

Gearing Differences Across Malaysian Public Listed Companies

Sharifah Raihan Syed Mohd Zain

International Islamic University Malaysia

Abstract: It is sometimes purported that one of the factors affecting a firm's value is its capital structure. The main objective of this research is therefore to examine capital structure differences among 572 companies listed on the main board and second board of KLSE and to examine the gearing patterns following the 1997 financial crisis. Using the analysis of variance (ANOVA) and Kruskal-Wallis statistical tests, the findings clearly indicate the existence of gearing differences between the main board and the second board, and within the sectors of the main board companies. The results also show that the gearing ratio for both boards gradually increase from the period of pre-crisis to post-crisis. Any increase in gearing following the crisis may partly be attributed to either one of the following reasons: a general trend of increasing the debt ratio or firms do indeed employ more debts due to the crisis.

Keywords: Gearing (Leverage), capital structure, main board, second board and crisis

1. Introduction

A firm's capital structure refers to the mix of its different securities. There are many methods which firms can use to raise their required funds, but the most basic and important financial sources are retentions, shares and debt. A high debt simply indicates that a company has placed a greater reliance upon debt than equity to finance its operations. Too high a debt may expose the company to uncertain future conditions which may eventually result in the company experiencing difficulty in continuing debt finance in the future.

The study covers two different groups of public listed companies on the Kuala Lumpur Stock Exchange (KLSE): the first group of companies is listed on the main board, while the second group is listed on the second board. Hence, this research is largely centred on: (i) the differences between gearing of the main board and the second board companies; (ii) and the effects of the 1997 financial crisis on the firms' gearing. Malaysia has also been affected by the 1997 East Asian financial crisis which resulted in a short recession in 1998 (BNM 1999). Following the crisis, Malaysian firms' market values fell to their lowest, especially among second board listed firms. The Kuala Lumpur Composite Index (KLCI) index was at its highest at 1200 points in the first quarter of 1997, declining to its lowest at 286 points in the third quarter of 1998. Since then, many studies have been conducted to understand the reasons for the currency crisis that had eventually led to the financial crisis.

The paper is divided into 5 sections. Following this section, Section 2 focuses on reviewing the literature on gearing differences. Section 3 describes the method of data

Assistant Professor, Department of Business Administration, International Islamic University of Malaysia, Jalan Gombak, 53100 Kuala Lumpur, Malaysia
Email: sraihan@iiu.edu.my

collection and the methodology employed to analyse such data. Section 4 outlines research findings and the discussion, and Section 5 concludes the paper.

2. Literature Review

Few other studies in finance have received as much attention as the 1958 paper by Modigliani and Miller ("MM" hereafter). Their proposition opposes the "traditional view" of capital structure which believes that the stockholders' wealth (value per share) can be increased by sensible use of debt. The MM proposition, however, states that, in the absence of taxes, the value of a firm is independent of the proportion of debt to equity. Their first view on capital structure created an early controversy and attracted the attention of many finance scholars including Durand (1959), Schwartz (1959), and Solomon (1963), who had all agreed that the capital structure of the firms "does matter" as it does affect the value of the firm. Since this early debate, there have been a number of empirical studies, and indeed further theoretical research in this area. As studies on taxes and capital allowances progressed, many other factors were found to be determinants of the capital structure. The factors that influence the determination of a firm's capital structure have been examined extensively both in theoretical and empirical research. Hence, this study focuses on industry differences.

There are two types of industry issues in the study of capital structures: (i) industry differences and (ii) industry norms. The former investigates whether there is any difference between the capital structure of one industry and another. For example, the utility industry debt level should be higher than the debt level of the pharmaceutical industry. The latter on the other hand, investigates whether firms' debt to equity ratio decisions are based on their peer group or in popular terms "following the leader". For example, if Coca-Cola Company increased their gearing ratio, will this prompt PepsiCo, Inc. to do the same? However, both issues are interrelated, if all firms choose to follow the industry norms, then it will lead to gearing differences among the different industries.

Schwartz and Aronson (1967) studied the financial structure differences in the following four classes of the US industries: railroads, electric and gas utilities, mining, and industrials (manufacturing) between 1928 and 1961. They compared the sample means using an F-ratio to test the differences within and between the means of the different industry equity ratios. The differences between industries were significant whereas the differences within the industries were not significant.

