



Credit Risk and Financial Performance: Evidence from Licensed Commercial Banks in Sri Lanka

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Abstract

Banks play a critical role in ensuring the efficient functioning and stability of financial systems of economies. They serve as financial intermediaries by transferring funds from savers to borrowers, thereby enabling economic growth and development. Credit risk is the major challenge faced by banks and it arises when a borrower fails to meet his financial contractual obligations of the loan contract. In the Sri Lankan context recent macroeconomic instability, debt crises, currency depreciation, changes in interest and inflation rates, COVID-19 pandemic and economic shocks highly influence the loan repayment ability of the borrowers. Therefore, this study aims on investigating the impact of credit risk on the financial performance of licensed commercial banks in Sri Lanka. In this study the proxies of credit risk are Non-Performing Loans Ratio (NPLR) and Provision for Loan Loss (LLP) whereas, Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) are proxies of financial performance of banks. The study includes the control variables of firm size. Under the purposive sampling method, ten the commercial banks were selected and the data covers a period of ten years from 2015 to 2024. Evidence consistently reveals that as the proportion of non-performing loans increases, returns on assets, returns on equity and net interest margins inevitably decline. These findings underscore that maintaining higher level of loan quality is a precondition for financial performance. The results also show that loan loss provisions do not significantly influence on return on assets or return on equity, while it exhibits a positive impact on net interest margin. These findings advocate that effective credit risk management and operational efficiency are important factors in sustaining profitability and financial stability of banks. Based on the findings it is recommended to banks to adapt strong credit assessment frameworks, credit monitoring systems and early-warning systems to identify potential defaults.

Keywords: Credit Risk, Financial Performance, Non-performing Loan, Provision for Loan loss, Net Interest Margin

Background of the Study

The banking sector is an important element in financial systems of entire economies by serving as an intermediary between savers and borrowers. They transfer funds from individuals and institutions with excess fund to those who need fund for financing consumption and investment. This process leads to formation of capital and efficient allocation and utilization of financial resources which is a vital prerequisite for economic development (Mishkin, 2007). This intermediary process mainly involves with accepting deposits from savers and granting loans to parties who need fund. In the case of commercial banks, deposits are considered as major liabilities and loans granted to customers are treated as major assets of them (Rose & Hudgins, 2013). In this background commercial banks play a significant role in the creation of credit which generates additional purchasing power in an economy. Through this creation of credit function banks contribute to industrial development and economic advancement (Matthews, Thompson & Zhang, 2023).

However, since loans granted by the banks are major assets and main source income of them; the efficient and sustainable operations of the commercial banks highly depend on the quality of the loan portfolio held by banks. The quality of the loan portfolio indicates the level of credit risk in a bank and is frequently measured using indicators such as the non-performing loan (NPL) ratio, loan loss provisions, and asset quality ratios. Credit risk is one of the most important risks faced by banks, which arises when a borrower fails to meet his financial contractual obligations of the loan contract. In the process of financial intermediation, lending and credit transactions are central to the operations of banks whereas, they frequently face uncertainty regarding whether borrowers will repay their loans.

The Basel Committee on Banking Supervision, provides more emphasis for credit risk and defines it as the potential that a bank borrower will fail to satisfy his commitments in line with agreed terms (BCBS, 2000). According to Mishkin (2007) credit risk arises in a situation where, borrowers will not pay interest or repay principal as assured. A loan is considered as a non-performing loan (NPL) when the borrower fails to meet the requirements of the scheduled payments of principal or interest for a prescribed period. In banking industry, a loan is commonly considered as non-performing when the payments are overdue for 90 days or more. At present, non-performing loans are the major challenge for the banking industry which cause the negative consequences such as loss of capital and profitability, liquidity issues, increased credit and reputational risks, reduced relending capacity and higher level of operational burden. These challenges may negatively affect the financial stability and survival of the banks (Pasila, 2019). Due to reduction in interest income and increased

provisions for loan losses non-performing loans negatively affect the profitability of banks and the financial system stability. Particularly, non-performing loans have adverse impact on the entire categories of measures of bank performance and poor credit appraisal, lending and recovery mechanisms adopted by banks, higher interest rates, economic downturn, poor repayment capacity of borrowers and concentration risk may cause the issue of non-performing loan (Gunarathne and Buddhika, 2024). Recently, due to its adverse impact on financial stability, the topics of credit risk and non-performing loans have attained significant attention and empirical studies reveal the role of non-performing loans in diminishing the profitability of banks measured in terms of return on assets (ROA), return on equity (ROE) and Net interest margin (NIM); and in increasing the risk exposure of banks.

