CHAPTER 2: LITERATURE REVIEW

2.1 BACKGROUND ON CAPITAL STRUCTURE THEORY

Modigliani and Miller (1958) in their original work proved under a very restrictive set of assumptions that capital structure is irrelevant. This was advocated in Modigliani and Miller’s (MM) Proposition I which says that the value of a firm in the absence of taxes is independent of its leverage.

MM also advocated Proposition II which says that the cost of equity of a levered firm increases in proportion to the increase in debt-equity ratio expressed in market values. The cost of equity increases when leverage increases because the cost of equity increases with leverage (Ross et al. 1993). Equity risk increases because the remaining shareholders have to bear more of the firm’s business risk as more debt is used.

When taxes are included, the value of a leveraged firm under Proposition I increases by the amount of the tax shield which is equal to the corporate tax rate (T) multiplied by the amount of debt used. With taxes, according to Proposition II, a levered firm’s cost of equity rises in proportion to the debt-equity ratio multiplied by (1 − T). Since (1 − T) is less than 1, corporate taxes cause the cost of equity to rise less rapidly with leverage than when there are no taxes (Brigham et al. 1999).

Thus, in the presence of corporate taxes, MM’s Propositions I and II suggest that a firm should use 100 per cent debt to maximize its value. However, when more debt is used, bankruptcy costs increase. This brings into question what a firm’s optimal capital structure should be.

Myers (1984) gave an explanation about the two ways of thinking about capital structure. Firstly, the Static Tradeoff Hypothesis argues that firms trade off the tax benefits of debt financing against the costs of borrowing by substituting debt for equity or vice-versa until the value of the
firm is maximized at an optimal capital structure point. Beyond this point, bankruptcy-related costs exceed the tax benefits and the costs of financial distress increase.

The second way of thinking is the Pecking Order Theory which says that firms prefer internal finance (Myers 1984; Brealey and Myers 2000). If external finance is needed, firms issue the safest security first, starting with debt, then possibly hybrid securities and finally equity as a last resort. This is because managers often have asymmetric information about their firms’ prospects and prefer to issue debt to equity when their inside information is favourable. They will prefer equity to debt only if prospects are unfavourable.

2.2 EMPIRICAL STUDIES OF INDUSTRY EFFECTS ON CAPITAL STRUCTURE

One of the early empirical studies on the influence of industry on capital structure was done by Schwartz and Aronson (1967). They found that firms belonging to the same industry classification generally had similar financial structures whereas firms from different industry classes generally displayed different financial structures. They also concluded that there was persistent difference in financial structures of the industry classes over time and relative stability in these structural differences in spite of changes in the level of taxes and the structure of the economy.

Scott and Martin (1975) studied data which covered United States companies from 1967 to 1972 and found that it was unwise to disregard industry class as a determinant of capital structure because financial structures were not, in fact, identical across a wide array of industries. However, the evidence in Belkaoui (1975) showed that debt ratios did not vary significantly by industry in Canada.
Aggarwal (1981) studied the 1977 data of Europe’s 500 largest industrial corporations. He measured financial leverage by using mean equity capital as a percentage of total assets. His analysis of variance (ANOVA) test showed that industry by itself was a significant factor in explaining capital structure. In another study, Bradley et al. (1984) found that there were significant differences in the mean leverage ratios of firms across industries both when industries regulated by government agencies were included or when they were excluded.

Naidu (1984) and Naidu (1986) used the ratio of stockholders’ equity to total assets to measure aggregate financial leverage. Naidu (1986) also measured short-term leverage of the firm by using the ratio of current debt to total assets.

Naidu (1984) examined the capital structure of firms in Hong Kong, Malaysia, India and the Philippines. For Malaysia, he selected a sample of 56 firms from 8 industries by using financial data from “Asia 1982: Measures and Magnitudes” which was published by Asian Finance Publications Ltd. The 8 industries were textiles, food, rubber, chemical, metal mining, electrical/electronics, cement and lumber/plywood. Naidu (1984) found that industry influence on a firm’s capital structure was significant in Malaysia but not in Hong Kong, Philippines and India. He found that in Malaysia, the average stockholders’ equity to total asset ratio for the rubber industry was about 78 per cent as compared to the other industry groups which averaged about 56 per cent for both 1979 and 1980.

Naidu (1986) studied Australian and South African firms. His One-way ANOVA and Kruskal-Wallis tests showed that the levels of aggregate leverage were significantly different between industry groups in Australia but no such inter-industry variation was observed in South Africa. However, he found that the levels of short-term financial leverage was significantly different across industry groups in both Australia and South Africa.
Annuar and Shamsher (1993) studied the capital structure of companies in Malaysia by using a sample which consisted of 60 KLSE listed companies from five sectors which were continuously traded from 1975 to 1989. The five sectors were the industrial, properties, plantation, tin and finance sectors. Financial leverage was measured by using the total debt (excluding trade creditors) to equity and total debt to total asset ratios. ANOVA was used and the results of Annuar and Shamsher (1993) showed that apart from the finance sector, there was significant difference in the leverage ratios within each sector as well as between sectors over the 15-year period.

