

## Short Selling Announcements and Stock Price Reactions: Evidence from the Malaysian Stock Market

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### ABSTRACT

This study aims to examine stock price reactions on selected stocks listed on Kuala Lumpur Stock Exchange (KLSE) vis-à-vis the short selling announcements. In this study, the results shows that the market reacted negatively towards the announcement of the re-imposition of short selling restrictions and for the subsequent removal of short selling restrictions, the stock prices reacted positively. Overall, this study offers significant implications to investors. The results implied that the announcement on the removal of short selling activities is welcome by investors. The positive reactions on the announcement also indicates that there are more supply in the market hence it increases the liquidity of the stock market. Thus, the indications from the results in this study will enable investors to construct their investment strategies.

### Introduction

Short selling is an activity where investors are able to sell the stocks at the current price that they do not initially own it. The stocks that used for short selling activities are borrowed for sale and later have to return back to the owner of the stock. This will enable short sellers to earn profits when the price falls. The stocks that bought by short sellers are usually overvalued so that when the price falls, short sellers will be able to buy back and earn profits from the declined of stock prices. They created an implicit signal to the market which they expect the stock prices are moving downward. In other words, short sellers are making money in the bearish market. Therefore, short sellers are always being claimed as scapegoat because of their immoral actions during the bearish market.

The intention of the short sellers or contrarians is basically based on speculative motive. The expectations of short sellers on the stock prices tend to be on the downside instead of upward moving. There are numerous historical attempts to restrict short selling activities through legislation and cost. In 2008, the world's financial crisis, many regulators around the world had to impose short selling restrictions in order to stop the market from tremendous falls and reduce the volatility of the stock markets. (Jain A., Jain P., McInish, and McKenzie., 2013) As stated in Boehmer, Jones, and Zhang (2013), the government of United States had tighten the rules of short selling when the financial crisis got exacerbated.

According to Jones and Lamont (2002), on November 1917, the market had fallen 31 percent due to the implementation of short selling regulations by New York Stock Exchange (NYSE). This is because market participants believed that short selling activities lead to the decline in stock price and gain an unfair amount of speculative profit. On the other hand, there are researchers that claimed high number of short selling activities will create a sign of bullish rather than bearish situation. This is due to the demand of short sellers buying back the stocks to cover their position. Thus the increase of the stock price is supported by the latent demand by short sellers (Luis, 1978).

Short selling activities also can be viewed from the demand and supply curve. These activities create supply of stocks in the market and if short selling activities are restricted, the price will bias upward. Consequently, investors will only allow to buy but not to short sell the stocks at the first place. The consequences of this will lead to increasing of the excess demand relative to the stocks supply. This is correlated with the theory of demand and supply, which the price will force to move up when the demand is higher than supply. This is also called upward bias hypothesis by Miller (1977).

On the other hand, Diamond and Verrecchia (1987) predicted that the short selling restriction will lead to a downward movement of stock prices. The restrictions will reduce the adjustment speed of stock prices in response to the bad news. The informed investors will not able to take actions on the private bad news and when the news become publicly available, the stock price will fall dramatically to response the bad news. As according to Reed (2007), the results showed that costly short selling on stocks will have larger price reactions especially towards bad news in earnings. Hence, the stock prices will be downward biased.

However, people are not always rational; therefore their behavioral biases may influence their financial decisions. These decisions will lead to the biases on the stock prices. According to De Bondt and Thaler (1985), they

show that stock markets overreact towards the unexpected and dramatic news events. Besides this, Shefrin and Statman (1985) argued that investors are keen on selling their winner stocks rather than losers. Some believe that Asian generally suffer from cognitive biases more than people of Western cultures. As Hofstede (1980) stated, differences among cultures are expressed on individualism and collectivism continuum. It is argue that Asian cultures tend to react based on collective societies. These societies can cause individuals to be overconfident and it also a behavioral bias. Therefore, the stock price reactions based on short selling announcement might not be the same across countries. This is because different countries have different cultures. For example, Lamba and Ariff (2006), is the pioneer in examining the stock price reactions on short selling announcements in emerging market, Malaysia.

Hence, it is an interesting field to find out the stock price reactions on the restriction and reintroduce of short selling activities in Malaysia. This is because Miller (1977) and Diamond and Verrecchia (1987) papers are seems to be contradicting with each other. It also noted that in this study, it is assumed that the circular date is the announcement date because on this date, the news is formally circulated to the investors through brokerage house.

### Background of Study

On 27<sup>th</sup> August 1996, Securities Commission of Malaysia introduced legislation on permitting short selling for the first time ever. There are 50 stocks that allow for short selling activities at that time and the actual trading take place on 3<sup>rd</sup> October 1996. Table 1.1 shows the list of stocks that allowed for short selling trading. In mid-1997, a currency crisis on Thai Baht had spread overnight to Malaysia, Indonesia and Philippines. In order to deal with the crisis, the former prime minister, Tun Dr. Mahathir Mohammad had come out with several solutions. The solutions are capital controls and re-imposition of restrictions on short selling activities (Toh, 1999). On 28<sup>th</sup> August 1997, the Malaysia's government had announced on the suspension on short selling activities in Malaysia permanently.

However, in order to attract more foreign investors and the development of financial market in Malaysia, on 22<sup>nd</sup> December 2006 Malaysia government reintroduced Regulated Short Selling (RSS) on the 70 stocks listed in Kuala Lumpur Stock Exchange (KLSE). RSS is a type of allowable trading strategy where a person can sell shares that he does not own. In order to settle the trade, the person must engage in Securities Borrowing Lending (SBL) where he will borrow the shares to deliver for the sale. It created a significant impact on stock prices on the second announcement of the removal on short selling restrictions and the subsequent reviews made by Securities Commission of Malaysia. Table 1.2 shows the list of 70 stocks that allowed for RSS at that time.

### Research Questions

According to Calvet and Fisher (2007), stock prices are driven by news regardless of the time period. In the short run, macroeconomic announcement will affect the forecasts of future cash flow done by investors. The forecasted future cash flow will lead to the change in discount rate of return. As per Andersen et al. (2004), daily returns of stock are affected by the announcements on macroeconomic news. Therefore, the question of stock price reactions arises when Malaysia made announcements on the re-imposition and removal of short selling restrictions.

In this study, researcher is going to examine the stock price reactions for the two particular special events which are the subsequent re-impose of short selling activities on 28<sup>th</sup> August 1997 and second reintroduce of short selling activities on 22<sup>nd</sup> December 2006. All of these events create an interesting research field on the stock price reactions.

### Implications of the Study

The increasing volatility and uncertainty in the financial market has led to the importance of determining the direction of the stock price regarding to any announcements made publicly. According to Drake, Myers, Scholz, and Sharp (2015), their study showed that announcement of the companies' restatement on financial statements will have a significant higher abnormal short selling activities on their stocks. It showed that the announcements made will impact the direction of the stock prices. Hence, this study is aims to determine the directions of the stock prices.