In Sri Lanka, licensed commercial banks are major players in the financial system of the country. In the last two decades Sri Lanka has been experiencing political instabilities, macroeconomic instability, debt crises, currency depreciation, changes in interest and inflation rates, COVID-19 pandemic and economic shocks. These adverse economic conditions negatively affect the repayment ability of borrowers and contribute to higher level of non-performing loans in banking industry (Rathnayake & Dissanayake, 2022). Particularly construction, manufacturing, and tourism sectors of Sri Lanka were highly affected and resulted in the concentrated credit risk in banks (Silva et al., 2024)

Given the important role of commercial banks in the financial system, instable economic conditions and the risk associated with non-performing loans, it is important to analyze the impact of non-performing loans on financial performance of the Sri Lankan banks. Exploring this relationship can provide valuable insights to regulatory authorities, policymakers and banks for designing active credit risk management strategies and ensuring financial stability. Therefore, this study focuses on investigating the impact of credit risk on the financial performance of licensed commercial banks in Sri Lanka.

Research Problem

Financial intermediation function offered by the banking industry is considered as a backbone of economic development of countries. Therefore, financial systems should maintain a stable banking sector in order to ensure the achievement of economic development goals whereas, sustainability and stability of the banks highly depend on their profitability. The loan quality of banks plays a significant role in determining the profitability and survival of banks. However, the issue of non-performing

loans is a major contemporary challenge faced by banking industry worldwide, particularly in developing economies.

Whereas credit risk plays a significant role in profitability and stability of banks, there is still limited empirical evidence on role of diverse indicators of credit risk in the financial performance of licensed commercial banks in Sri Lanka. Moreover, differences in risk management mechanisms among banks may result in different financial results, making it vital to study this association in the Sri Lankan banking context. In addition, recent adverse economic conditions of Sri Lanka adversely affected the loan quality of banks by diminishing the loan repayment capacity of borrowers and resulted in higher level of credit risk in several commercial banks. On the other hand, higher level of credit risk leads to poor financial performance and profitability of banks directly by reducing interest income and indirectly through loss of capital, liquidity issues and higher operational costs and provisions for potential losses. These conditions have heightened concerns about the rising credit risks and their possible impacts on the financial performance of commercial banks.

Therefore, the core research problem of this study is to determine the role of credit risk in the financial performance of licensed commercial banks in Sri Lanka. Specifically, the study aims to examine whether indicators of credit risk, such as non-performing loans and loan loss provisions, significantly affect measures of financial performance such as return on assets, return on equity and net interest margin. Understanding this association will support bank managers, policymakers and regulators to improve credit risk management policies and mechanisms and ensure the financial performance and stability of the banking industry.

Review of Literature

The influence of credit risk on the financial performance of banks can be explained based on numerous theoretical perspectives. The credit risk theory is the important framework developed by Robert C. Merton (1974); which indicates that lending activities of bank carry the risk of borrower default. According to the credit risk framework, when the value of the borrower's assets becomes lower than the value of its debt obligations, the borrower is likely to default and it indicates that credit risk highly depends on market conditions and financial well-being of borrowers (Bodie, 2020).

Furthermore, the information asymmetry theory states that lenders and borrowers have different level of information on the borrower's ability and willingness to repay a loan and it leads to adverse selection and moral hazard problems. Adverse selection indicates a condition where banks

unintentionally decided to lend loans to high-risk borrowers due to insufficient information, whereas moral hazard condition arises when borrowers take extreme risks after receiving loans from banks. These conditions result in loan default and subsequently lead to higher levels of non-performing loans (Liao, Chen & Lu, 2009). In addition, the risk-return trade-off theory states that generally banks increase their lending activities without following proper risk assessment so as to maximise their returns. However, it may lead to higher level of credit risk and lower profitability.

