

The Impact of Liquidity on the Capital Structure: Evidence from Malaysia

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Abstract

For many years, liquidity of a company's asset and its effect on the optimal debt level has been a controversial issue among scholars in finance studies. Prior studies have demonstrated that in some countries, asset liquidity increased debt level while in other countries liquid companies were less leveraged and more regularly financed by their own capital. This study investigates the effect of liquidity on the capital structure among the 300 listed companies in the Main market of Bursa Malaysia from 2005 to 2013 fiscal years. Pooled OLS is applied to investigate the impact of liquidity ratios on different Debt ratios. Liquidity of a company, which is the independent variable of this study, is measured by two common ratios which are: quick ratio and current ratio. Additionally, the Debt/Equity and Debt/Asset ratios represent the capital structures based on the short-term, long-term and total debt. The results show that all the measures of liquidity have significant impacts on all the proxies of leverage. According to the results, Quick ratio has a positive effect on leverage; although, Current ratio is negatively related to leverage. Moreover, short-term debt is more influenced by liquidity compared to long-term debt.

Keywords: Bursa Malaysia, capital structure, current ratio, liquidity, quick ratio

1. Introduction

Capital structure consists of the methods by which the companies finance their assets via a combination of debt and equity (Titman & Wessels, 1988). Capital structure policies have the underlying purpose of maximizing the worth of a company (Ross, 1977). Any occurrences that could accumulate needless costs (such as liquidation) compel firms to deviate from achieving the aforementioned purpose (Bradley, Jarrell, & Kim, 1984).

High levered companies which are losing financial flexibility may have trouble in finding new sources for financing their projects, and experience bankruptcy risk. Nevertheless, debt is not necessarily terrible. If debt is regularly monitored and its level is under control, while borrowed funds are applied suitably, then leverage can lead to increasing the return on investment. Thus, a firm with high leverage is required to design an efficient arrangement of capital that will eventually reduce its cost (Stulz, 1990). Liquidity is a trait of the company's assets to be quickly converted into cash. Companies in their operations try to sustain liquidity, or capability to timely do their obligations (Šarlija & Harc, 2012). Therefore, management of liquidity is very essential for every company to pay existing obligations on business, the obligations of payment consist of financial and operating expenses that are short-term (ST) debt maturity (Saleem & Rehman, 2011).

The dilemma between equity and debt has been noted as one of the main serious managerial decisions (Khalaj, Farsian, & Karbalae, 2013). More equity raises the claims of the external cash flow, which consequently will reduce the value of the company. Conversely, more debt will raise the costs and financial distress which is associated with bankruptcy. Morellec (2001) indicates when bond covenants limit the assets' disposition, then asset liquidity increases debt capacity. By contrast, the aforementioned researcher demonstrates that with unsecured debt, more liquidity increases credit spreads on the corporate debt and reduces optimal leverage. An additional argument for a negative relationship is debated by Myers and Rajan (1998) who argue that in the condition of high agency costs of liquidity, outside creditors limit the amount of debt financing accessible to the

firm. Hence, a negative relationship between liquidity and debt may be expected. However, a liquid company is one that immediately pays all obligations. Therefore, availability to external financing is generally easy for liquid companies whose financial traits fulfill the requirements of financial institutions. Moreover, Trade-off Theory argues that an optimal mixture of the capital is specified by trading off the net cost of debt against the net cost of equity, where the latter is chiefly determined by the debt tax shield (Lipson & Mortal, 2009). It still remains a puzzling matter whether it is better to utilize external sources and compensate in the form of interest rate or to apply internal sources for financing new projects or financial requirements (Šarlija & Harc, 2012).

