

**EARNINGS ANNOUNCEMENTS OF KLSE STOCKS:
IMPACT OF TYPE OF NEWS, FIRM SIZE, AND
OWNERSHIP STRUCTURE ON
PRICE BEHAVIOR**

by

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ABSTRAK

Kertas ini mengkaji faktor-faktor yang mempengaruhi perubahan harga saham semasa pengumuman hasil pendapatan syarikat-syarikat tempatan. Tambahan pula, kecekapan pasaran saham juga diselidiki selepas pengumuman hasil pendapatan dibuat. Penyesuaian Beta dengan model Dimson dilakukan untuk mengurangkan kesan kepincangan (bias) dagangan tipis. Faktor-faktor yang diselidiki termasuk jenis berita yang dilaporkan semasa pengumuman, saiz syarikat, hakmilik institusi, dan hakmilik pelabur asing. Dari empat faktor yang dikaji, hanya faktor hakmilik pelabur asing didapati mempunyai kesan yang penting. Keputusan analisa ini menunjukkan bahawa peratus hakmilik pelabur asing yang rendah boleh mengakibatkan perubahan tinggi pada harga saham jika dibandingkan dengan peratus hakmilik pelabur asing yang tinggi. Keputusan yang didapati ini adalah selaras dengan keputusan yang diperolehi pengkaji yang lain seperti Chung dan Lee (1998) dan Su (2002). Saiz syarikat didapati hanya mempengaruhi sedikit perubahan harga saham. Faktor-faktor yang selainnya tidak mempunyai sebarang pengaruh terhadap perubahan harga saham. Jika kecekapan pasaran saham dikaji, didapati kebanyakan paras AAR selepas hasil pendapatan pengumuman dibuat tidak terdapat kesan yang penting terhadap perubahan harga saham. Ini bermakna pasaran saham tempatan agak cekap dalam bentuk “semi-strong” ketika pengumuman pendapatan hasil dibuat. Akan tetapi terdapat perubahan yang nyata didalam hipotesis yang melibatkan CAR hasil keuntungan selepas pengumuman dibuat.

ABSTRACT

This paper studies the impact of factors in affecting the price behavior of the local stock market during earnings announcements. In addition, the market efficiency during post-earnings announcements is also studied. Appropriate adjustments to mitigate possible effects of thin trading bias are carried out using Dimson method. The factors investigated included type of news, firm size, level of institutional ownership, and level of foreign ownership. Out of these 4 factors studied only one factor, the level of foreign ownership show significant findings. The findings show that low-level foreign ownership firms have higher price change compared to high-level foreign ownership. These findings are consistent with findings from other researchers such as Chung and Lee (1998) and Su (2002). Firm size has marginal significant findings. As for the other 2 factors, the findings are not significant. In the area of testing market efficiency, most levels of AAR post earnings announcements show insignificant results. This means that the local market is quite efficient in the semi-strong form with regards to earnings announcements. However, this is in contrast with all the hypotheses involved in CAR post earnings announcements, which showed significant drifts.

Chapter 1

INTRODUCTION

1.1 Introduction

Often we read about how information such as earnings announcements affects stock price in the stock market. In addition to price behavior, market efficiency also comes into play since information is being processed and disseminated during earnings announcements. A lot of studies have been done by foreign researches such as Atiase (1985), Cheung and Sami (2000), Chung and Lee (1998), Cready (1988), Defeo (1986), Morse (1981) and Kim and Verrecchia (1991) on the effect of earnings announcements on price behavior. Additionally, researches done by Kross and Schroeder (1984), Freeman (1987), Riahi-Belkaoui (2002) and Utama and Cready (1997) looked into other factors that work in conjunction with earnings announcements to affect the price behavior of stocks. These factors include the type of news, either “good news” or “bad news” elicited from the announcements, size of the firms and ownership structure. Ownership structure can be further divided into level of institutional and foreign ownership of firms.

1.2 KLSE Overview

June 6, 1964 saw the birth of the Stock Exchange of Malaysia following the formation of Malaysia in 1963. It was renamed the Stock Exchange of Malaysia and Singapore after the pullout of Singapore from the federation of Malaysia in August 1965. In May 1973, the currency interchangeability arrangement between Malaysia and Singapore was dissolved. This led to the formation of a separate Malaysian stock exchange called the Kuala Lumpur Stock Exchange Berhad on July 2, 1973. On

December 27, 1976, a new company called the Kuala Lumpur Stock Exchange (KLSE) took over the functions of the Kuala Lumpur Stock Exchange Berhad.

