Credit risk management and financial performance: A study of listed Banks in Sri Lanka

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Abstract
This study tends to explore the credit risk management and financial performance of listed banks in Sri Lanka over the period from 2015 to 2019 by using Non-Performing Loan Ratio (NPLR) and Equity to Total Assets Ratio (ETAR) as credit risk management indicators and Return on Assets (ROA) and Return on Equity (ROE) as indicators of financial performance. This study considers all 13 banks listed in Sri Lanka, and the secondary data is collected via annual reports of respective banks. For empirical analysis, this study uses descriptive analysis, correlation, and multiple regression analysis. The results from regression analysis confirmed that credit risk management has a significant impact on banks' financial performance. While correlation analysis revealed that equity to total assets ratio is significantly positively correlated with return on asset and significantly negatively correlated with return on equity while non-performing loan ratio reveals an insignificant relationship. These insights are helpful for academic understanding and policy formulation by the decision-makers of the bank.
Keywords: credit risk management, financial performance, listed banks, Sri Lanka

Introduction
Banks are the largest financial institutions and play a vital role in the economy. They are in the business of safeguarding money and other valuables for their clients who provide loans, credit, and payment services such as checking accounts, money orders, and cashier's checks. Banks also may offer investment and insurance products and a wide range of other financial services (according to the 1999 Financial services modernization act by the US Congress). Adequately managing credit risk in financial institutions (FIs) is critical for the survival and growth of the FIs. In the case of banks, the issue of credit risk is of even of greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients and business conditions that they find themselves in.

Credit creation is the primary income generating activity for the banks. Credit risk is one of great concern to most bank authorities and banking regulators, as the higher levels of non-performing loans and advances due to some of the

characteristics of their clients and business conditions that they find in themselves. Since this risk carries the potential of wiping out enough of a bank's capital to force it into bankruptcy, managing this kind of risk has always been one of the major challenges in running a bank (Broll, paush & Welzel, 2002) The appropriate credit risk management of banks is essential for prolonged survival and development. Credit risk management is a structured approach to managing uncertainties through risk assessment and developing strategies to control and mitigateisk using managerial resources (Greuning & Iqbal, 2007). The strategies include transferring to another party, avoiding the risk, reducing the risk's negative effectsand accepting some or all of the consequences of a particular risk (Afriyie & Akotey, 2013). The Sri Lankan banking act provides the necessary directions and monitors the functions towards managing the credit risk. The act focuses on the credit limitation to accommodate the new credit facilities as to minimize the risk. Hence, credit risk management focuses on maintaining optimum financial performances. Even though various studies have been conducted in this area, but the results are inconclusive. So, the researcher prompted finding out what extent the credit risk management influences the financial performance of listed banks in Sri Lanka.

Literature Review

Credit risk has been defined from different perspectives by different researchers and organizations, and it is the most critical risk all financial institutions are exposed to (Gray, Cassidy & RBA, 1997) The indicators of credit risk include the level of non- performing loans, problematic loans, or provision for loan losses (Jimenez & Saurina, 2006) Various researchers have studied the impact of credit risk management on bank profitability and pointed out a statistically significant relationship between credit risk management and bank profitability.(Poudel, 2012) in his study of the impact of credit risk management on commercial banks' financial performance in Nepal, it has assessed various parameters related to credit risk management and concluded that all studied parameters have a negative impact on banks' financial performance. (Charles & Kenneth, 2013) examined the impact of credit risk management and capital adequacy on commercial banks' financial performance and showed that sound credit risk management and capital adequacy positively affect thebank's financial performance. (Li, Zou & Lions, 2014) found that there is a significant positive relationship between credit risk management and bank profitability in Europe.(Kodithuawakku, 2015) investigated the impact of credit risk management on thecommercial banks' performance in Sri Lanka and revealed that non-performing loans and provisions have an adverse impact on profitability. These research findings on credit risk and financial performance related to both developed and

developing countries are contradictory. Hence, this study tends to explore the credit risk management and financial performance of listed banks in Sri Lanka over the period from 2015 to 2019.

Methodology

The research was based on a quantitative research approach. The data used for this study were secondary data derived from the bank's annual reports over the period from 2015 to 2019. The population of the study includes listed banks in CSE Sri Lanka**.** The whole bank sector is selected as a sample where it consists of thirteen banks. For empirical analysis, this study employs descriptive analysis, correlation and multiple regression analysis using STATA 12 computer software. Accordingly, following hypotheses are developed:

H_1: There is a significant impact of credit risk management on the financial performance of listed banks in Sri Lanka.

