

# Liquidity and Profitability of Financial Institutions in Sri Lanka

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**Abstract:** *The financial institutions have to be highly concentrated on developing sound techniques for proper tradeoff between liquidity and profitability due to its highly deal with ensuring adequate liquidity assets than non- financial institutions to meet the customers' demands. Therefore the aims of this study are to examine the degree and pattern of determinants of liquidity on profitability of financial institutions in Sri Lanka for the period from 2009 to 2013. The study covers 16 Banks and Finance Companies listed on the Colombo Stock Exchange. For these objectives, the study used Cash Position Indicator (CPI), Capacity Ratio (CR) and Total Deposit Ratio (TDR) as independent variables to measure the liquidity level to examine its determinants on Return on Assets (ROA) of financial institutions in Sri Lanka. The correlation and regression model are used as statistical tools for hypotheses testing to draw final conclusions. The findings reveal that CPI and TDR have significant determinants on ROA with sign of positive and negative respectively while CR has insignificance on ROA of Banks and Finance Companies in Sri Lanka. The overall finding from regression model is that 30% of variation in profitability (ROA) is explained by variation of liquidity of Banks and Finance Companies in Sri Lanka. Further, the liquidity has negative and significant impact on profitability of financial institutions in Sri Lanka. The finding is more useful to finance decision makers of financial institutions for taking sound decisions on proper tradeoff between liquidity and profitability.*

**Keywords:** Liquidity, Profitability, Financial Institutions, Banks and Finance Companies, Colombo Stock Exchange

## 1. Introduction

The liquidity decision is one of the financial decisions in each organization to maintain sufficient ability to meet its current financial obligations without any losses and interruption. The financial institutions are highly deal with ensuring adequate liquidity assets than non- financial institutions to meet the customers' demands to survive in competitive environment successfully. In financial institutions, adequate liquidity means capacity of the institutions to convert their assets into cash to meet the needs of customers wanting to withdraw funds, provide new loans demand and borrowers wanting to be assured that their credit or cash needs will be met.

The liquidity is sufficient investment in current assets to settle the short-term obligations. The large holding of current assets strengthens the firm's liquidity position but also reduce the overall profitability. According to the economist Assaf Neto (2003, p.22), the liquid assets are usually less profitable than fixed assets. It is that investment in current assets does not generate production or sales thus generate less profit. Hence generally assume that a conflict exists between liquidity and profitability when managing current assets. Therefore a proper tradeoff must be attained between liquidity and profitability. It's requires the financial managers have to be develop sound techniques on managing of current assets.

The above statement shows that investment in fixed assets generates the profit. However financial institutions cannot lock up funds for long periods without affecting liquidity.

Hence its institutions have to be keeping a balance between liquidity and profitability by investing optimum amounts in current assets. However, the relationship between liquidity and profitability has been investigated in Sri Lanka as well as

developed and other developing countries, there are two findings in Sri Lankan context evidence from Banks and Finance Companies and the internal and external interested parties are given more attention in this area to take decision regarding to their field. Therefore, this study has been investigated the degree and pattern of determinates of liquidity on profitability of Banks and Finance Companies in Sri Lanka for the period from 2009 to 2013.

Among various liquidity ratios to measure the liquidity level of financial institutions, this study is used Cash Position Indicator (CPI), Capacity Ratio (CR) and Total Deposit Ratio (TDR) to represent the liquidity. The Return on Assets is used to measure the profitability.

## 2. Literature Review

The relationship between liquidity and profitability has been well documented in developed countries as well as developing countries including Sri Lanka in financial and non-financial companies with various findings.

The study has been sectioned the literature into two groups namely previous findings in financial companies and non-financial companies. The first group of studies is on previous findings from financial institutions. The sufficient studies has been investigated the impact of internal and external factors on bank profitability. Short (1979) and Bourke (1989) provided the first studies on bank profitability. Victor, Samuel and Eric (2013) examined the relationship between liquidity and profitability of Banks listed on the Ghana Stock Exchange for the period from 2005-2010. This study has been included profitability and liquidity ratios analyses, time series analysis, and regression and correlation analyses. The results concluded that there was a positive weak relationship between liquidity and profitability of the listed banks.