KLSE provides trading facilities for common equities, preferred stocks, Malaysian government securities, corporate debt securities, and transferable subscription rights and warrants. For companies seeking a listing on the Main Board, the pre-requisites for admission include a minimum paid-up capital of RM60 million, comprising ordinary shares of RM1 each. The Second Board was launched in November 1988 with the aim of allowing small and medium sized companies with good growth prospects to raise funds from the capital market. It is relatively small compared to the Main Board. Listing requirements for Second Board are essentially the same as Main Board. However, the paid-up capital of a company should be at least RM40 million, comprising ordinary shares of RM1 each. All companies listed on the Second Board are categorized into 7 sectors, namely, technology, consumer products, industrial products, construction, trading services, plantations and properties. In addition to these 7 sectors, Main Board companies can be further categorized into 6 more sectors, namely, finance, hotel, IPC, mining, trusts and closed-end funds. For the purpose of this study, Main Board firms are considered as large firms whereas Second Board firms are considered as small firms.

1.3 Problem Statement

Locally, there is relatively no earnings research done using these factors. Local research done by Annuar, Ariff and Shamsheer (1993) and Au (2000) investigated the impact of only earnings announcements on price and market efficiency. As a result, there is a need and motivation to do a more comprehensive study, which encompasses other variables such as type of news, firm size and

ownership structure. This study is undertaken to investigate the effect of these additional four factors on the price behavior of stocks in the Kuala Lumpur Stock Exchange (KLSE) during annual earnings announcements. The theory used in this study is in line with the Market Efficient Hypothesis, which states that information dissemination and interpretation is crucial but unobservable in the stock market. Earnings announcements belong to the semi-strong form of the Market Efficient Hypothesis. As such, this study focuses on the semi-strong form of the hypothesis that states that all publicly available information regarding the prospects of a company must be reflected in the stock price.

1.4 Research Objective and Research Questions

The main objective of this study is to investigate the effect of type of news, firm size and ownership structure on the price behavior during earnings announcements in the Kuala Lumpur Stock Exchange. But since data for studying market efficiency is generated too, this study will also look at market efficiency. However, for market efficiency, the focus will only be on the post earnings announcements time frame so as to limit the scope of this paper. An attempt will be made to answer the following research questions, specifically:

1. What is the difference in price behavior and market efficiency between “good news” announcements and “bad news” announcements?
2. What is the impact of firm size on price behavior and market efficiency? Is the magnitude of abnormal return higher for small (Second Board) firms than large (Main Board) firms?
3. What is the impact of the level of institutional ownership on price behavior and market efficiency?

4. Is level of foreign ownership a critical factor in affecting price behavior and market efficiency during earnings announcements?

1.5 Significance of the Study

Stock investment is always considered an important investment opportunity in the financial markets. All investors whether they are individuals or institutions such as unit trust funds are always interested in the price behavior and hence the performance of the stock markets. In fact, for some of them, their well-being and livelihood depends on how well they are able to decipher and understand the stock markets movements. This paper is designed to evaluate how information affects the price behavior of the local stock market. In particular, this study looks at how the type of news announcements, firm size and ownership structure play a role as well in affecting price behavior during earnings announcements. In addition, this paper also investigates the market efficiency of the stock using the four factors mentioned above during earnings announcements.

A study of this nature is useful in several aspects. According to Defeo (1986), this line of study provides a benchmark to researchers interested in examining price adjustments to events. Second, it contributes to the development of an understanding of the meaning of the term “rapid adjustment” as it is applied to describe an informationally efficient market. Lastly, it provides evidence, which is useful in understanding those factors that motivate traders to seek information and influence the way they respond to it, in aggregate. The findings of this study will help investors to make better decisions in equity investments. In addition, listed companies will benefit, as they will be more prepared in anticipation of price behavior following

annual earnings announcements. On the whole, this study will enhance the understanding of the role information played in the local stock market.

