

CREDIT RISK MANAGEMENT PRACTICES AND FINANCIAL PERFORMANCE: A COMPARISON BETWEEN LICENSED COMMERCIAL BANKS AND LICENSED FINANCE COMPANIES IN THE COLOMBO STOCK EXCHANGE

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ABSTRACT

The stability of the financial performance of financial intermediaries is one of the key determinants of the sustainable development of any country in the current world. Licensed Commercial Banks (LCB) and Licensed Finance Companies (LFC) are the main financial intermediaries in Sri Lanka. Lending is one of the primary income-generating activities in financial intermediaries. The credit risk arises due to the failure of borrowers to repay the loans or meet their contractual obligations. Among different types of risks facing LCB and LFC, credit risk is considered a significant determinant of financial performance. Even though numerous prior studies were conducted to examine the impact of credit risk management on the financial performance of LCB and LFC individually, there were very rare studies available that compared the impact of credit risk management practices on the financial performance of LCB and the LFC in Sri Lanka in parallel. Hence, the study aims to fill this empirical gap by investigating the impact of credit risk management on the financial performance of LCB and LFC. Further, the study investigated the level of credit risk management practices of Sri Lankan LCB sector and LFC sector by employing the CAMEL rating method. The sample comprises 15 LCBs and 34 LFCs and the examined period is from 2014 to 2019. The panel regression model to estimate the model. Data was collected through published annual reports. Descriptive analysis, Correlation, and Regression analysis were performed using EViews Statistical software. Based on the lowest CAMEL composite ranking LFC is ranked as the best sector of credit risk management. The findings of the study revealed useful insights for investors to invest their funds more accurately and earn higher profits with low risk. Based on the regression analysis, the study concludes that asset quality and capital adequacy significantly influence the performance of both LCBs and LFCs.

Keywords: Credit Risk, CAMEL analysis, License Commercial Banks (LCBs), License Finance Companies (LFCs), Financial Performance.

1. INTRODUCTION

Sri Lanka is a developing country and there are a variety of financial intermediaries. The performance of financial intermediaries has a direct bearing on the financial stability of every economy. Sri Lanka is also getting efforts to acquire a stable and

resilient financial system. LCB and LFC are essential components in the economy in the process of economic growth in Sri Lanka. According to the records of CBSL, the 2019 Sri Lankan financial sector consists of LCB and LFC which dominate around 62.4 percent of the total assets of the financial system. To contribute to financial intermediaries' commitment to promoting economic growth, they should be able to lock in on the stability of their financial performance. However, it is not an easy task in the competitive market. Because various risks affect the performance of financial intermediaries. Credit risk plays a major role among all the risks faced by the LCB and LFC. Credit risk means a borrower or counterparty may fail to meet its obligations under agreed terms. Since a large scale of credit is carried out by the LCB and LFC, among all risks faced by the credit risk is the most significant risk. When they are extending, committing, investing their funds or exposing through actual or implied contractual agreements can be arisen credit risk, whether reflected on or off the balance sheet (Kargi, 2014). The banks failing to mitigate and manage credit risk may pay a high cost of the same in the shape of bankruptcy since banks that are largely exposed to credit risk face a reduction in profitability (Arif, Abrar, & Afzal, 2012).

Many studies have revealed that, there is a relationship between credit risk and the financial performance of LCB and LFC individually. However, the available comparative studies on LCB and LFC are rare. This study aims to fill the gap between literature and empirical evidence about the comparison of credit risk management practices on the performance of LCB and LFC in Sri Lanka in parallel. Thus, the research will contribute to understanding and developing policies in the financial sector of Sri Lanka.

Hence, the main problem of this research is to examine "What is the impact of credit risk management practices on the financial performance of Sri Lankan licensed commercial banks (LCB) and licensed finance companies (LFC)?"

This research tries to answer the following sub-questions.

- What is the level of credit risk management practices in Sri Lankan Commercial banks and finance companies?
- What is the relationship between credit risk management and the financial performance of Sri Lankan Commercial banks and finance companies?
- What is the impact of credit risk management on the financial performance of Sri Lankan Commercial banks and finance companies?

This study aims.

- To identify the level of credit risk management practices of Sri Lankan commercial banks and finance companies.
- To examine the relationship between credit risk management and the financial performance of Sri Lankan commercial banks and finance companies

- To examine the impact of credit risk management on the financial performance of Sri Lankan Commercial banks and finance companies
Significance of the study.

Accordingly, the research was mainly focused on credit risk management practices and their impact on the financial performance of LCBs and LFCs in Sri Lanka. Further, the paper paid attention to the comparison between LCBs and the LFCs in parallel.