### Literature Review

#### Significance of Short Selling Activities

According to Stanley (2009), short selling activities tend to increase the number of sellers in the pool, thus it increases liquidity in the market. As per Securities and Exchange Commission (1990), liquidity in substantial market (US market) is provided through short selling by the market professionals, market makers, block positioners, and specialists. They offset the temporary inequality in demand and supply and act as a facilitator of the operation of the markets (Stanley, 2009). The liquidity hypothesis suggests that large stocks are easier to short-sell. Therefore, a higher returns premium to short sell less liquid overpriced small stocks is required by investors (Elfakhani, 2000). The results

of Elfakhani (2000) showed that more profits on shorting the less liquid overpriced small stocks rather than more liquid overpriced large stocks. Similarly, the findings of Choie and Hwang (1994) on market index showed that firm stocks which with high level of short interest had underperformed the market for the sampling period between 1986 and 1990. Short interest is defined as the number of stocks that sold short but yet to repurchase back. Alternatively, differential information hypothesis predicts that small stocks have less publicly available information due to information asymmetric (Elfakhani, 2000).

Besides, market will be more efficient if short selling activities are allowed. According to Chang et al. (2007), short sales have a significant implication on market efficiency theories. A market is said to be efficient if the stock price reflect all available information. According to Fama (1970), there are three different forms of market efficiency namely weak, semi-strong and strong forms. Fama (1970) defined that weak-form market efficiency is a market which only reflects on historical information, whereas semi-strong form reflects on historical and publicly available information. The examples of publicly available information are announcements of annual earnings, stock splits and so on. This also means that the companies are making public announcements related to their companies. Finally, strong form reflects all historical, public and private information. Thus, short selling activities will allow short sellers to act on the private negative information of a certain stock by selling at a higher price and buying back at lower price (Stanley, 2009).

### Upward Biased Hypothesis

According to Miller (1977), the divergence of opinion on a stock change will lead to the change in stock price. The greatest divergence of opinion will have a greater fluctuation in stock price. If standard theory holds, informed investors would have the ability to forecast the future price and they will long if the price is expected to go up and short if the price is expected to go down. Therefore, if the short selling activities are restricted, investors will only be able to buy stocks but not to sell stock. This will create an excessive demand and the price will tends to be overpriced. In other words, short selling increase the supply of the stock and lowering the stock price, if short selling activities are restricted, it means demand is higher and now the price of the stock should increase. Therefore, an upward bias of stock price will occur if short selling is restricted. There are two conditions that have to be fulfilled which are the stock's short sales are either eliminated or too costly and investors have heterogeneous beliefs or information about the stock value. Thus, pessimistic traders are forced to stay back when short selling activities are eliminated and the negative information will not be able to influence the stock prices. This also implied that the market only constraining pessimists but not constraining optimists (Miller, 1977). Miller (1977) also concludes that this bias is called upwards bias to stock prices. The further studies such as Figlewski (1981), Chen et al. (2002), Chen and Singal (2003), Asquith et al. (2005) and Chang et al. (2007) supported Miller's hypothesis.

Chang et al. (2007) identified their events on Hong Kong market and their findings showed that short selling constraints will cause stock to be overpriced. They stated that short selling constraints will prevent some negative information from being impounded into prices. Besides that, they found that the overvaluation effect is more dramatic for individual stocks which have greater dispersion of investors' opinion. Overall, their findings also appear to be consistent with Miller (1977) hypothesis.

### Market Completeness Hypothesis

In contrast to Miller (1977) and other researchers optimisms model, Diamond and Verrecchia's (1987) paper has another implication about the stock price on short selling restrictions. In their paper, they predicted that short sales constraints reduce the speed of adjustment of stock prices towards the private negative information. This is due to some of the information about short orders was remove from the market and this lead to a slower price adjustment as informed investors are unable to take actions against the private negative information if they do not own the shares. Since stocks which are subject to short sale constraints, the stocks prices will be incorporate slowly towards the private information and will have a relatively larger price reaction when the private information is publicized. Due to the information asymmetries, the price adjustment towards the negative private information will be particular slow. Therefore, Diamond and Verrecchia (1987) hypothesized that with the existence of short selling restrictions, the stock price will be downward biased. This will increase the left skew of the announcement day return distribution. Further researches done by Seneca (1967), Kerrigan (1974), Senchack and Starks (1993), Aitken et al. (1998), Desai et al. (2000), and Lamba and Ariff (2006) have supported the hypothesis made by Diamond and Verrecchia (1987).

### Comparison of Miller and Diamond & Verrecchias' Hypothesis Theories

Based on the above two hypothesis by Miller (1977) and Diamond and Verrecchia (1987), it creates the interest on finding the stock price reactions on short selling activities. Malaysian stock market is rare as the regulator had re-imposed and subsequent removed the short selling restrictions in order to protect public interest. Due to the

uniqueness of Malaysia's financial market, this created an interesting research area on determines the stock price reactions towards the short selling announcements.

The first hypothesis which to be tested is the directions of the stock prices in reacting towards the announcement of the re-impose of short selling restrictions. Furthermore, the second hypothesis that needs to be tested is the stock price reactions towards the announcement of the re-imposition of short selling restrictions. This study is also an extension of Lamba and Ariff (2006) because in their paper, the period examined was during year 1996-1997, but, in this study, it is extended to the further removal of short selling restrictions on 22<sup>nd</sup> December 2006.

### Data Collection

There are two lists of stocks had been gathered, which is list of stocks that was restricted and as well as list of stocks that was allowed from short selling activities on 28<sup>th</sup> August 1997 and 22<sup>nd</sup> December 2006 respectively to form the fundamental of this study. Both of the information was collected through the survey from Bursa Malaysia, Bursa Malaysia website, Menara Maybank, and Headquarter of OSK Investment Bank Bhd. Through the information from the list, daily closing prices for each of the stock have been downloaded from Bloomberg.

Data which was collected from Bloomberg later will be generated into more sophisticate form of information to identify stock price reactions toward short selling announcements in Malaysia.

### Event Study Methodology

A method that adopted from a study which it focuses on stock prices performance towards a particular event is called event study methodology. This method was first proposed by Fama et al. (1969). The primary goal of their paper is to examine the process by which stock prices adjust to the information. In order to examine the stock price performance, they focus on the cumulative effects of abnormal return in months surrounding time 0 which the event is identified. The evidences in their paper showed that the stock market is efficient because stock prices adjust very rapidly to new information.

The first step in applying event study methodology is to identify the event date. In which the date is noted as day '0'. Day '0' is defined as the hypothetical event for the stocks that being tested. In other words, day '0' is the day which the official announcement being made publicly (Wells, 2004). After the day '0' is identified, next is to identify the estimation period and lastly identify the event windows.

