

Specific Factors and Financial Performance of Domestic Licensed Commercial Banks in Sri Lanka

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A b s t r a c t

This study investigated to what extent bank specific factors impact on financial performance of domestic licensed commercial banks in Sri Lanka. Explanatory variables of this study were capital adequacy ratio, operating cost efficiency, non-performing loans, bank size and liquidity. Return on assets and return on equity were treated as criterion variables to measure financial performance. The researchers collected data from published financial statements of nine domestic licensed commercial banks listed on Colombo Stock Exchange for the period of ten years from 2006 to 2015. Descriptive and inferential statistics have been used to examine the impact of bank specific factors on financial performance using STATA package. The Result of the study showed that capital adequacy ratio had positive significant impact on ROA while operating cost efficiency and non-performing loans had negative significant impact on ROA. Non-performing loans had significant negative impact on ROE while bank size had positive significant impact on ROE. However, liquidity didn't have any impact on ROA and ROE. The findings of this study may help major stakeholders of the bank to make important decisions for enhancing profitability of the bank.

Key words: Capital adequacy ratio, Operating cost efficiency, Non-performing loans, Liquidity, Net profit margin



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Basically, banking sector has an important role to play an intermediary position by receiving money as deposits from the people who have surplus fund and lending such fund to the people, who have deficit. Further, an economy of a country cannot function without a bank since they are acting as the oil for the wheels that keep the economy turning. The banking and finance sector in Sri Lanka is playing a very special and vital part for achievement of continuous economic growth of the country. Unlike banking sector in other countries in this region, Sri Lankan banking sector has grown rapidly with modernizing techniques and it is now on the sound platform. Sri Lanka has a fairly well-diversified banking system, which includes 25 licensed commercial banks consists of 13 domestic banks and 12 foreign banks and 7 licensed specialized banks. Central bank of Sri Lanka was established as an apex institution to monitor entire activities of these banking and financial sectors.

Different types of risks such as liquidity risk, credit risk, interest rate risk, operational risk and exchange rate risk can occur in the banking sector since it is handling huge amount of money in their day to day activities. External factors and internal factors can lead to these types of risk in banks. Most of the internal factors are bank specific factors such as capital adequacy, operating cost efficiency, size of deposit liabilities, liquidity, performance of employees, profitability, composition of credit portfolio, interest rate policies, state of information technology, risk level management quality and size (Dang, 2011). Some researchers use CAMEL stands for capital adequacy, asset quality, management efficiency, earnings ability, and liquidity (Muluaem, 2015). They differ from bank to bank. These factors can be controlled by management of the bank as it is considered as unsystematic risk. In order to protect financial institutions from unexpected losses, external parties of the banks such as Central Bank of Sri Lanka and Basel Committee are developing policies and releasing guiding articles time to time. Determining the profitability of the bank is one way to measure performance of bank. Profitability is measured in terms of return on assets and return on equity. However, ROE and ROA focus on different aspects of profitability. ROE measures the amount of profit generated by the firm by using equity, while in contrast ROA focuses on operating profitability using total assets (Sun and Li, 2013).

The aim of this study was to examine the impact of bank specific factors on financial performance of domestic licensed commercial banks in Sri Lanka. Number of researches has been conducted to examine the impact of bank specific factors on the financial performance of licensed commercial banks in Sri Lanka as well as in other countries (Swarnapali, 2014, Qaisar et al, 2015, Vincent and Gemechu, 2013, Mbella and Magloire, 2017, Eric et al, 2016). However, findings of each study were not consensus with other studies conducted in various years and in different regions. Basically external economic factors are common for entire institutions but banks specific factors of each bank are not similar to other banks. It would differ from one another in terms of capacity of such bank. there is limited recent literature on bank specific factors and degree of its impact on profitability. Therefore, this study has been done to fill this gap.

2. Literature review

a) Capital adequacy ratio

Financial strength of the banks is measured by capital adequacy ratio, which means that it tests the ability of the

bank to absorb unexpected losses. This ratio is positively related to the financial soundness of the bank, thus it is negatively related with a possible failure (Kumar and Thamil selvan, 2014). It is measured using the formula of Capital Adequacy Ratio = $(\text{Tier One Capital} + \text{Tier Two Capital}) / \text{Risk Weighted Asset} \times 100$. Positive relationship between capital adequacy ratio and financial performance of the banks has been identified in previous researches as it leads to generate funds cheaply and invest in better quality assets. (Obamuyi (2013), Sufian and Kamarudin (2012), Flamini et al. (2009), Rao and Lakew (2012), Nouaili et al. (2015)). However, Studies done by Swarnapali (2014) in Sri Lanka and Zhang and Dong (2011) revealed that there was a negative relationship between capital adequacy ratio and bank profitability.

