Impact of political events on stock market returns: empirical evidence from Pakistan

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Abstract

Purpose – The purpose of this paper is to investigate the relationship between uncertain political events and Pakistani Stock Markets from May 1999 to December 2011.

Design/methodology/approach – Using the mean-adjusted return model and event study methodology and by comparing the market efficiency between the two government style, i.e. autocratic and democratic, the authors determined that how uncertain political events are affecting Pakistani Stock Markets.

Findings – The empirical result shows that political events have an impact on the Karachi Stock Exchange (KSE) returns. Moreover, the paper derives from the results that the KSE is inefficient for a short span of time, after 15 days KSE absorbs the noisy information. The political situation in Pakistan was more stable in autocratic government structure than in democratic structure but it is difficult to state that the stock markets are more efficient in Autocracy because only few events took place during an autocratic regime and magnitude of events was not same in the autocratic and democratic government structure.

Originality/value – This study is unique in its nature as it examines the effect of multiple political events on stock market returns in Pakistan simultaneously and is expected to contribute significantly in the capital market literature of Pakistan in particular.

Keywords Pakistan, Event study, Karachi Stock Exchange, Mean-adjusted return model, Political event, Stock market volatility

Paper type Research paper

1. Introduction

The financial markets are important part of every country's economy; stability in their performance is an indicator of better economic health of the country. The stock market has a significant role in financial markets; it plays a vital role in industrial growth of a country by providing an optimal channelization of funds between the users and suppliers of funds. The development and stable performance of the stock market attracts investments from both domestic and foreign investors and has a strong effect on the country's overall economic competitiveness (Levine and Zervos, 1998). The performance of the stock market is influenced by economic, non-economic and political events. The macroeconomic variables such as interest rate, inflation, monetary and fiscal policy affect the stock market as a whole, while the microeconomic variables affect the performance of individual firms. Non-economic events such as earthquakes,

floods, plane crashes and natural catastrophes may also have a significant effect on the country's economy (Ismail and Suhardjo, 2001). The impact of these natural disasters may be contagious and they not only affect the a country's economy but also the global economy as a whole. The world's deadliest tsunami in December 2004 spread destruction in almost 11 economies of the world.

Although political events do not have any direct relationship with stock markets but they are considered one of the main factors that may affect the stock markets. Bechtel (2009) argued that stable political situation has a low systematic investment risk and encourages growth, capital investment and improves overall economy's performance. Jorion and Geotzmann (1999) derived that political events had an interruption in the market transactions whereas, Chiu *et al.* (2005) proved that political elections in South Korea changed the behavior of foreign investors in financial markets. Beaulieu *et al.* (2006), Aktas and Oncu (2006), Bailey *et al.* (2005) and Frey and Waldenstrom (2004) argued that political events had a strong effect on the returns and trading volume of the financial markets.

This study analyzed the political events and their impact on market returns of Karachi Stock Exchange (KSE) which is the leading financial market in Pakistan. Some researchers like Robock (1971), Haendal *et al.* (1975), Kobrin (1979) and Feils (2000) have examined the impact of political risk on the volatility of investment and observed both negative and positive effects. In Pakistan, the probability of an event in any year is relatively higher than the preceding year with an average arrival rate of 1.5 events per year with no time trend (Masood and Sergi, 2008). The nuclear tests carried out by Pakistan and India had a significant effect on KSE returns and trading volume (Javed and Ahmed, 1999). The army intervention in politics, the war on terror and the political unrest have significantly damaged the economic conditions of Pakistan. The world's perception of Pakistan after September 11, 2011 had a drastic effect on the economic performance and resulted in reduced participation in the financial markets by foreign investors. The purpose of this study is to measure the impact of uncertain political events on the stock market of KSE-100 index, whether it is positive, negative or neutral using the major political events from May 1999 to December 2011.

The study is unique in its nature as it examines the effect of multiple political events on stock market returns in Pakistan and is also expected to contribute significantly in the capital market literature of Pakistan. The study also provides fruitful insights regarding the impact of political events on the stock market in Pakistan that will help policy makers and investors in Pakistan's capital markets. The rest of the paper has been organized as follows: next section reviews some relevant literature on the topic, followed by research design and methodology in Section 3. Section 4 analyzes the data collection and discusses the results drawn and the final section concludes the findings of the research.

2. Literature review
Many studies had been carried out regarding the impact of political events on financial markets both in developed as well as in developing countries. In this regards, Frey and Waldenstrom (2004) studied the fluctuation in the value of government bonds of Germany and Belgium traded in Zurich and Stockholm markets during Second World War. The outbreak of war depressed the value of both bonds; the result showed that the three major events: September 1939 German invasion of Poland, the invasion of Benelux and France in May 1940 and the German defeat at Stalingrad in 1943 affected both markets in similar ways. The German invasion of Benelux increased the value of

German bonds and decreased the value of Belgian bonds in both markets and the German defeat at Stalingrad had the opposite effect.

Bailey *et al.* (2005) examined the impact of political events on the returns of the US-based international equity mutual funds. The Iraqi invasion of Kuwait in August 1990 was taken as a macro political event. The dummy variable event study methodology was used in the study to measure the abnormal returns in the event window where 33 days are chosen as an event window, 11 days are pre event and 21 days are for post event analysis. The results stated that the investors were earning positive abnormal returns 11 days prior to the Kuwait invasion while the Iraq invasion of Kuwait had a negative impact on the abnormal returns of most of the foreign stock markets. Moreover, the negative impact on abnormal returns of the US international mutual funds was not as severe as that of the market indices.

Li (2005) investigated how the accuracy of noisy public information – about the expected aggregate dividend rate – obtained from the investors effects stocks market return in the USA. He stated that less accurate information can lead to increase in the risk premium and stock return volatility. He claimed from the findings that there was a significant negative relationship between the accuracy of noisy information with risk premium stock return volatility in the US financial markets. He argued that if the companies disclose more precise information to their investor than there will be a reduction in the cost of equity capital.

