EMPIRICAL INVESTIGATION OF GENERAL ELECTION ON STOCK MARKET: A MALAYSIAN CASE

BY

ALVIN TAN MENG KAI
EVELYN CHONG TSE YEEN
LEE PEI TZIN
LEE WEI YIN
YEOH WEI MIN

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DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

(4) The word count for this research project is 28028 words.

Name of Student:	Student ID:	Signature:
1. ALVIN TAN MENG KAI	10ABB06495	_____
2. EVELYN CHONG TSE YEEN	11ABB04055	_____
3. LEE PEI TZIN	10ABB02274	_____
4. LEE WEI YIN	10ABB04167	_____
5. YEOH WEI MIN	10ABB05738	_____

Date: _____

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DEDICATION

Dedicated to

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9MP	Ninth Malaysia Plan
BN	Barisan National
CARs	Cumulative Abnormal Returns
DJIA	Dow Jones Industrial Average
EMH	Efficient Market Hypothesis
ETP	Economic Transformation Programme
FTSE	Financial Times Stock Exchange
GDP	Gross Domestic Product
GE	General Election
HDBSVR	Hwang DBS Vickers Research
KLCI	Kuala Lumpur Composite Index
MCA	Malayan Chinese Association
MIC	Malaysian Indian Congress
MPI	Malaysian Pacific Industries
NASDAQ	National Association of Securities Dealers Automated Quotations
OLS	Ordinary Least Square
OH	Overreaction Hypothesis
PAS	Parti Islam SeMalaysia
PKR	Parti Keadilan Rakyat
S&P500	Standard & Poor 500
UIH	Uncertain Information Hypothesis
UMNO	United Malays National Organization

Abstract

The 2008 and 2013 general election in Malaysia has caused changes in the political structure of Malaysia. The incumbent government, Barisan National, failed to acquire two-thirds majority in the parliament, thus losing their once-absolute control over legislative power. Amidst the political uncertainty, it is the aim of this research paper to investigate if there is an impact of 12th and 13th Malaysian General Election on the stock market of Malaysia as well as the reaction of investors upon the arrival of 12th and 13th Malaysian General Election.

Event study methodology, along with an ordinary least square regression (OLS) is used to capture the impact of 12th and 13th Malaysian General Election on its stock market. On top of that, in order to determine if the reaction of investors in Malaysia is consistent with the theory of Uncertain Information Hypothesis (UIH), Cumulative Abnormal Return (CAR) is employed.

This research paper concludes that there is an impact of 12th and 13th Malaysian General Election on its stock market. Besides, reactions of investors in the election of year 2008 are generally consistent with the theory of Uncertain Information Hypothesis (UIH) but generally inconsistent with the theory during the general election in 2013.

CHAPTER 1: INTRODUCTION

1.0 Introduction

This chapter provides a quick glance on the historical preview of both the political climate of Malaysia and its stock market. It is constructed to explain the relationship between the political climates of Malaysia and the Malaysian stock market which then, serves as the fundamental issues as well as motivation for this research paper. The problem statements are made consistent with the scarcity issues of past research and other factors contributing to the problem statements. Next section will provide the insights on the importance of this research including research questions and objectives, significance of studies and the hypotheses of studies. Chapter layout serves as a summarization of the remaining chapters of the report. Last but not least, this chapter is will be ended with a conclusion providing the summary of chapter 1.

1.1 Research Background

Every 5 years, Malaysia elects its government, and because the elected government will influence numerous aspects of a country, the effect of these elections events becomes staggering which includes affecting Malaysia Stock Market (KLCI). For the past decades, peoples from all walks of life had never silent themselves from observing the cyclical nature of stock market and had attempted to correlate these cycles with everything by referring to simple econometric models to highly complicated econometric models. Stock market has been one of the most influential variables in the government's index of leading economic indicators (Wong & McAleer, 2007).

In present days, there has always been extensive empirical literature focusing on political events and financial markets. Researchers who investigating financial markets have examined the role of electoral systems, partisanship, political uncertainty, democracy elections as well as presidential elections in constructing both the value and volatility of financial assets (Freeman, Hays, & Stix, 1999).

Fama (1965) stated that stock prices are often associated with future economic activities. The confidence in a president can clearly reflect the underlying economic conditions that are important in establishing stock prices (Schwerts, 1990). Most studies have discovered how political news and policies affect macroeconomic outcomes such as growth rates (Aisen & Veiga, 2010), inflation rates (Aisen & Veiga, 2005), interest rates (Contractor, 2014) and exchange rates (Lesson 6 - Key Factors Affecting Exchange Rate, n.d.) in which impacts financial markets. Jensen and Schmith (2005) found that stock market response is based on how politics affect the stock markets. Different policies will bring different responses from the stock markets. For example, if the elected president offers market-unfriendly policies, it will cause the stock market to underperform.

General election is often the variable that researchers had been trying their best to figure out its correlation with the financial markets. It is a notion that this kind of country-related affair should be clean and transparent, yet the Malaysian general election seems to be otherwise. Cloaked in mystery, it is even more surprising when there are only a few researchers who have researched on the subject matter before (Ali, Nassir, Hassan & Abidin, 2010). Therefore, it is the main motivation of this research project to shed some light on the impact of Malaysian General Election on stock market and the reaction of stock market upon the arrival of Malaysian General Election.

1.1.1 Election and Stock Market

Wang and Lin (2007) stated that politics significantly influence financial market. This is because new information regarding the political decision that affects the government's economic policy requires the stock market to absorb them into their stock price. Therefore, as political uncertainty resides, positive stock returns are expected to tag along. While political uncertainty takes different shapes, this research paper focuses only on the political uncertainty associated with elections. The relationship between political elections and stock market performance can be dated back as far as 1970 by Niederohofer, Gibbs and Bullock (1970) who studied market behaviours at the time of US elections.

In the United States, after the presidential election in 2012, DJIA and S&P 500 had dropped by 2.36% and 2.37% respectively (Young, 2012). Some pointed their fingers at the fact that Obama got re-elected, while others stated that it is because of Wall Street that started to react towards the future which they presume to be bad. But the real reason is hard to find out because the market moves and then re-adjusts itself all the time (Matthews, 2012). There are authors agreed that the election will lead to uncertainty and uncertainty will most certainly affect the stock market. Newman (2012) claimed that the effect will not be long term but election itself will cause some turbulence in the stock market in the short term, especially abrupt changes in policy by the government. Next, Catania (2010) agreed with Newman in the sense that the incumbent government will alter the economic factors in order to win the next election and then put less attention to it after winning the election, but also added that there are also elements of behavioural science in investing where the concept of herd mentality or in easier terms, 'the blind leading the blind' can be used to describe the market situation during the election. Ro (2012) stated that the election will cause three events: firstly, the stake of changing the government that may result in changes in policies that will affect the

economic environment; second, the time pattern which elections take place gives impact to the government spending and investing behavior; and lastly, the increase of political and social uncertainties. These three events will certainly affect all classes of assets, in particular the equities as they are very sensitive towards the changes in the country's future economic outlook, which is what the election has shaken.

Besides, there are studies made in the past that had confirmed the existence of the Third Year Effect, where on average, the stock return in the third year of the presidential term was the highest (Wong & McAleer, 2009). However, there are some who think otherwise. Goldberg (2010) and Curry (2012) had given solid evidence on the fact that the Third Year Effect does not hold by giving examples of the presidential cycles of Roosevelt, Hoover, Bush and Obama. They concluded that it is the macroeconomic factors that cause the stock market to rise or fall and not the presidential cycle. Davidson (2012) suggested to individual investors to play safe during presidential election periods by ensuring their investment portfolios are consistent with their financial objectives, not on the other hand an abrupt decision to speculate the outcome of the election to earn from it as it is like putting our financial futures in the politician's hands.

There are also studies on the impact of election towards the stock market done in countries other than the United States. Hyam (2013) stated that gains in the stock market can be witnessed after the Australian election result was released. Furthermore, Opare (2012) conducted a study to investigate the effect of election in the European countries. The study concluded that in Belgium, Italy, Netherlands, Norway and Sweden, negative market return had been observed around elections and the returns after the elections dropped even further compared to before election. As for Denmark and Spain, the case were different as market returns were negative around elections but it became slightly positive after elections; while countries like Greece and Portugal were

found to experience higher returns before elections than after elections. Lastly, Finland, France and United Kingdom were found that their returns were higher and more positive after the election than before. Considering the European market as a whole, before the elections there were positive market returns, while after the elections the market will plunge to negative returns.

Besides, in Taiwan, when election was announced to be held, the stock market faced a slowdown and even a drop as uncertainty arises on whether there will be a change in the ruling party (Poon, 2012; Landler, 2000). After the election result was out, Taiwan stock market tends to increase as uncertainty ends (Poon, Mozur Hsu & Liu, 2012; Culpan, Sung & Forsythe, 2012; Bradsher, 2008). However, certain studies showed that there is no significant impact towards the local stock market caused by elections in countries like Australia (Sayce, 2013) and New Zealand (Abidin, Old & Martin, 2010).

While in Malaysia context, when Malaysia's GE-11 took place, the market suffer a plunge as of the announcement of dissolution of the parliament, however, it managed to pick up its pace at the time when BN remains the winning party and continued to rise gradually (Lee, 2004; Ngu, 2004; Yusof, 2004). After GE-12's results were released in 2008, the stock market faced a huge slump mainly due to the shocking performance from the opposition parties (Moten, 2009). After the announcement of the GE-13 results, Malaysia's financial market experienced a tremendous hike rather than an expected dive (Ng & Gangopadhyay, 2013; Chandran, 2013).

In Malaysia, experts foreseen in GE-13 that there will be a significant impact of it towards the stock market as stated in Ng (2013) and Tee (2013). Some stated that the general election is a key market risk for Malaysians (Singh, 2012). Choong (2013) indicated that the prolonged delay of election and thoughts on the instable political environment have resulted in a major overhang in Malaysia's stock market. Thus, investors shall be in defense

mode by playing it slow and steady till the end of GE in which their uncertainties will end while some researchers predicted that the GE-13 may boost Malaysia's turtle pace stock market in the beginning of 2013 (Ismail, 2012). However, some researches had concluded that there is lack of evidence that the stock market have any overreaction behaviour towards the general elections up to the 11th (Ali, Nassir, Hassan & Abidin, 2010).

There are a few reasons to why this research paper investigates only the latest 2 Malaysian General Election. First and foremost, according to Li and Born (2006), sensitivity of the stock market to election uncertainty may be related to the political structure of the country. As observed by this research paper, there are changes in the political structure in Malaysia for both the general election. The incumbent party, Barisan Nasional (BN) is unable to win by two-third majority; instead, there is a trend of increasing in the winning of parliamentary seats by the opposition party for the latest two elections. According to Malaysia Factbook (n.d.), the opposition party stepped up since the 12th general election in 2008 by winning 36.9% of parliamentary seats and further improved its position by gaining 40.1% of seats in the parliament in 13th general election comparing with only winning 9.6% of seats in the 11th election in 2004. More details of the general election results are further explained in Table 2.2.1 of Chapter 2 of this research paper.

On top of that, Akkoc and Ozkan (2013) argued that daily rates of return that were greater (lesser) than or equal to 5% (-5%) are caused by unexpected information related to the securities such as unanticipated government decisions. Therefore, by referring to Table 3.1.1 in Chapter 3, it clearly depicts 12th Malaysian General Malaysian is the only general election that fulfills the argument by having a -9.50% actual return according to figures from www.klse.info. However, by looking at the daily high of each election, 12th and 13th General Election is the most appropriate elections amongst the

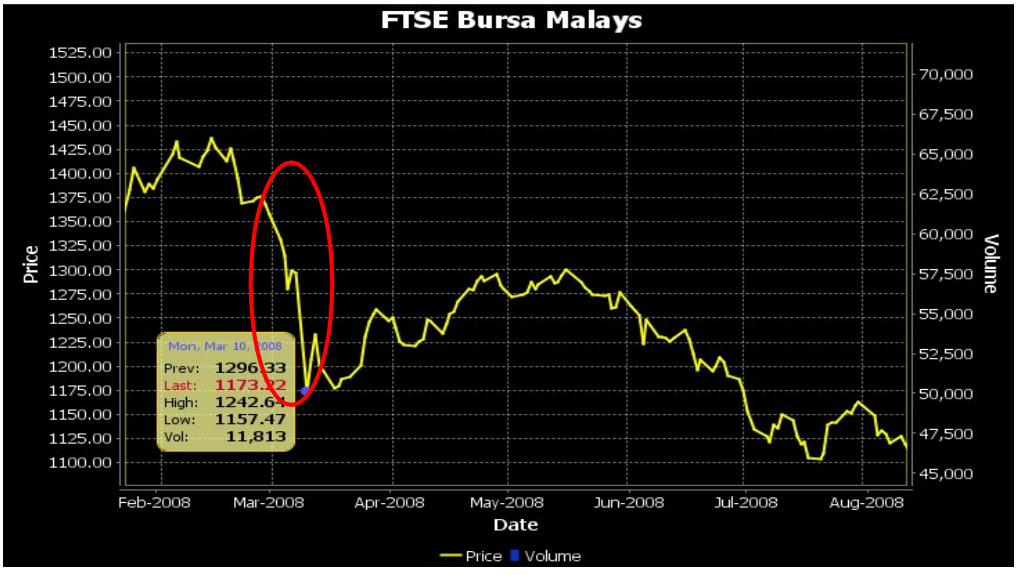
others with -10.712% and 7.756% respectively according to the data from www.klse.com. Therefore, concluding the targeted general election.

The main objective of this research paper is to investigate the impact of general election and the response of stock market towards it. By observing the line graph in Figure 1.2.1 and 1.2.2, it clearly portrays that there are significant differences among the 2 General Elections.

1.2 Problem Statement

This section contains the motivation behind this research paper. There are a few issues that drive the enthusiasm towards this research topic. All of them are thoroughly explained in the following sub-section.

Figure 1.2.1 Bursa Malaysia FBM KLCI during the period of the 12th Malaysian General Election



Source: Developed for Research

Figure 1.2.1 depicts that KLCI experienced a fall of 123.11 points to 1173.22 points after the announcement of result on the 12th General Election before gradually riding back to the initial points at about two months afterwards. It would be interesting to provide more evidences on the impact of general election on stock markets and its responses particularly in the case of Malaysia.

Figure 1.2.2 Bursa Malaysia FBM KLCI during the period of the 13th Malaysian General Election

Source: Developed for Research

Figure 1.2.2 depicts that KLCI skyrocketed by 57.25 points to 1752.02 points after the announcement of result for the 13th General Election before moving sideways and lastly back to its initial points in about two months afterwards. The trend of stock market performance is completely different for Figure 1.2.1 and Figure 1.2.2. It would be interesting to find out if the positive stock market performance is a direct impact of the general election in year 2013. So far, less study were conducted on the effect of the 13th Malaysian general elections on the Malaysian stock market.

1.2.1 Scarcity of Past Research

According to Kithinji and Ngugi (2009), there are numerous studies that have been undertaken to determine the relationship between the performance of stock market and political events in specific countries, but most of them were carried out in developed stock exchange. This paper further convince the above statement when most of the research journals referred are based on developed countries such as United States, Germany and Australia (Matozzi, 2004; Abidin, Old & Martin, 2010) while only a few on developing countries such as Taiwan and India (Hung, 2011; Liu, 2007).

On top of that, previous researchers (Matozzi, 2004; Abidin, Old & Martin, 2010; Liu, 2007) are focusing the relationship between election and stock market in a presidential-system country. However, less of them are putting their attention in a parliamentary-system country such as Malaysia. This is further supported by Pantzalis, Stangeland and Turtle (2000) whereby the authors stated in their research that sensitiveness of stock market to election uncertainty may vary in different countries of different political climate, economic and press freedom.

The finding for the research on Malaysian case relatively to stock markets will be even fewer. This is further supported by Ali, Nassir, Hassan and Abidin (2010) whereby they admitted that only few studies had been done on the Malaysian stock market in relation to issues such as General Election. In addition, at the time of the beginning of this research, the numbers of research done on the impact of 13th Malaysian General Election on the stock market as well as stock market reaction towards it were very limited, not to mention a comparison on the impact of the latest two Malaysian General Election on the stock market.

1.2.2 The Needs to Further into Sectoral Industry Analysis

Previous researchers often indulge themselves in the research of stock market in relation to political events as a whole (Matozzi, 2004; Hung, 2011; Liu, 2007; Ayuk, 2010). Ali, Nassir, Hassan and Abidin (2010) tested whether there is an overreaction from investors during the 8th, 9th, 10th and 11th Malaysian General Election and found that there is none. The way the researchers conducted the test was by observing the stock market aggregately. Different industry has different ration of contribution to the economy of a country and thus, there is possibilities that the impact of general election on the industry index may vary among each other.

Therefore, this research paper would like to bring in a new perspective by investigating it through the 10 sectors of Malaysia stock market. This means that the impact of Malaysian General Election on the 10 sectors and the reaction of the 10 sectors upon the arrival of Malaysian General Election will be determined.

1.3 Research Objectives

1.3.1 General objective

The main objective of this research paper is to investigate the impact of Malaysian General Election on stock market and the reaction of stock market upon the arrival of Malaysian General Election via observing the trend of stock index Kuala Lumpur Composite Index (KLCI) and all the industries indices in Malaysia and critically review on the differences. These industries indices include property, plantation, technology, construction, mining,

industrial, consumer goods, industrial products, finance as well as trading and service.

1.3.2 Specific objectives

I. To investigate the impact of 12th and 13th Malaysian General Elections on the KLCI average daily stock returns during the 5 trading days immediately before and after the voting day.

II. To investigate the impact of 12th and 13th Malaysian General Elections on the sectoral indices' average daily stock returns during the 5 trading days immediately before and after the voting day.

III. To determine the pattern of stock return for both KLCI and sectoral indices following the arrival of 12th and 13th Malaysian General Election whether it is consistent with the theory of Uncertain Information Hypothesis (UIH).

1.4 Research Questions

I. Do the 12th and 13th Malaysian General Elections affect the KLCI average daily stock returns during the 5 trading days immediately before and after the voting day?

II. Do the 12th and 13th Malaysian General Elections affect the sectoral indices' average daily stock returns during the 5 trading days immediately before and after the voting day?

III. Does the pattern of stock return for both KLCI and sectoral indices following 12th and 13th Malaysian General Election consistent with the theory of Uncertain Information Hypothesis (UIH)?

1.5 Research Hypothesis

1.5.1 Impact of Malaysian General Election on KLCI and Sectoral Indices

H_0 = 12th and 13th Malaysian General Election do not affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election's results.

H_1 = 12th and 13th Malaysian General Election do affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election' results.

1.5.2 Consistency of Uncertain Information Hypothesis (UIH) on the reaction of stock market following unexpected information.

H_0 = The reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 12th and 13th Malaysian General Election are consistent with the theory of Uncertain Information Hypothesis (UIH)

H_1 = The reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 12th and 13th Malaysian General Election are not consistent with the theory of Uncertain Information Hypothesis (UIH)

1.6 Significance of the Study

Many past researchers have conducted investigations on establishing the relationship between general election and stock market performance in developed countries like United States of America, United Kingdom and Japan. However, there are a few who have investigated the impact of general election on stock market performance in developing Asia countries like Malaysia.

Allvine and O'Neil (1980) and Huang (1985) have reported that the stock market returns are higher on average during Democratic presidencies compared to Republican presidencies in United States of America. Unlike other countries, Malaysia has thus far yet to change its government and it will be marked as the longest ruling government until next general election in 2018. Besides, Malaysia ruled under parliamentary system, not presidential system. Therefore, this research paper will be able to provide more evidences for future researchers that keen in

investigating relationship between general election and stock market in a parliamentary-system country.

General election is one of the most prominent political risks in a business. Most of the researches done so far are done to establish the relationship between general election and volatility of stock or return of stock as a whole in the composite index in respective countries. However, less or fewer has taken a step further to shed light on the impact of general election on each specific industry in the economy of the country. Generally, different industry has different ration of contribution to the economy of a country and therefore, the impact of general election on the industry index may vary among each other. The knowledge gap in this area can be bridged with a thorough investigation.

By allowing the knowledge gap to be filled, this paper is able to provide an insight for local and foreign investor on how general election affects the Malaysia stock market performance as a whole and in specific industries. This will then help to enhance the portfolio management especially for local retail investors so that they can consider reallocating their fund across other unaffected industries. This can also aid in providing better decision-making to achieve optimal risk reduction at the time around the event takes place.

1.7 Chapter Layout

The remaining chapter of this research paper is organized into four sections: Chapter 2 presents the literature review including relevant theoretical model, proposed theoretical framework, hypothesis development and conclusion at the end of the chapter. Chapter 3 explains on the data and methodology. This chapter comprises introduction, research design, data collection method, data adjustment, research instrument, constructs measurement, data processing, data analysis and conclusion of the chapter. Chapter 4 presents the empirical results. This chapter documents

introduction, descriptive analysis, inferential analyses and conclusion of the chapter. Chapter 5 contains discussion, conclusion and implications. This chapter encompasses of introduction, summary of statistical analyses, discussions of the major findings, implications of the study, limitations of the study, recommendations for future research and conclusion of the chapters.

1.8 Conclusion

In short, chapter 1 introduces the background as well as the objectives of this research paper. The central idea is being divided into 2 parts which the first part is to determine if there is any effect of general election on its stock market while the latter is to determine if the reaction of stock markets following announcement of general election results are consistent with Uncertain Information Hypothesis (UIH).

In fact, this research paper could be the mechanism for investors seeking for new enlightenment regarding political news affecting stock market in Malaysia. Past literatures will be reviewed in the next chapter.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This study examines the impact of Malaysian General Elections on its stock market. This chapter reviews major contribution of existing literature. The literature is reviewed in eight major areas: process of general election, political climate in Malaysia, Malaysian stock market, KLCI and Sectoral Indices Information, relationship between election and stock market, impact of political news on stock price movement, theory and empirical work of Efficient Market Hypothesis (EMH), Overreaction Hypothesis (OH) and Uncertain Information Hypothesis (UIH), event study, proposed theoretical framework and lastly the hypothesis development of this research paper.

2.1 The Process of General Election

According to Clause (2) and Clause (4) of Article 55, Federal Constitution of Malaysia, the parliament is dissolved automatically every fives after its first meeting or upon the advice of Prime Minister, the Yang di-Pertuan Agong may dissolve before the five- year period. The parliament will stand dissolved while the general election will take place and the next Parliament shall be summoned to meet on a date not later than 120 days from the dissolution date. There are six steps in the election process which must be completed in 60 days (13th Malaysia General Election, 2013).

First, the Election Commission will issue a writ to all returning officers of the various constituencies to conduct the elections as written under the Election Act 1958. Also,

an official announcement and notice is made to inform the public that a general election will be taking place. The announcement will include the date of nomination of candidates and the dates for both early voting and regular polling days.

Second, on nomination day, candidates will need to present their nomination papers to the returning officer between 9 a.m. to 10 a.m.. Any Malaysian citizen can be registered as a candidate by submitting appropriate forms and placing a monetary deposit of RM10,000 to contest for a parliamentary seat and RM5,000 to contest for state assembly seat. Also, candidate will lose the monetary deposit if they fail to get at least 1/8 of the total number of votes obtained by all the candidates in the constituency (13th Malaysia General Election, 2013).

Third, permitted by law, election campaign will commence once the eligible candidates are announced after nomination and it will officially ends on the midnight before polling day. Under the Election Offences Act 1954, a parliamentary candidate has a limit spending of RM200, 000 whereas a state constituency candidate can speed up till RM100, 000 for their election campaign. During the election campaigns, a special taskforce is set up by the Election Commission to monitor the candidates to ensure all candidates strictly complying with the campaigning regulations (13th Malaysia General Election, 2013).

Fourth, polling will be executed on the stipulated date as announced earlier. There are two kinds of polling; advance voting and regular voting. Advance polling is normally held three days before regular polling dates for police and armed forces. As for regular voting, any Malaysian citizens who are 21 years old and above and have registered as a voter has the right to cast a vote.

Fifth, it is the counting of votes. The counting of votes commences when the polling centers close at 5pm. The presiding officer will tally all the ballots and segregate acceptable ballots and ballots with unclear markings. Unclear markings ballot will not be counted.

Sixth, the public will be updated on the current votes. The official result will be declared by the returning officer of each constituency. The winner will then be confirmed as the elected representative of that constituency. The taking of vows by this newly elected representative must be done within the next 60 days so that Parliament will once again meet up within the 120 days after dissolution.

2.2 Political climate in Malaysia

According to Oxford Dictionaries (n.d.), general election is defined as the election of representatives to a legislature from constituencies across the country. General election is a democratic system held in a country to determine the leader amongst the party nominees and any candidate that is not associated to any political party to occupy the office.

As recorded in history and stated by (Rudner, 1970), Malaya (now known as Malaysia) had its first pre-independence election on 27 June 1955 in order to select the Colonial Legislative Council. In that election, the Alliance party (now known as Barisan Nasional (BN), National Front), formed by the alliance of three party that represent each majority race in Malaysia (United Malays National Organization (UMNO), Malayan Chinese Association (MCA), and Malaysian Indian Congress (MIC) won by sweeping 51 seats out of 52 seats in the legislative council (Rahman, 1965). Later, Malaya gained its independence from the British colonial and formed its own country in 1957. Malaya was then joined with the neighboring countries, north Borneo (Sabah and Sarawak) and Singapore in 1963 to form Malaysia, regardless the last-minute backed out by Brunei. Later, in 1965, Singapore gained its independence from Malaysia leaving Malaysia with 13 states and 3 federal territories up till today (Adam, Samuri & Fadzil, 2004).

The first General Elections (GE) held in Malaysia after independence was in 1959 and since then, General Elections are held every five years for a fully-elected Federal Dewan Rakyat (House of Representatives) (Rudner, 1970). Up to date, Malaysia had held 13 GEs and BN has consistently win Parliamentary majorities to form the Government. However, in GE-4 in 1969, BN had lost its dominant power by not winning at least two-third of the parliament seats. History repeated again in the most recent GE-12 and GE-13. In GE-12, BN was overconfident about their winning streaks over the years and believed that they will continue to emerge as the dominant party in the General Election. They neglected the influences of opposition party, Pakatan Rakyat, which is formed by Parti Keadilan Rakyat (PKR); Parti Islam SeMalaysia (PAS), and Parti Tindakan Demokratik.

The oppositions shake the incumbent party through cyberspace and using current trends intelligently, like blogs and short messaging system (SMS) to reach out to voters and to spread their manifestos (Wagstaff, 2013; Stodden, 2008). Several mainstream newspapers called this situation as 'Political Tsunami' (Tay, 2008), others refer to it as 'Political Volcano' (Lim, K. H. & Har W. M., 2008). After GE-12, questions arise on the future of BN, whether or not it will become the next long ruling parties to end its streaks, like Indian National Congress of India, 1989, Liberal Democratic Party of Japan, 2009 and Golkar Party of Indonesia, 1999.

In GE-13, BN had already learnt from its mistakes and start fighting back at the oppositions in order to regain its dominant power. However, GE-13 was simply continuing the trend of GE-12. The oppositions had a slightly improvement in the number of seats in the parliament. Table 2.2.1 shows the results of all the general election held in Malaysia.

Table 2.2.1: Figures for 2008 and 2013 elections results

No	Year	Government			Opposition			Total seats
		Seats	% seats	% vote	Seats	% seats	% vote	
1.	1959	74	71.2	51.7	30	28.9	48.3	104
2.	1964	89	85.6	58.5	15	14.4	41.5	104
3.	1969	95	66.0	49.3	49	34.0	50.7	144
4.	1974	135	87.7	60.7	19	12.3	39.3	154
5.	1978	130	84.4	57.2	24	15.6	42.8	154
6.	1982	132	85.7	60.5	22	14.3	39.5	154
7.	1986	148	83.6	55.8	29	16.4	41.5	177
8.	1990	127	70.6	53.4	53	29.5	46.6	180
9.	1995	162	84.4	65.2	30	15.6	34.8	192
10.	1999	148	76.7	56.5	45	23.3	43.5	193
11.	2004	198	90.4	63.9	21	9.6	36.1	219
12.	**2008**	**140**	**63.1**	**50.3**	**82**	**36.9**	**46.8**	**222**
13.	**2013**	**133**	**59.9**	**47.4**	**89**	**40.1**	**50.9**	**222**

Note: Adapted from *Malaysian Factbook, March 2014*, Malaysia

Table above shows the results of all the general election held in Malaysia since the independence of the country. In year 2008 and 2013, it can clearly observe that the incumbent party is losing its supremacy while the opposition party had been gaining seats gradually after the general election in 2004. These are among the reasons of targeting only 12th and 13th Malaysian General Election by this research paper.

2.3 The Malaysian Stock Market

According to (Smith, 2007) in 1930, the days where Malaysia was still a British's colony, the very first formal securities business organization was the Singapore Stockbrokers' Association. Later in 1937, it was re-registered as the Malayan

Stockbrokers' Association. The Malayan Stock Exchange was formed and the public trading of shares were commenced in 1960. The board system connected trading rooms in Singapore and Kuala Lumpur using direct telephone lines.