In his study of financial structure, Scott (1972) argued that firms are categorised according to their exposure to business risk. These clusters of risk determine to which group the firms belong in determining their capital structure ratios. In proving their assumption that a firm's capital structure is different based on the grouping, Scott (1972) studied 12 US industries comprising 77 firms between the period of 1959 and 1968. Consistent with Schwartz and Aronson's (1967) study, he found a similar result of differences between the industry classes at the 1 per cent level of significance for each year during that 10-year period.

Scott and Martin (1975) argued that since there is no valuation formula for the firms to determine their best ratio of gearing, the firms' finance managers should rely instead on their analysis and judgement by examining the funding mixes of other firms within the same industry. To study whether firms' gearing are located within the same industry, they

conducted a Kruskal-Wallis one-way analysis of variance by ranks on 277 US firms from 12 industries between the period of 1967 and 1972. They found industry class to be a significant determinant of the firms' financial structure.

Aggarwal (1981) studied international differences in capital structure norms. He examined 38 industries within 500 European industrial corporations in 13 countries. He found existence of industry effects on the capital structure. However, the results indicate that the country factor is the most significant determinant of capital structure rather than industry classification among large industrial enterprises.

Annuar and Shamser (1993) used analysis of variance to test industry differences using a sample of 60 Malaysian firms from 1975 to 1989. Differences in industrial, finance, properties, plantation and tin sectors gearing were analysed using debt-to-equity ratio and debt-to-assets ratio. With the exception of the finance sector, they found gearing of firms to differ significantly within and between industries. Both the industrial and finance sectors recorded the highest gearing ratio while plantation had the lowest. According to them, one of the reasons the plantation sector recorded the lowest gearing ratio was due to the lack of reinvestment in this sector as the Malaysian government is providing more support to manufacturing (industry).

The same result was found by Mohamad (1995) in his study on the capital structure of large Malaysian companies. He found inter-industry differences among the companies. The latest study on industry differences on Malaysian companies was conducted by Mansor and Mohamad (2000) between 1986 and 1995. Again, they found evidence of industry differences in the Malaysian firms' gearing ratios. However, the differences were not consistent when different gearing measures were used. They concluded that a lack of industry effect in Malaysian companies may be due to the firms' heavy diversification activities.

Yam (1998) argued that firms within the same industry face similar supply and demand conditions and experience a similar technological environment which leads to a similar risk exposure. Therefore, firms in the same industry should employ a similar debt to equity ratio. Using analysis of variance and pair-wise analysis, Yam sought to determine the gearing differences of 18 industries' classification from listed companies and 19 industry classifications from unlisted companies. The ANOVA analysis revealed significant differences in the gearing of both listed and unlisted industry classification. Their result confirms a previous study by Ariff *et al.* (1990) on Singapore listed companies, showing that gearing levels of Singapore listed companies are industry-specific.

The previous literature had found significant gearing differences among industries implying the existence of "industry norms" or "following the leaders". In contrast, the Remmers *et al.* (1974) and Collins and Sekely (1983) analyses on industry gearing differences findings were either partially significant or not significant.

Based on Scott's (1972) argument of gearing being industry specific due to the business risk clustering, Remmers *et al.* (1974) state that firms within the same industry face the same environmental and economic conditions and therefore, should be grouped in the same business cycle. They studied Fortune 500 companies from 9 industries in the US, Norway, Japan, and Holland. They found that the debt ratio is determined by industry differences for the Japanese and French companies, but not for the US, Holland and Norway-based companies.

In studying the country and industry effect on capital structure, Collins and Sekely (1983) employed data of 411 firms within 9 industries in 9 countries from the period of 1979 to 1980. Although they found support for the country effect, they did not find much support for the industry effect.

Therefore, the findings of industry differences that led to industry norms are extensive. If firms target their capital structure on the "norm" for their industry then that may be the best level of gearing ratio. Finance managers often look for guidance from similar firms on financial structure decisions, as they recognise that similar firms will be exposed to similar environmental factors that may expose the firms to a similar risk. They also realised that significant departure from published industry norms will be viewed with some suspicion by the investors. Drury and Bougen (1980) stated that any divergence from the industry norms is viewed with some suspicion by both lenders and investors.

