

The Impact of External Environmental Conditions on Corporate Capital Structure: Evidence from Hotels and Travels Sector in Sri Lanka

Perera H. A. P. K.¹, Samangi Bandaranayake²

^{1,2} Department of Finance, Faculty of Management & Finance, University of Colombo, P.O. Box 1490, Colombo 03, Sri Lanka.

Abstract: *In the modern financial era, companies adjust their capital structure to cope with the external and internal environmental conditions. The purpose of this study is to investigate the influence of external environment or in other words, institutional and macroeconomic conditions on capital structure decisions of firms listed under hotels and travels sector. The sample of the study comprised with 26 listed companies in hotels and travels sector of Colombo Stock Exchange over a period of 10 years from 2004 to 2013. The analysis is carried out by employing panel data econometric techniques. The empirical results demonstrate in overall institutional and macroeconomic conditions have significant influences on the capital structure decisions of firms listed in the hotels and travel sector. The findings of the study which is a featured departure from the previous studies on capital structure which emphasize the role that prevailing institutional and macroeconomic conditions play in determining the capital structure decisions in the listed firms in Sri Lanka.*

Keywords: Institutional factors, Macroeconomic factors, Capital structure, Hotels and Travels sector, Colombo Stock Exchange

1. Introduction

The capital structure decision has become crucial for any business organization to deal with the competitive environment while maximizing returns to various stakeholder groups (Abor & Biekpe, 2005). The theories on capital structure have given more consideration especially to the firm level characteristics. Based on these capital structure theories numerous empirical studies had been performed and confirmed that tax shield, assets structure, profitability, firm size, growth, risk, liquidity, industry class and product uniqueness are the firm specific key attributes which having clear relationships with capital structure and they directly impact toward determining the capital structure of firms (Titman & Wessels, 1988; Samarakoon, 1999). Even though the previous studies concentrated more on the firm level characteristics, the role of the institutional and macroeconomic factors in determining the capital structure of the firms are also becoming important as they are essential for the effective and sound decisions of firms (Riaz et al., 2014). Hence, the influence of institutional and macroeconomic factors on capital structure of the firms is one of the confounding issues currently confronted by the financial managers as they make decisions in the monetary and real market frameworks within which firms operate where the institutional and macroeconomic conditions are expected to exert a significant influence on all of the financial and investment decisions (Muthana et al., 2013). Moreover, it is one of the newly emerging interests that constitutes finding on how institutional and macroeconomic factors affect on capital structure decisions of the business organizations. Over the past few years, the developments of Hotels and Travels (H&T) sector in Sri Lanka are significantly changed with the influence of external environment. Thus, the aim of this study is to find out how institutional and macroeconomic factors influence on capital structure decisions of firms in H&T sector. The rest of the paper is organized as follows. Section 2 is a review of literature on the impact of institutional and macroeconomic

factors on capital structure. Section 3 discusses methodology used in the study and also details the model specification used for the empirical analysis. Section 4 includes the discussion of the empirical results. Finally, Section 5 summarizes and concludes the paper.

2. Literature Review

2.1 Theories of Capital Structure

The groundbreaking research of Modigliani and Miller (M&M) (1958) on capital structure of firms, gave origin to the M&M irrelevance proposition on capital structure. M&M irrelevant proposition indicates that, when the firms operate under perfect market conditions where the corporate taxes and bankruptcy costs are absent, the firm's value solely depends on the level and risk of its future cash flows. The trade-off theory brings another notion that the capital structure of the firms determined by a trade-off between benefit of tax advantage of debt and potential bankruptcy cost of debt where two major theories, tax/bankruptcy and agency theory, can be identified in the trade-off theory (Lemma & Negash, 2012). Firms set a target capital structure to maximize the value of the firms while considering the benefits and costs of debt (Graham & Harvey, 2001), while on the other hand, the financial managers try to balance agency cost of debt against benefits of debt when making decisions regarding the capital structure choice of the firms (Jenson, 1986). The information asymmetries prevail in the market also affect on the capital structure decisions of the firms (Lemma & Negash, 2012). As per the pecking order theory of Myers and Majluf (1984), a firm does not follow a target capital structure where a firm's choices over the levels of debt to be absorbed into the capital structure based on financing needs. As per Baker and Wurgler (2002), the market timing theory demonstrates that firms tend to look at the market conditions when raising debt while firms raise funds from markets when they look more favorable. Huang and Ritter (2005), documented that small growth firms rely

heavily on debt financing and only resort to equity markets when the cost of equity capital is low which is consistent with the market timing theory.