Moreover, the bank efficiency theory views the occurrence of non-performing loans as a result of poor management practices and ineffective monitoring systems adopted by banks. Particularly, inefficient banks may fail to evaluate borrowers' creditworthiness properly or monitor loan repayments efficiently, leading to a higher loan default (Berger & Humphrey, 1997).

In the journey of validating these frameworks and models, several empirical studies have been conducted both globally and within Sri Lanka which investigated the relationships between credit risk and return on assets (ROA), return on equity (ROE) and net interest margin (NIM).

Impact of Credit Risk on Return on Assets (ROA)

The following studies have identified negative relationships between credit risk and bank profitability, predominantly in terms of return on assets (ROA); which were conducted across various countries such as India (Agarwal et al., 2021; Chaudhary and Kumar, 2023), Bangladesh (Karim et al., 2022), China (Isanzu, 2017), Indonesia (Nugraha et al., 2021; Tangngisalu et al., 2020), Nigeria (Gabriel et al., 2019) and Australia (Gooley et al., 2025).

Moreover, the empirical studies conducted in the Sri Lankan context also confirmed the negative association between non-performing loans and return on assets (ROA). Bara et al. (2021) investigated 13 Sri Lankan commercial banks and found that non-performing loans negatively affect ROA. The studies conducted by Weerasinghe & Perera (2013), Ariyadasa et al. (2017) and Silva et al. (2024) also confirmed it.

However, Louzis, Vouldis, and Metaxas (2012), Klein (2013), Abid, Ouertani, and Zouari-Ghorbel (2014), Kolapo, Ayeni, and Oke (2012), Saba, Kouser, and Azeem (2012) have identified a positive impact of non-performing loans (NPLs) on return on assets of banks, implying that due to increased lending rates and risk-based pricing; higher credit risk may lead to higher profitability. This perspective could be explained based on the risk–return trade-off theory also.

Impact of Credit Risk on Return on Equity (ROE)

Empirical evidence from researches conducted in numerous countries indicates a negative association between credit risk and return on equity (ROE); Kenya (Gatimu, Muturi & Oluoch, 2018), Pakistan (Shahid et al., 2019; Ahmed et al., 2021), India (Kaur et al., 2023; Chaudhary and Kumar, 2023), Australia (Gooley et al., 2025), Saudi Arabia (Alshebmi et al., 2020) Bangladesh (Zabin, Hossain & Sultana, 2024) and United States of America (Skorburg and Shenai, 2021). However, Samuel (2015) and Abiola & Olausi (2014) found a positive association between non-performing loans and return on assets of banks.

Furthermore, Jathurika (2019), Anuradha (2024), Mithila & Kengatharan (2024), Kalinga (2023), Ariyadasa et al. (2017) and Silva et al. (2024) also found the negative impact of non-performing loans (NPLs) on return on equity (ROE) in the Sri Lankan Banking industry.

Impact of Credit Risk on Net Interest Margin (NIM)

Nguyen (2025), Akter & Roy (2017), Tan (2016) and Kansoy (2025) have documented a negative association between credit risk and net interest margin in the context of Vietnam, Bangladesh, China and Turkey banks respectively. These foreign evidences are supported by the studies conducted by Ariyadasa et al. (2017), Kalinga (2023), Silva et al. (2024) and Jayasena, Samaranayake & Weerasinghe (2023) in the Sri Lankan context.