After all the event dates have been identified, the samples will be the next step to be constructed. Returns of each stock in the sample will be computed in order to compute excess return or abnormal return. In order to avoid arithmetic anomaly, returns is computed using natural logarithm, where it will be used to multiply the ratio of the prices rather than using simple returns (Wells, 2004). The excess return will be measured as the performance of the certain stock.

Besides that, the computation of test statistic is needed because the value that computed is used to calculate P-value. P-value is to measure the significance of the test and draw an overall conclusion. In other words, the level of confidence about the findings will be tested. This is also can be referred as the parametric test.

### Sample Construction

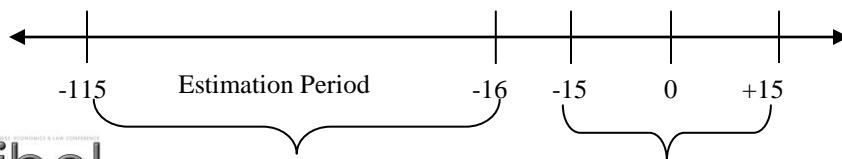
There are two major events being examined in this study. The first event is on 28<sup>th</sup> August 1997, where the re-imposition of short selling restrictions was announced. Followed by the second event on 22<sup>nd</sup> December 2006, which the announcement on the removal of short selling restrictions being made. Therefore there are two set of samples constructed in this study.

There are 50 stocks being examined with the stock price reactions on the first event (28<sup>th</sup> August 1997). The list of stocks that restricted for short selling activities is being mentioned in Chapter 1. Secondly, there are 70 stocks which are allowed for short selling activities in the second event (22<sup>nd</sup> December 2006) and the list of the particular 70 stocks is listed in Chapter 1.

#### 3.2.4 Event Period

The day '0' in this study is stated as at 28<sup>th</sup> August 1997 and 22<sup>nd</sup> December 2006. For each event, 131 daily return observations on each of the stock are being examined. The first 100 days (-115 to -16) is designated as the estimation period. In additions, the event window is 15 days before and after (-15, +15) the public announcement made (day 0) on short selling activities. Figure 3.1 summarizes the above time frame

Figure 3.1: Event study time frame



100 Days

31 Days

## Event Window

## Abnormal Returns Measures

It is designed that  $R_{i,t}$  is the actual return for stock  $i$  at day  $t$ .  $P_1$  is defined as the stock price at the time 1 and  $P_2$  is the stock price at time 2. In order to get continuously compounded returns, the equation 1 is being adopted. In which  $P_2$  is divided by  $P_1$  and multiply by natural logarithm. From Capital Asset Pricing Model (CAPM), the expected return of stocks is measured by using equation 2.

$$R_{i,t} = \ln \frac{P_2}{P_1} \quad (1)$$

$$R_{it} = R_f + \beta_i(R_{mt} - R_f) + \varepsilon_{it} \quad (2)$$

$R_{mt}$  is the market return on Kuala Lumpur Composite Index at time  $t$ .

Simple Market Model

In order to get the expected returns using CAPM, a regression model is adopted. This is also called simple market model which is being adopted in Scholes and Williams (1977). This model assumes a linear relationship between the stock price return and the market return.

$\widehat{R}_{i,t}$  is the expected return of stock  $i$  at day  $t$ . It is calculated as below:

$$\widehat{R}_{l,t} = \widehat{\alpha}_l + \widehat{\beta}_l R_{mt} \quad (3)$$

where  $\hat{\alpha}_i$  is estimated intercept for stock  $i$  and  $\hat{\beta}_i$  is estimated beta or slope coefficient in a regression of stock  $i$ .

### **Abnormal Returns Estimates**

**Abnormal Returns Estimates**  
 $AR_{i,t}$  is defined as the abnormal returns for stock  $i$  at day  $t$ . Abnormal return is calculated as expected return minus actual return. For every stock, the excess return for each day in the event period is estimated using the following equation:

$$AR_{i,t} = R_{i,t} - \widehat{R}_{i,t} \quad (4)$$

From equation 4, it also can be written as:

$$\widehat{AR}_{i,t} = R_{i,t} - (\widehat{\alpha}_i + \widehat{\beta}_i R_{mt}) \quad (5)$$

Finally, equation 5 is how excess return being measured using simple market model.  $\hat{\alpha}_i$  and  $\hat{\beta}_i$  are constant which the value is regress against regressed between the individual stock against the respective market return during the estimation periods (100 days, day -115 to day -16).

To examine the market's reaction before, during and after the announcement of short selling is being made, cumulative standardized abnormal return (CSAR) will be computed over the various event windows during days (-15,+15) relative to announcement date. In other words, it measures the overall or net impact of a particular event over a predefined number of days for the sample.

Cumulative Total Standardized Abnormal Returns at time  $t$ .

$$CT\widehat{SAR}_{t,T} = \sum_{t=T_1}^{T_2} T\widehat{SAR}_{t,t} \quad (7)$$

## Hypothesis

Hypothesis which will be tested in this study has no significant different when the abnormal returns are computed. Thus, below are the null hypothesis and alternative hypothesis.

$$H_0: \sum_{t=-115}^{t=15} AR_{i,t} = 0 \quad H_1: \sum_{t=-115}^{t=15} AR_{i,t} \neq 0$$

## Test Statistics

After the abnormal returns based on the above, it follows the test on its significance towards the events (28<sup>th</sup> August 1997 and 22<sup>nd</sup> December 2006). The test statistic of the event periods is showed in *equation 12*, where the total standardized abnormal returns is multiplied by the square root of the number of stocks in samples.

Firstly, in order to calculate the test statistic, standardized abnormal return is adopted. This is to ensure each abnormal return will have the same variance. This study followed the steps in Corrado and Zivney (1992).

### Standardized Abnormal Returns (SAR)

$$SAR_{i,t}(\text{Event Window}) = \frac{\widehat{AR}_{i,t}(\text{Event Window})}{\widehat{S}(\text{AR}_i)} \quad (9)$$

where,

$\widehat{AR}_{it}$  is shown above and

$$\hat{S}(AR_t) = \sqrt{\frac{1}{(n-d)} \left( \sum_{t=-115}^{t=-16} \widehat{AR}_{i,t}^2 \right)} \quad (10)$$

$n$  = number of days in estimation period (100 days)

$d$  = degree of freedom

Test statistic at day  $t$ .

$$T_t = \frac{1}{\sqrt{N}} \sum_{i=1}^N SAR_{i,t} \quad (12)$$

where  $N$  is the number of stocks in the sample.

### Announcement of Re-impose Short Selling Restrictions on 28<sup>th</sup> August 1997

#### Empirical Results

Table 4.1 shows the stock price reactions from day -15 to day +15. Total standardized abnormal returns (TSAR) in the table shows the sample's performance on the event windows. In addition, cumulative total standardized abnormal returns (CTSAR) from the table shows the total effects of the stock price reactions of the sample.