Stock Exchange of Malaysia was founded in 1964. When Singapore gained its independence from Malaysia in 1965, Stock Exchange of Malaysia became Stock Exchange of Malaysia and Singapore. After the currency interchangeability between Malaysia and Singapore ended in 1973, Stock Exchange of Malaysia and Singapore was separated into Kuala Lumpur Stock Exchange Berhad and the Stock Exchange of Singapore (Yeoh, Arsad & Hooy, 2010). Incorporated in 1976, the Kuala Lumpur Stock Exchange took over the operations of the Kuala Lumpur Stock Exchange Berhad as a company limited by guarantee. In April 2004, Kuala Lumpur Stock Exchange changed its name to Bursa Malaysia Berhad following their demutualization exercise in order to improve their competitiveness and to react to global trends in the exchange sector by becoming more customer-driven and market-oriented (Smith, 2007). Bursa Malaysia is listed on the Main Board of Bursa Malaysia Securities Berhad since March 2005. Therefore, it has changed itself from a not-for-profit motive organization to a profit-motive organization.

Now, Bursa Malaysia is an exchange holding company as approved under Section 15 of the Capital Markets and Services Act 2007 (Alilarocha, 2011). It is a fully-integrated exchange and offers a complete range of exchange-related services, for example, trading, clearing, settlement and depository services. Bursa Malaysia wholly-owned 10 subsidiaries that operates in various businesses that is still exchange-related. The goal for Bursa Malaysia is to help in developing Malaysia's capital market through increasing competitiveness, and to maintain an efficient, secure and active trading market for both, local and global investors (Bursa Malaysia, n.d.).

The main index in Bursa Malaysia is the FBM KLCI. It is often used as an indicator of Malaysian stock market performance. Currently, the index is comprised of 30

companies in Malaysia with the largest market capitalization. Other than that, according to Bursa Malaysia (n.d.), there is also FTSE Bursa Malaysia EMAS Industry that is segmented according to Industry Classification Benchmark (ICB) that includes 10 industry, 19 supersector and 39 sector indices. This has provided opportunity for investor to create sector-specific funds and index-linked products.

2.4 KLCI and Sectoral-Indices Information

Kuala Lumpur Composite Index (KLCI) - KLCI is a free float, capitalization-weighted stock market index (Malaysia Stock Market (FTSE KLCI), n.d.). It is an index that is most widely used by Malaysian investors as a primary benchmark, just like the Dow Jones Industrial Average (DJIA) and S&P 500 does for American investors. KLCI also acts as a basis for a wide range of investment products in Bursa Malaysia. FBM KLCI consists of 30 largest and eligible companies by market capitalization listed in the Main Board of Bursa Malaysia and calculated every 15 seconds (World Federation of Exchanges, n.d.) unlike the former KLCI that included 100 companies in which the market capitalization is calculated every 60 seconds. FBM KLCI is more transparent as it is calculated using internationally accepted methodology in order to increase investors' confidence. The new and improved FBM KLCI is easier to replicate, have lower maintenance cost and it has excluded some smaller stocks that is quite illiquid in the market. As a whole, FBM KLCI comprises of a more manageable basket of stocks which will serves better to the investors (Financial Times Stock Exchange (FTSE), 2009, June).

Construction (CONSTRUCTN) - The construction sector plays an important role in every country's economic development. The index was established in 1992 in Malaysia. Although the sector contributes to only around 3% to the Gross Domestic Product (GDP) in 2010, it still plays an integral part to the Malaysian economy. The reason behind this is because it is highly correlated with other industries such as metals processing industry and the mechanical engineering sector (Samari, Godrati,

Esmaeilifar, Olfat & Shafiei, 2013). As development progresses, the sector needs to satisfy the expansion and changes in the construction demand. The most significant factors that affect all construction's demand are the general economic situation and expectations on how it will change. Over the last two decades of the construction sector in Malaysia, the most profound changes taken place are the emergence of foreign site operatives as an indispensable component of the labour force. As there seems to be no sign of the dependence on foreign workers attenuating, future waves of migrant workers can be expected.

During the first half of 2010, the value-added of the construction sector was strengthened by 6.3% (Kamal, Haron, Ulang & Baharum, 2012). The expansion was resulted from the increased civil engineering and non-residential activities following the speedy implementation of construction projects under the Ninth Malaysia Plan (9MP). As Malaysia moves towards becoming a developed and industrialized nation as envisaged in Vision 2020, the construction industry will need to respond to the changes in construction demand. Hence, the future of this industry is foreseen to be robust given many construction projects in the pipeline.

Consumer Products (CONSUMER) - Consumer sector index first faced the market in Bursa Malaysia in year 1992. Some of the biggest companies that are included in the index are British-American Tobacco (Malaysia) Berhad, Nestle (Malaysia) Berhad and Carlsberg Brewery Malaysia Berhad. The consumer sector index is one of the most active indices in Bursa Malaysia.

Finance (FINANCE) - Thanks to many liberal financial policies which aimed to attract foreign capital in 1990s in an effort to promote further growth, the financial sector in Malaysia has grown tremendously. Malaysia's financial index was first established in 1970. Since then, the financial sector is becoming more diversified and the banking sector continues to be an important source of financing to the domestic economy for the future (Malaysian Investment Development Authority, n.d.). The development of the banking system, particularly the domestic banking institutions is

therefore viral to facilitate and support the economic growth and transformation process.

In short, the resilience of the Malaysian economy depends on the strength of the domestic banking institutions. Today, Malaysia has a thriving finance industry, particularly in Islamic banking. To date, Malaysia is among the largest Islamic banking service provider in Asia Pacific and is still competing with Bahrain to be the world leader in Islamic banking. In April 2009, the Malaysia government introduces new licenses for investment banking, Islamic banking, *takaful* and insurance business and at the same time, raising the foreign equity ownership from 49% to 70%, thus allowing foreign banks to open new branches and micro-credit facilities in the country (Anis & Teh, 2009). As Maybank is ranked 13 on the list of the strongest bank in the world based on financial evaluation in 2013, in the future, the Malaysian financial sector are expected to be prosperous (Van Trostsenburg, 2013).

Industrial Product (IND-PROD) - The industrial product index in Malaysia started in 1992. When the tin market collapsed during the early 1980s, the Malaysian government was forced to diversify and modernized the economy. Since then, the government has played an active role in industrialization and economic development (Gilbert, 1996). Besides that, the government was also responsible for encouraging the relocation of labor intensive industries to neighboring countries such as Thailand and Indonesia. In the meantime, Malaysia has promoted higher value in industries such as electronics, information technology and multimedia (Lall, 2006). In 2010, this industry was responsible for 41.6% of Malaysia's GDP. Not only that, Malaysia is ranked 37th in industrial production growth rate in the world at 7.5% (Yudken, 2011). The newly industrialized country has experienced an economic boom and underwent rapid development during the late 20th century. Prior to this rapid industrialization, Malaysia has been the world's largest producer of tin, rubber and palm oil (International Immigration Asia Malaysia, 2007).

Mining (MINING) - The mining sector index started off in 1970. However, up to date, the mining index is only made up of one company in Malaysia, Kuchai Development Berhad. Thus, any changes in the price of the company's stock will completely be taken into account in the index since there is no other company to give impact to the index.

Plantation (PLANTATION) - The plantation sector was listed in Malaysia Main Board in 1970. In 2011, the amount of investment of Malaysia in plantation and commodities sub- sector was valued at RM 989.5 millions. RM633.5 million was allocated for the production of palm oil (MIDA, 2011). This indicates that Malaysia is the largest producer and exporter of palm oil. It is undeniable that the palm oil exportation has become the prime economic component in Malaysia. Therefore, the plantation industry is dominated by palm oil industry (Ramasamy, Ong & Yeung, 2005). Some of the successful companies in plantation industry are Sime Darby, United Plantation Berhad and also Kuala Lumpur Kepong Berhad (Ramasamy, Ong & Yeung, 2005).

Property (PROPERTIES) - Property sector was listed in Malaysia Main Board since 1970. The real estate property is the land that is used for specific purposes which can be categorized into three types: residential (used for daily living), commercial (used for business- related purposes) and industrial (used for manufacturing, construction or goods distribution) (Huntington, n.d.). Rehda, YTL Land, SP Setia and also KLCC Property are the few companies that left remarkable achievement in this sector. The Malaysia's property sector was highly influenced by the 13th General Election in terms of risk-and-reward ratios and level of risk tolerance. Therefore, during the second quarters of 2013, Hwang DBS Vickers Research (HDBSVR) upgraded Malaysia's property sector from neutral to positive. However, the upgrade may not bring any major changes in the key companies of property sector even though GE-13 has changed the investor's mindset towards property industries (The Star, 2013).

Technology (TECHNOLOGY) - In 1999, the technology sector index was formed in Bursa Malaysia. The technology sector is not one of Malaysia's strongest players in the market as compared to plantations and finance. Some of the top technology companies in Malaysia are JCY International Berhad, UNISEM (Malaysia) Berhad, Globetronics Technology Berhad and Malaysian Pacific Industries (MPI) Berhad. In fact, there are fewer eyes on Malaysian's technology sector.

Trading and Services (TRAD/SERV) - Trading and services sector was listed in Malaysia Main Board in 1992. The sector encompasses companies that provide trading or services to consumer. It can be in terms of airline services, mass media, travelling as well as telecommunications. Trading and services sector is highly in demand and price driven in the nature of intense competitiveness (Bursa Malaysia, 2010). In order to survive among competitors in the sector, trading and services related companies have to pay attention in several aspects that take into consideration of the stakeholders. For instance, environmental friendly issues, level of transparency of company and also employment opportunity distributed (Bursa Malaysia, 2010). Examples of some companies under trading and services are Air Asia, Media Prima Berhad and Digi.

2.5 Reviews on the Relationships between Elections and Stock Market

According to Chuang and Huang (2009), stock markets are often the benchmarks to measure the economic performance of a country. Therefore, researchers may often linked elections and stock markets together as they are keen to find out whether the incumbent party has played their role in steering the nation's economy. This is stated by a few researchers, Kim and Mei (2001) and Ferri (2008) where unexpected election results or changes in government structures are often negatively linked to the market performance of the nation. The relationship between financial markets and

elections has been well documented in several past studies such as Hibbs (1977), Alesina, Roubin and Cohen (1997) and Ferri (2008). According to Pantzalis, Stangeland and Turtle (2000) the authors had examined the behaviour of market indices around the election period and found abnormal returns during the period. They concluded that the positive abnormal returns reflects a country's degree of political freedom, economic freedom, press freedom, function of election timing as well as the success of incumbent party to reelected.

Li and Born (2006) examine the presidential election uncertainty and stock returns in the United States and has found that there is a substantial evidence of the impact of political outcomes on business cycle and stock markets. Herbst and Slinkman (1984), Allvine and O'Niell (1980), Wong and McAleer (2007) and, Santa-Clara and Valkanov (2008) investigates whether Republicans or Democrats are better for stock market by looking at presidential election cycles and the stock market. Their results are in line with the study of Huang (1985) had also observe the stock returns related to the 4-year U.S Presidential Cycle and found evidence to support presidential election cycle theory. Their results shows that stock returns are significantly higher in year 3 and 4 of the cycles compares to year 1 and 2 which is consistent with the theory of presidential election cycle. On top of that, studies by Forester and Schmitz (1997) and Nordhaus (1975) have shown that stock returns exhibit a presidential cycle during the four years of a president's term regardless of whether they are a Democratic or Republican.

Nippani and Medlin (2002) examines the effect of the delay in the announcement of election results during the U.S presidential election in year 2000 and found significant evidence showing the presence of initial negative reaction towards stock markets at the delay of the election results. Nippani and Arize (2005) also conducted the same research to examine the effect of the delay in the announcement of election results during the U.S presidential election in year 2000 but is targeting at Canadian and Mexican stock markets instead of U.S stock market. They found support indicating

that both Canadian and Mexican stock markets were negatively affected during the presidential elections period.

Beyer, Jensen and Johnson (2004) examines the impact of political landscape and monetary conditions on the performance of security markets and found that Federal Reserve System policy had dominated political decisions that determine the return of the security while political gridlock had no advantages for security market performance. Dobson and Dufrene (1993) extend the relationship internationally by examining the co-movement of equity markets in New York, London, Toronto and Tokyo around U.S presidential elections and found no significant evidence in the relationship between S&P500 and foreign equity market index. The authors stated that the reason for this result was that the election period provided no new information. They further argued that the results may not be the same if the elections were hotly contested with no clear winner as U.S presidential elections is a global phenomenon given its enormous economic influential.

Gemmill (1992) and Gwilym and Buckle (1994) concluded that there is a close relationship between opinion polls and FTSE-100 Index for 1987 and 1992 elections respectively. Their results show consistency with Manning (1989). The author examines the impact of political uncertainty in U.K stock market by observing the share price of British Telecom over a period of 3 years and found significant evidence that the share price react strongly towards voters' opinion polls. Steeley (2003) investigated market reactions towards election news events and found evidence that U.K stock markets did respond to the evolving pattern of results.

Chuang and Wang (2009) found evidence in United States, Japan, Britain and France that political changes are negatively related to their stock returns. They further reasoned that different political parties will have different economic agendas, leading to the frequent changes in the economic policies where investors view it as significant uncertainties. Therefore, the investors taking up conservative stock position to protect their market portfolio. Kim and Mei (2001) examine the impact of political events on

market volatility and return by using a component-jump filter and found out that changes in the government administration will affect stock markets. The authors further explained that changes in government will lead to new economic policies implemented, which encourage the rouse of uncertainties. The rising uncertainties caused the investors to become more conservative and discourage investors from taking risks, which leads to negative stock return.

Vuchelen (2003) examines the impact of Belgian elections and government policies on the performance of Brussels Stock Market and found statistical evidence in the relationship between elections and government policies. The author explained that effect of political events and stock markets showed the importance of expected changes in economic policy because stock prices anticipate and capitalize on policy changes. Keef and Roush (2004) examine the influence of political party on DJIA from 1896 to 2001 and found that political party with the majority in congress was significantly related to the return of the index. Huang, Chan, Huang and Chang (2011) examine the political crisis in Taiwan and found that the crisis has a significant negative relationship with the stock market performance. However, they concluded that elections in Taiwan does not exhibits a long term influence on the stock market as Taiwan stock market manage to recover back after the crisis end.

Until now, most researchers have proven the significant effect of elections and political-linked events on the performance of stock market. However, there are researchers that yield different results. Dopke and Pierdzioch (2004) examine the interaction between stock market movement and politics in Germany and could not find any evidence that the market returns are higher during liberal than conservative governments. On the other hand, the authors could not find any evidence for an election cycle for German stock market returns. Jones and Bonning (2009), in their study to determine the relationship of U.S presidential elections and the monthly stock market return, the authors found no evidence to support the interaction between the elections and monthly stock market return. Their results showed that there are no

significant differences in the monthly stock market return regardless of the outcomes of the presidential election in United States.

Jensen and Schmith (2005) examined market response towards politics in Brazilian stock market by observing on the rise of Lula (former President of Brazil, from 2003-2011) and the decline of Brazilian stock market. The authors used a number of time-series regression to measure the effect of four main presidential elections on the mean and variance of Brazilian stock market. Though the authors are able to derive important insights of the expected impact of the election of Brazilian economy, they found no evidence that rise of Lula had any statistical impact on the mean return of Brazilian stock market.

Floros (2008) examined the relationship between Greek political elections and the Athens Stock Exchange between year 1996 and 2002. Using daily data, he discovered that on average, two months before an election in Greece, stock index performances would increase and the mean daily fluctuation would decrease. However, one month before the elections, stock index performances decreased and the daily fluctuations increased on average. The author only managed to find considerable increase in the index after a 3-month post election period. Therefore, concluding the studied research that elections in Greece significantly affect the market volatility but do not significantly affect Athens Stock Exchange.

2.6 Review on the Impact of Political News on Stock Price Movement

Factors affecting the price movement of financial securities has never silent itself from the concern of researchers for decades. These factors range from macroeconomic jargons to the intrinsic financial behaviour of investors. The spread of news is among the factors that catch the attention of financial researchers for

decades. Today, the revolution of information technology combined with easy access to the Internet resulted in a fast information superhighway at global reach. The resulted global village has allowed the accessibility of information available to everyone at any place at any time. At just the tip of the fingers, investors can keep track on the movement of the financial market all around the world and respond to it accordingly. However, such dealings might lead to waves of panic and precipitous action which later affects the global market. This is because national markets are no longer shielded and the movement of shares and other investments are influenced by international events such as U.S Presidential Election (Menon, Subha & Sagaran, 2009).

According to Zach (2003), a handful of analyses had been performed to investigate the impact of different types of information on asset prices which includes macroeconomic news, earning amendments and political broadcast. Major events such as U.S presidential elections which exhibits potential political broadcast has always been a controversial issue in finance as researchers are trying to figure out the relationship. Under an efficient market that the securities reflect publicly available information such as presidential election, the calendar events are irrelevant to current investment decision making because the security prices has already reflected the known political information. However, if the perception of efficient market is not taken into account in the evaluation of investment decision making, then a series of questions relevant to tactical investment will arise if the announcement of presidential elections affect the returns of asset prices (Grant & Trahan, 2005).

Presidential-election events can influence the financial markets to behave in a certain pattern due to informational effectiveness of election outcomes that security prices will absorb the political news in anticipation of the election results. The author further elaborated that elections always draw in media, canvasser, political traits and financial analysts to negate the information to be passed to politicians and the public. Apart from that, the spreading of political news to other financial markets will be influencing international stock markets via the widely used Internet, social network

and media with the rapid development of stock markets to be more unified (Pantzalis Stangeland and Turtle, 2000).

With the research focusing on the outcome of political news on the Baltic State Stock Markets, the importance of various public news released on stock-market movements have been examined. It is strongly agreed that stock-prices are of the same tier to present discount values of rationally forecasted future dividends (Soulanaeva, 2008). Moreover, when news announcement cause a toll on the expectations on either discount rate or future dividends or both, it will still influence the stock prices movement. In response, investors will alter their calculation based on the market conditions which are then reflected in an equilibrium asset prices (McQueen & Roley, 1993). It is stated that equity prices do change if the announcement of the news revised the investors' expectation and thus asset prices in equilibrium to reflect on *ex ante premia* for political risk (Tan & Gannon, 2002). Based on the research "Information and Volatility", the volatility of stock prices is akin to the rate of information flow to the market (Ross, 1989).

In a study conducted by Ajio (2008), the author constructed a theoretical model that defines the effect of the arrival of information on the volatility level of market. The author described that the volatility of market increases with the arrival of information such as press release because the market investors have to undergo statistics of the market along with the varying news feed that may diverge from their expectation or perceived as a negative expectation. The study further stated that the arrival of information may also calm the market down if the announcement is align with their expectation or consider being positive. Suleman (2012) conducted a study on the impact of good and bad news on stock volatility and found that bad political news have more effect on the volatility of stocks than the good news. The yield result is in line with the study of Engle and Ng (1993) whom results specifying that bad and good news have different impact volatility on the stock markets.

However, it is argued in "Electoral systems and the effects of political events on the stock market in Belgium" conducted by Vuchelen (2003), that stock prices only changes when the unexpected news forces investors to alter their view on policies of the presidential candidate, market index as well as individual securities' prices. When investors are uncertain over future corporate development, it may alter investors' expectation on the securities prices. The author also stated that investors can always foresee a reasonable path in a profitable market by conducting research and obtain valuable insights on prices which is always high and low constantly. The research was supported by the equation used which is the stock market index at time, *t* as the discounted value, using a risk = adjusted expected return of the expected dividends:

$$I_t = \sum_{i=1}^{\infty} \frac{E(D_{t+1})}{(1+E(r_{t+1}))}$$

where I_t is the stock market index at time *t*, and $E(D_{t+1})$ is the expected stream of dividends, and $E(r_{t+1})$ is the risk adjusted expected return.

Vuchelen (2003) further argued that news affect the market index only through the adjusted stream of expected returns whereby expected government policies are part of the information available to the investors that temporary policies changes only put forth a marginal effect on the stock prices because of the investors' long term view. Policies will still further push market index upwards if they are able to stimulate the expected return in the long run even though it diminish expected return in short run. However, this will only takes effect if the present value of the long run dominates the short run. Kim and Mei (2001) implemented a components-jump volatility filter which can be used to identify the circumstances of political risk. This can be done by classifying jump dates which are linked to political events which in turn enables authors to identify the market return and volatility effects of political publication. With factual results, it is proven that the political developments in Hong Kong have played an important role in its market volatility and return.

2.7 Review on Theory and Empirical Work of Efficient Market Hypothesis (EMH), Overreaction Hypothesis (OH) and Uncertain Information Hypothesis (UIH)

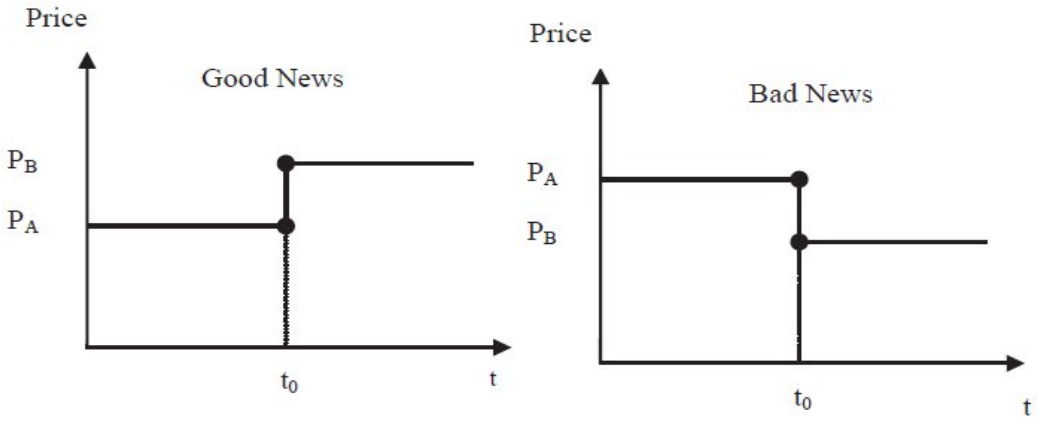
Efficient Market Hypothesis (EMH) is founded by Professor Eugene Fama at the University of Chicago Booth School Of Business in 1970 and has been a subject to great number of studies ever since. Fama (1970) defines an efficient market as a market that fully reflects all the available information. In another words, each and every stock price will immediately adjusted itself to reflect the available information, which includes all public and private information, as illustrated in Figure 2.7.1. In a typical competitive equity market, investors react quickly to the announcement of new information (Fama, 1970). According to Jones (1993), EMH only can exist if the following conditions hold:

i. A large number of rational investors who are able to maximize their profit are actively participating in the market. Then, the value of securities will become consistent and rational.

ii. If some investors are not rational, their irrational trades will cancel each other out or rational arbitrageurs eliminate their influence without affecting prices.

iii. Information is costless and widely available to market participants at approximately same time. Investors react quickly and fully to the new information, causing stock prices to adjust accordingly.

Figure 2.7.1: Efficient Market Hypothesis (EMH)



Source: Akkoc and Ozkan (2013)

Based on the EMH theory, each and every single stock price will immediately reflected by the company news. EMH is often associated with the concept of "Random Walk". The theory of random walk can be traced back as far as 1863 when a French financial philosopher and analyst exposed the random movement of the price of a bond and its derived option which was then documented in a book titled "Calcul des chances et philosophie de la bourse". However, this theory only marks its birth officially when Kendall (1953) investigated the behavior of 22 British industrial share prices and concluded his research "*data behaved almost like a wandering series".* The random walk concept then laid down the foundation of modern stochastic process of stock price (Preda, 2004). Fama (1965), after several documentation and reviewed on previous literatures, he defined random walk as series of price changes that has no memory, that is, the past cannot be used to predict the future in any meaningful way.

The logic of the random walk idea is that the information is immediately reflected in stock prices and tomorrow's price change will reflect only tomorrow's news and will be independent of the price changes today (Malkiel, 2003). Recall back to the EMH's assumption, the latest stock price will be fully reflected by the latest company news and that is why the stock price is said to have followed the idea of random walk.

Besides, Fama distinguished three information sets: past prices, publicly-available information, and all information including private information (Kondak, 1997). Efficient market hypothesis is divided into three forms namely weak form, semi-strong form, and the strong form with respect to the availability of the above mentioned three information sets.

Weak form of efficiency stated that the current stock prices reflected all historical market data such as the past prices and trading volumes (Bodie, Kane and Marcus, 2007). Weak form of efficiency is very similar with the findings of researches on random walk hypothesis that is, the price changes from one time to another are independent (Dixon and Holmes, 1992). Therefore, the technical analysis which is a technique using the derivation of past price movements in order to find out a meaningful sign to predict the future path of an individual stock or stock market itself is useless (Jones, 1993). However, one can beat the market and make superior profits in the weak form of efficient market by using the fundamental analysis or by insider trading.

Semi-strong form of efficiency states that, in addition to the past prices, all publicly available information including fundamental data on the firm's product line, earnings forecasts, dividends, stock split announcements, quality of management, balance sheet composition and patents held as well as accounting practices, should be fully reflected in security prices. Therefore, one cannot make a superior profit by using the fundamental analysis in the market which is efficient in the semi-strong form. In this stage, technical analysis cannot work at the semi-strong form of efficient market because if a market is efficient in the semi-strong form, it is also efficient in the weak form, because past prices are also publicly available information (Dixon and Holmes, 1992; Bodie, Kane and Marcus, 2007). However, insider traders can make superior profits in semi-strong form of efficiency.

Strong form of efficiency states that market prices reflect all information including both the past prices and the all publicly available information, and also all private

information. In such a market, prices will always be fair and investors or even insider traders cannot beat the market (Brealey, Myers and Marcus, 1999). Therefore, none of the technical or fundamental analysts can beat the market to make an abnormal return in strong form of efficiency because if a market is efficient in the strong-form, it must be efficient in both the weak form and the semi-strong form. Thus, the techniques that do not work in the weak form and the semi-strong form efficient markets naturally cannot work in strong form efficient markets.

Though EMH has been one of the most influential empirical work for financial researchers to investigate on the behaviour of stock price, there has been empirical studies that indicate that stock price do not always reflect all the available information (Yalcin, 2010). There are many observed market movements that are not explained by the arguments of the efficient market hypothesis. Such market movements that are inconsistent with the efficient market hypothesis are called anomalies (Yalcin, 2010). This is because the stock prices sometimes can be predicted based on the historical prices overreaction or under reaction of the investors and also uncertain information. Undeniable, some market participants are less rational. Therefore, pricing irregularities and predictable patterns in stock returns can appear over time and even persist for short periods. Grossman and Stiglitz (1980) stressed that market is not perfectly efficient because we cannot eliminate the possibility of no incentive for professionals to uncover the information that gets so quickly reacted in market prices.

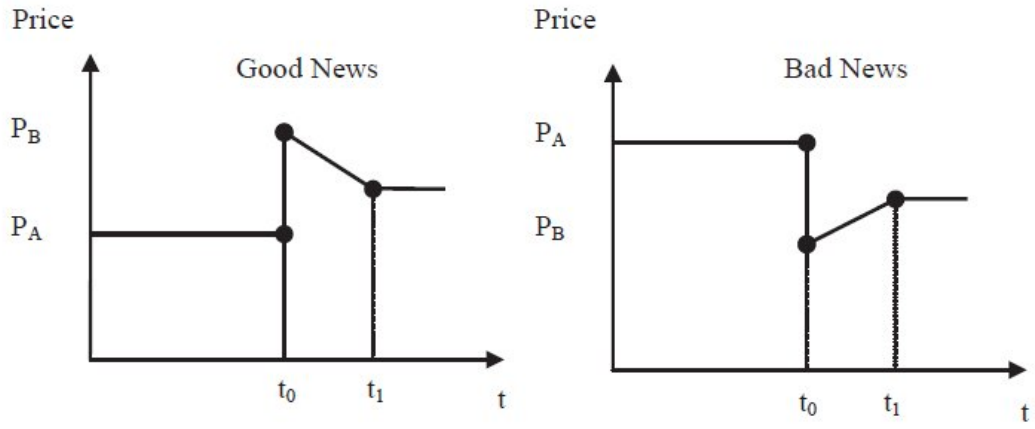
This ambiguity has led to the emergence of new study fields in behavioral finance such as Overreaction Hypothesis (OH) by De Bondt and Thaler (1985, 1987) and Uncertain Information Hypothesis (UIH) by Brown, Harlow and Tinic (1988, 1993) and Mehdian, Perry and Nas (2008).

Overreaction Hypothesis (OH) stated that if stock overreaction exist, then it is possible to predict future prices based on past price information to earn excess profit (Ali, Nassir, Hassan & Abidin, 2010). Overreaction is a notion which suggests that, stock price also has a tendency to overreact to extremely good and bad news as

shown in Figure 2.7.2. According to Bloomfield, Libby and Elson (2000), OH argues that investors tend to overreact to information which causes the stock prices to move upward too far in reaction to favorable news and move downwards too far in reaction to unfavorable news, or tendency to under react in other cases where stock price does not move far enough in reaction to favorable news and not low enough in reaction to unfavorable news. Howe (1986) in his study indicates that investors tend to overreact to dramatic and unanticipated news in most cases.

There are few past studies that revealed the consistent of the prediction of OH. Akkoc (2003) and Sevim, Yildiz and Akkoc (2007) reached similar results for Borsa Istanbul with De Bondt and Thaler (1985), where loser portfolios consistently outperform the market index, while winners portfolio consistently underperform in U.S stock markets.