In Malaysia as a developing country, particularly after the financial crisis in Asia (1997) and also global financial crisis (2009), firms tend to rebuild their infrastructures (Nadaraja, Zulkafli, & Masron, 2011). In this condition, the need for the studies that consider the capital structure in different aspects seems to be necessary. In the case of Malaysia, ownership structure is constituted by the most belonging of family businesses, moreover, the GLCs and managerial ownership are deeply involved in the capital structure in Malaysia (Ghasemi, Ab Razak, & Hassan, 2015). Since the debt structure and risk policies are mostly influenced by the ownership structure, therefore maybe different relationships exist between liquidity and debt policy in the Malaysian context. Limited studies on the debt structure in the Malaysian context (Mustapha & Ahmad, 2011) and also the lack of enough research, specifically association between liquidity and capital structure leads to conducting this research. The empirical findings from this research might provide insight into the liquidity management practices in the listed firms in Malaysia. The results show that both liquidity ratios have significant effects on the long-term (LT), ST, and the total debt ratios of the listed companies in Malaysian markets. The article is designed in the following sections: the second part will describe the literature review. The data collection procedure and the methodology discussion will be followed in the third segment. The next part includes the empirical results in addition to the discussion of the findings. Lastly, the final segment of the research will explain the conclusions of the study.

2. Literature Review

Liquidity has a significant effect on leverage but the former can have a positive or negative effect on the capital structure decision; thus, the net effect is unknown (Abu Mouamer, 2011). There are some theoretical thoughts in the context of capital structure. According to the traditional opinion by Modigliani and Miller (1958), the instruments issued by the company do not influence value and productivity of the firm.

In contrast, trade off theory stated that firms are generally financed by both equities and debts and attempt to determine an optimal level of the capital structure in which firm value is maximized (Chowdhury & Chowdhury, 2010). Thus, this theory argues that firms set an optimal debt ratio target, which is determined by the trade-off between the benefits (tax deductions) and costs of debt (bankruptcy costs) (Myers, 1984). At the optimal point, the marginal benefits of debt equal to the marginal costs of debt and firm performance is maximized (Park & Jang, 2013; Xu, 2012). The company will follow the “pecking order style” to finance investments (Deesomsak, Paudyal, & Pescetto, 2004). Myers and Majluf (1984) explained that firms follow a hierarchy of financial decisions when establishing its capital structure. Initially, firms finance projects using retained earnings because this financing method incurs no flotation costs and require no disclosure of the firm’s financial information (Bevan & Danbolt, 2002). If the retained earnings are insufficient, then firms opt for debts (DeAngelo & DeAngelo, 2007); if further financing is required, then the last option for the firm is to issue equity. The findings of several studies are parallel with PO theory (Eriotis, Vasiliou, & Ventoura-Neokosmidi, 2007; Rajan & Zingales, 1995; Seifert & Gonenc, 2010; Sheikh & Wang, 2011). Moreover, Liquidity has a significant effect on conservative debt policy when the company has ample liquid assets; hence, conservative policies are necessary to ignore potential risks. Over all, there is no universal theory for choosing between debt and equity. In other words, there are some helpful conditional theories. Each of these theories helps to understand the capital structure that company’s choose (Akinlo, 2011). Due to that, some important studies on the liquidity and capital structure in the different markets are reviewed.

Williamson (1988) showed that liquidity of the assets limits the optimal level of debt of the company regarding the average of debt usage in the particular industry. Submitter and Anderson (2002) demonstrated the positive relationship between liquid assets and LT debt of the firm. It can be explained that company is trying reduces the probability of distress of high leverage LT characteristics of capital structure with holding liquid asset as a precautionary solution. They also showed a negative relation between liquid assets and ST borrowings of the firm, assuming the substitute financing role for them in situation of lack of cash. Amazingly, they conducted the same test on the sample of Belgian firms and their findings showed a positive relationship between liquid asset and ST debt, while the relation between liquid assets and LT debt is negative.