b) Operating cost efficiency

Operating cost efficiency is used as one of the measure of efficiency of management. It is measured using the formula that total operating expenses are divided by total operating income. Basically operating cost should be lesser than the income from such operations. If so efficiency of the management would be increased. Bandara (2015) revealed that cost to income ratio had a negative and statistically significant relationship with the financial performance of the banks in a study carried out for commercial banks in Sri Lanka. But there was a positive relationship between operating cost and profitability of banks in a study carried out by Flamini et al, 2009.

c) Nonperforming Loans

Non-performing loan is a loan on which the borrower is not making any interest payments or repaying any principal. Therefore, loan is classified as non-performing by the bank. It is measured by dividing total non-performing loans with total loans and advances. Basically in banks increases of non-performing loans may lead to decrease financial performance of the banks. Most of the studies have found the same relationship such as negative relationship between non-performing loans and financial performance of the banks such as Kaaya and Pastory (2013), Kirui (2014) and Akter and Roy (2017).

d) Bank size

Size of the bank is generally measured in terms of assets. Basically there is a concept that when bank size is increased, financial performance of the bank will also be increased. Most of the previous studies' findings supports with this statement such as Goddard, et al. (2004), Bikker and Hu

(2002), Madhushani and wellappuli (2016), Weerasinghe and Perera (2013), Isik and Hassan, (2003), Sufian and Chong (2008), Flamini et al. (2009), Deger and Adem (2011). But very few researchers have found that negative relationship between bank size and financial performance of the bank such as Yong and Floros, 2012, (Staikouras and Wood, 2003).

e) Liquidity

Liquidity can be defined as ability of the bank to meet its financial obligations as they are due. It is measured by using the formula that liquid asset is divided by total assets (Longworth, 2010). According to the Athanasoglou et al, (2005), Demircuc-Kunt and Huizinga (1999) positive relationships have been identified between liquidity and profitability of the bank. Dang (2011) revealed in his study that adequate level of liquidity is positively related with bank profitability. However, Weerasinghe and Perera (2013) and Husain and Abdullah (2008) have found negative significant relationship between liquidity and profitability.

3. Methodology

a. Research design

Quantitative data on bank specific factors such as capital adequacy, operating cost efficiency, non-performing loans, bank size and liquidity and financial performance such as ROA and ROE have been collected from the published annual report of domestic licensed commercial banks listed on Colombo Stock Exchange in Sri Lanka. This study has been conducted using secondary data collected for the period of 10 years from 2006 to 2015.

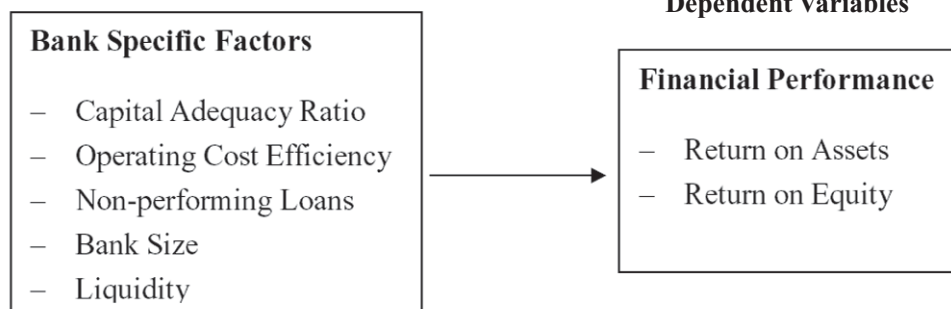
b. Target Population

Population of licensed commercial bank listed in Sri Lanka is 25 consists of 13 domestic banks and 12 foreign banks. However, population of this study was only 13 domestic licensed commercial banks.

c. Sampling Frame

Only nine domestic commercial banks have been selected randomly among thirteen banks to carry out this study. Financial statements of the selected banks have been used to derive appropriate data for the purpose of analysis of this study.

**d. Conceptual Frame work
Independent Variables**



e. Variables

Independent variables of this study were Capital adequacy ratio (CA), Operating cost efficiency (OCE), Nonperforming loan (NPL), Liquidity (LQ), Bank size (BS) while Return on assets (ROA), Return on equity(ROE) were treated as dependent variables.

