

THE INTERPLAY BETWEEN CREDIT RISK AND FINANCIAL PERFORMANCE OF LICENSED SPECIALIZED BANKS: EVIDENCE FROM A DEVELOPING COUNTRY

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Abstract

This paper investigates the influence of credit risk on the financial performance of licensed specialized banks in Sri Lanka from 2006 to 2020, a period marked by economic volatility that added layers of complexity and risk, especially for banks engaged in development lending. Using secondary data from annual reports, the study employs regression analysis to examine this relationship, with the non-performing loan (NPL) ratio as the dependent variable representing credit risk and return on equity (ROE) and return on assets (ROA) as independent variables indicating financial performance. The findings reveal that credit risk significantly impacts the financial performance of these banks, demonstrating a notable negative relationship between ROE and the NPL ratio, as credit risk increases, profitability decreases. These insights are crucial for policymakers to set realistic performance targets and for bank management to allocate capital efficiently and develop strategies to mitigate risk, thereby enhancing financial stability and performance amidst economic uncertainties.

Keywords: Credit Risk, Licensed Specialized Banks, Non-Performing Loans, Return on Equity, Sri Lanka

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1. Introduction

Risk management, as defined by ISO 31000, involves identifying, evaluating, and prioritizing risks arising from uncertainty. Effective risk management is essential for implementing a bank's strategy and ensuring its sustainable future. The global financial crisis of 2007-2009 highlighted weaknesses in the banking sector, including excessive leverage, inadequate liquidity buffers, poor governance, and improper credit risk management. Extreme stress events, such as the US subprime mortgage crisis and the drastic drop in gold prices in 2014, have adversely affected financial institutions in Sri Lanka. The ongoing COVID-19 pandemic poses another significant challenge, with banks facing pressure on revenue and customer expectations amidst near-zero interest rates and growing credit risk in loan portfolios.

Credit risk, defined as the potential for a borrower or counterparty to fail to meet obligations, is a key concern for banks, (Munangi and Sibindi, 2020). Managing credit risk across the entire portfolio and individual transactions is crucial for maintaining bank performance. Regulatory oversight in Sri Lanka falls under the Central Bank, with licensed commercial banks (LCBs) and licensed specialized banks (LSBs) dominating the financial system. While LCBs can accept demand deposits and engage in various foreign exchange transactions, LSBs have limited foreign exchange capabilities but can accept time and savings deposits. Licensed specialized banks in Sri Lanka primarily focus on lending for national development projects and regional entrepreneurial ventures, which inherently carry high risks (Fernando and Cooray, 2019). The stability of the banking system is vital for maintaining confidence in the financial sector, as any failures can have widespread repercussions on the economy. Recent mergers in 2019 were driven by the failure to meet minimum capitalization requirements and high ratios of non-performing loans, leading to the consolidation of specialized banks. Currently, Sri Lanka has 25 commercial banks and six licensed specialized banks, reflecting a reduction from 14 to 6 specialized banks by 2022. The remaining specialized banks consist of savings, housing, and development banks, each serving specific purposes within the financial landscape.

Given the challenges posed by the COVID-19 pandemic and recent regulatory changes, understanding this relationship is crucial for informing banking strategies and enhancing financial system stability. The primary objective is to assess how credit risk impacts the profitability and overall performance of specialized banks, shedding light on the effectiveness of risk management practices in mitigating financial risks in the Sri Lankan banking sector. This section introduces the topic of examining the relationship between credit risk and bank performance in Sri Lanka's specialized banking sector. It proceeds with a literature review in section two, followed by the methodology and data analysis, with section four discussing the findings and concluding the study.

2. Literature Review

This research is guided by the theory of Asymmetric Information, which closely aligns with the study's focus on the credit-granting process. As developed by George Akerlof, Michael Spence, and Joseph Stiglitz in 1970, this theory highlights the potential inefficiencies in markets due to information imbalances between buyers and sellers. In the context of lending, it underscores the challenge of distinguishing

between good and bad borrowers, leading to adverse selection and moral hazard issues. Munangi and Sibindi (2020) emphasize that borrowers with more information can negotiate better terms, while poor loan quality often stems from inadequate information processing and credit risk management. Ultimately, banks prefer high-quality borrowers, as a thorough analysis of available information enhances profitability performance.