2. LITERATURE REVIEW

A financial intermediary exists not only to accept deposits but also to grant credit facilities. Vodova, (2003) states that banks are obliged to accept deposits and provide loans to customers, with lending being the primary function of banks. The accurate assessment of borrowers' creditworthiness has always been the key to successful lending. Kithnji (2010), notes that banks face the possibility of losses resulting from non-repayment of interest and principal, non-realization of securities on loans, or both, making them inherently exposed to credit risk. Credit risk has been defined from various perspectives by different researchers and organizations, with most agreeing with the definition provided by the Basel Committee on Banking Supervision (2001). According to the Basel Committee, credit risk refers to the potential for losses arising from the failure of a borrower to repay a loan either partially or fully, due to bankruptcy or the inability to meet any due obligation and restructuring the rating.

Gopalakrishnan (2004) categorized credit risk into four categories: political, economic, social, and technological. He identified improper credit appraisal, lack of follow-up and supervision, recessionary pressures, changes in government policies, infrastructural obstacles, and fund diversion as the major causes of credit risk. According to Joseph et al., (2015) credit risk is caused by both internal and external factors. Poor credit policy, inadequate risk management, and insufficient credit monitoring were recognized as internal factors, while external factors include natural disasters, government policies, and borrower integrity.

The utilization of resources to achieve objectives is how a company's performance is defined. Mitigating uncertainties is expected to lead to improved firm performance. To protect investors' interests and safeguard bank assets, firms must take possible measures to mitigate uncertainties. Athanasoglu, Brissimis & Delis (2005) evaluate that the credit risk of the bank has a pervasive impact on bank profitability. They also claim that a bank's profitability is reliant on its ability to measure, monitor, and avoid risks while potentially covering losses. Mammam and Oluyemi (1994), stated that credit risk in a bank raises the proportion of substandard credits in a credit portfolio, which reduces the bank's profitability. On the other hand, Duca & McLaughlin (1990) argued that credit risk is the primary cause of the fluctuation in bank profitability.

The CAMEL framework is currently one of the most widely used models for evaluating bank performance and soundness, according to (Roman & Sargu,

2013)The CAMEL ratio model is a highly appropriate and precise tool for assessing the performance of the banking industry and predicting the failure rate, as noted by (Salhuteru & Wattimena, 2015). Below, we present an overview of significant studies that emphasize the practical use of the CAMEL model.

Using the CAMEL approach, Boateng (2019) investigated the relationship between credit risk and bank performance for ten banks in Ghana over seven years. The study found that capital adequacy, asset quality, management efficiency, and liquidity significantly influenced the performance of Ghanaian banks, but sensitivity was on the other side. Dash et al., (2009) compared the performance of public sector banks in India with private/foreign banks over five years using the CAMEL model. The study found that private/foreign banks outperformed public sector banks on most CAMEL parameters. Muluaem (2015) used CAMEL factor measurements to examine the financial performance of 14 Ethiopian Commercial Banks from 2010 to 2014. The study found that capital adequacy, asset quality, and management efficiency had a negative relationship, while earnings and liquidity had a positive relationship with profitability measures of return on assets and return on equity. The study also emphasized that institutions could improve their profitability by re-engineering their internal drivers.

Iheanyi and Sotonye (2017) utilized the CAMEL rating to evaluate the performance of banks in Nigeria by conducting an ordinary least squares analysis on data spanning 19 years. The study found no significant impact of management efficiency, earnings, and liquidity on bank profitability. On the other hand, asset quality was found to have a negative influence on profitability. In a separate study, Desta (2016) analyzed the financial performance of seven African Banks over three years using the CAMEL approach. The findings revealed that the banks had strong and satisfactory capital adequacy ratio and earnings ability but were rated as less satisfactory in terms of asset quality, management quality, and liquidity. Overall, the literature presents mixed results on the impact of CAMEL elements on bank performance, with some studies reporting positive effects while others report negative effects on profitability."

3. METHODOLOGY

The prime objective of the study was to examine credit risk management practices on financial performance. Hence, use of the CAMEL model identifies independent variables of the model, and the financial performance is the dependent variable of the model. It was measured through the return on equity and return on assets separately. The conceptual framework of research has explained in the figure-1 given below.

