

The Impact of Liquidity Ratios on Profitability

(With special reference to Listed Manufacturing Companies in Sri Lanka)

K. H. I. Madushanka^{1,2}, M. Jathurika²

^{1,2}Department of Business and Management Studies, Trincomalee Campus of Eastern University, Trincomalee, Sri Lanka
Email address: ¹khishanmadushanka@gmail.com, ²jathuinpam@yahoo.com

Abstract— The ultimate goal of the companies is to enhance the wealth of the shareholders. For that purpose the liquidity and profitability plays the vital and crucial role. Especially the liquidity and its management are caused to great extent of the growth and profitability of a firm. The liquidity management becomes most important one as the inadequate liquidity may injurious to the smooth operations of the firm as well as the excess liquidity can be disturbed to achieve the greater profits. In this way, the present study is aimed to investigate the relationship between liquidity and profitability. The analysis is based on 15 manufacturing companies listed on the Colombo Stock Exchange over a period of past five years from 2012 to 2016. Correlation and regression analysis as well as the descriptive statistics were applied in the analysis and findings suggest that Liquidity ratios (Quick ratio) have positive and significantly related to the firm profitability among the listed manufacturing companies in Sri Lanka. Overall this research can give a recommendation for the Manufacturing Companies in Sri Lanka that, pay more attention on the liquidity ratios as they have the significant impact on the profitability of the firms. Further they want to devise new strategies for the proper liquidity management as their current ratio values implies the lack of management in liquidity assets.

Keywords— Liquidity, Profitability, Manufacturing Sector, Sri Lanka.

I. INTRODUCTION

In the present economic world, financial crisis affects to most of the countries' economic situations. This situation can be seen in the considerable number of developing countries as well as developed countries economy. (Owolabi and Obida, 2012). As the result of this financial crisis, most of the countries in the world become as debtors in another countries and various international organizations such as International Monetary Fund, World Bank. Within this situation, the liquidity concept become as the most significant in the economy (Lamberg and Vålming, 2009).

When concerning about that financial crisis this situation similar for the companies also. The main reasons for that is higher level of inflation rate and disadvantageous foreign exchange rates (Owolabi and Obida, 2012). The actual value of the money is declined as above factors. Hence managers have the higher responsibility relating with the maintaining sufficient liquidity level within the company. However the business owners and managers in overall the world devise policies to enhance the profitability level and shareholders' wealth in organizations. As there has a financial crisis situation, to perform the day to day financial requirements managers need to maintain adequate level of liquidity level within firms (Eljelly, 2004).

The meaning of maintaining liquidity assets within the firm is the opportunity cost of earning profitability (Nires, 2012). The liquidity management can be identified as the backbone of the company. Without maintaining adequate liquidity level within the firm, managers cannot predict their future. If the firm cannot earn any profit, it is considered as the sick. But if the firm has not any liquidity, it is downfallen and then died. As that matter, liquidity is the pre-requisite for determining the survival of the company (Nires, 2012). Hence the liquidity management is become as more significant role rather than other activities.

Various parties are concerning about the financial activities of the firm for making better decisions. Following parties are highly concerning about the liquidity position and profitability level based on the following reasons. Shareholders are the owners of the listed companies. They invest their money on shares to make a higher return from the investment. Hence they primarily concern about the liquidity position of the company, because liquidity level affects to determine the profitability level of company (Saleem and Rehman, 2011). As the above reasons, liquidity and profitability of the firm is very important for the prospective investors as well.

Managers are the decision makers of the company. They need to get more better and favourable decisions for the company Hence, managers should concern about the both short term and long term financial positions of the company because, short term is the foundation for long term activities and survival. Managers have a responsibility to ensure the continuously operation of production cycle in efficiently and solve the short term financial obligations in promptly as well as enhance the profit level to ensure the prosperity of firm. Hence the lack of or excess liquidity is not favourable to the company in the present or future time.