Tho (1993) examined the financial structures of 122 KLSE listed firms from 1986 to 1990. She excluded the finance sector and divided her sample firms into 9 sectors. The One-way ANOVA and Kruskal-Wallis tests were used and results showed that there was significant difference in the financial structure of the various industry groups. A Multiple Comparison Test was also employed to determine which industry’s mean was different from that of another industry. This test confirmed that significant differences in financial structure between industries were the result of more than one industry being significantly different from other industry groups. Tho (1993) also deduced that the financial structure of the industry groups were stable over time since there was no difference in financial structure within industry groups over the five-year period of study.

Tho (1994) also looked into the determinants of corporate financial structure in Malaysia. Financial leverage was measured by using three ratios, i.e. short-term debt, long-term debt and total debt to equity. Tho (1994) used multiple regression to study the relationship between financial structure and firm attributes, first by excluding dummy variables which represented the different industries and then by including the dummy variables. The results showed that the adjusted R-square for the regression model increased for all three of the leverage ratios when the industry
dummy variables were included. The results, therefore, added more evidence in favour of industry effect on leverage ratios.

Ang (1994) examined the capital structure of 101 KLSE listed firms from 1972 to 1991. The sample firms were grouped under the pre-1993 KLSE classification of industrial, finance, property, oil palm, tin and rubber sectors. He further divided the industrial sector into 7 sub-sectors. He measured leverage by using the total debt to total asset ratio. His One-way ANOVA test indicated that there was significant difference in the capital structure of firms across different sectors over the 20-year period but the capital structures of firms in the various sub-sectors within the industrial group were not significantly different. Ang (1994) also used Duncan’s Multiple Range Test to identify which pairs of sectors (from the six main sectors) had significantly different means so that comparisons could be made between all possible pairs of sector means.

Mansor (1995) did a study on the capital structure of KLSE listed firms from 1980 to 1993 by breaking down the financial structure of the firms into short-term liabilities, long-term liabilities, common stock, preferred stock and retained earnings in percentage terms so that the total liabilities and equity for each year equaled 100 per cent. He found that if short-term liabilities were not considered, the average common equity (including retained earnings) for the 14-year period constituted about 88 per cent of the companies’ long-term capital. This meant that only 12 per cent of the capital was raised by long-term borrowings.

A recent study was done by Muhammad (1998) who investigated the differences in debt and equity levels across 10 industries for a sample of 97 KLSE listed companies from 1986 to 1995. He measured financial leverage by using the total debt to equity, total debt to total asset and common equity to total asset ratios. His One-way ANOVA and Kruskal-Wallis H-Statistic tests showed significant relationship of industry effects with respect to the three leverage ratios used.
2.3 OTHER STUDIES ON CAPITAL STRUCTURE RELATED ISSUES

Studies related to the usage of debt in the years prior to the crisis can be found in Pomerleau (1998) and Claessens et al. (2000).

Pomerleau (1998) did a study to determine the performance of corporations in Hong Kong, Indonesia, Korea, Malaysia, Philippines, Taiwan and Thailand. He showed that the investment spending spree in some Asian countries contributed to erosion of profit margins and to poor financial performance which were reflected by declining and low return on equity as well as low return on capital employed. His results showed that Malaysia’s total debt-equity ratio was only 62 per cent in 1996 as compared to Thailand’s 155 per cent but this was still double that of 1992 which was only 31 per cent.

Pomerleau argued that Asia’s high leverage should be remedied and there was a need to develop a balanced financial sector with vibrant equity and bond markets. According to Pomerleau (1998), the bond market in Asia was only 20 per cent of GDP as compared to the US bond market which was over 100 per cent of GDP. Besides Pomerleau (1998), Hitt et al. (1999) quoted a World Bank report which found that total bank loans in the United States equalled only 50 per cent of the nation’s GDP as compared with 100 per cent in Malaysia.

In another study, Claessens et al. (2000) compared the growth and financing patterns of corporations in 9 East Asian countries with the United States and Germany. The comparison was made over 9 years from 1988 to 1996. They found that Malaysia’s average real rate of return on assets (ROA) for the nine-year period was 6.3 per cent and this was less than Indonesia, Philippines, Thailand and Taiwan but higher than Hong Kong, Japan, Korea, Singapore, Germany and the United States.
Claessens et al. (2000) found that Malaysia's average total debt-equity ratio from 1988 to 1996 was 0.908 and this was quite low compared with other Asian countries. However, Malaysia's ratio had continuously been rising every year from only 0.610 in 1991 to 1.176 in 1996. Claessens et al. (2000) also measured long-term debt as a share of total debt and found that Malaysia's ratio was only 29.2 per cent and this ratio was the lowest among all the countries studied. Thus, long-term debt accounted for less than a third of all loans in Malaysia.