Figure 2.7.2: Overreaction Hypothesis (OH)



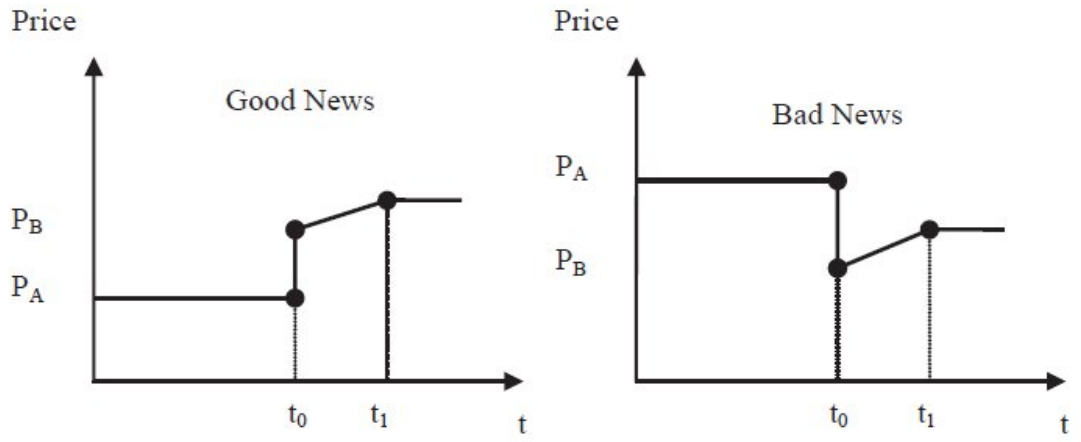
Source: Akkoc and Ozkan (2013)

On the other hand, Zhu (2007), Ising, Schiereck, Simpson and Thomas (2006) and Michayluk and Neuhauser (2006) are among the researchers to investigate if stock price has overreacted in relation to the arrival of new information in Hong Kong, German and Asian countries respectively. Bilson, Brailsford and Hooper (2002), Bialkwoski, Gottschalk and Wisniewski (2008) and Maloney and Mulherin (2003) have taken a new initiative in research by concentrating on extreme and dramatic events such as stock market crashes, political events and catastrophic events (war,

earthquakes and many more). They discovered significant impact of extreme events on market reaction. In addition, there are numerous researches on investigating the existence of OH in international markets such as Howe (1986), Zarowin (1989), Alonso and Robio (1990), Pettengill and Jordan (1990), Fung (1999), Gaunt (2000), Lai, Guru and Fauzias (2003) and Iihara, Kato and Tokunaga (2004). However, there is still no international consensus if OH holds true.

Apart from the overreaction and underreaction of market participants, uncertain information in the stock market may also affect the movement of future stock price. This scenario is known as Uncertain Information Hypothesis (UIH). In year 1988, Brown, Harlow and Tinic (1988; 1993) developed an expanded version of EMH, the theory of "Uncertain Information Hypothesis" (UIH) pointing that the release of unexpected information will lead to increase in uncertainty and risk in financial markets which will cause investors to be unable to accurately react to unexpected news and therefore, setting their initial security prices below fundamental value, which is illustrated in Figure 2.7.3. Once the complete information is revealed, security prices will recover back the underset portion and therefore positive response will follow regardless of the nature of the event. They tested the hypothesis through firm-specific events and market events. Their results show positive price reaction to both favourable and unfavourable events in the short run.

Figure 2.7.3: Uncertain Information Hypothesis (UIH)



Source: Akkoc and Ozkan (2013)

Though UIH had footed in 1988, it has received low limelight for a few decades until recent years, there has been an increasing amount of researchers investigating the reaction of investors upon the arrival of unexpected information in small stock markets (Akkoc & Ozkan, 2013). However, Shacmurove (2002), De Medeiros (2005), Mehdian, Perry and Nas (2008), Rezvanian, Turk and Mehdian (2011) and Akkoc and Ozkan (2013) revealed different and contradictory results. Shacmurove (2002) examines the investors' reaction in European stock markets and concluded that arrival of unexpected information does not affect the European stock market volatility while investors operating in small continental stock exchanges react to uncertain information in an efficient and rational behaviour.

De Medeiros (2005) examines the investors' reaction in Brazilian stock market and concluded that upon the release of favourable (unfavourable) events, investors increase (decrease) stock prices immediately before fall (rise) back to a middle level after about 5 days which verifies the occurrence of OH instead of UIH, which is contradicting with the results of Shacmurove (2002). Furthermore, Mehdian et al. (2008) examines the investors' reaction in Turkish stock market and concluded that there is strong statistical evidence for positive cumulative abnormal returns following both positive and negative events but cannot find significant price reversal following the release of unexpected news. While Mehdian et al. (2008) could not find consistent results with UIH, a follow up study by Akkoc and Ozkan (2013) reveals that investors' reaction in Turkish stock market are consistent with UIH from October 2004 to September 2011. Last but not least, Rezvanian et al. (2011) examines the investors' reaction in Chinese stock market and concluded that Chinese stock market set initial equity prices below their fundamental value in response to unexpected information which is consistent with UIH.

Moving past the literatures of EMH, OH and UIH, the following paragraphs will be dedicated to the stock market conditions of Malaysia. Of the 3 behavioural finance theory, EMH and OH received most of the attention compared to UIH when it comes to describing the stock market conditions in Malaysia. There are several past

literatures of EMH on Malaysian stock market. Salamudin, Ariff and Nassir (1999), Akinyote (2008) and Baharuddin, Abdullahi and Teoh (2010) described Malaysian stock market as semi-strong efficient market. This indicates that investors in Malaysia cannot earn abnormal return through publicly available information as securities prices in Bursa Malaysia as it has reflected all historical information as well as publicly available information. In other words, investors in Malaysia can only earn abnormal returns at the possession of internal or private information (Akinyote, 2008).

Salamudin, Ariff and Nassir (1999) concluded that Malaysia stock market exhibits semi-strong efficient market by examining the rights issue announcement behaviour and found positive correlation with securities' prices. The authors state that the underlying reason may be attributed to investors in Malaysia that believe funds from the issues are channeled to profitable investment in a high growth economy. While other researchers examined on rights issue announcement, Akinyote (2008) and Baharuddin, Abdullahi and Teoh (2010) examined on the announcement of dividends and stock price to come out with the conclusion that Malaysian stock market is semi-strong efficient market.

On the other hand, there are also several past studies of OH on Malaysian stock market. Ali, Nassir, Hassan and Abidin (2010) examined the short run stock overreaction with respect to the arrival of dramatic events in Malaysian stock market. Their studies reveal that Malaysian stock market is consistent with OH especially for political-based events. Overreaction behaviours existed upon the announcement of the removal of deputy prime minister and resignation of prime minister while underreaction behaviours upon the announcement of national election. Malaysian stock market only reacts overly to SARS outbreak in dramatic international event. Jothee and Annuar (2007) confirmed that there is an evidence of price overreaction to new information in Malaysian stock market when they examine the speed of price adjustment to corporate announcement.

2.8 Event Study

According to Wong (n. d.), the definition of event study is 'a study of the changes in stock price beyond expectation over a period of time (event window). The event study methodology was first introduced by Fama, Fisher, Jensen and Roll in 1969. They used the event study methodology mostly to test security price behaviour in the events of accounting rule changes, earning announcements, changes in severity of regulation and money supply announcement. Binder (1998) mentioned that the benefit of this statistical tool comes from its versatility. In other words, event study is designed to examine the effect of any event ranging from firm-specific events to economic wide events on a specific dependent variable.

Wong (n. d.) asserted that the key assumption of this methodology is that the market is efficient because it will only then reflects the sudden changes in stock price when a certain event takes place. However, Fama, Fisher, Jensen and Roll (1969) assume that the as long as insider news is absent, the market will be 'efficient' enough to have stock prices adjust immediately to new information. This conclusion was proven by Fama himself in 1965. In other words, event study can be used under the assumption of semi-strong market.

In the past many researchers have used this event study methodology to test the stock market reaction towards the occurrence of general election. Ayuk (2010) has used event study to investigate the presidential elections effect on stock market in U.S. whereas Liu (2007) has used the same method to investigate the presidential elections effect on stock market of various countries in Asia like Singapore, Vietnam and Indonesia. Apart from that, while most of the researchers like Binder (1998) and Chen, Ariff, Hassan and Mohamed (2013) uses event study to investigate the impact of general election on respective individual securities, the very same method can also be used to test on equity indices. Liu (2007) and Ayuk (2010) have examined the impact of general election on value-weighted equity index of a certain country.

One of the most important points in event study is the event window. Event window is the period in which the position of stock market is monitored when the election result was announced. Based on Chen, Ariff, Hassan and Mohamed (2013), they used the event window of -14 to +15 days to evaluate the investors' reaction on the government linked companies and non-government linked companies when general election takes place. The author further mentioned that Cumulative Abnormal Return (CAR) was computed in the event window of 5 days after the general election to capture the short term position in the market caused by the election outcome announcement.

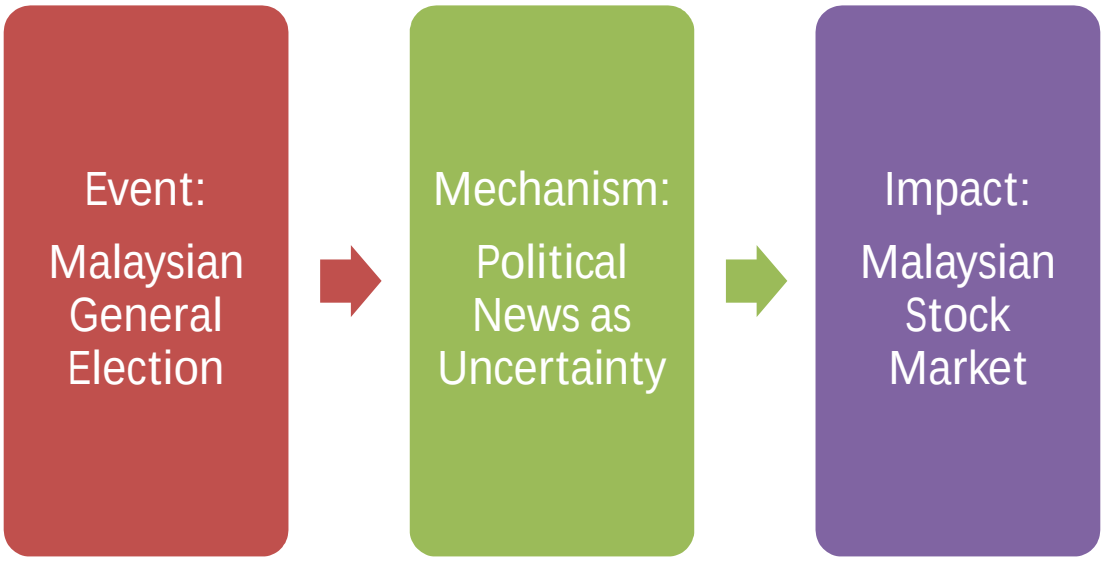
On the other hand, Ayuk (2010) used a period of 30 days event window which is divided to 15 trading days before and 15 trading days after the U.S. presidential elections polling day. The event day is represented by the letter, T which also symbolizes day 0. 15 days trading days before polling day is denoted as -15 ad 15 trading days after polling day is denoted as +15. Besides, he also included a pre-event window of 30 trading days immediately before the -15 trading days and a post-event window of 30 trading days immediately after the +15 days. The author's objective was to observe the actual stock returns from before the event take place through the post event period.

As for Liu (2007), the author defined their event window as (-10,-1) where t= -10 is the tenth day before election and ending at t= -1 which signifies the day before election. The author suggested that this event window for it is the period that the uncertainty of an election has the most potential to be resolved as most people have decided who they would vote for. This event window was supported by Pantzalis, Stangeland and Turtle (2000) and Cho (2004) with the reason that this period of time provides less incentive for the ruling party to manipulate the stock market. Liu (2007) marks the pre-event window as (-30,-11) as most presidential campaign commences a month before the polling day. The pro-event window is defined as (+1, +15) because election results will be out and whether a coalition building or runoff election is required will be known within a month's time. The author also set an estimation

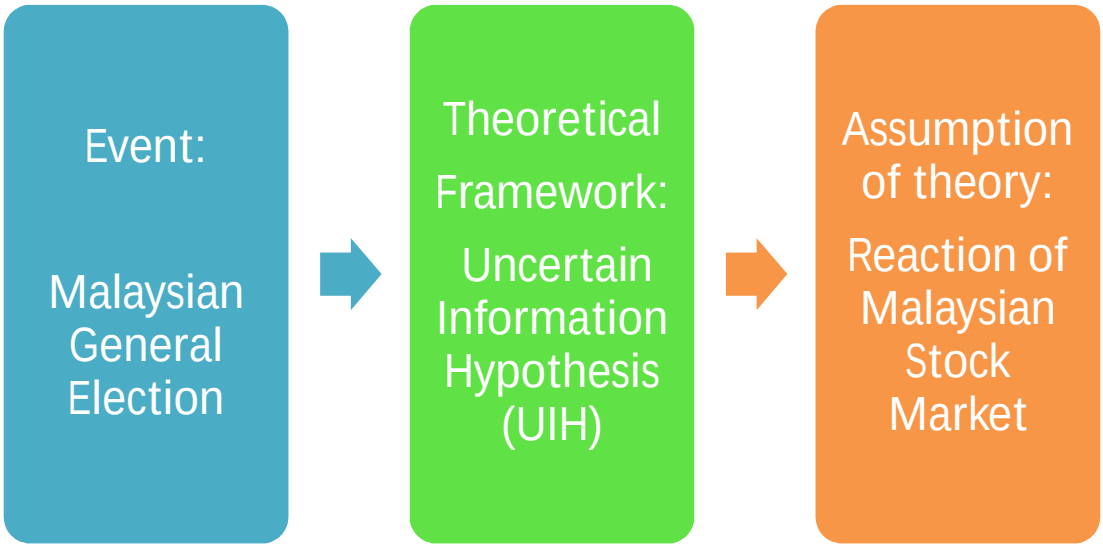
window (-140,-31) which is a 110-day period prior to the pre-event window (-30,-11) to exclude all election effect.

According to Bodie, Kane and Marcus (2005), one can measure the impact of an event of interest by estimating the abnormal return during the period in which the event occurs and attribute the abnormal stock performance to the new information. Krivin, Patton, Rose and Tabak (2003) investigate the effect of announcement on stock prices through the methodology of event study on large sample of firms. The author stated that among the benefits of this method is that event window length can be standardized across observation because the errors of having inappropriate event window should have small impact due to the Law of Large Numbers.

2.9 Proposed Theoretical Framework



Source: Developed for research.



Source: Developed for research.

2.10 Hypothesis Development

According to Salamudin, Ariff and Nassir (1999), Akinyote (2008) and Baharuddin, Abdullahi and Teoh (2010) Malaysian stock market are described as semi-strong efficient market. This indicates that securities prices have already reflected all publicly available information and therefore investors in Malaysia cannot earn abnormal return through publicly available information. In other words, investors in Malaysia can only earn abnormal returns at the possession of internal or private information.

The hypothesis developed is based on Ayuk (2010) where the author investigated the effect of U.S presidential election on Standard & Poor 500 (S&P500) and NASDAQ from year 1988 to year 2008. As this research paper aims at defining the effect of Malaysian General Election on KLCI and sectoral indices, therefore the similar concept of hypothesis is developed.

2.10.1 Impact of Malaysian General Election on KLCI and sectoral indices

H_0 = 12^{th} and 13^{th} Malaysian General Election do not affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election's results.

H_1 = 12^{th} and 13^{th} Malaysian General Election do affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election's results.

According to Akkoc and Ozkan (2013), there is generally an upward trend in the CARs following both favourable and unfavourable unexpected news. Hence, t-statistic is computed to test the null hypothesis that CARs are equal to zero. Therefore, this research paper adopts the same hypothesis as Akkoc and Ozkan (2013) because the objective of both papers are similar which is to determine the pattern of stock return following unexpected information is consistent with the theory of Uncertain Information Hypothesis.

2.10.2 Consistency of UIH on the reaction of stock market following unexpected information.

H_0 = The reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 12^{th} and 13^{th} Malaysian General Election are consistent with the theory of Uncertain Information Hypothesis (UIH)

$\mathbf{H_1}$ = The reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 12th and 13th Malaysian General Election are not consistent with the theory of Uncertain Information Hypothesis (UIH)

2.11 Conclusion

Literatures of political news, political event as well as theoretical framework (EMH, OH and UIH) have been critically reviewed as they are the foundation in constructing the proposed theoretical framework. Based on the logical deduction from theoretical framework, hypotheses are developed.

Similarly, a series of event study methodology had been thoroughly reviewed as well as this research paper will be conducting through the mentioned methodology. The methodology was first proposed by Fama, Fisher, Jensen and Roll (1969) and was later extended by a great number of researchers. The steps of conducting the methodology will be explained in the next chapter.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This research paper applies the event-study methodology proposed by Fama, Fisher, Jensen and Roll (1969). The methodology will closely follow the modification made by Ayuk (2010) as well as Krivin, Patton, Rose and Tabak (2003). Apart from that, this research paper adopts the methodology by Akkoc and Ozkan (2013) as well in the attempt to determine whether the reaction of investors of Malaysian stock market following the arrival of unexpected information is consistent with the prediction of Uncertain Information Hypothesis (UIH).

All the sectoral indices as well as composite index of Malaysian stock market are the research paper targeted study. Daily rate of returns are obtain through Datastream and KLSEinfo. For econometric analysis, E-views version 6 is used.

This chapter can be divided into 5 sections. First section presents the event study methodology for this research paper. The next section describes data collection method. Section three presents on the sampling design. Section four describes data analysis while the last section presents on the summary of this chapter.

3.1 Research Design

The purpose of this research paper is to find out if there is any impact of 12^{th} and 13^{th} Malaysian General Election on its stock market as well as the reaction of stock market upon the arrival of general election results. Therefore, a quantitative research

is employed. The framework for this study would be based on a methodology named event study.

3.1.1 Event Study on the Impact of 12th and 13th Malaysian General Elections on the Stock Market

Event study methodology had been critically reviewed in Chapter 2. Therefore, this section provides explanation and application of this methodology into this research paper in the attempt to find out the impact of 12th and 13th Malaysian General Election on its stock market as well as the reaction of investors upon the arrival of general election results. Event study was first proposed by Fama, Fisher, Jensen and Roll (1969). It is an econometric technique that is often used to investigate and infer on the impact of an event in a particular time frame or over several period on a dependent variable. It is a method that works under the notion of efficient market (semi-strong). This methodology is structured in a defined procedure (MacKinlay, 1997).

According to Wong (n.d.) and Liu (2007), firstly, the event (the independent variable) must be identified. In this research, the event of interest is the general election in Malaysia. The two latest general election; GE-12 and GE-13 will be target of this research. This research paper adopted a similar approach consistent with Akkoc and Ozkan (2013) to identify the targeted general election.

Table 3.1.1 Daily high and daily rate of return of KLCI after the announcement of General Election results in Malaysia.

Events	Date	Daily high (%)	Actual Return (%)
8th GE	21st October 1990	3.98	3.98
9th GE	15th April 1995	0.000	-1.68

10th GE	29th November 1999	0.560	-1.51
11th GE	21st March 2004	1.603	0.50
12th GE	08th March 2008	**-10.712**	**-9.50**
13th GE	5th May 2013	**7.756**	**3.38**

Note. Adapted from *KLSE Info, May 2013,* Malaysia

Akkoc and Ozkan (2013) argued that daily rates of return that were greater (lesser) than or equal to 5% (-5%) are caused by unexpected information related to the securities such as unanticipated government decisions. Table 3.1.1 clearly depicts 12th Malaysian General Malaysian is the only general election that fulfills the argument. However, by looking at the daily high of each election, 12th and 13th General Election is the most appropriate elections amongst the others. Therefore, concluding the targeted general election.

Secondly, Wong (n.d.) and Liu (2007) stated that the estimation, event and post-event windows must be defined. Therefore, this research paper chooses to follow the event window in which Krivin, Patton, Rose and Tabak (2003) has implemented in their research. Malaysia general election polling day is denoted as, T which also means day 0. This is because the Malaysia's general election is conducted on the weekends where stock markets are closed.

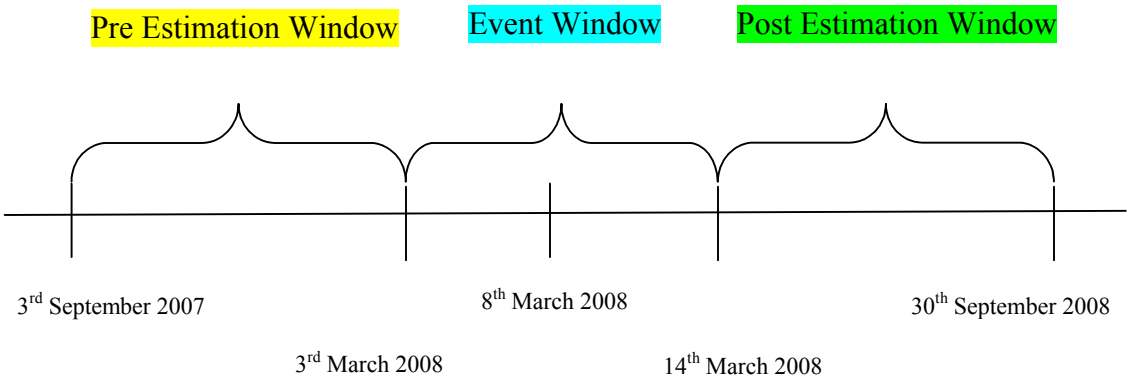
In order to investigate the effects on stock market before and after the general election, the event window is expanded in such a way 5 days immediately before the polling day (t= -5) and 5 days immediately after the polling day (t= +5). The pre-event window will be a period of 6 months before event window (t= {- 6 months,-5 days}). On the other hand, the post-event window will be a period of 6 months immediately after the event window (t= {+6 months, +5 days}).

This research paper chooses to follow the same time frame used by Krivin, Patton, Rose and Tabak (2003) due to several reasons. According to Cheah

(2005), Malaysian stock market has always been residing in the semi-strong form though it has yet to achieve full-efficiency level in the semi-strong form. Therefore, there is a possibility that the general election results may not be incorporated fully into the stock market the next day after the announcement of general election results. In other words, it means that Malaysian stock market requires a few days to fully reflect the publicly available information.

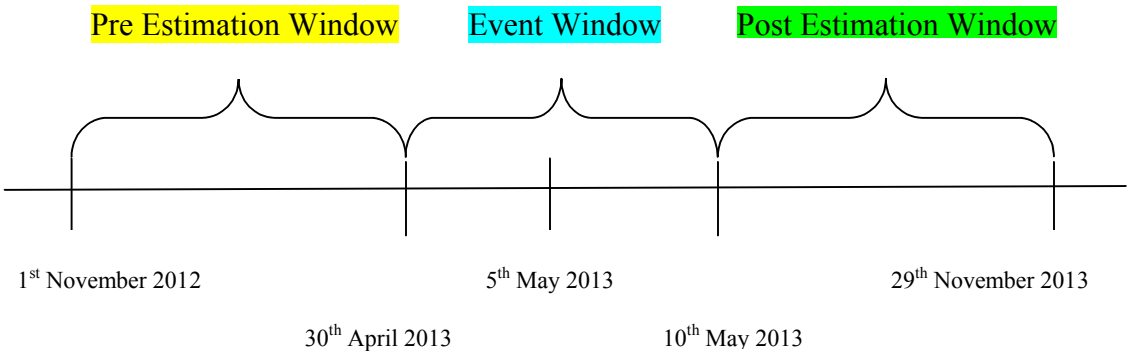
On top of that, it is better to choose an event window with 5 days before and 5 days after the polling day because MacKinlay (1997) supports that the period of interest is often expanded to multiple days including the day of announcement and the day after the announcement. By using this time frame, the price effects of announcements which occur after the stock market closes on the announcement day can be captured. However, in this case, polling day is denoted as day t = 0 because it always falls on Sunday. Therefore, Figure 3.1 and Figure 3.2 shows the timeline used for this event study in this research paper.

Figure 3.1: Event Window to study the Impact of 12th Malaysian General Election on its Stock Market



Source: Developed for Research

Figure 3.2: Event Window to study the Impact of 13th Malaysian General Election on its Stock Market



Source: Developed for Research

Last but not least, suitable parameters must be estimated using the data in estimation window which is Ordinary Least Squares (OLS) used by Ayuk (2010).

Applying the methodology by Ayuk (2010), the estimation window, event window and post estimation window of Krivin, Patton, Rose and Tabak (2003) are estimated together in one single equation:

$$R_{it} = \alpha + \beta D_{it} + \square \quad \text{.....} \quad \text{equation 3.4.1}$$

where R_t is the return of the index on Day t and $\square_t$ is the error term for the model. D_{it} is the dummy variable that takes on the presence of election and non-election period. The Dummy Variable takes on the value of 1 for election period and 0 for non-election period. The purpose of having Dummy Variable is to determine whether the changes in the price index are related to the general election.

The impact of general election on stock market can be further derived from the coefficient of the dummy variable. If the coefficient of dummy variable is test to be significant, and positive (negative), then there is a positive (negative) impact of general election on the Malaysian stock market. This research paper

studied if Malaysian General Election has a statistically significant effect on its stock Composite Index (KLCI) as well as the 10 sectoral – indices. This study considers on 2 cases whereby;

I. Dummy variable takes the value of 0 for non election periods (3rd September 2007 to 30th September 2008 excluding 3rd March 2008 to 14th March 2008 as well as 1st November 2012 to 29th November 2013 excluding 30th April 2013 to 10th May 2013)

II. Dummy variable takes the value of 1 for election periods (3rd March 2008 to 14th March 2008 as well as 30th April 2013 to 10th May 2013)

Therefore, between the dates of 3rd March 2008 to 14th March 2008 and 30th April 2013 to 10th May 2013, the dummy variables would be equal to 1 (D_{it} = 1) while the remaining days, the dummy variables would be equal to 0 (D_{it} = 0).

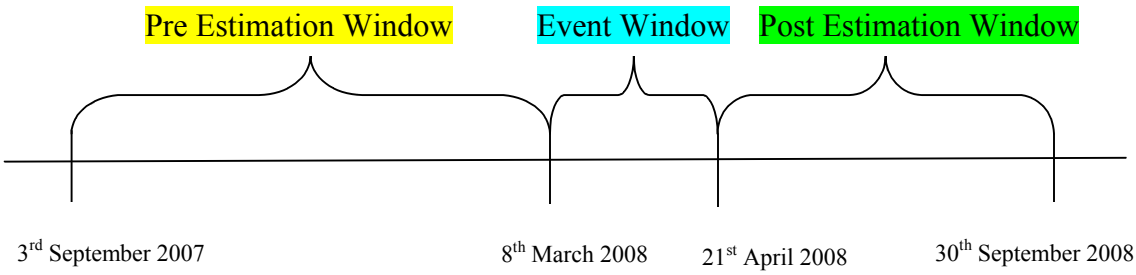
3.1.2 Event Study on the Consistency of UIH on the Reaction of Stock Market upon the Arrival of 12th and 13th Malaysian General Elections.

In this research, the event window in which Akkoc and Ozkan (2013) has implemented in their research to find out the consistency of UIH on the reaction of Borsa Istanbul upon the arrival of major political and economic news is adopted. The Malaysia general election polling day is denoted as, T which also means day 0. This is because the Malaysia's general election is conducted on the weekends where stock markets are closed.

In order to investigate whether the pattern of stock return for both KLCI and sectoral indices are consistent with the theory of UIH, the event window is

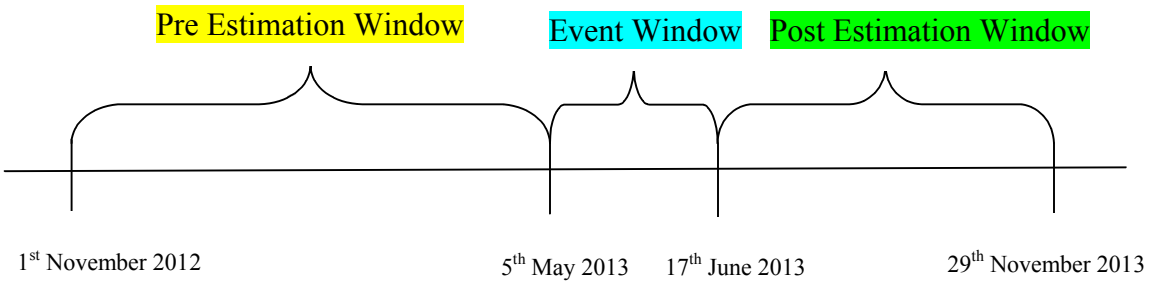
expanded 30 days immediately after the polling day (t= +30). The pre-event window will be a period of 6 months before event window (t= {- 6 months, 0 days}). On the other hand, the post-event window will be a period of 5 months immediately after the event window (t= {+5 months, 30 days}). Therefore, concluding a timeframe of total 1 year. The figures of the adopted time lines are illustrated in Figure 3.4 and Figure 3.5.

Figure 3.4: Event Window to Study the Reaction of Stock Market upon the Arrival of 12th Malaysian General Election



Source: Developed for research

Figure 3.5: Event Window to Study the Reaction of Stock Market upon the Arrival of 13th Malaysian General Election



Source: Developed for research

As mentioned previously, suitable parameters must be estimated using the data in estimation window which is, in this case, Cumulative Abnormal Return (CAR) used by Akkoc and Ozkan (2013).

