

**OVERREACTION HYPOTHESIS: AN ANALYSIS OF THE MALAYSIAN  
STOCK MARKET**

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**THIS THESIS IS SUBMITTED TO FULFIL THE REQUIREMENTS FOR  
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## DECLARATION

I hereby declare that this dissertation is my own work except for summaries and quotations which each origin and source has been duly acknowledged.

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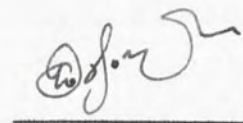


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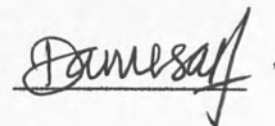
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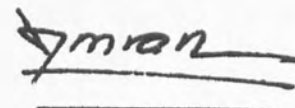
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## ABSTRAK

Hipotesis Reaksi Melampau mengandaikan para pelabur cenderung untuk menunjukkan reaksi melampau terhadap berita atau kejadian yang dramatik. Saham yang pernah mengalami kerugian akan mengatasi saham untung. Disertasi ini mengkaji Hipotesis Reaksi Melampau yang dikemukakan oleh De Bondt and Thaler (1985) dalam pasaran saham Malaysia. Pulangan bulanan bagi seratus syarikat yang tersenarai dalam Papan Utama Bursa Saham Kuala Lumpur (BSKL) telah dianalisa. Kajian dilakukan dari Januari 1990 hingga Disember 2001. Metodologi parametrik (ujian regresi) telah digunakan untuk mengkaji kewujudan reaksi melampau dalam pasaran saham Malaysia. Hasil kajian menunjukkan pasaran saham Malaysia secara amnya tidak bereaksi melampau. Empat daripada sepuluh tempoh ujian tidak menunjukkan kewujudan reaksi melampau. Reaksi melampau dalam pasaran saham Malaysia hanya berlaku pada 1997-98 dan 2000-2001. Portfolio 'Saham Untung' memperoleh pulangan purata sebanyak 20.16 manakala portfolio 'Saham Rugi' memperoleh pulangan purata sebanyak -13.20 peratus. Keputusan ujian 'Kesan Januari' mendapati bahawa syarikat yang mengalami keuntungan tidak akan rugi pada tahun berikutnya dan syarikat yang mengalami kerugian akan memperoleh keuntungan pada bulan Januari tahun berikutnya.



## ABSTRACT

The Overreaction Hypothesis implies that investors tend to overreact to dramatic news and events. Undervalued prior losers' stocks given adequate time will outperform the stock market. This dissertation investigates the Overreaction Hypothesis as proposed by De Bondt and Thaler (1985, 1987) in the Malaysian stock market. Monthly returns of one hundred companies listed in the Kuala Lumpur Stock Exchange Main Board were analyzed. This event study analysis is conducted from January 1990 to December 2001. Parametric methodology (regression test) was used to examine the existence of overreaction in Malaysian stock market. Test results showed that the Malaysian stock market generally does not overreact. Four out of ten test periods found no stock market overreaction. Overreaction only occurred in 1997-98 and 2000-01. 'Winners' portfolio returns is 20.16 percent on average while 'Losers' portfolios earned an average return of -13.20 percent. Results of test on January effect showed that a winning firm does not lose in the coming year and losing firms will gain positive returns in January of subsequent year.



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## LIST OF SYMBOLS

$\alpha$	alpha
$\beta$	beta (risk)
$AR_{i,t}$	Abnormal returns (AR) of stock $i$ in month $t$
$CAR_i$	Cumulative abnormal returns (CAR)
$P_{i,t}$	Price relative of stock $i$ in month
$R_{i,t}$	Return of stock $i$ in month $t$
$R_{M,t}$	Return of the market index in month $t$
$R_F$	Return of a risk-free investment





## CHAPTER 1

### INTRODUCTION

#### 1.1 BACKGROUND

Research by De Bondt and Thaler (1985) initiates considerable interests on investor's overreaction in the financial markets. Overreaction Hypothesis as suggested by De Bondt and Thaler is a financial anomaly of which investors tend to overreact to unexpected and dramatic news event thus violating the Bayes' rules.

