

Liquidity and Capital Structure: Evidence from Sri Lanka

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Abstract: In the corporate finance, the decision on the capital structure and its components is viewed as one of the most extensively researched area. In this context, researchers carried out the study on liquidity and capital structure in the Sri Lanka Telecom Plc. Data on the Liquidity and Capital Structure from the year 2005 to 2011 were collected for the study purpose. Regression analysis was used to answer the research question as what extent the Liquidity influences on Capital Structure of the Sri Lanka Telecom Plc. Findings revealed that, the decision making on the capital structure is highly depending on the liquidity management of the Sri Lanka Telecom Plc. Due to that, the firm should focus on the liquidity management to take the decision on the capital structure which should lead to the firms value in the long term perspective.

Keywords: Capital Structure, Liquidity, and Sri Lanka Telecom Plc

Back Drop of the Study

In the corporate finance, the decision on the capital structure and its components is viewed as one of the most extensively researched area. Capital structure refers to the way a firm is financing its assets through a combination of equity and debt. It can be measured as the ratio between debt and total of equity and liabilities (Kajanathan, 2012; Sarlija and Hanc, 2012). On the other hand, Liquidity management is vital for firms, where a major part of the assets is composed of current assets. It directly affects the profitability of the firms. Also profitability liquidity tradeoff is important because if working capital management is not given due consideration then firms are likely to fail and face bankruptcy (Raheman, Afza, Qayyum and Ahmed bodla, 2010; Raheman and

Nasr, 2008). In this context, the working capital is known as life giving force for any economic unit and its management is considered among the most important function of corporate management. Due to that, every organization whether, profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital for smooth functioning of the organization. Working capital is the most crucial factor for maintaining liquidity, survival, solvency, and profitability of the business (Raheman et al., 2010; Mukhopadhyay, 2004). Based on the research findings on the liquidity and capital structure, the positive significant relationship has been found. Meantime, the liquidity has the influence on the capital structure in the different countries context (Sarlija and Hanc, 2012; Khalaj, Farsian and Karbalaee, 2013; Uremadu, 2012; Anderson and Carverhill, 2010).

In Sri Lanka, Sri Lanka Telecom is one of Sri Lanka's most valuable blue chip companies with an annual turnover in excess of Rs 50 Billion. Sri Lanka Telecom is the nation's number one integrated communications service provider and the leading broadband and backbone infrastructure services provider in the country. Listed on the Colombo Stock Exchange, the company's market capitalization as at 31 December 2011 topped Rs 87 Billion (Annual Report, Sri Lanka Telecom Plc, 2011). Based on it, as researchers, we have to check the strength of the decision making aspects of the Sri Lanka Telecom Plc in the capital structure context. Therefore, the decision on the capital structure is the complex. It means, on what basis, the debt and equity should be utilized to get the profit in terms of the return on assets or equity. Meantime, survival is also depending on the capital structure decision. Further, in the income perspective, if income, derived from the use of debt, is greater than

the cost of capital, then it can be said that using debt is a good financial decision. However, it still remains an open question whether it is better to use internal sources of financing or to use external sources and pay for compensation in the form of interest rates (Sarlija and Harc ,2012).

- To suggest the Sri Lanka Telecom Plc to formulate the better policy frame work in the capital structure with liquidity management to get the organizational objectives as survival and solvency.

Theoretical & Empirical Review and Hypotheses Development

There are some thoughts in the capital structure in the theoretical context. In this way, in the traditional way, Barges (1963) stated that, debt capital is cheaper than equity. The implication of this assertion is that the cost of debt plus the increased cost of equity together on a weighted basis will be less than the cost of equity that existed on equity before debt financing (Olayinka, 2011). Secondly, we have viewed the Modigliani and Miller (1958) theory; they noted that, instruments issued by the firm do not affect a firm's productivity and value. In contrast, trade off theory stated that, since interest payments are tax deductible, raising more debt increases the tax benefits. However, an increase in debt equally increases the probability of default and hence the expected cost of bankruptcy (Olayinka, 2011). Further, Pecking order theory noted the facts interestingly, that corporate managers know more about their company's prospects, risk and value than do outside investors. According to the theory, companies prefer to finance their projects from internally generated cash flows (Myers and Majluf, 1984; Olayinka, 2011). Signaling effect theory, this has been proposed by Ross (1977). He stated that investors believe higher levels of debt will imply higher quality and higher future cash flows. This means that lower quality firms with higher expected costs of bankruptcy at any level of debt cannot follow the steps of higher quality firms by incurring more debt. Furthermore, there are no universal theory of debt-equity choice and no reason to expect one. All the same, there are several useful conditional theories, each of which helps to

understand the financial structure that firm's choose (Olayinka, 2011).