3. Data and Methodology

The sample consisted of 572 publicly listed companies in the Kuala Lumpur Stock Exchange (KLSE), comprising 357 companies from the main board and 215 companies from the second board. The main board and the second board companies' financial and accounting data were extracted from Datastream database. The main difference between the two boards is the requirement of their paid-up capital to be listed on the KLSE, i.e. RM60 million for firms listed in the main board and RM40 million for firms listed in the second board (KLSE website, 2001). The second board is relatively new, launched in 1988 to enable smaller companies which are viable and have strong growth potential to be listed. Therefore, the main board consists of large, and mature companies, while the second board consists of small and newly listed companies. Each board is further classified by sectors, which reflect the core business of these companies. The main board consists of six different sectors which include construction, consumer products, industrial products, plantation, properties and services. The second board consists of a few groups, but is treated as one sector or one board for this research because there are too few companies that are listed under each sector.

The data from the main board companies were gathered for a 7-year period (1994-2000) while those of the second board were gathered for a 6-year period (1995-2000). For the purpose of studying the effects of the 1997 financial crisis on the capital structure of Malaysian firms', the data have been divided into the following 3 time periods: pre-crisis, crisis and post-crisis. For the main board, the data for a 3-year period have been averaged for the pre-crisis and post crisis, while for the second board, the data from a 2-year period have been averaged for the pre-crisis and post crisis. Both boards used the 1997 data for the crisis period.

There is no common measure of capital structure that was used in most of the literature. Different researchers and authors have used different sets of capital structure measures, based on their own argument and theoretical standpoint. However, most of the measures would definitely serve the objective of measuring the gearing ratio. Stonehill *et al.* (1975) state that corporate treasury usually prefer book values measure over market values measure. Their findings are supported by Myers (1977), who suggested that such measures were strongly related to the firms' "assets-in-place". Marsh (1982) proposed the use of market values rather than book values to calculate debt. However, he employed both methods as he

found it very difficult to calculate the market value of firms' debt. He found similar results for both measurements. Titman and Wessels (1988) used both methods to measure equity and used book value to measure debt. They argued that they did not suspect the cross-sectional differences between the market values and book values of debt to be correlated with any of the capital structure determinants in their study. Therefore, the use of both methods are acceptable. Rajan and Zingales (1995) also used a total debt to total debt plus market value of equity in their study.

Clearly, many authors used a book value measure for debt and either book value or market value measure for equity. The gearing measurement in this paper is consistent with the Titman and Wessels (1988) and Rajan and Zingales (1995) studies and that is: (i) "book value ratios" for book value of debt to book value of debt plus book value of equity; (ii) "mixed value ratios" for book value of debt to book value of debt plus market value of equity. *Datastream* defines total debt as the sum of preference capital, long term debt and short-term debt.

The statistical analyses employed in this paper include ANOVA and Kruskal-Wallis using spreadsheets and *Statgraphics* version 5.0. Analysis of variance is the statistical method used for testing the null hypothesis, that the means of several populations are equal. ANOVA was used to test for any differences between and within the means of the main board and the second board. It was also used to test for differences between the means of six sectors selected under the main board.

Hypothesis statement for ANOVA

Null hypothesis: all population means are equal

$$H_0 = \mu_1 = \mu_2 = \dots = \mu_i$$

Alternative hypothesis: Not all population means are equal

$$H_1 = \mu_1 \neq \mu_2 \text{ and/or } \mu_1 \neq \mu_3, \text{ and/or } \mu_2 \neq \mu_3, \dots$$

where μ is the mean of book-values ratio or the mean of mixed-values ratio.

There are two hypotheses formulated to test the differences in gearing:

Null hypotheses:

H0: There is no difference between the main board and second board firms' gearing before, during and after the crisis.

H0: There is no difference between gearing ratios among firms within the same sectors on the main board before, during and after the crisis.

Alternative Hypotheses:

H1: There is a significant difference between the main board and second board firms' gearing before, during and after the crisis.