Even though several studies have investigated the association between credit risk and profitability of banks, numerous gaps remain in the present literature, mainly in the Sri Lankan context. The main focus of the previous studies was on either the determinants of credit risk or their overall impact on profitability of banks. Moreover, numerous previous studies were based on relatively short time periods and small sample size; often focusing on a single performance measure such as return on assets or return on equity. Consequently, there is limited empirical evidence that broadly assess the influence of credit risk on multiple dimensions of financial performance of banks in the Sri Lankan banking sector over an extended and more recent period, mainly incorporating the effects of the COVID-19 pandemic and recent financial instability. Therefore, a significant research gap remains in offering updated empirical evidence on the association between credit risk and the financial performance of licensed commercial banks in Sri Lanka based on more updated data and a comprehensive set of performance indicators and this study aims to fill this gap.

Based on the empirical evidences regarding the credit risk and financial performance, the following hypotheses are formulated.

H₁: There is a significant impact of non-performing loans (NPL) on Return on Assets (ROA) of licensed commercial banks in Sri Lanka

H₂: There is a significant impact of non-performing loans (NPL) on Return on Equity (ROE) of licensed commercial banks in Sri Lanka

H₃: There is a significant impact of non-performing loans (NPL) on Net Interest Margin (NIM) of licensed commercial banks in Sri Lanka

H₄: There is a significant impact of loan loss provision (LLP) on Return on Assets (ROA) of licensed commercial banks in Sri Lanka

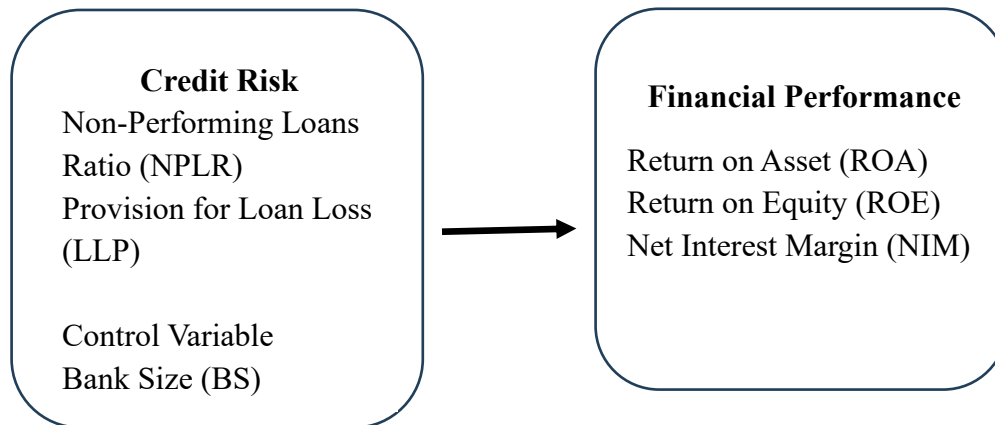
H₅: There is a significant impact of loan loss provision (LLP) on Return on Equity (ROE) of licensed commercial banks in Sri Lanka

H₆: There is a significant impact of loan loss provision (LLP) on Net Interest Margin (NIM) of licensed commercial banks in Sri Lanka

Conceptual Framework and Operationalization

Figure 1 shows the conceptual frame work of the study. Credit risk encompasses Non-Performing Loans Ratio (NPLR) and Provision for Loan Loss (LLP) whereas, Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) are proxies of financial performance of banks. The study includes the control variables of firm size.

Figure 1: Conceptual Framework



Source: Developed by the author

Table 01 shows the operationalization of variables of the study.

Table 01: Operationalization Table

Concept	Variable	Indicator	Measurement
Credit Risk	Non Performing Loan Ratio	Loans overdue for 90+ days or classified as impaired.	NPL Ratio = $\frac{\text{NPLs}}{\text{Total Gross Loans}}$ (Kapilarathne, 2023)
	Provision for Loan Losses	Reserves set aside to cover potential losses defaulted loans.	LLP Ratio = $\frac{\text{Provisions}}{\text{Gross Loans}}$ (Fernando, 2015)
Financial Performance	Return on Assets (ROA)	Indicator of profitability relative to total assets.	ROA = $\frac{\text{Net Profit}}{\text{Total Assets}}$ (Karadayi, 2023)
	Return on Equity (ROE)	Profitability measure relative to shareholder equity.	ROE = $\frac{\text{Net Profit}}{\text{Shareholder Equity}}$ (Pennacchi & Santos, 2021)
	Net Interest Margin (NIM)	A measure of a bank's net interest income generation relative to its interest-earning assets.	$\frac{\text{Interest income} - \text{Interest expense}}{\text{Average Earning Assets}}$ (Chaudron, 2020)
Control Variable	Bank Size	Scale of the bank's operations	Log of Total Assets (Damayanthi, 2023)