Based on the theoretical review, we have come to the fact that, the theories in the capital structure are in the inconclusive trend. Due to that, we reviewed the recent studies on the capital structure and liquidity in the different industrial sectors.

Olayinka (2011) examined the determinants of capital of 66 firms listed on the Nigerian stock Exchange during the period 1999-2007 using panel data. The results show that there is a negative relationship between leverage and growth opportunities, leverage and tangibility, but positively related to liquidity as well as size. This negative coefficient shows that growing firms do not use debt financing. The results suggest that leverage is negatively correlated with profitability which is quite consistent with the pecking order theory. In the same way, leverage and size are positively related. This finding supports the view of size as an inverse proxy for the probability of bankruptcy. Liquidity is positively correlated with leverage which is consistent with trade-off theory.

Sarlija and Harc (2012), conducted the study on a sample of 1058 Croatian firms the aim of this study is to investigate the impact of liquidity on the capital structure of Croatian firms. Results revealed that there are statistically significant correlations between liquidity ratios and leverage ratios. Also, there are statistically significant correlations between leverage ratios and the structure of current assets. The relationship between liquidity ratios and the short-term leverage is stronger than between liquidity ratios and the long-term leverage. The more liquid assets firms have, the less they are leveraged. Long term leveraged firms are more liquid. Increasing inventory levels leads to an increase in leverage. Furthermore, increasing the cash in current assets leads to a reduction in the short-term and the long term leverage.

Khalaj, Farsian and Karbalaee (2013) investigated the linkage between liquidity and capital structure among the top 100 Malaysian public listed companies from 2006 to 2010 fiscal years. Liquidity of

a firm, which is the independent variable of research, has been measured by different ratios. Research finding shows that there is a significant relationship liquidity ratios and leverage. This relationship is consistent with the findings of prior researches in developing and developed countries like the United States and Thailand. According to the results, Malaysian firms with more liquid stocks prefer equity to enjoy lower cost of capital.

Uremadu (2012) investigated the effect of bank capital structure and liquidity on profitability using Nigerian data for the period 1980-2006 studied. Research findings revealed that the positive influence of cash reserve ratio, liquidity ratio and corporate income tax; and a negative influence of bank credits to the domestic economy, savings deposit rate, gross national savings, and balances with the central bank, inflation rate and foreign private investments, on banking system profits. He equally observed that liquidity ratio leads banks' profits in Nigeria, closely followed by balances with the central bank and then, gross national savings and foreign private investments, followed suit in that order. he therefore recommend a drastic reduction in balances with central bank, liquidity ratio and cash reserve ratio profiles by the monetary authorities to enable banks create adequate credits and release more money into circulation for effective financial intermediation to occur; ensure effective and efficient management of bank liquidity by banks to moderate levels so as to optimize profitability, and curb perennial unethical banking practices such as directly engaging in trading, importation and exportation of goods, and other speculative deals, instead of lending to the domestic economy.

Sibilkov (2007) has investigated the study on the effect of asset liquidity on capital structure. Using data from a broad sample of U.S. public companies, he found that leverage is positively related to asset liquidity. Further analysis reveals that the relation between asset liquidity and secured debt is positive, whereas the relation between asset liquidity and unsecured debt is curvilinear. The results are consistent with the view that the costs of financial distress and inefficient liquidation are economically important and that they affect capital structure decisions. In addition,

the results are consistent with the hypothesis that the costs of managerial discretion increase with asset liquidity.

