CHAPTER 3

DATA AND RESEARCH METHODOLOGY

3.1 SOURCES OF DATA

The sample used in this study was obtained from Investor Digest, the monthly publication of the KLSE. In order to obtain a large sample of suspended stock, the period of study was extended from 1993 to 1997 for a total sample of about 530 suspended stocks. A data cleaning was conducted on the sample stocks and it was discovered that 59 stocks were not suitable due to errors in recording the suspension date, unavailable stock's prices, delisted stocks and stocks that had undergone a merger exercise. Of this 471 remaining stocks, almost half of the stocks have repeated suspensions over the study period.

The data of daily stock prices were collected from the Extel Workstation in the main library.

3.2 METHOD OF ANALYSIS

The abnormal return encompassing the suspension period were estimated using the "market model". The "market model" is given by

$$\widetilde{R}_{i,t} = \alpha_i + \beta_i \widetilde{R}_{m,t} + \widetilde{\mu}_{i,t}$$

where

$\tilde{R}_{i,t}$ = return on security i in period t

$\tilde{R}_{m,t}$ = return on market portfolio in period t

α_i, β_i = parameters specific to security i and

$\tilde{\mu}_{i,t}$ = random error term on security i in period t

Adjustment for dividend payments were made for those stocks which were ex-dividend during the period analyzed.

The return on KLSE composite index is used as the estimate for the return on market portfolio. Market model estimates were obtained from the Corporate Handbook KLSE Main Board and Second Board published by Thomson Information. Since estimate of α_i were not available from published sources, the author has assumed α_i as zero. To confirm the validity of this assumption, the author has run regression on a sample of stocks to produce insignificant value of α_i with 4 to 5 decimal points, probably because regression of daily return were close to the origin. Moreover, Hopewell and Schwartz (1978) in a similar study using $\alpha_i = 0$ and $\beta_i = 1$ produce virtually identical mean abnormal return estimates.

To minimize estimation errors on volatility, β_i for the same period as suspension of stock *i* were used. This estimation assumed β_i value constant for the one year period.

Given the actual return on security i in period t, estimates of α_i and β_i for security i and the estimated return on the market portfolio in period t, the abnormal return for security i in period t, $U_{i,t}$ can be estimated by

$$\hat{U}_{i,t} = R_{i,t} - \{\hat{\alpha}_i + \hat{\beta}_i R_{m,t}\}$$

where

$\hat{U}_{i,t}$ = abnormal return for security i in period t

$R_{i,t}$ = actual return on security i in period t

$\hat{\alpha}_i$, $\hat{\beta}_i$ = estimates of α_i, β_i from market model

$R_{m,t}$ = actual return on the market portfolio in period t

Fourteen "daily" abnormal returns were estimated for each sample security using daily closing prices. The abnormal returns cover the period from the closing 6 market days prior to the day of suspension to the closing 7 market days after the day of requotations. "Day 0" is the period from the closing on the day prior to suspension to the closing on the day trading reopens. Each of the 6 pre-suspension and 7 post-suspension abnormal returns will be analyzed and the mean return graph will be postulated.

A moving-window method were adopted using "events" time as the day relative to each security's suspension. A distribution of individual security abnormal return for each of the twelve periods in event time were collected. The estimated mean security abnormal return for any particular day t was calculated from

$$\bar{U}_t = \frac{1}{N}\sum_{i=1}^{N} U_{i,t}$$

where N is the number of sample suspensions. The standard deviation for day t using

$$s_t = \left[\frac{1}{N-1}\sum_{i=1}^{N}(U_{i,t} - \bar{U}_t)^2\right]^{\frac{1}{2}}$$

were used to measure the dispersion among individual security abnormal returns on that day.

Finally, an abnormal performance index developed by Hopewell and Schwartz (1978) was constructed to provide a measure of cumulative abnormal return.

$$API_D = \frac{1}{N}\sum_{i=1}^{N}\left[\prod_{t=d+1}^{D}(1+U_{i,t})\right]$$

At first the entire sample's suspension will be analysed. Subsequently, the entire sample will be classified into subgroups using the following classifications.

