CHAPTER VI

MAJOR ISSUES ARISING OUT OF THE STUDY

The previous two chapters (Chapter IV and V) make an endeavour in understanding the impact of national political and economic events on share prices of the Bombay Stock Exchange over a period November 1995 to June 2010 through empirical analysis based on certain recognized models as suggested by the erudite authorities on the subject. The major issues that have arisen out of the analysis are listed below:

1. After examining the average stock market responses around the general elections in India over the period November 1995 to June 2010, a stronger positive price changes have been observed in the Indian stock market as the election outcome date comes closer. On the back of extensive media coverage, exit poll opinions, formation of pre-poll alliances, as the result date draws nearer, the likelihood of future outcome possibly becomes more prominent. This resolution of uncertainty perhaps contributes to heightened stock price reaction before the actual date of election outcome. The result, consistent with the uncertain information hypothesis of Brown et al. (1988), thus seems very much in line with the empirical findings of the previous studies on matured markets (Pantzalis et al., 2000; Koulakiotis et al., 2008).

Using the GARCH modeling, the study also reveals a significant and positive association between the pre-election returns and stock market uncertainty (volatility). This higher volatility coupled with higher return over the pre-election period thus seems inconsistent with the notion of Brown et al. (1988) and contradicts our earlier assumption of lower uncertainty as a cause of rise in stock prices before the date of election outcome. However, this finding of higher uncertainty-induced excess returns during the pre-election spell is in line with Peel and Pope (1983) and Bialkowski et al. (2006). One plausible explanation for such stock market behaviour in India can be lent from Malley et al. (2007). In fact, as the likelihood of future election winner becomes certain, this contributes to an increase in stock prices, but at the same time increases market anxiety on the expectations of future macroeconomic policy changes and gives rise to market volatility on the other way.
Broadly speaking, post-election period, however, does not show evidence of any significant impact on the share price volatility. At the same time, pre-election positive thrust though persists through the next one-week period following the election verdict, but as the same is not statistically significant, we can only advocate absence of any immediate post-election impact or surprise. But after a week or so, stock prices start declining significantly and remain in the negative territory for almost another two weeks probably in the wake of fresh uncertainties that post-election periods in India are usually stylized with owing to a verdict of hung parliament, formation of coalition government, political alignment, etc.

2. Behaviour of the Indian equity prices is also found largely driven by some election-specific factors such as timing of elections, change in government and verdict of hung parliament. An early election, held earlier than scheduled 5 year tenure, seems to have a significant negative strike on the stock market before the declaration of result. In fact, as early elections usually forces market participants to revise their expectations in a shorter period of time (Pantzalis et al., 2000), this plausibly catches by the shiver of uncertainty about the voting outcome and results in lower returns. However, over the post-election period following the outcome of early elections, no significant impact can be observed on the stock market returns. In contrast to the hypothesis of Brown et al. (1988), stock market following outcomes of the early elections, thus, neither shows a sign of significant positive return (resolution of pre-election uncertainty) nor catches by any surprise (non-resolution of the uncertainty). Though it seems a puzzle, but strong immediate positive or negative reaction following an early-election result cannot be rejected outright, which might have been averaged out over the 30-day post-election event window and calls for future investigation of the post-election price movements on daily basis.

Change in political power, i.e. loss of the incumbent government, however, is observed to have significantly negative impact on the post-election stock market returns in line with findings of Koulakiotis et al. (2008) and Wang et al. (2008). Perhaps the assumption of increased pre-election market anxiety on the expectations of future macroeconomic policy changes remains unresolved or rather gets aggravated following verdict of transition of ruling party and seems results in increased market uncertainty and lower returns (Peel and Pope, 1983; Malley et al., 2007)
Moreover, election outcome in India with a verdict of hung parliament generally has significantly positive impact on the post-election stock returns. In fact, mandate of no party having absolute majority usually is expected to expose market participants to the vulnerability of the future economic policies and bring about uncertainty-induced negative market reaction. But the present finding of the study, in contrast to the proposition, seems quite baffling. One plausible explanation of such behaviour could be that the higher-uncertainty events though typically casts big doubt on the stability of the country's political vibes, but as most of the time the political parties succeed in mustering a coalition within a fortnight or so, the uncertainty is ultimately resolved and is reverberated in the stock market positive resilience. So, it can be conjectured that the higher return following verdict of hung parliament mainly comes at the later part of the post-election window and that too possibly as a consequence of post-election uncertainty resolution which seems to be higher for higher-uncertainty events than for lower-uncertainty events (Brown et al., 1988).