3.2 Data Collection Method

This research is done using only secondary data. The KLCI index and sectoral – industry indices (Construction, Consumer Products, Financial, Industrial Product, Mining, Plantation, Property, Technology and Trading/Services) are historical data. The data used in this research paper was obtained from Datastream of Universiti Tunku Abdul Rahman's library as well as from www.klse.info that provides Kuala Lumpur Stock Exchange (KLSE) stocks trading information.

The entire set of data for KLCI index and sectoral – industry indices cover daily return of 6 months prior and after the announcement of 12th and 13th General Election results. The timeframe is appropriate for this study as Krivin, Patton, Rose and Tabak (2003) applied the same period. Table 3.2.1 and 3.2.2 shows the timeframe of the data collection as well as the number of observation for each index.

Table 3.2.1 Timeframe of Data Collection

6 month prior	Announcement of GE's result	6 months subsequent
1st September 2007	8th March 2008	30th September 2008
1st November 2012	5th May 2013	30th November 2013

Source: Developed for research

Table 3.2.2 Number of Observation Collected

Indices	Total number of observations	
Year	2008	2013
Kuala Lumpur Composite Index (KLCI)	267	266

Construction	267	266
Consumer Product	265	266
Finance	260	262
Industrial Product	266	266
Mining	259	264
Plantation	264	266
Property	261	266
Technology	260	266
Trading and Services	265	266
Industrial	267	266

Source: Developed for research

3.3 Data Adjustment Method

Along the data collection process, there are some missing data of industry indices for both year 2008 and 2013. Due to the reason that Kuala Lumpur Composite Index (KLCI) is set as the data benchmark, thus, the missing data of the industry indices is filled to make the amount of observation tally with KLCI which is 267 observations for year 2008 and 266 observations for year 2013.

Unconditional Mean Imputation is used to replaces each missing value with a mean of all observations. This practice had been largely used by numerous researchers without having a well-recognized name before it was given the name by Schafer and Graham (2002).

In this research paper, the same method of data adjustment is used whereby the daily return of sectoral indices for the year is totaled and divided them by the number of observation to get the mean. The obtained mean was then substituted into the missing data. Therefore, the amount of data will be tally with KLCI's observation. Below is the table after data adjustment:

Table 3.3.1 Total Number of Observation after Adjustment

Indices	**Total number of observations**	
Year	**2008**	**2013**
Kuala Lumpur Composite Index (KLCI)	267	266
Construction	267	266
Consumer Product	267	266
Finance	267	266
Industrial Product	267	266
Mining	267	266
Plantation	267	266
Property	267	266
Technology	267	266
Trading and Services	267	266
Industrial	267	266

Source: Developed for research

3.4 Research Instrument

3.4.1 Ordinary Least Square (OLS)

This research paper adopts an approach taken by Floros (2008) to investigate the effect of political elections on the Athens Stock Exchange as well as Ayuk (2010) to study the impact of U.S presidential election on international financial market. The model is as follows:

$$R_{it} = \alpha + \beta D_{it} + \square \quad \text{.....} \quad \text{equation 3.4.1}$$

Where:

R_{it} = return of index *i* on day *t*

D_{it} = dummy variable that takes on the presence of election and nonelection period. (1 for election period and 0 for nonelection period)

The model employed is an Ordinary Least Square (OLS). The OLS estimator is an unbiased and consistent estimator when the sample size is large and asymptotic distribution, namely greater than 30 observations (Stock & Watson, 2007). Gujarati (2003) stated that the asymptotic distribution can be accurate because the variances of the t test and the standard normal variable do not have great difference. In addition, Gujarati (2003) indicated that as long as the model can fulfill the ten classical linear regression model assumptions, the OLS estimator can perform BLUE (Best Linear Unbiased Estimator) properties.

The significant level adopted are 0.01, 0.05 and 0.10 for all hypothesis testing. After estimating the equation using E-view version 6.0, the p-value of each variable is compared with the significant level. The p-value should be less than 0.01, 0.05 or 0.10 in order to reject the null hypothesis. Besides that, the R-squared value is reviewed because it represent the percentage of variation in dependent variable which explained by all the independent variable (Gujarati, 2003). The higher the value of R-squared shows that the independent variable can better explain the dependent variable.

Jarque-Bera test is used to test whether the residuals obey the normality assumptions. The p-value for each tests are compared to the significant levels,

0.01, 0.05 and 0.10. The null hypothesis will not be rejected if the p-value of each test is greater than the significant levels, which means there is no problem in the model.

3.4.2 Cumulative Abnormal Return (CAR)

In order for this research paper to determine if investors' reaction following the announcement of unexpected information is consistent with the theory of Uncertain Information Hypothesis (UIH), this research paper computes cumulative abnormal returns (CARs) for the event period of 30 days after announcement of general election results. This method is first used by Ajayi and Mehdian (1994) and reproduced by Mehdian et al. (2008), Rezvanian et al. (2011) and Akkoc and Ozkan (2013).

First of all, the abnormal return of each index *i* on day *t* (*t* = +1, … ,+30) following the unexpected event is calculated, which in this case is 12th and 13th Malaysian General Election. The formula for the calculation of abnormal return, AR_{it} is as follow:

$$AR_{it} = R_{it} - \check{R}_{i3} \quad \text{.....} \quad \text{equation 3.4.2}$$

Where:

R_{it} = daily percentage rate of return for index *i* on day *t*

$\check{R}_{i3}$ = mean return of each index *i* for non-event days.

Next, the CARs are calculated by adding the abnormal returns over 30 days by using the following equation:

$$CAR_{it} = CAR_{i(t-1)} + AR_{it} \quad \text{.....} \quad \text{equation 3.4.3}$$

Where:

CAR_{it} = cumulative abnormal return of index *i* on day *t*

$CAR_{i(t-1)}$ = cumulative abnormal return of index *i* on day *(t-1)*

The statistical significance of the CARs is tested by using the standard t-test of null hypothesis in which the CARs for each day is equal to zero during the post event window. The t-statistic is derived from the following equation:

$$t = CAR_{it} / [Var (CAR_{it})]^{1/2} \quad \text{..... equation 3.4.4}$$

The graphical presentation of CARs for post event windows following Malaysian General Election are presented for each index to determine whether the reaction of investors towards unexpected information is consistent with the predictions of UIH (Bush, Mehdian and Perry, 2010).

3.5 Data Processing

Research model (equation 3.4.1) in this study requires the daily rate of returns (R_t) for KLCI index and sectoral industry indices. Therefore, daily index prices of all the indices are taken and transformed into daily rates of return by using the following equation 2.2.5:

$$R_{it} = \ln \left(\frac{I_{it}}{I_{it-1}}\right) \times 100$$

Where:

R_{it} = daily percentage rate of return for index *i* on day *t*

I_{it} = closing values of index *i* at day *t* (today's index price)

I_{it-1} = closing values of index *i* at day *t – 1* (yesterday's index price)

The daily rate of returns was calculated for all the indices as well as KLCI according to the timeframe provided in Figure 3.2.1.

3.6 Data Analysis

This section will be a continuation of event study methodology proposed by Ayuk (2010). Estimation of models will be performed using E-views version 6.0. As mentioned in chapter 2, effect of general elections on KLCI and sectoral indices are captured in the dummy coefficient.

$$R_{it} = \alpha + \beta D_{it} + \varepsilon_t \quad \text{----------} \quad \text{(eq 3.4.1)}$$

Dummy coefficient captures the effect of general election during event period

The dummy coefficient β_i will determine the impact of general election during the event period. Hypothesis testing as well as significance testing will be explained in the following sub-sections.

3.6.1 Impact of Malaysian General Election on KLCI and Sectoral Indices

H_0 = Daily return of KLCI and sectoral indices are not affected by 12th and 13th Malaysian General Election during 5 trading days prior and subsequent to the day of announcement of general election's results.

$\mathbf{H_1}$ = Daily return of KLCI and sectoral indices are affected by 12th and 13th Malaysian General Election during 5 trading days prior and subsequent to the day of announcement of general election's results.

According to Ayuk (2010), the dummy variable will assist in establishing whether index price could be related to presidential election. If the coefficient of dummy variable is significantly positive (negative), then there is a positive (negative) relationship effect of presidential election on the US stock indices returns.

Therefore, this research paper adopts the similar concept of defining the dummy variable which is that if the coefficient of dummy variable is significantly positive (negative), then there is a positive (negative) relationship effect of Malaysian General Election on KLCI and sectoral indices returns. This hypothesis testing is done on the ten sectoral indices and KLCI.

3.6.2 Significance Testing for Dummy Variable of Individual Index in Equation (eq. 3.4.1)

$\mathbf{H_0}$ = dummy variable, D_{it} in mean equation is not significant in explaining eq. 3.4.1

$\mathbf{H_1}$ = dummy variable, D_{it} in mean equation is significant in explaining eq. 3.4.1

This hypothesis testing will reveal if the dummy variable D_{it}, is significant in eq. 3.4.1. The p-value of D_{it}, generated from E-views version 6.0 will be examined. If the p-value falls below the significance level of 10%, 5% and 1%, the null hypothesis would be rejected according to the significance level. This

hypothesis testing is done on all the ten industries and KLCI studied in this research project.

3.6.3 Significance Testing for Cumulative Abnormal Return (CAR) in Equation 3.4.3

H_0 = Cumulative Abnormal Return (CAR_{it}) is not significant in explaining eq. 3.4.3

H_1 = Cumulative Abnormal Return (CAR_{it}) is significant in explaining eq. 3.4.3

This hypothesis testing will reveal if the CAR_{it} is significant in eq. 3.4.3. The t-statistics value is obtained through the equation 3.4.4 adopted by Akkoc and Ozkan (2013). If the t-statistics value is greater than the critical value at significance level of 10%, the null hypothesis would be rejected. This hypothesis testing is done on the stock index of all ten industries and KLCI studied in this research project.

3.7 Adopted Assumptions

This research paper adopted methodology is based on the research of Ayuk (2010). There are a few assumptions that the authors had mentioned before apply the methodology on their investigation. Therefore, it is important for this study to assume them as well. The assumptions are as follows:

I. The timeframe of this study was suitable and supported the purpose of this study.

II. The statistical tests used were the most appropriate for the research objectives in the study.

III. The event window began immediately before voting day because during prior period, markets are devoting more attention to the election. It is assumed that investment decisions during this period are likely to be affected by political news due to the probability of victory by certain candidate increases as voting day get nearer.

IV. The event window began immediately after voting days because during the period, investment decisions are more likely to be affected by the news for potentially important policy announcement by the winning party.

3.8 Conclusion

In this chapter, secondary data was used and the targeted population is KLCI and all the sectoral indices of Malaysian stock market. Event study was chosen by adopting the similar methodology performed by Krivin, Patton, Rose and Tabak (2003), Ayuk (2010) and Akkoc and Ozkan (2013). The methodology is performed to investigate if 12^{th} and 13^{th} Malaysian General Election affects Malaysian stock market by observing on the statistically significance of dummy coefficients as well as the Cumulative Abnormal Return (CAR). Next chapter will unveil the empirical results of this research paper.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The objective of this chapter is to present and explain the gathered data rather than drawing conclusions. The two purposes of this research paper will be address through the presentation of empirical results. The statistical test used in this chapter is Ordinary Least Squares (OLS) and Cumulative Abnormal Return (CAR). The data are presented in forms of table and graphs followed by a brief description in words.

This chapter consists of 3 sections. Section 1 provides the information of descriptive statistics. Next section presents on the results and findings of this study while the last section provides a summary of this chapter.

4.1 Descriptive Statistics

Descriptive statistics are required in this study. These statistics were used in computing the means, medians, standard deviations, skewness and kurtosis for the data collected. The mean, commonly called as average is a mathematically computed value which represents a central value of a given data set. Standard deviation on the other hand is the square root of variance. It is a measure of dispersion and gives us a way to describe where any given data value is located with respect to the mean.

Table in Panel A and Panel B reports sample statistics for stock returns. Most of the sectors have higher standard deviations than the mean. Generally, the sample periods

have a small daily mean return that ranges between +1 and -1 for all the sectors in Malaysia including Kuala Lumpur Composite Index (KLCI).

It is among the assumptions of Ordinary Least Squares (OLS) that the probability distribution must be normal. However, the assumption of normal distribution is unrealistic in modern finance. Haas and Pigorsch (2007) stated that observation of large changes in financial market may be hard to align with the standard distributional assumption in statistics and econometrics, that is, normality. As there are large changes of return, therefore, distribution of the returns will be fat-tailed. In addition, Gujarati (2003) explained that the normality assumption may not be very crucial in large data sets ($n > 100$).

As observed earlier in Panel A and Panel B, most of the skewness in pre-event window and post-event window for both 2008 and 2013 are negative while most of the skewness during event window in 2008 are negative. All the skewness of event window in 2013 shows positive sign. As an additional measure to it, the kurtosis will be analyzed. For this measure, higher kurtosis is the result of infrequent extreme deviation.

Distributions with negative or positive excess kurtosis are called platykurtic distributions and leptokurtic distributions respectively. The pre-event finance index in Panel B records the largest kurtosis of 9.8725. Among the all the kurtosis data in Panel A and Panel B, nearly most of them are leptokurtic. Most of the values of the kurtosis and skewness are bit further from the normal distribution value.

Therefore, based on the information and results of the analysis of descriptive statistics, this study found that KLCI and sectoral indices in the short term (the 12^{th} and 13^{th} Malaysian General Election investigation period) do not exhibit normality.

Table 4.1.1

Panel A: 2008 Description of data (index returns) employed.

	klci	consumer	property	construction	finance	plantation	trad&serv	indprod	industrial	mining	tech
Pre-event											
mean	0.0582	0.0785	-0.1787	-0.0850	0.0833	0.2775	-0.0071	-0.0436	0.0705	-0.0657	-0.0978
median	0.0800	0.1400	-0.1950	0.0100	0.0500	0.2800	-0.0150	-0.0909	0.0250	0.0000	-0.1225
SD	1.0044	0.7417	0.9016	1.2965	0.8000	1.5245	0.7028	0.7948	0.8632	2.2699	0.9779
skewness	-0.6936	-0.7250	-0.1567	-0.4584	0.1407	0.2465	-0.2309	-0.6496	-0.1600	0.1405	0.1206
kurtosis	1.9853	2.3190	-0.2386	2.2400	1.6032	1.2638	-0.0324	2.8579	1.1477	2.5688	0.4927
Event window											
mean	-1.2100	-0.5519	-1.0522	-1.0955	-0.4439	-1.0451	-1.0025	-0.6062	-0.9515	-0.6660	-0.4063
median	-0.8950	-0.3395	-0.4412	-0.4027	-0.7550	-0.5900	-1.2150	-0.4709	-1.2450	-0.3049	-0.2913
SD	3.4874	1.6164	2.9442	4.1909	2.2855	2.7576	2.5282	1.9434	2.5289	2.8833	2.1404
skewness	-1.4695	-0.5319	-1.3465	-1.3774	0.6546	0.1331	-0.1312	-1.2692	-0.4583	-0.3596	-1.0459
kurtosis	3.3103	-0.7987	4.1782	3.5812	-0.0785	0.9637	1.7285	2.6252	0.9267	0.6190	2.5201
Post event											
mean	-0.1123	-0.0264	-0.1806	-0.1485	-0.0383	-0.2234	-0.1167	-0.0963	-0.0991	-0.0689	-0.1235
median	-0.1500	0.0011	-0.2124	-0.1554	-0.0500	-0.0313	-0.1149	-0.0917	-0.0548	0.0000	-0.1225
SD	0.9659	0.6154	0.8777	1.1432	0.9203	1.5424	0.8584	0.7450	0.8404	2.2918	0.9562
skewness	0.6900	-0.2857	-0.1570	0.0773	0.4238	-0.7276	0.6800	-0.0995	0.0656	-0.6008	-0.2419
kurtosis	1.4328	1.3958	2.1966	1.0431	1.5719	2.1408	1.4252	-0.2242	0.4458	7.5451	1.1273

Source: Developed for research

Table 4.1.2

Panel B: 2013 Description of data (index returns) employed.

	klci	consumer	property	construction	finance	plantation	trad&serv	indprod	industrial	mining	tech
Pre-event											
mean	0.0171	0.0291	0.1065	0.0172	0.0431	-0.0126	0.0221	0.0173	-0.0112	0.1328	-0.1326
median	0.0000	0.0200	0.0800	0.0500	0.0800	-0.0400	0.0300	0.1000	0.0000	0.0000	0.0000
SD	0.4750	0.5583	0.7734	0.7297	0.4418	0.5609	0.4586	0.5618	0.6262	2.0150	1.1625
skewness	-1.1164	-0.1545	-0.7316	-0.8792	-1.6886	0.8035	-1.1270	-1.0544	-0.3966	1.5534	-0.7483
kurtosis	5.5608	1.1389	3.7833	6.3280	9.8725	3.7417	6.3927	2.0217	2.9230	5.2377	4.6656
Event window											
mean	0.3890	0.3170	1.0380	1.1800	0.4870	0.2610	0.4750	0.4620	0.4270	-0.0710	0.6580
median	0.0700	0.2250	0.2900	0.2650	0.0300	0.1650	0.1650	0.1350	0.2900	-0.4450	-0.2600
SD	1.2448	0.8268	2.4291	2.6000	1.5153	1.0047	1.2752	0.8750	0.7530	2.0547	1.9141
skewness	1.6852	0.8068	1.4990	1.3872	1.6978	0.2095	2.1202	0.8823	1.2219	1.4038	0.6355
kurtosis	3.5478	1.7240	1.7541	1.4583	2.5405	0.0119	5.4277	1.1131	3.8873	2.7304	-1.0960
Post event											
mean	0.0174	0.0158	-0.0441	0.0106	-0.0010	0.0512	0.0363	0.0918	0.0605	0.0672	0.1394
median	0.0500	0.0300	0.0200	0.0300	0.0900	0.0500	0.0900	0.0800	0.0600	0.0000	0.0700
SD	0.5360	0.5463	1.2534	0.8268	0.6682	0.6882	0.5741	0.6903	0.6426	2.4642	1.6454
skewness	-0.4386	-0.8302	0.1827	-0.3070	-0.8894	-0.5604	-0.6646	-0.1754	-0.5020	0.7419	-0.4284
kurtosis	1.9241	2.6311	3.9419	1.8815	2.3793	5.0405	1.8426	2.0624	2.7369	2.5207	9.8350

Source: Developed for research

4.2 Results and Findings

Table 4.2.1 The effect of Malaysian General Election on Kuala Lumpur Composite Index (KLCI) and all sectoral indices for the 1-year period for election year 2008

KLCI/Sector	N	Dummy coefficient	F-statistics	Probability, p
KLCI	267	-1.77276	9.868520	0.001872***
Construction	267	-0.976707	4.539054	0.034051**
Consumer Product	267	-0.574476	5.962250	0.015270**
Finance	267	-0.457496	2.223830	0.137085
Industrial Product	267	-0.534489	3.942510	0.048111**
Industrial	267	-0.931586	9.068189	0.002852***
Mining	267	-0.598597	0.651771	0.420204
Plantation	267	-1.055615	4.151814	0.042583**
Property	267	-0.872528	6.947268	0.008890***
Technology	267	-0.294762	0.793125	0.373965
Trading & Services	267	-0.936930	10.30522	0.001490***

*Note. Model: $R_t=a+\beta_i D_t+\varepsilon_t$; N=number of daily stock returns. The dummy coefficient represents the election event window and the effect of the election on the stock market; ***= Significant at the 1% level; **= Significant at the 5% level; *= Significant at the 10% level.*

Table 4.2.1 shows the result of the effects of 12th Malaysian General Election on Kuala Lumpur Composite Index (KLCI) and all sectoral indices for the period of 1 year. The table includes dummy coefficient, β_i F-statistics values as well as p-values. The dummy coefficient, β_i is use to capture the effect of 12th Malaysian General Election towards KLCI and the sectoral indices. The positive (negative) sign of the coefficient of the dummy variable will show that there is a positive (negative) relationship between GE and stock indices returns.

P-values are use to test on the significance of dummy coefficient on capturing the effect of GE on KLCI and all sectoral indices. The insignificance of p-values indicate that there is no election effect on KLIC and all sectoral indices while a significant p-values specify the presence of election effect on KLCI and all the sectoral indices.

Based on the yielded results, dummy coefficients for all the indices carry a negative sign, which represents a negative relationship between Malaysian General Election and its stock market. This relationship indicates that 12th Malaysian General Election had caused the stock market to suffer a plunge. Furthermore, 8 out of 11 indices showed a significant relationship which in other words, there is an impact of 12th Malaysian General Election on these 8 indices. Finance, Mining and Technology Index are the only 3 indices that showed insignificant dummy coefficients. The dummy coefficients of KLCI, Industrial Index, Properties Index and Trading & Services Index are significant at level 1% while Construction Index, Consumer Product Index, Industrial Product Index, Plantation Index are significant at 5% significance level.

The null hypothesis states that 12th Malaysian General Election do not affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election results while vice versa for the alternative hypothesis.

Since most of the p-values of dummy coefficients are less than the significance level of 1% and 5%, therefore, the null hypothesis is rejected. As a result, this research paper concludes that 12th Malaysian General Election do affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election results.

Table 4.2.2 shows the result of the effects of the 13th Malaysian General Election on Kuala Lumpur Composite Index (KLCI) and all sectoral indices for the period of 1 year. The table includes dummy coefficient (β_i), F-statistics values as well as p-values. The dummy coefficient, (β_i) is used to capture the effect of 12th Malaysian General Election towards KLCI and the sectoral indices. The positive (negative) sign of the coefficient of the dummy variable will show that there is a positive (negative) relationship between GE and stock indices returns.

Table 4.2.2 The effect of Malaysian General Election on Kuala Lumpur Composite Index (KLCI) and all sectoral indices for the 1-year period for election year 2013

KLCI/Sector	N	Dummy coefficient	F-statistics	Probability, p
KLCI	266	0.371734	4.402201	0.036843**
Construction	266	1.166406	15.93440	0.000085***
Consumer Product	266	0.295086	2.649371	0.104784
Finance	266	0.467859	5.294570	0.022172**
Industrial Product	266	0.404266	3.787916	0.052685*
Industrial	266	0.399266	3.753240	0.053772*
Mining	266	-0.168188	0.053348	0.817516
Plantation	266	0.239008	1.305256	0.254290
Property	266	1.013273	7.655803	0.006059***
Technology	266	0.642961	1.849076	0.175051
Trading & Services	266	0.445195	5.957107	0.015316**

Note. Model: $R_t=a+\beta_i D_t+\varepsilon_t$*; N=number of daily stock returns. The dummy coefficient represents the election event window and the effect of the election on the stock market; ***= Significant at the 1% level; **= Significant at the 5% level; *= Significant at the 10% level.*

P-values are use to test on the significance of dummy coefficient on capturing the effect of GE on KLCI and all sectoral indices. The insignificance of p-values indicate there is no election effect on KLIC and all sectoral indices while a significant p-values specify the presence of election effect on KLCI and all the sectoral indices.

Based on the yielded results in Table 4.2.2, there is a positive relationship between the 13th Malaysian General Election and its stock market. The positive relationship is deduced from the positive sign (+) pertains in the dummy coefficients. In other words, the upward performance of KLCI and sectoral indices is due to announcement of 13th Malaysian General Election results. On top of that, most of the indices show significant in its dummy coefficients. Construction Index and Property Index are significant at 1%, KLCI and Trading & Services Index are significant at 5% while Industrial Product Index, Finance Index and Industrial Index are significant at 1% significance level. On the other hand, Consumer Product Index, Mining Index, Plantation Index and Technology Index are insignificant at any of the given level of significance.

The null hypothesis states that 13th Malaysian General Election do not affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election results while vice versa for the alternative hypothesis.

Since most of the p-values of dummy coefficients are less than the significance level of 1% and 5%, therefore, the null hypothesis is rejected. As a result, this research paper concludes that 13th Malaysian General Election do affect the average daily stock returns of KLCI and sectoral indices during 5 trading days prior and subsequent to the actual day of announcement of general election results.

Table 4.2.3 and Table 4.2.4 display the post event CARs next to their related t-statistics for each of the 30 days following the announcement of 12th Malaysian General Election results in 2008. The value of t-statistics is computed to test the null hypothesis which is reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 12th Malaysian General Election are consistent with the theory of Uncertain Information Hypothesis (UIH).

As portrayed by Table 4.2.3 and Table 4.2.4, the CARs do not exhibit any statistical significant trending for Construction Index and Finance Index in response to 12th Malaysian General Election. However, CARs of other indices show signs of statistical significant during the first 2 days after the event day. Among the indices, Property, Industrial as well as Trading & Services Index have the most statistical significant CARs whereby the indices show significant upward trending on the 8th and 17th day while significant downward trending on the 11th day. Most CARs of KLCI and Industrial Product Index remained statistically significant in the first 10 days with upward movement. Technology Index and Mining Index are the only indices with one significant CAR which is on the 1st and 2nd day respectively. The CARs reach their lowest level (-9.4159 significantly and -10.8727 insignificantly) on the 1st day following 12th Malaysian General Election for all these indices.

Table 4.2.3: Post event Cumulative Abnormal Returns (CARs) for KLCI, Consumer Product Index, Property Index, Construction Index, Finance Index and Plantation Index during 12th Malaysian General Election

Day	KLCI		Consumer Product		Property		Construction		Finance		Plantation	
	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR
1	*-3.1432*	-9.4159	*-2.0408*	-3.3135	*-3.8351*	-7.8942	-1.2668	-10.8727	-1.6156	-3.4696	*-1.9901*	-4.9540
2	*-2.1671*	-6.4918	-1.0513	-1.7069	*-2.0008*	-4.1184	-0.6682	-5.7354	0.2285	0.4908	-0.2482	-0.6179
3	-1.4180	-4.2477	-0.6161	-1.0004	*-1.8425*	-3.7927	-0.6045	-5.1881	-0.2136	-0.4588	-0.0811	-0.2019
4	*-2.2345*	-6.6936	-1.0617	-1.7238	*-2.6024*	-5.3569	-0.8984	-7.7107	-1.2612	-2.7084	-0.9625	-2.3959
5	*-2.3867*	-7.1495	-1.0570	-1.7162	*-2.6057*	-5.3635	-0.8993	-7.7188	-1.2606	-2.7071	-0.9686	-2.4112
6	*-2.8426*	-8.5154	*-1.9276*	-3.1297	*-4.2060*	-8.6577	-1.0942	-9.3915	-1.3861	-2.9767	-1.2353	-3.0751
7	*-2.7445*	-8.2213	*-1.7326*	-2.8131	*-3.6980*	-7.6120	-0.7054	-6.0542	-0.6083	-1.3063	*-2.1689*	-5.3991
8	*-2.5328*	-7.5872	*-1.7224*	-2.7966	*-4.7300*	-9.7362	-1.0389	-8.9169	-1.1157	-2.3960	*-2.8454*	-7.0831
9	*-2.4346*	-7.2931	-1.5090	-2.4500	*-4.9749*	-10.2404	-0.9169	-7.8696	-1.2365	-2.6556	*-2.7465*	-6.8370
10	*-2.0694*	-6.1990	-1.2524	-2.0335	*-4.3454*	-8.9446	-0.6422	-5.5123	-0.6217	-1.3352	*-2.9570*	-7.3610
11	-1.2368	-3.7049	-1.1560	-1.8769	*-3.5362*	-7.2789	-0.3897	-3.3450	0.3843	0.8252	*-2.1070*	-5.2450
12	-0.7881	-2.3608	-0.3513	-0.5704	*-2.4257*	-4.9931	-0.1698	-1.4576	0.7197	1.5456	-1.6908	-4.2090
13	-0.5297	-1.5867	-0.0085	-0.0138	-1.6262	-3.3473	0.0978	0.8397	0.7199	1.5460	-0.8608	-2.1429
14	-0.3848	-1.1526	-0.0038	-0.0062	-1.6294	-3.3539	0.0969	0.8316	0.7205	1.5473	-0.8670	-2.1582
15	-0.6471	-1.9385	-0.0121	-0.0197	-1.6326	-3.3605	-0.0933	-0.8011	0.0967	0.2077	-1.0413	-2.5922
16	-0.5423	-1.6244	-0.1128	-0.1831	-1.6358	-3.3672	-0.1135	-0.9738	0.6883	1.4781	*-2.2842*	-5.6862
17	-0.8013	-2.4003	-0.1211	-0.1966	*-2.2451*	-4.6214	-0.2804	-2.4065	-0.2196	-0.4715	*-3.2579*	-8.1101
18	-1.1504	-3.4462	-0.4127	-0.6700	*-2.7524*	-5.6656	-0.5184	-4.4492	-0.3684	-0.7911	*-3.5447*	-8.8241
19	-1.2192	-3.6521	-0.3471	-0.5635	*-2.8031*	-5.7698	-0.5129	-4.4019	-0.5358	-1.1507	*-3.7351*	-9.2981
20	-1.2144	-3.6380	-0.3424	-0.5559	*-2.8063*	-5.7765	-0.5138	-4.4099	-0.5352	-1.1494	*-3.7413*	-9.3133
21	-1.0595	-3.1739	-0.3014	-0.4893	*-2.6966*	-5.5507	-0.5339	-4.5826	-0.2743	-0.5890	*-2.9073*	-7.2373
22	-0.9747	-2.9198	-0.0941	-0.1528	*-2.7424*	-5.6449	-0.4911	-4.2153	-0.1111	-0.2386	*-2.9049*	-7.2313
23	-0.3891	-1.1657	0.4950	0.8038	*-2.2780*	-4.6891	-0.2538	-2.1780	0.2383	0.5117	-1.5407	-3.8353
24	-0.3978	-1.1916	0.7762	1.2603	*-2.2412*	-4.6133	-0.2797	-2.4007	0.0522	0.1121	-1.5021	-3.7392
25	-0.7269	-2.1775	1.0574	1.7169	*-2.2044*	-4.5376	-0.3022	-2.5934	0.1176	0.2525	*-2.0339*	-5.0632
26	-0.4084	-1.2234	1.0984	1.7834	*-2.0413*	-4.2018	-0.3025	-2.5961	0.2714	0.5829	-1.4008	-3.4872
27	-0.1266	-0.3793	1.1031	1.7910	*-2.0445*	-4.2084	-0.3034	-2.6041	0.2720	0.5842	-1.4070	-3.5025
28	-0.0218	-0.0652	1.1078	1.7986	*-2.0477*	-4.2150	-0.3044	-2.6122	0.2726	0.5855	-1.4131	-3.5177
29	0.3001	0.8989	1.1125	1.8062	*-2.0509*	-4.2217	-0.3053	-2.6203	0.2732	0.5868	-1.4193	-3.5330
30	0.6520	1.9530	1.2520	2.0328	-0.8579	-1.7659	-0.2520	-2.1630	0.1570	0.3372	-1.3968	-3.4770