Further, this relationship is significant for the creditors. Creditors can be divided in to two parts based on the maturing period as short and long term creditors. Short term creditors will check the liquidity of company before selling goods on credit. They expect to get money within short term period for their selling items. To fulfil it's as they wish, company should be maintained sufficient level of liquidity assets. Long term creditors also concern about the liquidity position for receiving interest income and concern about the profitability level for the security of lending capital amount.

Employees and trade unions are concerning about the liquidity level of the company. Because they need to know whether the company can meet its employee related obligations—salary, pension, provident fund, etc. For pay that

obligations, company should ensure the smooth of production process. As well as the profitability level is highly impacted to determining the security of jobs, promotions, salary increments etc. Hence the excess or lack of liquidity level may not be good for employees.

After analyzing the above factors, can be identified that the liquidity is very significance criterion. Because of most of the parties get better decisions by considering the liquidity position of the companies. A company needs to maintain adequate level of liquidity because liquidity is greatly affected to the profitability as the close relationship among them. As the result of that, when one variable is increased, other variable is decreased.

There has not standard or formal rule to determine the best suited liquidity level for the companies. It depends on the balance sheet situations of the firms (Owolabi and Obida, 2012). However if firms with low current assets it will be a problem for the continuous operations. Instead of low balances, if companies have the much more liquidity assets rather than daily requirements, it is also badly affected for the profitability purpose (Horne & Wachowicz, 2000).

II. RESEARCH PROBLEM

Many studies in the literature are based on developed countries. Therefore, those findings cannot be applied to the Sri Lankan context since, the nature of economic activities, economic conditions, of developed countries are different from in developing countries. Moreover, few studies have been conducted to analyse the association between liquidity and profitability of manufacturing industry in Sri Lanka. After considering above factors, this study tries to fill this gap by doing research on manufacturing companies in Sri Lanka.

One of the major reasons that may cause liquidation is illiquidity and inability to make adequate profit. These are some of the basic ingredient of measuring the “going concern” of an establishment. For these reasons companies are developing various strategies to improve their liquidity position. Strategies which can be adapted within the firm to improve liquidity and cash flows concern the management of working capital, areas which are usually neglected in times of favourable business conditions (Pass and Pike, 1984). The problems to be addressed by this study are to evaluate the relationship between liquidity management and profitability of some listed manufacturing companies in Sri Lanka.

Maintaining a proper liquidity indicates that funds are confined to liquid assets thereby making them unavailable for operational use or for investment purposes for higher returns. Thus, there is an opportunity cost associated with the maintenance of those liquid assets and this might affect the overall profitability of the firm. In other words, increasing profitability would tend to reduce firm’s liquidity and too much attention on liquidity would tend to affect the profitability (Smith, 1980). Therefore, firms should always strike to maintain a balance between conflicting objectives of liquidity and profitability. The firm’s liquidity should not be too high or too low. Excessive dependence on liquidity indicates the accumulation of idle funds that don’t fetch any profits for the firm (Smith, 1980). On the other hand,

insufficient liquidity might damage the firm’s goodwill, deteriorate firm’s credit standings and that might lead to forced liquidation of firm’s assets. Hence, the present study is initiated “To identify of the impact of liquidity ratios on profitability of listed manufacturing companies in Sri Lanka” (Nireesh, 2012).

III. RESEARCH QUESTIONS

The questions of the study are,

- Is there any significant impact of liquidity ratios on profitability of Listed Manufacturing Companies?
- Is there any significant relationship between liquidity ratios and profitability of Listed Manufacturing Companies?

IV. RESEARCH OBJECTIVES

The Main Objective

To identify of the impact of liquidity ratios on profitability of selected listed manufacturing companies in Sri Lanka.

Sub Objective

To identify the significant relationship between liquidity ratios and profitability of selected listed manufacturing companies in Sri Lanka.

Researcher expected to use two types of liquidity ratios for achieving above objectives. In here, current ratio and quick ratio is used for calculating the liquidity position of companies.