1.6 Organization of the Report

The chapters of this study are organized as follows. Chapter 1 provides the background of KLSE in Malaysia and states the objectives and organization of the study. Chapter 2 reviews the empirical evidence of stock performance as reported in previous research. Chapter 3 describes the theoretical framework and methodology of this study and hypotheses to be tested. It also describes the statistical procedures employed in this study and explains the data, the sample and the period of study. Chapter 4 reports the results and findings of the statistical tests and the summary. Finally, Chapter 5 gives the conclusion, implication, limitations and recommendations of the study.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter begins by reviewing the efficient market hypothesis since the whole idea of this study is concerned about how information in earnings announcements affects the price behavior of the stock market. The relevancy and usefulness of earnings announcements as a source of information for investors is also explored. This exploration is critical because if information from earnings announcements is found to be not relevant or useful to investors then this study will not be valid at all. Next, reviews will be done on all those selected factors that interact with earnings announcements in affecting price behavior and market efficiency.

2.2 Efficient Market Hypothesis

The global financial markets are highly competitive. This means that alert investors are always on the look out for superior investment opportunities in the securities markets. These investors will bid up the price of superior security until its expected return is equivalent to other investments with similar risks. Similarly, inferior investments that are expected to generate below-average returns will be sold until their prices decline enough to again yield acceptable returns. Security prices will be adjusted to their perceived worth quickly so long as investors believe that they can earn above-average returns by buying under-priced securities and selling over-priced ones. These rapid transactions of securities ensure that the financial markets are always in a state of high competitiveness. The idea that securities already reflect all available information is referred to as the efficient market hypothesis (EMH).

Fama (1970) had done an extensive study on the efficient market hypothesis. In his paper, he reviewed three relevant information subsets of EMH: the weak, semi strong and strong forms of the hypothesis. The weak-form hypothesis asserts that stock prices already reflect all information that can be derived by examining market trading data such as history of past prices or trading volume. These trading data are publicly available and virtually free to get. The semi-strong form hypothesis states that all publicly available information regarding the prospects of a company must be reflected already in the stock price. These information includes past prices, data on the company's product line, quality of management, balance sheet composition, patents held, earning forecasts, earning announcements, and accounting practices. Again, all these information is almost free to obtain. The strong form is a quite extreme version of EMH. This hypothesis is concerned with whether individual investors or groups have monopolistic access to any information relevant for price formation. Hence, in efficient market hypothesis, information dissemination and interpretation are crucial albeit complex and unobservable in most of the times.

At the local stock market, Annuar, Ariff and Shamsheer (1993) investigated the semi-strong form efficiency on the Kuala Lumpur Stock Exchange. They studied the effect of annual earnings and dividend announcements on stock prices. As a result of their study, they found that the market anticipates the information content of annual earnings and dividend announcements well before the official announcement. After the announcement, the abnormal returns for earnings and dividend announcements are not significant. Their findings are consistent with semi-strong market efficiency.

2.3 Earnings Announcements and Competing Information

In their study, Lev and Zarowin (1999) expressed concerns that financial reporting has lost much of its usefulness for investment decisions. According to them, one of the reasons contributing to this alleged decline in usefulness is attributed to the increasing rate and impact of business change and the inadequate accounting treatment of change and its consequences. As an example, they observed that the large investments that generally drive change, such as Research and Development expenditures, are immediately expensed, while the benefits of change are recorded later and not matched with the previously expensed investments. Another reason for this usefulness decline is attributed to the increases in competing sources of firm- and industry-specific information (e.g., growth in the security analyst industry). But another study done by Francis and Schipper (1999) on whether financial statements have lost their relevancy found that the results were mixed and inconclusive.

The above findings motivated Francis, Schipper and Vincent (2002) to examine whether the news in analyst reports pre-empts, or substitutes for, the news in earnings announcements. They found that investors' reactions to analyst reports and to earnings announcements are negatively related as would be expected if the two were substitutes. That is, their results provide little support for the view that the informativeness of earnings announcements is eroded by competing information in the form of analyst reports. Hence, their results suggest that the usefulness of earnings announcements as a source of information for investors cannot be ignored.