Source: Developed for research

Note: t-statistics in bold indicate statistical significance at 10% significance level or higher

Table 4.2.4: Post event Cumulative Abnormal Returns (CARs) for Trading and Services Index, Industrial Product Index, Industrial Index, Mining Index and Technology Index during 12th Malaysian General Election

Day	Trading &Services		Industrial Product		Industrial		Mining		Technology	
	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR
1	*-3.2138*	-5.8904	*-2.2837*	-4.9807	*-3.2835*	-6.0175	-0.6655	-1.0164	*-2.7042*	-5.1060
2	-1.1408	-2.0909	-1.3579	-2.9615	-1.6233	-2.9750	*-2.7913*	-4.2628	-1.6958	-3.2021
3	-1.7684	-3.2413	-1.2482	-2.7222	*-2.1021*	-3.8526	-0.4775	-0.7291	-0.2161	-0.4081
4	*-3.2909*	-6.0318	*-1.8583*	-4.0530	*-3.1375*	-5.7501	-0.4227	-0.6455	-0.8443	-1.5941
5	*-3.3102*	-6.0671	*-1.8549*	-4.0454	*-3.1497*	-5.7724	-0.4267	-0.6517	-0.8382	-1.5827
6	*-3.5887*	-6.5776	*-2.3183*	-5.0562	*-3.3284*	-6.0999	-0.3720	-0.5681	-1.4028	-2.6487
7	*-2.9669*	-5.4380	*-2.0940*	-4.5669	*-3.7526*	-6.8774	-1.4370	-2.1944	-0.8446	-1.5947
8	*-3.8128*	-6.9885	*-2.4474*	-5.3377	*-4.3079*	-7.8949	-1.3822	-2.1108	-1.0014	-1.8908
9	*-3.9986*	-7.3289	*-2.4156*	-5.2684	*-4.4593*	-8.1724	-1.3275	-2.0272	-0.8563	-1.6168
10	*-3.4860*	-6.3894	*-2.1088*	-4.5991	*-4.1305*	-7.5700	-0.5131	-0.7836	-1.0130	-1.9128
11	*-2.2968*	-4.2098	-1.6323	-3.5599	*-3.6872*	-6.7575	-0.0786	-0.1200	-0.6084	-1.1489
12	-1.5769	-2.8903	-0.9402	-2.0506	*-2.7201*	-4.9850	-1.1435	-1.7463	0.0715	0.1351
13	-0.8297	-1.5207	-0.6288	-1.3714	-1.6492	-3.0225	-0.3292	-0.5027	0.8204	1.5491
14	-0.8490	-1.5560	-0.6253	-1.3638	-1.6614	-3.0448	-0.3332	-0.5089	0.8265	1.5605
15	*-1.8695*	-3.4265	-1.0521	-2.2946	*-2.2111*	-4.0523	-0.2785	-0.4253	-0.1353	-0.2555
16	*-2.1916*	-4.0169	-0.8920	-1.9453	*-2.4390*	-4.4698	-0.2237	-0.3416	-0.4192	-0.7915
17	*-3.1903*	-5.8474	-1.2041	-2.6261	*-3.5016*	-6.4174	-0.1690	-0.2580	-0.4224	-0.7976
18	*-4.1344*	-7.5778	-1.2778	-2.7868	*-4.7935*	-8.7849	-0.1142	-0.1744	-0.1502	-0.2836
19	*-4.2383*	-7.7683	-1.1222	-2.4475	*-4.9831*	-9.1324	-0.0594	-0.0908	-0.3335	-0.6296
20	*-4.2576*	-7.8036	-1.1188	-2.4400	*-4.9952*	-9.1547	-0.0635	-0.0970	-0.3274	-0.6182
21	*-4.1051*	-7.5241	-0.6973	-1.5207	*-4.8902*	-8.9622	1.4777	2.2567	-0.3306	-0.6242
22	*-3.9689*	-7.2745	-0.6884	-1.5015	*-4.8725*	-8.9297	1.1658	1.7803	0.0422	0.0798
23	*-3.0471*	-5.5850	-0.0744	-0.1622	*-3.8617*	-7.0773	1.5872	2.4239	0.6640	1.2537
24	*-3.2819*	-6.0154	-0.1343	-0.2930	*-3.5930*	-6.5848	1.6420	2.5075	0.3377	0.6377
25	*-3.7405*	-6.8558	-0.1851	-0.4037	*-4.2900*	-7.8623	1.6967	2.5911	0.4087	0.7717
26	*-3.3424*	-6.1263	0.6124	1.3355	*-3.6939*	-6.7698	0.2978	0.4548	1.2846	2.4256
27	*-3.3617*	-6.1616	0.6158	1.3431	*-3.7061*	-6.7921	0.2937	0.4486	1.2907	2.4371
28	*-3.3810*	-6.1970	0.6193	1.3507	*-3.7183*	-6.8144	0.2897	0.4424	1.2968	2.4486
29	*-3.4003*	-6.2323	0.6228	1.3582	*-3.7304*	-6.8367	0.2857	0.4362	1.3028	2.4600
30	*-3.0732*	-5.6328	0.9250	2.0175	*-3.2489*	-5.9542	-1.0805	-1.6501	1.6174	3.0540

Source: Developed for research

Note: t-statistics in bold indicate statistical significance at 10% significance level or higher

Table 4.2.5: Post event Cumulative Abnormal Returns (CARs) for KLCI, Consumer Product Index, Property Index, Construction Index, Finance Index and Plantation Index during 13th Malaysian General Election

Day	KLCI		Consumer Product		Property		Construction		Finance		Plantation	
	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR
1	*5.5950*	3.3643	1.4606	2.0799	1.3893	6.4113	1.0513	6.8974	*5.6051*	3.9639	*2.0325*	2.0681
2	*7.9139*	4.7586	*1.9591*	2.7897	*2.2694*	10.4726	0.8633	10.8448	*8.8063*	6.2278	*2.8562*	2.9061
3	*7.6383*	4.5929	*2.0292*	2.8896	*1.9966*	9.2139	1.0163	9.4522	*8.4159*	5.9517	*2.7462*	2.7942
4	*6.8638*	4.1272	*2.2538*	3.2095	*2.2071*	10.1853	1.0212	10.3396	*7.0356*	4.9756	*3.9335*	4.0022
5	*7.4364*	4.4715	*2.8928*	4.1194	*2.5259*	11.6566	1.1452	13.0570	*7.4654*	5.2795	*4.3247*	4.4003
6	*8.8738*	5.3358	*3.4615*	4.9292	*3.3345*	15.3879	1.0381	15.1444	*9.2384*	6.5334	*4.4407*	4.5183
7	*8.8976*	5.3501	*3.9249*	5.5891	*3.1983*	14.7592	1.2272	14.3918	*8.7490*	6.1873	*5.0482*	5.1364
8	*8.3725*	5.0344	*4.2830*	6.0990	*3.3654*	15.5305	1.2726	15.3192	*8.5283*	6.0312	*4.3583*	4.4344
9	*6.8330*	4.1087	*4.2969*	6.1189	*3.2313*	14.9118	1.3298	14.5066	*7.2612*	5.1351	*2.6757*	2.7225
10	*7.0397*	4.2330	*4.2688*	6.0787	*3.6108*	16.6631	1.1822	15.2240	*7.7475*	5.4790	*3.1456*	3.2005
11	*7.7620*	4.6673	*4.7321*	6.7386	*4.7466*	21.9044	0.9970	17.3914	*8.4883*	6.0029	*3.9692*	4.0386
12	*8.7005*	5.2316	*4.9989*	7.1185	*4.8422*	22.3458	1.0324	18.4788	*9.4977*	6.7168	*4.9993*	5.0866
13	*8.3418*	5.0159	*4.6056*	6.5583	*4.4611*	20.5871	1.0324	17.3862	*9.0366*	6.3907	*4.4961*	4.5747
14	*7.3012*	4.3902	*4.5914*	6.5382	*3.8482*	17.7584	1.1931	16.2636	*7.8968*	5.5846	*3.8357*	3.9027
15	*6.7263*	4.0445	*4.5492*	6.4781	*4.3880*	20.2497	1.0367	16.5510	*7.3791*	5.2185	*3.2736*	3.3308
16	*7.5483*	4.5388	*4.4368*	6.3180	*5.1424*	23.7310	0.8628	17.9884	*8.1058*	5.7324	*3.5665*	3.6288
17	*8.2041*	4.9331	*4.6333*	6.5978	*5.2121*	24.0523	0.8890	18.7758	*9.2142*	6.5163	*3.9872*	4.0569
18	*7.3797*	4.4374	*4.5068*	6.4177	*4.9046*	22.6336	0.9189	18.2332	*8.6117*	6.0902	*3.0516*	3.1049
19	*6.8214*	4.1017	*4.8087*	6.8476	*4.9894*	23.0250	0.9638	17.2006	*8.4051*	5.9441	*2.2733*	2.3130
20	*6.5292*	3.9260	*4.6401*	6.6075	*4.5693*	21.0863	1.0155	16.5580	*8.1420*	5.7580	*2.3303*	2.3710
21	*7.4843*	4.5003	*4.9700*	7.0773	*4.6086*	21.2676	1.0784	17.7054	*8.6990*	6.1519	*4.1368*	4.2091
22	*7.2420*	4.3546	*4.8857*	6.9572	*4.4074*	20.3389	1.1085	17.0428	*8.4782*	5.9958	*3.6336*	3.6971
23	*6.7668*	4.0689	*4.8434*	6.8971	*3.9678*	18.3102	1.2207	15.4602	*7.9181*	5.5997	*4.2214*	4.2952
24	*7.3062*	4.3932	*4.8504*	6.9069	*4.3473*	20.0615	1.1157	16.0076	*9.0266*	6.3836	*4.3571*	4.4332
25	*8.4276*	5.0675	*5.1803*	7.3768	*4.5491*	20.9928	1.1388	17.3550	*9.7533*	6.8975	*6.1538*	6.2613
26	*7.6365*	4.5918	*4.8783*	6.9467	*4.0813*	18.8342	1.1953	16.7524	*9.0235*	6.3814	*5.3853*	5.4793
27	*7.1946*	4.3261	*4.2532*	6.0566	*4.0556*	18.7155	1.0487	16.0198	*8.6472*	6.1153	*4.6757*	4.7574
28	*4.1417*	2.4904	*3.6773*	5.2364	*3.2844*	15.1568	1.1196	13.9472	*5.7398*	4.0592	*3.3371*	3.3954
29	*5.9616*	3.5847	*4.1266*	5.8763	*3.3584*	15.4981	1.2287	15.1446	*6.6927*	4.7331	*5.0453*	5.1335
30	*6.8834*	4.1390	*4.2740*	6.0862	*3.6967*	17.0594	1.1562	14.5820	*7.7446*	5.4770	*4.9746*	5.0615

Source: Developed for research

Note: t-statistics in bold indicate statistical significance at 10% significance level or higher

Table 4.2.6: Post event Cumulative Abnormal Returns (CARs) for Trading and Services Index, Industrial Product Index, Industrial Index, Mining Index and Technology Index during 13th Malaysian General Election

Day	Trading &Services		Industrial Product		Industrial		Mining		Technology	
	T test	CAR	T test	CAR	T test	CAR	T test	CAR	T test	CAR
1	*2.7577*	3.7153	1.1548	2.2277	*1.7960*	2.1784	1.3751	4.5951	0.7860	3.6364
2	*3.0832*	4.9307	1.5838	3.0553	*2.3224*	2.8168	1.0864	3.6303	1.2500	5.7827
3	*3.0646*	4.7860	*1.8314*	3.5330	*2.3953*	2.9052	1.6026	5.3554	0.8774	4.0591
4	*1.7886*	4.9214	*1.8924*	3.6507	*2.6825*	3.2536	1.5802	5.2805	1.2117	5.6054
5	*1.7262*	5.3867	*2.6325*	5.0783	*3.3243*	4.0319	1.2915	4.3156	*1.9934*	9.2218
6	*2.0804*	6.3420	*3.2844*	6.3360	*4.2464*	5.1503	*3.1394*	10.4908	*2.9048*	13.4381
7	*1.7331*	6.2974	*3.0655*	5.9137	*4.1708*	5.0587	*3.6197*	12.0959	*2.8111*	13.0045
8	*1.9568*	6.3627	*3.6604*	7.0614	*5.0682*	6.1471	*3.8457*	12.8510	*3.0848*	14.2708
9	*2.7137*	5.5081	*3.6022*	6.9490	*5.2895*	6.4155	*3.0871*	10.3161	*3.0084*	13.9172
10	*2.4630*	5.7034	*3.8601*	7.4467	*5.1562*	6.2539	*3.0647*	10.2413	*3.6453*	16.8636
11	*2.1385*	6.3887	*4.2892*	8.2744	*5.5094*	6.6823	*3.2937*	11.0064	*4.0055*	18.5299
12	*1.8998*	7.0141	*4.1013*	7.9120	*5.3020*	6.4307	*4.7676*	15.9315	*4.3138*	19.9563
13	*2.0099*	6.7894	*3.8306*	7.3897	*4.6493*	5.6391	*4.2693*	14.2667	*4.1617*	19.2526
14	*2.0588*	5.8447	*3.4251*	6.6074	*4.4419*	5.3875	*2.5591*	8.5518	*3.5038*	16.2090
15	*2.2541*	5.6801	*3.2631*	6.2950	*4.3498*	5.2758	*2.5367*	8.4769	*3.6392*	16.8353
16	*2.2727*	6.6354	*3.7803*	7.2927	*4.5546*	5.5242	*2.5143*	8.4020	*3.7573*	17.3817
17	*2.3109*	6.7208	*4.1886*	8.0804	*4.9656*	6.0226	*2.4919*	8.3272	*3.9727*	18.3781
18	*2.8220*	6.0461	*4.1096*	7.9281	*4.8818*	5.9210	*2.4695*	8.2523	*3.9308*	18.1844
19	*3.6974*	6.4614	*4.0048*	7.7257	*4.9794*	6.0394	*3.9823*	13.3074	*3.9041*	18.0608
20	*3.4939*	5.7068	*3.8480*	7.4234	*4.4092*	5.3478	*2.4995*	8.3525	*3.7498*	17.3471
21	*2.1028*	6.4221	*4.1579*	8.0211	*5.1334*	6.2262	*2.4771*	8.2777	*3.8203*	17.6735
22	*2.3333*	6.4975	*3.9649*	7.6487	*5.5525*	6.7346	*1.9430*	6.4928	*3.5688*	16.5098
23	*1.8757*	5.7228	*3.8392*	7.4064	*4.8916*	5.9330	*1.3999*	4.6779	*3.2978*	15.2562
24	*2.0717*	6.1781	*3.8536*	7.4341	*4.9975*	6.0614	*1.9072*	6.3731	*3.4181*	15.8125
25	*1.5849*	6.9535	*4.1893*	8.0817	*5.6805*	6.8897	*2.6658*	8.9082	*3.7523*	17.3589
26	1.6756	6.2588	*3.9497*	7.6194	*4.8217*	5.8481	*2.1347*	7.1333	*3.6283*	16.7853
27	*1.8494*	6.0142	*3.7929*	7.3171	*4.6307*	5.6165	*1.8549*	6.1984	*4.0577*	18.7716
28	*1.7200*	4.1695	*4.8181*	9.2947	*3.7060*	4.4949	1.0514	3.5136	*3.8408*	17.7680
29	1.3265	5.3148	*5.3923*	10.4024	*4.2653*	5.1733	1.2954	4.3287	*3.7168*	17.1943
30	1.5568	5.8202	*5.5984*	10.8001	*4.6350*	5.6217	1.2730	4.2538	*3.7700*	17.4407

Source: Developed for research

Note: t-statistics in bold indicate statistical significance at 10% significance level or higher

Table 4.2.5 and Table 4.2.6 exhibit the post event CARs next to their t-statistics for each of the 30 days following the announcement of 13th Malaysian General Election results in 2013. The value of t-statistics is computed to test the null hypothesis which is reaction of stock market (KLIC and 10 sectoral indices) upon the arrival of 13th Malaysian General Election are consistent with the theory of Uncertain Information Hypothesis (UIH).

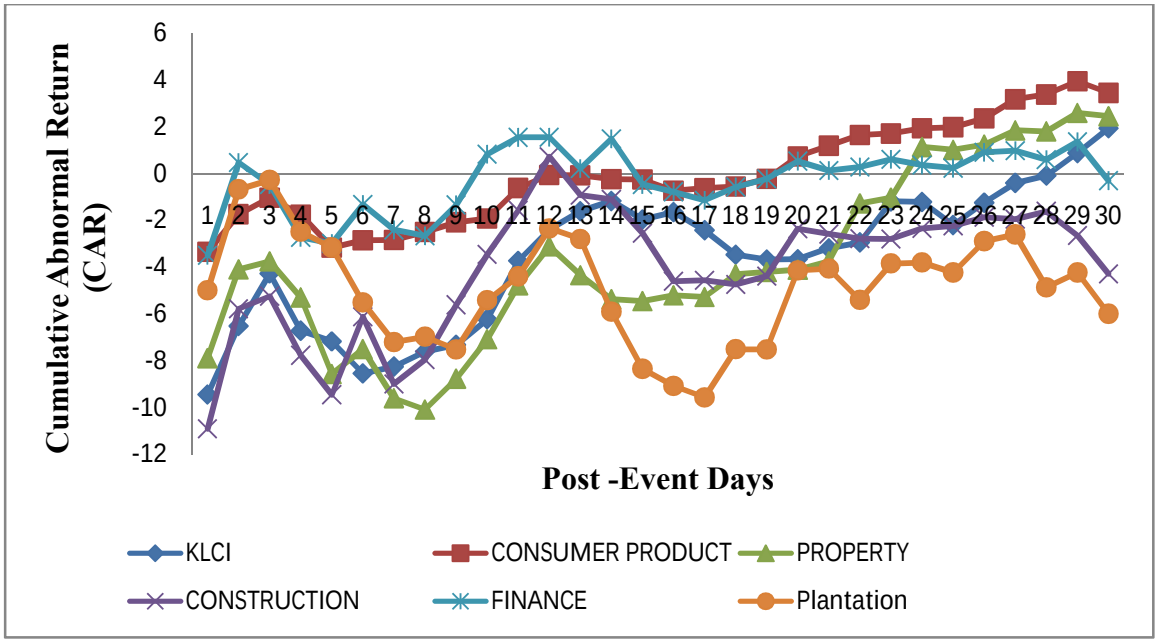
As revealed in Table 4.2.5 and Table 4.2.6, Construction Index is the only index that did not contain any statistically significant CARs in response to the 13th Malaysian General Election. All the CARs in KLCI, Finance Index, Plantation Index and Industrial Index are statistically significant while Consumer Product Index and Property Index only have one insignificant CAR which in on the 1st day after the general election. Other indices such as Mining, Technology and Trading & Services Index compromise of mostly statistically significant CARs. The CARs reach their highest level (18.7853 significantly and 18.7758 insignificantly) for these indices in response to the 13th Malaysian General Election.

Figure 4.2.1 represents the graphs of CARs over the 30 post-event days for KLCI, Consumer Product Index, Property Index, Construction Index, Finance Index and Plantation Index for year 2008 during the 12th Malaysian General Election. Figure 4.2.2 represents the graphs of CARs over the 30 post-event days for Trading and Services Index, Industrial Product Index, Industrial Index, Mining Index and Technology Index for the year 2008 during the 12th Malaysian General Election. The pattern displays in both the figures are consistent with the discussion and statistical analysis in Table 4.2.3 and Table 4.2.4.

Both Figure 4.2.1 and Figure 4.2.2 depict an upward trend for all the indices during the first 3 days after general election. However, after the 3rdday, most of the indices illustrate a declining trend before having a pullback around 6th to 8th day. KLCI, Consumer Product Index and Property Index have almost the same trending of CARs while Finance Index, Plantation Index and Construction Index have approximately

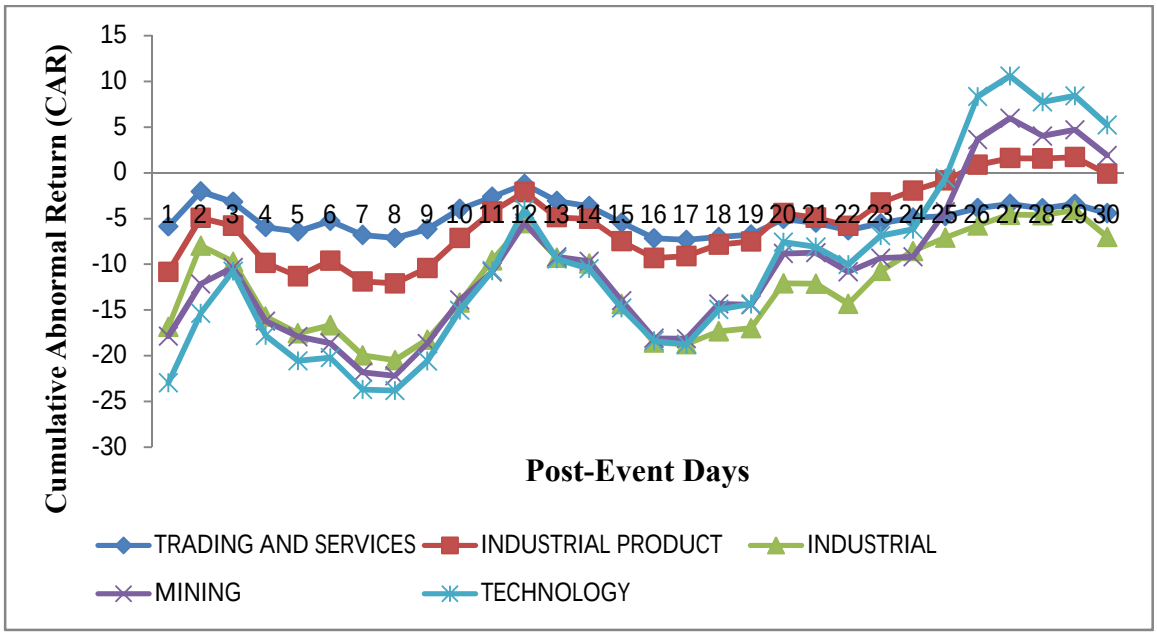
same frequency in Figure 4.2.1. Consumer Product Index, Trading & Services Index as well as Industrial Product Index have a very stable growth of CARs through the 30 post-event days. Generally, throughout the 30 days, all the indices have an increasing trend of CARs which exhibits the assumption of UIH except for Plantation Index and Trading & Services Index.

Figure 4.2.1: Post-event Cumulative Abnormal Returns (CAR) for year 2008



Source: Developed for research

Figure 4.2.2: Post-event Cumulative Abnormal Returns (CAR) for year 2008



Source: Developed for research

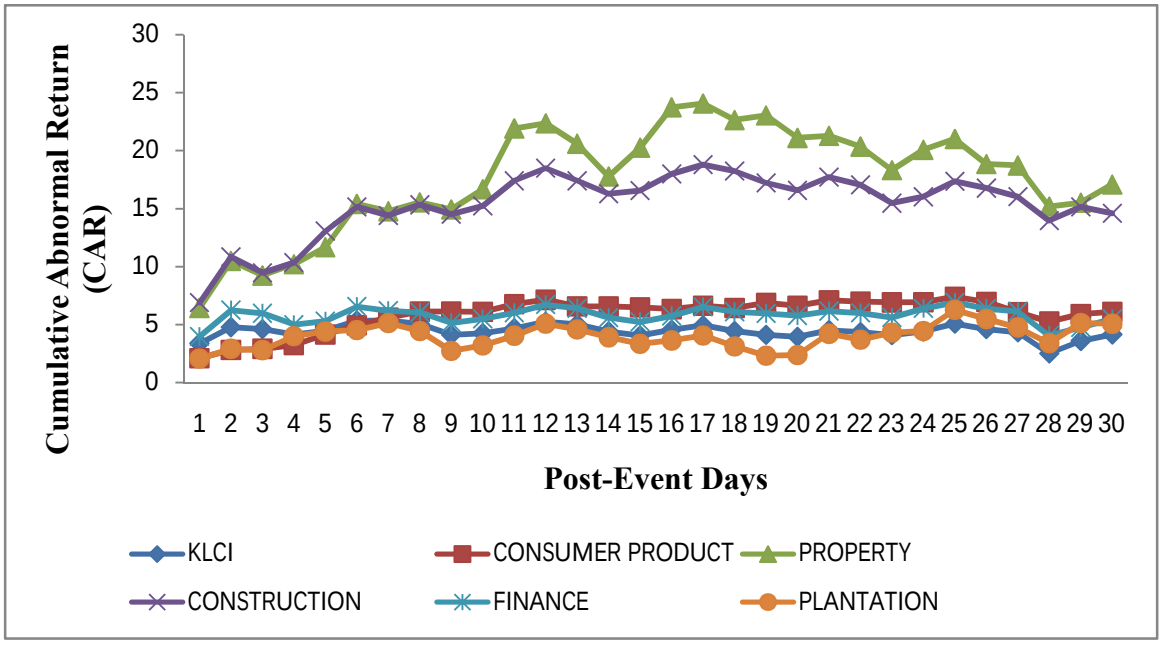
In other words, Figure 4.2.1 and Figure 4.2.2 indicate the arrival of political news increases the uncertainty of financial markets in Malaysia and there is an upward price movement following the arrival of unexpected information with exception on Plantation Index and Trading & Services Index. The CARs movement of Trading & Services Index is more prone to the explanation of Efficient Market Hypothesis (EMH). On top of that, both Figure 4.2.1 and Figure 4.2.2 revealed that 12th Malaysian General Election is being perceived as an unfavourable event rather than a favourable event.

This can be seen through the negative value in the CARs following the announcement of 12th Malaysian General Election results. The empirical results in both the figures also provide a support for the prediction of UIH. Therefore, it can presume that investors in Malaysia during the 12th Malaysian General Election set securities' prices below their fundamental value in response to general election. The empirical results of this research paper are consistent with the findings of Akkoc and Ozkan (2013) and

Mehdian et al. (2008) whereby investors in Turkey set securities' prices below their fundamental value in response to unexpected information.

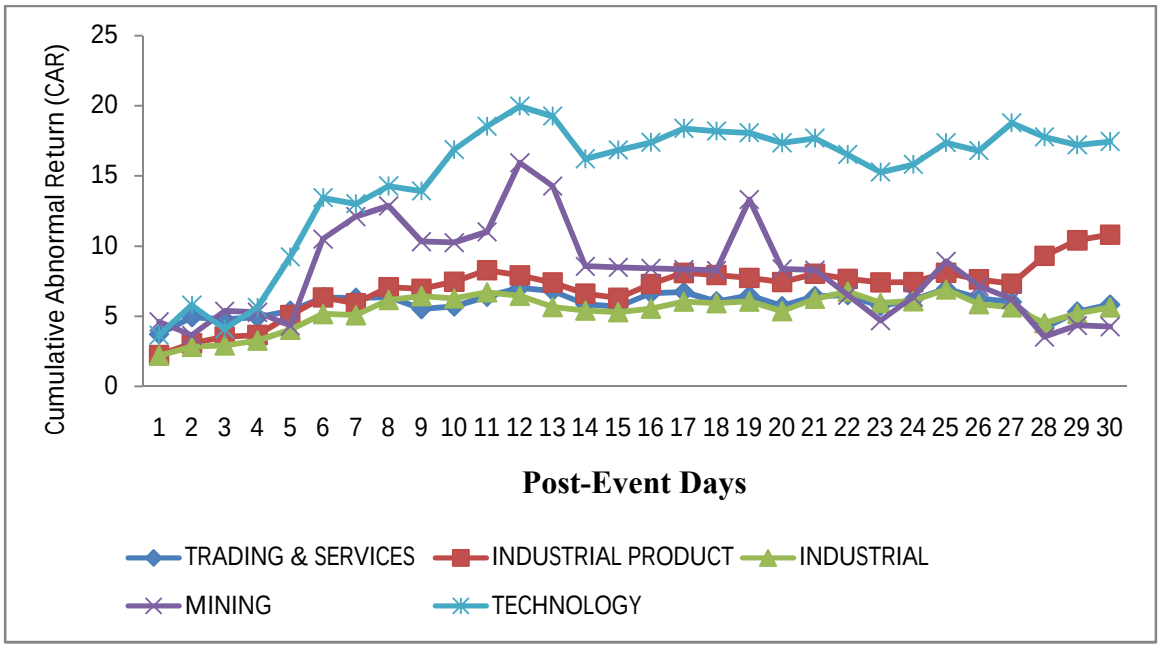
Figure 4.2.3 shows the CARs results of 30 post-event days of KLCI, Consumer Product index, Property Index, Construction Index, Finance Index and Plantation Index for 13th Malaysian General Election in 2013. Figure 4.2.4 demonstrates the CAR results for the 30 post-event days from the 13th Malaysia General Election in 2013 for the Trading & Services Index, Industrial Product Index, Industrial Index, Mining Index and Technology Index. The pattern displays in both the figures are consistent with the discussion and statistical analysis in Table 4.2.5 and Table 4.2.6.