Ongore and Kusa(2013) investigated the determinants of financial performance of Commercial Banks in Kenya from employed ROA, ROE, NIM as dependent variables and capital adequacy, asset quality, management efficiency and liquidity management as independent variables. The findings from regression analysis revealed that capital adequacy and management efficiency have positive and significant affect the performance of commercial banks while asset quality has negative and significant affect on the performance of commercial banks in Kenya. On the other hand, the effect of liquidity on the performance of commercial banks is not strong. Munther, Lina and Rania (2013) investigated the impact of liquidity through quick ratio on profitability (ROA) in Jordanian Banks listed on the Amman Stock Exchange (ASE)for the period 2005- 2011.The results from simple regression, found that there is significant impact of quick ratio on ROA. It's concluded that profitability in Jordanian banks is significantly influenced by liquidity.

Shrimal, Michael and Zahida (2013) investigated the bank-specific and other determinants of commercial bank profitability in selected South Asian countries which are Bangladesh, India, Pakistan and Sri Lanka. The findings revealed profit persistence in South Asian banking markets. Even though increasing competition exerts negative pressure on bank profitability, high industry concentration still allows these banks to earn higher profits. The well-capitalized banks and those with relatively more efficient production processes are the more profitable. South Asian banks also seem to experience economies of scale as bank size is positively associated with profitability. The results also indicated that slack legal systems in these countries (leading to inferior contract enforcement) positively affect profits as banks probably require higher risk premiums on their loan contracts. Weersainghe and Perera(2013) studied the impact of bank specific and macroeconomic factors on the profitability of commercial banks in Sri Lanka for the period 2001-2011 by carrying out a multiple panel regression. The results found that the large banks are recorded more profits due to economic of scale than the banks which are well sound with a higher regulatory capital ratio. Further, the results from the panel regression suggested that the liquidity and operating cost efficiency of banks have negatively related with profitability of commercial bank in Sri Lanka. Besides, interest rate has negative and significant impact on Return on Assets. It means that lower interest rate scenario lead to higher level of profitability with the expansion of banking activities.

The previous studies have been sufficiently investigated on non-financial companies than financial companies. Raheman and Nasr(2007) examined the effect of working capital management on profitability of sample of 94 Pakistani companies listed on Karachi Stock Exchange for a period of six years from 1999 – 2004. The study has been used average collection period, inventory turnover in days, average payment period, cash conversion cycle, and current ratio as independent variables to represent the working capital management to examine the effect on net operating profitability. They found that there is a strong negative relationship between variables of working capital management and profitability of the firms. Further, the study also showed that the liquidity and debt ratio have significant

negative relationship with its profitability while size of the firm has significant negative relationship with its profitability. Lyrودي, Mc Carty, Lazaridis and Chatzigagios(1999) investigated the association between liquidity and profitability of listed companies in London Stock Exchange for 4 years period. The results reveal that the cash conversion cycle (CCC),current ratio (CR) and the quick ratio (QR) have negatively associated with net profit ratio, return on assets ratio and the return on equity ratio. They also found a positive correlation between the liquidity ratios itself.Mohamad and Saad (2010) examined the effect of working capital management on performance of Malaysian listed companies. They found that current assets to total asset ratio has positive relationship while cash conversion cycle, current assets to current liabilities ratio and current liabilities to total assets ratio have negative relations.

In Sri Lankan context, the researchers have been investigated this topic in various non- financial sectors such as Velnampy and Kajanathan(2013) Niresh (2012), Jayarathne (2014), Jude Leon (2013), Priya and Nimalathasan(2013), Ajanthan(2013) and Nimalthasana(2010).Velnampy (2013) investigated causality between the profitability and cash position among listed telecommunication firms in Sri Lanka over a period from 2005 – 2011.Sales, total assets and current liabilities were used as the independent variables to measure the cash position and return on assets and return on equity as the dependent variable to measure the profitability. From SPSS, the descriptive analysis showed that there is no big fluctuation in the cash position ratios, return on equity and return on assets among Dialog telecom plc and Sri Lanka telecom plc. Based on the correlation analysis, there is a significant relationship between cash position ratios and return on equity & assets in the Sri Lanka telecom plc while there is no significant relationship in the Dialog telecom plc. Further, Sri Lanka telecom plc, cash position ratios has significant impact on the profitability comparing with Dialog telecom plc.