Beaulieu *et al.* (2006) investigated the short-term effect of October 30, 1995 Quebec Referendum separation from the Canada Federation on the stock returns. The results depicted that Quebec will remain a part of Canadian Federation was good news for financial markets and had a positive impact on the stock returns. The study also identified that the effect of referendum was higher on firms who had greater political risk exposure. Moreover, the impact of political instability was greater on domestic firms as compared to multinational firms and its impact was not only seen on Quebec firms but also on the Canadian markets.

Ferguson (2006) examined the behavior of London bond market from 1845 to 1914, the weekly closing prices of bonds issued by five bigger economies Britain, France, Germany, Russia and Austria-Hungary was taken for the study. A comparative analysis was done between the political events from 1845 to 1880 and from 1881 to 1914, which were affecting the international bond yield. The results showed that wars, diplomatic crises and revolutions that took place between 1845 and 1880 had a more significant effect on the international bond yield as compared to political events from 1881 to 1914. According to the author, this was due to increasing separation of national bond markets but this theory did not explained why the London bond market failed to anticipate the risk of First World War.

Bechtel (2009) argued that a democratic political system had an effect on systematic investment risk. The objective of the study was to discover a relationship between democratic politics and systematic investment risk. The data collected in the study (daily stock market data from Germany from 1991 to 2005) suggested that right wing governments (supporters/acceptors of social hierarchy, free market) led to lower investment risk whereas left leaning governments had the opposite effect. This effect was more obvious when inflation was high and also depended on the state of the government (divided or unified). According to the study, systematic risk decreases if the electoral prospects of a rightist government improve (through investor anticipation) while good prospects for a leftist government increase the systematic risk. The study also found that coalition governments lead to higher investment risk.

In the context of developing economies, Ismail and Suhardjo (2001) examined the effect of domestic political events on the Jakarta Stock Exchange. The 100 days of estimation and 11 days of event period was taken to study the abnormalities in the stock market. A sample of important political events was taken from 1999 to 2001. They concluded that the whole market and the overall industry did not show any significant response to all events. There was no difference in mean of abnormal returns before and after the events. There were only two out of 11 events in which the stock market as a whole responded to an event and those were the church bombing on May 28, 2000 and the cabinet movement on August 23, 2000 – that was because of political issues which are common in Indonesia. After the 1997 Asian financial crisis, Indonesia was politically unstable. The measure of dispersion in the economic performance had increased from 0.97 percent in 1995-1996 to 2.65 percent in 1998-1999 due to the Asian financial crisis and there was greater volatility in 1998 than the 1999 and 2000. The findings reported that the political events that took place in 1999 and 2000 were less important for investors in the stock market and there was also a chance that the people of Indonesia were used to the political unrest situations; therefore, the intensity of their reaction to political situations was minimized.

Chiu *et al.* (2005) studied the behavior of foreign investors in the four elections of South Korea, i.e. 15th and 16th presidential elections and 16th and 17th parliamentary elections. They focussed mainly on three questions: did foreign investors change their trading strategy at the time of election? Did presidential elections have more impact to market activity as compared to parliamentary elections? And did foreign investors prefer trading in Korea Stock Price Index (KOSPI) 200 futures or KOSPI 200 options at the time of political instability? The bivariate GARCH chart that includes dummy variables was used to study the behavior of foreign investors from November 11, 1997 to June 20, 2004. The results showed that negative relationship exist between KOSPI 200 index return and the volume of both future and option contracts. The parliamentary elections decreased the trading volume of option contracts as compared to presidential elections; moreover in the parliamentary elections, the financial derivatives markets were more stable as compared to their stability during the presidential elections.

Önder and Simga-Mugan (2006) evaluated the impact of economic and political news on the emerging markets; the study took a case of two markets the Buenos Aires Stock Exchange (BASE) in Argentina and Istanbul Stock Exchange (ISE) in Turkey. They examined political and economic news and financial markets from January 1995 to December 1997. The results showed that both economic and political news affects the stock markets. The domestic political events had a significant impact on the volatility of returns while the world political events affected the trading volume in both markets.

In addition, the global political news had a positive impact on trading volume of BASE and the negative impact of ISE trading volume. The domestic economic news did not affect the Turkish market whereas it increased volatility in Argentine market. Economic news affected the trading volume in both markets; the world economic news increased trading volume in BASE while country-related world economic news increased trading volume in ISE.

Aktas and Oncu (2006) evaluated the impact of the efficient market hypothesis (EMH) in the situation when Turkish parliament rejected the highly controversial bill on March 1, 2003 that allowed the deployment of the US army. The market model was used for the estimation of the betas for three different periods (60 days, 120 days and 240 days). The empirical results explained that the first trading day after the rejection

of resolution historical β's estimation was highly significant and there was no clear sign of underestimation or overestimation of investors that was against EMH.

In the context of Pakistan the study of Javed and Ahmed (1999) was considered as the pioneer study on the topic which evaluated the impact of the nuclear tests on KSE. The study included two nuclear experiment events that took place on May 11, 1998 in India and May 28, 1999 in Pakistan and examined their impact on stock market returns. The analysis was done on trading volume, volatility and average returns in the KSE from April 1995 to June 1999 by using the ARCH Model. The results reported that Indian nuclear tests had a significant negative impact on the average rate of returns while trading volume and volatility level increased at KSE. The Pakistani nuclear tests did not affect the average rate of returns significantly. They did, however, increased the volatility and trade volume.

Furthermore, the major political events in Pakistan from 1947 to 2006, which had an effect on the stock market, had been analyzed by Masood and Sergi (2008). The data were collected by primary sources from historians, economists, politicians, government officials, investors, senior bankers and stock market analysts. The Bayesian modeling and Markov Chain Monte Carlo techniques were used for the analysis and forecasting. The results indicated that the probability of an event in any year is higher than the previous year with an average arrival rate of 1.5 events per year with no time trend. The forecast suggested that the level of political risk would remain unchanged in the future. In the end, they found that the Pakistan's political uncertainty has a risk premium of 7.5 to 12 percent.