H2: Alternative hypothesis: There are significant differences between gearing ratios among firms in the same sectors on the main board before, during and after the crisis.

However, if the ANOVA assumption is violated, for example, the assumption that the underlying variance of each group is equal, the Kruskal-Wallis test will then be used, which compares medians instead of the means. The null hypothesis in this test asserts that there are no differences among the samples, i.e. all the samples come from the same population. If the null hypothesis is true, this would mean: (i) there is no significant difference between the median of the main board and the second board, and (ii) there is no significant difference between the median of the six sectors under the main board.

4. The Findings

As was previously explained, there is a *book value ratio* of debt to book value debt plus book value of equity, and a *mixed value ratio* of book value debt to book value debt plus market value equity for the statistical analyses. As shown in Table 1 of the *Statgraphics* one-way analysis of variance, the differences between the means were found to be significant for the book-value ratio of the pre-crisis with a p -value of the F -test less than 0.10 (0.0867). The post-crisis book-value ratios were also significant at the 99 per cent confidence level with a 7.32 F ratio. The 1997 book-value ratio was statistically not significant and violated the ANOVA assumption with a significant Cochran's statistic. Thus, based on the book value ratios, there was a significant difference between the gearing of large and small companies at the 90 and 99 per cent confidence level before and after the crisis. As indicated by the mean scores of both periods, the second board companies' gearing was higher than the main board gearing ($29.0456 > 25.6148$) during the pre-crisis and ($50.9003 > 35.8393$) during the post-crisis period. The post-crisis period had given a stronger level of difference with the p -value of less than 0.05. However, the standard deviation of the post crisis mean score was so much higher than the pre-crisis period. The deviation indicates a large deviation of certain firms from the average group gearing.

Although significant results were found for the mixed-value ratio across three periods, Cochran's test showed a significant p -value which indicates the standard deviations are not equal, therefore violating the ANOVA assumption that the populations should have equal variances. For any p -value with a significant standard deviation, i.e. with a p -value of less than 0.05 from the Cochran test, the Kruskal-Wallis test will then be applied to validate the hypothesis based on the median. This is a one-way analysis of variance by rank. Table 1 shows both the book-value ratios and the mixed-value ratios, where the p -values of the Kruskal-Wallis test are less than 0.1, 0.05 or 0.01, and are significant at the 90, 95 or 99 per cent confidence level, respectively across the three periods. The null hypothesis of the

Table 1. Gearing differences between the Main Board and the Second Board analyses using ANOVA and Kruskal-Wallis

Group	Book value ratios			Mixed-value ratios		
	Pre- crisis	1997	Post-crisis	Pre crisis	1997	Post crisis
Main board	25.6148 (20.1481)	33.5908 (35.5104)	35.8393 (64.216)	13.5248 (13.6032)	27.9872 (25.2012)	36.4108 (26.631)
Second board	29.0456 (21.269)	36.3284 (29.8707)	50.9003 (64.8309)	16.9983 (16.4212)	40.0936 (30.3792)	54.0876 (70.7932)
ANOVA						
F-ratio	2.95	0.87	7.32	5.65	24.55	16.97
Prob-value	0.0867*	0.3513	0.0070***	0.0178	0.0000	0.0000
COCHRAN'S TEST						
Prob-value	0.3998	0.0041***	0.8724	0.0045***	0.0025***	0.0000***
KRUSKAL-WALLIS						
Mainboard	236.845	269.854	275.794	219.664	239.958	253.907
Secondboard	259.471	295.731	302.90	252.383	309.447	298.580
H-Statistic	2.7223	3.3616	3.6188	6.0365	25.531	10.4377
Prob-value	0.0989*	0.0667*	0.0571*	0.0140**	0.0000***	0.0012***

Notes:

*, **, ***Significant at the 10, 5, and 1 per cent confidence level, respectively.

Reported standard deviation are in parenthesis

Book value ratio=book value of debt to book value of debt plus book value of equity

Mixed value ratio=book value of debt to book value of debt plus market value of equity

Kruskal-Wallis test states that the medians of the dependent variable within each level of factor are the same. Since all the *p*-values are significant at the required level, there was a significant difference between the main board and the second board companies' gearing before, during and after the crisis based on the book value and the market value of equity. The second board median rank was always higher than the main board median rank across the three periods. Based on the book-value ratios, the test also revealed that the 1997 median rank of both boards was higher than the pre-crisis values and the values of the post-crisis period were ranked even higher. The same result is evident for the mixed-value ratio, indicating the increase in gearing following the 1997 crisis.

