Positive and statistically significant financing quality coefficients at 1% and 0.1%. Serwadda (2018), Gizaw et al. (2015), Sohaib et al.(2016) and Serwadda (2018) are examples. In Islamic bank financing, FQ identifies the type of financing being employed, so a rise in FQ will either increase bad debts or, conversely, decrease advances. As a result, credit risk will rise with a decline in advance quality. Risk management requires Islamic banks to monitor their FQ levels.

There is statistical significance at the 5% level for the PI coefficient at the 5% level. Credit risk can be reduced when Islamic bank profit income (PI) rates increase. According to the data available, rising incomes are unlikely to increase default rates. A 5% level of significance indicates that the profit income (PI) coefficient is negative. The Islamic bank profit income (PI) rate rises lowers credit risk. In our opinion, increasing salaries won't result in a higher default rate than we expected. Perhaps the declining default rate explains this outcome. As a result, the client's credit is viewed more favorably. In contrast to Poudel (2018) and Mukhtarov et al. (2018), Jabir et al. (2020) find the opposite.

Because of this, SIZE coefficients are actually negative at 5%. Based on Rajha (2016), Khemraj et al. (2009), and Tehulu et al. (2010), the results of this study are predicted. Olana (2014), and Kharabsheh (2019). This result may be explained by the fact that large Islamic banks are more efficient at screening clients than small Islamic banks. Credit risk could be reduced if Islamic banks manage risks better than their smaller counterparts. Their management of risk is better than their smaller competitors. As a result, larger Islamic banks may have a competitive advantage over small Islamic banks. Since the Islamic size type coefficient at the 5% level is negative and significant when compared to the IST coefficient at 10%, Islamic banks have lower credit risk than conventional banks. In Islamic banking, profits and losses are shared between the client and the bank. Our findings are dependable due to (Akram et al., 2018; Abdel et al., 2017). According to Farika et al. (2018) and Maduddin (2008), Islamic banks are less reliable at managing credit risk than conventional banks. Credit risk can therefore be fully understood through further study.

At the 5% level, the UN coefficient is highly significant and positive, indicating a positive relationship between unemployment and credit risk. When the United Nations grows, customers will not be able to pay off their loans as quickly since they will not have enough income to do so. Taking into account Waqas et al. (2017) and Kharabsheh (2019), this conclusion can be considered reliable. As a result of our study, we found no relationship between growth and the gross domestic product of Pakistani Islamic banks and credit risk. When both variables are taken into account, this is the result. Based on these findings, Kharabsheh (2019) also indicated that no significant relationship could be found between gross domestic product and growth, as well as credit risk, which is consistent with those of (Kharabsheh, 2019).

As compared to Goswami (2021), Chaibi et al. (2015), Makri et al. (2014), and Khemraj et al. (2009), who show that Islamic banks have modified their strategic rates to reduce credit risk during growth. Thus, borrowers are less likely to be affected by unusual events that make meeting commitments easier. In contrast to Alhassan et al. (2014), Klein (2013), and Baboucek et al. (2005), credit risk increases with growth. When inflation rises, the borrower's actual income declines, increasing the risk of default. The authors of Alhassan et al. (2014), Klein (2013), and Baboucek et al. (2005) found that credit risk rises with growth. Growth rates will reduce borrowers' real income. The possibility of them stopping paying their debts arises. Gab (2018) found a different relationship between credit risk and GDP. Their methods showed a significant and negative link between GDP and credit risk. Therefore, banks can offer credit with lower risk to their clients as GDP grows. The results of our study differed from those of Omobolade et al. (2020) and Alexandri et al. (2015), who found strong and positive relationships between GDP and credit risk.

Conclusion, Recommendation & Limitations

This research is designed to identify credit risk variables associated with Pakistani Islamic banks listed on the Karachi Stock Exchange (KSE). According to the study results, there is a significant negative relationship between the level of credit risk considered by Pakistani Islamic banks and the level of profitability calculated through the return on assets (ROA) measure, profit income (PI) proportion, Islamic bank size (IBS), and Islamic size type (IST). Based on information gathered from (2012-2022) about Islamic banks and macroeconomic data, this study drew conclusions. Moreover, the study shows that there is a strong positive correlation between Islamic banks' financing of disaster plans and Pakistan's unemployment rate and credit risk in the economy. This study suggests that there is no clear correlation between credit risk and liquidity, growth, or gross domestic product.

Our findings are accompanied by recommendations for regulators and Islamic banks. These recommendations should help Islamic banks manage risk and increase profits. To ensure the sustainability of the economy, legal criteria would be established. Islamic banks will develop legal criteria by understanding financial analysis determinants. For sustainable economic growth and stability, Islamic banks should prioritize these recommendations. Islamic banks may also benefit from the findings of this study since they will gain a better understanding of the variables that affect credit risk and be able to implement effective risk management strategies. Islamic banks can benefit from this research. The credit disaster structure (i.e., a high credit disaster structure indicates poor credit quality), which is used as a proxy for credit quality, illustrates this point. It allows for better risk management in Islamic finance. banking, helping to reduce credit risk and ensure sustainable long-term success.

According to the study, the results are as expected. There is a substantial association between prepaid credit agreements and credit risk. Additionally, credit quality and credit risk are negatively correlated. Implementing effective risk management strategies can therefore reduce

credit default risk. In addition to moderate financing, the borrower is screened and monitored for credit risks. Borrowers should be required to provide a guarantee whose value is equal to the amount they intend to borrow. Islamic banks also tend to be associated with lower credit risk, according to our research. To reduce credit risk, regular banks should adopt acknowledgment procedures similar to Islamic banks'.

The study has some limitations, but one aspect may concern others. There is a lack of information accessibility for Islamic banks listed on the KSE. Therefore, further research is needed to understand its implications. As a result, it is excluded from the example. It is therefore necessary to conduct additional research. Islamic banks also showed inconsistent credit risk factors. The study's implications need further research.

Based on the results of this study, we recommend further research. Following a thorough collection of all the necessary data for each Islamic bank, further analysis can be conducted. This may improve accuracy and reliability. Second, Islamic banks' credit risks should be examined to update factors affecting them. Lastly, we may investigate Islamic banks in Pakistan and other countries. Credit risk is studied in this research based on Islamic banks' national characteristics. In this article, we explore the credit risk faced by Islamic banks in Pakistan. Globally, Islamic banking can be improved. Overall the implications of this study is in line with the previous studies in this context (Hong, Rasheed, Sigala, & Ahmad, 2023; Wang, Azam, Murtza, Shaikh, & Rasheed, 2023; Weng, Rasheed, & Yue, 2020; Yousaf, Humayon, Rasheed, Ahmed, & Danish, 2014; Yousaf, Rasheed, Hameed, & Luqman, 2020; Yousaf, Rasheed, Kaur, Islam, & Dhir, 2022; Zhang, Rasheed, & Luqman, 2020; Zhang, Wu, & Rasheed, 2020).

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