2.2 Measurement of Capital Structure

Rajan and Zingales (1995), documented that, the definition of capital structure depends on the objective and purpose of the study. Thus, different empirical results have been produced based on the capital structure measurement that has been used in the study. Most of the studies do not use market-based values of capital structure due to several reasons such as data limitation where market value data of debt is not often available (Titman & Wessels, 1988). Titman and Wessels (1988), further illustrated that some managers tend to target capital structures based on book-based measures since market values of equity depends on several factors that often can not be controlled by firms. Furthermore, Fama and French (2002), noted that most of the theoretical predictions applicable to the book-based measures of capital structure. Bowman (1980), demonstrated that use of the book-based values delivers similar results to that of the market-based values of capital structure as they are highly correlated. Therefore he concluded the misspecification due to using book-based value measures is probably fairly small.

2.3 Institutional Conditions and Capital Structure

The literature highlights the importance of institutional factors in determining the capital structure decisions of a firm (Gajurel, 2006; Bopkin, 2009). The stock market is available for firms to raise funds which allow businesses to be publically traded or raised additional capital (Aduda et al., 2012). Demirguc-Kunt and Maksimovic (1996), reported a negative relationship between an active stock market and the use of long-term debt, and on the other hand, they concluded that in developed stock markets, further development leads to substitution of equity for debt financing. Lemma and Negash (2012), reported that developed stock markets reduce the information asymmetry issues confronted by creditors so that enhance borrowing opportunities of a publically quoted company. Diamond (1984), argued that banks and other financial intermediaries have important advantage over equity markets in reducing information asymmetries that produce adverse selection problem while also playing an important role in reducing the costs of acquiring and processing information about prospective investment activities and in exerting control over the management of firms. This will consequently motivate firms to access funds from banks at a lower rate so that a positive relationship between size of the banking sector and the firms' capital structure choice has been reported by Bopkin (2009).

2.4 Macroeconomic Conditions and Capital Structure

Harkbarth et al. (2006), documented that macroeconomic conditions determine both the pace and the size of capital so that due consideration should also be given to the state of the economy as well. Dammon and Senbet (1988), noted that high inflation forces investors to sell bonds in exchange for stocks and hence firms' capital structure measured as debt-equity ratio, tends to drop. However, Booth et al. (2001) found that higher inflation leads to a decrease in both total

and long term debt ratios in developing countries. The rate of growth in the gross domestic product (GDP) of the country is essential for effective and sound decision making of firm's financial policies (Riaz et al., 2014). Booth et al. (2001), reported a positive relationship where they found that real economic growth tends to increase total debt ratio and long-term book-debt ratio where the firms can borrow against real growth prospects, but not against inflationary growth prospects. Faccio (2006), found that firms with political relations appeared to have a significantly higher level of debt than firms without political relations. Hence it demonstrates a positive relationship between government intervention and capital structure choice of the firms. Further, the government intervention causes to increase the government borrowings where it has amplified intensely in developing countries in late 1990's where effects of such phenomenon on private sector credit have become critically important (Fayed, 2012). Thus, the nexus between government borrowing and private credit is generally believed as an inverse one in the policy developing level and financial media (Emran & Farazi, 2009; Fayed, 2012). Further, Booth et al. (2001), reported that in developing countries the discrepancy between bank oriented and market oriented financing is become more complex by wide-ranging government ownership and regulation of the financial system.