Priya and Nimalathasan(2013) examined the effect of changes in liquidity levels on profitability of manufacturing companies in Sri Lanka for the period from 2008 to 2012.Overall finding from correlation and regression analysis is that there is a significant relationship between liquidity and profitability among the listed manufacturing companies in Sri Lanka. From selected variables in separate investigation, Inventory Sales Period (ISP), Current Ratio (CR) and Operating Cash Flow Ratio (OCFR)are significantly correlated with Return on Asset (ROA) while Operating Cash Flow Ratio (OCFR) and Creditors Payment Period (CPP) are significantly correlated with Return on Equity (ROE).Ajanthan (2013) examined the nature and extent of the nexus between liquidity and profitability in profit-oriented quoted 08 listed trading companies and also to determine whether any relationship exist between the two performance measures in Sri Lanka for the period from 2008 to 2012. Correlation, regression analysis and descriptive statistics were used in the analysis and findings suggested that there is a significant relationship exists between liquidity and profitability among only the listed trading companies in Sri Lanka.

### 3. Methodology

The study has been used cash position indicator, capacity ratio and total deposit ratios independent variables to measure the liquidity level to examine its determinants on Return on Assets (measurement of profitability) of selected Banks and Finance Companies listed on the Colombo Stock Exchange. The calculations of selected variables of this study are shown in table 1.

**Table 01: Measurements of Selected Variables**

Variables	Measurements
Cash Position Indicator	Cash and deposits due from banks/ Total assets
Capacity Ratio	Net loans/Total assets
Total Deposit Ratio	Total customer deposits/Total assets
Return on Assets	Net Profit After Tax/Total Assets

The following hypotheses were formulated in this study.

**H<sub>1</sub>:** There is a significant association between Cash Position Indicator & Return on Assets of Banks and Finance Companies in Sri Lanka.

**H<sub>2</sub>:** There is a significant association between Capacity Ratio & Return on Assets of Banks and Finance Companies in Sri Lanka.

**H<sub>3</sub>:** There is a significant association between Total Deposit Ratio & Returns on Asset of Banks and Finance Companies in Sri Lanka.

**H<sub>4</sub>:** There is a significant impact of Cash Position Indicator on Return on Assets of Banks and Finance Companies in Sri Lanka.

**H<sub>5</sub>:** There is a significant impact of Capacity Ratio on Return on Assets of Banks and Finance Companies in Sri Lanka.

**H<sub>6</sub>:** There is a significant impact of Total Deposit Ratio on Return on Assets of Banks and Finance Companies in Sri Lanka.

**H<sub>7</sub>:** There is a significant impact of Liquidity on Profitability of Banks and Finance Companies in Sri Lanka.

The following model of pooled least square used without weights to examine the impact of liquidity ratios on profitability.

$$ROA_i = \beta_0 + \beta_1 CPI_i + \beta_2 CR_i + \beta_3 TDR_i + \varepsilon_i \quad (1)$$

**Where:**  $ROA_i$  is the return on total assets,  $CPI_i$  is the cash position indicator,  $CR_i$  is the capacity ratio,  $TDR_i$  is the total deposit ratio,  $\beta$  is the coefficient of regression and  $\varepsilon_i$  is the error term of regression.

This study covers 16 Banks and Finance Companies from Banks, Finance and Insurance sector in Colombo Stock Exchange. The selected companies are Nations Trust Bank PLC, Sampath Bank PLC, Commercial Bank of Ceylon PLC, Lanka Orix PLC, DFCC PLC, Citizens Development Business Finance PLC, LB Finance PLC, Pan Asia Banking Corporation PLC, Seylan Bank PLC, Arpico Finance Company PLC, Soft Logic Company PLC, Central Finance Company PLC, Vallibel Company PLC, Nation

Development Bank PLC, Hatton National Bank PLC and Merchant Bank of Sri Lanka PLC.