2.4 Earnings Announcements and Trading Price and Volume Change

Trading price and volume change are inextricably tied together when ones looked at the stock market. According to Bamber (1986), security prices reflect an

averaging of investors' belief whereas trading volume reflects investors' activity by summing all market trades. Hence, a brief review of trading volume is necessary. Morse (1981) investigated price changes and trading volume during the days surrounding the announcement of quarterly and annual earnings in the Wall Street Journal (WSJ). He found that the most significant price changes and excess trading volume occurred the day prior to and the day of the WSJ announcement. The results suggested a lack of activity in the stock market in anticipation of the earnings announcements. Cheung and Sami (2000) replicated Morse (1981) study and found that their results support his findings. By studying firms listed in the Hong Kong Stock Exchange, they found that there are significant price changes during the four days from the date of announcement to three days after the announcement. Also, there is large volume reaction during the four days from day one before the date of announcement to day two after the announcement.

Verrecchia (1981) showed that the degree of volume reaction to new information could not be used to infer correctly the extent of agreement among investors about how information should be interpreted. In particular, the degree of volume reaction in conjunction with the degree of price change does not tell us anything about the extent to which investors would revise their expectations given the new information. He suggested that greater volume reaction might mean that the information has resulted in a greater shift in expectations than less volume reaction.

Further studies in trading volume and price reactions to public announcements were done by Kim and Verrecchia (1991). They found that the price change at the time of the announcement is proportional to both the unexpected portion of the announcement and its relative importance across posterior beliefs of traders. Also, studies done by Utama and Cready (1997), Eilifsen, Knivsfla and Saettem (2001), and

Isakov and Perigno (2001) showed that there is significant decrease in stock price volatility in the post-announcement period relative to the pre-announcement period. This implies that information is being disseminated and processed during the pre-announcement period. However, in this paper the focus will only be on the price behavior. The study of the impact of earnings announcements on trading volume will not be investigated as time limitation prevents the study of this enlarged scope of works.

2.5 Earnings Announcements and Type of News

Ball and Brown (1968) found that a significant portion of the information revealed through earnings announcements is reflected in security prices prior to the report month. Kross and Schroeder (1984) examined both the association between quarterly announcement timing (early or late) and the type of news (good or bad) reported, and the relationship between stock returns and timing around the earnings announcement dates. Their results showed that early quarterly earnings announcements contain better news and are associated with larger abnormal returns relative to late announcements for both large and small firms. This also implies that stock prices respond positively to announcements of increase in earnings and negatively to announcements of decrease in earnings. Nofsinger (1997) investigated the trading behavior of institutional and individual investors around news releases. He found that institutions conducted high abnormal buy and sell volume around both good and bad firm-specific news releases. However, individual investors engaged high abnormal trading only around good news. He suggested that bad news travels more slowly than good news.

2.6 Earnings Announcements and Firms Size

Grant (1980) found that traded Over The Counter (OTC) firms, which are smaller, have greater price reactions to accounting reports than do New York Stock Exchange (NYSE) firms. Oppong (1980) investigated the information content of annual earnings announcements. He postulated that information is also available in other sources beside annual earnings announcements. He also hypothesized that large firms are generally associated with greater flow of additional information, which may preempt annual reports. Atiase (1985) found that the degree of unexpected security price changes in response to earnings reports is inversely related to the capitalized value (size) of the firms. This implies that the returns of small firms during announcement periods are on average more variable than the announcement-period returns of large firms. That is, for a given level of unexpected earnings, the cumulative abnormal returns of small firms exceed those of large firms. Freeman (1987) supported Atiase's findings. In addition, he also showed that security prices of large firms anticipate accounting earnings earlier than those of small firms. This could be due to large firms having more resources at their disposal to gather or predict earnings earlier than small firms.

Defeo (1986) investigated the duration of price adjustments to earnings announcements relative to other potential sources of variations across firms and time. One of the variations was firm size. He found that, when the market response was defined as a change in the mean of the distribution of returns, the response period was longer and began earlier for larger firms. This is in line with Freeman (1987) findings.