Source: Developed by the author

Research Methodology

The research approach adopted in this study is quantitative research methodology, which is considered the most appropriate to investigate the relationship between credit risk and the financial performance of the licensed commercial banks in Sri Lanka. Since the study is based on the secondary data in the

form of annual reports of licensed commercial banks, quantitative paradigm may support in objective measurement, rigorous statistical testing, and subtle interrelationship analysis.

This study employs the secondary data collection; mainly based on audited financial information that has been compiled in annual reports of licensed commercial banks, listed in the Colombo Stock Exchange (CSE) in Sri Lanka. The data covers a period of 10 years from 2015 to 2024, and therefore, allows conducting a longitudinal investigation of the trends in non-performing loans (NPLs), loan loss provisions (LLP), and financial metrics like Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM).

The population of the study includes all the twenty-four licensed commercial banks which are licensed and regulated by the central bank of Sri Lanka (CBSL, 2024). Purposive sampling was used to select ten commercial banks whose annual data was available from 2015 to 2024 the selected sample banks include; Commercial Bank PLC, Hatton National Bank PLC, Sampath Bank PLC, Nations Trust Bank PLC, Seylan Bank PLC, DFCC Bank PLC, NDB Bank, Pan Asia Banking Corporation PLC, Union Bank of Colombo PLC and Amana Bank PLC.

Results and Interpretation

Descriptive Statistics of Variables

Table 02: Descriptive Statistics

	ROE	ROA	NIM	NPLR	LLP	BS
Mean	0.1069	0.0102	0.0431	0.0731	0.0594	5.6173
Std. Dev.	0.0534	0.0047	0.0117	0.0335	0.0389	0.4305
Maximum	0.2150	0.0303	0.0915	0.1664	0.1718	6.4456
Minimum	0.0070	0.0007	0.0232	0.0030	0.0045	4.6789
Skewness	-0.0587	0.8220	1.4270	0.3007	1.2700	-0.1380
Kurtosis	2.0107	5.3393	5.9761	2.9258	4.1140	2.1314

Source: E-Views Output

According to table 02, the mean value of ROE reveals that sample banks generate an average 10.69% return on shareholders' equity with the standard deviation of 0.0534. The minimum (0.0070) and maximum (0.2150) values suggest that ROE ranges from 0.7% to 21.5% during the study period. The ROA registered an average of 0.0102 with the standard deviation of 0.0047, implying that the sample banks earn about 1.02% return on the total assets, indicating moderate level of efficiency in the utilization of asset in generating income. ROA ranges from 0.0007 to 0.0303, indicating that some sample banks achieved very low profitability whereas others earned higher returns. The NIM recorded the average value of 0.0431, indicating that on average, sample banks earned 4.31% of net interest income to their interest-bearing assets and the standard deviation of 0.0117 indicates a moderate degree of variation in the net interest margins of the banks. The average value of NPLR is 0.0731 with the standard deviation of 0.0335, representing that on average 7.31% of total loans are non-performing among the sampled banks and NPLR varies from 0.0030 to 0.1664, exhibiting significant differences in asset quality among sample banks. The mean value of LLP ratio implying that sample banks maintain an average loan loss provision of 5.94%. and the standard deviation of 0.0389 implies considerable disparity in loan loss provision policies of the sample banks. The minimum (0.0045) and maximum (0.1718) values also indicate a diverse range of provisioning levels.