Similar tests were applied to the following different sectors on the main board: construction, consumer products, industrial products, plantation, properties and services. Although there are more than six sectors listed on the Kuala Lumpur Stock Exchange, a few of the sectors were excluded due to the small number of companies listed in those sectors. Using a one-way analysis of variance, the differences between the means of the six sectors were found to be significant during the pre-crisis period using the book-value ratios. The differences were also found to be significant using the mixed-value ratios during the 1997 and post-crisis period. The F ratio in Table 2 shows a *p*-value of less than 0.05 for the book-value ratio during the pre-crisis period with a gearing ratio of 20 to 30 per cent among all sectors except for plantation which had the lowest score of 12.615 per cent. The mixed value ratio of the 1997 and post-crisis period showed a high ratio for construction, at 37.555

Table 2. Gearing differences between the Main Board 6 sectors analyses using ANOVA

Variables	Book-value ratios			Mixed-value ratios		
	Pre crisis	1997	Post crisis	Pre crisis	1997	Post crisis
Construction	29.3836 (14.4306)	39.6821 (21.087)	20.4669 (116.706)	13.2004 (8.5676)	37.5453 (26.8071)	45.3814 (25.0051)
Consumer products	25.4863 (21.9837)	30.6098 (25.0994)	37.9246 (49.6834)	12.2141 (12.2884)	23.2639 (21.8046)	30.742 (26.1153)
Industrial products	28.7059 (22.1687)	38.9093 (56.7383)	36.9386 (59.1739)	15.1171 (16.8883)	26.5026 (25.031)	34.6435 (27.1031)
Plantation	12.6146 (16.4476)	21.9126 (27.6052)	16.745 (50.6714)	6.5362 (9.6406)	17.8825 (23.2979)	23.3756 (25.9291)
Properties	24.9114 (16.4566)	28.9596 (17.8359)	41.0588 (80.3403)	13.2579 (9.7305)	29.4643 (23.6588)	40.8217 (23.2151)
Services	27.5321 (20.8921)	36.3878 (25.3175)	43.0886 (32.4101)	16.4619 (15.1046)	33.1413 (27.2947)	41.4421 (27.6282)
F-ratio	3.81	1.75	1.28	2.88	3.00	3.84
Prob-value	0.0023***	0.1232	0.2719	0.0147**	0.0116**	0.0021***
COCHRAN'S TEST						
P-value	0.1486	0.0000***	0.0000***	0.0000***	0.6575	1.0

Notes:

*, **, *** Significant at the 10, 5, and 1 per cent level, respectively.

Reported standard deviations are in parenthesis

Book value ratio—book value of debt to book value of debt plus book value of equity

Mixed value ratio—book value of debt to book value of debt plus market value of equity

and 45.381 per cent respectively, whilst the plantation was still the lowest with a score of 23.3756. Hence, there were differences between the book-value ratios for construction, consumer products, industrial products, plantation, properties and services during the pre-crisis period. There were also differences among the six sectors' mixed value ratios gearing during the 1997 and post-crisis period.

Many statisticians have suggested a follow-up test for the one-way analysis of variance if the factors have more than two levels. The test is intended to compare every possible pair of means. The two common tests are Newman-Keuls and Tukey HSD (Honestly Significant Difference). According to Roberts and Russo (1999), the former is suitable when comparing the means of up to and including three groups while the latter is more suitable to compare the means of a group of 5 or more. Both tests are suitable with roughly equal sized groups, with similar variances and normally distributed data. Due to the difference in the number of observations at each level of the sectors, *Statgraphics* Version 5.0 has suggested a Bonferroni test instead of the Tukey HSD test. *Statgraphics* has produced the Bonferroni's multiple comparison procedure to determine which means are significantly different from others. An asterisk, '*' has been placed next to the pair indicating that these pairs have shown statistically significant differences at the 95 per cent confidence level.