3. Incumbent government in order to increase probability of their re-election ordinarily tends to stimulate the economy prior to an election by initiating expansionary economic policies, which may in turn boost performance of the equity market as well. These opportunistic policies at the time of elections thereby drive the economy to expand before the elections and then contract on the back of obvious post-election actions to curb the resultant inflation. After making an empirical investigation into the hypothesis in the Indian context over the period starting from 1994-95 to 2009-10, no significant association of the Indian economic condition with the election years as well as with the immediate post election years has been observed. At the same time, no significant behaviour pattern is noticed in the performances of the Indian stock market around the years of national general elections. So, by and large, our results lend no support for the hypothesis of political manipulation of policy outcomes in India in view of upcoming elections and confirm existence of no election cycle in India. We also cannot attest the alignment of stock market cycle to the timing of elections in India. Thus it can be concluded that state of economic condition is no way related to the year of election in India, and thereby exerts no impact on the stock market performance as well. Insubstantial evidences in this regard can also be contributed to the number of several midterm elections over the
period of study that reduces normal periodicity between the general elections and left little time at the disposal of the incumbent government to exploit economic policies before elections to their end.

4. So far as the Indian union budgets over the period from November 1995 to June 2010 are concerned, no recognizable impact thereof has been observed on the daily returns of the Indian stock market. Nonetheless the well-publicized event is always found to usher in with elevated volatility in the pre as well as the post-budget stock market returns. Union budgets in India thereby can be viewed as to engender higher degree of uncertainty only with no commensurate returns to equity investors.

5. In order to analyze the nature and magnitude of the stock market reactions around the budget release dates in greater detail, two important facets of the Indian union budgets, viz., budget outcome (good or bad) and budget timing (budget before general election or otherwise), are also looked at in the study. It is found that budgets that are welcomed with positive stock market reactions on the very date of the budget releases (favourable budget), may not always bring forth substantial positive return over the post-budget period. But budgets that are followed by immediate negative stock market responses (unfavourable budget) usually emerge with significant negative return over the post-budget period.

Moreover, during the budgets scheduled immediately before the general elections (interim budgets), stock market reaction though happens to be euphoric prior to the budget date possibly on the back of expectations relating to favourable monetary and fiscal arrangements and incentives, during the post-budget period, however, interim budgets in general is found to exert no significant impact on the daily mean return. Thus, the stock market rally preceded by interim budgets generally loses its shine during the post-budget period possibly due to upsetting interim budgets that, by and large, fail to meet to the market expectations. The result seems analogous to the finding on the existence of election cycle in India and possibly can be taken as an evidence of no election-time manipulation of budget releases in India.

6. The major national unexpected (unscheduled) political and economic events are found to have significant influence on the risk and return of our stock market. Sensex as a surrogate to the Indian stock market although registers significant positive (negative) reaction immediately on the event date following news regarding
favourable (unfavourable) events, but shows no revision in the market movements thereafter. This behaviour thus, by and large, advocates no set pattern of underreaction or overreaction in the average stock market daily movements in the wake of unanticipated political and economic events in India; rather backs up efficiency in the price discovery mechanism of the Indian stock market following the new information. Moreover, one cannot also expect any irrational price movements in case of extreme positive reactions following unexpected favourable political and economic events. However, extreme negative reaction following unfavourable political and economic events suggests considerable evidence of overreaction in the Sensex implying irrational feeling of desperation among the market participants in the wake of extremely pessimistic political occurrences. The study results also suggest unfavourable political and economic events as significant contributors of the stock market time varying volatility in comparison to the favourable one.