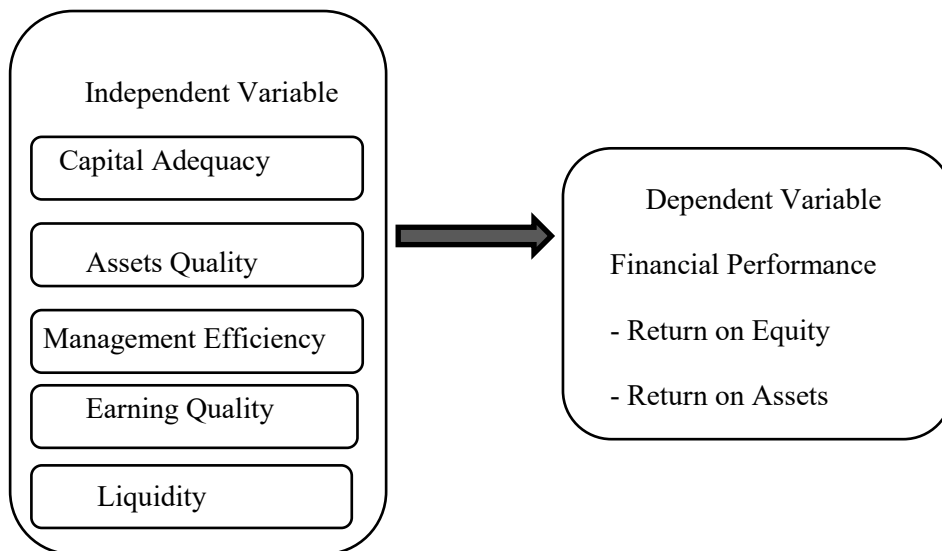


Figure 1: Conceptual Framework

Independent variables of the research study are Capital Adequacy (CAR), Assets Quality (AQR), Management Efficiency (MER), Earning Quality (EQR), and Liquidity (LR) to measure credit risk management practices. Dependent variables are utilized Return on Assets (ROA) and Return on Equity (ROE) to measure performance.

Following table presents the operationalization model of the study:

Table 1: Operationalization of variables

Dependent Variable Performance	Return on Assets (ROA)	<u>Profit before Tax</u> Total Assets
	Return on Assets (ROE)	<u>Profit after Tax</u> Total Equity
Independent Variable Credit Risk Management	Capital Adequacy (CAR)	<u>Total Equity</u> Total Assets
	Assets Quality (AQR)	<u>Non-Performing Loans</u> Total Loans & Advances
	Management Efficiency (MER)	<u>Loan and Advances</u> Total deposits
	Earning Quality (EQR)	<u>Operating Income</u> Total Assets
	Liquidity (LR)	<u>Liquid Assets</u> Total deposits,

The CAMEL rating method is performed unequally with performance in different countries and different banks. Therefore, this study tries to identify which relationship between Sri Lankan LFC and LCB performance and CAMEL indicators. The major hypothesis of this study is to examine the impact of credit risk management practices on the financial performance of LCB and LFC in Sri Lanka.

H₁: There is a relationship between Capital Adequacy and Financial Performance (RoE/RoA).

H₂: There is a relationship between Assets Quality and Financial Performance (RoE/RoA).

H₃: There is a relationship between Management Efficiency and Financial Performance (RoE / RoA).

H₄: There is a relationship between Earning Quality and Financial Performance (RoE / RoA).

H₅: There is a relationship between Liquidity and Financial Performance (RoE / RoA).

H₆: There is an impact of Capital Adequacy on Financial Performance (RoE / RoA).

H₇: There is an impact of Assets Quality on Financial Performance (RoE / RoA).

H₈: There is an impact of Management Efficiency on Financial Performance (RoE / RoA).

H₉: There is an impact of Earning Quality on Financial Performance (RoE / RoA).

H₁₀: There is an impact of liquidity on Financial Performance (RoE / RoA).

There are 24 LCBs and 38 LFCs are operating in Sri Lanka in October 2020 according to the Central Bank website. This study has selected a sample of 15 LCBs and 34 LFC in Sri Lanka. The basis of selection was purely based on data availability.

The present study is based on documentary data which is a form of secondary data, mainly focusing on annual reports and the website of the Central Bank of Sri Lanka. This financial data was collected for the period of 2014 to 2019 from the annual reports of selected banks.

4. RESULTS AND DISCUSSION

Secondary data were used in the study and the data were collected through corporate annual reports. Descriptive statistics are used in this study to assess the level of credit risk management practices of the Sri Lankan LCB and LFC companies. Correlation analysis is a statistical technique that can show whether and how strongly variables are related. To examine the relationship between credit risk management and the financial performance of the Sri Lankan LCB and LFC companies.

In this investigation, panel data were used to measure the impact of credit risk management practices on the financial performance of LCB and LFCs. Hence, the panel regression models were performed to examine the impact of credit risk management practices on financial performance. Accordingly, the following regression models are formulated for the current study.