Table 3. Gearing differences between the Main Board 6 sectors analyses using Bonferroni Multiple Range Tests

Variables	Book-value ratios			Mixed-value ratios		
	Pre crisis	1997	Post crisis	Pre crisis	1997	Post crisis
1. Construction	*1,4				*1,4	*1,4
2. Consumer products						
3. Industrial products	*3,4					
4. Plantation	*4,5 & 4,6				*4,6	*4,5 & 4,6
5. Properties	*4,5					*4,5
6. Services	*4,5				*4,6	*4,6

Notes:

* significant at 95 per cent confidence level

N.B. The shaded figures are therefore ignored, F-ratio is not significant.

Book value ratio—book value of debt to book value of debt plus book value of equity

Mixed value ratio—book value of debt to book value of debt plus market value of equity

The following Bonferroni multiple range tests (see Table 3) was prepared based on the ANOVA test in Table 2. Based on the book-value ratios of the pre-crisis period, the mean scores of the plantation sector was different from the mean score of the other sectors (p -values < 0.05) except the consumer products. Therefore, the plantation sector gearing was significantly different from the gearing of construction, industrial products, properties and services. Mixed-value ratios of both the 1997 and the post-crisis periods showed almost similar results in which plantation differed from construction and services during the 1997 crisis while plantation differed from construction, property and services following the 1997 crisis. Following the ANOVA post-hoc test (Bonferroni test), the only sector that was statistically different from other sectors was plantation.

The above Kruskal-Wallis H-test was used to find if there were any differences between the medians of the six sectors. The test results support the previous ANOVA test which had a significant Cochran's test. The H-statistic in Table 4 shows significant p -values of less than 0.01 across three periods at the 99 per cent confidence level using both the book-value ratios and the mixed-value ratios. Either at the book-value ratios or mixed-value ratios, the construction sector ranked the highest across the following 4 periods: (i) the pre-crisis and the 1997 of book value ratios, (ii) the 1997 and the post-crisis period of mixed-value ratios. However, the plantation sector is ranked the lowest across the three time periods. Both the ANOVA and the Kruskal-Wallis tests have indicated that the plantation sector has the lowest mean and median score. On the other hand, the Bonferroni multiple range tests proved that only the gearing of the plantation sector was significantly different from the gearing of most of the other sectors.

Table 4. Gearing differences between the Main Board 6 sectors analyses using Kruskal-Wallis

Variables	Book-value ratios			Mixed-value ratios		
	Pre crisis	1997	Post crisis	Pre crisis	1997	Post crisis
Construction	192.946	213.839	181.0	171.875	204.917	201.68
Consumer product	163.276	167.44	172.41	148.457	151.181	145.17
Industrial products	180.282	179.44	181.117	162.160	160.40	161.151
Plantation	97.771	122.443	122.167	96.971	118.514	116.139
Properties	168.336	167.493	180.043	167.45	178.315	185.553
Services	176.229	193.096	202.955	175.368	183.513	186.399
H-Statistic	22.5019	16.8952	15.4616	20.1892	17.74	21.3463
Prob-value	*0.0004	*0.0047	*0.0086	*0.0012	*0.0033	*0.0007

Notes:

* P-values significant at least 1 per cent confidence level

Book value ratio—book value of debt to book value of debt plus book value of equity

Mixed value ratio—book value of debt to book value of debt plus market value of equity

4.1 Discussion on the Findings

Whether at the book value or mixed value ratios, the second board ratios were always higher than those of the main board. Immediately following the crisis, the main board companies were able to maintain their gearing ratio with little increase. However, the second board gearing had doubled from pre- crisis to post-crisis either measured by book value ratios or mixed value ratios. The analysis of variance found the differences between both boards book value ratios gearing during pre-crisis and post-crisis periods. The differences of the gearing were marginally significant during the pre-crisis stage (significant at 90 per cent confidence level) but strongly significant following the crisis (significant at 99 per cent confidence level). Therefore, there are small differences in gearing between large and small companies when the economy is growing but large differences are found when the economy is in crisis.

