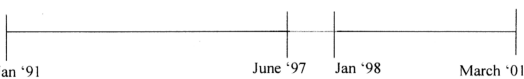
4. Methodology

The population under this study includes the stocks traded in KLSE from January 1991 up to March 2001. The period on the second half of 1997 is excluded in order to avoid the impact of the regional currencies crisis. Figure 1 illustrates the time period of which this study is based on.

Figure 1: Time period of which this study is based.



The companies that had bonus and rights issues are identified from Investors Digest, a monthly publication of the KLSE. The companies that had other announcements such as earning or dividend payout announcements made at the same time are excluded to avoid any spillover effects. For the second half of 1997, a total of nine (9) bonus issues and four (4) rights issues are excluded in this study.

The main data needed is the daily closing prices of the particular stock as well as the daily Kuala Lumpur Composite Index (KLCI). Since the companies that have bonus and rights issues are from different sectors of the economy, the KLCI is used as a proxy for the general market return. Daily closing price could be obtained from the Sequencer Database available in the Main Library of University of Malaya while the daily KLCI could be obtained from the PAPCAP Database available in the computer laboratory of Faculty of Business and Accountancy. Once these data is obtained, a cross check is done with the daily closing price and daily KLCI available in the Bloomberg system in the KLSE library.

The market model risk adjusted approach is used to determine the abnormal return, u. In this approach, the expected return is obtained after the market return is adjusted for the individual stock risk factor. The residual of this expected return and the actual daily return is the abnormal return.

Abnormal return, $u_{i,t}$ = $R_{i,t} - (a_i + b_i R_{m,t})$

$R_{i,t}$ = Daily return of stock i in day t

= $(P_{i,t} - P_{i,t-1})*100/ P_{i,t-1}$

$P_{i,t}$ = Closing price of stock i at day t

$P_{i,t-1}$ = Closing price of stock i at day t-1

$R_{m,t}$ = Daily return of the market in day t

= $(M_t-M_{t-1})*100/M_{t-1}$

M_t = KLCI at day t

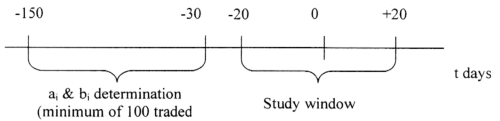
M_{t-1} = KLCI at day t-1

a_i = the risk free rate of return, i.e. the intercept

b_i = Beta, the risk factor

For a particular stock to be included in the test, the stock must be reasonably actively traded. This means the stock should be traded at least 100 days out of 120 days from t-30 to t-150. The coefficient alpha, a_i and beta, b_i are determined by regressing the stock return against the market return for a minimum of 100 days prior to the 30 days before announcement date, which is from day t-30 to day t-150.

Figure 2: Time line showing study window



The study window is over a period of forty one (41) days, that is twenty (20) days before and twenty (20) days after the announcement day or the event day, t_0. A twenty trading days is almost equivalent to one month in calendar day. As mentioned earlier, in an efficient market, market players are unlikely to predict any event prior to the announcement. Also, any reaction of market players would be reflected in the announcement date itself. Thus, by observing the share price movement one month before and after the announcement, we should have a clear indication on the return pattern of the share.

The average abnormal return, AR_t and cumulative abnormal return, CAR_t are obtained as shown in the following formula:

$$AR_t = \frac{1}{I} \sum_{i=1}^{I} u_{it}$$

$$CAR_t = \sum_{t=-20}^{t=20} AR_t$$

where AR_t is the average abnormal return for time t for i stock. CAR_t is the cumulative abnormal returns for time period t=-20, -19,-18,...0...,+18,+19, +20.

The sample of stock is segregated into different classes in order to test different hypotheses laid out.

Bonus issues:

Hypothesis 1:	There is no abnormal return generated when bonus issue is first announced.
Hypothesis 2:	Any abnormal return earned is the same for all bonus issues distribution ratios.
Hypothesis 3:	There is no difference in abnormal return for main and Second Board bonus issues.
Hypothesis 4:	Any abnormal return earned following a bonus issue is the same for the period before and after the crisis.

Rights issues:

Hypothesis 5:	There is no abnormal return generated when right issue is first announced.
Hypothesis 6:	Any abnormal return earned is the same for all rights issues distribution ratios.
Hypothesis 7:	There is no difference in abnormal return for main and Second Board rights issues.
Hypothesis 8:	Any abnormal return earned following a rights issue is the same for the period before and after the crisis.