Overreaction occurs when investors, after a series of good news' announcements become overly optimistic that such similar news announcement will prevail in the future and hence overreact.

The tendency for investors to overreact to new information results in exaggerated shift in stock prices and this is followed by price movements in reverse direction. Extreme movements in stock prices cause biases.

Eventually the price deviates from their fundamental values and this will be followed by subsequent price movements in the opposite direction. The more extreme the initial price movement, the subsequent adjustment will be greater.



The psychology underlying this hypothesis is that people tend to be overconfident and eventually makes predictions using similarity rather than the Bayes' rule. The Overreaction Hypothesis provides financial markets' practitioners insights on the selection of securities and also establishes the importance of behavioural finance in financial research.

Such price reversals and investors' overreaction can also be found in studies conducted by Alonso and Rubic (1990), Atkins and Dyl (1990) and Domian *et al.* (1998). However, while some studies such as those conducted by Mun *et al.* (2000) in the US and Canadian stock markets fully support the Overreaction Hypothesis.

Other researches such as the case studies in the United Kingdom (UK) stock market by Clare and Thomas (1995) are less favourable. A study by Brailsford (1992) failed to find such investors' overreaction. Furthermore, Zarowin (1989) reported that size effect is responsible for price reversals and not investors' overreaction to price earnings.

The Overreaction Hypothesis also attempts to explain market inefficiencies thus refuting the Efficient Market Hypothesis (EMH). In the EMH, financial agents interact with each other in a rational and efficient manner. Past and future prices are random and unrelated to each other.

New information is constantly absorbed by investors and reflected in security returns. This instantaneous processing of data implies that future rates of return cannot be predicted by past returns.



In the EMH, prices fully reflect available information and Fama (1998) argued that anomalies are results of chance and overreaction is as common as underreaction. Post event continuation of pre-event abnormal returns is as frequent as post-event reversal. Therefore, if in an efficient market the anomalies split randomly between underreaction and overreaction, they are consistent with market efficiency. Long-term returns are fragile and tend to disappear with reasonable changes in the way they are measured.

Yong (1985) reported that successive price changes over time in the Malaysian stock market exhibit departure from the random walk hypothesis. Conversely, small values of coefficient determination indicated difficulty in designing a forecasting model, based on the relationship between past and future prices. This is true for other stock market exchanges in Europe, Asia, Australia or the United States.

However, Girard *et al.* (2001) in his study reported that overreaction is more likely to be observed in emerging markets since younger markets are more prone to crisis-contingent shocks. Such behaviour pattern is evident in crisis-related herding or panic behaviours. Malaysian stock market appeared to become more segmented after the Asian crisis and exhibits pre and post crisis correlations that are similar to that of Hong Kong, Philippines, Singapore, Taiwan and Thailand. Furthermore, emerging markets such as Malaysia, Korea, Indonesia, Philippines, Taiwan and Thailand consistently demonstrated more predictability than developed markets.

Therefore, such contradictory empirical results regarding the Overreaction Hypothesis in the Malaysian stock market warrant further review. The Overreaction





Hypothesis provides financial markets' practitioners insights on the selection of securities and also establishes the importance of behavioural finance in financial research.

The market offers a variation of investors' behaviour. Understanding the cause of overreaction is of scientific interest because it improves the comprehension of stock market observations.

An analysis will be conducted on one hundred randomly selected firms listed in the Kuala Lumpur Stock Exchange Main Board which had been established prior to the year 1990. This study on overreaction covers periods from January 1990 through December 2001.

A parametric (regression test) approach will be used and this methodology's justifications will be discussed in coming chapters. This analysis is performed to examine the consistency of the Malaysian stock market, if any, to the Overreaction Hypothesis.

## **1.2 THE MALAYSIAN STOCK MARKET**

The securities industry in Malaysia began in the late nineteenth century as an extension of the British corporate presence in the rubber and tin industries. The first formal organization was registered as Malaya Stockbroker's Association in 1938.