Another study of Malik *et al.* (2009) examined the impact of President Gen (R) Pervaiz Muhsaraf's resignation on August 18, 2008 on the stock returns and volume of KSE 100 index, the study took a sample of daily returns and trading volume from February 18, 2008 to February 18, 2009. The pre event window was taken from February 18, 2008 to August 17, 2008 and post event window was taken from August 18, 2008 to February 18, 2009. The Phillip Perron test was used to examine the relationship between stock market returns and the trading volume. The results indicated that there was a positive relationship between stock market returns and trading volume and this relationship became stronger in post event time period, which was the resignation of ex-president Gen (R) Pervaiz Musharraf that had a positive impact on Karachi stock market. However, the number of other political events such as Mumbai attacks and Asif Ali Zardari became the president of Pakistan took place in the post even period. They impact of these events was also present in the stock markets. They did not measure the impact of them in their study.

Do *et al.* (2013) empirically provided evidence that social network-based political connections of directors and politicians had strong positive influence on the value of the firm. They used a sample of close gubernatorial elections from 1999 to 2010 and concluded that association of firms with elected governors may increase their value by 1.36 percent on average surrounding the election dates. Moreover, these political associations were more valuable whereas higher level of regulation and corruption, in smaller firms, and in firms dependent on external source of financing. Firms connected to the winners of election invest more, sustain superior operating performance, hold more cash and have improved stock performance in longer term. In addition, Milyo (2012) also argued the same political connections in the USA and found that the value of firms was strongly exaggerated by which party controls political power and this had been demonstrated by stock market reactions to political events.

Keeping in view the above mentioned literature, the authors found a significant gap to be researched in Pakistani context. The previous researchers measured the economic

impact of only certain political event on Pakistan financial market. The studies of Javed and Ahmed (1999) and Malik *et al.* (2009) looked at only one event for the analysis; they did not draw any broader view for the analysis of KSE over the trend. A comprehensive study was conducted by Masood and Sergi (2008) on the effect of multiple political events on KSE returns covering only the period up to the year 2006. Moreover, they focussed to measure the political risk in the Pakistani stock market and the probability of events took place in the following year as compare to previous years. The political and economic environment has changed drastically in last few years and there is a strong need to address the effect of hot political events on stock market returns which is to be investigated by the present study.

The purpose of this study is to measure the abnormal change in the KSE 100 index returns due to the uncertain domestic political events over the period of time (from May 1999 to December 2010). This study not only measures the impact of political events but also identify the time taken by Pakistan stock markets to come to its normal position after a political event. Moreover, the present study also examines the difference between the impact of political events occurred in the era of the autocratic government of Gen. (R) Pervaiz Musharraf from 1999 to 2002 and political events occurred in democratic government after 2003 on KSE returns. So, the present study is expected to fulfill this gap and to contribute significantly to the existing literature.

3. Research methodology
This paper has used the event study methodology to measure its impact on KSE 100 Index. Brown and Warner (1985) and Mackinlay (1997) derived that event methodology is very helpful to measure the economic impact of a certain event on the value of a firm in short span of time. It had been used by Ismail and Suhardjo (2001), Bailey *et al.* (2005) and Beaulieu *et al.* (2006) for the study of political events. Moreover, Henderson (1990) also supported that event study methodology may provide better results when measuring market wide events either on the market as whole or on an individual firm. The present study also uses event study methodology to assess the economy-level political events on the stock market returns as a whole market phenomenon.

3.1 Events identification
The major macro political events from May 1999 to December 2011 are considered for examination in this study. The selection of the events is made by examining BBC News, CNN World, Terrorism Issues, Pak Tribune, Dawn News and The News. The selection is made by analyzing the intensity of an event. The instensity of an event is measured by examining its importance in the front pages of the leading newspapers, the headlines of the political events are gathered and those events are selected for analysis which has given same prominence in all the leading newspapers. Furthermore, it makes no difference on the selection whether the event is positive or negative. Lots of political events are considered to be postive in the eyes of international community while they might have a negative impact on stock markets. After thorough screening the following events are considered which have been described in Table I.

3.2 Data collection
The daily values of KSE 100 index, from May 1999 to December 2010, are obtained from *Business Recorder* (www.brecorder.com/) which is the most trusted and authentic source.

Table I.
Selected political events
from May 1999 to
December 2011

Sr. no.	Event date	Event descriptions
1	May 8, 1999	Kargil War took place between India and Pakistan
2	October 12, 1999	Fourth military coup in Pakistan ended Nawaz Sharif's Government and General Pervaiz Musharaf became the chief executive of Pakistan
3	June 20, 2001	Pervez Musharraf dissolved the parliament and was elected as a President
4	September 11, 2001	Pakistan alters its foreign policy after the attacks on the world trade center and became the ally of the USA on Afghan War
5	October 10, 2002	General election held in Pakistan
6	4 February 2004	Dr Abdul Qadeer Khan admitted that he was involved in the leakage of nuclear weapons secrets to Libya, North Korea and Iran
7	June 18, 2004	The USA began drone attacks on the tribal areas of Pakistan
8	August 26, 2006	Baloch Leader Nawab Akbar Bughti was killed in army operation
9	March 9, 2007	President Musharraf suspended Chief Justice Iftikhar Muhammed Chaudhry which would become the cause of lawyer's movement in Pakistan
10	July 8, 2007	Incidence of Lal Masjid took place in Islamabad
11	November 3, 2007	President Musharaf declared state of emergency and dismissed the Judges of higher court
12	December 27, 2007	Assassination of Benazir Bhutto
13	February 18, 2008	General election held in Pakistan
14	August 18, 2008	President Pervaiz Musharaf resigned
15	September 6, 2008	Asif Ali Zardari became the President of Pakistan
16	November 26, 2008	Mumbai attacks took place in India which was blamed on Pakistan by the Indian authorities. Islamabad denies involvement but promises to co-operate with the Indian investigation
17	12 to 16 March 2009	Massive protest took place in the form of Long March. As a result Prime Minister Gillani reinstated the judges which were dismissed by President Musharraf by an executive order
18	October 11, 2009	Attack on Pakistan Army General Head Quarter, Islamabad
19	May 2, 2011	Al-Qaeda supreme commander Osama bin Laden was killed by American Special Forces in Abbottabad
20	26 November 2011	Attack on Pakistan Salala check Post by NATO and Pakistan shut down NATO supply routes as a reaction

3.3 Hypothesis
The two hypotheses are used in this study:

H0. Political events have no effect on stock markets.