From the table, both TSAR and CTSAR show that the stock prices reacted negatively on the announcement date, 28<sup>th</sup> August 1997 and there are statistical significant at 1% level. TSAR is -143.1588 and CTSAR is -126.2652 on day 0. Among the fifty stocks that involved in short selling activities, only nine stocks reacted positively and the remaining stocks were reacted negatively towards the announcement.

Besides, the stock market was reacted negatively before the event date. On day -6, the TSAR is -1.7133 and the CTSAR is -2.5323, both are statistical significant. There are only twenty four stocks traded positively and twenty six stocks traded negatively on the trading day.

Furthermore, TSAR and CTSAR after the announcement made showed that the stock prices were also reacted negatively on day +1, TSAR is -15.3679 statistical significant at 5% level and CTSAR is - 20.0299 statistical significant at 1% level. In general, CTSAR shows that the stock prices reacted negatively around the announcement date. Most of them are reacted significantly at 1% level.

#### Discussion of the Results

In Malaysia, the stock market fell severely for the first time in year 1997. In the first quarter of itself, Kuala Lumpur Composite Index (KLCI) had fallen from over 1,300 points. Followed by the subsequent falling, on 4<sup>th</sup> August 1997, KLCI had broken the downward support line of 1,000 points. This indicates that the market was suffering from the Asia Financial Crisis. Hence, when the Malaysian government announced the re-imposition of the short selling restrictions on 28<sup>th</sup> August 1997, it created confusion among investors in the market.

Investors responded negatively towards the announcement because of the uncertainties aroused. Thus, the market viewed the announcement as a negative announcement made by the government. According to Sundaram (2006) stated that due to the policy imposed by the government on the restriction of the short selling activities, it was said to worsen the situation and directly exacerbated the stock market. These worries were supported by the further bearish in the market. On 1<sup>st</sup> September 1998, KLCI falls to 262 points which reached the bottom of the crisis.

On the announcement date, 28<sup>th</sup> August 1997 of the suspension of short selling activities, the stock prices reacted negatively. This might be due to the worries of the investors as they treated the announcement as a bad news. This was because the restrictions on short selling activities will stop the investors from utilizing the usage of short selling activities. The question is why the stock price reactions are negative on the announcement date?

Generally, short selling activities are for hedging purposes. It is a very useful risk management tool which it can reduce the overall risks. For example, investors will be able to earn a riskless profit by implementing arbitrage strategy. They will be able to buy and sell the stocks simultaneously on the spot, future markets and forward contracts. According to Klinger and Belquist (1994), short selling activities are being viewed as a diversification technique where it can reduce overall volatility by being available for shorting the overpriced stocks and provides a downside protection to investors. Thus, investors will not be able to enjoy the advantageous of short selling activities if short selling is banned.

In the bearish market, investors will tend to sell their stocks in order to cut costs, which in the end will lead to the stock prices fallen dramatically in response to the heavy selling. When short selling activities is restricted, investors

will only be able to increase the supply but not the latent demand. Therefore, investors treated the announcement of re-impose of short selling restrictions as a bad news and they response negatively towards the announcement. According to Luis (1978), short selling activities which were not restricted will tend to increase the latent demand and thus it increases liquidity in the market.

On the other hand, short selling restrictions also bring to the effect of reduced the speed of adjustment of stock prices towards negative information and therefore, with the existence of short selling constraints, the stock prices will react negatively (Diamond and Verrecchia, 1987). Generally, restrictions on short selling activities do exist in different stock market. However, the only different is that the degree of heterogeneous interpretations, which different interpretations will delay the speed of adjustment of stock prices with the integration of information especially negative private information. As the degree of heterogeneous of the news increases, the selection of more optimistic opinions imposes an opposite force on the asymmetry. This implies that the stock prices react stronger to the bad news rather than good news.

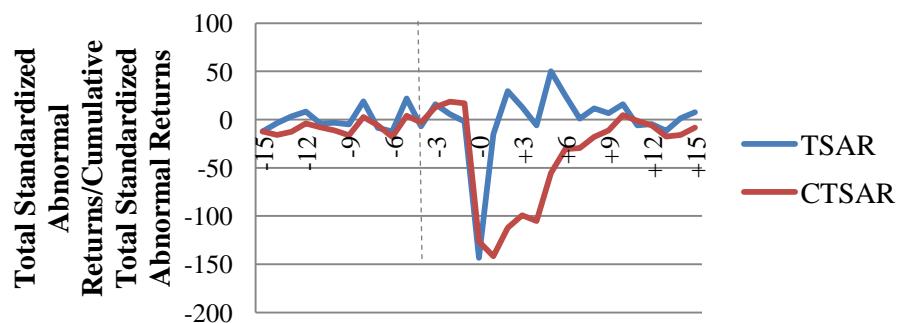
However, it is spotted that there are only nine stocks reacted positively on the announcement date. The positive reactions on the stocks might cause by the information which benefits the companies and offset the bad news of restrictions of short selling activities.

The stock market reacted negatively before the event date. One of the possible reasons for the negative reactions is leakage of private information. Generally, this is also being addressed as insider trading. According to Cornell and Sirri (1992), this indicates that noise traders are attracted by informed trading. Thus, information asymmetry will affect the trading behavior among investors.

According to Diamond and Verrecchia (1987), with the restrictions of short selling activities, the informed investors with bad news will not be able to trade. This is because the constraints of short selling activities will not allow them to short the stocks and there will be less trading on the period. The less trading or inactive trading days will lead to a downward bias of stock prices. This also implied that the further negative reactions on the stock prices.

Figure 4.1 shows the trends of total standardized abnormal returns (TSAR) and cumulative total standardized abnormal returns (CTSAR) over 31 days (-15, +15) of the suspension of short selling activities announcement for fifty approved stocks. It is clearly that the market is in a negatively view towards the suspension of short selling activities. Interestingly, at day -5, there is a positive TSAR, 7.0649 which is significant at 1% significant level. TSAR shows that the market remains volatile after the announcement of the suspension. Besides that, CTSAR shows that the overall market is negatively response to the announcement. According to Fama (1970), an efficient market will tend to fully reflect all the available information. From Figure 4.1, it shows that the market is efficient in responding to the announcement. This is because the market responded dramatically negative on the day 0.

**Figure 4.1:** Total standardized abnormal returns (TSAR) and cumulative total standardized abnormal returns (CTSAR)



*Notes:* The above shows the stock price reactions around the event date (28<sup>th</sup> August 1997) re-impose of short selling restrictions. The TSAR and CTSAR are calculated based on OLS market model. For the market model, the estimation period is (-115,-16) with a length of 100 days

Overall, the results from this event are consistent with Diamond and Verrecchia's (1987) hypothesis, which short selling restrictions will lead to negative reaction on the stock prices. There is strong evidence that the re-impose of short selling restrictions had led to the persistent decline in stock prices and observed returns.

