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Return volatility around national elections: Evidence from India

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Abstract

This paper analyses the share price performance around National elections in India during the 2014 general elections. Due to change in the market sentiment, the stock prices react to the changes in the government. We investigate shareholders' returns around national elections for 30 companies of BSE SENSEX. Stock prices have been observed over different event windows like (-15, +15), (-2, +2), (-15, -2), (+2, +15) days around the event date. Event study methodology has been used to analyze the results. High positive CAAR (cumulative average abnormal returns) has been observed over different event windows, which reflect market has positively reacted to the possibility of a change in government and after election of a new government.

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1. Introduction

Political cycles affect the economy and financial market in many ways. Politics is important in various forms. They shape the institutions and regulations that are relevant for finance, be they courts, taxes, administrative efficiency, fiscal policies, corruption or expropriation risk. The relationship between behavior of investors and politics relies on the concept of political risk, which is defined as the unfavourable changes in public policy that affect investment values (see, among others, Brooks and Mosley, 2008). Investors try to evaluate this risk as best as possible, but uncertainty is reflected in times of political change and in particular during elections (Bernhard and Leblang, 2002).

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Shiller (1981) has argued that observed stock market volatility is not consistent with the predictions of different present value models. Hence drivers which drive volatility need to be identified and evaluated. There are various other factors which contribute to volatility. Schwert (1989) has investigated empirically if the aggregate stock return variability can be linked to different macroeconomic variables, financial leverages, and trading volume. He has concluded that only a small proportion of the variations in the market volatility are possible to explain.

Political factors in general and political uncertainty in particular, can influence both the return and risk levels of financial assets (Gemmill, 1992). Bialkowski (2008) showed in his paper that stock markets can become very unsettled during the times of important political changes. From literature, a negative relationship between financial asset valuations and level of uncertainty regarding the economy has been reported.

The in-depth analysis into return volatility surrounding elections is important due to three important reasons. First, the uncertainty about the election outcome has important implications for risk-averse investors. Earlier research indicated that investors are usually not diversified internationally and have a string home bias (French and Poterba, 1991; Baxter and Jermann, 1997). So they tend to hold more domestic assets which mean the country-specific political risk will not diffuse in their portfolios. Hence in the case of elections in the home country, it will have significant implications for the risk level of their portfolios. Second, any market-wide fluctuations in response to election shocks will lead to increase in the systematic volatility of all listed stocks. Therefore it is evident that when voters go for casting their ballots, option prices could increase around that time.

Also, volatility hikes which are observed around an Election Day or declaration of results would indicate that the efforts to formulate precise predictions should be furthered and additional resources need to be employed to resolve this issue.

2. Literature Review

Previous studies on the relationship between politics and stock markets have focused on systematic risk induced by political factors, without analyzing firm-specific risk. Therefore, it is unknown how increased political risk around national elections influences firm-specific performance. Change in the government will result in change in important macroeconomic policies which can lead to changes in the key management of the firm. Event study methodology will examine the performance of the firms around national elections.

Hensel and Ziemba (1995) have documented that small-cap stocks have significantly higher returns during Democratic administrations as opposed to Republican administrations. Gemmill (1992) reported that implied volatilities move upwards in the last week before elections. Gemmill also reported that opinion polls were connected to the stock market indexes as well as market volatility.

This study is important for different reasons. The presence of abnormal returns surrounding election events can affect the portfolio decisions of investors. Uncertainty related to election outcome has also important implications for investors, especially when risk averse (i.e. 'hedgers') and risk loving investors (i.e. 'speculators') can use instruments like derivatives instruments to eliminate or take advantage of the increased volatility of returns. Additionally, evidence suggests that investors do not diversify internationally (Baxter & Jermann, 1997), and thus political risks are not diffused within portfolios.

The remainder of this paper is organized as follows. Section 2 has discussed the existing literature, empirical investigation of the theories, and studies of stock market behaviour around important political events. Section 3 provides an overview of the datasets which are employed in this paper, and introduces the event study methodology used to analyze returns and volatility around the election date. Section 3 also introduces the hypotheses that will be tested, whilst Section 4 discusses the key findings. The robustness of results is also examined in Section 4. Section 5 summarizes the conclusions to be drawn from this paper.

