CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusion

The optimization of capital structure appears to be an important role in today's modern business. Firms tend to finance the operations and growth of companies by seeking internal funding through equity or external leverage through the issuance of bond and/or borrowings from various sources. Although the firm can enjoy a tax shield benefit from interest payment, the variation in capital structure also affects the risks exposed by the shareholders of the firm and thus determines the final cost of capital for that firm. Therefore, it is critical to know the relationship between capital structure and firm characteristics in order to achieve an optimal capital structure.

Eleven hypotheses are formed to answer the research questions being raised in this study. This paper investigates the relationship between capital structure and firm characteristics specifically for firm size, interest coverage ratio, tangibility, profitability, and growth opportunities. Then a regression model is formed for the capital structure with above five independent variables and an additional dummy variable for fifty (50) percent of debt ratio. The model is also used to determine if there is any significant difference in capital structure between firms that use heavy (more than fifty percent) debt capital and those that use less (less than fifty percent) debt capital. Further analyses are performed to determine if there is any significant difference on the selected firm characteristics between firms with more and less than fifty (50) percent of debt ratio.

This study indicates that firm size is significantly positive relation to capital structure. This is consistent with alternative hypothesis 1 as well as the majority of the studies on the relationship between firm size and capital structure. Trade-off theory appears to be the most appropriate theory to explain the relationship between firm size and capital structure.

Interest coverage ratio is found to be statistically significant negative relationship with capital structure. Therefore, alternative hypothesis 2 is accepted. Again, trade-off theory is the most suitable theory to explain the relationship between interest coverage ratio and capital structure for manufacturing firms.

Although tangibility is found to be statistically significant positive in explaining the variance of capital structure (with a positive coefficient of 0.09029 at significance value of 0.020), it is found to have no significant correlation with capital structure at 5% significance level. The two inconsistent results show that tangibility alone is not a critical factor in explaining the capital structure of manufacturing firms. This factor is only significance upon combines with other independent variables and dummy variable. However, other firm characteristics play a more important role in explaining the capital structure of firms. In fact, tangibility has the weakest unique contribution in explaining the capital structure of firms.

Profitability is reported to have negative relationship with capital structure. This is consistent with the postulation of alternative hypothesis 4. Therefore

alternative hypothesis 4 is accepted. Pecking order theory is supported in this context in which profitable firms tend to have fewer borrowings but more funding through internal equity.

Growth opportunities are found to have negative relationship with capital structure. This result indicates that trade-off theory is supported in explaining the effect of capital structure in relation to growth opportunities for manufacturing firms in Malaysia.

The summary of hypotheses and actual findings for Pearson correlation analysis for all five independent variables in relation to the capital structure are summarized in Table 5.1 as shown below:

Table 5.1: Summary of Results for the Relationship between Independent Variables and Dependent Variable

Independent Variable	Null Hypothesis	Final Result	Conclusion
Firm Size	No relationship	+	Alternative hypothesis of H1 is supported. Explained by trade-off theory
Interest Coverage Ratio	No relationship	–	Alternative hypothesis of H2 is supported. Explained by trade-off theory
Tangibility	No relationship	No relationship	Null hypothesis of H3 is supported
Profitability	No relationship	–	Alternative hypothesis of H4 is supported. Explained by pecking order theory
Growth Opportunities	No relationship	–	Alternative hypothesis of H5 is supported. Explained by trade-off theory and market timing theory

Mann-Whitney U test shows that there is a significant difference in capital structure at 95% confidence level between firms that use heavy debt capital (more than fifty percent of debt ratio) and those that use less debt capital (less than fifty percent of debt ratio). Therefore alternative hypothesis 6 is substantiated.

Further analyses by T-test on all five firm characteristics latent variables show that firm size, interest coverage ratio, profitability, and growth opportunities are statistically different (at $\alpha = 0.05$) for firms with more and less than fifty (50) percent of debt ratio. Therefore, alternative hypotheses for H7, H8, H10, and H11 are supported. As for hypothesis 9, there is no significant difference for firms with more and less than fifty (50) percent of debt ratio. Therefore, null hypothesis 9 is supported. The results of Mann-Whitney U test and T-test are summarized in Table 5.2 below:

Table 5.2: Summary of Results for Mann-Whitney U Test and T-Test for Capital Structure and Firm Characteristics

Variable	Test Name	Null Hypothesis	Final Result	Magnitude of Difference	Conclusion
Capital Structure	Mann-Whitney U Test	No difference	Significant difference	Large	Alternative hypothesis 6 is supported
Firm Size	T-Test	No difference	Significant difference	Small	Alternative hypothesis 7 is supported
Interest Coverage Ratio	T-Test	No difference	Significant difference	Large	Alternative hypothesis 8 is supported
Tangibility	T-Test	No difference	No significant difference	-	Null hypothesis 9 is supported
Profitability	T-Test	No difference	Significant difference	Small	Alternative hypothesis 10 is supported
Growth Opportunities	T-Test	No difference	Significant difference	Large	Alternative hypothesis 11 is supported

The regression analysis result shows that the model with dummy variable is a better model in explaining the variance of capital structure with higher in F-statistic value (223.653) and better R-square (R^2) value (0.821). All five independent variables and one dummy variable are found to be statistically significant at 95% confidence level. All these results indicate that firm characteristics (i.e. firm size, interest coverage ratio, tangibility, profitability, and growth opportunities) and dummy variable for fifty (50) percent of debt ratio together help to explain 82.1% of the variance in capital structure of firms.