3.3 CLASSIFICATION OF SUSPENSION

3.3.1 VOLUNTARY VERSUS NON-VOLUNTARY SUSPENSION

Voluntary suspensions are primarily for corporate announcements i.e. announcements of earnings, dividends, acquisitions, mergers, tender offers, stock splits, major new products, expansion plans, contract awards, and discoveries. (Table 1, event 1) Such announcements may contain new material information. Using an efficient market hypothesis (Fama, 1976), while this information is being fed into the market during the period of suspension, a non-zero abnormal return would occur over the suspension period. These abnormal returns would present an opportunity for investors to earn abnormal profits. This study will examine abnormal return over the suspension period for evidence consistent with the efficient market hypothesis.

Sometimes, price adjustment to new information could occur prior to suspension due to information leakage, insider trading or correlated new announcements before the suspension. "Anticipatory" abnormal return behavior prior to these suspensions would also be examined in the pre-suspension period.

Non-voluntary suspensions were usually initiated by the KLSE when events 2 to 6 in table 1 occurs in the company. Due to the small occurrence of these events, they will be combined as non-voluntary suspension for the analysis.

3.3.2 STANDARD VERSUS NON-STANDARD SUSPENSION

Next, the total sample of suspended stocks will be separated by the length of its suspension period. It is envisaged that the longer the trading suspension, the more information is disseminated resulting in higher abnormal return for the particular stock.

Due to the 18 April 1995 ruling, maximum of 10 market days is used as the standard for a normal suspension period. Suspension of more than 10 market days will be treated as non-standard suspension. The total sample will be separated into 2 subgroups of 10 market days or less and of more than 10 market days. Abnormal returns for these subgroups will be compared and analysed.

3.3.3 MAIN BOARD VERSUS SECOND BOARD SUSPENSION

The total sample of suspended stocks will be segregated according to their respective boards (main board or second board). It is hoped that the division into these subgroups will result in classification of securities according to their volatility. Studies have shown that the main and second board on the KLSE are not co-integrated (Habibullah and Baharumshah, 1995). The main

board is less volatile than the second board and they will be analysed separately in this study.

3.3.4 FAVOURABLE VERSUS NON-FAVOURABLE SUSPENSION

Finally, the total sample of suspended stocks will be separated by the "favourableness" of the information disseminated during the suspension period. Information disseminated during the trading suspension was determined to be favourable or unfavourable according to the results experienced by the securities having plus or minus tick price changes over their suspension periods respectively. The subgroups in 3.3.1, 3.3.2 and 3.3.3 will be further classified by the "favourableness" of the information in order to avoid offsetting of plus and minus tick price changes.

Normally, the "favourableness" of the information disseminated is dependent upon the actual information released by the company. But unfortunately, due to the limit time frame for this research and the complexity of detailed accuracy, the actual information released by the company was not used as the basis of "favourableness". Though out this research, the author has assumed the favourable or unfavourable trading suspension solely by looking at the securities having plus or minus tick price changes over their suspension periods respectively.

Before classification of the information, the reasons given for trading suspensions need to be separated into two distinct groups. The first group will consists of rationale for trading suspension classified as failure to disseminate requested information and the second group will consists of rationale for trading suspension classified as failure to meet exchange (technical) requirements. Only suspensions in the former group can be further classified into "favourableness" of the information disseminated.

For example, a classification of reasons given for trading suspensions is provided in Table 2 and the rationale for the classification of suspended

stocks by the "favourableness" of the information disseminated during a trading suspension is provided in Table 3 (Kryzanowski, 1979) :-

TABLE 2(a) – TRADING SUSPENSION CLASSIFIED AS FAILURE TO DISSEMINATE REQUIRED INFORMATION IF THE RATIONALE GIVEN FOR SUSPENSION IS ONE OF THE FOLLOWING :-

1. Pending clarification of property acquisition (or affairs, or capital structure reorganisation, or settlement of company affairs, or change of control, or of the company's overseas activities, or of misleading or inconclusive information and/or rumour given to the investing public);
2. Pending company (or shareholder) announcement;
3. Pending information or release of information or dissemination of information (e.g. exploration news);
4. No notification of material changes in the company's corporate (or financial) affairs;
5. Unsatisfactory filing statement about affairs or until an adequate technical report is available to the public;
6. Lack of public information;
7. No reason for sudden share price increase (or decrease);
8. Exchange investigation into corporate affairs (or trading activity).