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$$ROE = \beta_0 + \beta_1CAR + \beta_2AQR + \beta_3MER + \beta_4EQR + \beta_5LR + e - \quad 1$$

$$ROA = \beta_0 + \beta_1CAR + \beta_2AQR + \beta_3MER + \beta_4EQR + \beta_5LR + e - \quad 2$$

Where,
 CAR = Capital Adequacy Ratio
 AQR = Asset Quality Ratio
 MER = Management Efficiency Ratio
 EQR = Earning Quality Ratio
 LR = Liquidity Ratio

To analyze data gathered from annual reports of LCBs and LFCs, descriptive statistics, correlation, and regression analysis were applied respectively. Descriptive statistics provide the level of credit risk management practices. The statistical correlation analysis was used to analyze the relationship between credit risk and financial performance and the linear regression model is employed to examine the impact of credit risk management practices on financial performance to test the above-mentioned hypotheses in research.

Table 2: Descriptive Statistics of the Independent Variables

Company Category	FPs	Mean	Median	Maximum	Minimum	Std. Dev.
LCBs	ROE	0.1148	0.13643	0.32712	-0.0653	0.07948
	ROA	0.01417	0.01556	0.05165	-0.0348	0.01291
LFCs	ROE	0.100884	0.121220	0.464081	-0.687613	0.163489
	ROA	0.022809	0.023717	0.159164	-0.087042	0.034057

Source: Sample Data Analysis, 2020.

During the period study the LCBs earned 11.5% mean return on equity with the deviation from its mean by 7.9%. (+/-7.9). The highest ROE for a bank in a particular year was 32.7% and in the same way, the minimum ratio for a bank in a year was -6.5%. The highest ROA for a bank in a particular year was 5.1% and in the same way, the minimum ratio for a bank in a year was -3.5%. At the same time LFCs earned 1.4% mean return on their total assets with the deviation from its mean by 1.3% (+/-1.3) and the highest ROA for a company in a particular year was 15.9% and in the same way, the minimum ratio for an LFC in a year was -8.7%.

Table 3: Descriptive Statistics of Independent Variables of LCB (n = 90)

	CAR	AQR	MER	EQR	LR
Mean	0.161872	0.038606	1.033252	0.050623	0.483240
Median	0.092829	0.032750	0.936829	0.048926	0.334432
Maximum	0.728412	0.127900	3.288144	0.085046	2.718362
Minimum	0.042062	0.009000	0.688124	0.018179	0.179347
Std. Dev.	0.161076	0.022216	0.365804	0.012282	0.423885

Source: Sample Data Analysis, 2020.

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The mean capital adequacy of the sample banks in the study period was 16.2%. It reveals that equity represents nearly 16.2% of the total assets of LCB in Sri Lanka. The highest capital adequacy for a bank in a particular year was 72.8% and in the same way, the minimum ratio for a bank in a year was 4.2%. The value of CAR can deviate from its mean by 16.1% (+/-16.1). The mean asset quality of the sample banks in the study period was 3.8%. It reveals that non-performing loan represents nearly 3.8% of the total gross loan and advances of LCB in Sri Lanka. The highest AQR for a bank in a particular year was 12.8% and in the same way, the minimum ratio for a bank in a year was 0.9%. The value of the AQR can deviate from its mean to both sides by 2% (+/-2).

Similarly, the mean management efficiency of the sample banks in the study period was 103%. It reveals that total loan represents on average nearly 103% of the total deposits (liabilities) of commercial banks in Sri Lanka. The highest total loan-to-total deposit ratio for a bank in a particular year was 328% and in the same way, the minimum ratio for a bank in a year was 68%. The value of MER can deviate from its mean to both sides by 36.6% (+/-36.6). The mean EQR of the sample banks in the study period was 5.1%. It reveals that operating profit represents nearly 5.1% of the total assets of LCB in Sri Lanka. The highest-earning quality ratio for a bank in a particular year was 8.5% and in the same way, the minimum ratio for a bank in a year was 1.8%. The value of the EQR can deviate from its mean to both sides by 1.2% (+/-1.2).

The mean LR of the sample banks in the study period was 48.3%. It reveals that liquid assets represent nearly 48.3% of the total deposits of LCB in Sri Lanka. The highest LR for a bank in a particular year was 272% and in the same way, the minimum ratio for a bank in a year was 17.9%. The value of the liquidity ratio can deviate from its mean by 42.3% (+/- 42.3).