Eilifsen, Knivsfla and Sættem (2001) found that there is a significant decline in the noise term for the largest companies after the earnings release date, supporting the hypothesis that earnings announcements reduce informational asymmetries among

investors. Asthana and Mishra (2001) went a step further by examining the effects of the sizes of the announcing and non-announcing firms on information transfers. They hypothesized that the information transfer is positively related to the announcing firm size. One implication of their hypothesis is that abnormal price reactions of large firms around earnings announcements are more likely due to information about overall trends in the economy and industry sector. Hence, the disclosures by large firms should contain more relevant information for non-announcing firms in the same industry and thereby cause more information transfers than small firms. Their empirical results supported this hypothesis. Norfsinger (2001) investigated on the trading behavior around macro-economic announcements and tested on the lead/lag relationship between large and small firms. He found evidence to show that investors reacted quickly to both good or bad news by buying large firms and not small firms. This implied that small firms returns lagged large firm returns during both up markets and down markets.

2.7 Earnings Announcements and Institutional Ownership

Potter (1992) examined the relation between the level of institutional investor ownership and the magnitude of security price variability at quarterly earnings announcement dates. He found that the degree of price variability at quarterly announcement dates increases with the level of institutional investor ownership. This result is consistent with the view that a concentration of institutional investor ownership reduces the informativeness of prices prior to an earnings announcement. This means that firms with high level of institutional ownership potentially have more resources to process and analyze information at an earlier stage. These firms typically do not have to wait for the earnings announcements for information. With earlier

access to information, they can make investment decisions earlier than the earnings announcements dates. Later findings by Utama and Cready (1997) showed that volume response as a function of institutional ownership is quadratic with quadratic curve reaches a maximum at around 50 percent institutional ownership. Nofsinger (1997) found that high-level institutional firms reduce informativeness of prices prior to an earnings announcement due to the fact that they can access to information earlier. Due to this, it is expected that price changes would be less around earnings announcements.

2.8 Earnings Announcements and Foreign Ownership

Riahi-Belkaoui (2002) examined the relationship between the observed post-announcement drift in stock prices and the level of multinationality. He found that post-earnings-announcement drift was negatively related to the level of foreign ownership given that the firm size is controlled. This implies that firms with high level of foreign ownership tend to have more capability in processing information during post-earnings-announcement. The level of foreign ownership is synonymous with how wealthy the firms are or how much resources they have in information gathering and processing. This is in line with Cready (1988) findings that stated the wealth of market participants is a determinant of the speed and duration of the market's response of information. He suggested that firms characterized by high-wealth investors should be associated with speedier responses to information releases than firms characterized by low-wealth investors. Again all these could be attributed to the more resources these firms have in gathering and processing information.

Su (2002) investigated the stock price reactions to earnings announcements in the China markets. He found that domestic A-share investors did not correctly

anticipate price changes and did not adjust to the new earnings information very rapidly in the markets. He offered a couple of reasons for these findings. Government officials and managers may be involved in inside trading of A-shares. Also, most A-share investors are short-term traders who speculate based on sentimental factors. However, international B-share investors seem to be able to predict price changes better and hence, not much abnormal announcement-day effect were observed.

Chung and Lee (1998) investigated the ownership structure and trading volume reaction to earnings announcements in Japan. Three types of shareholders were identified. They were corporate stockholders, foreign investors and ordinary domestic investors. They found that volume reaction increases with the fraction of shares held by foreign investors. This means that foreign investors trade more on current information and are more responsive to earnings announcements than domestic investors. This can be partly explained by the fact that foreign investors are large institutional investors that react more strongly and more quickly to earnings announcements than small investors.

2.9 Summary

Despite the tremendous amount of information generated by the stock market community, information content of earnings announcements is still useful for investment decisions as found by Francis, Schipper and Vincent (2002). Other studies done by foreign researchers showed that factors such as type of news, firm size, level of institutional ownership and level of foreign ownership work in conjunction with earnings announcements in affecting the price behavior and market efficiency of the foreign stock market. Kross and Schroeder (1984) showed that stock prices react positively to “good news” announcements and negatively to “bad news”

announcements. This is to be expected intuitively since investors are profit-inclined. The other three factors, that is firm size, level of institutional ownership and level of foreign ownership have more to do with the wealth of the firms. Large firm, high level of institutional ownership and high level of foreign ownership translates into more wealth and hence more resources at their disposal in gathering, processing and analyzing firm-specific information.

Chapter 3

METHODOLOGY

3.1 Introduction

This chapter begins by giving a brief description about event study that leads to the foundation used in the development of the performance measures. It is divided into 10 sections. Section 2 gives an overview of event study and the adoption of the market model for this study. Section 3 and 4 discusses the methodology and framework used in this study. Section 5 discusses about the adjustment of thin trading since KLSE is relative thinly traded. Section 6 and 7 describe the variables used in the study. Section 8 outlines the hypotheses used in the study. Section 9 describes the data set and data collection procedure. Lastly, Section 10 outlines the tests used in this study.