Figure 4.2.3: Post-event Cumulative Abnormal Returns (CAR) for year 2013



Source: Developed for research

Figure 4.2.4: Post-event Cumulative Abnormal Returns (CAR) for year 2013



Source: Developed for research

For Figure 4.2.3, KLCI index, Consumer Product index, Finance index and Plantation index, the CAR value for the 30 days after the event day fluctuated very subtly within 0% to 4%. Industrial Index and Trading & Services Index in Figure 4.2.4 experienced the same sluggish fluctuation too. On the other hand, the Property Index and the Construction index are having an upward trend since the beginning until day 17th before both the indices starts to undergo decline movement. Similar scenario is found in Mining Index and Technology Index where both the indices CARs soared for the first 12 days following the announcement of 13th Malaysian General Election results. CARs movement of Technology Index remains sideway while Mining Index suffers a plunge thereafter. Based on the empirical results for both Figure 4.2.3 and Figure 4.2.4, this research paper deduces that the announcement of 13th Malaysian General Election results is being perceived as good news rather than bad news. This can be proven by the positive values of CARs in Table 4.2.5 and Table 4.2.6.

Basically, most of the indices are not in consistent with the prediction of UIH. This is shown by the fluctuation in narrow band by most of the indices (KLCI, Consumer Product Index, Finance Index, Plantation Index, Industrial Index and Trading & Services Index). Indices such as Property, Construction, Industrial Product and Technology Index aligned with the prediction of UIH while Mining Index remains ambiguous. In other words, empirical results of this study suggest that the prediction of UIH does not generally hold in response to the announcement of 13th Malaysian General Election results.

4.3 Conclusion

The statistical tests are conducted and findings are presented in the form of tables and figures followed by a brief description in words. The summary of the findings are shown in Table 5.1.1 and Table 5.2.2. The implications and discussions of these findings are available in the following final chapter.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

This chapter is dedicated to provide a summary on all the findings of this research paper. It will be divided into 5 sections. First section summarizes on the statistical analysis on Chapter 4 with an additional discussion of results. Implications and limitations of this research paper are thoroughly explained in the second and third section respectively. The next section attempts to present recommendations for future researcher. This chapter ends with a general conclusion.

5.1 Summary of Results and Findings

Table 5.1.1 Summary of the results for the impact of 12th and 13th Malaysian General Election on stock indices

Index / Year	Significance of Dummy Coefficient, β	
	2008	2013
KLCI	SIGNIFICANT	SIGNIFICANT
Construction	SIGNIFICANT	SIGNIFICANT
Consumer	SIGNIFICANT	INSIGNIFICANT
Finance	INSIGNIFICANT	SIGNIFICANT
Industrial Product	SIGNIFICANT	SIGNIFICANT
Industrial	SIGNIFICANT	SIGNIFICANT
Mining	INSIGNIFICANT	INSIGNIFICANT
Plantation	SIGNIFICANT	INSIGNIFICANT
Properties	SIGNIFICANT	SIGNIFICANT
Technology	INSIGNIFICANT	INSIGNIFICANT
Trading/Services	SIGNIFICANT	SIGNIFICANT

Source: Developed for research

Among the important empirical areas of research in recent years is the establishment of relationship between political elections and stock market. Pantzalis, Stangeland and Turtle (2000) mentioned that presidential-election events can influence the financial markets to behave in a certain pattern due to informational effectiveness of election outcomes that security prices will absorb the political news in anticipation of the election results. Investigation conducted by Li and Born (2006) suggests that differences in political rhetoric often lead to a difference in economic outcomes, thereby indicating the interaction between stock return and political election outcomes. Kim and Mei (2001) proven that the political developments in Hong Kong have played an important role in its market volatility and return. These are just among the few researchers that had been thoroughly clarified in Chapter 2 of this research paper.

It is important to note that the first objective in this research paper is to investigate the impact of Malaysian General Election on KLCI and the 10 sectoral indices. Though there are a lot of researchers that had established the impact of political elections on stock market across the global, the obtained findings would still like to contribute in the establishment of the impact of political elections on stock market. Empirical results in this study suggest that overall Malaysian stock market is affected by both 12^{th} and 13^{th} Malaysian General Election.

The results of this research paper show significant coefficient of dummy variable, β for most of the indices in year 2008 and 2013. The findings are in consistent with the findings of Foerster (1994), Pantzalis, Stangeland and Turtle (2000), Landler (2000), Li and Born (2006), Wang and Lin (2008), Huang, Chan, Huang and Chang (2011), Poon (2012), Opare (2012) as well as Hyam (2013) whereby their findings had been thoroughly described in Chapter 2.

Table 5.1.2 Summary of results for the reaction of investors upon arrival of 12th and 13th Malaysian General Election

Index / Year	Consistency with Uncertain Information Hypothesis (UIH)			
	2008	10% Significant level	2013	10% Significant level
KLCI	YES	Significant at first 10 days	NO	Significant
Consumer Product	YES	Significant at first 8 days	NO	Significant
Property	YES	Significant	YES	Significant
Construction	YES	Insignificant	YES	Insignificant
Finance	YES	Insignificant	NO	Significant
Plantation	NO	Significant	NO	Significant
Trading & Services	NO	Significant	NO	Significant
Industrial Product	YES	Significant at first 10 days	YES	Significant
Industrial	YES	Significant	NO	Significant
Mining	YES	Significant only at 2nd day	NO	Significant
Technology	YES	Significant only at 1st day	YES	Significant

Source: Developed for research

Investor's reaction are often being forecasted or described through 3 theoretical models which are Efficient Market Hypothesis (EMH), Overreaction Hypothesis (OH) and Uncertain Information Hypothesis (UIH) that had been thoroughly reviewed in Chapter 2. By comparing on the year of which the hypothesis is created, UIH is relatively much "younger" than the other 2 models and therefore the foundation for UIH are not as solid as EMH and OH.

Thus, it is the obligation as well as the objective of this research paper to enhance the availability of UIH in examining the reaction of stock market upon the arrival of Malaysian General Election. The empirical results demonstrates that the arrival of 12th and 13th Malaysian General Election results as unexpected information do not cause statistically significant price reversals in Construction Index, Finance Index, Mining Index and Technology Index in 2008 while only Construction Index in 2013. The reaction of Malaysian stock market during 12th Malaysian General Election is found to have consistency with the prediction of UIH where Malaysia's investor position the securities price below the fundamental values in response to unexpected information. However, larger portion of the reaction of Malaysian stock market

during 13th Malaysian General Election is found to have inconsistent with the prediction of UIH. Property Index, Industrial Product Index and Technology Index are the only 3 indices that are found to have statistically significant with the prediction of UIH during 13th Malaysian General Election. Therefore, this study concludes that the efficiency of Malaysian stock market has increased since 2008 which is consistent with the conclusion of Akkoc and Ozkan (2013) that states the efficiency of Borsa Istanbul has increased since 2004, in comparison with the study of Mehdian et al. (2008) examining the period 1997 to 2004.

5.2 Discussions of Major Findings

According to Nimkhunthod (2007), the author stated that based on UIH, the election, which is considered being good news, is expected to give non negative abnormal return. However, the empirical results obtained illustrate that 12th Malaysian General Election is being perceived as an unfavourable event rather than a favourable event by Malaysia's investors. There are several reasons that can be use to explain the non-alignment. During the 12th Malaysian general election, the result of the voting were a shock as it was the first time since 1969 that the coalition did not win two-third majority in the lower house parliament due to the non-Malay citizens rejecting the incumbent party (Pepinsky, 2009). The winning without two-third majority had caused a change in the political structure of Malaysia whereby the incumbent party is losing its supremacy. Li and Born (2006) stated that the sensitivity of the stock market to election uncertainty may be related to the political structure of the country. The 2008 election results, which can be described as negative shocks, tend to gives the investors a higher motivation to retreat as political uncertainty rises along with the changes of political structures in Malaysia. Therefore, this has lead to the plunge in the stock market the following day.

Besides, the spillover effects of the Subprime Mortgage crisis in United States to the Asian market also took place around the period of general election in Malaysia. There

were several effects that were significant towards Malaysia that was caused by the Subprime Crisis. Firstly, the crisis affected the trade of Malaysia negatively as Malaysia is very dependent on trade (Nambiar, 2009). Since the crisis, export levels of Malaysia decreased significantly and this had affected a lot of industries, like the consumer products, plantations and others. Furthermore, due to the Subprime crisis started from the financial sector in the United States, there had been a blow of confidence of the public towards the financial markets around the world. This can be seen when the Dow Jones Industrial Average (DJIA) fall for more than 1300 points since the early of 2008 to March of 2008 from 13044 points to 11740 points (S&P Dow Jones Indices, LLC, n.d.). The financial sector in Malaysia had been affected by the drop in loan growth and increase in Non-performing loans (NPLs) (Ibrahim, n.d.). In addition, the Malaysia foreign direct investments (FDI) were also been affected badly. During the period of the crisis, capital flow into Malaysia had declined as well as the portfolio flow, which resulted in a tremendous drop in the FDI (Goh & Lim, 2010). A drop in FDI will certainly affect the businesses in the country negatively as well.

As the first ambiguity had been clarified, here comes another statement. The stock index crossed the 1720 mark for the first time ever, briefly touching an intra-day peak of 1826 right after the announcement of general election results (KLCI, 2013). For the second time, the incumbent party, UMNO is unable to win with two-third majority during the 13th Malaysian General Election with the number of winning seats declines as compared to 12th Malaysian General Election. However, the stock market did not plummet and instead, witnessed a historic day on 6th of May 2013 as the benchmark FTSE Bursa Malaysia KLCI index soared to an all-time high after the country's ruling coalition returned to power for the 13th term (Godlewski, Turk & Weill, 2013). However, this is not the first time Malaysia witness such scenario as it happened before on the 2008, the 12th Malaysian General Election. The reaction of stock indexes for all the industries for these two General Elections is completely different (Liow, 2010).

There are a few factors that may explain the situation during 13th Malaysian General Election. BN through its control of Employee Provident Fund and other major government and government-linked investors and companies has been supporting the market (Marquardt, 2013). Felda Global Ventures Holdings Bhd is one of the examples of government-linked companies. As the announcement of the victory of BN was made, the elected government has the influence to raise the KLCI in the event of celebrating their victory (Cramb, 2013). Besides, the European and American economies are still at a phase of recovery from the subprime mortgage crisis and European debt crisis. Therefore, developing countries such as Malaysia are still an attractive location for portfolio investment. It indirectly contributes to the growth of the KLCI (Yeyati & Williams, 2012).

On top of that, Ilias and Wong (2013) stated that political continuity and policy certainty are important to sustain the investment growth momentum and the implementation of projects that are already in the pipeline of Economic Transformation Programme (ETP). The author also expected an uptrend in KLCI after the 13th General Election because there is greater clarity and better political stability and policy fronts. On top of that, having the incumbent party to win the general election constitute a strong domestic economics and corporate balance sheets and thus causes the corporate earnings to continue growing. All these major projects were granted to different large public listed companies. So, if the opposition wins the election, they might alter the policy and stop all the projects that were given out before the election. Investors will concern on the uncertainties that entails over the changes in government coalition. Last but not least, according to David Chua, Citibank's investment strategist, the incumbent government has done a good job in bringing foreign direct investment into the country's economy (Ng, 2013). So, investors prefer the current government to remain to avoid major alteration in certain projects or policies.

Next, Construction Index and Property Index are found to have among the largest CARs following both Malaysian General Election. The construction sector indicates

an uptrend after the 13th Malaysian General Election results are out because it is perceived as good news for the investors. The fact that the government remains the same although the incumbent party lost a few more seats in parliament compare to the previous general election to the opposition party indicates that there is still political stability in the country. Thus, lesser major changes in country policy may decrease the uncertainty in stock market. Thus, the stock price increase reflecting on the positive effect the result gives to the financial market. Unlike the 12th General Election, most investors did not expect the incumbent party to lose so many parliamentary seats to the opposition party. It was the first time after so long that the incumbent party did not win by two-third majority since 1969. When this happened, investors realized that the uncertainty levels in the stock market has increased because the decisions made in the parliament are not solely based on the incumbent party but any establishment of policies or regulation must be done under the agreement of both the incumbent party and the opposition party. Furthermore, it was a shock that investors had to receive and their shock was reflected in stock market immediately the day after the general election's result was announced.

In terms of construction and property, the government has granted many projects to several public listed companies for execution as part of the development plan of Economic Transformation Programme. Some of the projects are the construction of MRT, the development of Iskandar Malaysia and Greater KL (Performance Management and Delivery Unit, 2010). Most of the public listed company's main shareholders like Employee Provident Fund or Khazanah Nasional Berhad are actually under the control of incumbent party. So, when the incumbent party did not win by two-third majority in the 12th Malaysian General Election, uncertainty rises and investors in these public listed companies were badly affected. However, the stock market tends to have an upward trend in the 13th Malaysian General Election because the investors had already expected for the worst in which they had experienced in the previous general election. In addition, the results of the 13th Malaysian General Election turns out that the incumbent party will still remain as the government. Thus, all the policies and projects will remain the same as it is after the

13th Malaysian General Election indicating that uncertainties were almost insignificant.

5.3 Implications of the Study

The implications of this study can be divided into two categories, investors and researchers.

5.3.1 For Investors

It is stated in Chapter 1 of this research paper that the significance bring along by the findings of this paper provides insights for local and foreign investor on how general election affects the Malaysia stock market performance as a whole and in specific industries. Though this empirical investigation suggests that the impact of 12th and 13th Malaysian General Election on its stock market as a whole (KLCI) as well as sectoral indices are mostly significant, there are still certain sectoral indices that are not affected. For example, this study showed that Mining Index and Technology Index are not affected by both elections in 2008 and 2013. Therefore, local and international investors may enhance their portfolio management thorough the findings of this research paper.

On top of that, since the findings revealed the impact of general election on Malaysian stock market, this can also aid in providing better decision-making by investors to achieve optimal risk reduction at the time around the happening of the event. Indirectly, this empirical study has allowed the local as well as international investors to have a better understanding on evaluating the political risk in Malaysian stock market.

Last but not least, foundation from past researchers has led to an assumption that general elections which arouse political news, causes political uncertainty. Therefore, investors may take their respective position trying to outperform the market. As the empirical results are aligned with most of the past studies, therefore, this research paper does not deny that there are possibilities of earning abnormal return at the time around the happening of the event.

5.3.2 For Researchers

This research paper is among the first papers attempting to understand the impact of 12th and 13th Malaysian General Election on its sectoral indices. More to the point, this research paper is also among the first papers to have use Uncertain Information Hypothesis (UIH) to describe the reaction of Malaysian stock market towards a particular event. Most of the previous researchers used individual firm's daily return to investigate on the impact, but not market as a whole. Therefore, research designed in this paper paves the road for future researchers who wish to adopt sectoral indices as their target sample to better understand the effects of Malaysian general elections on its stock market.

Researchers may question on the significance of this research paper as there are so many previous findings that had affirm the impact of elections on stock market. However, unlike previous studies that focus on developed countries such as United States and European countries, Malaysia has thus far yet to change its government and it will be marked as the longest ruling government until next general election in 2018. Besides, Malaysia ruled under parliamentary system, not presidential system. Therefore, the results of this research paper have provides evidence for the relationship between general election and stock market in a parliamentary-system country that allows the enhancement of knowledge in this field of study.

Last but not least, different industry has different ration of contribution to the economy of a country and therefore, the impact of general election on the industry index may vary among each other. The knowledge gap in this area is bridged by the thorough investigation of this research paper whereby this research paper concludes that 12th and 13th Malaysian General Election has different impact on different sectoral indices. Mining and Technology Index remain insignificant for both elections, Finance Index was affected in 2013 only and Plantation and Consumer Product Index was affected only in 2008 while other indices are significantly affected by Malaysian General Election.

5.4 Limitations of the Study

There are several predicaments that are found during the course of this research which cannot be avoided due to time and resources constraints. Therefore, it is best for readers to take note on the limitations in the scope of this study.

5.4.1 Two General Elections

As such, all results relating to this study is only true when applied on 12th and 13th Malaysian general election, not any general election in the past. The development of this research paper has obviously indicates the differences in the impact of each general election on Malaysian stock market. Based on Table 3.1.1 in Chapter 3, it can be clearly observe that 8th, 12th and 13th Malaysian General Election are the elections that significantly affect Malaysian stock market with daily rate of return of 3.98%, -9.50% and 3.38% respectively after the announcement of general election results.

However, general elections before year 2008 does not caused much fluctuation on the daily high in the stock market (less than 4%) as compared to

12th and 13th Malaysian General Election (-10.712% and 7.756% respectively). Therefore, this research paper only includes the most recent two general elections. Since this research paper investigates only 2 out of 13 Malaysian general elections, the empirical results should not be used as a generalization on all general elections in Malaysia.

5.4.2 Monday effect

As mentioned, Malaysia's general election polling day is always held on Sunday for the convenience of the citizens as it is a non-working day. The results are also normally announced before the stock market initiate operation on the next day, Monday. So, all the changes in decision of buying and selling of stocks will accumulated and be matched once the stock market resumes on Monday. Therefore, this research paper used the first daily return, in this case Monday, to determine whether there is abnormal return.

However, market anomalies such as Monday effect is not take into account by this research paper. Lakonishok and Maberly (1990) states that on Monday, people tend to increase the number of sell transactions relative to buy transactions. This Monday effect appears all year round which might also be a contributing sector towards the changes in return on the Monday, after the polling day.

5.4.3 Market Volatility

Previous researchers often combine the both the investigation of market return and volatility when it comes to the impact of political news. However, this research paper does not investigate on the market volatility. This has caused the imperfection evidence of relationship between general election and stock

market in a parliamentary-system country that allows the enhancement of knowledge in this field of study. This is because general election may impact both market returns and volatility differently. This has been proven by Floros (2008), whereby the author concluded his investigation that there is no significant impact of Greek political elections on Athens Stock Exchange, but there is existence of abnormal volatility.

Moreover, Suleman (2012) found that bad political news have more effect on the volatility of stocks than the good news. The yield result is in line with the study of Engle and Ng (1993) whom results specifying that bad and good news have different impact volatility on the stock markets. The empirical results disclose that 12th Malaysian General Elections is perceived as bad news while 13th Malaysian General Elections reflects the acceptance of good news. Therefore, this research paper is unable to contribute to the findings of previous researchers regarding the degree of different news on markets volatility.

5.5 Recommendations for Future Research

Considering the myriad limitations present in this research project, there are several improvements future researchers could attempt when conducting a similar study.

5.5.1 Compare amongst General Elections in Malaysia

Mentioned in the previous section, this research only studies the 12th and 13th Malaysian General Election. And thus, the outcomes are not best fit to represent all the general elections, as a whole, in Malaysia. Future researchers can compare amongst the 11 previous general elections in Malaysia to get a

consistent result on the impact of general elections on stock market in general taking into account all other factors.

Therefore, it is important for future researchers to use the paved research design in this research paper to investigate on the impact of previous 11 general elections on Malaysian stock market. It would be better if future research makes it possible for investors to determine their investment decision through a new pricing model that suits specifically during election period.

5.5.2 Speed of Information Spreading

As mentioned before in Chapter 2, the spread of news is among the factors that catch the attention of financial researchers for decades while political news has its unique way of affecting stock market.

According to Suffian (2008), 12th Malaysian General Election had produced a result that has since changed political landscape of the country. The author further argued on the role played by Internet as a conduit for expressing public desire for political change. This is because Internet is among the various factors that lead to the worst results of Barisan Nasional (BN) in the history of Malaysian General Election.

The author stated that as evolution of Malaysian politics is developing quickly, information becomes more freely available and along with the increasing younger electorate, the role of ICT in Malaysian political and social discourse has become even wider than before. Therefore, future research can be designed to compare the stock markets' reaction towards Malaysian General Election before and after the boom of Internet and social media.

5.5.3 Volatility Transmission

As mentioned previously, general election may impact both market returns and volatility differently as shown by Floros (2008). Therefore, this research paper recommends future research to use sophisticated econometric techniques to verify if there is volatility transmission during Malaysian General Election.

Among the sophisticated econometric techniques to investigate on the volatility transmission includes GARCH model. Pioneer studies on this methodology includes Jong, Kemna and Kloek (1992) and Brockett, Chen, and Garven (1994). Their event study methodology includes a market model with GARCH effects and time-varying slope. They are called dynamic market models. On top of that, Kim and Mei (2001) implemented a components-jump volatility filter which can be used to identify the circumstances of political risk enables authors to identify the market return and volatility effects of political publication.

5.6 Conclusion

In conclusion, the main objective of this research paper is to investigate the impact of 12th and 13th Malaysian General Election on its stock market as well as the reaction of stock markets following the announcement of general election results. Based on the results of data analysis and discussion on findings, it is concluded that there is an impact of the 12th and 13th Malaysian General Election on its stock market. Furthermore, Malaysian stock market react in response to general election is consistent with the prediction of UIH in 2008 but not in 2013. This shown that Malaysian stock market in 2013 has become more efficient than in 2008.

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APPENDICES

Appendix 4.1: Result of impact of 12th Malaysian general election on the stock market

Index	Constant	Dummy Coefficient	P-values of F-statistics	R^2	Jarque-Bera Test
KLCI	-0.032724	-1.77276	0.001872	0.035903	0.00000
Construction	-0.118833	-0.976707	0.034051	0.016840	0.00000
Consumer	0.022583	-0.574476	0.015270	0.022004	0.00000
Finance	0.018249	-0.457496	0.137085	0.008540	0.00000
Industrial Product	-0.071681	-0.534489	0.048111	0.014659	0.00000
Industrial	-0.019892	-0.931586	0.002852	0.033087	0.00000
Mining	-0.067383	-0.598597	0.420204	0.002453	0.00000
Plantation	0.010483	-1.055615	0.042583	0.015426	0.00000
Properties	-0.179712	-0.872528	0.008890	0.025546	0.00000
Technology	-0.111488	-0.294762	0.373965	0.002984	0.00000
Trading/Services	-0.65560	-0.936930	0.001490	0.037432	0.00000

Appendix 4.2: Result of impact of 13th Malaysian general election on the stock market

Index	Constant	Dummy Coefficient	P-values of F-statistics	R^2	Jarque-Bera Test
KLCI	0.017266	0.371734	0.036843	0.016402	0.00000
Construction	0.013594	1.166406	0.000085	0.056922	0.00000
Consumer	0.021914	0.295086	0.104784	0.009936	0.00000
Finance	0.019141	0.467859	0.022172	0.019661	0.00000
Industrial Product	0.057734	0.404266	0.052685	0.014145	0.00000
Industrial	0.027734	0.399266	0.053772	0.014018	0.00000
Mining	0.097188	-0.168188	0.817516	0.000202	0.00000
Plantation	0.021992	0.239008	0.254290	0.004920	0.00000
Properties	0.024727	1.013273	0.006059	0.028182	0.00000
Technology	0.015039	0.642961	0.175051	0.006955	0.00000
Trading/Services	0.029805	0.445195	0.015316	0.022067	0.00000

Appendix 4.3: Result of Cumulative Abnormal Return (CAR) for KLCI in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-9.5	-0.0841	-9.4159	-9.4159	2.9956	-3.1432
11-Mar-08	2.84	-0.0841	2.9241	-6.4918	2.9956	-2.1671
12-Mar-08	2.16	-0.0841	2.2441	-4.2477	2.9956	-1.4180
13-Mar-08	-2.53	-0.0841	-2.4459	-6.6936	2.9956	-2.2345
14-Mar-08	-0.54	-0.0841	-0.4559	-7.1495	2.9956	-2.3867
17-Mar-08	-1.45	-0.0841	-1.3659	-8.5154	2.9956	-2.8426
18-Mar-08	0.21	-0.0841	0.2941	-8.2213	2.9956	-2.7445
19-Mar-08	0.55	-0.0841	0.6341	-7.5872	2.9956	-2.5328
21-Mar-08	0.21	-0.0841	0.2941	-7.2931	2.9956	-2.4346
24-Mar-08	1.01	-0.0841	1.0941	-6.199	2.9956	-2.0694
25-Mar-08	2.41	-0.0841	2.4941	-3.7049	2.9956	-1.2368
26-Mar-08	1.26	-0.0841	1.3441	-2.3608	2.9956	-0.7881
27-Mar-08	0.69	-0.0841	0.7741	-1.5867	2.9956	-0.5297
28-Mar-08	0.35	-0.0841	0.4341	-1.1526	2.9956	-0.3848
31-Mar-08	-0.87	-0.0841	-0.7859	-1.9385	2.9956	-0.6471
1-Apr-08	0.23	-0.0841	0.3141	-1.6244	2.9956	-0.5423
2-Apr-08	-0.86	-0.0841	-0.7759	-2.4003	2.9956	-0.8013
3-Apr-08	-1.13	-0.0841	-1.0459	-3.4462	2.9956	-1.1504
4-Apr-08	-0.29	-0.0841	-0.2059	-3.6521	2.9956	-1.2192
7-Apr-08	-0.07	-0.0841	0.0141	-3.638	2.9956	-1.2144
8-Apr-08	0.38	-0.0841	0.4641	-3.1739	2.9956	-1.0595
9-Apr-08	0.17	-0.0841	0.2541	-2.9198	2.9956	-0.9747
10-Apr-08	1.67	-0.0841	1.7541	-1.1657	2.9956	-0.3891
11-Apr-08	-0.11	-0.0841	-0.0259	-1.1916	2.9956	-0.3978
14-Apr-08	-1.07	-0.0841	-0.9859	-2.1775	2.9956	-0.7269
15-Apr-08	0.87	-0.0841	0.9541	-1.2234	2.9956	-0.4084
16-Apr-08	0.76	-0.0841	0.8441	-0.3793	2.9956	-0.1266
17-Apr-08	0.23	-0.0841	0.3141	-0.0652	2.9956	-0.0218
18-Apr-08	0.88	-0.0841	0.9641	0.8989	2.9956	0.3001
21-Apr-08	0.97	-0.0841	1.0541	1.953	2.9956	0.6520
				CAR std	2.9956	

Appendix 4.4: Result of Cumulative Abnormal Return (CAR) for Consumer Product Index in 2008

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t test
10-Mar-08	-3.32	-0.0065	-3.3135	-3.3135	1.6236	-2.0408
11-Mar-08	1.6	-0.0065	1.6065	-1.7069	1.6236	-1.0513
12-Mar-08	0.7	-0.0065	0.7065	-1.0004	1.6236	-0.6161
13-Mar-08	-0.73	-0.0065	-0.7235	-1.7238	1.6236	-1.0617
14-Mar-08	0.001067194	-0.0065	0.0076	-1.7162	1.6236	-1.0570
17-Mar-08	-1.42	-0.0065	-1.4135	-3.1297	1.6236	-1.9276
18-Mar-08	0.31	-0.0065	0.3165	-2.8131	1.6236	-1.7326
19-Mar-08	0.01	-0.0065	0.0165	-2.7966	1.6236	-1.7224
21-Mar-08	0.34	-0.0065	0.3465	-2.4500	1.6236	-1.5090
24-Mar-08	0.41	-0.0065	0.4165	-2.0335	1.6236	-1.2524
25-Mar-08	0.15	-0.0065	0.1565	-1.8769	1.6236	-1.1560
26-Mar-08	1.3	-0.0065	1.3065	-0.5704	1.6236	-0.3513
27-Mar-08	0.55	-0.0065	0.5565	-0.0138	1.6236	-0.0085
28-Mar-08	0.001067194	-0.0065	0.0076	-0.0062	1.6236	-0.0038
31-Mar-08	-0.02	-0.0065	-0.0135	-0.0197	1.6236	-0.0121
1-Apr-08	-0.17	-0.0065	-0.1635	-0.1831	1.6236	-0.1128
2-Apr-08	-0.02	-0.0065	-0.0135	-0.1966	1.6236	-0.1211
3-Apr-08	-0.48	-0.0065	-0.4735	-0.6700	1.6236	-0.4127
4-Apr-08	0.1	-0.0065	0.1065	-0.5635	1.6236	-0.3471
7-Apr-08	0.001067194	-0.0065	0.0076	-0.5559	1.6236	-0.3424
8-Apr-08	0.06	-0.0065	0.0665	-0.4893	1.6236	-0.3014
9-Apr-08	0.33	-0.0065	0.3365	-0.1528	1.6236	-0.0941
10-Apr-08	0.95	-0.0065	0.9565	0.8038	1.6236	0.4950
11-Apr-08	0.45	-0.0065	0.4565	1.2603	1.6236	0.7762
14-Apr-08	0.45	-0.0065	0.4565	1.7169	1.6236	1.0574
15-Apr-08	0.06	-0.0065	0.0665	1.7834	1.6236	1.0984
16-Apr-08	0.001067194	-0.0065	0.0076	1.7910	1.6236	1.1031
17-Apr-08	0.001067194	-0.0065	0.0076	1.7986	1.6236	1.1078
18-Apr-08	0.001067194	-0.0065	0.0076	1.8062	1.6236	1.1125
21-Apr-08	0.22	-0.0065	0.2265	2.0328	1.6236	1.2520
			CAR std	1.6236		