Projected statistical model of this study is given below:

$$ROA = \alpha + \beta_1 CAR + \beta_2 OCE + \beta_3 NPL + \beta_4 BS + \beta_5 LQ + e \dots\dots\dots (1)$$

$$ROE = \alpha + \beta_1 CAR + \beta_2 OCE + \beta_3 NPL + \beta_4 BS + \beta_5 LQ + e \dots\dots\dots (2)$$

4. Data Analysis

Variables	Obs	Mean	Std. Deviation	Minimum	Maximum
Capital Adequacy Ratio	90	.1372	.0247	.056	.2000
Operating Cost efficiency	90	.5269	.1376	.1132	.8567
Non-performing Loans	90	.0583	.0500	.0131	.3361
Bank Size	90	5.3443	.4538	4.1013	6.1954
LQ	90	.0852	.0273	.0402	.1540
ROA	90	.0132	.0046	.0010	.0384
ROE	90	.1796	.0713	.0222	.4524

Source: Survey data

According to the descriptive statistics showed in the table 4.1, Mean capital adequacy ratio of selected banks is 13.72%. As per the Basel III, capital adequacy ratio should be 7.75% since 2017. It revealed that licensed domestic commercial banks are maintaining capital requirement in an acceptable manner. Its standard deviation is also at level of 0.0247. Approximately half of the operating income was used for spending on operating expenses. But standard deviation was 13.76%. Average nonperforming loans on

total loans and advances were 5.8%. It can be reduced more and more if the banks use some techniques to manage credit risk. Average liquid assets was 8.52% of total assets. Thereby, banks may face liquidity risk in the future. Mean and standard deviation of the bank size was 5.3443 and 0.4538 respectively. Average return on assets was 1.32% and it was very lower than average return on equity as 17.96%. Standard deviation was also very lower for ROA and ROE (0.0046 & 0.0713 respectively).

Table 4.2: Pairwise Correlation Analysis

	(1)	(2)	(3)	(4)	(6)	(7)
(1) Capital adequacy ratio	1					
(2) Operating cost efficiency	-0.0977	1				
(3) Nonperforming Loans	-0.1938	0.3565	1			
(4) Bank Size	-0.2542	-0.2362	-0.2742	1		
(5) Liquidity	-0.3169	-0.0946	-0.0203	0.0378	1	
(6) ROA	0.3753	-0.4102	-0.4751	0.0202	0.0327	1
(7) ROE	-0.0403	-0.2136	-0.3699	0.3320	0.1751	0.5326
	0.7059	0.0432	0.0003	0.0014	0.0989	0.0000

Source: Survey data

As per the result of correlation analysis presented in the Table 4.2, positive correlation ($r = 0.3753$) was identified between capital adequacy and ROA. It was significant at 0.01 level ($p = 0.0003$). Operating cost efficiency and non-performing loans had negative and significant relationship with ROA ($r = -0.4102$, $p = 0.0001$ and $r = -0.4751$, $p = 0.000$ respectively). Further, Operating cost efficiency ($r = -0.2136$, $p = 0.0432$) and nonperforming loans ($r = -0.3699$, $p = 0.0003$) had negative and significant relationship with ROE. Liquidity had no relationship with both measures of profitability ROA and ROE of licensed domestic commercial banks listed in Sri Lanka.

Table 4.3 Test of Multicollinearity

VIF test was carried out to check multicollinearity problem in the data set. Table 4.3 shows that the VIF for each independent

variable is less than 10 (cut off VIF) & the mean of VIF is also less than 2. All are near to 1. Further none of the tolerance value is less than .10 (cut off tolerance statistic). Therefore, model of this study is free from the problem of multicollinearity.

Table 4.3 Test of Multicollinearity

Variables	VIF	1/VIF
Capital Adequacy Ratio	1.33	0.752109
Operating Cost Efficiency	1.20	0.832203
Non-Performing Loans	1.28	0.779875
Bank Size	1.26	0.793232
Liquidity	1.15	0.872506
Mean VIF	1.24	

Table 4.4 Result of Multiple Regression Model - Dependent variable ROA

	Coef.	Std.Err	T	P > t	[95% Conf. Interval]	
Capital adequacy ratio	.0554	.0183	3.02	0.003	.0189	.0918
Operating cost efficiency	-.0088	.0031	-2.84	0.006	-.0150	-.0026
Nonperforming loans	-.0309	.0088	-3.48	0.001	-.0486	-.0132
Bank size	-.0006	.0009	-0.66	0.514	-.0025	.0012
Liquidity	.0164	.0154	1.06	0.290	-.0142	.0470
Constant	.0140	.0075	1.86	0.066	-.0009	.0291
R² = 0.3836		Prob> F = 0.0000		Root MSE = 0.0037		
Adjusted R² = 0.3469		F (5,84) = 10.46				