Anderson and Carverhill (2007) conducted a study on the liquidity and capital structure. Particularly, findings

revealed that higher levels of LT debt will result in more reduction in the optimal use of ST debt and higher levels of liquid asset holding. Moreover, the firm value is no sensitive to the level of LT debt. The explanation is that by adapting appropriate liquidity, the company is able to cover various contracting requirements in such a way as to keep approximately the same value of the company for a different range of LT debt levels. Suhaila, Mahmood, and Mansor (2008) used a sample of 17 firms for a period from 2000 to 2005 to understanding the debt policy changes among Malaysian listed firms after crisis of 1997. Their results showed that there was a negative relation between liquidity and level of debt. Sibilkov (2009) investigated the effect of liquid assets on capital structure. Testing data from a wide sample of public listed firms on U.S., he found that leverage is positively associated with liquid assets. More analysis showed that the relation between secured debt and asset liquidity is positive, while the relation between unsecured debt and asset liquidity is curvilinear.

The findings are consistent with the point of view that the costs of inefficient liquidation and financial distress are economically significant and that they influence capital structure policies. Chakraborty (2010) studied the capital structure determinants including liquidity among 1169 non-financial listed companies of 13 years in India by using panel regression technique. This paper revealed that the stock market of India can be explained by the static trade-off theory and the pecking order theory. Akinlo (2011) investigated the determinants of capital structure among 66 listed firms on the Nigerian stock Exchange over eight years from 1999 to 2007 by using panel data. The findings revealed that leverage was positively related to liquidity. The findings confirmed that the positive correlation between leverage and liquidity is consistent with Trade-Off Theory.

Šarlija and Harc (2012) investigated the effect of asset liquidity on the capital structure based on a sample of 1058 listed firm in Croatia. Findings showed that there were statistically significant correlations between leverage ratios and liquidity ratios. Moreover, there were statistically significant correlations between the structure of current assets and leverage ratios. In addition, the relationship between the ST leverage and liquidity ratios was stronger than between the LT leverage and liquidity ratios. The more asset liquidity led to less leveraged firm. However, LT leveraged companies were more liquid. Increasing inventory levels led to an increase in debt, although, increasing the cash led to a decline in the LT and the ST leverage. Findings by Rajendran and Achchuthan (2013) demonstrated that the capital structure policies was highly depending on the management of asset liquidity among listed companies on Telecom sector in Sri Lanka from 2005 to 2011. Therefore, the company should focus on the management of liquidity to make the decision on the structure of capital which should keep the value of the company in the LT aspect. Ahmad and Aris (2015) investigated determinants of capital structure in trading and service industry in Bursa Malaysia during 2007 to 2011. Their finding indicates a significant negative effect of liquidity on debt decision in companies.

3. Research Methodology

This study randomly selected 300 companies among industrial products, properties industry, consumer products, trading and services, plantation, construction, and technology sectors under the Main market. However, selected companies should have three criteria; first, they should be enlisted in the Main market of Bursa Malaysia during 2005 to 2013. Secondly, the selected firms should continuously use leverage in their capital structure during these years. Thirdly, for selected companies, the data should be available for each variable. Pooled OLS regression is carried out to identify the influence of liquidity on the leverage over the nine years on the main market of Bursa Malaysia. This method previously was used by Rajendran and Achchuthan (2013) to reveal the effect of liquidity on capital structure. This study utilized STATA 13 and also data were extracted from Thomson Reuters DataStream. Table 1 presents the variables and measurements applied in this research. The liquidity is viewed as the independent variable, which is measured by the two common ratios as quick ratio (QR) and current ratio (CR). However, capital structure is considered as the dependent variable, in which the debt asset ratio and debt equity ratio are measured based on ST, LT and total debt.