Previous research has yielded conflicting findings regarding the relationship between credit risk and financial performance in the banking sector, (see Fernando, and Nimal, 2013). While some studies suggest a positive correlation, others argue for a negative impact. Credit risk, a significant financial concern, demands careful monitoring and supervision to mitigate default rates. It must be identified, measured, monitored, and managed effectively to ensure that loans are properly priced and aligned with the desired returns. Various studies have explored the impact of credit risk on bank profitability, revealing mixed results across different countries and contexts. For instance, Felix and Claudine (2008) investigated the influence of credit risk on bank financial performance, finding an inverse relationship between bank profitability and the ratio of non-performing loans to total loans. This suggests that profitability, measured by return on equity (ROE) and return on assets (ROA), declines as the ratio of non-performing loans increases. Conversely, other studies have highlighted a positive relationship between credit risk and financial performance. Samuel (2015) documented a positive association between credit risk indicators, such as non-performing loans, and the financial performance of banks. Similarly, Saeed and Zahid (2016) examined the effect of credit risk variables on bank profitability during the global financial crisis, finding a positive relationship between these variables and bank profitability.

However, some researchers have identified a negative relationship between credit risk and bank performance. Kolapo, Ayeni, and Oke (2012) found a significant negative correlation between credit risk and bank performance, indicating that increased exposure to credit risk reduces bank profitability. They also noted a positive impact of the total loan portfolio on bank performance. Additionally, Athanasoglou, Brissimis, and Delis (2005) used dynamic panel data models to explore the effect of credit risk on Greek banks' profitability, revealing a negative and significant relationship between credit risk and profitability.

Studies conducted in specific regions and countries have further elucidated the relationship between credit risk and bank profitability. In their research, Siddique, Khan, and Khan (2022) examine the impact of credit risk management and various bank-specific factors on the financial performance of commercial banks in South Asia. Their study underscores the importance of effective credit risk management practices in bolstering the financial stability and profitability of banks within this region, highlighting how specific internal bank factors can significantly influence overall performance outcomes. Further Islam, Alam, and Hossain (2019) and Islam et al (2020) observed a significant negative relationship between credit risk and bank profitability in the Asia-Pacific region, specifically among Bangladeshi commercial banks. Similarly, Ali, Zulkhibri, and Kishwar (2019) found that credit risk negatively impacted the financial performance of Islamic banks in Pakistan. In South Africa, research on 18 banks over 10 years revealed a negative relationship between credit

risk and financial performance, indicating that higher non-performing loans led to lower profitability.

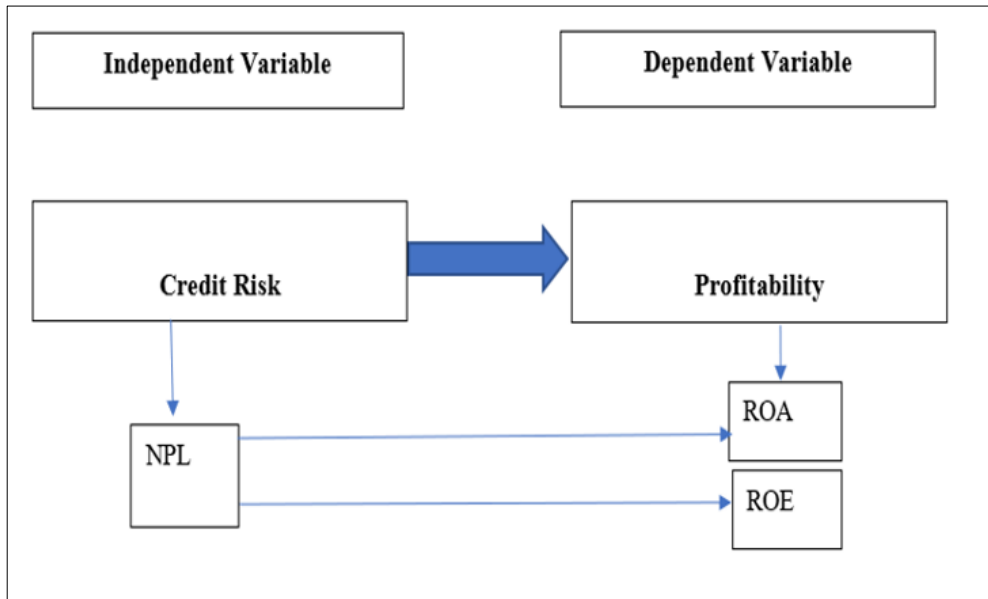
Despite these findings, some studies have reported unexpected results. Kithiniji (2010) investigated the effect of credit risk management on the profitability of commercial banks in Kenya and found that the bulk of bank profits were not influenced by credit and non-performing loans. This suggests that credit risk indicators may not always correlate with bank profitability as expected. In the context of Sri Lanka, research has also examined the impact of credit risk on bank performance. Fernando and Nimal (2013) studied the overall risk management practices of Sri Lankan banks and found that risk management programs improved the efficiency of licensed commercial banks in the country. Similarly, Kodithuwakku (2015) analyzed the impact of credit risk management on the financial performance of commercial banks in Sri Lanka, revealing a negative impact of non-performing loans and provisions on profitability. Another study by Fernando and Cooray (2019) focused on modeling the determinants affecting the performance of licensed specialized banks (LSBs) in Sri Lanka. They found significant relationships between return on assets (ROA) and return on equity (ROE) with loan quality, efficiency, and capital adequacy ratio.