For hypothesis 2 and 6, stocks are arranged based on their distribution ratios, r. The abnormal return in each category over the period is thus determined. The categories are:

Category 1 : $r > 1:2$
Category 2 : $1:3 < r \leq 1:2$
Category 3 : $1:3 \geq r$

For hypothesis 3 and 7, stocks are segregated based on their listing board. This is a test if the board of listing influences any abnormal return. The stocks in the KLSE are listing either in the Main Board or the Second Board. One of the listing requirements for the Main Board is having a minimum paid up capital of 20 million Ringgit. Apart from this, the company should have a three-to-five year track records, share spread and projected earnings that support the expanded base. The Second Board was launched in November 1988 with a main purpose to allow small and medium sized companies with good growth prospects to raise fund from the capital market. These Second Boarders are niche player, having single or very limited product lines, sell to a single or very few customers and are confined to doing business in Malaysia. In addition, many do not have vast reserves, whether in the form of cash or shareholder's funds to tide over the hard time. Thus, Second Board is a channel for such small and medium-sized companies to tap the capital market.

Finally, stocks are divided according to the time period of announcement, which is from January 1991 to June 1997 (before crisis) or January 1998 to March 2001 (after crisis). Hypothesis 4 and hypothesis 8 aim to investigate the change in market performance after the Asian financial crisis. During the period before the regional financial crisis, there was a bull race whereby a day does not pass without some form of speculations, rumors, change in ownership, expansion plans, cash calls or script issues at companies listed. Also, the political stability,

growing confidence in the economy, market remained resilient provided solid base for the economy to grow.

However, the Asian financial markets experienced a drastic drop in regional equities, sparked off by the devaluation of Thai Baht in early July 1997. Mounting bad debts and surging interest rates mainly caused this disaster. At the end of 1997, other Asian currencies also drop to its record low level. Besides foreign exchange, the stock market in the region also slumped. Stock Exchange of Thailand (SET) Index drop by 55% for the year and this is followed by KLCI. Singapore Straits Times Industrial Index (STII) also fall 31% by the end of 1997. KLCI fell by 61% from its peak of 1271.57 on February 25 1997 to mere 491.60 on January 9, 1998. The Ringgit also depreciated against the US dollar from mid July 1997 to almost half its value by Jun 7, 1998.

The Malaysia economy also suffered a currency crisis when the government was heavily indebted in Yen denominated loans. The country slipped into a recessions as the Japanese Yen shot up against the Ringgit and physical price of key commodities like petroleum and palm oil collapsed. Thanks to government concerted effort to make earlier payments on its foreign loans and alter the economic base from mainly primary commodities loan export oriented manufacturing sector, the economy can grow at a much slower pace between 4% to 5% in 1998. The KLSE recovered well from the blow. However, the recovery was cut short. Various internal and external factors such as capital controls and the drop in the US technology based stock dragged the market back to lower levels. Thus, it would be interesting to investigate how the impacts of bonus and rights issues have changed since then.

The numbers of stocks that fall into respective categories are shown on the tables below. A total of 121 bonus issues and 41 rights issues are identified. A high proportion of both the bonus and rights issues has a distribution ratio that is greater than one for two (See Table 1). Also, most of the bonus and rights issues are from companies that are listed in the Main Board (Refer Table 2). As this study covers a longer time frame for the period before the crisis, we could expect more bonus and rights issues are announced in this period as compared to the period after the crisis and it was indeed the case. (Refer Table 3).

Table 1: Number of Bonus and Rights Issues fall into three different distribution ratios.

Distribution Ratio, r	Bonus Issues	Rights Issues
$r > 1:2$	56	23
$1:3 < r \leq 1:2$	39	8
$1:3 \geq r$	26	10
Total	121	41

Table 2: Number of Bonus and Rights Issues from Main Board and Second Board

Listing Board	Bonus Issues	Rights Issues
Main Board	88	31
Second Board	33	10
Total	121	41

Table 3: Number of Bonus and Rights Issues before and after 1997 Asian currency crisis

Announcement Period	Bonus Issues	Rights Issues
Before Crisis	74	31
After Crisis	47	10
Total	121	41