CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Hypotheses
Previous studies conducted by researchers in the related field, as cited in the literature review, apparently indicated some significant findings regarding the relationship between corporate governance with respect to corporate performance, investment patterns and financing patterns. This study, which analyses the Malaysia scenario, is based on empirical data gathered from companies listed in the Kuala Lumpur Stock Exchange (KLSE). In order to determine whether there are significant relationships between certain selected variables, the following null hypotheses could be tested:

Hypothesis #1: There is no relationship between weak corporate governance and corporate performance
Hypothesis #2: There is no relationship between weak corporate governance and investment patterns
Hypothesis #3: There is no relationship between weak corporate governance and financing patterns

3.2 Selection of Measures
This study uses a total of 145 Malaysian companies listed in the KLSE as a proxy of the Malaysian corporate sector. These companies are listed in Appendix 1. Publicly listed companies are chosen because data collection is readily available.
Measures used in this analysis are performance variables compiled by the Kuala Lumpur Stock Exchange (KLSE) over a period of time. A period of ten years (1989 – 1998) is selected for this study to indicate a trend over time. Based on a publication by Bank Negara Malaysia (The Central Bank and the Financial System in Malaysia, 1999), the stock market performance started to pick up in the late 1980's up to a point where it reached its peak in 1993. This was followed by the Asian Economic and Financial Crisis in 1997, which hit the Asian region adversely. Following which, capital controls were implemented in Malaysia, and its effect was again reflected in the KLSE performance. Figure 3.1 shows the events shaping the KLSE from January 1988 to October 1999.

*Figure 3.1: Events Shaping the KLSE (January 1988 – October 1999)*

Complete data for 1999 has not yet been published at the time this paper is prepared; complete data is only available up to 1998.

To analyse corporate governance variables, this study identifies three of these variables. Corporate governance variables analysed in this study are company size, corporate control structure and industry sector.

Company size is classified in terms of total assets as large-, medium- or small-size companies. To categorise company size, a 33rd percentile will be calculated using the Microsoft Excel software.

Corporate control structure refers to whether a company is a member of a conglomerate or is independent. Conglomerate companies are determined from company profiles. A company is deemed a conglomerate if it is made up of a combination within a group of businesses that are unrelated. Unrelated in the sense that they are producing products in different industries. (Lipsey and Chrystal, 1997). Others are classified as independent companies.

Certain industry sectors are selected because they represent a significant part of the corporate sector in the KLSE and were prominently affected by the Asian crisis. Over the years, classifications according to sectors in the main board of the KLSE have changed. Therefore, the classifications used in this study are based on those as at 1998. The sectors are consumer products, industrial
products, trading and services, construction, finance, properties and plantations. Smaller sectors such as hotels, trusts and mining are ignored in this study.

Financial statement figures across companies selected from the KLSE will be used to calculate financial performance indicators. These performance ratios will then be utilised to analyse allocation of investments, financing sources and growth in income and revenue (corporate performance). Formulae for these ratios are adopted from Saldana (1999).

In analysing investment patterns, the following financial ratios will be used:

- **Incremental investments in fixed assets**: This is a ratio of change in fixed assets to change on total assets, and it signifies the growth in fixed assets relative to total investment needs of the companies.

- **Incremental investments in other assets**: This ratio is measured by one minus the incremental investments in fixed assets ratio, and it explains the importance of growth in working capital and other investments of companies.

- **Average growth rate of fixed assets and total assets**: These ratios are measured by taking the percentage change in fixed assets and total assets on an annual basis respectively, and it indicates the relative growth rates of short- and long-term investments. They also describe the risk of investments and structural characteristics of investments relative to corporate governance variables.
In analysing financing patterns, the following financial ratios will be used:

- **Self-financing ratio (fixed assets):** This is a ratio of net income to change in fixed assets, and it signifies the capacity of net income to finance growth in fixed assets.

- **Self-financing ratio (total assets):** This is a ratio of change in reserves to change in total assets, and it indicates the capacity of increase in reserves to finance growth in total assets.

- **New equity financing ratio:** This is a ratio of change in shareholder's equity (net of change in reserves) to change in total assets, and it shows the degree of financing of total assets growth from new equity.

- **Incremental debt financing ratio:** This is a ratio of change on total liabilities to change in total assets, and it describes the degree of financing growth in total assets by additional debts repaid during the year.

- **Incremental equity financing ratio:** This ratio is measured by one minus the incremental debt financing ratio, and it explains the degree in financing growth in total assets by additional equity generated internally and new equity capital.