Overall, the literature provides a comprehensive overview of the relationship between credit risk and bank performance, although findings vary across studies and contexts. While some studies suggest a positive impact of credit risk on financial performance, others highlight a negative relationship. The time dimension of the panels used in most empirical studies may limit the ability to capture the full effect of credit risk on bank profitability, especially in Sri Lanka. Therefore, further research is needed to address these issues and gain a better understanding of the relationship between credit risk and bank profitability in the Sri Lankan context. This research aims to contribute to the existing literature by investigating how credit risks impact the financial performance of licensed specialized banks in Sri Lanka over 15 years using panel data analysis. By addressing this gap in the literature, the study seeks to provide valuable insights for policymakers, bank managers, and other stakeholders in the banking sector.

3. Methodology

Fernando and Cooray (2019) underscore the importance of measuring banking performance using financial ratios such as return on assets (ROA) and return on equity (ROE), as these ratios offer insights into investment opportunities and aid decision-making processes. These ratios, particularly ROA and ROE, are commonly utilized in financial performance analysis, while the non-performing loan (NPL) ratio is often employed to assess credit risk. The ROA and ROE are designated as profitability indicators, while the NPL ratio serves as a credit risk indicator. With the primary goal of evaluating the influence of credit risk on the financial performance of licensed Specialized banks in Sri Lanka, a conceptual framework was formulated to examine the relationship between the identified variables. This framework was developed by drawing upon previous literature in alignment with the study's objectives.

Figure 1 : Conceptual Model



The following two null hypotheses are tested.

- H₀: There is no significant relationship between Credit risk and the financial performance of licensed specialized banks
- H₁: There is a significant relationship between Credit risk and the financial performance of licensed specialized banks

The research targeted licensed specialized banks operating in Sri Lanka from 2006 to 2020. The sample consisted of all six government-owned licensed specialized banks in Sri Lanka. Purposive sampling was employed to select banks based on the availability of published annual reports. Data spanning fifteen financial years, from 2006 to 2020, was collected for analysis. To illustrate the data, tables, and charts will be created using Microsoft Word and Excel software. Statistical Package for Social Science (SPSS) version 27 will be employed to analyze the data and draw conclusions. Correlation and regression analysis will be conducted to identify the relationship between credit risk and profitability of licensed specialized banks in Sri Lanka from 2006 to 2020.

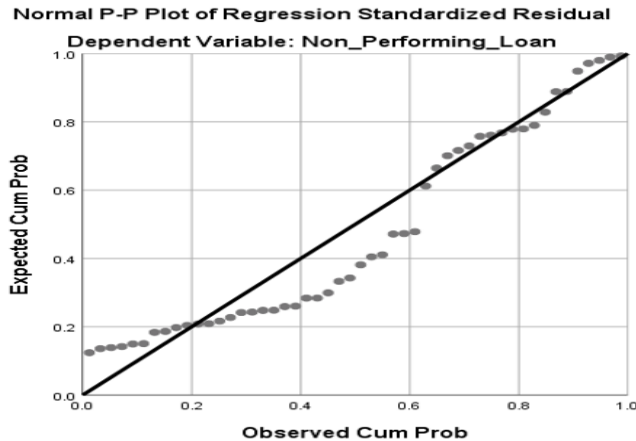
4. Analyses and Findings

The scatter plot diagram is employed to explore the relationship between pairs of numerical data, with each variable represented on its respective axis. When variables are correlated, the points tend to align along a line or curve. This study aimed to determine if the independent and dependent variables were linear. The scatter diagram depicted in Figure 2 confirmed the normality of the dataset. Sufficient

evidence suggests a linear relationship between the dependent and independent variables.

Descriptive statistics

Figure 2: Scatter plot for normality



Descriptive statistics provide essential insights into the characteristics of the data in a study. Table 4.3.1 presents concise summaries of the sample and its measures. The mean return on equity (ROE) is 11.632, and the mean return on assets (ROA) is 1.418. These values suggest that Sri Lankan licensed specialized banks encounter a moderate level of credit risk. With minimum and maximum non-performing loan (NPL) ratios of 1.3% and 37.42% respectively, it indicates a need for licensed specialized banks to enhance their credit portfolio management policies and exercise caution in granting loans to lower-risk customers.