H1. Political events have a significant effect on the stock markets.

H0. Political events during democratic and autocratic governments have same impact on stock markets.

H1. Political events during democratic and autocratic governments have significantly different impact on stock markets.

3.4 Event window

The event window selection is an empirical issue, a window that is too long will abosrb the impact of other ecnomic, non-economic and political events that are not of interest in this study and a window that is too short will not be able to analyze the effect of an event. Ismail and Suhardjo (2001) used 100 days of estimation and 11 days of event period to study the abnormalities in the stock market due to domestic political events. Bailey *et al.* (2005) used event window of 33 days for the analysis of the Iraq invasion of Kuwait in August 1990; 11 days were before and 22 days after the event for the analysis. Beaulieu *et al.* (2006) used ten days before and after the event, for the analysis of October 30, 1995 Quebec Referendum impact on stock returns. Malik *et al.* (2009) examined the impact of Gen. (R.) Pervaiz Musharraf resignation on the stocks returns and volume of KSE 100 index by using the six months before and after as an event window. The political situation in Pakistan is uncertain; lots of economic, non-economic and political events took place in a short period of time. To avoid the impact of other events on our study we used event windows of two, five and 15 days before and after an event for analysis. In all, two and five days windows are to measure the short-term impact on KSE 100 index and the 15-day window to analyze the market efficiency to absorb the uncertain information.

3.5 Model

We used the mean adjusted returns model for the estimation of normal and expected returns and it has been considered as an efficient model for the analysis of market indexes. Ismail and Suhardjo (2001) employed the mean adjusted return model in their domestic political event study for the absolute and cross-industrial indexes analysis of Jakarta Stock Exchange. They argued that mean adjusted returns model can serve a better explanation of connection between stock market returns and political instability, particularly with reference to a developing and emerging economies.

The model considered that the expected return of the index is a constant number, R^*. For example:

$$R^* = (1/T) \sum_{t=1}^{t} R_t$$

where T is the number of days in the event window, and t the market index return on day t of the event window.

The abnormal returns of a market index are the difference between the actual and expected return on a given period of time.

$$AR_t = R_t - R^*$$

where AR_t is the abnormal return or expectation error of the market index in day t in the event window, R_t the return of the market index on day t of the event window, and R^* the expected return of the market index for the T period of the event window.

Furthermore, we calculated the average abnormal returns before and after the event, according to two, five and 15 days before and after the event day.

$$AR^*_{before} = \frac{\sum_{t=-k}^{t=-1} AR_{before,t}}{n}$$

where K is the number of days taken before the event day, AR^*_{before} the average abnormal return before the event day.

And:

$$AR^*_{after} = \frac{\sum_{t=1}^{t=k} AR_{before,t}}{n}$$

where K is the number of days taken after the event day, AR^*_{after} the average abnormal return after the event day.

And after that we calculated the standard deviation of the average abnormal return, before and after the event day:

$$\sigma_{before} = \sqrt{\frac{\sum_{t=-k}^{t=-1} \left(AR_{before,t} - AR^*_{before,t}\right)^2}{n-1}}$$

And:

$$\sigma_{after} = \sqrt{\frac{\sum_{t=k}^{t=1} \left(AR_{after,t} - AR^*_{after,t}\right)^2}{n-1}}$$

Furthermore, a pooled standard error of the difference between means of the samples is calculated to test the difference of means. The formula of combined standard error of difference between means is given below:

$$\sigma_{pre-post} = \sqrt{\left(\frac{(n_1 - 1)\sigma_1^2 + (n_2 - 1)\sigma_2^2}{n_1 + n_2 - 1}\right)\left(\frac{1}{n_1} + \frac{1}{n2}\right)}$$

where, σ_1^2 is the variance of pre event period; σ_2^2 the variance of post event period; and n_1,n_2 the number of days in pre and post event period.

The statistical t-test is used to analyze the difference between the means of market abnormal returns in the pre and post event period. As we are taking the three event windows, so it will be the difference between means of two, five and 15 days market abnormal returns before and after an event. The formula of t-stat is given below:

$$t = \frac{AR^*_{after} - AR^*_{before}}{\sigma_{pre-post}}$$

If the value of t-statistic is significant then we conclude that the market is inefficient because it does not absorb uncertain information and if the t-statistics shows insignificant results then the market is efficient and it absorbs noisy information and EMH is true. We have taken three event windows of two, five and 15 days to analyze how much time a market takes to absorb uncertain information.

4. Empirical results and discussion
Table II shows the significance level of an event at different event windows level and Table III represents the averaged abnormal returns before and after the event.

The episode of Kargil war persisted for almost two months between Pakistan and India; both sides blame each other to violate line of control agreement and

Sr no.	Event	2 days	t-values 5 days	15 days
1	Kargil War	0.939	−0.129	−0.298
2	Fourth Military Coup	−2.909***	−1.182	−0.392
3	General (R.) Pervaiz Musharaf became Chief Executive	0.379	0.128	−0.155
4	Attack on World Trade Center	−2.604***	−1.984**	−0.244
5	General Election	−0.684	0.131	0.375
6	Dr Abdul Qadeer Khan confession	−0.749	−0.287	−0.400
7	First Drone Attack on Pakistan	−0.938	−0.065	0.246
8	Nawab Akbar Bughti Killed in Army Operation	4.037***	1.484	0.448
9	Chief Justice Iftikhar Muhammed Chaudhry Suspended	−4.162***	−0.103	0.013
10	Lal Masjid Incidence	−1.349	−0.001	−0.429
11	State of Emergency declared in Pakistan	−0.102	0.141	0.078
12	Benazir Bhutto Assassination	−4.441***	−0.527	−0.766
13	General Election Held	0.552	0.200	−0.049
14	President General (R.) Pervaiz Musharaf Resigned	−0.685	−0.912	−0.107
15	Asif Ali Zardari became President of Pakistan	−1.545	−0.778	0.154
16	Mumbai Attacks	0.000	−0.354	−3.495***
17	Long March for restoration of Judges	1.989**	0.837	0.633
18	Attack on Army General Head Quarter	−0.069	−0.330	−0.448
19	Osama Bin Ladin Operation by Americans in Abbottabad	−2.167**	−0.386	−0.192
20	NATO attack on Pakistan Salala check Post	−0.642	0.012	−0.114