Table 4: Descriptive statistics of Independent Variables of LFC (n=204)

	CAR	AQR	MER	EQR	LR
Mean	0.179880	0.069919	2.152159	0.112270	0.241164
Median	0.149127	0.051650	1.518768	0.106758	0.182589
Maximum	0.633422	0.375400	8.972264	0.326459	2.384192
Minimum	0.005458	0.000000	0.593687	-0.049303	0.000196
Std. Dev.	0.104098	0.062754	1.535345	0.049859	0.239001

Source: Sample Data Analysis, 2020

The mean capital adequacy of the sample LFC in the study period was 18%. It reveals that equity represents nearly 18% of the total assets of LFC in Sri Lanka. The highest CAR for a finance company in a particular year was 63% and in the same way, the minimum ratio for a finance company in a year was 0.55%. The value of CAR can deviate from its mean to both sides by 10.4% (+/-10.4). The mean asset quality of the sample LFC in the study period was 7%. It reveals that non-performing loan represents nearly 7% of the total gross loan and advances of LFC in Sri Lanka. The

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highest AQR for a finance company in a particular year was 37.5%. The value of the AQR can deviate from its mean to both sides from 6.3% (+/-6.3). Similarly, the mean management efficiency of the sample finance companies in the study period was 215%. It reveals that total loan represents on average nearly 215% of total deposits of LFC in Sri Lanka. The highest MER for an LFC in a particular year was 897% and in the same way, the minimum ratio for a finance company in a year was 59%. The value of the MER can deviate from its mean by 153% (+/-153). The mean EQR of the sample finance companies in the study period was 11.2%. It reveals that operating profit represents nearly 11.2% of the total assets of LFC in Sri Lanka. The highest EQR for an LFC in a particular year was 32.6% and in the same way, the minimum ratio for an LFC in a year was -5%. The value of earning quality ratio can deviate from its mean by 5% (+/-5). The mean LR of the sample finance companies in the study period was 24%. It reveals that liquid assets represent nearly 24% of the total deposits of LFC in Sri Lanka. The highest LR for a finance company in a particular year was 238%. The value of the LR can deviate from its mean by 23.9% (+/-23.9). When Pearson correlation is close to 1(+/-1) that means there is a strong relationship between two variables. When correlation is positive; if one variable increases, then the other variable also increases.

Table 5: Pearson Correlation Analysis of LCB

Variables	ROE	CAR	AQR	MER	EQR
ROE	-				
CAR	-0.67449*				
AQR	-0.30691*	0.33491			
MER	-0.48608*	0.64473	0.24591		
EQR	0.12672	0.08860	-0.00923	-0.19429	
LR	-0.38464*	0.78156	0.24283	0.70115	0.10882

* Significant at 0.05 level.

Source: Sample Data Analysis, 2020

ROE has a weak negative relationship with Liquidity, Asset Quality, and Management Efficiency on the other hand, ROE has a moderate negative relationship with capital adequacy. ROE and Earning Quality have a weak positive relationship.

Table 6: Pearson Correlation Analysis of LFC

	ROE	CAR	GNPL	MER	EQR
ROE	-				
CAR	-0.10959				
AQR	-0.64617*	0.175043			
MER	0.220632*	0.047674	-0.28568		
EQR	0.275549*	0.120502	-0.16125	0.35817	
LR	0.064002	-0.00993	-0.09902	0.53661*	0.17698

* Significant at 0.05 level.

Source: Sample Data Analysis, 2020

ROE has a weak negative relationship with capital adequacy on the other hand, ROE has a moderate negative relationship with asset quality. ROE has a weak positive relationship with Management Efficiency, Earning Quality, and Liquidity. As per results shown in the above table 5 and table 6, there are no independent variables that are highly correlated with each other. If the inter-correlation among the independents is greater than 0.8, that means, that two independent variables are correlated with each other. According to the result, all the pair-wise correlations are below 0.8, therefore there is no multicollinearity between independent variables.

According to the result, all the pair-wise correlations are below 0.8, therefore there is no multicollinearity between independent variables.

In the present study has used panel data which cross-section combined with time-series data. The panel regression models were performed to examine the impact of credit risk management practices on financial performance in LCBs and LFCs in Sri Lanka.

There are two methods to deal with the effects of panel data which are called as fixed effect model and the random effect model and there are two assumptions made for these two models. To see if individual effects are correlated or uncorrelated with independent variables, the Hausman test is performed.

The hypothesis tested under the Housman test is as follows.

H0: The random effect model is appropriate.

H1: The fixed effect model is appropriate.

As per results of the Hausman test, model and model 2 are statistically significant at a 5% level. Therefore, the null hypothesis was rejected, and accepted the fixed models for analyzing panel data using EViews.