3.2 Overview of Event Study

Event study is an important methodological approach to market-based empirical research in finance and accounting. It is also known as residual analysis and abnormal performance index test. This study involves the analysis of security price behavior around the time of disclosure of firm-specific events. In this study, the firm annual earnings announcement date is the firm-specific event. According to Bowman (1982), there are four basic types of event studies.

1. Information content
2. Market efficiency
3. Model evaluation
4. Metric explanation

The information content of an event is studied by analysis of security price behavior up to and concurrent with the event. Market efficiency goes one step further. It involves analysis of security price behavior subsequent to the event. The other two types, namely model evaluation and metric explanation are generally concurrent with an information content study. The type of event study used in this paper is the market efficiency test since this study investigates the security price changes around the earnings announcements dates.

3.3 Research Methodology

The design and methodology used in this paper was adopted from study done by Bowman (1982). Five steps involved were:

1. The event of interest was identified. As mentioned earlier, this study looked at the annual earnings announcements of KLSE firms. The calendar date of the announcements became time zero in event time. All time periods were described in event time relative to the zero time when the event occurred.
2. The security price reaction was modeled. For studies involving earnings announcements, one expected the direction of the security price reaction to the event to differ across firms and to be conditional upon information relevant to the event. Hence, one could hypothesize the null hypothesis as follows:

$$E(e_{it} | \eta, y_{it}) = 0$$

where

e_{it} = measure of abnormal returns for firm i in time period t

η = expectations model

y_{it} = information from η for firm i and time t .

For the alternate hypotheses, positive unanticipated earnings were assumed to be correlated with positive excess returns. Similarly, negative unanticipated earnings were assumed to be correlated with negative excess returns. Hence the alternate hypotheses could be hypothesized as follows:

$$E(e_{it} | \eta, y_{it}^+) > 0$$

$$E(e_{it} | \eta, y_{it}^-) < 0.$$

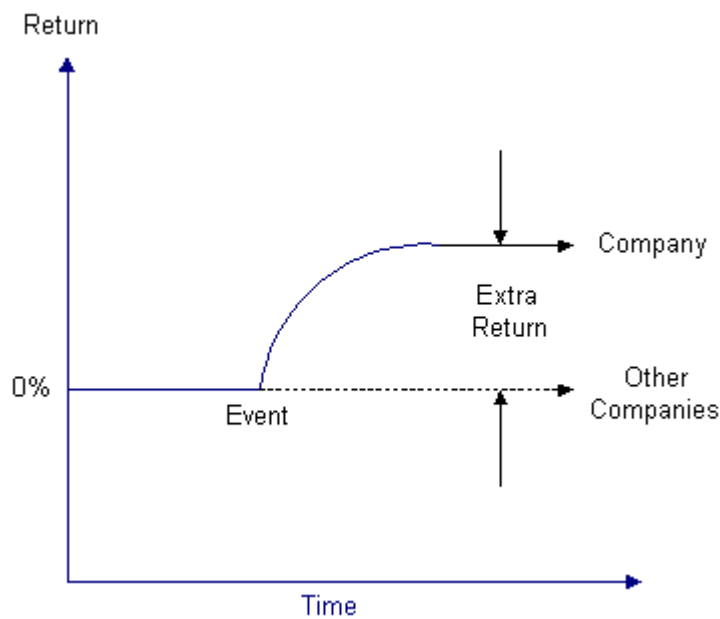


Figure 3.1 Model of positive earnings announcements.
Source: <http://www.stockalpha.com/Specific.htm>