Note: ***,**,*Significantce at 1, 5, and 10 percent, respectively

Table II.
t-values at event window
two, five and 15 days

triggered the war. The war resulted in nothing else than economic loss for both countries, the Prime Minister Mian Nawaz Sharif agreed to disengage his forces from the Kargil in a meeting with Bill Clinton on July 4, 1999. The market did not show any statistically significant response to the Kargil war. However, average abnormal returns were positive 15 days prior to the war and average abnormal returns were negative for next 15 days, although the event is insignificant but its impact is negative on KSE 100 returns. It seems that the information was negatively captured by KSE.

Gen. (R) Pervaiz Musharraf removed the Nawaz Sharif government on October 12, 1999 and once again, for the fourth time in the history of Pakistan, the martial law was imposed as the law of necessity to protect the national interest of Pakistan, at first he joined the office as a chief executive and started working under President Rafiq Tarrar but after almost two years on June 20, 2001 he dissolved the parliament and elected himself as president of Pakistan. The fourth military coup showed a statistically high negative response at 1 percent significance level in event window [2, 2]. The abnormal returns were positive before the event and negative abnormal returns were observed after the event. Although its impact is insignificant in event window [15, 15] but it is observed that the impact was still there even after 15 days while the event of parliament disbandment by Gen. (R) Pervaiz Musharraf did not present any significant impact on KSE. The average abnormal returns responded negatively after the event but it did not create drastic noise in the stock market.

The attack on world trade center on September 11, 2011 forced Pakistan to change its foreign policy. Pakistan became the ally of the USA on Afghan war. Pakistan and the USA both shifted their policy of Pro Taliban to Anti-Taliban. In the previous decade both of them worked to trained and armed them against the Soviet Union Jihad movement. After the attack on world trade center, Pakistan co-operated with the USA

Sr no.	Event	AR*					
		2 days		5 days		15 days	
		Pre	Post	Pre	Post	Pre	Post
1	Kargil War	−0.795	0.351	−0.095	−0.337	0.189	−0.381
2	Fourth Military Coup	2.628	−3.674	0.976	−1.198	0.286	−0.318
3	General (R.) Pervaiz Musharaf became Chief Executive	−0.493	−0.020	−0.149	0.029	0.107	−0.146
4	Attack on World Trade Center	1.322	−1.762	1.205	−1.420	0.132	−0.148
5	General Election	1.301	0.823	0.385	0.533	−0.038	0.357
6	Dr Abdul Qadeer Khan confession	0.419	−0.254	0.250	−0.232	0.219	−0.207
7	First Drone Attack on Pakistan	0.404	−0.703	0.064	−0.092	−0.248	0.268
8	Nawab Akbar Bughti Killed in Army Operation	−2.706	2.424	−1.590	1.525	−0.498	0.485
9	Chief Justice Iftikhar Muhammed Chaudhry Suspended	0.766	−0.905	0.006	−0.207	−0.051	−0.028
10	Lal Masjid Incidence	0.350	−0.315	0.029	0.028	0.216	−0.213
11	State of Emergency declared in Pakistan	−0.155	−0.474	−0.242	0.144	−0.079	0.071
12	Benazir Bhutto Assassination	1.901	−2.441	0.512	−0.485	0.396	−0.378
13	General Election Held	−0.158	0.656	−0.050	0.179	0.031	−0.012
14	President General (R.) Pervaiz Musharaf Resigned	0.345	−2.017	0.997	−1.869	0.035	−0.372
15	Asif Ali Zardari became President of Pakistan	0.469	−0.424	0.244	−0.235	−0.253	0.230
16	Mumbai Attacks	0.000	0.000	0.004	−0.003	0.896	−0.955
17	Long March for restoration of Judges	−2.778	1.991	−1.427	1.152	−0.912	0.966
18	Attack on Army General Head Quarter	−0.039	−0.113	0.294	−0.221	0.477	−0.473
19	Osama Bin Ladin Operation by Americans in Abbottabad	0.920	−1.060	0.184	−0.150	0.091	−0.092
20	NATO attack on Pakistan Salala check Post	0.280	−0.389	−0.050	−0.037	0.052	−0.059

Table III.
Average abnormal returns before and after an event

to diminish terrorist grooming from the soil of Afghanistan. This event had a greater impact on Pakistani political and security issues that it had on the USA in the years following the event and it gave birth to a number of political events in Pakistan. Currently, we limited our scope to analyze its impact on stock market. The results showed highly significant impact on KSE; significantly negative abnormal returns were observed two and five days after the event, even though results do not show a significant impact after 15 days but average abnormal returns were still negative after 15 days.

General elections were held in Pakistan on October 10, 2002 and as a result, Mir Zafarullah Khan Jamali became the prime minister of Pakistan and democratic structure was restored. Many legal experts questioned the democratic structured from 2002 to 2007. The positive abnormal returns were observed on the subsequent day, although the impact of the event was not significant. Investors took this news positively and a positive change was observed in the abnormal and market returns. Dr Abdul Qadir Khan confessed in front of whole nation on February 4, 2004 that he was involved in the leakage of nuclear secrets to Libya, North Korea and Iran. This event destroyed Pakistan's image internationally and gave birth to reservations about the security of Pakistan's nuclear assets among the international community.

The average abnormal returns were negative in all the three event windows; however, the results indicated that there was no significant difference in abnormal returns before and after the event. The political news was perceived negatively by investors but its impact was lower.