TABLE 2(b) – TRADING SUSPENSION CLASSIFIED AS FAILURE TO MEET EXCHANGE (TECHNICAL) REQUIREMENTS IF THE RATIONALE GIVEN FOR THE SUSPENSION IS ONE OR MORE OF THE FOLLOWING :-

1. Failure to meet exchange requirements for continued listing privileges;
   (a) Failure to maintain transfer facilities;
   (b) Insufficient shares in the public's hands;
   (c) Failure to meet capital requirements (e.g. placed in liquidation or insolvent and unable to meet liabilities);
   (d) No annual report;
   (e) Pending completion of a rights offering (or of negotiations or sale of company assets or of primary distribution elsewhere);
2. Pending clarification of the company's listed status
3. In order to permit additional financing (or refinancing or reorganisation or the resolution of certain undisclosed judgements).

TABLE 3(a) – CONSIDERED FAVOURABLE INFORMATION

1. Financing (e.g. to permit financing or pending an underwriting announcement);
2. Alleged manipulation of share price downwards (e.g. no reason for sudden share price drop);
3. Property acquisition (e.g. pending information about proposed property acquisition(s);
4. Acquirer or target in a merger or acquisition;
5. Consolidation, reorganisation or image change;
6. Company request, pending (favourable) company announcement regarding affairs; and
7. Pending company announcement regarding previously withheld (favourable) information.

TABLE 3(b) – CONSIDERED UNFAVOURABLE INFORMATION

1. Alleged manipulation of share price upwards (e.g. pending exchange investigation of trading or share price increases without apparent reason or unusual market activity or pending full investigation into company affairs or maintained the price thus creating an artificial market or pending inquiry into trading aspects of the stock);
2. Dissemination of misinformation (e.g. two conflicting engineering reports or distribution of erroneous information or inconclusive information and rumours disseminated or dissemination of false or unsubstantiated informations);
3. Company mismanagement (e.g. pending full investigation into company affairs);
4. Unsatisfactory filing statement (e.g. pending receipt of additional particulars on production or pending clarification of company agreement on claims or pending company announcement regarding property assays);
5. Pending clarification and settlement of company affairs;
6. Company request, pending (unfavourable) company announcement regarding affairs; and
7. Pending company announcement regarding previously withheld (unfavourable) information.

3.4 HYPOTHESIS

In order to check whether the mean abnormal return is significantly different from zero, the following hypothesis is used :-

$$Ho \quad : \quad \mu = 0$$

$$H1 \quad : \quad \mu \neq 0$$

t statistics for each mean return is calculated and compared with the critical t value at 5% significant level. The critical t value is 1.96. If the t value for the mean return is greater than 1.96 then we will reject Ho and conclude that the mean is significantly different from zero at 5% significant level. Otherwise, if the t value for the mean is less than 1.96 then we will accept Ho that the mean is significantly equal to zero at 5% significant level.

3.5 THE SAMPLE

The frequency, mean length and standard deviation of suspension for subgroup 3.3.1, 3.3.2, 3.3.3 and 3.3.4 are shown in the following table.

TABLE 4 – FREQUENCY, MEAN AND STD DEVIATION

Period of study : 1/1/93 to 31/12/97			
Subgroup	No	Mean-length (days)	Standard deviation
1) Voluntary	459	10.31	95.08
Non-voluntary	12	31.75	18.30
2) Suspension of ≤ 10 market days	329	4.80	31.57
Suspension of > 10 market days	142	24.89	45.98
3) Suspension in main board	317	11.41	90.33
Suspension in second board	154	9.71	32.27
4) Favourable suspension	213	11.93	63.06
Non-favourable suspension	248	9.76	64.01
Total	471	10.86	97.83

Most of the suspensions were voluntary in nature - suspension at the request of the company or company's solicitors. This group represents 97% of all the suspensions. It means that even though there are six reasons for

suspension (Investor Digest), most of the suspensions are for the first reason. Either Malaysian companies do not suspense their stocks during acquisition, pending clarification, reorganisation or various other offers or they generally call for suspension by giving only the first reason as the request of the company.

70% of the total suspension period were less than 10 market days. Companies generally do not suspense their shares for too long period because the market may react negatively to it and this will result in larger price movement at the time of requotation.

About 67% of the suspensions in this study belong to the main board. Since companies in the main board are larger in size, they may have more activities in store that will have material effect to their shares' prices.

The proportion of suspensions having an plus tick price movement one day after requotation or favourable suspensions are almost equally distributed with minus tick suspension or unfavourable suspension. Only ten suspensions have a zero tick price movement.