CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Hypotheses

With regard to the research objectives stated earlier, the following hypotheses are to be tested in this research paper: -

H1: Firms with higher levels of performance have correspondingly higher levels of shareholder value.

H2: Firms with different capital structures or financing policies have correspondingly different levels of shareholder value.

H3: Firms with higher dividends have correspondingly higher levels of shareholder value.

H4: Firms with higher growth opportunities have correspondingly higher levels of shareholder value.

3.2 Selection of Measures

3.2.1 Shareholder Value Measure

This research paper being an exploratory research on shareholder value maximization in Malaysia utilises two proxies for shareholder value. First, a basic financial determinant of value or value creation, that is *Return on Equity (ROE)* is used as one of the proxies for shareholder value. Another proxy used is the *Total Shareholder Return (TSR)* which is calculated using share price appreciation plus dividends (Brand, 1999).

ROE has been recognised in the retail banking sector as a primary measure for shareholder value creation (Myers, 1997). Here it is considered as *the* single most important financial ratio because of its relationship to shareholder value creation. ROE can be said to be a reasonably good measure of shareholder value when one notes that companies are under pressure to increase shareholder value in order to attract or have access to new capital through the capital markets. In this case, a low ROE places limits on a firm's access to new capital (Eisemann, 1997), either through internally generated funds due to the fact that firms with low ROE do not produce much retained earnings, or through external equity. Private companies that do not have excess to the capital markets might be discouraged from further investment due to a low ROE. For publicly traded companies, the lower ROE is, relative to the investors' required return, the lower will be the company's stock price. Lower stock price will equate towards lower shareholder value if one takes the approach of TSR, where stock price appreciation is an important factor in shareholder value creation.

McTaggart et al. (1994) used ROE in addition to two other primary determinants, that is the *rate of growth in equity capital (g)*, and the *cost of equity capital* (K_e), in describing the three measures of financial performance relationship with value creation. McTaggart et al. suggests that as long as ROE exceeds K_e, then economic profit will be obtained. Subsequently, having equated value creation as a function of the discounting of a company's future economic profit stream back to a present value at the appropriate cost of equity capital, value is thus created when the ROE is greater than K_e.

It has also been noted that improving on ROE can create value but not necessarily so (Filippello, 1999). Sometimes improving ROE can even destroy value, especially when the net income did not adequately consider the cost of capital required to produce the reported income. Filippello has also highlighted other possible shortcomings that ROE posses that is the fact that ROE has been found to be an insufficient measure when companies entered into a high aggressive growth mode. Despite these shortcomings, ROE is still used as a reasonable proxy for shareholder value bearing in mind its simplicity and previously mentioned reasons for use.

The other proxy used in this research for measuring shareholder value is Total Shareholder Return (TSR). This is one of the approaches has been adopted by The Boston Consulting Group in dealing with the challenges of shareholder value creation. Companies are deemed to have increased value to shareholders when stock prices rise and/or dividends are paid. TSR thus becomes a measure that the investors use to determine just how successful are their investments. In effect, TSR shows the theoretical capital growth that would have been achieved by a shareholder, assuming that all the dividend received were reinvested. According to Brand (1999), the current financial performance of a company, the expected future performance, and the ability of the management team to develop and execute a value-oriented strategy drive the differences in the TSR between companies. TSR is also considered an important measure of shareholder value creation when some professional portfolio managers choose investments (Reimann, 1990). More simpler measures have been used (Serven, 1999), in which shareholder value creation has been defined as the increase in the market value of the stock. This is perhaps not as good as TSR as dividend gains are not considered, although the generally low dividend yield of Malaysian stocks might make this a moot point.

Keeping TSR value high is not only to the shareholders interest but to that of management as well. Since TSR is used as a measure of the amount of value that companies are delivering to shareholders, it is in effect also a measure of management performance (Perrin, 1998). Usually, high TSR values in keeping with shareholder expectations will mean that shareholders would keep the present management in place, and reject enticements from would be acquirers of the firm that almost always results in a change of management. Unsatisfied and unhappy shareholders would be expected to replace the management with one that can meet their expectations.

However, TSR is not without its own shortcomings as been highlighted by some researchers. Although research on these shortcomings (Dobbs and Koller 1998; Perrin 1998) has been approached from the view of TSR as a measure of management performance, it is still relevant to the issue of shareholder value creation. According to Perrin, a company's share price, one of the components of TSR, is essentially driven by three key factors. The first of these factors is the general sentiment regarding a country's economic strength, which is reflected in the stock market. Secondly, issues affecting the particular industry sectors are also a factor. Thirdly, management performance affects share price. The first two factors mean that two out of the three determinants of shareholder value creation are essentially out of management's control. In effect, this means that TSR is not a shareholder value measure in which a company has full control over. As a result of this, it has been suggested that a company's TSR should be compared against the average TSR for like companies, i.e. its peers in the respective sector. The economic situation of a country's economy should also be taken into account when TSRs are being evaluated. In addition to this, Dobbs and Koller believed that share prices in the short term are driven largely by the differences between the company's actual performance and market expectations, and by changes in these expectations rather than by the level of the company's performance per se. The result of high or low TSR values compared to the market is attributed to the delivery of "surprises" that are not in tune with market expectations. In effect, TSR is deemed to be a measure of how well a company beats the target set by market expectations. In other words, TSR is said to be a measure of improvement. Notwithstanding these issues, TSR remains an effective measure of what matters to investors, namely capital gains and dividend pay-outs. Moreover, any artificial share price rises due to stock market volatility such as stock market rumours is said to be smoothed out by taking into consideration a time span of at least three years when measuring TSR (Perrin, 1998).