Table 7: Regression Analysis for Equation 01 of LCB

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 2014 2019				
Periods included: 6				
Cross-sections included: 15				
Total panel (balanced) observations: 90				
Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	0.066105	0.027950	2.365148	0.0208
CAR	-0.135024	0.063411	-2.129340	0.0367
AQR	-1.003622	0.215370	-4.659990	0.0000
MER	0.010249	0.016611	0.617010	0.5392
EQR	2.011960	0.491725	4.091638	0.0001
LR	-0.006503	0.015830	-0.410805	0.6825

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Cross-section fixed (dummy variables)			
R-squared	0.905670	Mean dependent var	0.114803
Adjusted R-squared	0.880066	S.D. dependent var	0.079475
S.E. of regression	0.027523	Akaike info criterion	-4.154433
Sum squared resid.	0.053028	Schwarz criterion	-3.598920
Log-likelihood	206.9495	Hannan-Quinn Criter.	-3.930417
F-statistic	35.37221	Durbin-Watson stat	1.753677
Prob(F-statistic)	0.000000		

Source: *Sample Data Analysis, 2020*

As per above table, the estimated linear regression model is.

$$ROE = 0.07 - 0.13 \text{ CAR} - 1.004\text{AQR} + 0.01\text{MER} + 2.01\text{EQR} - 0.006\text{LR} + \epsilon$$

The probability of the model (F Statistic) is 0.000 which indicates that the overall model is significant in determining the financial performance of the banking industry. Durbin Watson's measure is 1.7 which detects the autocorrelation problem of the model. However, it is between 1.5 and 2.5. It is depicted that there is no autocorrelation among variables. This amount is between 1.5 and 2.5. Therefore, there is no autocorrelation between among other variables.

Table 8: Regression Analysis for Equation 02 of LCB

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 2014 2019				
Periods included: 6				
Cross-sections included: 15				
Total panel (balanced) observations: 90				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021883	0.004116	-5.317054	0.0000
CAR	-0.045483	0.009337	-4.871041	0.0000
AQR	-0.212094	0.031713	-6.687850	0.0000
MER	0.015657	0.002446	6.400865	0.0000
EQR	0.818698	0.072407	11.30695	0.0000
LR	-0.012466	0.002331	-5.348117	0.0000
Cross-section fixed (dummy variables)				
R-squared	0.922488	Mean dependent	0.014165	
Adjusted R ²	0.901448	S.D. dependent var	0.012910	
S.E. of regression	0.004053	Akaike info crit.	-7.985676	
Sum squared	0.001150	Schwarz criterion	-7.430163	
Log-likelihood	379.3554	Hannan-Quinn	-7.761660	
F-statistic	43.84633	Durbin-Watson	1.877033	
Prob(F-statistic)	0.00000			

Source: *Sample Data Analysis, 2020*

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As per above table the estimated linear regression model is.

$$\text{ROA} = -0.02 + -0.04\text{CAR} - 0.21\text{AQR} + 0.015\text{MER} + 0.81\text{EQR} - 0.01\text{LR} + \varepsilon$$

The probability of the model (F Statistic) is 0.000 which indicates that the overall model is significant in determining the financial performance of the finance companies. Durbin Watson's measure got 1.8 which detects the autocorrelation problem of the model.

Table 9: Regression Analysis for Equation 01 of LFC

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 2014 2019				
Periods included: 6				
Cross-sections included: 34				
Total panel (balanced) observations: 204				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.025405	0.044046	0.576799	0.5649
CAR	0.419381	0.136936	3.062616	0.0026
AQR	-1.252605	0.174275	-7.187513	0.0000
MER	0.014684	0.010669	1.376340	0.1706
EQR	0.422440	0.222966	1.894640	0.0599
LR	0.035626	0.042306	0.842103	0.4009
Cross-section fixed (dummy variables)				
R-squared	0.723373	Mean dependent var		0.100884
Adjusted R ²	0.659665	S.D. dependent var		0.163489
S.E. of regression	0.095377	Akaike info criterion		-1.691787
Sum squared	1.500957	Schwarz criterion		-1.057441
Log-likelihood	211.5623	Hannan-Quinn Criter.		-1.435182
F-statistic	11.35453	Durbin-Watson stat		1.984429
Prob(F-statistic)	0.000000			

Source: *Sample Data Analysis, 2020*

As per above table the estimated linear regression model is.

$$\text{ROE} = 0.2 + 0.42\text{CAR} - 1.25\text{AQR} + 0.01\text{MER} + 0.42\text{EQR} + 0.3\text{LR} + \varepsilon$$

The probability of the model (F Statistic) is 0.000 which indicates that the overall model is significant in determining the profitability of the finance companies. Adj-R squared depicts the fitness of the model in explaining the company's profitability. It is 65.96% as per OLS panel regression results, implying that all considered independent variables of Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality and Liquidity are explaining approximately 70% of the return on equity, which is one of the dependent variables of the model. Durbin Watson's measure is 1.98 which detects the autocorrelation problem of the model.