Appendix 4.5: Result of Cumulative Abnormal Return (CAR) for Property Index in 2008

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t test
10-Mar-08	-8.1	-0.2058	-7.8942	-7.8942	2.0584	-3.8351
11-Mar-08	3.57	-0.2058	3.7758	-4.1184	2.0584	-2.0008
12-Mar-08	0.12	-0.2058	0.3258	-3.7927	2.0584	-1.8425
13-Mar-08	-1.77	-0.2058	-1.5642	-5.3569	2.0584	-2.6024
14-Mar-08	-0.2124	-0.2058	-0.0066	-5.3635	2.0584	-2.6057
17-Mar-08	-3.5	-0.2058	-3.2942	-8.6577	2.0584	-4.2060
18-Mar-08	0.84	-0.2058	1.0458	-7.6120	2.0584	-3.6980
19-Mar-08	-2.33	-0.2058	-2.1242	-9.7362	2.0584	-4.7300
21-Mar-08	-0.71	-0.2058	-0.5042	-10.2404	2.0584	-4.9749
24-Mar-08	1.09	-0.2058	1.2958	-8.9446	2.0584	-4.3454
25-Mar-08	1.46	-0.2058	1.6658	-7.2789	2.0584	-3.5362
26-Mar-08	2.08	-0.2058	2.2858	-4.9931	2.0584	-2.4257
27-Mar-08	1.44	-0.2058	1.6458	-3.3473	2.0584	-1.6262
28-Mar-08	-0.2124	-0.2058	-0.0066	-3.3539	2.0584	-1.6294
31-Mar-08	-0.2124	-0.2058	-0.0066	-3.3605	2.0584	-1.6326
1-Apr-08	-0.2124	-0.2058	-0.0066	-3.3672	2.0584	-1.6358
2-Apr-08	-1.46	-0.2058	-1.2542	-4.6214	2.0584	-2.2451
3-Apr-08	-1.25	-0.2058	-1.0442	-5.6656	2.0584	-2.7524
4-Apr-08	-0.31	-0.2058	-0.1042	-5.7698	2.0584	-2.8031
7-Apr-08	-0.2124	-0.2058	-0.0066	-5.7765	2.0584	-2.8063
8-Apr-08	0.02	-0.2058	0.2258	-5.5507	2.0584	-2.6966
9-Apr-08	-0.3	-0.2058	-0.0942	-5.6449	2.0584	-2.7424
10-Apr-08	0.75	-0.2058	0.9558	-4.6891	2.0584	-2.2780
11-Apr-08	-0.13	-0.2058	0.0758	-4.6133	2.0584	-2.2412
14-Apr-08	-0.13	-0.2058	0.0758	-4.5376	2.0584	-2.2044
15-Apr-08	0.13	-0.2058	0.3358	-4.2018	2.0584	-2.0413
16-Apr-08	-0.2124	-0.2058	-0.0066	-4.2084	2.0584	-2.0445
17-Apr-08	-0.2124	-0.2058	-0.0066	-4.2150	2.0584	-2.0477
18-Apr-08	-0.2124	-0.2058	-0.0066	-4.2217	2.0584	-2.0509
21-Apr-08	2.25	-0.2058	2.4558	-1.7659	2.0584	-0.8579
			CAR std	2.0584		

Appendix 4.6: Result of Cumulative Abnormal Return (CAR) for Construction Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-11.02	-0.1473	-10.8727	-10.8727	8.5829	-1.2668
11-Mar-08	4.99	-0.1473	5.1373	-5.7354	8.5829	-0.6682
12-Mar-08	0.4	-0.1473	0.5473	-5.1881	8.5829	-0.6045
13-Mar-08	-2.67	-0.1473	-2.5227	-7.7107	8.5829	-0.8984
14-Mar-08	-0.1554	-0.1473	-0.0081	-7.7188	8.5829	-0.8993
17-Mar-08	-1.82	-0.1473	-1.6727	-9.3915	8.5829	-1.0942
18-Mar-08	3.19	-0.1473	3.3373	-6.0542	8.5829	-0.7054
19-Mar-08	-3.01	-0.1473	-2.8627	-8.9169	8.5829	-1.0389
21-Mar-08	0.9	-0.1473	1.0473	-7.8696	8.5829	-0.9169
24-Mar-08	2.21	-0.1473	2.3573	-5.5123	8.5829	-0.6422
25-Mar-08	2.02	-0.1473	2.1673	-3.3450	8.5829	-0.3897
26-Mar-08	1.74	-0.1473	1.8873	-1.4576	8.5829	-0.1698
27-Mar-08	2.15	-0.1473	2.2973	0.8397	8.5829	0.0978
28-Mar-08	-0.1554	-0.1473	-0.0081	0.8316	8.5829	0.0969
31-Mar-08	-1.78	-0.1473	-1.6327	-0.8011	8.5829	-0.0933
01-Apr-08	-0.32	-0.1473	-0.1727	-0.9738	8.5829	-0.1135
02-Apr-08	-1.58	-0.1473	-1.4327	-2.4065	8.5829	-0.2804
03-Apr-08	-2.19	-0.1473	-2.0427	-4.4492	8.5829	-0.5184
04-Apr-08	-0.1	-0.1473	0.0473	-4.4019	8.5829	-0.5129
07-Apr-08	-0.1554	-0.1473	-0.0081	-4.4099	8.5829	-0.5138
08-Apr-08	-0.32	-0.1473	-0.1727	-4.5826	8.5829	-0.5339
09-Apr-08	0.22	-0.1473	0.3673	-4.2153	8.5829	-0.4911
10-Apr-08	1.89	-0.1473	2.0373	-2.1780	8.5829	-0.2538
11-Apr-08	-0.37	-0.1473	-0.2227	-2.4007	8.5829	-0.2797
14-Apr-08	-0.34	-0.1473	-0.1927	-2.5934	8.5829	-0.3022
15-Apr-08	-0.15	-0.1473	-0.0027	-2.5961	8.5829	-0.3025
16-Apr-08	-0.1554	-0.1473	-0.0081	-2.6041	8.5829	-0.3034
17-Apr-08	-0.1554	-0.1473	-0.0081	-2.6122	8.5829	-0.3044
18-Apr-08	-0.1554	-0.1473	-0.0081	-2.6203	8.5829	-0.3053
21-Apr-08	0.31	-0.1473	0.4573	-2.1630	8.5829	-0.2520
				CAR std	8.5829	

Appendix 4.7: Result of Cumulative Abnormal Return (CAR) for Finance Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-3.47	-0.0004	-3.4696	-3.4696	2.1476	-1.6156
11-Mar-08	3.96	-0.0004	3.9604	0.4908	2.1476	0.2285
12-Mar-08	-0.95	-0.0004	-0.9496	-0.4588	2.1476	-0.2136
13-Mar-08	-2.25	-0.0004	-2.2496	-2.7084	2.1476	-1.2612
14-Mar-08	0.0009	-0.0004	0.0013	-2.7071	2.1476	-1.2606
17-Mar-08	-0.27	-0.0004	-0.2696	-2.9767	2.1476	-1.3861
18-Mar-08	1.67	-0.0004	1.6704	-1.3063	2.1476	-0.6083
19-Mar-08	-1.09	-0.0004	-1.0896	-2.3960	2.1476	-1.1157
21-Mar-08	-0.26	-0.0004	-0.2596	-2.6556	2.1476	-1.2365
24-Mar-08	1.32	-0.0004	1.3204	-1.3352	2.1476	-0.6217
25-Mar-08	2.16	-0.0004	2.1604	0.8252	2.1476	0.3843
26-Mar-08	0.72	-0.0004	0.7204	1.5456	2.1476	0.7197
27-Mar-08	0	-0.0004	0.0004	1.5460	2.1476	0.7199
28-Mar-08	0.0009	-0.0004	0.0013	1.5473	2.1476	0.7205
31-Mar-08	-1.34	-0.0004	-1.3396	0.2077	2.1476	0.0967
01-Apr-08	1.27	-0.0004	1.2704	1.4781	2.1476	0.6883
02-Apr-08	-1.95	-0.0004	-1.9496	-0.4715	2.1476	-0.2196
03-Apr-08	-0.32	-0.0004	-0.3196	-0.7911	2.1476	-0.3684
04-Apr-08	-0.36	-0.0004	-0.3596	-1.1507	2.1476	-0.5358
07-Apr-08	0.0009	-0.0004	0.0013	-1.1494	2.1476	-0.5352
08-Apr-08	0.56	-0.0004	0.5604	-0.5890	2.1476	-0.2743
09-Apr-08	0.35	-0.0004	0.3504	-0.2386	2.1476	-0.1111
10-Apr-08	0.75	-0.0004	0.7504	0.5117	2.1476	0.2383
11-Apr-08	-0.4	-0.0004	-0.3996	0.1121	2.1476	0.0522
14-Apr-08	0.14	-0.0004	0.1404	0.2525	2.1476	0.1176
15-Apr-08	0.33	-0.0004	0.3304	0.5829	2.1476	0.2714
16-Apr-08	0.0009	-0.0004	0.0013	0.5842	2.1476	0.2720
17-Apr-08	0.0009	-0.0004	0.0013	0.5855	2.1476	0.2726
18-Apr-08	0.0009	-0.0004	0.0013	0.5868	2.1476	0.2732
21-Apr-08	-0.25	-0.0004	-0.2496	0.3372	2.1476	0.1570
			CAR std	2.1476		

Appendix 4.8: Result of Cumulative Abnormal Return (CAR) for Plantation Index in 2008

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-4.97	-0.0160	-4.9540	-4.9540	2.4893	-1.9901
11-Mar-08	4.32	-0.0160	4.3360	-0.6179	2.4893	-0.2482
12-Mar-08	0.4	-0.0160	0.4160	-0.2019	2.4893	-0.0811
13-Mar-08	-2.21	-0.0160	-2.1940	-2.3959	2.4893	-0.9625
14-Mar-08	-0.03132	-0.0160	-0.0153	-2.4112	2.4893	-0.9686
17-Mar-08	-0.68	-0.0160	-0.6640	-3.0751	2.4893	-1.2353
18-Mar-08	-2.34	-0.0160	-2.3240	-5.3991	2.4893	-2.1689
19-Mar-08	-1.7	-0.0160	-1.6840	-7.0831	2.4893	-2.8454
21-Mar-08	0.23	-0.0160	0.2460	-6.8370	2.4893	-2.7465
24-Mar-08	-0.54	-0.0160	-0.5240	-7.3610	2.4893	-2.9570
25-Mar-08	2.1	-0.0160	2.1160	-5.2450	2.4893	-2.1070
26-Mar-08	1.02	-0.0160	1.0360	-4.2090	2.4893	-1.6908
27-Mar-08	2.05	-0.0160	2.0660	-2.1429	2.4893	-0.8608
28-Mar-08	-0.03132	-0.0160	-0.0153	-2.1582	2.4893	-0.8670
31-Mar-08	-0.45	-0.0160	-0.4340	-2.5922	2.4893	-1.0413
1-Apr-08	-3.11	-0.0160	-3.0940	-5.6862	2.4893	-2.2842
2-Apr-08	-2.44	-0.0160	-2.4240	-8.1101	2.4893	-3.2579
3-Apr-08	-0.73	-0.0160	-0.7140	-8.8241	2.4893	-3.5447
4-Apr-08	-0.49	-0.0160	-0.4740	-9.2981	2.4893	-3.7351
7-Apr-08	-0.03132	-0.0160	-0.0153	-9.3133	2.4893	-3.7413
8-Apr-08	2.06	-0.0160	2.0760	-7.2373	2.4893	-2.9073
9-Apr-08	-0.01	-0.0160	0.0060	-7.2313	2.4893	-2.9049
10-Apr-08	3.38	-0.0160	3.3960	-3.8353	2.4893	-1.5407
11-Apr-08	0.08	-0.0160	0.0960	-3.7392	2.4893	-1.5021
14-Apr-08	-1.34	-0.0160	-1.3240	-5.0632	2.4893	-2.0339
15-Apr-08	1.56	-0.0160	1.5760	-3.4872	2.4893	-1.4008
16-Apr-08	-0.03132	-0.0160	-0.0153	-3.5025	2.4893	-1.4070
17-Apr-08	-0.03132	-0.0160	-0.0153	-3.5177	2.4893	-1.4131
18-Apr-08	-0.03132	-0.0160	-0.0153	-3.5330	2.4893	-1.4193
21-Apr-08	0.04	-0.0160	0.0560	-3.4770	2.4893	-1.3968
				CAR std	2.4893	

Appendix 4.9: Result of Cumulative Abnormal Return (CAR) for Trading & Services Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-5.97	-0.0796	-5.8904	-5.8904	1.8329	-3.2138
11-Mar-08	3.72	-0.0796	3.7996	-2.0909	1.8329	-1.1408
12-Mar-08	-1.23	-0.0796	-1.1504	-3.2413	1.8329	-1.7684
13-Mar-08	-2.87	-0.0796	-2.7904	-6.0318	1.8329	-3.2909
14-Mar-08	-0.1149	-0.0796	-0.0353	-6.0671	1.8329	-3.3102
17-Mar-08	-0.59	-0.0796	-0.5104	-6.5776	1.8329	-3.5887
18-Mar-08	1.06	-0.0796	1.1396	-5.4380	1.8329	-2.9669
19-Mar-08	-1.63	-0.0796	-1.5504	-6.9885	1.8329	-3.8128
21-Mar-08	-0.42	-0.0796	-0.3404	-7.3289	1.8329	-3.9986
24-Mar-08	0.86	-0.0796	0.9396	-6.3894	1.8329	-3.4860
25-Mar-08	2.1	-0.0796	2.1796	-4.2098	1.8329	-2.2968
26-Mar-08	1.24	-0.0796	1.3196	-2.8903	1.8329	-1.5769
27-Mar-08	1.29	-0.0796	1.3696	-1.5207	1.8329	-0.8297
28-Mar-08	-0.1149	-0.0796	-0.0353	-1.5560	1.8329	-0.8490
31-Mar-08	-1.95	-0.0796	-1.8704	-3.4265	1.8329	-1.8695
1-Apr-08	-0.67	-0.0796	-0.5904	-4.0169	1.8329	-2.1916
2-Apr-08	-1.91	-0.0796	-1.8304	-5.8474	1.8329	-3.1903
3-Apr-08	-1.81	-0.0796	-1.7304	-7.5778	1.8329	-4.1344
4-Apr-08	-0.27	-0.0796	-0.1904	-7.7683	1.8329	-4.2383
7-Apr-08	-0.1149	-0.0796	-0.0353	-7.8036	1.8329	-4.2576
8-Apr-08	0.2	-0.0796	0.2796	-7.5241	1.8329	-4.1051
9-Apr-08	0.17	-0.0796	0.2496	-7.2745	1.8329	-3.9689
10-Apr-08	1.61	-0.0796	1.6896	-5.5850	1.8329	-3.0471
11-Apr-08	-0.51	-0.0796	-0.4304	-6.0154	1.8329	-3.2819
14-Apr-08	-0.92	-0.0796	-0.8404	-6.8558	1.8329	-3.7405
15-Apr-08	0.65	-0.0796	0.7296	-6.1263	1.8329	-3.3424
16-Apr-08	-0.1149	-0.0796	-0.0353	-6.1616	1.8329	-3.3617
17-Apr-08	-0.1149	-0.0796	-0.0353	-6.1970	1.8329	-3.3810
18-Apr-08	-0.1149	-0.0796	-0.0353	-6.2323	1.8329	-3.4003
21-Apr-08	0.52	-0.0796	0.5996	-5.6328	1.8329	-3.0732
				CAR std	1.8329	

Appendix 4.10: Result of Cumulative Abnormal Return (CAR) for Industrial Product Index in 2008

Date	Daily return (%)	Expected Return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-5.08	-0.0993	-4.9807	-4.9807	2.1810	-2.2837
11-Mar-08	1.92	-0.0993	2.0193	-2.9615	2.1810	-1.3579
12-Mar-08	0.14	-0.0993	0.2393	-2.7222	2.1810	-1.2482
13-Mar-08	-1.43	-0.0993	-1.3307	-4.0530	2.1810	-1.8583
14-Mar-08	-0.0917	-0.0993	0.0076	-4.0454	2.1810	-1.8549
17-Mar-08	-1.11	-0.0993	-1.0107	-5.0562	2.1810	-2.3183
18-Mar-08	0.39	-0.0993	0.4893	-4.5669	2.1810	-2.0940
19-Mar-08	-0.87	-0.0993	-0.7707	-5.3377	2.1810	-2.4474
21-Mar-08	-0.03	-0.0993	0.0693	-5.2684	2.1810	-2.4156
24-Mar-08	0.57	-0.0993	0.6693	-4.5991	2.1810	-2.1088
25-Mar-08	0.94	-0.0993	1.0393	-3.5599	2.1810	-1.6323
26-Mar-08	1.41	-0.0993	1.5093	-2.0506	2.1810	-0.9402
27-Mar-08	0.58	-0.0993	0.6793	-1.3714	2.1810	-0.6288
28-Mar-08	-0.0917	-0.0993	0.0076	-1.3638	2.1810	-0.6253
31-Mar-08	-1.03	-0.0993	-0.9307	-2.2946	2.1810	-1.0521
1-Apr-08	0.25	-0.0993	0.3493	-1.9453	2.1810	-0.8920
2-Apr-08	-0.78	-0.0993	-0.6807	-2.6261	2.1810	-1.2041
3-Apr-08	-0.26	-0.0993	-0.1607	-2.7868	2.1810	-1.2778
4-Apr-08	0.24	-0.0993	0.3393	-2.4475	2.1810	-1.1222
7-Apr-08	-0.0917	-0.0993	0.0076	-2.4400	2.1810	-1.1188
8-Apr-08	0.82	-0.0993	0.9193	-1.5207	2.1810	-0.6973
9-Apr-08	-0.08	-0.0993	0.0193	-1.5015	2.1810	-0.6884
10-Apr-08	1.24	-0.0993	1.3393	-0.1622	2.1810	-0.0744
11-Apr-08	-0.23	-0.0993	-0.1307	-0.2930	2.1810	-0.1343
14-Apr-08	-0.21	-0.0993	-0.1107	-0.4037	2.1810	-0.1851
15-Apr-08	1.64	-0.0993	1.7393	1.3355	2.1810	0.6124
16-Apr-08	-0.0917	-0.0993	0.0076	1.3431	2.1810	0.6158
17-Apr-08	-0.0917	-0.0993	0.0076	1.3507	2.1810	0.6193
18-Apr-08	-0.0917	-0.0993	0.0076	1.3582	2.1810	0.6228
21-Apr-08	0.56	-0.0993	0.6593	2.0175	2.1810	0.9250
			CAR std	2.1810		

Appendix 4.11: Result of Cumulative Abnormal Return (CAR) for Industrial Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-6.05	-0.0325	-6.0175	-6.0175	1.8327	-3.2835
11-Mar-08	3.01	-0.0325	3.0425	-2.9750	1.8327	-1.6233
12-Mar-08	-0.91	-0.0325	-0.8775	-3.8526	1.8327	-2.1021
13-Mar-08	-1.93	-0.0325	-1.8975	-5.7501	1.8327	-3.1375
14-Mar-08	-0.05478	-0.0325	-0.0223	-5.7724	1.8327	-3.1497
17-Mar-08	-0.36	-0.0325	-0.3275	-6.0999	1.8327	-3.3284
18-Mar-08	-0.81	-0.0325	-0.7775	-6.8774	1.8327	-3.7526
19-Mar-08	-1.05	-0.0325	-1.0175	-7.8949	1.8327	-4.3079
21-Mar-08	-0.31	-0.0325	-0.2775	-8.1724	1.8327	-4.4593
24-Mar-08	0.57	-0.0325	0.6025	-7.5700	1.8327	-4.1305
25-Mar-08	0.78	-0.0325	0.8125	-6.7575	1.8327	-3.6872
26-Mar-08	1.74	-0.0325	1.7725	-4.9850	1.8327	-2.7201
27-Mar-08	1.93	-0.0325	1.9625	-3.0225	1.8327	-1.6492
28-Mar-08	-0.05478	-0.0325	-0.0223	-3.0448	1.8327	-1.6614
31-Mar-08	-1.04	-0.0325	-1.0075	-4.0523	1.8327	-2.2111
1-Apr-08	-0.45	-0.0325	-0.4175	-4.4698	1.8327	-2.4390
2-Apr-08	-1.98	-0.0325	-1.9475	-6.4174	1.8327	-3.5016
3-Apr-08	-2.4	-0.0325	-2.3675	-8.7849	1.8327	-4.7935
4-Apr-08	-0.38	-0.0325	-0.3475	-9.1324	1.8327	-4.9831
7-Apr-08	-0.05478	-0.0325	-0.0223	-9.1547	1.8327	-4.9952
8-Apr-08	0.16	-0.0325	0.1925	-8.9622	1.8327	-4.8902
9-Apr-08	0	-0.0325	0.0325	-8.9297	1.8327	-4.8725
10-Apr-08	1.82	-0.0325	1.8525	-7.0773	1.8327	-3.8617
11-Apr-08	0.46	-0.0325	0.4925	-6.5848	1.8327	-3.5930
14-Apr-08	-1.31	-0.0325	-1.2775	-7.8623	1.8327	-4.2900
15-Apr-08	1.06	-0.0325	1.0925	-6.7698	1.8327	-3.6939
16-Apr-08	-0.05478	-0.0325	-0.0223	-6.7921	1.8327	-3.7061
17-Apr-08	-0.05478	-0.0325	-0.0223	-6.8144	1.8327	-3.7183
18-Apr-08	-0.05478	-0.0325	-0.0223	-6.8367	1.8327	-3.7304
21-Apr-08	0.85	-0.0325	0.8825	-5.9542	1.8327	-3.2489
			CAR std	1.8327		

Appendix 4.12: Result of Cumulative Abnormal Return (CAR) for Mining Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-1.1	-0.0836	-1.0164	-1.0164	1.5271	-0.6655
11-Mar-08	-3.33	-0.0836	-3.2464	-4.2628	1.5271	-2.7913
12-Mar-08	3.45	-0.0836	3.5336	-0.7291	1.5271	-0.4775
13-Mar-08	0	-0.0836	0.0836	-0.6455	1.5271	-0.4227
14-Mar-08	-0.0898	-0.0836	-0.0062	-0.6517	1.5271	-0.4267
17-Mar-08	0	-0.0836	0.0836	-0.5681	1.5271	-0.3720
18-Mar-08	-1.71	-0.0836	-1.6264	-2.1944	1.5271	-1.4370
19-Mar-08	0	-0.0836	0.0836	-2.1108	1.5271	-1.3822
21-Mar-08	0	-0.0836	0.0836	-2.0272	1.5271	-1.3275
24-Mar-08	1.16	-0.0836	1.2436	-0.7836	1.5271	-0.5131
25-Mar-08	0.58	-0.0836	0.6636	-0.1200	1.5271	-0.0786
26-Mar-08	-1.71	-0.0836	-1.6264	-1.7463	1.5271	-1.1435
27-Mar-08	1.16	-0.0836	1.2436	-0.5027	1.5271	-0.3292
28-Mar-08	-0.0898	-0.0836	-0.0062	-0.5089	1.5271	-0.3332
31-Mar-08	0	-0.0836	0.0836	-0.4253	1.5271	-0.2785
1-Apr-08	0	-0.0836	0.0836	-0.3416	1.5271	-0.2237
2-Apr-08	0	-0.0836	0.0836	-0.2580	1.5271	-0.1690
3-Apr-08	0	-0.0836	0.0836	-0.1744	1.5271	-0.1142
4-Apr-08	0	-0.0836	0.0836	-0.0908	1.5271	-0.0594
7-Apr-08	-0.0898	-0.0836	-0.0062	-0.0970	1.5271	-0.0635
8-Apr-08	2.27	-0.0836	2.3536	2.2567	1.5271	1.4777
9-Apr-08	-0.56	-0.0836	-0.4764	1.7803	1.5271	1.1658
10-Apr-08	0.56	-0.0836	0.6436	2.4239	1.5271	1.5872
11-Apr-08	0	-0.0836	0.0836	2.5075	1.5271	1.6420
14-Apr-08	0	-0.0836	0.0836	2.5911	1.5271	1.6967
15-Apr-08	-2.22	-0.0836	-2.1364	0.4548	1.5271	0.2978
16-Apr-08	-0.0898	-0.0836	-0.0062	0.4486	1.5271	0.2937
17-Apr-08	-0.0898	-0.0836	-0.0062	0.4424	1.5271	0.2897
18-Apr-08	-0.0898	-0.0836	-0.0062	0.4362	1.5271	0.2857
21-Apr-08	-2.17	-0.0836	-2.0864	-1.6501	1.5271	-1.0805
			CAR std	1.5271		

Appendix 4.13: Result of Cumulative Abnormal Return (CAR) for Technology Index in 2008

Date	Daily Return (%)	Expected Return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
10-Mar-08	-5.24	-0.1340	-5.1060	-5.1060	1.8882	-2.7042
11-Mar-08	1.77	-0.1340	1.9040	-3.2021	1.8882	-1.6958
12-Mar-08	2.66	-0.1340	2.7940	-0.4081	1.8882	-0.2161
13-Mar-08	-1.32	-0.1340	-1.1860	-1.5941	1.8882	-0.8443
14-Mar-08	-0.1225	-0.1340	0.0115	-1.5827	1.8882	-0.8382
17-Mar-08	-1.2	-0.1340	-1.0660	-2.6487	1.8882	-1.4028
18-Mar-08	0.92	-0.1340	1.0540	-1.5947	1.8882	-0.8446
19-Mar-08	-0.43	-0.1340	-0.2960	-1.8908	1.8882	-1.0014
21-Mar-08	0.14	-0.1340	0.2740	-1.6168	1.8882	-0.8563
24-Mar-08	-0.43	-0.1340	-0.2960	-1.9128	1.8882	-1.0130
25-Mar-08	0.63	-0.1340	0.7640	-1.1489	1.8882	-0.6084
26-Mar-08	1.15	-0.1340	1.2840	0.1351	1.8882	0.0715
27-Mar-08	1.28	-0.1340	1.4140	1.5491	1.8882	0.8204
28-Mar-08	-0.1225	-0.1340	0.0115	1.5605	1.8882	0.8265
31-Mar-08	-1.95	-0.1340	-1.8160	-0.2555	1.8882	-0.1353
1-Apr-08	-0.67	-0.1340	-0.5360	-0.7915	1.8882	-0.4192
2-Apr-08	-0.14	-0.1340	-0.0060	-0.7976	1.8882	-0.4224
3-Apr-08	0.38	-0.1340	0.5140	-0.2836	1.8882	-0.1502
4-Apr-08	-0.48	-0.1340	-0.3460	-0.6296	1.8882	-0.3335
7-Apr-08	-0.1225	-0.1340	0.0115	-0.6182	1.8882	-0.3274
8-Apr-08	-0.14	-0.1340	-0.0060	-0.6242	1.8882	-0.3306
9-Apr-08	0.57	-0.1340	0.7040	0.0798	1.8882	0.0422
10-Apr-08	1.04	-0.1340	1.1740	1.2537	1.8882	0.6640
11-Apr-08	-0.75	-0.1340	-0.6160	0.6377	1.8882	0.3377
14-Apr-08	0	-0.1340	0.1340	0.7717	1.8882	0.4087
15-Apr-08	1.52	-0.1340	1.6540	2.4256	1.8882	1.2846
16-Apr-08	-0.1225	-0.1340	0.0115	2.4371	1.8882	1.2907
17-Apr-08	-0.1225	-0.1340	0.0115	2.4486	1.8882	1.2968
18-Apr-08	-0.1225	-0.1340	0.0115	2.4600	1.8882	1.3028
21-Apr-08	0.46	-0.1340	0.5940	3.0540	1.8882	1.6174
			CAR std	1.8882		