V. METHODOLOGY

This study adopts a quantitative approach, links secondary data derived from the annual financial reports of selected firms during the period of 2012-2016, using the CSE’s database.

To measure the liquidity position, use two liquidity ratios. Current ratio and quick ratio is used as the liquidity ratios. Return on Assets; Return on Equity the profitability ratios that are used for this study. Liquidity ratios are implemented as the independent variables and dependent variables are the profitability ratios.

VI. CONCEPTUALIZATION

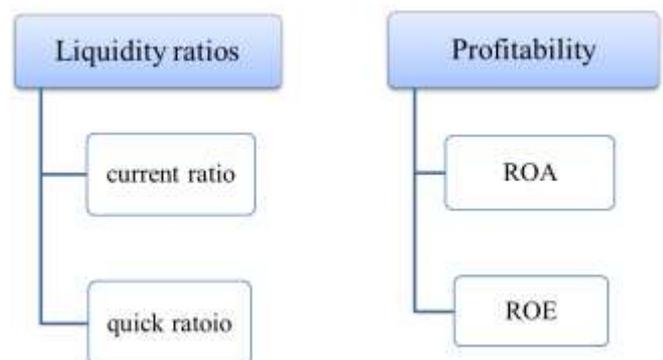


Fig. 1. Conceptualization of variables.

VII. OPERATIONALIZATION

TABLE 1. Operationalization of variables.

Key concept	Variables	Indicators	Measurement
Liquidity ratios	Current ratio (CR)	Company's ability to meet short-term debt obligations	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
	Quick ratio (QR)	Company's ability to meet its short-term obligations using its most liquid assets.	$\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$
Profitability	Return On Assets (ROA)	How much is earned on firm's total assets	$\frac{\text{Net Profit After tax}}{\text{Total Assets}} \times 100$
	Return On Equity (ROE)	How much is earned on firm's capital	$\frac{\text{Net Profit After tax}}{\text{Total Equity}} \times 100$

VIII. HYPOTHESES

Based on the conceptualization model, two hypotheses which were developed in order to determine the relationship between liquidity ratios and profitability. The following hypotheses are formulated for the study.

- H1 -There is a significant impact of liquidity ratios on profitability.
- H2 -There is a significant relationship between liquidity ratios and profitability.

IX. SAMPLING DESIGN

The present study is confined only to the 15 listed manufacturing companies in Sri Lanka representing the period of 2012-2016, and the value of each item was considered for the purpose of ratio computation and analysis which are related to correlation and regression.

The population of interest in this study is 41 listed manufacturing companies on the CSE, as at 29th March 2018. In selecting the population, the risk of missing data was minimized by excluding firms that were not listed throughout the review period. After the eliminations 15 manufacturing companies remained in the population.

X. METHODS OF DATA ANALYSIS

Methodology in research is a vital part. The analysis method will be a summary of how liquidity ratios impact on profitability. In order to make proper findings, data has to be analyzed and interpreted through relevant analysis techniques. Data analysis is done by the help of software package SPSS. It is used for processing the data.

In addition, descriptive statistics which includes central tendency and dispersion measures are used to describe the dataset. Central tendency include mean, median and mode, while the measures for dispersion include standard deviation, variance. Descriptive statistics is the discipline of quantitatively describing the main features of a collection of information, or the quantitative description itself (Dodge, 2003). The following statistical tools or techniques used in the study.

A. Correlation Analysis

Correlation analysis is a statistical analysis method which statistically measures the extent the nature of the relationship between the two variables. The technique is used to find out the relationship among the variables and their strength. The relationship between these two variables is described through a single value, which is the coefficient. Correlation coefficient 'r' is a number that represents the level of relationship between two individual variables (Washington, 2010). In this study, the correlation co-efficient analysis is under taken to find out the relationship between the following two variables;

- Independent variable – Liquidity ratios.
- Dependent variable – Profitability.

In this research, in order to find out the relationship between variables, Pearson-co-efficient of correlation is used. The Co- efficient of correlation (r) takes the values from + 1 to - 1 (including plus one to minus one).