Correlation Analysis

Table 03: Correlation Matrix of Credit Risk and Financial Performance

	ROE	ROA	NIM	NPLR	LLP	BS
ROE	1.000000 ----- 100					
ROA	0.838034 0.0000 100	1.000000 ----- 100				
NIM	0.283199	0.334985	1.000000			

	0.0043	0.0007	-----			
	100	100	100			
NPLR	0.002489	-0.133803	0.065763	1.000000		
	0.9804	0.1844	0.5156	-----		
	100	100	100	100		
LLP	-0.157284	-0.135058	0.116148	0.440313	1.000000	
	0.1181	0.1803	0.2498	0.0000	-----	
	100	100	100	100	100	
BS	0.428888	0.452088	0.190983	0.283955	0.365681	1.000000
	0.0000	0.0000	0.0570	0.0042	0.0002	-----
	100	100	100	100	100	100

Source: E-Views Output

In the table 03, Nonperforming Loan Ratio ($r=0.0025$, $p=0.980 >0.05$) and Loan Loss Provision ($r=-0.1573$, $p=0.118 >0.05$) have insignificant positive and negative relationships with ROE respectively. However, Bank Size ($r= 0.4289$, $p<0.01$) has a statistically significant positive relationship with ROE at 0.01 significant level. Furthermore, Nonperforming Loan Ratio ($r=-0.1338$, $p=0.1844 >0.05$) and Loan Loss Provision ($r=-0.1351$, $p=0.180 >0.05$) have insignificant negative association with ROA. But Bank Size ($r= 0.4520$, $p<0.01$) has a statistically significant positive relationship with ROA. In the case of NIM, Nonperforming Loan Ratio ($r=0.0658$, $p=0.516 >0.05$), Loan Loss Provision ($r=-0.1161$, $p=0.250 >0.05$) and Bank Size ($r=0.1910$, $p=0.057 >0.05$) have insignificant positive relationship with NIM.

Multicollinearity Analysis of the Variables

The multicollinearity analysis was conducted to determine whether strong associations exist among the independent variables included in the regression model and the output is presented in Table 04.

Table 04: VIF Scores

Variable	VIF
NPLR	1.2679
LLP	1.3456
BS	1.1799

Source: E-Views Output

The VIF values related to NPLR, LLP and BS are below the criteria level, signifying no series multicollinearity concerns in the regression model.

Panel Regression Analysis

Panel regression analysis is conducted in order to examine the impact of credit risk on financial performance measured by ROA, ROE and NIM.

Table 05: Initial Model Results: Fixed, Random and Pooled OLS

Dependent Variable	Model	R ²	F stat Prob.	Significant Variable	Coefficient	p-value
ROA	Fixed Effects	0.6812	<0.0001	NPLR	-0.0606	0.0000
	Random Effects	0.2903	<0.0001	NPLR	-0.0548	0.0000
				BS	0.0005	0.0020
	Pooled OLS	0.3354	<0.0001	LLP	-0.0329	0.0054
				BS	0.0066	0.0000
ROE	Fixed Effects	0.7308	<0.0001	NPLR	-0.4541	0.0005
	Random Effects	0.1882	0.0001	NPLR	-0.3779	0.0027
	Pooled OLS	0.2979	<0.0001	LLP	-0.4998	0.0004
				BS	0.0695	0.0000
NIM	Fixed Effects	0.5565	<0.0001	LLP	0.0759	0.0473

			BS	0.0168	0.0142
Random Effects	0.1529	0.0011	LLP	0.0797	0.0239
			BS	0.0109	0.0343
Pooled OLS	0.0390	0.2793	None	-	-

Source: EViews Outputs

Table 05 presents the regression results of the association between non-performing loans ratio (NPLR), loan loss provisions (LLP), bank size (BS), and the financial performance indicators of licensed commercial banks in Sri Lanka, measured by ROA, ROE, and NIM, using Fixed Effects, Random Effects, and Pooled OLS models. For the entire three dependent variables Fixed Effects shows strong explanatory power.

Given the panel nature of the dataset, it is important to determine the most appropriate estimation technique to ensure consistent and reliable results. Therefore, the model selection and diagnostic tests of the Redundant Fixed Effects Test (F-test), the Breusch–Pagan Lagrange Multiplier (LM) test, and the Hausman Specification Test were performed.