3. Methodology

This study examine the influence of institutional and macroeconomic conditions on the capital structure decisions of firms listed in H&T sector while excluding the firms that do not have complete records. Therefore, this study retained 26 companies and the sample period is 10 years from 2004 to 2013. The data collected from Annual Reports of the companies and published statistics from the Central Bank of Sri Lanka. Hence, a pure quantitative set of secondary data will be used in this study. The data will be analyzed using E-views software package. Model 01 defines capital structure as a function of institutional factors while Model 02 defines capital structure as a function of macroeconomic factors where the study used two estimation models, fixed effects model and random effects model and perform Hausmanspecification test (Hausman, 1978) to select the best estimation model for the study.

Model 01

$$TLA_{it} = \beta_{0i} + \beta_1 SIZE_t + \beta_2 CR_t + \mu_{it} \quad (1)$$

$$TLA_{it} = \beta_0 + \beta_1 SIZE_t + \beta_2 CR_t + \varepsilon_{it} + \mu_{it} \quad (2)$$

TLA_{it} = total debt ratio of firm i at time t , $SIZE$ = stock market size, CR = bank credit, β_0 = common intercept, β_1 - β_2 = coefficient of independent variables, β_{0i} = intercept of firm i , μ_{it} = error term of firm i at time t , ε_{it} = cross section error term

Model 02

$$TLA_{it} = \beta_{0i} + \beta_1 GDP_t + \beta_2 INF_t + \beta_3 GOV_t + \mu_{it} \quad (3)$$

$$TLA_{it} = \beta_0 + \beta_1 GDP_t + \beta_2 INF_t + \beta_3 GOV_t + \varepsilon_{it} + \mu_{it} \quad (4)$$

TLA_{it} = total debt ratio of firm i at time t , INF = inflation, GDP = GDP growth rate, GOV = government intervention, β_0 = common intercept, β_1 - β_3 = coefficient of independent variables, β_{0i} = intercept of firm i , μ_{it} = error term of firm i at time t , ε_{it} = cross section error term. The summary of the

variables and their proxy measures are presented in the Table 1.

Table 1: Summary of variables

| Variables | Proxy Measures |
|----------------------------|---|
| Capital Structure | Total debt ratio = Total liabilities/Total assets |
| Institutional Factors | |
| Stock Market Development | Stock market size = Market capitalization/ GDP |
| Banking Sector Development | Bank credit/GDP |
| Macroeconomic Factors | |
| Inflation | Annual change in Colombo Consumer Price Index (CCPI) |
| GDP Growth | Annual GDP growth rate (Real terms) |
| Government Intervention | Government borrowings from local commercial banks/GDP |

4. Data Analysis and Discussion

4.1 Descriptive Statistics

The Table 2 demonstrates the descriptive statistics of the variables used in the study. Accordingly, it clearly demonstrated that 35% of the total assets of the firms listed under H&T sector were financed through debt financing sources while the balance is financed using equity. Thus, it clearly depicted that firms listed under H&T sector are more towards equity finance. Further, it also records a standard deviation of 64.85% with respect to the total debt ratio of the sample companies. The bank credit also registers a mean value of 52.2% which indicates a higher level of development in the banking sector compared to the level of development in the stockmarket. Further, mean value of 47.86% indicates that government borrowings are also significant in the Sri Lankan economy.

Table 2: Descriptive Statistics

| | Mean | Median | Maximum | Minimum | Std. Dev. |
|------|--------|--------|---------|---------|-----------|
| TLA | 0.3577 | 0.2110 | 6.5771 | 0.0010 | 0.6485 |
| SIZE | 0.2577 | 0.2610 | 0.3940 | 0.1110 | 0.0755 |
| CR | 0.5219 | 0.4745 | 0.7800 | 0.2892 | 0.1573 |
| GDP | 0.0655 | 0.0660 | 0.0820 | 0.0350 | 0.0134 |
| INF | 0.0993 | 0.0830 | 0.2260 | 0.0350 | 0.0528 |
| GOV | 0.4786 | 0.4840 | 0.5470 | 0.4260 | 0.0376 |

4.2 Correlation Analysis

The data were tested for the problem of multicollinearity by using a correlation matrix before estimating the coefficients of the models. Based on the magnitude of the correlation coefficients, Table 3 confirms that in overall the problem of multicollinearity is not a potential problem on the regression models.