Anderson and Carverhill (2010) have jointly focused the study on the liquidity and capital structure. Results revealed that firm's policy toward liquid asset holding is closely connected to the question of the firm's capital structure. In particular, results show that higher levels of long-term debt will result in higher levels of liquid asset holding and a reduction in the optimal use of short-term debt. The value of the firm is rather insensitive to the long-term debt level outstanding. The reason is that by adapting its liquidity policy appropriately, the firm is able to balance its various contracting frictions in such a way as to achieve approximately the same value of the firm for a wide range of long-term debt levels.

Velnampy (2005) noted that, each organization is employing a lot of money in various projects. Its success is depending on the ability to generate profitability. Hence the profitability and return on investment of the firm should be assessed. Thus, the study is made to evaluate worth wild of investment employed in the Toddy bottling project of palmyra and coconut development society of Sankani, Sri Lanka. Sophisticated and nonsophisticated techniques can be used to appraise the project. In the study, Net Present Value, Internal Rate of Return as well as actual and budget comparisons are made to evaluate the investments and efficiency of management. The study revealed that Toddy bottling projects is profitable and worthwhile. But the project fails to achieve the budgetary outcomes.

Velnampy and Nimalathan (2009) stated that the banking organizations, today, is moving towards the goal of integrated financial services because of the strong competition and quick changes of technology. In developing countries like Sri Lanka, banking organizations provide fund for other organizational developments. Financial system of a country is broadly the mechanism in the financial market which deals with the business or transactions in money. The financial sector in every country has become the deciding factor of the economy. The study is initiated

an association between organizational growth and profitability of virtually all of the Banks' branches of Commercial bank of Ceylon Ltd in Sri Lanka with 10 years accounting period: 1997-2006. Return on Average Assets, Return on Average Share holders are significantly associated with number of advances and number of depositors and sales are correlated with all profitability ratios except ROE and ROI. Further organizational growth has a greater impact on all profitability ratios.

Velnampy (2013) pointed that corporate governance is about putting in place the structure, processes and mechanism that ensure that the firm is being directed and managed in a way that enhances long term share holder value through accountability of managers and enhancing organizational performance. In a way, the study is initiated on "corporate governance and firm performance" with the samples of 28 manufacturing companies using the data representing the periods of 2007 – 2011. Board structure, board committee, board meeting and board size including executive directors, independent non-executive directors, and non executive directors were used as the determinants of corporate governance whereas return on equity and return on assets were used as the measures of firm performance. The study found that determinants of corporate governance are not correlated to the performance measures of the organization.

Kajanathan and Achchuthan (2013) have jointly examined to find out the impact of corporate governance practices on Working capital management. Twenty five listed manufacturing firms were selected as sample size in Colombo Stock Exchange for the period from 2007 to 2011. Multiple Regression Analysis was utilized to find out the significant impact of corporate Governance practices on the Working Capital Management. The results revealed that there is a significant impact of corporate Governance practices on current liabilities to total assets in working capital management. In contrast, the cash conversion cycle and the current assets to total assets are not influenced by the corporate governance practices. Based on the findings, researchers recommended to the policy makers in the corporate governance practices to

establish the models of corporate governance that must be suitable to the manufacturing sector in Sri Lanka to ensure the survival, solvency, and profitability of the business.

Based on the above literature, the following hypotheses are taken for the studies.

H1: There is a significant impact of current ratio on the Debt to Equity in the capital structure.

H2: There is a significant impact of quick ratio on the Debt to Equity in the capital structure.

H3: There is a significant impact of liquidity ratio on the Debt to Equity in the capital structure.

Methodology

Data collection

Secondary data which are collected from the Sri Lanka Telecom Plc's Annual Reports have been utilized in this study. Further, textbooks, journals, magazines in the liquidity and capital structure perspective were utilized for this study.

Sample

This study was conducted to Sri Lanka Telecom Plc, especially on the Liquidity and Capital Structure. Data on the Liquidity and Capital Structure from the year 2005 to 2011 were collected for the study purpose.

Data analysis method

Time series analysis was carried out to identify the trends over the last seven years on the liquidity and capital structure of the Sri Lanka Telecom Plc. Importantly, regression analysis is used to answer the research question as what extent the Liquidity influences on Capital Structure of the Sri Lanka Telecom Plc?. (SPSS- 16 version has been utilized in this study).

Design of the variables

The following table gives a clear picture regarding the variables and measurements used in this study.