To analyse corporate performance, standard financial performance ratios are calculated as follows:

- **Leverage:** This is a ratio of total liabilities to total assets, and it indicates how much of a company's total liabilities are backed up by the company's total assets.
• **Return on Equity (ROE):** This is a ratio of net income to shareholder equity, and it describes the rate of return that management has earned on the capital provided by the owner after accounting for payments to all other capital suppliers. Besides that, ROE also corresponds to a company's overall business risk.

• **Return on assets (ROA):** This is a ratio of net income to total assets, and it measures a company's success in using assets to generate income independent of the financing of those assets.

• **Total asset turnover:** This is a ratio of net sales to total assets, and it indicates the effectiveness of a company's usage of its total asset base.

• **Net profit margin:** This is a ratio of net income to net sales, and it measures the extent of a company's ability to generate income from a particular level of sales.

3.3 **Sampling Design**

Non-probability sampling is adopted in this study. Samples for this analysis are purposive in nature in the sense that they are chosen based upon some appropriate characteristics of the sample members. A total of 145 companies were chosen as samples for this study. This is more than ten percent of the total number of listed companies in the KLSE today.

Several criteria are used in the selection of these samples. The samples are chosen from the companies listed on the main board of the KLSE. Besides that,
these sample companies must have a consistent ten-year time series financial
data i.e. they must be listed on the KLSE from 1989 to 1998. During this time
frame, these companies should not have undergone any change in its financial
year-end. Companies that have changed their registered names or have been
delisted from the KLSE are eliminated from the sample. Furthermore, companies
with incomplete financial data for the ten-year period are also not chosen. The
reason for adopting such strict criteria imposed on these samples is to ensure
consistency in the findings.

3.4 Data Collection Procedure

This study is conducted based on secondary data published by KLSE. Most of
the data are obtained from the KLSE Annual Handbook and annual published
financial statistics by KLSE. These empirical data are further counter-checked via
the KLSE-RIS Website which features company financial data and shareholder
profiles.

Secondary data is chosen in this case to trace the historical trend of the possible
relationship between corporate governance with respect to corporate
performance, investment and financing patterns of the selected companies. Due
to the time constraint for this research paper, secondary data proves to be readily
accessible.
Other data and information are taken from several sources including company
annual reports, financial journals and investment digests.

3.5 Data Analysis Techniques

To test the relationship between corporate governance with respect to corporate
performance, investment and financing patterns, a multiple regression analysis
with dummy variables will be carried out.

Variables describing company corporate performance, investment patterns and
financing patterns are the dependent variables (Y) for the analysis, while the
corporate governance factors are the independent variables (X). Weak corporate
governance is analysed using the following variables i.e. firm size, corporate
control structure and industry sector. In other words, corporate performance,
investment patterns and financing patterns are a function of weak corporate
governance.

The proxies chosen for corporate performance are Return on Equity (ROE),
Return on Assets (ROA) and leverage, following the works of previous
researches (Saldana, 1999, and Xu and Wang, 1997).

All the corporate investment indicators will be used as proxies for investment
patterns, with the emphasis of the average growth rate for total assets. Based on
the definition of the average growth rate for total assets, this ratio is able to
describe the risk of investments as well as the structural characteristics of investments relative to the corporate governance variables. Total assets of a company is an important variable as it is also the criteria used to classify firm size.

With respect to corporate financing patterns, all its indicators will be subjected to statistical tests. However, incremental equity financing ratio will be emphasised. This ratio is able to indicate the degree in financing growth in total assets by additional equity generated internally and new equity capital. Malaysia's capital markets comprise the conventional and Islamic markets for medium- and long-term assets. The conventional markets consist of the equity market dealing in corporate stocks and shares, and the bond market dealing in the public and private debt securities with maturities exceeding one year. Among the various markets, the equity market is the most mature, and hence stable (Bank Negara Malaysia, 1999).

Based on the explanation above, the following basic model is formulated:

\[ Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \]

Where: \( Y_i \) = proxies for corporate performance, investment patterns and financing patterns respectively

\( X_1 \) = firm size

\( X_2 \) = corporate control structure

\( X_3 \) = industry sector
This model will be replicated altogether twelve times using the indicators of corporate performance, investment and financing patterns for analysis, to establish a relationship with weak corporate governance.

The SPSS software will be used to carry out all the necessary statistical tests. An F-test will be carried out first to test the overall significance on the coefficients ($\beta_{11...33}$). If these are significant, then a t-test will be carried out to identify which independent variable influences the respective proxy.

3.6 Conclusion

If the tests are significant, then the null hypotheses can be rejected. Therefore, it could be shown that there is a relationship between weak corporate governance with respect to corporate performance, investment patterns and financing patterns.