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Table 10: Regression Analysis for Equation 02 of LFC

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 2014 2019				
Periods included: 6				
Cross-sections included: 34				
Total panel (balanced) observations: 204				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.017561	0.008550	2.053923	0.0420
CAR	0.088480	0.027554	3.211117	0.0017
AQR	-0.295946	0.036307	-8.151207	0.0000
MER	0.004950	0.001988	0.024888	0.5802
EQR	0.056630	0.039238	1.443245	0.1514
LR	-0.010894	0.007342	-1.483745	0.1403
ROA(-1)	0.230754	0.079839	2.890252	0.0045
Cross-section fixed (dummy variables)				
R-squared	0.834480	Mean dependent var		0.022175
Adjusted R ²	0.784824	S.D. dependent var		0.033600
S.E. of regression	0.015586	Akaike info criterion		-5.282539
Sum squared	0.031581	Schwarz criterion		-4.544704
Log-likelihood	16.80521	Hannan-Quinn Criter.		-4.983134
F-statistic	0.000000	Durbin-Watson stat		1.738062
Prob(F-statistic)	0.834480			

Source: *Sample Data Analysis, 2020*

As per above table, the estimated linear regression model is.

$$ROA = 0.01 + 0.08CAR - 0.29AQR + 0.004MER + 0.05EQR - 0.01LR + \varepsilon$$

All considered independent variables of Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality and Liquidity are explaining 78.48% of the return on assets. The probability of the model (F Statistic) is 0.000 which indicates that the overall model is significant in determining the financial performance of the finance companies. Under the random model, Durbin Watson was 1.37. So, this shows the autocorrelation problem of the model. Therefore, researcher ran the regression by adding dependent variable lag. The current Durbin Watson measure is 1.74 which detects the autocorrelation problem of the model.

5. CONCLUSION

Based on descriptive analysis, the researcher achieved the first objective of the study. The mean value of CAR of LCB and LFC are 16% and 18% respectively. The higher CAR indicates the investor protection ability of the company from bankruptcy. When

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comparing with LFC and LCB, LFC is highly successful in CAR with a mean value of 18%. Asset quality determines the healthiness of financial institutions against loss of value in the assets as asset impairment risks the solvency of the financial institutions. The weakening value of assets has a spillover effect, as losses are eventually written off against capital, which eventually exposes the earning capacity of the institution. The mean value of AQR of LCB and LFC are 4% and 7% respectively. According to the AQR, LCB had a lower value of non-performing loans to total loans ratio with a mean value of 4%, LCB is at the top position with assets quality ratios than LFC. Management efficiency is another important element of the CAMEL model. The ratio in this segment involves subjective analysis to measure the efficiency and effectiveness of management. The management of the company takes crucial decisions depending on its risk perception. The mean value of MER of LCB and LFC are 103% and 215% respectively. According to the MER, LFC is in the top position with the highest mean value of MER with the mean value of 215% with total loans to total deposit ratio, both LFC and LCB have a high level of management efficiency ratios. The quality of earnings is a very important criterion that determines the ability of a company to earn consistently. It determines the profitability of the bank and explains its sustainability and growth in earnings in the future. The mean value of EQR of LCB and LFC are 5% and 11% respectively. LFC is at the top position of earning quality. The risk of liquidity is a curse to the image of the company. The company has to take proper care to hedge the liquidity risk; at the same time ensuring a good percentage of funds are invested in high return generating securities so that it is in a position to generate profit by providing liquidity to the depositors. The mean value of LR of LCB and LFC are 48% and 24% respectively. According to the LR LCB are at the top position of liquidity than LFC.

To compare the overall performance of the LFC and LCB understudy, a composite ranking system was applied. It is computing by averaging all the ranks. Thus, (Capital Adequacy + Asset Quality + Management efficiency + Earning quality + Liquidity) /no of indicators (5). Based on the composite average, these sectors have been ranked. The sector which has the lowest composite average is ranked as the best sector.