Table 1: Design of the variables

Variables	Measures	Symbols
Liquidity Ratio		
Current Ratio	= Current Assets (CA)/ Current Liability(CL)	CR
Quick Ratio	= [Current Assets- Inventory]/ Current Liability	QR
Liquidity Ratio	= [Cash in hand + Short Term Investment]/ Current Liability	LR
Capital structure		
Debt equity Ratio	= Total debt/ Equity	DER

Results and Interpretation

Descriptive Statistics

Table 2: Descriptive Statistics

Variables	Mean	Range	Standard Deviation	Co-Variance
Current Ratio	1.25	1.00	0.430	0.185
Quick Ratio	1.17	1.01	0.425	0.181
Liquidity Ratio	0.89	2.71	0.953	0.909
Debt Equity Ratio	0.28	0.21	0.797	0.006

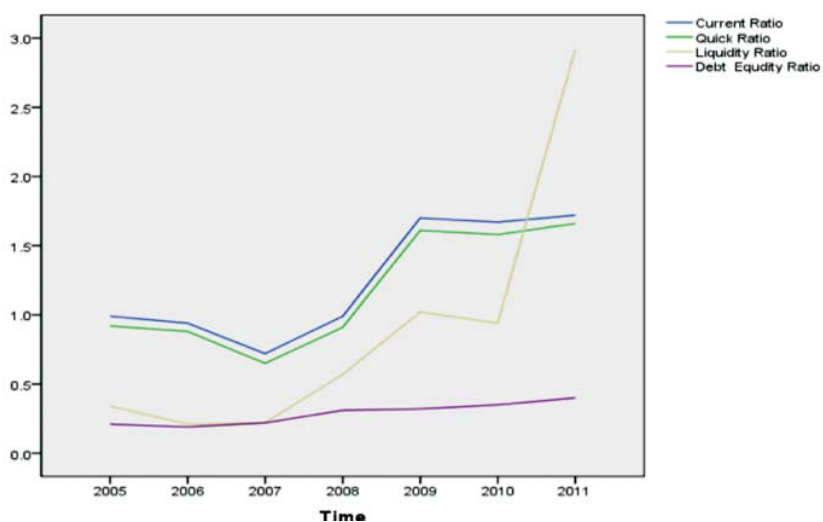


Figure 1: Time Series Analysis

In this study, the Liquidity is considered as the independent variable, which was measured by the three key ratios as current ratio, quick ratio and liquid ratio. Meanwhile, capital structure is viewed as the dependent variable, in which the debt equity ratio is used to determine the dependent variable as capital structure.

Models of the Study

In this study, Capital Structure is a function of the current, quick and liquidity ratio in the liquidity management.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \epsilon_i$$

According to the above model and hypotheses development, we can construct the new research models for the study.

$$CS = \beta_0 + \beta_1 CR + \epsilon_i \dots\dots\dots (1)$$

$$CS = \beta_0 + \beta_1 QR + \epsilon_i \dots\dots\dots (2)$$

$$CS = \beta_0 + \beta_1 LR + \epsilon_i \dots\dots\dots (3)$$

Where:

β_0 = Intercept

β_1 = Population slope

CR: Current Ratio (independent Variable)

LR: Liquidity Ratio (independent Variable)

QR: Quick Ratio (independent Variable)

CS: Capital Structure (Dependent variable)

ϵ_i = Random Error

Based on the descriptive statistics and Trend serious Analysis:

Liquidity management of the Sri Lanka telecom Plc, Generally, current ratio represents the ability to solve the short term obligations. In our study, Sri Lanka telecom plc has the adequate current assets to solve the short term obligations (based on the mean value as 1.25). In contrast, the standard notes that, the ideal ratio should be 2:1 (Chartered Institute of Management Accountants, Improving cash flow using credit Management 2010). In the Quick ratio, based on the standard, ratio should be 1.5: 1, but, in our case, the quick ratio represents value as 1.17. More or less, the ratio is in line with standard. Meanwhile, the inventory component in the current assets is limited in

the Sri Lanka Telecom Plc. When we compare the current and quick ratio in our study, we are able to identify the small piece of difference between the two ratios; further, the difference between the two ratios as current and quick ratio represents the inventory value. Furthermore, the difference between the current, quick, and liquidity ratio are limited, based on it, we can come to the fact that, the highly liquid assets have been maintained in the current assets of the Sri Lanka Telecom Plc . In overall, more or less, the liquidity position of the Sri Lanka Telecom Plc is in the satisfactory one.