Titman and Wessels (1988) state that small firms may be more geared than larger firms and may therefore prefer to borrow short term debt (through bank loans) rather than issue long-term debt because of the lower fixed costs associated with using short term debt. The differences in the financing practice between large and small firms are probably reflected in the high transaction costs that small firms face when they issue long-term debt or equity. By borrowing more short-term debt, these firms are particularly sensitive to temporary economic downturns, which have less effect on larger firms that are less geared. The second board companies did indeed employ higher short term debt than long term as shown in Figure A1 in Appendix I. Perhaps, one of the reasons high debt ratios for small companies increased substantially following the crisis may be due to the financial assistance in the amount of RM1.5 billion provided by the government to the financial institutions to aid small and medium-sized companies following the collapse of the financial market (BNM 1999).

The strong differences between the sectors when the economy was stable are consistent with the findings of many studies on the industrial differences of Malaysian capital structure such as those of Annuar and Shamser (1993) and Mohamad (1995). The Annuar and Shamser (1993) study on the five sectors traded under the KLSE found that Malaysian firms' capital structure differed significantly within and between industries. Using analysis of variance, Mohamad (1995) found significant inter-industry differences in capital structure among large Malaysian companies.

Mansor and Mohamad's (2000) study on Malaysian firm's capital structure found that heavy industries such as construction, chemical and electrical (industrial products) tend to have higher debt ratios than other industries. Light industries such as food (consumer products) and services tend to have low gearing ratio. Their proposition on high debt level in the heavy industries is due to the proportion of fixed assets held by this industry as collateral for debt. However, they concluded that there is no difference in industry classification between the industries due to substantial diversification in the activities among listed firms.

The results of the Bonferoni multiple range test as presented in Table 3 show that only the plantation sector is significantly different from the other sectors for all the three tests that are significant. The low gearing ratio in the plantation sector may be due to lack of reinvestment in this sector as the Malaysian government is providing more support to the manufacturing (industry) as suggested by Annuar and Shamser's (1993) study. Further to that, the crisis had a minor effect on the plantation sector especially on the cost of production. The costs of imported inputs such as fertilisers, pesticides and machinery were higher due to the depreciation of the ringgit (BNM 1999). However, palm oil and saw log had both benefited from the depreciation of the ringgit due to the sharp increase in the export earnings because the transaction for these two items was quoted in the US dollar. Due to that reason, the profits of the firms related to these sectors were not as badly affected as those in the other five sectors, thus, profitable firms would require less debt for their investments. The situation explains why the plantation sector had the lowest gearing

5. Conclusion

Besides gearing differences of the two boards, the observations of the mean scores and median ranks indicated evidence that the gearing ratio for both boards gradually increased from the pre-crisis to post-crisis period. Similar tests have proven that there are statistical differences between the book value gearing of the main board's six sectors. With the exception of the plantation sector, the mean scores reveal that the gearing of the other five sectors has increased even more following the crisis.

Although a few studies such as those of Sekely and Collins (1988) and Booth *et al.* (2001) have categorised Malaysia under the low-debt country group, gearing has increased over the last few years, even before the 1997 crisis. A study by Claessens *et al.* (1998) has indicated a significant increase in Malaysia's annual gearing ratio from 1988 to 1996. Therefore, any increase in gearing following the crisis may be due to either one of the following reasons: a general trend of increasing the debt ratio, or firms do indeed employ more debt due to the crisis.

If the increase in gearing is due to the crisis, the following are a few possible explanations for the increase in gearing ratio following the crisis: (i) it could partly be just an accounting entry of accumulated losses resulting in a low book value of equity; (ii) as the share prices fell due to the crisis, the market value of the equity was also reduced, causing the debt ratio to increase; (iii) in reality, following the crisis, the only choice for financing is to use debt if the firms' shares and retentions are unavailable.

Figure A2 in Appendix I shows an increase in private debt securities issuance over the equity issuance following the 1997 financial crisis in Malaysia. Immediately following the crisis, both capital sources issued by corporations were very low as indicated in the Figure 1 for the year 1998; however, debt issuance surpassed the equity issuance during that year and the subsequent years (compared to 1996 and 1997 proportions). The evidence supports the third explanation for the scarce equity sources due to the crisis.