H_2: There is a significant relationship between credit risk management and the financial performance of listed banks in Sri Lanka.

Results and Discussions

Table 1 represents the collected variables' descriptive statistics, namely NPLR, ETAR, ROA, and ROE. Based on the results, the NPLR represents an average of 0.029 with a standard deviation of 0.025 and the minimum & maximum of NPLR are 0 and 0.13, respectively. ETAR shows an average value of 0.179, with a standard deviation of 0.168. Firms reported a maximum of 0.747 ETAR while its minimum is 0.032. As well as ROA shows the maximum value of 8.74 with an average of 2.05 and its minimum value is -1.3. Moreover, ROE changes averagely at 14.552 and it varies significantly among firms with a minimum of -6.2 to 44.69.

Table 1. Descriptive Analysis

Variables	Observation	Mean	SD	Min	Max
NPLR	65	0.02	0.02	0	0.13
ETAR	65	0.179	0.1679	0.0328285	0.7470651
ROA	65	2.050	1.663	-1.3	8.74
ROE	65	14.55	9.186	-6.2	44.69

According to table 2 of the results from the correlation analysis, there is a significant positive relationship between ETAR and ROA (r=0.4058; $p<0.05$), and ETAR is significantly negatively associated with ROE(r= -0.5188; $p<0.05$). Moreover, NPLR is insignificantly correlated with both ROA and ROE.

Table 2. Correlation Analysis

Variables	NPLR	ETAR
ROA	-0.1027	0.4058*
ROE	0.0519	-0.5188*

* indicates a correlation significant at 95%

Table 3 implies that the *p*-value is 0.0005, which is lower than 0.05, shows that there is a significant impact of credit risk management on ROA. The adjusted R^2 value is 0.1476, which means that 14.76% impact is created by credit risk management on ROA. Coefficient estimation shows that the impact of NPLR on ROA is insignificant as its p-value is greater than 0.05. On the other hand, ETAR's impact on ROA is significant as its p-value is lower than 0.05. This means that a 1% increase in ETAR will increase ROA by 3.96%.

Table 3. Multiple Regression Analysis

ROA	Coefficient	Std. Err	T	P >| t |
NPLR	-3.857817	6.86769	-0.56	0.576
ETAR	3.956082	1.004629	3.94	0.000
CONS	1.451801	0.328009	4.43	0.000
Observation	65	R-square		0.1679
F(2,62)	8.27	AdjustedR-square		0.1476
Prob>F	0.0005	Root MSE		1.5359

Table 4 represents that the *p*-value is 0.0000, which is lower than 0.05,, indicating a significant impact of credit risk management on ROE. The adjusted R^2 value is 0.2514, which means that a 25.14% impact is created by credit risk management on ROE. Coefficient estimation shows that the impact of NPLR on ROE is insignificant as its p-value is greater than 0.05. On the other hand, ETAR's impact on ROE is significant as its p-value is lower than 0.05. This means that 1% increase in ETAR will lead to a reduction in ROE by 28.43%.

Table 4. Multiple Regression Analysis

ROE	Coefficient	Std. Err	T	P >| t |
NPLR	-2.835072	35.54071	-0.08	0.937
ETAR	-28.42904	5.199015	-5.47	0.000
CONS	19.73408	1.697466	11.63	0.000
Observation	65	R-squared		0.2692
F(2,62)	15.10	Adjusted	R-squared	0.2514
Prob>F	0.0000	Root MSE		7.9486

Conclusions and Recommendations

The study results provide evidence that the credit risk management has a significant impact on banks' financial performance. The researcher able to

find that selected variables can make an impact on the financial performance of banks. Thus, it recommends that the bank managers put more efforts to the credit risk management, especially to control the loans and advances to lending. Moreover, when considering the relationship, equity to total assets ratio is significantly positively correlated with return on asset and significantly negatively correlated with return on equity, while the non-performing loan ratio reveals an insignificant relationship. Based on the findings, the researcher may further conclude that these results can be further strengthened if the firms manage their credit risk more efficiently. Further, a more aggressive policy towards credit risk management may not be able to improve financial performance. : The researcher suggests that the banks should design and formulate efficient credit risk management strategies to enhance their bank performance.

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