Source: Survey data

According to the results of multiple regression analysis presented in the table 4.4, coefficient of determination (R^2) of the model – 1 was 0.3836 which means 38.36% of total variance in ROA is explained by the variables which were considered as independent variables of this model. Further, capital adequacy had positive significant impact on ROA as $p = 0.003$ and $\beta = 0.0554$. Operating cost efficiency and non-performing loans had negative significant impact on ROA as $p = 0.006$, $\beta = -0.0088$ and $p = 0.001$, $\beta = -0.0309$ respectively. Even though these three variables had

significant impact on ROA value of β for each variable is very less. Bank size and liquidity didn't have any significant impact on profitability of the banks in terms of ROA. This result of this model consistent with the findings of some previous researches such as Apere and Oyinpreye (2016), Murerwa (2015), Samangi and Prabhath, (2013), Ongore and Kusa (2013), Akter and Roy, (2017), Kodithuwakku, (2015), Kirui (2014), Kaaya and Pastory (2013) and Weersainghe and Perera (2013).

Table 4.5 Result of Multiple Regression Model -Dependent variable ROE

	Coef.	Std.Err	t	P > t	[95% Conf. Interval]
Capital adequacy ratio	.0386	.3203	0.12	0.904	-.5984 .6757
Operating cost efficiency	-.0200	.0546	-0.37	0.715	-.1288 .0886
Nonperforming Loans	-.4048	.1555	-2.60	0.011	-.7142 -.0955
Bank size	.0380	.0169	2.24	0.028	.0043 .0718
Liquidity	.4204	.2697	1.56	0.123	-.1158 .9568
Constant	-.0308	.1325	-0.23	0.816	-.2944 .2326
R² = 0.2213		Prob> F = 0.0000		Root MSE = 0.06477	
Adjusted R² = 0.1749		F (5,84) = 4.77			

Source: Survey data

The results presented in table 4.4 reveals that value of coefficient of determination R² was 0.2213, which tells that 22.13% of variance in ROE was explained by the all five independent variables used in the model – 2, which is significant as p associated with F is 0.000 less than 0.01. Further, Non-performing loans had significant and negative impact on ROE as p = 0.011 and $\beta = -0.4048$. Similar finding has been identified in in previous study such as Rasika, Hewage and Thennakoon (2016). Bank size had positive significant impact on ROE as p = 0.028 and $\beta = 0.0380$. Capital adequacy, operating cost efficiency and liquidity didn't have any significant impact on ROE.

H1: there is a significant impact of capital adequacy ratio on financial performance and H2: there is a significant impact of operating cost efficiency on financial performance were supported to the findings of this study in terms of ROA. H3: there is a significant impact of non-performing loans on financial performance was supported to this findings in terms of ROA and ROE. H4: there is a significant impact of bank size on financial performance was also supported in as per the result of model – 2 regarding ROE. However, H5: there is a significant impact of liquidity on financial performance wasn't supported to the result of this study as p value of regression analysis in two models were more than 0.05.

5. Conclusion

This study was carried out to provide productive knowledge and ideas on how to increase financial performance of the banks to investors of the banks, policy makers,

managements, practitioners and other stakeholders. The major aim of this study was to examine the impact of bank specific factors on financial performance of domestic licensed commercial banks in Sri Lanka. Data has been collected from nine licensed domestic commercial banks for ten years period from 2006 to 2015 from annual reports of randomly selected banks. The findings of this study revealed that capital adequacy ratio had positive significant impact on financial performance of the banks while operating cost efficiency had negative significant impact on financial performance in terms of ROA. Bank size had positive significant impact on financial performance in terms of ROE. Non-performing loans had negative significant impact on financial performance of the banks as per the result of two models concerning ROA and ROE. Liquidity didn't have any impact on financial performance of the banks. As per these finding of the study, researcher can conclude that even though four out of five independent variables have significant impact on financial performance, non-performing loans should be paid with more attention as it has higher β value in model – 2 rather than other explanatory variables. Management of the bank can use some credit risk management strategies to reduce percentages of non-performing loans on total loans and advances such as screening the details of the customers according to the CAMELS and 5C methods, providing loans to their customers, diversification of loans and analysis capacity of loans receivers with the help of Fitch rating agencies. Finally this study can conclude that bank specific factors are mostly taking part to determine financial performance of banks.

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