Table 1. Design of the variables

Variables	Measures	Symbols
Quick Ratio	$(\text{Current Assets} - \text{Inventory}) / \text{Current Liability}$	QR
Current Ratio	$\text{Current Assets} / \text{Current Liability}$	CR
Debt equity Ratio	Total debt/ Equity	DEBT/ EQUITY
Debt asset Ratio	Total debt/ Asset	DEBT/ ASSET
Long-Term Debt equity Ratio	Long-Term Debt / Equity	LT DEBT/ EQUITY
Short-Term Debt equity Ratio	Short-Term Debt / Equity	ST DEBT/ EQUITY
Long-Term Debt Asset Ratio	Long-Term Debt / Asset	LT DEBT/ ASSET
Short-Term Debt Asset Ratio	Short-Term Debt / Asset	ST DEBT/ ASSET

The study is being conducted to investigate the influence of liquidity ratios on Capital Structure by applying Pooled OLS regression through STATA 13. Capital structure is investigated based on six different proxies that are mentioned in Table 1. Leverages are assumed as functions of the QR and CR.

$$Debt/Asset_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (1)$$

$$Debt/Equity_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (2)$$

$$LT - Debt/Asset_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (3)$$

$$ST - Debt/Asset_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (4)$$

$$LT - Debt/Equity_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (5)$$

$$ST - Debt/Equity_{it} = \alpha_0 + \beta_1 Quick\ Ratio_{it} + \beta_2 Current\ Ratio_{it} + \varepsilon_{it} \quad Model\ (6)$$

Where:

α : the constant (Intercept), ε_{it} = Random Error β : the regression coefficient

4. Research Findings

Figure 1 and Figure 2 plot the annual frequencies of all leverage ratios (six ratios) from 2005 to 2013. To be precise, Figure 1 and Figure 2 illustrate debt/Equity ratios and debt/asset ratios separately. Both figures show that there are two constant levels of leverage; the first level is from 2005 to 2008 and the second one from 2009 to 2013. To explain this consistency, Agha (2013) mentions that managers have their own target leverage ratio based on the capital structure. This leverage stability was mentioned in some of the previous studies in Malaysia (Aggarwal & Zhao, 2007; Agha, 2013; Ahmad & Aris, 2015). Generally, firms tended to decrease the debt ratio after financial crisis 2008.

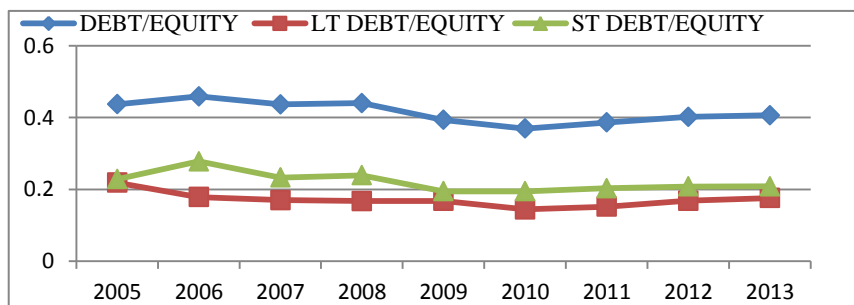


Figure 1. Debt/Equity ratios trends from 2005 to 2013

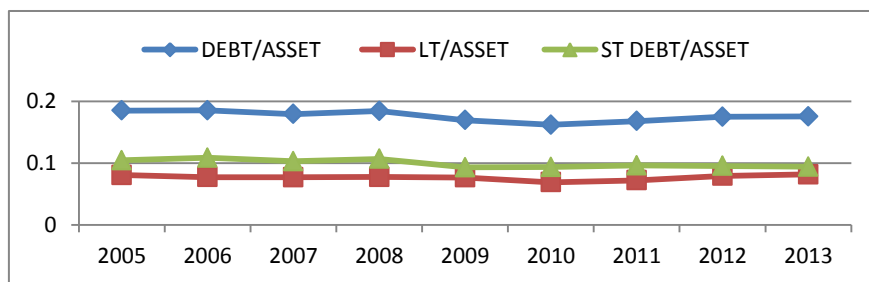


Figure 2. Debt/Asset ratios trends from 2005 to 2013

Figure 3 demonstrates the mean annual percentage of the two liquidity ratios namely; QR and CR, over a period from 2005 to 2013. According to both trends, the firms follow two constant level of liquidity. Moreover, Figure 3 shows that the liquidity level has increased significantly after 2009.