## Announcement of Removal Short Selling Restrictions on 22<sup>nd</sup> December 2006

### Empirical Results

Table 4.2 shows the stock price reactions for the removal of short selling restrictions from day -15 to day +15. TSAR and CSTAR are being examined to identify the stock price reactions.

From the table, TSAR shows that in day 0, 22<sup>nd</sup> December 2006, the stock price reactions towards the announcement of removal of short selling restrictions is positive reacted at 17.9435 but CTSAR is negative at -20.0756 and both are statistically significant at 5% level. The negative figure is caused by the previous negative TSAR which it means that the sample reacted positively on the event date itself but being offset by the negative figure before the event date. On day -11, the TSAR is at negative, -46.61319 statistically significant at 1% level. On the announcement date itself, there are forty three stocks out of seventy stocks reacted positively towards the announcement.

On day -6, the stocks reacted positively. TSAR on day -6 is 30.9314, statistically significant at 1% level. There are forty six stocks reacted positively and the remaining reacted negatively.

The positive reactions on the stocks continue for several days, on day +1, TSAR is 20.5770, statistically significant at 5% level. The subsequent positive reactions are not statistically significant but it is economically significant because of the small sample size. On day +11, the further positive reactions with TSAR, 23.6278, CSTAR, 35.6658 and both test statistic are significant at 1% level. Looking at CTSAR as an overall, it shows that the stock prices react positively after the announcement date and most of them are statistically significant at 1% level.

### Discussion of the Results

According to Bris et al. (2007), after the suspension of short selling activities on 28<sup>th</sup> August 1997 to prevent excessive volatility in the stock market by the Malaysian government, once again, the Securities Commission launched the Capital Market Masterplan recommending on the reintroduction of short selling activities and securities borrowing and lending activities. After the recommendation, the government has taken few steps vigilantly to reintroduce the short selling activities. Hence, on 23<sup>rd</sup> March 2005, the government has lifted the major capital controls and reintroduce short selling activities on 22<sup>nd</sup> December 2006. This short selling activity is under an uptick rule which the short selling orders can only be placed in at a price higher than last done price. This short selling activity is called as Regulated Short Selling (RSS).

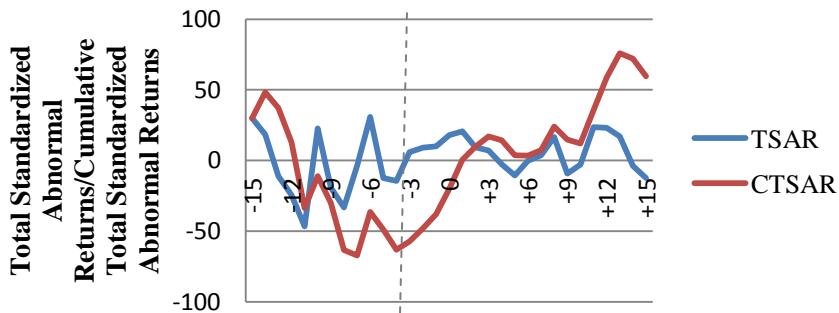
On the day of announcement, 22<sup>nd</sup> December 2006, the stock prices reacted positively. The positive reaction indicates that investors are welcoming the removal of short selling restrictions. As per Hong and Stein (2003), the removal of short selling restrictions will decrease the frequency of the extremely negative returns and the skewness of stock returns will become less negative. Thus, the positive reactions by the market is due to several reasons.

Market responded gradually positive towards the announcement after few days it has been announced. This is because investors might want to observe the change by the government in removal of short selling restrictions. They learnt the lesson from 1997 where the government has re-imposed the short selling activities and caused the market responded negatively on the announcement date. In order to prevent such a situation reoccurred, they would rather adapt a wait and see attitude.

The positive reactions on the stocks continue for several days after the announcement which this indicates that investors are welcoming the removal of short selling restrictions. This also implying that the market views the removal of short selling activities as a tool which will contribute to the market completeness. According to Fingleton and Webb (1993), informational efficiency will increase the market completeness. A complete market is which the investors can create strategy and get a positive payoff in the certain market but not the others.

Figure 4.2 summarizes the TSAR and CTSAR over 31 days (-15, +15) for 70 approved stocks. It is clear that the market is reacted positively towards the announcement of reintroduce Regulated Short Selling (RSS). It shows that investors are interested in trading, once the restrictions on short selling activities have been removed. CSTAR shows the net effects of the announcement toward the market and it shows that on day +10, an upward revaluation of the market has started. The upward revaluation is continued up until the end of event windows, day +15. From the figure, it shows that the market is slightly slower in responding to the announcement because investors are used to be protected by the government before the reintroduction. They are staying in the comfort zone where the stock prices will only move and biased upward when they were only allowed to buy the stocks. This is according to Miller's (1977) hypothesis. Therefore, they were confused in reacting towards the announcement.

**Figure 4.2:** Total standardized abnormal returns (TSAR) and cumulative total standardized abnormal returns (CTSAR)



Notes: The above shows the stock price around the event date (22<sup>nd</sup> December 2006), removal of short selling restrictions. The TSAR and CTSAR are calculated based on OLS market model. For the market model, the estimation period is (-115,-16) with a length of 100 days.

Overall, the evidence from this event is consistent with the positive view by investors. They viewed the announcement as good news as the removal of short selling restrictions is a step in developing a better transparent stock market which it will allow more price discovery. Hence, this will help to complete the market (Lamba and Ariff, 2006). However, this evidence does not support the upward biased hypothesis by Miller (1977), which short selling constraint will move the stock prices upward bias.

### Conclusions

This study is designed to examine the stock price reactions towards the re-imposition and removal of short selling restrictions announcements on the approved stocks which listed in Kuala Lumpur Stock Exchange (KLSE).

The two events of this study are consistent with the findings of Lamba and Ariff (2006). According to the result generated in this study, the stock price reactions towards the re-imposition of short selling restrictions and the removal of short selling restrictions announcements in Malaysia context are found to be coherent with their paper.

The findings of the study show that the re-imposition of short selling restrictions on 28th August 1997 is consistent with the hypothesis of Diamond and Verrecchia (1987). In which the stock prices reacted negatively towards the announcement of re-imposition of short selling restrictions. The cumulative effect of the re-imposition of short selling restrictions leads to the constant decrease in their observed returns.

Besides, the findings from this study on the re-imposition of short selling restrictions also show that the market is efficient in responding towards the negative information. There is a dramatic negative respond of the market on the day of announcement regarding the re-impose of short selling restrictions. Hence, it is argued that the emerging markets will react immediately towards the negative information.

There is a positive stock price reaction towards the announcement of removal of short selling restrictions on 22nd December 2006. The positive reaction has indicates that the investors valued the removal as a step to be more competitive in the world market. Which according to Figlewski and Webb (1993) the removal of short selling restrictions will increase the informational efficiency by having fuller price discovery and improved on the market completeness. Ultimately, cumulative effects on the stock price reactions after the announcement of removal of short selling restrictions show a constant increase in the observed returns.