The dataset of all selected variables in this study were collected from annual reports of above selected companies for the period of 2009-2013 and correlation analysis and pooled regression type of panel data analysis are used for hypotheses testing.

### 4. Empirical Results

#### 4.1 Test of Multicollinearity

An assumption of the regression model is that there is no exact linear relationship between any of the independent variables. Thus, as a first step, this study is used correlation matrix between independent variables and two methodologies namely tolerance and variance inflation factor (VIF) from regression output are used to check multicollinearity among selected independent variables are presented in Table 2 and Table 3 respectively.

#### 4.1.1 Correlation Coefficients (r) among Selected Independent Variables

**Table 2: Correlations Matrix between Selected Independent Variables**

Variables	CPI	CR	TDR
CPI	1		
CR	0.178	1	
TDR	-0.238*	0.237*	1

\*Correlation is significant at the 0.05 level (2-tailed).

A suggested rule of thumb is that if the pair wise correlation between independent variables is very high, in excess of 0.8 with significant, multi collinearity may pose serious problem (Ahmet.B, 2010). According to Table 2 show that no multicollinearity exists among selected independent variables since significant correlation coefficients are less than 0.8.

#### 4.1.2 Tolerance and Variance Inflation Factor (VIF)

**Table 3: Tolerance and Variance Inflation Factor**

Variables	Collinearity Statistics	
	Tolerance	VIF
CPI	0.885	1.130
CR	0.886	1.129
TDR	0.863	1.159

Two methodologies namely Tolerance and VIF values from regression results are also used to check the multicollinearity. The table 3 clearly shows that there is no multicollinearity among selected independent variables since tolerance level is less than or equal to 1 and VIF values are below the 5 or 10. Therefore, table 2 and 3 reports that there is no multicollinearity among selected independent variables of this study.

#### 4.2 Hypotheses Testing from Correlation and Regression Tools

Correlation coefficient between selected independent and dependent variables and regression outputs are presented in

table 4 and table 5 respectively to test the hypotheses for drawing conclusions.

#### 4.2.1 Correlation Coefficient between Liquidity Ratios and Profitability (ROA)

**Table 4: Correlations Coefficient between Liquidity Ratios and ROA**

Variables	CPI	CR	TDR
ROA	0.350 (sign at 1%)	-0.203	-0.461 (sign at 1%)

According to the Table 4, Cash Position Indicator (CPI) and Total Deposit Ratio (TDR) have significant associations with Return on Asset at the 0.01 level with sign of positive and negative respectively while Capacity Ratio (CR) has insignificant association with Return on Asset at the 0.05 level in Banks and Finance companies in Sri Lanka. Therefore, H<sub>1</sub> and H<sub>3</sub> are accepted. But H<sub>2</sub> is rejected from correlation tool.

**Table 5: Summary of Hypotheses Testing from Correlation Tool**

No	Hypotheses	Results
H <sub>1</sub>	There is a significant association between CPI and ROA of Banks and Finance Companies in Sri Lanka.	Accepted
H <sub>2</sub>	There is a significant association between CR and ROA of Banks and Finance Companies in Sri Lanka.	Rejected
H <sub>3</sub>	There is a significant association between TDR and ROA of Banks and Finance Companies in Sri Lanka.	Accepted

#### 4.2.2 Regression Analysis

The pooled regression type of panel data analysis is used to investigate the impact of liquidity on profitability of Banks and Finance Companies in Sri Lanka.

##### 4.2.2.1 Overall Regression Summary Output

**Table 6: Overall Regression Summary Output**

R	0.548
R <sup>2</sup>	0.300
Adjusted R <sup>2</sup>	0.268
F	9.420
Prob (F-Statistic)	0.000

Table 6 reports that R value of 0.548 indicates positive strong linear correlation between liquidity and profitability. The value of R Square is 0.300 implies that 30% of variation in ROA is explained by the variations of all selected liquidity ratios. Remaining 60% variation in ROA attributed to other variables which are not considered in this study. The F value is significant at the 0.01 level. Therefore at the 0.01 significance level, it can be statistically concluded that the model is fit to investigate the Liquidity determinants on Profitability of Banks and Finance Companies in Sri Lanka.