Table 06: Redundant Fixed Effects Test statistics

Model	F Statistic	d.f.	Prob.	Selected Model
Model ROA	10.67	(9, 87)	0.0000	Fixed
Model ROE	15.54	(9, 87)	0.0000	Fixed
Model NIM	11.29	(9, 87)	0.0000	Fixed

Source: E-Views Output

Table 07: Breusch and Pagan Lagrangian Multiplier Test Scores

Model	Chi Bar Sq. Statistic	Prob.	Selected Model

Model ROA	75.0116	0.0000	Random
Model ROE	77.2105	0.0000	Random
Model NIM	79.1738	0.0000	Random

Source: E-Views Output

Table 08: Hausman Test Scores

Model	Chi Sq. P – value	Selected Model
Model ROA	3.8257 0.2809	Random
Model ROE	9.0799 0.0282	Fixed
Model NIM	4.4026 0.2211	Random

Source: E-Views Output

Based on the results of Redundant Fixed Effects Test (F-test), the Breusch–Pagan Lagrange Multiplier (LM) test, and the Hausman test the random effects model was chosen for conducting panel regressions for ROA and NIM, whereas the fixed effects model was selected for the panel regression for ROE.

Regression Estimations – Model ROA (Random Effect)

Table 09: Panel Regression Estimates – Model ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPLR	-0.0547	0.0180	-3.0384	0.0031
LLP	-0.0052	0.0133	-0.3922	0.6958
BS	0.0054	0.0017	3.1353	0.0023

Constant	-0.0155	0.0091	-1.7133	0.0899
R - Square		0.2904		
F Statistic		13.0937		
Prob. (F stat)		0.0000		
Observation		100		

Note: Model Specification – Random Effects, Significance level - 5%, Dependent variable - ROA

Source: E-Views Output

Table 09 presents the panel regression estimates of ROA under random effect model and the model reports a R-squared value of 0.2904, indicating that approximately 29% of the variation in ROA is explained by the predictors of NPLR, LLP and BS. Meanwhile, the F statistics of 13.0937 with the probability of 0.0000, which is below the 5% criteria benchmark signifies that this regression model has the power to explain the changes in bank returns relative to its assets in a considerable manner. Examining the individual coefficients, NPLR recorded a coefficient of -0.0547 ($p < 0.05$), signifies that non – performing loan ratio has a significant negative impact on ROA. However, the LLP ($\beta = -0.0052$, $p = 0.6958 > 0.05$) does not show any significant impact on ROA. Meanwhile, BS reported a coefficient of 0.0054 ($p < 0.05$), demonstrating a positive effect of bank size on ROA.

Regression Estimations – Model ROE (Fixed Effect)

Table 10: Panel Regression Estimates - Model ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPLR	-0.4540	0.1124	-4.0401	0.0001
LLP	-0.0561	0.1279	-0.4392	0.6616
BS	-0.0112	0.0235	-0.4739	0.6368
Constant	0.2060	0.1312	1.5695	0.1202
R - Square		0.7307		

F Statistic	19.6789
Prob. (F stat)	0.0000
Observation	100

Note: Model Specification – Fixed Effects Significance level at 5%, Dependent variable - ROE

Source: E-Views Output

As seen in table 10, the results of fixed effects model show that the R-squared value is 0. 7307, indicating that 73.07% of the observed variation in ROE can be explained by the differences in NPLR, LLP and Bs. The Regression coefficient for NPLR stands at -0.4540 with t statistics of -4.0401 ($p < 0.05$) and indicates a significant negative impact of NPLR on ROE. Moreover, LLR ($\beta = -0.0561$, $P = 0.6616 > 0.05$) and BS ($\beta = -0.0112$, $P = 0.6368 > 0.05$) have not produced any significant impact on ROE.