B. Regression Analysis

Regression analysis is a statistical tool for the investigation of impact of one variable of another. Usually, the investigator seeks to ascertain the causal effect of one variable upon another. This study involves only one independent variable and is therefore normal regression analysis used to drive the conclusion but not multiple regression analysis. The technique involves developing a mathematical equation that describes the effect of the one variable to upon another. In general, regression analysis describes the mathematical equation, that "best fit" the value recorded for the two variables.

Regression analysis in this study is used to test the hypothesis (H1) that the significant impact of liquidity ratios on profitability. Simple regression is used to find out relationship between liquidity ratios and profitability which begins with a set of data values and determines a "best fit" equation of the firm.

$$Y = a + bx$$

Where,

Y – Dependent Variable

a – Y intercept of the equation

b – Slope of the equation

x – Independent Variable

In this study regression models could be created as follows;

$$ROA = a_0 + a_1 CR + b_2 QR \dots \dots \dots \text{Model 01}$$

$$ROE = b_0 + b_1 CR + b_2 QR \dots \dots \dots \text{Model 02}$$

Where, ROA indicates Return on Assets, ROE indicates Return on Equity, CR indicates Current assets and QR indicates Quick ratio.

a₀ and b₀ indicate the constant terms

a₁, a₂, b₁, b₂ are regression coefficients

C. Descriptive Statistics

The current section deals with the results of the study which includes descriptive statistics. The descriptive statistics are calculated and analysis mean and standard deviation of all

variables have been presented in Table 4.2 and profitability variables consisting ROA and ROE. Data from 2012/13 to 2016/17 were collected for CR, QR and along with the profitability variables from annual reports. A summary of the descriptive statistics for these variables is presented below.

TABLE 2. Descriptive statistics for variable.

	Min	Max	Mean	Std. Deviation
CR	0.40	12.78	1.81	1.603
QR	0.29	2.41	1.00	0.47
ROA	0.67	28.89	7.60	5.71
ROE	-1.90	81.00	17.34	14.53

Source: Results from the panel data analysis

Table 2 presents the descriptive statistics for the liquidity ratios (independent variable) and profitability (Dependent variable).

As in the table above the number of observations included in the regression analysis is 75 observations with two dependent variables; Return on Assets and Return on Equity and two independent variables; CR and QR. The minimum value is the lowest value with relate to the variables and maximum is the highest value of mentioned variables. The mean value is the measurement of central tendency where it represents the average value of the above variables.

The descriptive statistics show that over the period under study, the criteria used for measuring profitability including Return on Equity, Return on Assets averaged 7.60, 17.34 respectively. Furthermore, the mean value of the Current ratio was 1.81 and Quick ratio was the 1.00 value.

Mean value of current ratio did not reach to the standard conventional rule of 2:1 for Current ratio and Mean value of current ratio approximately reach to the standard conventional rule of 1:1. This indicates that on the average, manufacturing companies in Sri Lanka may find it difficult to meet their short-term obligations with having inventories but have the adequate capacity to face the short term obligations well without inventories. However, some companies have recorded 12.78 and 2.41 for current ratio and quick ratio in respectively. It means, some companies have good ability to face the short term obligations well while it expresses these companies have not adopted an effective liquidity management.

D. Regression Analysis

Regression analyses the impact between the independent and dependent variables which have used in the study; normal regression analysis has performed to identify the impact of liquidity ratios on profitability as conceptualized in the models.

TABLE 3. Model summary (Dependent variable- ROA, and ROE).

Model	R	R Square	Adjusted R Square	F-Statistics
1(ROA)	0.248*	0.062	0.036	3.072
2(ROE)	0.387*	0.150	0.126	1.347

Table 3 show the model summary. Co-efficient of determination is a measure of a portion of total variance in the Y variable. That is explained or accounted for by the introduction of the X variable.