3. Objectives, Data and Methodology

The objective of the present paper is to examine the short term abnormal returns of the stocks listed on the BSE SENSEX. The hypothesis for the study is:

H₁: The shareholders of the sample firms earn positive/negative abnormal return in the short-run.

Null hypothesis assumes that shareholders of the sample firms cannot earn abnormal returns in the short run i.e. average abnormal returns are zero.

3.1. Data

This study takes the data of BSE SENSEX 30 companies from time period May 2013 to June 2014. Daily closing prices of stocks listed on the BSE SENSEX and SENSEX index itself has been taken for analysis purpose. CMIE prowest database has been used for data collection purpose.

3.2. Event study methodology

We have used event study methodology to examine the short-term prices reaction around the event day. This methodology comprises of two steps: first we define the event, its announcement date, the estimation period and the event window period. In second step, abnormal returns are calculated using the parameters estimated from the model.

Announcement date of election results has been taken as day “0”. The other days are expressed relative to the result announcement date. The estimation period for the study is the days before the occurrence of the event. And it does not overlap with the event window period. We have considered estimation period of 241 (-267, -26) days as estimation window.

Event window period is the period over which we examine the abnormal returns of the stocks. It can be few days before the event as well as few days after the event. We have taken different event windows such as (-15, +15), (-2, +2), (-15, -2), (+2, +15) to capture the leakage effect.

3.3. Estimation of abnormal returns

The abnormal returns are obtained by subtracting the expected returns estimated using the model, from the actual returns in the event period. Abnormal returns for j^{th} firm for time t (AR_{jt}) is

$$AR_{jt} = R_{jt} - E(R_{jt})$$

where, $R_{jt} = \ln(P_t / P_{t-1})$

Here R_{jt} are the actual returns calculated by taking the logarithm of price of the stocks for time ‘t’ divided by price of the stock at time ‘t-1’.

The expected returns has been calculated using the market model as follows,

$$\text{Expected Returns, } E(R_{jt}) = \alpha_j + \beta_j R_{mt}$$

The abnormal returns have been calculated by subtracting these expected returns from the actual returns.

Average abnormal Returns: The average abnormal returns (AARs) for each day t in the event window are calculated by:

$$AAR_{jt} = \frac{\sum_{j=1}^N AR_{jt}}{N}$$

Where N = Number of firms.

Cumulative abnormal Returns (CARs): The cumulative abnormal returns (CARs) are daily abnormal returns cumulated over part of the event period.

The model used to determine CAAR is:

$$CAAR = \sum_{t=T1}^{t=T2} AAR_t$$

Where $t = T_1$ to T_2 days where T_1 and T_2 vary for different event windows. To check the significance of CAAR values over different event windows, t-test has been used.

4. Results and Analysis

Table 1 presents the results of the event study methodology. First, abnormal returns over different event windows have been calculated. Fig 1 shows the abnormal returns over the event window of (-15, +15). Abnormal returns are computed through Sharpe Model for every company for 15 days before and 15 days after the event. Average abnormal returns (AARs) and cumulative abnormal returns (CAARs) help in knowing the informational efficiency of the market. High abnormal returns indicate that market is inefficient in processing the information as it arrives in the market and investors can earn abnormal returns by investing in the companies having high CAARs.

Table 1 gives the abnormal returns to the shareholders on the event day and various event windows for a total of 30 companies included in BSE SENSEX. It also provides the results of t-test conducted to measure statistical significance for average abnormal returns and cumulative average abnormal returns.

AAR value of 2.33 percent for the day “0” i.e. the results announcement day indicate that shareholders can earn abnormal returns to the extent of 2.33 percent. Table 1 also indicates that the shareholders of the selected companies experience CAAR of 2.98 per cent during event windows of eleven days (-5, +5) and 2.21 per cent during event window of five days (-2, +2).