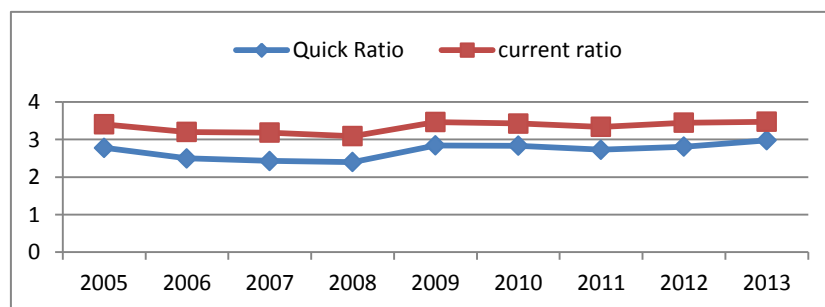


Figure 3. liquidity ratios trends from 2005 to 2013

As a whole, firms preferred to use less debt in capital structure after the year 2008; although they tend to have more liquidity in their assets. Table 2 shows that, minimum and maximum figures for CR are relatively close to that of QR which reveals selected firms did not have a large amount of inventory. In Table 2, the peak of QR (46.28) indicates that a firm with a lot of cash (high QR) has tied up likely in nonproductive asset condition. Nevertheless, high CR (37) is not constantly good as it indicates the excess amount of inventory or marketable securities or cash. Table 2 also shows, on average, 17.5% of firms assets are financed through debt, out of which 7.6% of debt is from LT debt and 9.9% are from LT debt. It indicated that firms in the Main market preferred to use more ST debt.

Table 2. Descriptive statistics

Variables	Observ.	Mean	Std. Dev.	Min.	Max.
Quick Ratio	2537	2.506	3.856	.067	46.288
Current Ratio	2587	3.310	4.042	.097	37
Debt/Asset	2700	.175	.152	0	.600
Debt/Equity	2700	.415	.523	0	4.04
LT Debt /Asset	2700	.076	.096	0	.569
ST Debt/Asset	2698	.099	.109	0	0.565
LT Debt /Equity	2700	.171	.358	0	12.206
ST Debt/Equity	2695	.220	.365	0	8.816

LT Debt: Long-Term Debt, ST Debt: Short-Term Debt.

Table 3 presents the average of quick and current ratios based on different sectors in the main market of Bursa Malaysia. Plantation and construction have the maximum and minimum liquidity with 6.754 and 4.487 as the current ratio and 6.541 and 1.595 as the quick ratio among the sectors in the Main Mark. These significant different liquidity figures have roots in the nature of activities in each sector. For instance, plantation sector has fewer growth opportunity and higher surplus cash (Pandey, 2003) and this sector also includes stable and mature firms and less use of loan in the capital structure. The results of the study by Baharuddin, Khamis, Mahmood, and Dollah (2011) show that construction firms rely heavily on the debt financing and they suffer from cash flow (Mahmood & Zakaria, 2007). In addition, Properties and Consumer products sectors show the most differences between current ratio and quick ratio among sectors. This considerable difference between current ratio and quick ratio in Consumer products sector can be related to the huge amount of the inventory among the consumer products firms.

Table 3. Average liquidity ratios based on sectors

Name of Sector	Average Quick Ratio	Average Current Ratio
Plantation	6.541	6.745
Technology	4.168	4.487
Properties	2.275	3.728
Consumer Products	2.032	3.164
Industrial Products	1.964	2.930
Trading	2.375	2.796
construction	1.596	2.004

Noticeably, Chartered Institute of Management Accountants (CIMA) (2010) suggest that some ratio for evaluating liquidity risks that is presented in Table 4.