7. It is also found that reactions in shares with higher market risk are more euphoric than that of the shares with lower market risk. This result is very similar to the finding of Harris and Spivey (1990), Feinberg and Tokic (2002). Moreover, historically estimated beta as a measure of market risk is found significantly associated with the underreaction or overreaction in the extreme stock returns and can be used as an important explanatory variable for identifying stock-specific reaction patterns in the wake of both the extreme favourable and unfavourable political and economic upshots. While stocks with high market risk are generally found in overreacting following extreme unfavourable political and economic events only, slight overreaction is also observed in case of stocks with lower market risk but following both the extreme favourable and unfavourable political and economic occurrences. So far as the stock return volatility is concerned, extreme pessimistic and optimistic, both the events seem significant contributors of increased volatility of high-beta stocks, whereas for low-beta stocks, it is only the pessimistic events that typically lead to higher volatility. Increased volatility following extreme negative events though found significant for both the high and low-beta stocks but seems more pronounced for high-beta stocks than the low-beta stocks. Furthermore, high-beta stocks seem more sensitive to the world market movements than the low-beta stocks.

8. Like the broad market (Sensex) reaction, share price reactions to unexpected political and economic events across the different industries somewhat seem to be
instantaneous and efficient following both unexpected favourable and unfavourable events. Even so, following favourable events, evidences of overreaction in cement and IT stocks and underreaction in automobile stocks have been found to certain extent.

In the context of some event-induced extreme reactions, however, share price movements across the industry appear very much in conformity with the overreaction hypothesis. While price reversal seems significant following favourable political and economic events in case of FMCG, IT, pharmaceutical and cement stocks only, following unfavourable outcomes, the phenomenon of overreaction is found to be all encompassing (excluding IT stocks) implying evidence of irrationality in price reactions following extreme positive and negative first day reactions in the wake of favourable and unfavourable eco-political events respectively. Considering relatively lower beta of the FMCG, pharmaceutical and cement stocks, their behaviour to overreact following both the favorable and unfavourable events is very much warranted in line with the behaviour of low-beta stocks.

So far as the volatility of the daily returns are concerned, pessimistic events can be observed as significant contributors of increased volatility for almost all the industries, but not the optimistic events (optimistic events even cannot be seen as significant contributor of uncertainty resolution). The finding holds fairly good even in case of select negative and positive extreme reactions.

9. Average conditional as well as unconditional (as measured by squared standard deviations) variances are relatively higher for metal, textiles, IT, banking and automobiles and lower for FMCG, pharmaceutical and capital goods. Time-varying volatility looks very spikier (immediate reaction seems quite intense) with lower persistence (from the relatively higher and lower ARCH and GARCH coefficients) for banking, textiles and unexpectedly for pharmaceutical sectors. On the other hand volatility is found to be comparatively less reactive and more persistent for cement, IT, FMCG, automobile and capital goods. Persistence in volatility rather has two interesting implications. First, volatility, as a measure of investment risk, if remains persistent becomes important in explaining the time-varying risk premium. If shocks to the variance are only transitory in nature, investors will not make any changes in their discounting factor to value the stocks (Poterba and Summers, 1986). Second,
the persistence in volatility can be used to predict future course of volatility and other economic variables.

10. For both the high and low-FII stocks, the study suggests no anomaly in the efficiency in respect to price reactions and thereby confirms that firm-level FII ownership percentage cannot be used as a decisive factor to make out stock-specific reaction behaviour following favourable as well as unfavourable news relating to the country’s political and economic consequences. The difference in price reactions between high and low-FII stocks is largely negligible, exhibiting a resemblance in pricing behaviour among those firms (Chen et al., 2005). Pessimistic events though are found to be significant contributors of increased volatility for both the high and low-FII stocks but seem to cause greater instability in the low-FII stocks than their high-FII peers.

11. Relatively high GARCH ($\beta_1$) and low ARCH ($\beta_2$) coefficients of the high-FII stocks in comparison to the low-FII stocks indicates that, in general, shocks to conditional variance is more persistent and less spiky in the former than the later. So, higher amount of FII participation can be said to contribute less reactive and relatively more persistence and predictable conditional volatility of the Indian stocks. Even unconditional volatility (as measured by the standard deviation) is also found to be lower for the high-FII stock in comparison to that of the low-FII stocks. This lower volatility in the high-FII companies may be the outcome of the monitoring role played by the FIIs in a high-FII company to have good corporate governance (Stulz, 1999), which in turn reduces variance in the security. One view in favour of the positive linkage between the large FIIs’ ownership and reduced stock price volatility is that compared to their domestic counterparts, foreign investors face additional cross-border investment risks, and hence may seek to alleviate risk by specifically targeting firms with inherent characteristics associated with lower volatility (Li et al., 2010). It can also be true that FIIs demand greater transparency, higher accountability of management, and less risk taking, all of which can result in lower return volatility. However, looking at the leverage term ($\beta_4$), it can be said that immediate volatility of the high-FII stocks is significantly reacts to the arrival of negative news only but in case of low-FII stocks, it responds quite intensely to the arrival of both the negative and positive news. As a result, returns of High-FII stocks though ordinarily seem spikeless, but considering its intense reaction to negative news, its asymmetry effect
appears more pronounced than the low-FII stocks. This type of behaviour could be
the outcome of herding – where many FIIIs may trade in similar ways – and/or
positive feedback trading where FIIIs buy after positive returns and sell after negative
returns. Alternatively, as other market participants perceive the FIIIs to be infallible in
their assessment of the market, they tend to follow the decisions taken by FIIIs mainly
in the wake of negative news and exacerbate volatility in the share prices.