From the findings of removal of short selling restrictions show that market participants nowadays are more educated and they will prefer a fuller disclosure of price relevant information such as the removal of short selling restrictions.

### Policy Implication

Short selling activities tend to increase the liquidity of the market by increasing the number of stocks for sales. This is further supported by the results shown in the study which the re-impose of short selling restrictions having a negative reaction and the stock prices reacted positively towards the announcement of removal of short selling restrictions. Therefore, the stock price reactions towards the short selling announcement will be able to provide some indications to the investors to structure their investment strategies.

Alternatively, investors can apply passive management strategy which the investment strategy is limited to ongoing buying and selling actions. Investors who applied this strategy are called passive investors. The aim of the passive investors is looking for long term appreciation. Their investment strategy is known as buy and hold strategy. This strategy is supported by the findings in Malkiel (2003), where in the paper stated that passive management strategy is the best strategy to be applied in all markets. Passive management strategy is being claimed as the winning strategy

even if the market is inefficient. One of the possible reasons for this is the zero sum game in the stock market. It is explained that all stock have to be held by someone in the market, if investor A is achieving above average returns, then investor B must be achieving below average performance. This implies that investors will never perform above the average. Therefore, by applying passive management strategy, investors will save on the transaction costs, which enable investors to earn an average return.

### Limitations and Recommendations

One of the limitations in this study is the methodology used. Although, event study methodology is a powerful and useful method to identify certain events towards the performance of the stock, it has its own limitations as well. According to Wells (2004), beta obtained from regression is used to compute returns which it is assumed to be constant. Beta is used to assess the risks involved. If the beta is constant, it means there is a constant risk as well. This is not applicable in the real world as the risk is unknown. Changes in macroeconomics factors such as interest rate will have an effect on relationship between stock prices and the financial market.

Due to the limitations above, it is also suggested that future researchers can perform a better methodology in examining the stock price reactions. A more refined methodology should be adopted for the following study to estimate alpha and beta instead of using simple market model. The beta should include a better estimator on the overall risks.

Finally, future researchers also can perform the similar event study on short selling announcements on the different regions context. Different regions such as Europe region, Asia region and so on might have different types of reactions toward the announcements. Therefore, it is interesting to examine the stock price reactions towards the short selling announcement from different markets but fall under the same region. This is to help investors to form a better and diversified portfolio.

### References

- Aitken, M. J., Frino, A., McCORRY, M. S. & Swan, P. L. (1998) 'Short Sales Are Almost Instantaneously Bad News: Evidence from the Australian Stock Exchange.' *The Journal of Finance*, Vol. LIII (6), pp. 2205-2223.
- Andersen, T. G., Bollerslev, T., Diebold, F. X. & Vega, C. (2004) 'Real-Time Price Discovery in Stock, Bond and Foreign Exchange Markets.' Working Papers.
- Asquith, P., Pathak, P. A. & Ritter, J. R. (2005) 'Short Interest, Institutional Ownership, and Stock Returns.' *Journal of Financial Economics*, Vol. 78, pp. 243-276.
- Boehmer, E., Jones, C. M. & Zhang, X. Y. (2013) 'Shackling Short Sellers: The 2008 Shorting Ban'. *The Review of Financial Studies*, Vol. 26 n 6.
- Bris, A., Goetzmann, W. N. & Zhu, N. (2007) 'Efficiency and the Bear: Short Sales and Markets around the World.' *The Journal of Finance*, Vol. LXII (3), pp. 1029-1079.
- Calvet, L. E. & Fisher, A. J. (2007) 'Multifrequency News and Stock Returns.' *Journal of Financial Economics*, Vol. 86, pp. 178-212.
- Chang, E. C., Cheng, J. W. & Yu, Y. H. (2007) 'Short-Sales Constraints and Price Discovery: Evidence from the Hong Kong Market.' *The Journal of Finance*, Vol. LXII (5), pp. 2097-2121.
- Chen, J., Hong, H. & Stein, J. C. (2002) 'Breadth of Ownership and Stock Returns.' *Journal of Financial Economics*, Vol. 66, pp. 171-205.
- Chen, H. H. & Singal, V. (2003) 'Role of Speculative Short Sales in Price Formation: The Case of the Weekend Effect.' *The Journal of Finance*, Vol. LVIII (2), pp. 685-705.
- Choie, K. S. & Hwang, S. J. (1994) 'Profitability of short-selling and exploitation of short information.' *Journal of Portfolio Management*, Vol. 20, pp. 33-38.
- Cornell, B. & Sirri, E. R. (1992) 'The Reaction of Investors and Stock Prices to Insider Trading.' *The Journal of Finance*, Vol. XLVII (3), pp. 1031-1059.
- Corrado, C. J. & Zivney, T. L. (1992) 'The Specification and Power of the Sign Test in Event Study Hypothesis Tests Using Daily Stock Returns.' *Journal of Financial and Quantitative Analysis*, Vol. 27(3), pp. 465-478.
- Desai, H., Ramesh, K., Thiagarajan, S. R. & Balachandran, B. V. (2000) 'An Investigation of the Informational Role of Short Interest in the Nasdaq Market.' *The Journal of Finance*, Vol. LVII (5), pp. 2263-2287.
- De Bondt, W. F. M. & Thaler, R. (1985) 'Does the Stock Market Overreact?' *The Journal of Finance*, Vol. XL (3), pp. 793-805.
- Diamond, D. W. & Verrecchia, R. E. (1987) 'Constraints on Short-Selling and Asset Price Adjustment to Private Information.' *Journal of Financial Economics*, Vol. 18, pp. 277-311.