Appendix 4.14: Result of Cumulative Abnormal Return (CAR) for KLCI Index in 2013

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
6-May-13	3.38	0.0157	3.3643	3.3643	0.6013	5.5950
7-May-13	1.41	0.0157	1.3943	4.7586	0.6013	7.9139
8-May-13	-0.15	0.0157	-0.1657	4.5929	0.6013	7.6383
9-May-13	-0.45	0.0157	-0.4657	4.1272	0.6013	6.8638
10-May-13	0.36	0.0157	0.3443	4.4715	0.6013	7.4364
13-May-13	0.88	0.0157	0.8643	5.3358	0.6013	8.8738
14-May-13	0.03	0.0157	0.0143	5.3501	0.6013	8.8976
15-May-13	-0.3	0.0157	-0.3157	5.0344	0.6013	8.3725
16-May-13	-0.91	0.0157	-0.9257	4.1087	0.6013	6.8330
17-May-13	0.14	0.0157	0.1243	4.233	0.6013	7.0397
20-May-13	0.45	0.0157	0.4343	4.6673	0.6013	7.7620
21-May-13	0.58	0.0157	0.5643	5.2316	0.6013	8.7005
22-May-13	-0.2	0.0157	-0.2157	5.0159	0.6013	8.3418
23-May-13	-0.61	0.0157	-0.6257	4.3902	0.6013	7.3012
27-May-13	-0.33	0.0157	-0.3457	4.0445	0.6013	6.7263
28-May-13	0.51	0.0157	0.4943	4.5388	0.6013	7.5483
29-May-13	0.41	0.0157	0.3943	4.9331	0.6013	8.2041
30-May-13	-0.48	0.0157	-0.4957	4.4374	0.6013	7.3797
31-May-13	-0.32	0.0157	-0.3357	4.1017	0.6013	6.8214
3-Jun-13	-0.16	0.0157	-0.1757	3.926	0.6013	6.5292
4-Jun-13	0.59	0.0157	0.5743	4.5003	0.6013	7.4843
5-Jun-13	-0.13	0.0157	-0.1457	4.3546	0.6013	7.2420
6-Jun-13	-0.27	0.0157	-0.2857	4.0689	0.6013	6.7668
7-Jun-13	0.34	0.0157	0.3243	4.3932	0.6013	7.3062
10-Jun-13	0.69	0.0157	0.6743	5.0675	0.6013	8.4276
11-Jun-13	-0.46	0.0157	-0.4757	4.5918	0.6013	7.6365
12-Jun-13	-0.25	0.0157	-0.2657	4.3261	0.6013	7.1946
13-Jun-13	-1.82	0.0157	-1.8357	2.4904	0.6013	4.1417
14-Jun-13	1.11	0.0157	1.0943	3.5847	0.6013	5.9616
17-Jun-13	0.57	0.0157	0.5543	4.139	0.6013	6.8834
			CAR std	0.60134616		

Appendix 4.15: Result of Cumulative Abnormal Return (CAR) for Consumer Product Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t test
6-May-13	2.09	0.0101	2.0799	2.0799	1.4240	1.4606
7-May-13	0.72	0.0101	0.7099	2.7897	1.4240	1.9591
8-May-13	0.11	0.0101	0.0999	2.8896	1.4240	2.0292
9-May-13	0.33	0.0101	0.3199	3.2095	1.4240	2.2538
10-May-13	0.92	0.0101	0.9099	4.1194	1.4240	2.8928
13-May-13	0.82	0.0101	0.8099	4.9292	1.4240	3.4615
14-May-13	0.67	0.0101	0.6599	5.5891	1.4240	3.9249
15-May-13	0.52	0.0101	0.5099	6.0990	1.4240	4.2830
16-May-13	0.03	0.0101	0.0199	6.1189	1.4240	4.2969
17-May-13	-0.03	0.0101	-0.0401	6.0787	1.4240	4.2688
20-May-13	0.67	0.0101	0.6599	6.7386	1.4240	4.7321
21-May-13	0.39	0.0101	0.3799	7.1185	1.4240	4.9989
22-May-13	-0.55	0.0101	-0.5601	6.5583	1.4240	4.6056
23-May-13	-0.01	0.0101	-0.0201	6.5382	1.4240	4.5914
27-May-13	-0.05	0.0101	-0.0601	6.4781	1.4240	4.5492
28-May-13	-0.15	0.0101	-0.1601	6.3180	1.4240	4.4368
29-May-13	0.29	0.0101	0.2799	6.5978	1.4240	4.6333
30-May-13	-0.17	0.0101	-0.1801	6.4177	1.4240	4.5068
31-May-13	0.44	0.0101	0.4299	6.8476	1.4240	4.8087
3-Jun-13	-0.23	0.0101	-0.2401	6.6075	1.4240	4.6401
4-Jun-13	0.48	0.0101	0.4699	7.0773	1.4240	4.9700
5-Jun-13	-0.11	0.0101	-0.1201	6.9572	1.4240	4.8857
6-Jun-13	-0.05	0.0101	-0.0601	6.8971	1.4240	4.8434
7-Jun-13	0.02	0.0101	0.0099	6.9069	1.4240	4.8504
10-Jun-13	0.48	0.0101	0.4699	7.3768	1.4240	5.1803
11-Jun-13	-0.42	0.0101	-0.4301	6.9467	1.4240	4.8783
12-Jun-13	-0.88	0.0101	-0.8901	6.0566	1.4240	4.2532
13-Jun-13	-0.81	0.0101	-0.8201	5.2364	1.4240	3.6773
14-Jun-13	0.65	0.0101	0.6399	5.8763	1.4240	4.1266
17-Jun-13	0.22	0.0101	0.2099	6.0862	1.4240	4.2740
			CAR std	1.4240		

Appendix 4.16: Result of Cumulative Abnormal Return (CAR) for Property Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t test
6-May-13	6.41	-0.0013	6.4113	6.4113	4.6147	1.3893
7-May-13	4.06	-0.0013	4.0613	10.4726	4.6147	2.2694
8-May-13	-1.26	-0.0013	-1.2587	9.2139	4.6147	1.9966
9-May-13	0.97	-0.0013	0.9713	10.1853	4.6147	2.2071
10-May-13	1.47	-0.0013	1.4713	11.6566	4.6147	2.5259
13-May-13	3.73	-0.0013	3.7313	15.3879	4.6147	3.3345
14-May-13	-0.63	-0.0013	-0.6287	14.7592	4.6147	3.1983
15-May-13	0.77	-0.0013	0.7713	15.5305	4.6147	3.3654
16-May-13	-0.62	-0.0013	-0.6187	14.9118	4.6147	3.2313
17-May-13	1.75	-0.0013	1.7513	16.6631	4.6147	3.6108
20-May-13	5.24	-0.0013	5.2413	21.9044	4.6147	4.7466
21-May-13	0.44	-0.0013	0.4413	22.3458	4.6147	4.8422
22-May-13	-1.76	-0.0013	-1.7587	20.5871	4.6147	4.4611
23-May-13	-2.83	-0.0013	-2.8287	17.7584	4.6147	3.8482
27-May-13	2.49	-0.0013	2.4913	20.2497	4.6147	4.3880
28-May-13	3.48	-0.0013	3.4813	23.7310	4.6147	5.1424
29-May-13	0.32	-0.0013	0.3213	24.0523	4.6147	5.2121
30-May-13	-1.42	-0.0013	-1.4187	22.6336	4.6147	4.9046
31-May-13	0.39	-0.0013	0.3913	23.0250	4.6147	4.9894
3-Jun-13	-1.94	-0.0013	-1.9387	21.0863	4.6147	4.5693
4-Jun-13	0.18	-0.0013	0.1813	21.2676	4.6147	4.6086
5-Jun-13	-0.93	-0.0013	-0.9287	20.3389	4.6147	4.4074
6-Jun-13	-2.03	-0.0013	-2.0287	18.3102	4.6147	3.9678
7-Jun-13	1.75	-0.0013	1.7513	20.0615	4.6147	4.3473
10-Jun-13	0.93	-0.0013	0.9313	20.9928	4.6147	4.5491
11-Jun-13	-2.16	-0.0013	-2.1587	18.8342	4.6147	4.0813
12-Jun-13	-0.12	-0.0013	-0.1187	18.7155	4.6147	4.0556
13-Jun-13	-3.56	-0.0013	-3.5587	15.1568	4.6147	3.2844
14-Jun-13	0.34	-0.0013	0.3413	15.4981	4.6147	3.3584
17-Jun-13	1.56	-0.0013	1.5613	17.0594	4.6147	3.6967
			CAR std	4.6147		

Appendix 4.17: Result of Cumulative Abnormal Return (CAR) for Construction Index in 2013

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
6-May-13	6.9	0.0026	6.8974	6.8974	2.8085	2.4559
7-May-13	3.95	0.0026	3.9474	10.8448	2.8085	3.8614
8-May-13	-1.39	0.0026	-1.3926	9.4522	2.8085	3.3656
9-May-13	0.89	0.0026	0.8874	10.3396	2.8085	3.6815
10-May-13	2.72	0.0026	2.7174	13.057	2.8085	4.6491
13-May-13	2.09	0.0026	2.0874	15.1444	2.8085	5.3923
14-May-13	-0.75	0.0026	-0.7526	14.3918	2.8085	5.1244
15-May-13	0.93	0.0026	0.9274	15.3192	2.8085	5.4546
16-May-13	-0.81	0.0026	-0.8126	14.5066	2.8085	5.1652
17-May-13	0.72	0.0026	0.7174	15.224	2.8085	5.4207
20-May-13	2.17	0.0026	2.1674	17.3914	2.8085	6.1924
21-May-13	1.09	0.0026	1.0874	18.4788	2.8085	6.5796
22-May-13	-1.09	0.0026	-1.0926	17.3862	2.8085	6.1906
23-May-13	-1.12	0.0026	-1.1226	16.2636	2.8085	5.7908
27-May-13	0.29	0.0026	0.2874	16.551	2.8085	5.8932
28-May-13	1.44	0.0026	1.4374	17.9884	2.8085	6.4050
29-May-13	0.79	0.0026	0.7874	18.7758	2.8085	6.6853
30-May-13	-0.54	0.0026	-0.5426	18.2332	2.8085	6.4921
31-May-13	-1.03	0.0026	-1.0326	17.2006	2.8085	6.1245
3-Jun-13	-0.64	0.0026	-0.6426	16.558	2.8085	5.8957
4-Jun-13	1.15	0.0026	1.1474	17.7054	2.8085	6.3042
5-Jun-13	-0.66	0.0026	-0.6626	17.0428	2.8085	6.0683
6-Jun-13	-1.58	0.0026	-1.5826	15.4602	2.8085	5.5048
7-Jun-13	0.55	0.0026	0.5474	16.0076	2.8085	5.6997
10-Jun-13	1.35	0.0026	1.3474	17.355	2.8085	6.1795
11-Jun-13	-0.6	0.0026	-0.6026	16.7524	2.8085	5.9649
12-Jun-13	-0.73	0.0026	-0.7326	16.0198	2.8085	5.7040
13-Jun-13	-2.07	0.0026	-2.0726	13.9472	2.8085	4.9661
14-Jun-13	1.2	0.0026	1.1974	15.1446	2.8085	5.3924
17-Jun-13	-0.56	0.0026	-0.5626	14.582	2.8085	5.1921
			CAR std	2.8085		

Appendix 4.18: Result of Cumulative Abnormal Return (CAR) for Finance Index in 2013

Date	Daily Return (%)	Expected Return (%)	Abnormal Return (%)	CAR (%)	CAR std	t-test
6-May-13	3.98	0.0161	3.9639	3.9639	0.7072	5.6051
7-May-13	2.28	0.0161	2.2639	6.2278	0.7072	8.8063
8-May-13	-0.26	0.0161	-0.2761	5.9517	0.7072	8.4159
9-May-13	-0.96	0.0161	-0.9761	4.9756	0.7072	7.0356
10-May-13	0.32	0.0161	0.3039	5.2795	0.7072	7.4654
13-May-13	1.27	0.0161	1.2539	6.5334	0.7072	9.2384
14-May-13	-0.33	0.0161	-0.3461	6.1873	0.7072	8.7490
15-May-13	-0.14	0.0161	-0.1561	6.0312	0.7072	8.5283
16-May-13	-0.88	0.0161	-0.8961	5.1351	0.7072	7.2612
17-May-13	0.36	0.0161	0.3439	5.479	0.7072	7.7475
20-May-13	0.54	0.0161	0.5239	6.0029	0.7072	8.4883
21-May-13	0.73	0.0161	0.7139	6.7168	0.7072	9.4977
22-May-13	-0.31	0.0161	-0.3261	6.3907	0.7072	9.0366
23-May-13	-0.79	0.0161	-0.8061	5.5846	0.7072	7.8968
27-May-13	-0.35	0.0161	-0.3661	5.2185	0.7072	7.3791
28-May-13	0.53	0.0161	0.5139	5.7324	0.7072	8.1058
29-May-13	0.8	0.0161	0.7839	6.5163	0.7072	9.2142
30-May-13	-0.41	0.0161	-0.4261	6.0902	0.7072	8.6117
31-May-13	-0.13	0.0161	-0.1461	5.9441	0.7072	8.4051
3-Jun-13	-0.17	0.0161	-0.1861	5.758	0.7072	8.1420
4-Jun-13	0.41	0.0161	0.3939	6.1519	0.7072	8.6990
5-Jun-13	-0.14	0.0161	-0.1561	5.9958	0.7072	8.4782
6-Jun-13	-0.38	0.0161	-0.3961	5.5997	0.7072	7.9181
7-Jun-13	0.8	0.0161	0.7839	6.3836	0.7072	9.0266
10-Jun-13	0.53	0.0161	0.5139	6.8975	0.7072	9.7533
11-Jun-13	-0.5	0.0161	-0.5161	6.3814	0.7072	9.0235
12-Jun-13	-0.25	0.0161	-0.2661	6.1153	0.7072	8.6472
13-Jun-13	-2.04	0.0161	-2.0561	4.0592	0.7072	5.7398
14-Jun-13	0.69	0.0161	0.6739	4.7331	0.7072	6.6927
17-Jun-13	0.76	0.0161	0.7439	5.477	0.7072	7.7446
			CAR std	0.7072		

Appendix 4.19: Result of Cumulative Abnormal Return (CAR) for Plantation Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	2.08	0.0119	2.0681	2.0681	1.0175	2.0325
7-May-13	0.85	0.0119	0.8381	2.9061	1.0175	2.8562
8-May-13	-0.1	0.0119	-0.1119	2.7942	1.0175	2.7462
9-May-13	1.22	0.0119	1.2081	4.0022	1.0175	3.9335
10-May-13	0.41	0.0119	0.3981	4.4003	1.0175	4.3247
13-May-13	0.13	0.0119	0.1181	4.5183	1.0175	4.4407
14-May-13	0.63	0.0119	0.6181	5.1364	1.0175	5.0482
15-May-13	-0.69	0.0119	-0.7019	4.4344	1.0175	4.3583
16-May-13	-1.7	0.0119	-1.7119	2.7225	1.0175	2.6757
17-May-13	0.49	0.0119	0.4781	3.2005	1.0175	3.1456
20-May-13	0.85	0.0119	0.8381	4.0386	1.0175	3.9692
21-May-13	1.06	0.0119	1.0481	5.0866	1.0175	4.9993
22-May-13	-0.5	0.0119	-0.5119	4.5747	1.0175	4.4961
23-May-13	-0.66	0.0119	-0.6719	3.9027	1.0175	3.8357
27-May-13	-0.56	0.0119	-0.5719	3.3308	1.0175	3.2736
28-May-13	0.31	0.0119	0.2981	3.6288	1.0175	3.5665
29-May-13	0.44	0.0119	0.4281	4.0569	1.0175	3.9872
30-May-13	-0.94	0.0119	-0.9519	3.1049	1.0175	3.0516
31-May-13	-0.78	0.0119	-0.7919	2.3130	1.0175	2.2733
3-Jun-13	0.07	0.0119	0.0581	2.3710	1.0175	2.3303
4-Jun-13	1.85	0.0119	1.8381	4.2091	1.0175	4.1368
5-Jun-13	-0.5	0.0119	-0.5119	3.6971	1.0175	3.6336
6-Jun-13	0.61	0.0119	0.5981	4.2952	1.0175	4.2214
7-Jun-13	0.15	0.0119	0.1381	4.4332	1.0175	4.3571
10-Jun-13	1.84	0.0119	1.8281	6.2613	1.0175	6.1538
11-Jun-13	-0.77	0.0119	-0.7819	5.4793	1.0175	5.3853
12-Jun-13	-0.71	0.0119	-0.7219	4.7574	1.0175	4.6757
13-Jun-13	-1.35	0.0119	-1.3619	3.3954	1.0175	3.3371
14-Jun-13	1.75	0.0119	1.7381	5.1335	1.0175	5.0453
17-Jun-13	-0.06	0.0119	-0.0719	5.0615	1.0175	4.9746
			CAR std	1.0175		

Appendix 4.20: Result of Cumulative Abnormal Return (CAR) for Trading & Services Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	3.74	0.0247	3.7153	3.7153	0.7916	4.6934
7-May-13	1.24	0.0247	1.2153	4.9307	0.7916	6.2286
8-May-13	-0.12	0.0247	-0.1447	4.7860	0.7916	6.0459
9-May-13	0.16	0.0247	0.1353	4.9214	0.7916	6.2169
10-May-13	0.49	0.0247	0.4653	5.3867	0.7916	6.8047
13-May-13	0.98	0.0247	0.9553	6.3420	0.7916	8.0115
14-May-13	-0.02	0.0247	-0.0447	6.2974	0.7916	7.9551
15-May-13	0.09	0.0247	0.0653	6.3627	0.7916	8.0377
16-May-13	-0.83	0.0247	-0.8547	5.5081	0.7916	6.9580
17-May-13	0.22	0.0247	0.1953	5.7034	0.7916	7.2048
20-May-13	0.71	0.0247	0.6853	6.3887	0.7916	8.0705
21-May-13	0.65	0.0247	0.6253	7.0141	0.7916	8.8605
22-May-13	-0.2	0.0247	-0.2247	6.7894	0.7916	8.5767
23-May-13	-0.92	0.0247	-0.9447	5.8447	0.7916	7.3833
27-May-13	-0.14	0.0247	-0.1647	5.6801	0.7916	7.1753
28-May-13	0.98	0.0247	0.9553	6.6354	0.7916	8.3822
29-May-13	0.11	0.0247	0.0853	6.7208	0.7916	8.4900
30-May-13	-0.65	0.0247	-0.6747	6.0461	0.7916	7.6377
31-May-13	0.44	0.0247	0.4153	6.4614	0.7916	8.1624
3-Jun-13	-0.73	0.0247	-0.7547	5.7068	0.7916	7.2091
4-Jun-13	0.74	0.0247	0.7153	6.4221	0.7916	8.1127
5-Jun-13	0.1	0.0247	0.0753	6.4975	0.7916	8.2079
6-Jun-13	-0.75	0.0247	-0.7747	5.7228	0.7916	7.2293
7-Jun-13	0.48	0.0247	0.4553	6.1781	0.7916	7.8045
10-Jun-13	0.8	0.0247	0.7753	6.9535	0.7916	8.7839
11-Jun-13	-0.67	0.0247	-0.6947	6.2588	0.7916	7.9064
12-Jun-13	-0.22	0.0247	-0.2447	6.0142	0.7916	7.5973
13-Jun-13	-1.82	0.0247	-1.8447	4.1695	0.7916	5.2671
14-Jun-13	1.17	0.0247	1.1453	5.3148	0.7916	6.7139
17-Jun-13	0.53	0.0247	0.5053	5.8202	0.7916	7.3523
			CAR std	0.7916		

Appendix 4.21: Result of Cumulative Abnormal Return (CAR) for Industrial Product Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	2.26	0.0323	2.2277	2.2277	1.9291	1.1548
7-May-13	0.86	0.0323	0.8277	3.0553	1.9291	1.5838
8-May-13	0.51	0.0323	0.4777	3.5330	1.9291	1.8314
9-May-13	0.15	0.0323	0.1177	3.6507	1.9291	1.8924
10-May-13	1.46	0.0323	1.4277	5.0783	1.9291	2.6325
13-May-13	1.29	0.0323	1.2577	6.3360	1.9291	3.2844
14-May-13	-0.39	0.0323	-0.4223	5.9137	1.9291	3.0655
15-May-13	1.18	0.0323	1.1477	7.0614	1.9291	3.6604
16-May-13	-0.08	0.0323	-0.1123	6.9490	1.9291	3.6022
17-May-13	0.53	0.0323	0.4977	7.4467	1.9291	3.8601
21-May-13	0.86	0.0323	0.8277	8.2744	1.9291	4.2892
22-May-13	-0.33	0.0323	-0.3623	7.9120	1.9291	4.1013
23-May-13	-0.49	0.0323	-0.5223	7.3897	1.9291	3.8306
24-May-13	-0.75	0.0323	-0.7823	6.6074	1.9291	3.4251
27-May-13	-0.28	0.0323	-0.3123	6.2950	1.9291	3.2631
28-May-13	1.03	0.0323	0.9977	7.2927	1.9291	3.7803
29-May-13	0.82	0.0323	0.7877	8.0804	1.9291	4.1886
30-May-13	-0.12	0.0323	-0.1523	7.9281	1.9291	4.1096
31-May-13	-0.17	0.0323	-0.2023	7.7257	1.9291	4.0048
3-Jun-13	-0.27	0.0323	-0.3023	7.4234	1.9291	3.8480
4-Jun-13	0.63	0.0323	0.5977	8.0211	1.9291	4.1579
5-Jun-13	-0.34	0.0323	-0.3723	7.6487	1.9291	3.9649
6-Jun-13	-0.21	0.0323	-0.2423	7.4064	1.9291	3.8392
7-Jun-13	0.06	0.0323	0.0277	7.4341	1.9291	3.8536
10-Jun-13	0.68	0.0323	0.6477	8.0817	1.9291	4.1893
11-Jun-13	-0.43	0.0323	-0.4623	7.6194	1.9291	3.9497
12-Jun-13	-0.27	0.0323	-0.3023	7.3171	1.9291	3.7929
13-Jun-13	2.01	0.0323	1.9777	9.2947	1.9291	4.8181
14-Jun-13	1.14	0.0323	1.1077	10.4024	1.9291	5.3923
17-Jun-13	0.43	0.0323	0.3977	10.8001	1.9291	5.5984
			CAR std	1.9291		

Appendix 4.22: Result of Cumulative Abnormal Return (CAR) for Industrial Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	2.2	0.0216	2.1784	2.1784	1.2129	1.7960
7-May-13	0.66	0.0216	0.6384	2.8168	1.2129	2.3224
8-May-13	0.11	0.0216	0.0884	2.9052	1.2129	2.3953
9-May-13	0.37	0.0216	0.3484	3.2536	1.2129	2.6825
10-May-13	0.8	0.0216	0.7784	4.0319	1.2129	3.3243
13-May-13	1.14	0.0216	1.1184	5.1503	1.2129	4.2464
14-May-13	-0.07	0.0216	-0.0916	5.0587	1.2129	4.1708
15-May-13	1.11	0.0216	1.0884	6.1471	1.2129	5.0682
16-May-13	0.29	0.0216	0.2684	6.4155	1.2129	5.2895
17-May-13	-0.14	0.0216	-0.1616	6.2539	1.2129	5.1562
21-May-13	0.45	0.0216	0.4284	6.6823	1.2129	5.5094
22-May-13	-0.23	0.0216	-0.2516	6.4307	1.2129	5.3020
23-May-13	-0.77	0.0216	-0.7916	5.6391	1.2129	4.6493
24-May-13	-0.23	0.0216	-0.2516	5.3875	1.2129	4.4419
27-May-13	-0.09	0.0216	-0.1116	5.2758	1.2129	4.3498
28-May-13	0.27	0.0216	0.2484	5.5242	1.2129	4.5546
29-May-13	0.52	0.0216	0.4984	6.0226	1.2129	4.9656
30-May-13	-0.08	0.0216	-0.1016	5.9210	1.2129	4.8818
31-May-13	0.14	0.0216	0.1184	6.0394	1.2129	4.9794
3-Jun-13	-0.67	0.0216	-0.6916	5.3478	1.2129	4.4092
4-Jun-13	0.9	0.0216	0.8784	6.2262	1.2129	5.1334
5-Jun-13	0.53	0.0216	0.5084	6.7346	1.2129	5.5525
6-Jun-13	-0.78	0.0216	-0.8016	5.9330	1.2129	4.8916
7-Jun-13	0.15	0.0216	0.1284	6.0614	1.2129	4.9975
10-Jun-13	0.85	0.0216	0.8284	6.8897	1.2129	5.6805
11-Jun-13	-1.02	0.0216	-1.0416	5.8481	1.2129	4.8217
12-Jun-13	-0.21	0.0216	-0.2316	5.6165	1.2129	4.6307
13-Jun-13	-1.1	0.0216	-1.1216	4.4949	1.2129	3.7060
14-Jun-13	0.7	0.0216	0.6784	5.1733	1.2129	4.2653
17-Jun-13	0.47	0.0216	0.4484	5.6217	1.2129	4.6350
			CAR std	1.2129		

Appendix 4.23: Result of Cumulative Abnormal Return (CAR) for Mining Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	4.67	0.0749	4.5951	4.5951	3.3417	1.3751
7-May-13	-0.89	0.0749	-0.9649	3.6303	3.3417	1.0864
8-May-13	1.8	0.0749	1.7251	5.3554	3.3417	1.6026
9-May-13	0	0.0749	-0.0749	5.2805	3.3417	1.5802
10-May-13	-0.89	0.0749	-0.9649	4.3156	3.3417	1.2915
13-May-13	6.25	0.0749	6.1751	10.4908	3.3417	3.1394
14-May-13	1.68	0.0749	1.6051	12.0959	3.3417	3.6197
15-May-13	0.83	0.0749	0.7551	12.8510	3.3417	3.8457
16-May-13	-2.46	0.0749	-2.5349	10.3161	3.3417	3.0871
17-May-13	0	0.0749	-0.0749	10.2413	3.3417	3.0647
20-May-13	0.84	0.0749	0.7651	11.0064	3.3417	3.2937
21-May-13	5	0.0749	4.9251	15.9315	3.3417	4.7676
22-May-13	-1.59	0.0749	-1.6649	14.2667	3.3417	4.2693
23-May-13	-5.64	0.0749	-5.7149	8.5518	3.3417	2.5591
27-May-13	0	0.0749	-0.0749	8.4769	3.3417	2.5367
28-May-13	0	0.0749	-0.0749	8.4020	3.3417	2.5143
29-May-13	0	0.0749	-0.0749	8.3272	3.3417	2.4919
30-May-13	0	0.0749	-0.0749	8.2523	3.3417	2.4695
31-May-13	5.13	0.0749	5.0551	13.3074	3.3417	3.9823
3-Jun-13	-4.88	0.0749	-4.9549	8.3525	3.3417	2.4995
4-Jun-13	0	0.0749	-0.0749	8.2777	3.3417	2.4771
5-Jun-13	-1.71	0.0749	-1.7849	6.4928	3.3417	1.9430
6-Jun-13	-1.74	0.0749	-1.8149	4.6779	3.3417	1.3999
7-Jun-13	1.77	0.0749	1.6951	6.3731	3.3417	1.9072
10-Jun-13	2.61	0.0749	2.5351	8.9082	3.3417	2.6658
11-Jun-13	-1.7	0.0749	-1.7749	7.1333	3.3417	2.1347
12-Jun-13	-0.86	0.0749	-0.9349	6.1984	3.3417	1.8549
13-Jun-13	-2.61	0.0749	-2.6849	3.5136	3.3417	1.0514
14-Jun-13	0.89	0.0749	0.8151	4.3287	3.3417	1.2954
17-Jun-13	0	0.0749	-0.0749	4.2538	3.3417	1.2730
			CAR std	3.3417		

Appendix 4.24: Result of Cumulative Abnormal Return (CAR) for Technology Index in 2013

Date	Daily Return (%)	Expected return (%)	Abnormal return (%)	CAR (%)	CAR std	t-test
6-May-13	3.61	-0.0264	3.6364	3.6364	4.6261	0.7860
7-May-13	2.12	-0.0264	2.1464	5.7827	4.6261	1.2500
8-May-13	-1.75	-0.0264	-1.7236	4.0591	4.6261	0.8774
9-May-13	1.52	-0.0264	1.5464	5.6054	4.6261	1.2117
10-May-13	3.59	-0.0264	3.6164	9.2218	4.6261	1.9934
13-May-13	4.19	-0.0264	4.2164	13.4381	4.6261	2.9048
14-May-13	-0.46	-0.0264	-0.4336	13.0045	4.6261	2.8111
15-May-13	1.24	-0.0264	1.2664	14.2708	4.6261	3.0848
16-May-13	-0.38	-0.0264	-0.3536	13.9172	4.6261	3.0084
17-May-13	2.92	-0.0264	2.9464	16.8636	4.6261	3.6453
20-May-13	1.64	-0.0264	1.6664	18.5299	4.6261	4.0055
21-May-13	1.4	-0.0264	1.4264	19.9563	4.6261	4.3138
22-May-13	-0.73	-0.0264	-0.7036	19.2526	4.6261	4.1617
23-May-13	-3.07	-0.0264	-3.0436	16.2090	4.6261	3.5038
27-May-13	0.6	-0.0264	0.6264	16.8353	4.6261	3.6392
28-May-13	0.52	-0.0264	0.5464	17.3817	4.6261	3.7573
29-May-13	0.97	-0.0264	0.9964	18.3781	4.6261	3.9727
30-May-13	-0.22	-0.0264	-0.1936	18.1844	4.6261	3.9308
31-May-13	-0.15	-0.0264	-0.1236	18.0608	4.6261	3.9041
3-Jun-13	-0.74	-0.0264	-0.7136	17.3471	4.6261	3.7498
4-Jun-13	0.3	-0.0264	0.3264	17.6735	4.6261	3.8203
5-Jun-13	-1.19	-0.0264	-1.1636	16.5098	4.6261	3.5688
6-Jun-13	-1.28	-0.0264	-1.2536	15.2562	4.6261	3.2978
7-Jun-13	0.53	-0.0264	0.5564	15.8125	4.6261	3.4181
10-Jun-13	1.52	-0.0264	1.5464	17.3589	4.6261	3.7523
11-Jun-13	-0.6	-0.0264	-0.5736	16.7853	4.6261	3.6283
12-Jun-13	1.96	-0.0264	1.9864	18.7716	4.6261	4.0577
13-Jun-13	-1.03	-0.0264	-1.0036	17.7680	4.6261	3.8408
14-Jun-13	-0.6	-0.0264	-0.5736	17.1943	4.6261	3.7168
17-Jun-13	0.22	-0.0264	0.2464	17.4407	4.6261	3.7700
			CAR std	4.6261		