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Prior to the severe worldwide market crash in October 1987, price limits and circuit breakers were hardly known. Only a few stock exchanges chose to enforce price limits or circuit breakers to stabilize volatility in their respective markets. Two such exchanges were the Tokyo Stock Exchange (TSE) and the Tel Aviv Stock Exchange (TASE).

The course of history was changed on October 1987, when stock markets across the world crumbled. The cause of the crash has become a hot topic. Alan Greenspan, then the chairman of the Reserve Board, said the crash was 'an accident waiting to happen.' While others attribute the accident to price bubbles, economic fundamentals, futures-related trading and even program trading.

Several reports were compiled immediately following the crash. The first report to be released was the interim report by Commodity Futures Trading Commission (CFTC). This report was released on 9 November 1987. The second report was released on 21 December 1987 by Chicago Mercantile Exchange (CME). The third report, released on 8 January 1988, was the most prominent among the four. Called the Brady Commission Report, it was named after Nicholas Brady, who chaired the task force that studied the crash.

The Brady Report discusses the causes of Black Monday and prescribed solutions to prevent similar incidents from recurring. The report concluded that market crashes were attributed to futures-related trading (including portfolio insurance and index arbitrage). The report recommended the use of coordinated circuit breakers (including price limits) and coordinated margin requirements as mechanisms to prevent future market crashes.

Figure A2. Funds raised by the private sector in the capital market

Source: (BIM, 2000) CDROM

* Now known as Bursa Malaysia

** Faculty of Economics and Business, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

*** MBA Student at UKM. Currently at Technology Group, Bursa Malaysia, 50490 Kuala Lumpur, Malaysia

Source: Dr David Blake, 1989, Crash of '87: Why markets fail? *Professional Investor*, October 1989:20.

Appendix A

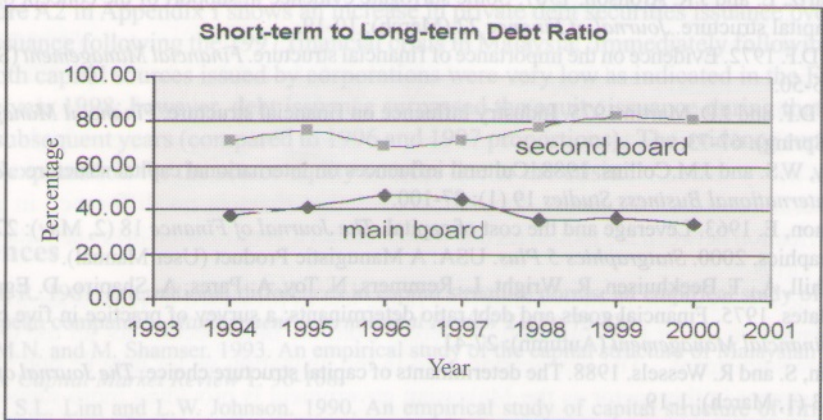
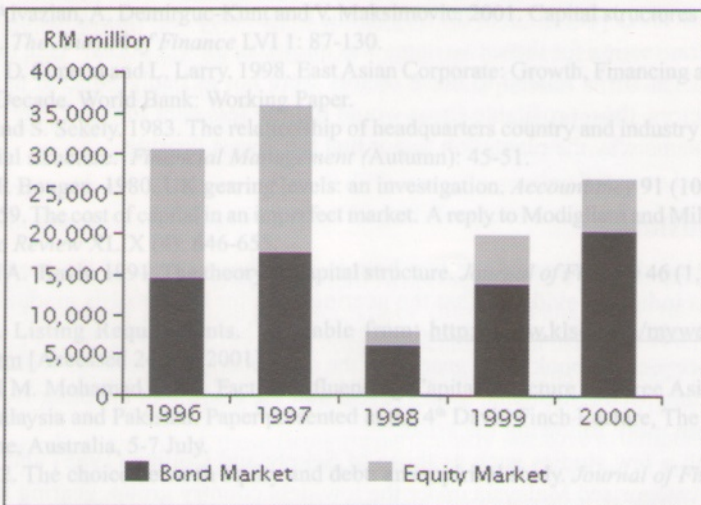


Figure A1. The short-term debt to long-term debt ratio

Figure A2. Funds raised by the private sector in the capital market
Source: (BNM, 2000) CDROM