In conclusion, the results of this study are consistent with majority of previous study results. Although the finding of no significant correlation between capital structure and tangibility is inconsistent with majority of the past studies, it is consistent with the finding of Deesomsak et al. (2004) in the study of capital structure for Malaysian firms. This could be a unique characteristic for manufacturing firms in Malaysia. When tangibility combines with other independent variables and dummy variable in a regression model, it is found to be significant in explaining capital structure but at the least significant contribution amongst all of them.

5.2 Limitations of the Study

The current research is not without weakness. Below are some of the limitations of the study:

a) The design of this study is restricted to the sample from the public listed companies in the Main Board of Bursa Malaysia. Therefore, the result may be biased towards big and well-established firms and may

not fully represent the population of manufacturing firms in Malaysia as there are many small, medium, and even big firms which are not listed in Bursa Malaysia. The exclusion of these firms might affect the validity and reliability of the sample.

b) The estimation of the market value of firms is based on the daily closing price of the last trading day of the year. Whenever the data is not available (e.g. no trading on that day), the last traded value is taken for the computation. This method tends to under-value those firms that have relatively less trading volume. The market price may not reflect the actual value of the firms due to lack of trading. Besides, the share price on the last trading day of the year may not fully reflect the actual value of the firms for that year. Generally, investors tend to receive the full information at a delayed time. Therefore, the actual condition and thus the value of the firms will only be able to be fully reflected before that delayed period.

c) Due to the nature of database, Bloomberg only reports group financial data instead of company financial data. This could potentially introduce an error in the evaluation of firm if the group financial data is very different from the company financial data due to subsidiaries make a big gain or loss that could affect the overall performance of the firm.

d) This study assumes a linear regression for the model being proposed. In actual fact it could be a non-linear model which requires some correction factors if a linear model is to be proposed or a more advanced statistical approach is to be used in estimating the model.

e) The differences in accounting method (e.g. straight line depreciation method versus accelerated depreciation method, inventory valuation policies, and the difference in financial year end) for every individual firm may cause an inconsistency in comparing these firms at the same level. Such differences could significantly affect the reported financial data and ultimately the results of this study.

5.3 Suggestions for Future Research

Since this study only concentrates on firm characteristics, future research could combine the existing latent variables with other determinants of capital structure to provide a more comprehensive study by covering different groups of factors. Some of the groups of factors to be considered are macroeconomic factors, time variant attributes, legal factors, and political patronages.

Only one dependent variable (debt ratio) is used in this study. Future study may consider decomposing the debt ratio into short-term debt ratio and long-term debt ratio. By adding these two new dependent variables into the original model together with the (total) debt ratio would help to improve the insight into the relationship between different debt ratios and the determinants of capital structure. This could help to identify how the firms organize different types of debts towards achieving an optimal capital structure.

This model assumes a linear regression which may not always be true. A more complicated model may be used to transform the proposed model into a

linear model. This can be done through a natural logarithmic transformation to improve the model.

The future research direction could also extend the sample into different markets to investigate if there are any similarities or differences between manufacturing firms in Malaysia market and other markets.

5.4 Implications

This study could be useful to the business managers especially in manufacturing firms by identifying the major determinants of capital structure and their relationship with capital structure. By knowing the relationship between firm characteristics and debt ratio, it helps the managers in making vital decisions to achieve their respective optimal capital structure. Consequently, firms could enjoy the greatest benefits of interest tax shield and a better control in agency cost with a balance in the cost of bankruptcy risk. As a starting point, the recommended model could provide a mean in establishing the optimal capital structure for their firms. Besides, the inclusion of interest coverage ratio as new construct which is lacking in the study for Malaysia market would give more in-depth knowledge to the managers on the effect of this factor to the capital structure of firms.

The finding on the significant difference in capital structure between firms that use heavy debt capital and those that use less debt capital indicates that managers need to consider the model differently for different scenarios (different debt ratios). The significant difference in firm size, growth

opportunities, interest coverage ratio, and profitability, especially the first two factors with significant difference in large magnitude, are informative and helpful to the managers when deciding the optimal capital structure for different levels (heavy or less) of debt ratio.