Here for Model 01

$$R^2 = 0.062$$

Adjusted $R^2 = 0.036$

In this model R^2 indicates that 6.2% of ROA can be explained by the differences in the Independent variable (liquidity ratios), the remainder 93.8% of the ROA is attributed to other factors. Whereas,

Here for Model 02

$$R^2 = 0.150$$

Adjusted $R^2 = 0.126$

In this model R^2 indicates that 15% of ROE can be explained by the differences in the Independent variable (liquidity ratios), the remainder 85% of the ROE is attributed to other factors.

TABLE 4. Result of regression analysis (Dependent variable = ROA).

Independent variable	B	Std. Error	T	Sig.
(Constant)	4.857	1.581	3.072	0.003
Current ratio	-0.185	0.419	-0.441	0.660
Quick ratio	3.066	1.411	2.173	0.033

TABLE 5. Result of regression analysis (Dependent variable = ROE).

Independent variable	B	Std. Error	T	Sig.
(Constant)	5.157	3.828	1.347	0.182
Current ratio	0.355	1.013	0.350	0.727
Quick ratio	11.495	3.417	3.365	0.001

Thus, the regression Model one and two have obtained in the Chapter three could be partially accepted and it explains Independent variable (Quick ratio) has significant impact on ROA and ROE. Whereas, independent variable (Current ratio) has an significant impact on ROA and ROE. The impact of Quick ratio on ROA is significant ($t=2.173$ and $p=0.033$) at the 5 percent level and the impact of Quick ratio on ROE is significant ($t=3.365$ and $p=0.001$) at the 1 percent level. However, the other variable (Current ratio) in that equation is not statistically significant though all have positive signs.

E. Correlation Coefficient Analysis

TABLE 6. Correlation coefficient analysis.

Variables	CR	QR	ROA	ROE
CR	1.000			
QR	0.234* (0.043)	1.000		
ROA	0.008 (0.946)	0.243* (0.036)	1.000	
ROE	0.127 (0.277)	0.385** (0.001)	0.290* (0.012)	1.000

*** Correlation is significant at the 0.01 level

**Correlation is significant at the 0.05 level

Correlation analysis is used to identify the strength of relationship between two variables. Correlation analysis shows there is a significant relationship between the Independent variable (Quick ratios) which is one of the variables measuring the Liquidity ratios and the Dependent variable (profitability). Results further indicate that correlation between Quick ratio and ROA is 0.243. It clearly described the positive relationship between Quick ratio and ROA which is at the significance level of 5% (p value-0.036) Meanwhile correlation between Quick ratio and ROE which is used as the independent variable in this study is 0.385 which is also denoted the positive relationship at significance level 1% (p

value-0.001).Correlation between the Current ratio and ROA, ROE shows insignificant relationship according to the p values.

F. Hypotheses Testing

Here the correlation analysis and regression analysis are used to test the hypothesis. The hypothesis testing formulated by the researcher for this study based on the hypothesis referred in chapter 3.

Those are,

H₁: There is a significant impact of Liquidity ratios on Profitability.

From the above regression analysis, Independent variable (Current ratio) has insignificant impact on ROA and ROE. The impact of Quick ratio on ROA is significant (t=2.173 and p=0.033) at the 5 percent level and the impact of Quick ratio on ROE is significant (t=3.365 and p=0.001) at the 1 percent level. However, the other variable (Current ratio) in that equation is not statistically significant though all have positive signs. So this H₁ could be partially accepted as Quick ratio is the main variable which expresses the profitability.

H₂: There is a significant relationship between Liquidity ratios and Profitability.

It could be identified correlation between Quick ratio and ROA is 0.243 means positive significant relationship which is at the significance level of 5% (p value-0.036) Meanwhile correlation between Quick ratio and ROE is 0.385 which is also denoted the positive significant relationship at significance level 1% (p value-0.001).Correlation between the Current ratio and ROA, ROE shows insignificant relationship according to the p values. So this H₂ also partially accepted.

TABLE 7. Summary of hypotheses testing results.