Table 3: Correlation matrix

| Institutional factors | | | | | |
|-----------------------|---------------------|--------|--------|-------|-----|
| | | TLA | SIZE | CR | |
| SIZE | Pearson Correlation | -0.074 | 1 | | |
| | Sig. (2-tailed) | 0.237 | | | |
| CR | Pearson Correlation | -0.072 | 0.481 | 1 | |
| | Sig. (2-tailed) | 0.244 | 0.000 | | |
| Macroeconomic factors | | | | | |
| | | TLA | GDP | INF | GOV |
| GDP | Pearson Correlation | -0.08 | 1 | | |
| | Sig. (2-tailed) | 0.197 | | | |
| INF | Pearson Correlation | 0.038 | 0.032 | 1 | |
| | Sig. (2-tailed) | 0.542 | 0.612 | | |
| GOV | Pearson Correlation | 0.073 | -0.512 | 0.235 | 1 |
| | Sig. (2-tailed) | 0.243 | 0.000 | 0.000 | |

4.3 Regression Results

The results of Hausman specification test demonstrated that random model is superior compared to the fixed model. The empirical results demonstrated in the Table 4 indicate that the stock market development has an insignificant as well as a negative relationship with the capital structure. Bopkin (2009) reported that stock market development is insignificant in predicting the capital structure choice of the firms in emerging market countries. It further confirms by the results of the study. Booth et al. (2001) profound that once the capital markets become more developed, they become a feasible choice for corporate financing and firms make lower usage of debt, so that a negative relationship can be expected between level of stock market development and capital structure.

Table 4: Regression results – institutional factors

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------|-------------|--------------------|-------------|--------|
| C | 0.573 | 0.0960 | 5.9655 | 0.0000 |
| SIZE | -0.433 | 0.3595 | -1.2042 | 0.2297 |
| CR | -0.198 | 0.172542 | -1.1515 | 0.2507 |
| R-squared | 0.68788 | Adjusted R-squared | 0.65156 | |
| F-statistic | 18.9377 | Prob(F-statistic) | 0.00000 | |

This lower usage of debt by the sample firms listed in H&T sector can be further proven through the information regarding the movements of the Sri Lankan equity market which is demonstrated in Table 5. Thus, it presents that the Sri Lankan equity market has started to boost its performancesince the end of the 30-year civil war in year 2009. Therefore, the firms listed under H&T sector exploited this opportunity to raise more funds from equity sources in order to fulfill their financing requirements resulting lower utilization of debt financing sources in their capital structures.

Table 5: Equity market movement

| Year | Market cap. Rs. Billions | Right Issues (H&T) | | |
|------|-----------------------------|--------------------|-------------|----------------|
| | | No. of Issues | Shares '000 | Value Rs. '000 |
| 2006 | 834.8 | 1 | 38,882 | 388,823 |
| 2007 | 820.8 | 4 | 680,575 | 3,411,991 |
| 2008 | 488.8 | - | - | - |
| 2009 | 1092.1 | 2 | 20,421 | 153,421 |
| 2010 | 2210.5 | 4 | 407,206 | 7,114,054 |
| 2011 | 2213.9 | 3 | 80,405 | 2,932,264 |
| 2012 | 2167.6 | 1 | 3,039 | 110,929 |
| 2013 | 2459.9 | 1 | 66,000 | 660,000 |

As per the Table 4, banking sector development demonstrates a negative association with the capital structure. According to Lemma and Negash (2012), a negative relationship occurred as stronger creditor rights protection and better quality of law enforcement discouraged firms from borrowing money since the firms may want to reduce the risks that involved with debt. Table 6 demonstrates the development of the bank credit over the years.