12. In addition, the coefficient of the conditional variance in the GARCH mean equation
(\( \beta_1 \)) is found to be insignificant in most of the cases. This suggests that, in India,
investors are, in general, not being compensated in the form of higher risk premium.
However, in some cases, specifically for Sensex after controlling the effect of the
major unanticipated political and economic events, the coefficient (\( \beta_1 \)) is interestingly
found to be negative and statistically significant. Sensex excess return is also found
to vary inversely with the time-invariant\(^1\) (unconditional) risk specifically in the
context of general elections and union budgets in India. This suggests that investors
in India in some cases are penalized for taking higher stock market risk. Following
Brown et al. (1988), as higher uncertainty (or resolution of the uncertainty) usually
results in lower (or higher) returns, negative association between the stock market
risk and return doesn’t seem very unusual. Glosten et al. (1993) rather pointed out
that this finding, in contradiction to Capital Asset Pricing Model (CAPM), can be
expected in time periods when savings rate is high but alternative investment
opportunities are limited.

13. Over the period from November 1995 to June 2010, Sensex as well as other portfolio
daily returns averages are found positive implying growth in the value of the Indian
equity market over the time. However, stock market daily returns in India are in
general non-normally distributed with sharp peakedness about the mean, heavily
tailed, and slightly negative skewness. Significant serial correlations of the squared
residuals of all the return series strongly suggest the presence of volatility clustering
in the Indian equity returns. Thus, feature of the volatility clustering along with the
existence of leptokurtosis and skewness in the daily return distributions advocate the
appropriateness of conditional volatility models for the time series analysis of the
daily Indian stock returns.

\(^1\) As measure by standard deviation of returns.
14. Empirical evidence out of the study also confirms that conditional volatility of the Indian equity market is generally an asymmetric function of past innovations. The outcome of our research shows that negative surprises lead to higher upward revisions in volatility than the positive surprises and is very much in agreement with the outcomes of the previous studies in the Indian context (Kaur, 2002, 2004; Pandey, 2005; Karmakar, 2005, 2006; Kundu, 2010). In view of this, it can be said that the asymmetric conditional model is better to capture the stylized facts relating to the volatility behaviour of the Indian stock market.

15. The study also observes high correlations of the Indian stock market returns with returns of the emerging stock markets in comparison to that of the developed markets specifically US. From the perspective of the global investors, the weak stock market linkage in the form of low correlations with the developed market returns thus offer potential benefits of international portfolio diversification.

16. Stock market volatility in India is found to be significantly influenced by a contemporaneous volatility spillover from the world market. The result is very much expected considering unprecedented increase in the cross border transactions between India and other countries in terms of goods and financial mobility since the economic liberalisation during 1990’s and confirms the importance of the foreign stock market volatility in determining stock return variations of the Indian market. Somewhat strong global linkage with the other markets has lowered the degree of insulation of the India stock markets from external shocks and reducing the scope for independent monetary policy (Li & Majerowska, 2007).

17. Gyrations in the world market are observed to play positive and significant role in estimating risks and returns at the industry level as well. Return and volatility spillovers from the world market are found highest in metal sector followed by IT, banking, and automobile, whereas, it turns out to be relatively lower for FMCG, pharmaceutical, cement and capital goods sectors. Moreover, high-beta stocks seem more sensitive to the world market movements than the low-beta stocks. These different degrees of responsiveness of different stocks to global market movements possibly provide an opportunity for investors to reduce their exposure to world market vulnerability by moving from one class of stocks to another specifically at the time of global turmoil.