	Hypotheses	Tools	Results
H ₁	There is a significant impact of Liquidity ratios on Profitability.	Regression	Partially accepted
H ₂	There is a significant relationship between Liquidity ratios and Profitability.	Correlation	Partially accepted

XI. RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Overall this research could give a recommendation for the Manufacturing Companies in Sri Lanka that is, pay more attention on the liquidity ratios as they have the significant impact on the profitability of the firms. Specifically concentrate on the Quick Ratios as they have positive and significantly related to the firm profitability.

Further they want to devise new strategies for the proper liquidity management as their current ratio values implies the lack of management in liquidity assets. Particularly they can implement strategies regarding the management of Inventories and they could adopt new inventory management techniques like Just in Time (JIT) and the modern technologies for the

effective Management and it will lead to enhance the profitability of firms.

This study only considers the five year of data collection future studies could take a long period to identify the real impact and relationship and also this study only covers the 15 listed manufacturing companies and covers more firms in Sri Lanka or increase the sample will result the accurate results.

XII. CONCLUSION

This research has been completed by researcher through five chapters; each chapter contains very important aspects relating to this research. This research has been completed with the two important objectives that are to identify the impact of Liquidity ratio on profitability of listed Manufacturing Companies in Sri Lanka and to identify the relationship between Liquidity ratios and profitability. Correlation analysis and regression show that Liquidity ratios (Quick ratio) have positive and significantly related to the firm profitability.

REFERENCES

- [1] A. Alagathurai, "A nexus between liquidity & profitability: A study of trading companies in Sri Lanka," *European Journal of Business and Management*, vol. 5, issue 7, pp. 221-237, 2013.
- [2] A. S. Alshatti, "The effect of the liquidity management on profitability in the Jordanian commercial banks," *International Journal of Business and Management*, vol. 10, issue 1, pp. 62-71, 2015.
- [3] E. Ben-Caleb, U. Olubukunola, and U. Uwugibe, "Liquidity management and profitability of manufacturing companies in Nigeria," *International Organization of Scientific Research Journal of Business and Management (IOSR-JBM)*, vol. 9, issue 1, pp. 13-21, 2013.
- [4] S. Lamberg and S. Vålming, "Impact of Liquidity Management on Profitability: A study of the adaption of liquidity strategies in a financial crisis," 2009.
- [5] V. C. Lartey, S. Antwi, and E. K. Boadi, "The relationship between liquidity and profitability of listed banks in Ghana," *International Journal of Business and Social Science*, vol. 4, issue 3, pp. 48-56, 2013.
- [6] M. S. Malik, M. Awais, and A. Khurshed, "Impact of liquidity on profitability: A comprehensive case of Pakistan's private banking sector," *International Journal of Economics and Finance*, vol. 8, issue 3, pp. 69-74, 2016.
- [7] J. A. Nireesh, "Trade-off between liquidity & profitability: A study of selected manufacturing firms in Sri Lanka," *Researchers World*, vol. 3, issue 4(2), pp. 34-40, 2012.
- [8] Owolabi, S. A. and Obida, S. S., "Liquidity management and corporate profitability: Case study of selected manufacturing companies listed on the Nigerian stock exchange," *Business Management Dynamics*, vol. 2, issue 2, pp. 10-25, 2012.
- [9] Priya, K. and Nimalathasan, B. "Liquidity management and profitability: A case study of listed manufacturing companies in Sri Lanka," *International Journal of Technological Exploration and Learning*, vol. 2, issue 4, pp. 161-165, 2013.
- [10] Q. Saleem and R. U. Rehman, "Impacts of liquidity ratios on profitability," *Interdisciplinary Journal of Research in Business*, vol. 1, issue 7, pp. 95-98, 2011.
- [11] D. A. Sanghani, The Effect of Liquidity on the Financial Performance of Non-Financial Companies Listed At the Nairobi Securities Exchange. Unpublished MBA Project, 2, 2014.
- [12] Colombo stock Exchange (CSE) listed manufacturing company Annual report 2012-2016.