Table 6: Growth of bank credit (2004-2013)

| Year | Growth of bank credit (%) |
|------|---------------------------|
| 2004 | 28.9274 |
| 2005 | 34.6383 |
| 2006 | 42.1359 |
| 2007 | 46.1664 |
| 2008 | 48.4651 |
| 2009 | 46.44 |
| 2010 | 54.9838 |
| 2011 | 66.5475 |
| 2012 | 75.6614 |

Further, the Central Bank of Sri Lanka enforced regulations to enhance minimum capital requirement of commercial banks to Rs. ten billion by year 2016. In line with that, it expects to implement a comprehensive supervisory framework to assess the operational activities of banks. As a result of strict regulatory requirements, banks will take necessary actions to scrutinize their operations and it creates negative relationship with the corporate borrowings. Moreover, the banking sector development is insignificant in determining the capital structure decisions of firms where this further signifies through the fact that from the total loan portfolio of commercial banks, loans granted for H&T sector is in the range of 2% to 3% during the selected sample period.

Table 7:Regression results – macroeconomic factors

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------|-------------|--------------------|-------------|---------|
| C | 0.2638 | 0.4459 | 0.5915 | 0.5547 |
| GDP | -3.1566 | 2.1027 | -1.5012 | 0.1347 |
| INF | 0.4012 | 0.4715 | 0.8510 | 0.3956 |
| GOV | 0.544 | 0.7689 | 0.7087 | 0.4792 |
| R-squared | 0.689454 | Adjusted R-squared | | 0.65181 |
| F-statistic | 18.31611 | Prob(F-statistic) | | 0.00000 |

Table 7 demonstrates the impact of macroeconomic variables on capital structure. GDP growth rate has a negative relationship with the capital structure decision. As per Gajurel (2006) and Lemma and Negash (2012), a negative relationship can be expected when there is a likely increase in stock prices during the times of economic growth which will lead to lesser usage of debt by the firms. It can be further proven through the Table 8 where there is an increase average market price index of the firms in the H&T sector and the real economic growth of the country during the sample period. Furthermore, a boost in economy and consequent growth in GDP may portray growth for firms so that as per the pecking order theory, companies will prefer internal sources to that of external debt financing. Thus, the findings suggest that the issue of market timing and information asymmetry is vital in the capital structure decisions (Frank & Goyal, 2009). In addition to that, the GDP growth is found to be insignificant in determining the capital structure decisions

where this can be due to the fact that H&T's contribution to the total GDP is less than 1% during the sample period.

Table 8: Movement of stock prices and GDP

| Year | Avg. market price index | GDP |
|------|-------------------------|-------|
| 2006 | 1028.07 | 7.70% |
| 2007 | 1599.625 | 6.80% |
| 2008 | 1290.325 | 6.00% |
| 2009 | 1293.475 | 3.50% |
| 2010 | 1850.75 | 8.00% |
| 2011 | 4606.375 | 8.20% |
| 2012 | 3474.625 | 6.40% |
| 2013 | 3207.6 | 7.30% |

There is a positive relationship between inflation and the capital structure and it is in line with findings of Frank and Goyal (2009). During the inflationary conditions, a firm is likely to issue more debt since it decreases the real value of debt and increases the real tax advantage for firms. This can be further proven through the Figure 1 which depicts the inflation of the country during the period under consideration where similar a movement demonstrates in the total debt ratio of the sample companies.