Capital structure measurement as debt to equity ratio has the value as 0.28; it means that, the 28 % of the debt is maintained in the capital employed (Based on the mean value). Further, in the figure 1, we also can see the debt to equity ratio trend, there is no big fluctuation in the figure. Mean while, the standard deviation and rage of the debt to equity hold no big fluctuation in the last seven years from 2005 to 2011 (the standard deviation and rage of the debt to equity as 0.797, 0.21 respectively). In the liquidity management, the liquidity ratio has been fluctuated over the last seven years from 2005 to 2011. Meantime, other ratios as current and quick have not been fluctuated than the liquidity ratio. Based on it, researchers are able to come to the fact that, the decision on the high liquid assets has been changed dramatically for the last seven years.

In the regression analysis, the basic assumption as the multi co linearity problem should be tested. Because, there is a high chance to the multi co linearity problem in our study, in which, liquidity, quick and current ratio have the same elements as current assets and liability themselves. Based on it, we have done the test that, whether the auto correlation problems are in the study or not. The answerer was, yes, researchers have identified the auto correlation problem (Based on the Variance Inflation Factor and Tolerance Test). Therefore, researchers created the separate models for the independent variables as current, quick and liquidity ratios with the dependent variable as debt to equity in the capital structure.

Regression Analysis

The purpose of Regression analysis is to find out the impact of Liquidity on the capital structure.

Table 3: Presents the results of the Regression analysis.

Model	Model Summary			Sig
	R Value	R Square	F value	
Model 1	0.845	0.713	12.447	0.017
Model 2	0.845	0.713	12.441	0.017
Model 3	0.838	0.703	11.836	0.018

Based on the separate models, all the ratios in the short term solvency as current, quick, and liquidity ratios have the significant impact on the debt to equity in the capital structure. Further, all the dimensions are in the significant level as 0.05. Meantime, the predictor power of the liquidity management ratios are in the greatest level. All are beyond the 70 %. Due to that, we are able to come to the fact that, the decision making on the capital structure is highly depending on the liquidity management of the Sri Lanka Telecom Plc.

Based on the model 3, the cash holdings in the Sri Lanka Telecom Plc have the significant impact on the debt to equity in the capital structure. It means that, decision on the capital structure is highly depend on the high liquid assets as cash and cash equivalents (more than 70 % impact which has been found).

Therefore, H1, H2 and H3 are accepted. It means that:

- There is a significant impact of current ratio on the Debt to Equity
- There is a significant impact of quick ratio on the Debt to Equity

There is a significant impact of liquidity ratio on the Debt to Equity

Conclusion

Based on the overall study, researchers are able to come to key point that, the decision making on the capital structure is highly depending on the liquidity management of the Sri Lanka Telecom Plc. Further, in supportive way, Olayinka (2011) has stated that, the leverage and liquidity are positively correlated in the Nigerian perspective. Further, Sarlija and Harc (2012) have jointly stated that, there are statistically significant correlations between liquidity ratios and leverage ratios. Also, there are statistically significant correlations between leverage ratios and the structure of current assets in the Croatian firms.

Generally liquidity problems are solved by the debt fund or equity fund or even combination of the both. But, the question is, which way is the best one in the Sri Lankan Context. If the firm uses the debt fund to solve the short term solvency problem, the interest expenses will be paid to the investors, which will create the problems in the financial expenses of the firm. Meantime, in the Sri Lanka, the inflation and interest rate are considered as the problematic ones to the economic growth in the long term perspective (Velnamby and Achchuthan, 2013: Central Bank Reports, 2012). In contrast, if the firm uses the equity fund to solve the liquidity problem, dividend expenses will be considered as the cost. Overall, all the circumstances depend on the profitability of the firms. Especially, in the Sri Lanka Telecom Plc perspective, the profitability in terms of the return on assets and return on equity should be focused systematically with capital structure and liquidity management. Further research should be approached to answer the questions as which source, whether the debt fund or equity fund create the firm value in the telecommunication industry in Sri Lanka.

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