Table 4. Risk of liquidity

	Low risk	Average risk	High risk
Current ratio	Over 1.5	1.0–1.5	Under 1.0
Quick Ratio	Over 1.25	0.25–.75	Under 0.25

Reference: CIMA (2010).

The means of CR (3.31) and QR (2.5) indicate a low risk situation for most of the selected firms on average. Comparing the current and quick ratios in this study shows a relatively large difference between these two ratios. Since this large difference represents the inventory value, it can be inferred that the level of inventory is high among the listed companies during 2005 to 2013. In addition, based on the suggestion of CIMA, the Debt/Equity ratio less than 50% shows that the company is slightly relying on external financing to support its business. Thus, listed companies in the main market of bursa Malaysia tend to fund most part of their capital structure based on equity.

When the regression analysis is used, the essential assumption as the multicollinearity matter should be checked. The calculation of the variance inflation factor (VIF) is a formal method to detect multicollinearity (Gurajati, 2003). Multicollinearity would not be an issue if the VIF value is less than 10 and the tolerance value of variables is more than 0.10 (Neter, Wasserman, & Kutner, 1983). The VIF figures for all the independent variables were generated by STATA 13 and are significantly below 10, which indicates that multicollinearity did not exist. Table 5 shows that there is not multicollinearity problem.

Table 5. Collinearity statistics of independent variables

Variable	VIF	1/VIF
Current ratio	5.13	0.1949
Quick ratio	5.13	0.1949
Mean VIF	5.13	

The major benefit of liquidity ratios is that these liquidity ratios test what resources the firms have generated to meet their payment commitments over a period of time. Table 6 shows that both current and quick ratios have significant impact on all the six models. The results concur with the findings of Ahmad and Aris (2015) in Malaysia. Moreover, all the dimensions are significant in the level of 0.001. Further, the power prediction of CR is greater than Quick ratio's power in all six models. The adjusted R-squared for models 1 and 2 are 19.7% to 12.4%. The predictability of the models based on liquidity variables seems low and indicates that capital structure is not highly depending on the liquidity. Moreover, the CR has a negative effect on leverage, although QR is positively related to leverage. These different effects can be inferred based on the role of inventory in liquidity decisions. As mentioned before, the high difference between CR and QR shows that the level of inventory in Malaysian firms is high; thus, it can influence the debt decisions and firms, which have high level of inventory, prefer to use less level of debt in capital structure. However, when the inventory is excluded from the CR, the effect completely reverses. That is to say, the positive influence of QR on leverage reveals that firms which have more current asset (except inventory) tend to use more debt. In other words, the inventory causes the

liquidity affects debt decisions in negative way, however other kinds of current assets cause debt policy is positively influenced by liquidity. Comparing LDER (Model 3) with SDER (Model 4) and also LDAR (Model 5) with SDAR (Model 6) show that firms consider the liquidity more often when using ST debt compared to LT debt decisions.

These findings also reveal that firms with a higher quick ratio have the ability to meet their contractual obligation and hence, resort to finance via debt. Particularly, higher quick ratio will ensure that the companies can face their short-term obligation (Suhaila et al., 2008). Therefore it can be understood that the effect of quick ratio has more effects on the short-term debt compare to the long-term debt. In addition, these findings show that the relationships between quick ratio and debts are in the line with the static trade off theory that postulates a positive relation between debt and liquidity.

Over all, the positive influence of liquid assets (except inventory) on debt decisions shows that listed companies in Malaysian market consider liquidity as a guarantee that when it is hard for a firm to get funded on the capital market, or in the condition of lower earnings, or in the times that capital cost is very high, can survive and do its tasks. On the other hand, Malaysian firms did not use liquidity as a method to cover ST cash requirements. In fact, they used liquidity to get more debt instead of use liquidity as a solution in cash requirement situations.

However, if a firm can quickly get cash for its inventory without losing the goods value, inventory increases the firm liquidity. If it takes a long time to sell its inventory, it does not help the firm's liquidity. It seems that the listed firms in Bursa Malaysia could not sell their products in a short time and consider them as an asset with low liquidity.