##### 4.2.2.2 Standardized Coefficients of Liquidity Ratios

**Table 7: Standardized Coefficients of Liquidity Ratios**

Variables	$\beta_a$
Constant	0.037*
CPI	0.118*
CR	-0.012
TDR	-0.032*

Table 7 reports that Cash Position Indicator (CPI) and Total Deposit Ratio (TDR) have significant impact on Return on Assets (ROA) at the 0.05 level with sign of positive and negative respectively while Capacity Ratio (CR) has insignificant impact on ROA of Banks and Finance Companies in Sri Lanka at the 0.05 level. Therefore, H<sub>4</sub> and H<sub>6</sub> are accepted. But H<sub>5</sub> is rejected.

##### 4.2.2.3 Standardized Coefficient of Overall Liquidity for Test the H<sub>7</sub>

**Table 7: Standardized Coefficients of Overall Liquidity**

Variables	$\beta_a$
Constant	0.040*
Liquidity	-0.051*

The liquidity has negative and significant impact on profitability of Banks and Finance Companies in Sri Lanka at the 0.05 level. Therefore H<sub>7</sub> is accepted.

**Table 8: Summary of Hypotheses Testing from Regression Tool**

No	Hypotheses	Results
H <sub>4</sub>	There is a significant impact of CPI on ROA of Banks and Finance Companies in Sri Lanka.	Accepted
H <sub>5</sub>	There is a significant impact of CR on ROA of Banks and Finance Companies in Sri Lanka.	Rejected
H <sub>6</sub>	There is a significant impact of TDR on ROA of Banks and Finance Companies in Sri Lanka.	Accepted
H <sub>7</sub>	There is a significant impact of liquidity on Profitability of Banks and Finance Companies in Sri Lanka.	Accepted

## 5. Conclusions and Recommendations

The study has been used correlation and regression tools for hypotheses testing to draw conclusions. The findings show that Cash Position Indicator (CPI) and Total Deposit Ratio (TDR) have significant determinants on Return on Assets (ROA) with sign of positive and negative respectively while Capacity Ratio (CR) has insignificance on ROA of Banks and Finance Companies in Sri Lanka. The overall finding from regression model is that 30% of variation in profitability (ROA) is explained by variation of liquidity of Banks and Finance Companies in Sri Lanka. Further, the liquidity has negative and significant impact on profitability of financial institutions in Sri Lanka.

The main income of financial institutions is interest income. The cash position indicator has positive and significant role on ROA when rising of short term deposits increase then interest income after interest expenses. The reason of capacity ratio has insignificant role on ROA is that most of the financial institutions in Sri Lanka does not have well plan and careless to collect the interest on time from lending

money. The total deposit ratio (TDR) has significant and negative role on ROA when rising of customers' deposit increase the interest expenses than interest income receive from using these deposit amounts in various ways.

Generally assume that higher liquidity does not generate production or sales thus negative relationship between liquidity and profitability. Therefore financial managers have higher responsibility to manage the optimum liquidity to maintain the profitability. But the relationship between both variables may be positive or negative in financial institutions. The high liquidity may allow financial institutions to avoid costly borrowing and receive high income from lending and investment in other higher liquidity financial institutions than interest expenses. Thus there may be positive linkage between both variables. The overall finding of this study is that there is a negative and significant impact of liquidity on profitability. The reason that however higher liquidity, it may not be reduce the borrowing in sufficient level further interest expenses for customers' deposit and borrowings are higher than income receives due to less management on liquidity and profitability in short run in Sri Lanka context. It may be positive in medium or long run through reduce the borrowings and well management in liquidity and profitability. The result is consist with Weersainghe and Perera (2013) who reported liquidity has negatively related with profitability of commercial bank in Sri Lanka.

Some areas for future researchers are that this study covers only 16 Banks and Finance Companies due to the unavailability of data. This result can be generalized to only financial institutions in Sri Lanka context. Also this study has been employed three most appropriate liquidity ratios for financial institutions and ROA for profitability measurement. Thus the future researchers can be compared explanatory power of liquidity on profitability among various sectors of Colombo Stock Exchange with employing various liquidity and profitability ratios.

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