CAAR during 14 days pre-event window (-15, -2) is -0.09 per cent. CAAR during the around the announcement is 0.25 per cent and 1.49 per cent for event windows of two days (-1, 0) and three days (-1, +1) respectively. All these results are significant at 5 per cent except for the event window of (-10, +10), (-2, +2), (-15, -2) and (+2, +15). Hence, it leads to rejection of the Null hypothesis.

Table1: Cumulative abnormal returns on event day and during event windows

Event Window	Cumulative abnormal returns (average) %	p-value
Day 0	2.33	
<i>Panel A: Symmetric Event Windows</i>		
(-15, +15)	3.91	0.050
(-10,+10)	3.20	0.083
(-5, +5)	2.98	0.018
(-2, +2)	2.21	0.105
(-1,+1)	1.49	0.032
<i>Panel B: Asymmetric event windows</i>		
(-15, -2)	-0.09	0.905
(-1, 0)	0.25	0.035
(0,+1)	1.48	0.038
(+2, +15)	2.52	0.067

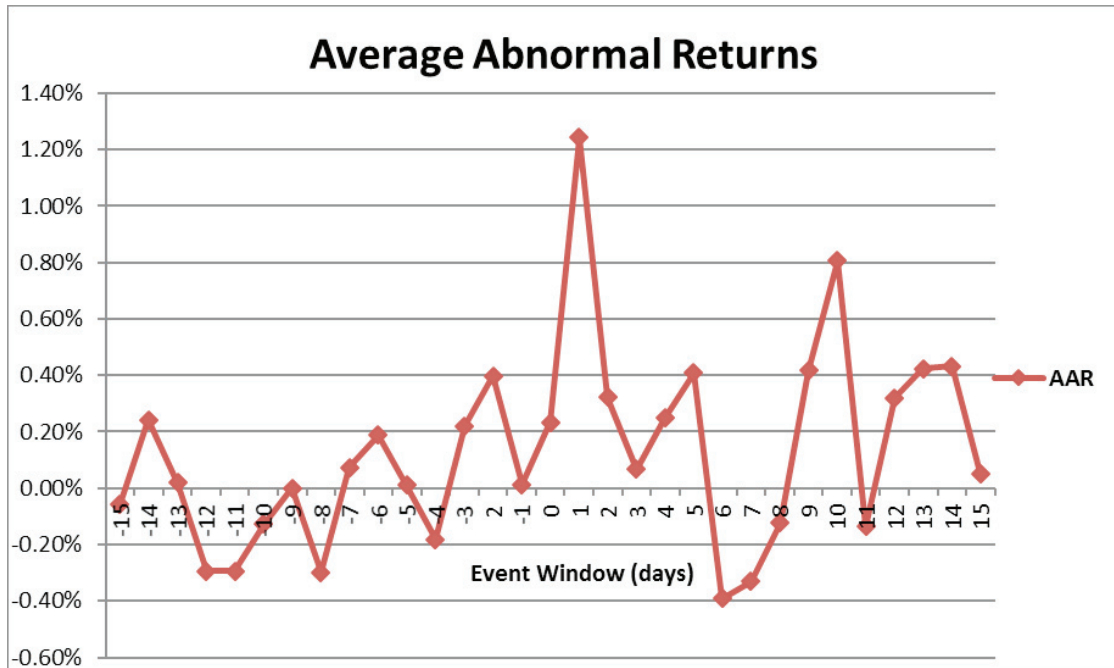


Fig. 1 Average abnormal returns over event window (-15, +15)

The plot shown in Fig 1 clearly shows that there is high volatility in stock returns around the elections. The positive returns can be observed 3-4 days before the announcement of the results. This can be attributed to the surveys released before the actual announcement of the results. A strong abnormal rise happens on the date of announcement of election results and the continuous rise in the stock returns continues for a number of days after the event of declaration of results.

It can be seen from the table 1 that the cumulative abnormal returns in the event window (-15, +15) reaches to 3.91% which is significantly different from zero.

5. Findings and Conclusion

The findings from the above study report that investors can earn abnormal returns by systematically investing during the events of political uncertainty. National elections are important events as they lead to important changes in the political and macroeconomic structure of the country. Positive average abnormal returns over different event windows showed that market has reacted positively to the news of changes in the government.

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