3.2.2 Independent Variable Measures

With regard to corporate performance in Malaysia, the work of Nor Aziah et al. (1989) is referred to, in which the various performance measures utilised by Malaysian firms were surveyed. Sales growth was determined to be the second most popular financial indicator of performance for firms in Malaysia, and correspondingly, turnover growth is utilised in this research. The "size effect" (Banz, 1981) is taken into account by using total assets as a proxy for size, and testing for firm size effects.

Capital structure or financing policy will be defined in terms of the two following types of debt / equity ratio (Gul, 1999): -

- *Book Debt / Equity ratio = Total Book Value of Liabilities ÷ Total book value of common equity*
- *Market Debt / Equity = Total Book Value of Liabilities ÷ [Shares Outstanding X Share closing price]*

The total book value of common equity in the first ratio utilised is replaced with total shareholder funds in this study, thus assuming that the existence of preference stocks in Malaysian companies, if any, is negligible.

Dividend policy will be defined in terms of the following two ratios, dividend yield and dividend payout ratio. The following ratio was utilised by Gul (1999) as a measure for dividend policy.

- *Dividend Yield = Dividend per share ÷ Price per share*

The other measure that will be used is the dividend payout ratio, which is defined as the dividends paid out to ordinary shareholders divided by the profit attributable to shareholders (after deducting Preference Share Dividends).

The following two proxies for growth opportunities as used in Gul (1999), will be utilised for the studies: -

First is the *earnings/price (EP) ratio* (Beaver and Morse, 1978);

- *EP = Primary EPS before extraordinary item ÷ Share closing price*

The EP ratio has been demonstrated by Chung and Charoenwong (1991) to be inversely related to growth opportunities.

The second measure is the ratio if the market to book value of equity (Chung and Charoenwong, 1991), which is defined as follows: -

- *MKTBKEQ = [Shares Outstanding X Share closing price]*

  ÷ Total book value of common equity

Based on Gul's research, two reasons were presented for the selection of this measure. First, it has been determined that the difference between the market value and book value of equity approximates the value of investments facing the firm. Second, the firm's expected future earnings and the expected growth rate of both earnings and cash flow are deemed to be determined by the amount of growth opportunities.

3.3 Sample Design, Collection and Characteristics

The method of sampling used was convenience sampling, in which the available financial data of companies for the period of 1995 to 1999, at the point the research was conducted, were obtained. Convenience sampling is utilised as this method is best utilised for exploratory research (Zikmund, 1997), which is undertaken here. Although a more representative sample of the market was attempted but financial data was unavailable for all the firms in the KLSE (Kuala Lumpur Stock Exchange) Composite Index, within the stated five-year period. Also, some sample bias was introduced due to the unavailability of financial data for companies with the financial year ending in the month of December from the data sources, when the data was collected. The secondary financial data was collected from sources such as the Sequencer on-line financial database and the Corporate Handbook – KLSE Main Board and Second Board.

The sample consists of 106 listed companies in the KLSE Main Board and Second Board, with a cross-sectional study done for the period of 1995 – 1999. This allows an analysis of pre- and post-crisis situation on shareholder value and the dependent variables. When using ROE as the shareholder value proxy, each and every year of the five-year period will be studied. However, when using TSR as the shareholder value proxy, the same five year period will be studied but this will be done in four batches of 1995 –1996, 1996 –1997, 1997 –1998 and 1998 –1999, in accordance with the method used. Out of the total sample used, 85 companies were listed in the main board, while the remaining 21 companies were listed on the second board. The companies analysed represented about 14% out of the total 776 companies that are listed in KLSE, either on the Main Board or Second Board.

3.4 Data Analysis Techniques

All the data was analysed using the appropriate statistical techniques, with computations assisted by the Statistical Packages for the Social Sciences (SPSS) version 8.0 statistical computer program.

As the study attempts to determine the relationships between the level of shareholder value and the respective level of firm corporate performance, growth opportunities, dividend policy and capital structure, an appropriate statistical technique such as the *paired-samples t-tests* was initially used to determine if any significant relationships exists between the dependent and independent variables in the first place.

Significant relationships that exist will be further tested using the *Analysis of Variance technique, ANOVA*. Here both the dependent and independent variables will be arbitrarily divided into two levels i.e. high and low. This is not done to specifically denote what is a high or low value per se but rather to differentiate between correspondingly low or high levels of the independent variable when compared to shareholder value. The running of the ANOVA statistical tool will attempt to determine the significance of the different levels of shareholder value and the corresponding independent variables.

Subsequently, this research will attempt to determine the linear relationships, if any, between the shareholder value and the respective independent variables that are significantly related to it, through the use of *Linear Regression* methods. Measures of association of the correlation between the independent variables will also be tested.