During the outbreak of the World War II, operations halted and resumed only in 1945. There were no public trading of shares until the year 1960 when the Malayan Stock Exchange was constituted.

The Stock Exchange of Malaysia was formed on 6 June 1964. The Companies Act 1965 came into force to provide legal framework in supervising the companies operations.

The operations of the Exchange were further strengthened with the adoption of new rules and by-laws, creation of a fidelity fund and implementation of stricter listing requirements.

In August 1965, the stock exchange initially known as the Stock Exchange of Malaysia and Singapore split in 1973 to make way for the establishment of a separate Malaysian stock exchange.

The Securities Industry Act enactment in June 1973 provides regulations which aimed to protect investors. The Kuala Lumpur Exchange Berhad was later formed in July 1973 and was incorporated under the Securities Industry Act and the Companies Act 1965 (Yong, 1995).

More implementations were initiated and amendments were made in established Acts and new Acts were also introduced over the years to ensure proper development of the stock market and mainly to protect investors.



From January 1990 onwards, all Malaysian incorporated companies were no longer allowed to be traded on the Singapore Stock Exchange and vice versa.

This split was viewed as an effort for the Malaysian stock exchange to become totally independent of its neighbours (Yong, 1994).

Hence, this event study time frame was initiated on January 1990, to further examine the performance of the Malaysian stock market after it splits from the Stock Exchange of Malaysia and Singapore and became an independent stock exchange.

### **1.3 OBJECTIVE OF STUDY**

The main objective of this event study is to investigate whether the Malaysian stock market shows consistency with the Overreaction Hypothesis.

With the Kuala Lumpur Stock Exchange developing in complexity and sophistication over the years, this event study is also conducted to gain an understanding on the observations of the Malaysian stock market and its' investors' behaviour.

### **1.4 SCOPE OF STUDY**

The Overreaction Hypothesis analysis is performed on hundred randomly selected firms (refer to Appendix A) listed in the Kuala Lumpur Stock Exchange (KLSE) Main



Board prior to the year 1990. The data comprises monthly returns covering periods from January 1990 through December 2001 (refer to Appendix B).

## 1.5 CONCLUDING REMARKS

The Overreaction Hypothesis event study is of particular importance because security markets are viewed by most economists as the paragons of market efficiency.

The Overreaction Hypothesis of De Bondt and Thaler (1985, 1987) was also one of the ground-breaking applications of behavioural finance to the solution of the efficient market hypothesis and the capital asset pricing model crisis.

Reasons to conduct the Overreaction Hypothesis event study in Malaysia are twofold. From a theoretical point of view, price reversals resulting from overreaction may challenge the assumption of investors' rationality which is fundamental to almost all financial theories.

On the practical side, trading strategy can be devised to profit from market overreaction assuming that the overreaction is of a magnitude that is economically significant.

Furthermore, the stock market performances in the region are always assumed to be the result of 'investors' sentiment'. If such claims were true, a swing in investors' attitudes could thus lead to significant reinforcement of market dynamics.



Therefore a study on overreaction in the Malaysian stock market should give additional insights on either the myth or truth of 'investors' sentiment'.





## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 OVERVIEW

The hitherto dominant paradigm in financial market research, the Efficient Market Hypothesis (EMH), has been subjected to critical re-examination. In the EMH, past and future price movements are random and unrelated to each other.

Dimson and Mussavian (1998), in reviewing the contributions of market efficiency to the history of finance, noted that the EMH is simple in principle but elusive. If capital markets are sufficiently competitive, then simple microeconomics indicates that investors cannot expect to achieve superior profits from their investment strategies.

The Overreaction Hypothesis is one of the most controversial issues in recent financial research. Challenging the tenets of the EMH, De Bondt and Thaler (1985, 1987) presented anomalous empirical evidence that is consistent with stock prices overreacting to current changes in earnings. They reported positive (negative) estimated abnormal stock returns for portfolios which previously generated inferior (superior) stock price and earning performance.