Table 1: Descriptive statistics

	N	Min.	Max.	Mean	Std. Deviation	Variance	Skewness	Std.error
NPL	70	0.0130	0.3742	0.12608	0.1127	0.013	0.780	0.287
ROA	70	-0.0067	0.0395	0.01419	0.0080	0.000	0.733	0.287
ROE	70	-0.0528	0.3115	0.11633	0.0802	0.006	0.861	0.287

Source: Author Developed based on Data

Hypothesis testing

Before conducting regression analysis, it conducts Pearson correlation analysis. This statistical technique is utilized to examine the relationships between independent and dependent variables by calculating correlation coefficients.

Table 2: Correlation analyses

		Correlations		
		NPL	ROA	ROE
NPL	Pearson Correlation	1	0.084	-0.349**
	Sig. (2-tailed)		0.491	0.003
	N	70	70	70
ROA	Pearson Correlation	0.084	1	0.617**
	Sig. (2-tailed)	0.491		0.000
	N	70	70	70
ROE	Pearson Correlation	-0.349**	0.617**	1
	Sig. (2-tailed)	0.003	0.000	
	N	70	70	70

**Correlation is significant at the 0.01 level (2-tailed).

Source: Author Developed based on Data

The regression findings from the study indicate that the independent variable ROE exhibits a negative influence on profitability. Furthermore, the non-performing loans of the banks demonstrate a statistically significant negative relationship with return on equity, with a confidence level exceeding 95%. Additionally, the Pearson correlation matrix presented in Table 2 suggests that the correlation between each pair of independent variables is minimal, indicating the absence of multicollinearity issues in the model.

Credit risk on return on asset

All significance tests were conducted at a confidence level of 90%, implying that all the tests required a p-value of less than or equal to 0.10 for significance. As indicated in Table 3, a significant negative correlation is observed between the dependent and independent variables. Specifically, there is a notable negative relationship between the dependent variable NPL and the independent variable return on equity.

Table 3: Credit risk on return on asset

		Coefficients			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta		
1	(Constant)	0.110	0.028		3.980	0.000
	ROA	1.168	1.689	0.084	0.692	0.491*

a. Dependent Variable: NPL
<0.10*

Source: Author Developed based on Data

As indicated in Table 4, a significant negative correlation is observed between the dependent and independent variables. Specifically, there is a notable negative relationship between the dependent variable NPL and the independent variable return on equity.

Table 4: Credit risk and return on equity

		Coefficients				
		Unstandardized	Standardized			
		Coefficients	Coefficients			
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.183	0.023		8.137	0.000
	ROE	-0.491	0.160	-0.349	-3.073	0.003**
a. Dependent Variable: NPL						
<0.01**						

Source: Author Developed based on Data

The study performed formal detection of multicollinearity using tolerance or the variance inflation factor (VIF) indicating that the VIF is less than 5%, suggesting the absence of collinearity relationships between variables. Additionally, the correlation matrix between the dependent variable return on equity and the independent variable non-performing loans reveals no issues of collinearity, as the correlations range from medium to weak. Tables 3 and 4 display the beta coefficients of the independent variables, serving as indicators of their predictive powers. Notably, all beta coefficients are negative, indicating an inverse relationship between the dependent variable ROE and the independent variable NPL. These results affirm that credit risk (NPL) is significantly and negatively associated with the financial performance of banks.

The regression analyses in this study have revealed valuable insights into the relationship between credit risk and bank performance within Sri Lanka's specialized banking sector. This study utilizes data from six licensed specialized banks in Sri Lanka to construct a panel dataset, which forms the basis for regression analyses conducted separately for two key variables: Return on Equity (ROE) and Return on Assets (ROA). The results illuminate the significant role of credit risk in determining bank performance within Sri Lanka's specialized banking sector, highlighting a negative relationship between credit risk and bank performance, particularly concerning ROE and non-performing loans. This discovery carries substantial implications not only for the financial stability of specialized banks but also for the broader economic landscape of Sri Lanka. Primarily, the adverse association between credit risk and bank performance highlights the paramount importance of effective risk management practices within the banking industry. Credit risk, which pertains to potential losses stemming from borrowers' failure to meet loan repayment obligations, poses a significant threat to banks' financial well-being and stability. When borrowers default on loans, banks incur losses through non-performing loans, thereby diminishing profitability and eroding capital reserves.