On June 18, 2004, the first drone attack took place on Pakistani soil by US near Wana, South Waziristan. Five people were killed in it, including Nek Muhammad Wazir. It started the debate of national sovereignty in the media and was considered an attack on Pakistan. In the following years it became a common occurrence. Negative abnormal returns were observed for a short period of time but they were insignificant, positive average abnormal returns were found after 15 days which shows that stock market did not react violently to this event. The conflict of between Baloch nationalists and Pakistan government has been there since 1947, the history of the conflict is quite confusing and debatable. In 2005, a conflict between Ex-President Musharraf and Baloch tribe Bughti started over royalty of natural resources and coast of Baluchistan. The Ex-President Gen. (R) Pervaiz Musharraf, instead of negotiating with Baloch nationalist, started a military operation against them. In August 26, 2006 Ex-Governor and Chief Minister of Balochistan Nawab Akbar Bughti was killed in an army operation. The facts about the conflict and operation are confusing as both the parties defended themselves with their arguments.

The result shows highly significant positive abnormal returns in an event window [2, 2] and after five days and 15 days positive abnormal returns are still there as compare to pre period but they are insignificant. This event had a positive impact on KSE returns, positive average abnormal and market returns are observed after the event in all the three event periods.

The differences between chief justice (CJ) of Pakistan Iftikhar Muhammad Chaudhry and Ex-President Gen. (R) Pervaiz Musharraf arouse as a consequence of the missing persons and steel mill case. The Ex-President forced him to resign but he refused, the President took an action and suspended him on March 9, 2007. The suspension of CJ triggered a lawyer's movement in Pakistan and a huge protest started all over the country in favor of the CJ. The results indicate highly statistically significant impact on KSE of the suspension of CJ, the significant negative abnormal returns were observed for shorter period of time, the average abnormal returns after the event day were negative for all the three-event period but the event was significant only for two days, later on the market absorbed the noise of information. The Lal Masjid was used as a recruiting and training school of Mujahidin against Soviet Union in General Zia ul Haq regime. The students of Lal Masjid started taking action against the shops who were selling vulgar movies and against prostitution houses in Islamabad. They started challenging the government to implement pure Islamic laws in Pakistan on which Pakistan came into being, the conflict escalated and the deadlock from both sides resulted in an army operation on July 8, 2007. A huge number of innocent students were killed in the operation; this incident started the movement of suicide bombing in Pakistan.

The results indicate the negative average abnormal returns after the event day, however, they were not significant, the event was taken negatively by the stock market but the market did not respond to it significantly. The Ex-President Gen. (R) Pervaiz Musharraf declared state of emergency in Pakistan due to his conflict with judiciary on November 3, 2007. He banned all the media channels and appointed judges of his own choice in the higher courts. A protest by lawyer's, political parties and civil society started all over the Pakistan which created an uncertain political situation in Pakistan.

The stock market did not respond to this event significantly, the negative abnormal returns were observed two days after the event day, surprisingly the results shows the positive average abnormal returns in five and 15 days post period. The market did not respond to it negatively but also shows positive impact.

The Ex-Prime Minister and leader of Pakistan People's Party (PPP), Benazir Bhutto, was assassinated after her address in Liaqat Bagh in Rawalpindi on December 27, 2007. Protests started all over the country and the whole country closed down for three days. Her death had a significant negative impact on KSE; negative average abnormal returns indicated in all the three post period but the event was significant in an event window [2, 2]. The stock market showed its impact in longer period but it was not significant, in short period the highly significant negative abnormal returns were observed. Moreover, general elections were held in Pakistan on February 18, 2008, the PPP came into power and Yousaf Raza Gillani became the Prime Minister of Pakistan. The true democratic set up started again in Pakistan. The general election did not have any significant impact on KSE returns, positive abnormal returns were observed in the post period for a short span of time. The results of elections had a positive impact on the performance of stock market. President Gen. (R) Pervaiz Musharraf resigned on August 18, 2008; it did not have any significant impact on the stock market returns. Positive average abnormal returns were observed prior to the event while after his resignation negative abnormal returns were observed. The Pakistani community took it positively but the stock market perceived this information differently. Mr Asif Ali Zardari who had a suspicious historical background became the president of Pakistan on September 6, 2008. The market responded negatively to this event, the positive abnormal returns were shown five days prior to the event while after the event, the negative abnormal returns were observed; overall this event did not have a significant impact.

Mumbai attacks took place in India on November 26, 2008. In all, 11 terrorists were involved in it and they brought the whole city to a halt, the bombings and shootings took place all over the city. India blamed Pakistan for the Mumbai attacks, tensions started between two countries after the Mumbai attacks. The Mumbai attack is the only event which had a significant impact on stock market for a longer period of time. The significant negative abnormal returns were observed 15 days after the event, however, the market did not respond to it in short time period. The abnormal returns were same in two and five days prior and after the event. Bhurban Accord was signed between President Asif Ali Zardari and Nawaz Sharif on March 08, 2008, in which both parties agreed to reinstate the deposed judges within 30 days of coalition government which were sacked by Ex-President Gen. (R) Pervaiz Musharraf when he imposed emergency in Pakistan on November 03, 2007. After that, the President Asif Ali Zardari refused to fulfill his promise and as a result, lawyers' protest started all over the country between March 12 and March 16, 2009. The political parties, civil society and lawyers started their way toward Islamabad for the restoration of Judges. The Prime Minister reinstated the judges by an executive order when the long march was near Gujranwala. The restoration of judges was considered a positive event in Pakistan's community and the whole nation celebrated it. The result of long march had a significant positive impact on KSE returns; the results show significant positive abnormal returns two days after the event. The negative abnormal returns were observed 15 days before the event while positive abnormal returns were obtained after the restoration of judges which means the stock market responded positively to the restoration of judiciary. The average abnormal returns were positive in five and 15 days post period but they were not significant.