Although anthology of researches favours the Overreaction Hypothesis, both short term and long term, there are also empirical studies suggesting different explanations for this financial anomaly.

The psychology underlying the hypothesis is that people tend to become overconfident and eventually makes predictions using similarity rather than the Bayes' rule. Hence, the Overreaction Hypothesis applies behavioural finance to the solution of the EMH (Frankfurter and McGoun, 2002).

Behavioural finance provides a framework in analyzing investors' behaviour. If the EMH is correct, it is a fundamental error to ascribe known irrationalities of human behaviour to the share market behaviour (Bowman and Buchanan, 1995).

## 2.2 OVERREACTION HYPOTHESIS

### 2.2.1 Hypothesis Development

De Bondt and Thaler (1985, 1987) argued that investors and analysts rely heavily on representative heuristics. Overreaction occurs when individuals, in revising their beliefs, tend to overweight recent information and underweight prior data, hence violating the Bayes' rule.

Bayes' rule or Bayesian decision function is a rule of which it is possible to compute a posteriori probabilities of events or hypotheses from a priori probabilities (Shiryayev, 1988).



The tendency for investors to overreact to new information results in exaggerated shift in stock prices and this is subsequently followed by price movements in reverse direction.

Extreme movements in stock prices cause biases. Eventually the price deviates from their fundamental values. Prior losers eventually outperform prior winners. The more extreme the initial price movement, the subsequent adjustment will be greater.

In their study they reported that stocks of the New York Stock Exchange (NYSE) that did badly (losers) for the past three years are undervalued and stocks that had been doing well (winners) for the past three years are overvalued. In the following years, subsequent price reversals occur and prior losers showed higher returns than prior winners thus contradicting the random walk hypothesis.

De Bondt and Thaler (1985, 1987) findings have other notable aspects. First, the overreaction effect was asymmetric. It is much larger for losers than for winners. Secondly, most of the excess returns were realized in January. This is consistent with previous studies on the turn-of-the-year effect and seasonality. The overreaction phenomenon was evident during the second and third years of the test period.

Overreaction tests conducted either parametrically (De Bondt and Thaler, 1987, Alonso and Rubio, 1990, Zhong *et al.*, 1991, Da Costa, 1994, Gunaratne and Yonesawa, 1997, Domian *et al.*, 1998, Fung, 1999, Fung *et al.*, 2000, Huang *et al.*, 2001) or non-parametrically (Mun *et al.*, 2000) found no significant evidence on seasonality, bid-ask spreads, risks aversion and the size effect. Atkins and Dyl (1990)





found that the stock market overreacted but the magnitude of overreaction was small compared to the bid-ask spreads observed for the individual stocks in the sample. However, price reversals are not caused by a shift from the bid to ask prices *per se*.

### 2.2.2 Overreaction and International Markets

Overreaction is not only evident in the United States (US) stock market, but is also pronounced in international markets as well. Tests on overreaction have been carried out in the US, European and Asian markets. While some empirical studies are favourable to the overreaction hypothesis, others reported inconsistency to the hypothesis.

Empirical studies of the US stock market by De Bondt and Thaler (1985, 1987), Atkins and Dyl (1990), Zhong *et al.* (1991), Domian *et al.* (1998) found empirical evidences of stock prices' deviation from their fundamental value in the short term and subsequent reversion in the long term. Overreaction can also be found in the Spanish equity market (Alonso and Rubio, 1990) and also the Brazilian stock exchange (Da Costa, 1994).

In the Asian stock markets, price reversals are also evident in Japan (Gunaratne and Yonesawa, 1997), Hong Kong (Fung, 1999, Fung *et al.*, 2000) and Taiwan (Huang *et al.*, 2001). Girard *et al.* (2001) observed a period of excessive optimism (pessimism) followed by a period of excessive pessimism (optimism) within the Asian markets (Japan, Korea, Malaysia, Philippines and Singapore) during the Asian crisis, which is consistent with the overreaction hypothesis.





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