These findings echo similar patterns observed in prior research conducted across diverse geographical contexts, reaffirming the universal nature of the link between credit risk and bank performance. Studies by Islam, Alam, and Hossain (2019), Islam et al (2020), and Athanasoglou, Brissimis, and Kolapo (2012) consistently document a negative correlation between credit risk and bank

profitability, underscoring the pervasive impact of credit risk on financial institutions worldwide. Consequently, there's an urgent need for banks to adopt robust risk management frameworks and strategies to mitigate the adverse effects of credit risk on their operations. These findings are consistent with prior research by Islam, Alam, and Hossain (2019); Islam et al (2020); and Athanasoglou, Brissimis, and Kolapo (2012), which also underscore a significant negative relationship between credit risk and bank profitability. Moreover, studies by Fernando and Nimal (2013) and Kodithuwakku (2015) conducted within the Sri Lankan context further corroborate these findings, emphasizing the urgent need for enhanced credit risk management programs to fortify the financial performance of licensed commercial banks in Sri Lanka.

Additionally, the significant negative relationship between credit risk and bank performance underscores the imperative for specialized banks in Sri Lanka to prioritize the enhancement of their credit risk management practices. Effective credit risk management entails the implementation of stringent credit assessment processes, proactive monitoring and surveillance mechanisms, and timely intervention strategies to mitigate emerging risks. Strengthening risk management capabilities enables specialized banks to better identify, assess, and mitigate credit risks, thereby safeguarding financial stability and resilience amid adverse market conditions.

A noteworthy implication of the study's findings is the pivotal role played by non-performing loans (NPLs) in mediating the relationship between credit risk and bank performance. Non-performing loans, indicative of borrowers defaulting on repayment obligations, serve as critical indicators of credit risk within banks' loan portfolios. Elevated levels of NPLs not only diminish banks' profitability by reducing interest income and increasing provisioning costs but also undermine investor confidence and overall sector stability.

Given the detrimental impact of non-performing loans on bank performance, specialized banks in Sri Lanka must adopt proactive measures to address underlying causes of loan delinquencies and defaults. This may entail implementing stricter lending criteria, conducting comprehensive credit assessments, and enhancing collection and recovery efforts to mitigate losses associated with non-performing loans. Furthermore, specialized banks may explore debt restructuring and workout arrangements with distressed borrowers to rehabilitate delinquent loans and mitigate credit risk exposure.

5. Conclusion

In conclusion, the findings of this study provide compelling evidence of the significant negative relationship between credit risk and bank financial performance in Sri Lanka's specialized banking sector. The findings emphasize the critical importance of effective credit risk management practices and highlight the urgent need for specialized banks to fortify their risk management frameworks to mitigate adverse effects on financial performance. The results underscore the critical importance of effective credit risk management practices in enhancing banks' financial stability and resilience. By prioritizing the enhancement of credit risk

management frameworks, specialized banks can mitigate the adverse effects of credit risk on their profitability and capital adequacy, thereby safeguarding their long-term viability and contributing to the overall stability of the financial system.

Moreover, policymakers, regulators, and industry stakeholders must collaborate to implement proactive measures aimed at promoting sound risk management practices, enhancing regulatory oversight, and fostering financial inclusion to mitigate the systemic risks associated with credit risk and ensure the sustainable growth and development of Sri Lanka's banking sector.

Additionally, regulators may consider implementing stress testing exercises and scenario analyses to assess banks' resilience to adverse economic conditions and identify potential vulnerabilities stemming from credit risk exposure. By proactively monitoring and addressing emerging risks, regulators can help mitigate the likelihood of financial crises and systemic disruptions within the banking sector, thereby safeguarding depositor interests and preserving overall financial stability. Furthermore, policymakers may explore policy interventions aimed at promoting financial inclusion and responsible lending practices to mitigate the incidence of credit risk among underserved segments of the population. Initiatives such as microfinance programs, targeted credit subsidies, and financial literacy campaigns can help empower marginalized communities to access formal financial services responsibly, thereby reducing their reliance on informal sources of credit and mitigating credit risk within the banking sector.

Acknowledging the theory of Asymmetric Information in the credit granting process, factors such as market knowledge, funding capacity, and service efficiency of the counterparty seeking financial services from the institution must be considered. Development banks, acting as absorbers of credit risk, should adhere to basic lending practices to mitigate or eliminate credit risk associated with transactions. Product pricing, diversification, and the development of credit policies are essential aspects for development banks to manage credit risk efficiently. Risk transfer techniques can also mitigate risks, and future studies could explore the effects of other risk factors such as liquidity risk, market risk, and operational risk on financial institutions' performance. Additionally, research on risk management practices within Sri Lankan banks can investigate awareness and implementation levels within the banking sector.

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