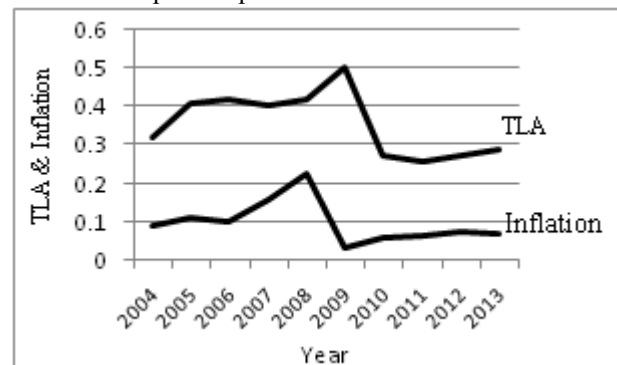


Figure 1: Movement of inflation and TLA

Furthermore, the arguments based on trade off, tax/bankruptcy, and market timing theories are consistent with the resulted positive association between the inflation and capital structure decisions of firms. However, the insignificant influence of the inflation on the capital structure decisions of the sample companies may be due to the fact that no direct weightage has been given to H&T when calculating the Colombo Consumer Price Index (CCPI) which is the official inflation measurement index of the country. The empirical findings of the study demonstrate that government intervention has a positive relationship with the capital structure. This evidence contradicts with the usual expectation of, as government intervention increases government borrowings will also increase so that a negative association is expected between government borrowing and private sector credit. However, a counter argument can be raised against this conjecture that when the banks maintain liquidity levels more than their statutory requirements, a reduction of borrowing opportunities for the private sector may not occur despite the presence of higher rate of lending to the government (Fayed, 2012). Table 9 illustrates the statutory liquid assets ratio (SLAR) maintained by the Sri Lankan commercial banks during the period under consideration where the minimum SLAR requirement is 20% and banks maintained a fairly high margin of liquid assets than the required level. Thus, it supports the above argument of excess liquidity of banks towards the positive association

between government intervention and capital structure decisions of the companies. Moreover, it has also been argued that government borrowings might actually encourage the banks to embark more on relatively risky private lending, as the safe government assets in a bank's portfolio permit it to tolerate more risk (Kumhof & Tanner, 2005). Since H&T sector has a minor portion out of the total loan portfolio, the impact of government intervention is very minimal so that it has an insignificant influence on the capital structure.

Table 9: Liquid assets ratio (SLAR)

| Year | Liquidity Ratio (%) | Required SLAR (%) | Excess (%) |
|------|---------------------|-------------------|------------|
| 2004 | 26.3 | 20 | 6.3 |
| 2005 | 35.2 | 20 | 15.2 |
| 2006 | 23.9 | 20 | 3.9 |
| 2007 | 24.8 | 20 | 4.8 |
| 2008 | 25.6 | 20 | 5.6 |
| 2009 | 33 | 20 | 13 |
| 2010 | 29.4 | 20 | 9.4 |
| 2011 | 26 | 20 | 6 |
| 2012 | 26 | 20 | 6 |
| 2013 | 31 | 20 | 11 |

5. Conclusion

This study investigates the influence of external environment on corporate capital structure since Frank and Goyal (2009), have concluded that approximately 30 percent of differences in capital structure could be explained by internal determinants. Hence, this implies that there are other factors affecting capital structure decisions not accounted for by internal determinants. Thus, this empirical study attempted to explore the influence of institutional and macroeconomic conditions on corporate capital structure of 26 companies listed in H&T sector in the Colombo Stock Exchange. In terms of institutional factors, the study documents that the development of the banking sector has a negative insignificant impact on the capital structure decisions of the sample companies while it is also depicted that the stock market development is insignificant in determining the capital structure decisions. The study also presents interesting findings regarding the impact of macroeconomic factors on corporate capital structure where the GDP growth rate has insignificant and negative relationship with the capital structure which indicates that when the economy is at a growth phase, companies may tend to portray high profits so that it creates less demand for debt. Further, the inflation has demonstrated a positive but statistically insignificant association with total debt ratio of the companies in the H&T sector. The study demonstrates that the government intervention has a positive insignificant impact towards the capital structure. However, a crowding out effect is not observed so that government intervention positively influences towards the capital structure decisions of the firms in the H&T sector. Nevertheless, the government has a responsibility to provide signals to the banking sector to increase private sector credit. Therefore, the author suggests that the impact of institutional and macroeconomic conditions on the cost of capital in order to obtain a holistic view on how institutional and macroeconomic conditions affect firms' financing decisions and thereby the values of the firms which remains as an open research question which

is another promising area for future research. However, the institutional and macroeconomic data, and econometric analysis offer tantalizing glimpses of what institutional and macroeconomic conditions really mean so that further research in this regard is inevitable.

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