Table 11: CAMEL Composite Average Ranking

Sector	CAR	AQR	MER	EQR	LR	Composite Average	Rank
LCB	2	1	2	2	1	1.6	2
LFC	1	2	1	1	2	1.4	1

To assess the overall performance of sectors, the composite rating has been calculated using the group ranking of the selected two sectors in Sri Lanka from 2014 through 2019 and results are presented in the above Table 5-1. Based on CAMEL model analysis, LFC is ranked in the first position with the lowest composite average of 1.4. Further analysis reveals that LFC has the best capital adequacy ability, efficient management process, and better management efficiency than LCB; however, it has a lower liquidity and an assets quality than LCB.

Based on regression analysis, the researcher achieved the second and third objectives of the study. The results of the fixed effect estimation model showed the existence of the following impact and relationship between performance measured by ROA & ROE and five CAMEL-independent variables. Credit risk as measured by CAR had a statistically significant negative impact on the ROE ratio of LCB. This means that if a bank has the highest amount of CAR which indicates the investor protection ability of the company from bankruptcy, then the return obtained from the equity could be decreased. Because if there is low risk; can be obtained a low return. However, CAR had a statistically positive impact on the ROE ratio of LFC. This means that if a company has the highest amount of CAR then the return obtained from the equity could be increased. Because if there is a high risk; then can obtain a high return.

Credit risk as measured by AQR had a statistically significant negative impact on the ROE ratio both of LCB and LFC. This means that if a company has the highest amount of non-performing loans relative to total loans which incur if customers are unable to repay within 90 days relative to total loans, then the return obtained from the equity could be decreased, hence high risk leads to lower the return.

EQR has a positive significant impact on the ROE ratio of LCB. This means that if a bank has the highest amount of EQR which incurs if the banks can earn consistently then the return obtained from the equity could be increased; hence law risk leads to a law return. However, EQR has a positive insignificant impact on the ROE ratio of LFC which means the EQR has no impact on the financial performance of LFC.

Although the researcher has found there is a positive insignificant impact between MER and ROE ratio in two sectors. And also, the researcher found a negative insignificant impact between LR on the ROE ratio of LCB on the other hand, researcher found a positive insignificant impact between LR on the ROE ratio of LFC. That means MER and LR have no impact on the financial performance of LCB and LFC.

All indicators of the CAMEL method are a statistically significant impact on the ROA of LCB. CAR, AQR, and LR have a statistically negative impact on the ROA of LCB. However, the MER and EQR have a statistically positive impact on the ROA of LCB. This means that if a company has the highest amount of MER and EQR, then the return obtained from the assets could be increased, hence law risk leads to a higher return.

Only two indicators of CAMEL indicators are a statistically significant impact on the ROA of LFC. CAR had a statistically significant positive impact on the ROA ratio of LFC. This means that if a bank has the highest amount of CAR which indicates the investor protection ability of the company from bankruptcy then the return obtained from the assets could be increased. Because if there is low risk; then they can obtain a high return. Credit risk as measured by AQR had a statistically significant negative impact on the ROA ratio of LFC. This means that if a company has the highest amount

of non-performing loans relative to total loans, then the return obtained from the assets could be decreased, hence high risk leads to a lower return.

Three independent variables are significant in model 1 and all variables are significant in model 2 as well as the overall probability value of the two models is significant at a 95% level of LCB. This means that model 1 and model 2 variables are suitable to measure the financial performance of LCB. Between two dependent variables, ROA is the best because all independent variables are significant with it. There are only two independent variables that are significant with model 1 and model 2 however, the overall probability value of the two models is significant at a 95% level of LFC. This means that model 1 and model 2 variables are suitable to measure the financial performance of LFC.

According to these findings, CAR had a significant relationship with financial performance, therefore, LFC and LCB should take action to increase the capital adequacy ratio. LFC and LCB should take action to decrease AQR to increase their financial performance. As results reveal that management efficiency had a positive relationship with ROA of LCB, therefore LCB should improve the efficiency management system. LCB should follow the way which increases the earning quality and should take the decision to increase the operating income for favorable profitability of the bank. LCB has to decide for decreasing LR to increase profitability because there is a significant negative relationship between LR and the ROA of LCB.

Finance sector is one of the most competitive sectors of present economic sectors. When commonly consider all the LCB and LFC are in a competitive position. Here LFC has a lower CAMEL composite ranking than LCB. It indicates LFC's ability to pay customer obligations more than LCB. Therefore, customers should consider the interest rate, credibility, goodwill, and other facilities & benefits before selecting the best place for their investment and other financing activities. This study topic will be a good area for future researchers because the result may change in the future according to the future expected data. The findings of this study may be helpful for the LCB and LFC and policymakers in improving the financial sector in Sri Lanka.

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