- Drake, M. S., Myers, L. A., Scholz, S., & Sharp, N. Y. (2015) 'Short Selling Around Restatement Announcements: When Do Bears Pounce?' *Journal of Accounting, Auditing & Finance*, pp. 1-28.
- Elder, A. (1993) *Trading for a Living*. United States of America: John Wiley & Son.
- Elfakhani, S. (2000) 'Short Positions, Size Effect, and The Liquidity Hypothesis: Implications for Stock Performance.' *Applied Financial Economics*, Vol. 10, pp. 105-116.
- Fama, E. F. (1970) 'Efficient Capital Markets: A Review of Theory and Empirical Work.' *The Journal of Finance*, Vol. 25(2), pp. 383-417.
- Fama, E. F., Fisher, L., Jensen, M. C. & Roll, R. (1969) 'The Adjustment of Stock Prices to New Information.' *International Economic Review*, Vol. 10(1), pp. 1-21.
- Figlewski, S. (1981) 'The Informational Effects of Restrictions on Short Sales: Some Empirical Evidence.' *Journal of Financial and Quantitative Analysis*, Vol. XVI (4), pp. 463-476.
- Figlewski, S. & Webb, G. P. (1993) 'Options, Short Sales, and Market Completeness.' *The Journal of Finance*, Vol. XLVIII (2), pp. 761-777.
- Hofstede, G. (1980) *Culture's Consequences: International Differences in Work-Related Values*. California: Beverly Hills.
- Hong, H. & Stein, J. C. (2003) 'Differences of Opinion, Short-Sales Constraints, and Market Crashes.' *The Review of Financial Studies*, Vol. 16(2), pp. 487-525.
- Jain, A., Jain, P. K., McInish, T. H., McKenzie, M. (2013) 'Worldwide reach of short selling regulations'. *Journal of Financial Economics*, Vol. 109, pp. 177-197.
- Jones, C. M. & Lamont, O. A. (2002) 'Short-Sale Constraints and Stock Returns.' *Journal of Financial Economics*, Vol. 66, pp. 207-239.
- Klinger, J. & Belquist, J. R. (1994) 'Do 1980s' Timing Strategies Still Work?' *Financial Executive*, pp. 26-28.
- Lamba, A. S. & Ariff, M. (2006) 'Short selling restrictions and market completeness: the Malaysian experience.' *Applied Financial Economics*, Vol. 16, pp. 385-393.
- Luis, H. S. (1978) 'Short Interest: Its Influence as a Stabilizer of Stock Returns.' *Journal of Financial and Quantitative Analysis*, Vol. 13(5), pp. 965-985.
- Malkiel, B. G. (2003) 'Passive Investment Strategies and Efficient Markets.' *European Financial Management*, Vol. 9(1), pp. 1-10.
- Miller, E. M. (1977) 'Risk, Uncertainty and Divergence of Opinion.' *The Journal of Finance*, Vol. XXXII (4), pp. 1151-1168.
- Scholes, M. & Williams, J. (1977) 'Estimating Betas from Nonsynchronous Data.' *Journal of Financial Economics*, Vol. 5, pp. 309-327.
- Securities and Exchange Commission. (1990) "SEC Concept Release: Short Sales, Exchange Act Release." Downloaded from <http://www.sec.gov/rules/concept/34-42037.htm> as at 16th August 2010.
- Senchack, A. J. & Starks, L. T (1993) 'Short-Sale Restrictions and Market Reaction to Short Interest Announcements.' *Journal of Financial and Quantitative Analysis*, Vol. 28(2), pp. 177-194.
- Seneca, J. J. (1967) 'Short Interest: Bearish or Bullish?' *The Journal of Finance*, Vol. 22(1), pp. 67-70.
- Shefrin, H. & Statman, M. (1985) 'The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence.' *The Journal of Finance*, Vol. XL (3), pp. 777-790.
- Stanley, C. A. (2009) 'The Panic Effect: Possible Unintended Consequences of The Temporary Bans on Short Selling Enacted During The 2008 Financial Crisis.' *Entrepreneurial Business Law Journal*, Vol. 4(1), pp. 277-303.
- Sundaram, J. K. (2006) 'Pathways through Financial Crisis: Malaysia.' *Global Governance*, Vol. 12, pp. 489-505.
- Toh, E. (1999) 'Dr M Claims Success of Capital Controls.' *Singapore Business Times*, 03 September.
- Wells, W. H. (2004) 'A Beginner's Guide to Event Studies.' *Journal of Insurance Regulation*, Vol. 22(4), pp. 61-70.

## Appendix:

**Table 1.1:** List of stocks that allowed for RSS on 27<sup>th</sup> August 1996

No.	Name of the stock	No.	Name of the stock
1	Affin Holdings Bhd	26	Metroplex Bhd
2	Ammb Holdings Bhd	27	Malayan Industrial Devt Finance Bhd
3	Amsteel Corporation Bhd	28	Multi Purpose Holdings Bhd
4	Commerce Asset-Holdings Bhd	29	Pacific Bnak Bhd
5	DCB Holdings Bhd	30	Pan Malaysia Cement Works Bhd
6	Ekran Bhd	31	Perlis Plantations Bhd
7	Genting Bhd	32	Petronas Dagangan Bhd
8	Golden Hope Plantations Bhd	33	Petronas Gas Bhd
9	Hicom Holdings Bhd	34	Proton Bhd
10	Highlands & Lowlands Bhd	35	Public Bank Bhd (L)
11	Hong Leong Bank Bhd	36	Rashid Hussain Bhd
12	IOI Corporation Bhd	37	Renong Bhd
13	Jaya Tiasa Holdings Bhd	38	Resorts World Bhd
14	Kuala Lumpur Kepong Bhd	39	Sarawak Enterprise Corporation Bhd
15	Leader Universal Holdings Bhd	40	Sime Darby Bhd
16	Lingui Developments Bhd	41	TA Enterprise Bhd
17	Malaysia Mining Corporation Bhd	42	Tan Chong Motor Holdings Bhd
18	Malaysian Airline System Bhd	43	Tanjong Public Limited Company
19	Malaysian Helicopter Service Bhd	44	Technology Resources Industries Bhd
20	Malaysian Resources Corporation Bhd	45	Telekom (M) Bhd
21	Magnum Corporation Bhd	46	Tenaga Nasional Bhd
22	Malakoff Bhd	47	Time Engineering Bhd
23	Malayan Banking Bhd	48	UMW Holdings Bhd
24	Malayan United Industries Bhd	49	United Engineers (M) Bhd
25	MBF Capital Bhd	50	YTL Corporation Bhd