Regression Estimations – Model NIM (Random Effect)

Table 11: Panel Regression Estimates - Model NIM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPLR	-0.0387	0.0372	-1.0410	0.0305
LLP	0.0797	0.0333	2.3922	0.0187
BS	0.0108	0.0041	2.6844	0.0086
Constant	-0.0199	0.0219	-0.9104	0.3649
R - Square	0.1529			
F Statistic	5.7778			
Prob. (F stat)	0.0011			
Observation	100			

Note: Significance level - 5%, Dependent variable - NIM

Source: E-Views Output (2025)

According to the table 11, the R squared value was 0.1529 indicating that the predictors under study explain a variation of about 15.29% in NIM. Even though, this model has a lower explanatory power, the significant F value ($F=5.7778$, $P<0.05$) indicates the acceptability of it.

The model reveals that NPLR ($\beta=-0.0387$, $P<0.05$) and LLP ($\beta=0.0797$, $P<0.05$) have significant negative and positive impact respectively on NIM. Moreover, BS ($\beta=0.0108$, $P<0.05$) has significant positive influence on NIM.

The results of the regression analysis offer significant insights into impact of credit risk and bank size on the financial performance of banks. With respect to return on assets, non-performing loan ratio exhibits a significant negative association with return on assets signifying that higher levels of non-performing loans diminish profit generating efficiency of banks' assets. It indicates that credit risk has direct and negative impact on operational efficiency and profitability of banks. However, loan loss provision does not show a statistically significant influence on return on assets, suggesting that provisioning mechanisms may not instantly influence earning productivity of assets. Furthermore, results reveal a significant positive association between bank size and return on assets, suggesting that strong market base, advantages of economies of scale and enhanced resource utilization provide opportunities to larger banks to enhance their profitability. Mirroring the trends seen in return on assets, non-performing loan ratio shows a significant negative impact on return on equity. The findings underscore that increases in non-performing loan levels weaken both the bank's operational efficiency and returns available to equity shareholders. Nevertheless, both loan loss provision and bank size are statistically insignificant in determining variations in return on equity. This indicates that the level of loan loss provisions and the size of banks may not directly influence returns available to shareholder within the study period due to the factors such as cost management, capital structure and macroeconomic conditions. Moreover, non-performing loan ratio has a significant negative influence on net interest margin, indicating that rises in non-performing loans diminish the income generated from interest-earning activities. However, loan loss provision positively influences on the net interest margin, it implies the adaptation of more prudent lending practices or charging of higher interest spreads as a compensation for potential credit risk. Similarly, bank size has a positive association with net interest margin, signifying that larger banks are able to optimize their interest margins more effectively due to diversified portfolios, stronger bargaining power and more effectual financial intermediation.

Conclusion

Overall, the findings of the study confirm the significant role of credit risk in determining the financial performance of banks. Evidence consistently reveals that as the proportion of non-performing loans increases, returns on assets, returns on equity and net interest margins inevitably decline. These findings underscore that maintaining higher level of loan quality is a precondition for financial performance. The results also show that loan loss provisions do not significantly influence on return on assets or return on equity, while it exhibits a positive impact on net interest margin. Bank size seems to increase certain measures of financial performance, as demonstrated by its positive and significant association with return on assets and net interest margin, whereas its impact on return on equity remains statistically insignificant. These findings advocate that effective credit risk management and operational efficiency are important factors in sustaining profitability and financial stability of banks.

Recommendations

Based on the findings, the following recommendations can be proposed. Banks should strengthen their credit risk management policies and practices to decrease the level of non-performing loans. Adaptation of stringent credit assessment frameworks, proper credit monitoring systems and early-warning systems to identify potential defaults may be useful in this regard. Moreover, in order to minimize issues from non-performing loans, banks need to implement more active loan recovery approaches and restructuring practices. Since larger bank size seems to contribute positively to profitability, smaller banks may consider strategic mergers or organic expansion. Furthermore, policymakers and regulators should promote prudent lending policies and standards; and unceasing monitoring of credit risk indicators in order to preserve the stability of the banking sector. Finally, future researches in this area may integrate other variables such as liquidity, capital adequacy, and macroeconomic factors to establish a more complete understanding of the determinants of bank financial performance.

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