To sum up, the positive effect of quick ratio on leverage is almost consistent with previous studies and show that firms and banks prefer more liquidity to debt financing. However, the negative effect of current ratio on debt financing reveals that inventory has a significant role in the debt decision and cause reverse impact on the short-term, long-term, and total debts.

Table 6. Estimation results

Model	Current Ratio	Quick Ratio	Cons	Adj. R-squared
Model (1)	-.0269887*** (.0014704)	.0102445*** (.0011)	.2360149 *** (.00371)	0.1979
Model (2)	-.0773*** (.0053)	.0318*** (.0041)	.5863*** (.0134)	0.124
Model (3)	-.0294*** (.0038)	.01309*** (.0029)	.2286*** (.0096)	0.034
Model (4)	-.0440*** (.0038)	.0171*** (.0029)	.3267*** (.0096)	0.085
Model (5)	-.0103*** (.0009)	.0044*** (.0007)	.0954*** (.0024)	0.066
Model (6)	-.0166*** (.0010)	.0058*** (.0008)	.1408*** (.0027)	0.155

Note. ***, **, * Statistically significant at level 0.01, 0.05 and 0.10, respectively. T statistic is presented within the parentheses.

5. Conclusion

Since liquidity decisions directly connect to the debt structure of companies, every business needs to monitor its liquidity relationship with debt decision. Liquidity is a key financial indicator that measures whether the firm has the ability to fulfill its debt commitments based on ST, LT, and the total debt ratios without incurring undesirable losses.

The effect of liquidity on the capital structure is one of the unclear academic areas in Malaysian market, particularly in the term of different debt financing based on short-term and long term debts. Therefore this study tries to investigate the influence of asset liquidity on the capital structure among listed companies in the Main market of Bursa Malaysia. Considering the time span and number of companies that are surveyed, this study might be one of the comprehensive studies in this issue in Malaysia. Findings show that CR and QR have significant effects on debt policies in the main market of bursa Malaysia.

Generally, the main part of the total debt is formed by ST debt in the main market. In addition, ST debt decision

is more sensitive to considering liquidity ratios compared to LT debt. This finding is consistent with most of the previous studies that mentioned the importance of the effect of liquidity on ST debt (Mushtaq, Chishti, Kanwal, & Saeed, 2015; Šarlija & Harc, 2012). One reason could be the ability of liquidity to cover ST debt; however, in the long term, the relation between liquidity and debt became weaker compared to the near time (short-term). According to the high levels of quick and current ratios, it seems that managers in the Malaysian market behave in a conservative manner in forming the asset structure. It means, they follow the liquidity ratios that are two times more than ratios that are suggested by CIMA.

Listed firms in different sectors choose various liquidity strategies based on the requirements and necessity of their activities. Moreover, there are different effects of quick and current ratios on leverage in terms of inventory finance in the short term and that different industries would require different inventory management strategies and financing. Surprisingly, the findings reveal the different impacts of CR and QR on debt decisions. To be specific, the proportion of inventory among Malaysian companies is high, in which it affects the influence of liquidity on debt decisions. Due to this, inventory management and sales management may need to progress in the Malaysian market. This research, however, has two main limitations. Firstly, the sample comprised of only listed companies under the main market and does not include the firms on ACE market. Secondly, this research extensively focuses on the effect of liquidity on the capital structure. However, the significant impacts of some factors on the capital structure in Malaysia, such as performance (Baharuddin et al., 2011), firms size (Khalaj et al., 2013) and tangibility (Ahmad & Aris, 2015) are previously studied by different researchers. Then the combined effect of liquidity and three above mentioned factors on the capital structure during different time periods can be suggested to be studied in further research. The effect of liquidity on the capital structure can be studied in different sectors which provides better insights on the debt strategy among various sectors in the Malaysian market.

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