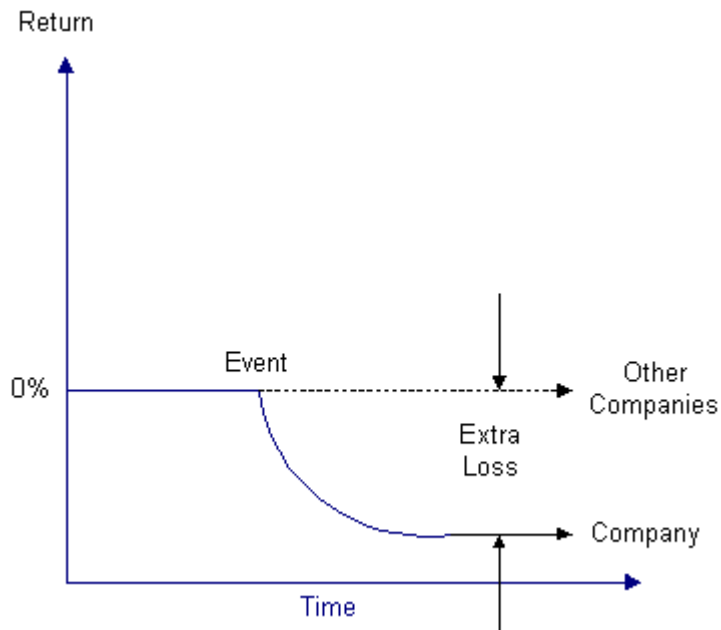


Figure 3.2 Model of negative earnings announcements.

Source: <http://www.stockalpha.com/Specific.htm>

3. The abnormal returns were estimated. There were many estimation methods available such as the unadjusted or mean adjusted returns, risk adjusted returns and risk controlled portfolio returns. The risk-adjusted methodologies were more universally used as seen in studies by Eilifsen, Knivsfla and Sættem (2001) and Asthana and Mishra (2001). Hence, this method was adopted in this study. The most common of this method was the market model where its parameters α_i and β_i were estimated using daily returns from a certain number of trading days preceding the event window. The market model used in this paper was defined as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$$

where

R_{it} = return on security i in period t

R_{mt} = return on the market portfolio in period t

α_i and β_i = constants for security i

e_{it} = disturbance term (residual)

The parameters of the model were estimated using ordinary least squares regression and then used to calculate the residuals

$$e_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

which, were assumed to have the properties that its expected value or mean is zero and its variance is constant.

$$E(e_{it}) = 0$$

$$\sigma(e_{it}, e_{jt}) = 0 \quad \forall i \neq j$$

Since the expected value of the residuals was zero, any non-zero value of the residuals was termed the abnormal return.

4. The abnormal returns were organized and grouped. They were averaged to get the Average Abnormal Returns (AAR). The next step was the accumulation over time to capture the aggregate abnormal return behaviors. There were two principle aggregation methods, namely Cumulative Abnormal Returns (CAR) and Abnormal Performance Index (API). In this paper, the CAR method, which is simply the sum of all abnormal returns over the time period of interest, was used. A number of researchers (Au, 2000; Freeman, 1986 and Su, 2002) used the CAR method. CAR captures the total firm-specific stock movement for an entire period when the market might be responding to new information. AAR and CAR were computed as follows:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N e_{it}$$

$$CAR_t = \sum_{t=-K}^{t=+K} AAR_t$$

where

e_{it} = excess return for firm I in period t

N = number of firms in the portfolio

t = number of time periods being aggregated.

5. The results were analyzed. The final step was to analyze and interpret the results.

3.4 Research Framework

Utama and Cready (1997) used 250 days for the estimating period while Cheung and Sami (2000) used 120 days. As such, no specific number of days were specified in research literatures but logically, the longer this estimating period is the more accurate is the estimated α_i and β_i . In this study, 500 trading days was used for this estimating period. Longer than 500 days was not recommended, as the estimating period would fall into the time frame when Malaysia economic structural breakdown occurred in the 1997 since the announcements dates selected for this paper were from year 2000 to 2002. A test period of 31 days, that is, -15 trading days to +15 trading days from the event date or announcement date was chosen as used in Cheung and Sami (2000) study. Too narrow a test period might lead to price behavior changes not be observed. Conversely, too long a period might lead to additional confounding effects from other events.

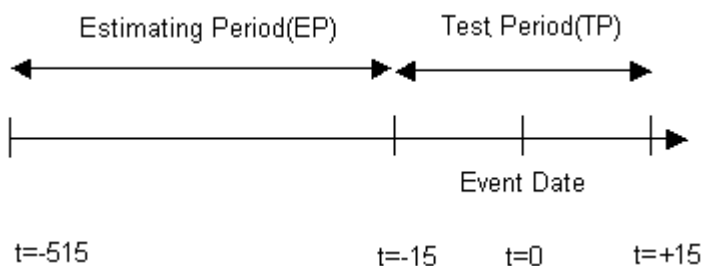


Figure 3.3 Model of Event Study.