**Table 1.2:** List of stocks that allowed for RSS on 22<sup>nd</sup> December 2006

No.	Name of the stock	No.	Name of the stock
1	Affin Holdings Bhd	36	Maxis Communication Bhd
2	Airasia Bhd	37	Media Prima Bhd
3	Aminvestment Group Bhd	38	MISC Bhd
4	Ammb Holdings Bhd	39	MK Land Holding Bhd
5	Asiatic Development Bhd	40	Mulpha International Bhd
6	Astro All Asia Networks Bhd	41	OSK Holdings Bhd
7	Berjaya Sports Toto Bhd	42	Padiberas Nasional Bhd
8	Bumiputra-Commerce Holdings Bhd	43	Plus Expressways Bhd
9	Bursa Malaysia Bhd	44	Pos Malaysia & Services Holdings Bhd
10	Dialog Group Bhd	45	PPB Group Bhd
11	Digi.Com Bhd	46	Proton Holdings Bhd
12	DRB-Hicom Bhd	47	Public Bank Bhd
13	ECM Libra Avenue Bhd	48	Puncak Niaga Holdings Bhd
14	Eon Capital Bhd	49	Ranhill Bhd
15	Gamuda Bhd	50	Rashid Hussain Bhd
16	Genting Bhd	51	Resorts World Bhd
17	Guocoland (Malaysia) Bhd	52	RHB Capital Bhd
18	Hong Leong Bank Bhd	53	SapuraCrest Petroleum Bhd
19	IGB Corporation Bhd	54	Scomi Marine Bhd
20	IJM Corporation Bhd	55	Shell Refining Co (F.O.M) Bhd
21	IJM Plantations Bhd	56	SP Setia Bhd
22	IOI Corporation Bhd	57	Sunrise Bhd
23	KLCC Property Holdings Bhd	58	TA Enterprise Bhd
24	Kuala Lumpur Kepong Bhd	59	Telekom Malaysia Bhd
25	Kurnia Asia Bhd	60	Tenaga Nasional Bhd
26	Lafarge Malayan Cement Bhd	61	Time Dotcom Bhd
27	Landmarks Bhd	62	Titan Chemicals Corp. Bhd
28	Lion Corporation Bhd	63	UEM Builders Bhd
29	Lion Diversified Holdings Bhd	64	UEM World Bhd
30	Lion Industries Corporation Bhd	65	UMW Holdings Bhd
31	Magnum Corporation Bhd	66	Unisem (M) Bhd
32	Malayan Banking Bhd	67	Utama Banking Group Bhd
33	Malaysian Bulk Carriers Bhd	68	Wah Seong Corporation Bhd
34	Malaysian Plantation Bhd	69	YTL Corporation Bhd
35	Malayan Resources Corporation Bhd	70	YTL Power International Bhd

**Table 4.1:** Results of Stock Price Reactions on 28<sup>th</sup> August 1997

Event Day	TSAR	t-test	CTSAR	t-test	Positive: Negative
-15	- 12.2019	- 1.7256*	- 12.2019	- 1.7256*	20:30
-14	- 3.6942	- 0.5224	- 15.8961	- 2.2480**	18:32
-13	3.3162	0.4690	- 12.5798	- 1.7791*	30:20
-12	8.4675	1.1975	- 4.1124	- 0.5816	30:20
-11	- 3.9333	- 0.5563	- 8.0457	- 1.1378	21:29
-10	- 3.2311	- 0.4569	- 11.2768	- 1.5948	25:25
-9	- 5.0869	- 0.7194	- 16.3636	- 2.3142**	24:26
-8	19.0525	2.6944**	2.6889	0.3803	33:17
-7	- 8.4800	- 1.1993	- 5.7911	- 0.8190	25:25
-6	- 12.1146	- 1.7133*	- 17.9057	- 2.5323**	24:26
-5	22.0388	3.1168***	4.1330	0.5845	34:16
-4	- 7.0698	- 0.9998	- 2.9368	- 0.4153	21:29
-3	16.0379	2.2681**	13.1011	1.8528*	32:18
-2	5.6513	0.7992	18.7525	2.6520**	31:19
-1	- 1.8589	- 0.2629	16.8936	2.3891**	28:22
<b>0</b>	<b>-143.1588</b>	<b>-20.2457***</b>	<b>-126.2652</b>	<b>-17.8566***</b>	<b>9:41</b>
+1	- 15.3679	- 2.1734**	-141.6331	-20.0299***	26:24
+2	29.4128	4.1596***	-112.2203	-15.8704***	33:17
+3	13.1169	1.8550*	- 99.1034	-14.0153***	32:18
+4	- 6.0881	- 0.8610	-105.1916	-14.8763***	29:21
+5	49.9565	7.0649***	- 55.2350	- 7.8114***	27:23
+6	24.8359	3.5123***	- 30.3991	- 4.2991***	28:22
+7	0.8761	0.1239	- 29.5230	- 4.1752***	23:27
+8	11.5331	1.6310	- 17.9900	- 2.5442**	27:23
+9	6.7142	0.9495	- 11.2757	- 1.5946	30:20
+10	15.8564	2.2424**	4.5807	0.6478	31:19
+11	- 5.9085	- 0.8356	- 1.3278	- 0.1878	23:27
+12	- 4.6086	- 0.6518	- 5.9365	- 0.8395	22:28
+13	- 11.5107	- 1.6279	- 17.4471	- 2.4674**	25:25
+14	1.4073	0.1990	- 16.0399	- 2.2684**	29:21
+15	7.6161	1.0771	- 8.4238	- 1.1913	28:22

Notes: \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels respectively. All the t-tests are two tailed tests.

**Table 4.2:** Results of Stock Price Reactions on 22<sup>nd</sup> December 2006

Event Day	TSAR	t-test	CTSAR	t-test	Positive: Negative
-15	29.9702	3.5821***	29.9702	3.5821***	46:24
-14	18.3715	2.1958**	48.3417	5.7779***	38:32
-13	-11.0517	-1.3209	37.2900	4.4570***	27:43
-12	-24.3695	-2.9127***	12.9205	1.5443	27:43
-11	-46.6319	-5.5736***	-33.7114	-4.0293***	18:52
-10	22.7542	2.7196**	-10.9572	-1.3096	44:26
-9	-19.1226	-2.2856**	-30.0798	-3.5952***	22:48
-8	-33.2792	-3.9776***	-63.3590	-7.5729***	29:41
-7	- 3.8540	-0.4606	-67.2130	-8.0335***	35:35
-6	30.9314	3.6970***	-36.2816	-4.3365***	46:24
-5	-12.4282	-1.4854	-48.7097	-5.8219***	26:44
-4	-14.3383	-1.7137*	-63.0480	-7.5357***	36:34
-3	5.9662	0.7131	-57.0818	-6.8226***	40:30
-2	9.1185	1.0899	-47.9633	-5.7327***	35:35
-1	9.9443	1.1886	-38.0191	-4.5441***	31:39
<b>0</b>	<b>17.9435</b>	<b>2.1447**</b>	<b>-20.0756</b>	<b>-2.3995**</b>	<b>43:27</b>
+1	20.5770	2.4594**	0.5014	0.0599	44:26
+2	9.3768	1.1207	9.8782	1.1807	35:35
+3	7.1920	0.8596	17.0702	2.0403**	36:34
+4	- 2.6948	- 0.3221	14.3754	1.7182*	29:41
+5	- 10.6055	- 1.2676	3.7698	0.4506	28:42
+6	- 0.2362	- 0.0282	3.5336	0.4224	31:39
+7	3.7831	0.4522	7.3167	0.8745	25:45
+8	16.7108	1.9973*	24.0276	2.8718***	42:28
+9	- 9.2350	- 1.1038	14.7925	1.7680*	23:47
+10	- 2.7546	- 0.3292	12.0379	1.4388	36:34
+11	23.6278	2.8241***	35.6658	4.2629***	44:26
+12	23.0711	2.7575**	58.7369	7.0204***	41:29
+13	17.1277	2.0472**	75.8646	9.0676***	32:38
+14	- 3.7972	- 0.4539	72.0674	8.6137***	24:46
+15	-12.4435	- 1.4873	59.6239	7.1264***	21:49

Notes: \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels respectively. All the t-tests are two tailed tests.