The supreme commander of Al-Qaida, Osama bin Ladin was killed in an operation executed by the American forces on May 2, 2011 in Abbottabad. Two questions arose against the competency of Pakistani intelligence agencies, first Osama bin Ladin was living in Abbottabad near Pakistan army training school and they were unaware and second, the Americans executed the operation on Pakistani soil for almost about an hour and they did not even notice it. Pakistan faced controversies on international media that they provided a place of living to Osama bin Ladin. The KSE had a significant impact of this event, the highly significant negative abnormal returns were observed in the post two days of an event, the KSE responded negatively to the Abbottabad operation. However, the negative average abnormal returns were observed for 15 days after the operation but they were insignificant. NATO forces attacked Pakistan army Salala check posts near Afghan border, 28 Pakistani soldiers were killed including a Major and a Captain. Pakistan army protested in international forum and shut down NATO supplies and ordered the US to empty their Shamsi Air Base. The average normal and abnormal returns were positive 15 days before the event, the negative mean normal and abnormal returns were observed for 15 days after the event day but they were insignificant. The market did not respond significantly to NATO attack.

4.1 Summary of the analysis
This part summarizes the analysis which has been explained above. The Table IV shows the events that have the significant impact on the KSE market returns. Seven out of 20 events had a significant impact on the stock market in shorter time period while the market did not respond significantly for larger period of time. The event of Mumbai attacks was the only highly significant event that had an impact for more than 15 days; bases on the empirical results, it can be concluded that the KSE is inefficient for shorter period of time, after almost 15 days, it absorbs the noisy information and starts normalizing. Therefore, we reject our first *H0* hypothesis that the political events have no impact on stock market. For events that are insignificant, we can assume that they are less important from other events or another possibility is there that they were anticipated by the market, the market did not respond to them on the event day or after that because the information was previously absorbed in the market returns.

4.2 Autocracy vs democracy
In this part we compare the impact of political events in autocratic and democratic governments. According to the legal point of view, the autocratic leadership remained in Pakistan from October 12, 1999 to October 10, 2002 because in this time span the one person General (R.) Pervaiz Musharraf was running the whole country. After the general elections on October 10, 2002 the parliament came into being and process of democracy was started. Legal experts have a point of view that the democratic structure, from 2002 to 2007, was against the true spirit of democracy, the army

	Event Windows		
	2 days	5 days	15 days
Events No.	2***,4***,8***, 9***,12***,17**, 19**	4**	16***
Note: ***,**,*Significant at 1, 5, and 10 percent levels, respectively			

General is not allowed in the constitution to become the president. One person cannot hold two government offices but we considered the autocratic era from 1999 to 2002 because the assemblies came into being after this period and Supreme Court allowed him to hold the position of President in an army uniform. The political events took place in autocratic governments are numbered 2, 3, 4 and 5. If we assume the intensity of all the political events and the market performance were same before every event, then we can compare them by using Figure 1. Figure 1 implies that the percentage change in average abnormal returns before and after the political event was more consistent in autocratic government structure except the event 5 but that is not so simple. The intensity of every event is different.

We compare the mean market returns 15 days before every event and results have been presented in Table V.

The results have indicated that there is no statistically significant difference in the mean market returns before the political events, so we conclude that the market performance was almost same before every event. Now the problem is about the intensity of political events, if the intensity of every political event is same, then it is simple to compare market efficiency in autocratic and democratic government structure but the case is not that simple, the autocratic structure remained for only three years and only four events took place in it and it can be concluded that the political situation was stable in autocratic government but it is difficult to conclude that the markets are more efficient in it because the political events of huge intensity did not take place during this time period. If number of major political events took place in both autocratic and democratic governments, then both government structures can be compared.

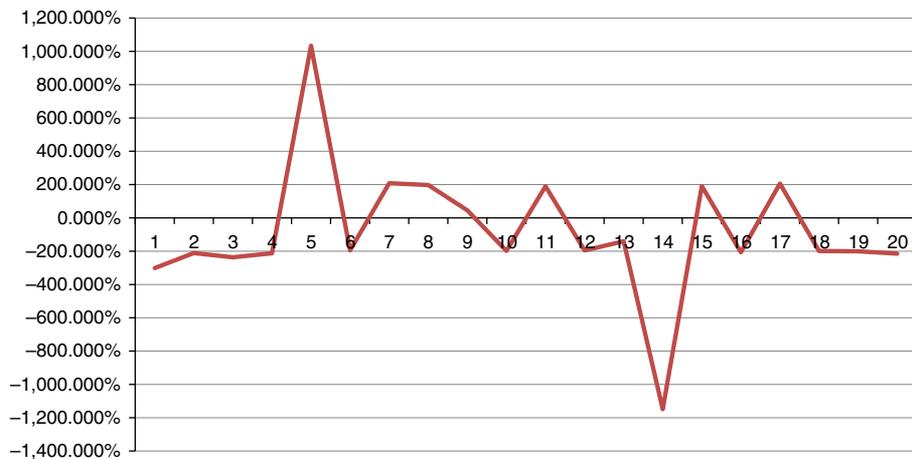**Figure 1.**
Percentage change in average abnormal returns 15 days prior and after an event

Market returns	Sum of squares	df	Mean square	F	Significance
Between groups	45.895	19	2.416	1.342	0.156
Within groups	503.821	280	1.799		
Total	549.716	299			

Table V.
Mean comparison between market returns, ANOVA

5. Conclusion

Political situation of Pakistan is uncertain since September 11, 2011. The last year of Ex-President Gen. (R) Pervaiz Musharraf regime was highly uncertain, Pakistan faced huge amount of political and economic uncertainty during this period. Mixed results are derived from this study, it have shown that Pakistan stock market is inefficient for a short period of time, it has an impact of noisy information and it takes almost 15 days to absorb the information. Only seven out of 20 events have shown significant difference in abnormal returns for two days prior and after an event. The KSE 100 index does not respond significantly to all the political events, their impacts are observed by comparing the mean abnormal returns before and after an event, but intensity of their impact is lower. The 2008 Mumbai attack is the only event which has a significant impact for longer period of time, the result have shown highly significant abnormal returns for an event window [15, 15].