Source: Atiase (1985) and Strong (1989)

3.5 Adjustment for Thin Trading

Thin trading was an issue with the local relatively small stock market. Strong (1989) found that thinly traded shares have a beta estimate that is biased downwards, while for frequently traded shares the bias is upwards. The biased beta estimates would potentially give biased estimates of abnormal returns and hence affect the accuracy of the test statistics. There are a number of methods for correcting this bias, namely Scholes – William (SW) beta estimator and Dimson Aggregate Coefficients (DAC) estimator. Dyckman, Philbrick, and Stephan (1984) found that both SW and DAC procedures yield reduced biases in ordinary least square estimates of beta. In this study, DAC method was adopted, as the DAC method does not require that a trade to take place in every return interval as happened in some of local listed firms. Also, Annuar, Ariff and Shamsheer (1993) used this method in their research. The main purpose of adopting DAC method in this study was to alleviate thin trading bias in the relatively small KLSE stock market. The DAC formula is as follows:

$$\beta_D = \sum_{k=-n}^n \beta_k$$

where $k = -n, \dots, 0, \dots, n$,

β_k are estimates of the slope coefficients in a multiple regression of the return on the security in period t against the return on the market in periods $t - n, \dots, 0, \dots, t + n$. Dimson used this method with $k = -1, \dots, 5$. Similarly, this paper would use $k = -1, 0, 1, 2, 3, 4, 5$.

3.6 Unit of Analysis and Sampling Design

AAR (Average Abnormal Return) and Cumulative Abnormal Return (CAR) of individual firm at specific annual earnings announcements date were used as the

units of analysis. AAR was used for 2-level statistical testing. CAR was used for plotting charts. Both were used in the post earnings announcements statistical testing. For hypotheses 1 and 2, a sampled firm from either Main Board or Second Board could have a range of up to 3 annual earnings announcements dates from year 2000, 2001, and 2002. That is, each firm could have up to 3 AAR values. But for hypotheses 3 and 4, whereby ownership structure information was only available in KLSE Annual Handbook 2000, each sampled firm would only have 1 AAR value. Convenience sampling was used in this study. In fact, due to the fragmented nature in KLSE data, as long as a unit of analysis contained all the relevant information used in this study, that unit was included in the sample.

3.7 Variables

The 4 factors selected for this study are type of news, firm size, level of institutional ownership, and level of foreign ownership.

3.7.1 Type of news

The type of news could be either “good news” or “bad news” during the earnings announcements. An increase in earning per share or a decrease in loss per share as compared to previous year performance denoted good news for the firms. In contrast, a decrease in earning per share or an increase in loss per share as compared to previous year performance denoted bad news for the firms. Information about type of news was found in the annual earnings reports of all firms. The above definition of “good news” and “bad news” implicitly assume that previous year earning is the best predictor of this year

earning. In fact, this is the most naïve model (random walk model of earning forecast) of earning forecast.

3.7.2 Firm Size

Firm size referred to the degree of market capitalization of the firm. In this study, Main Board firms were used as proxy for large firms. Similarly, Second Board firms were used as proxy for small firms.

Table 3.1

Main Board and Second Board Capitalization

KLSE	No of Firms	Total Value (RM million)	Total Value Per Firm (RM million)
Main Board	520	85,591	165
Second Board	292	10,425	36

Source: KLSE Statistics (2001)

3.7.3 Level of Institutional Ownership

This ownership structure referred to the percentage of outstanding shares held by institutional investors at earnings announcement dates. In this study, those firms with 15% or less of total shares owned by institutions were classified as low-level institutional ownership. Those firms with 45% or higher were classified as having high-level institutional ownership. These figures were selected to represent extreme levels of institutional ownership conveniently available. This information was found in the *KLSE Annual Handbook*. Below is the profile of institutional ownership among KLSE firms. As can be seen from the figures below, institutional investors made up only about 3% of the total shareholders, yet they took up 43% of the total equity. No breakdown in institutional ownership by local and foreign shareholder was available.