The study concluded from the analysis that KSE is relatively inefficient and it takes almost 15 days to come to its original position. The market did not respond to all political events and it can be assumed that these events were lesser important. We found that political situation of Pakistan was highly unstable from 2007 to 2009 as compared to other years; a large number of political events took place during this time period. Moreover, the political situation in Pakistan was more stable in autocratic structure of government as compared to democratic structure but it is difficult to give a statement that the stock market was more efficient in autocratic regime. This study has suggested that the people of Pakistan absorb political instability and uncertainty quickly and it has become a part of their life and it is just a common phenomenon for them. The people react for short period of time and after that they absorb the noisy information. Second, the political situation of Pakistan has been extremely unstable in recent years, especially from 2007 to present, that a huge amount of events took place in a small period of time, the trigger of another event forced people to forget the previous one. In other words, political uncertainty has become certain in people's life. The reasons for this immunization can be explored further by academic researchers which do not fall in the scope of current study. Future research can focus on other related political events which are ignored by the present study due to technical reasons and more sophisticated statistical analysis may be applied which may generalize the results of event study methodology.

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Appendix
The Table AI presents the average abnormal returns of KSE 100 index before and after the event at different event windows level and the Table AII shows the means comparison of market returns before all the political events.

		R*					
		2 days		5 days		15 days	
Sr no.	Event	Pre	Post	Pre	Post	Pre	Post
1	Kargil War	1.804	2.950	1.232	0.989	0.798	0.228
2	Fourth Military Coup	1.108	−5.194	0.436	−1.738	0.373	−0.232
3	General (R.) Pervaiz Musharaf became Chief Executive	−1.025	−0.552	−0.256	−0.079	0.017	−0.236
4	Attack on World Trade Center	0.425	−2.659	0.109	−2.516	−0.131	−0.411
5	General Election	1.252	0.774	0.676	0.824	0.451	0.847
6	Dr Abdul Qadeer Khan confession	0.748	0.076	0.336	−0.146	0.388	−0.038
7	First Drone Attack on Pakistan	−0.504	−1.611	−0.386	−0.542	−0.252	0.263
8	Nawab Akbar Bughti Killed in Army Operation	−3.270	1.860	−1.914	1.200	−0.701	0.282
9	Chief Justice Iftikhar Muhammed Chaudhry Suspended	1.635	−0.036	0.146	−0.067	−0.100	−0.077
10	Lal Masjid Incidence	0.420	−0.244	0.310	0.309	0.269	−0.160
11	State of Emergency declared in Pakistan	−1.413	−1.732	−0.736	−0.350	−0.204	−0.054
12	Benazir Bhutto Assassination	0.531	−3.811	0.354	−0.643	0.380	−0.393
13	General Election Held	0.840	1.654	0.592	0.821	0.304	0.261
14	President General (R.) Pervaiz Musharaf Resigned	1.492	−0.870	1.133	−1.733	−0.522	−0.930
15	Asif Ali Zardari became President of Pakistan	0.558	−0.335	0.290	−0.189	−0.597	−0.114
16	Mumbai Attacks	0.000	0.000	0.007	0.000	0.003	−1.848
17	Long March for restoration of Judges	−1.667	3.102	−0.117	2.462	−0.308	1.570
18	Attack on Army General Head Quarter	−0.344	−0.418	0.660	0.145	0.537	−0.414
19	Osama Bin Ladin Operation by Americans in Abbottabad	0.460	−1.519	0.173	−0.162	0.087	−0.097
20	NATO attack on Pakistan Salala check Post	0.064	−0.605	−0.488	−0.475	−0.063	−0.174

Table AI.
Average returns before
and after an event

Market returns	N	Descriptive			95% Confidence Interval for Mean		Minimum	Maximum
		Mean	SD	SE	Lower bound	Upper bound		
Kargil War	15	0.79767	1.359952	0.351138	0.04455	1.55078	−1.266	4.093
Fourth Military Coup	15	0.37293	1.041431	0.268896	−0.20379	0.94966	−1.367	2.082
General (R.) Pervaiz Musharaf became Chief Executive	15	0.01660	1.180883	0.304903	−0.63735	0.67055	−2.565	2.455
Attack on World Trade Center	15	−0.13113	0.620832	0.160298	−0.47494	0.21267	−1.345	0.755
General Election	15	0.45087	0.758647	0.195882	0.03074	0.87099	−0.804	1.547
Dr Abdul Qadeer Khan confession	15	0.38767	0.750562	0.193794	−0.02798	0.80331	−1.789	1.523
First Drone Attack on Pakistan	15	−0.25187	1.513256	0.390721	−1.08988	0.58615	−3.346	1.932
Nawab Akbar Bughti Killed in Army Operation	15	−0.70147	1.582970	0.408721	−1.57809	0.17515	−3.729	2.519
Chief Justice Iftikhar Muhammed Chaudhry Suspended	15	−0.10040	1.256925	0.324537	−0.79646	0.59566	−2.094	2.036
Lal Masjid Incidence	15	0.26867	0.671283	0.173324	−0.10308	0.64041	−1.132	1.142
State of Emergency declared in Pakistan	15	−0.20400	1.377610	0.355697	−0.96689	0.55889	−2.720	2.079
Benazir Bhutto Assassination	15	0.38027	0.602241	0.155498	0.04676	0.71378	−0.535	1.324
General Election Held	15	0.30360	0.599355	0.154753	−0.02831	0.63551	−0.389	1.526
President General (R.) Pervaiz Musharaf Resigned	15	−0.52200	2.770834	0.715426	−2.05644	1.01244	−4.112	3.875
Asif Ali Zardari became President of Pakistan	15	−0.59727	2.296280	0.592897	−1.86890	0.67437	−3.906	4.493
Mumbai Attacks	15	0.00307	0.009475	0.002447	−0.00218	0.00831	−0.010	0.033
Long March for restoration of Judges	15	−0.30793	2.126017	0.548935	−1.48528	0.86942	−5.005	3.912
Attack on Army General Head Quarter	15	0.53660	1.518189	0.391995	−0.30415	1.37735	−2.635	2.935
Osama Bin Ladin Operation by Americans in Abbottabad	15	0.08660	0.671631	0.173414	−0.28534	0.45854	−0.700	1.520
NATO attack on Pakistan Salala check Post	15	−0.06307	0.679674	0.175491	−0.43946	0.31332	−1.131	1.269
Total	300	0.03627	1.355919	0.078284	−0.11779	0.19033	−5.005	4.493

Table AII.
One way mean comparison of market returns 15 days prior to every event