8.1 Introduction

The goal of corporate entities is to maximize the value of Shareholders’ Wealth in the firm. Managers can achieve this goal through their investment, financing and dividend decision. The type of action used by a company management can tell the investor a lot about the company, and thereby influence his decision to purchase, sell or hold the shares. There are large numbers of studies globally and in India which focussed on the impact of macro (external) factors on share price movements. Along with the external factors it is important for an investor to understand the various types of corporate actions in order to get a clearer picture of how a company's decisions affect the shareholders decisions and, thereby, the price and volume of shares in the market. Positive news about a company can increase buying interest in the market while a negative press release can ruin the prospect of a stock. Corporate announcements affect the Stock market which is reflected from excess returns of firm surrounding the announcement. Change in shareholders’ wealth can be measured through direction and magnitude of excess returns associated with the event. Though, the degree of effect & time taken to incorporate the information content of announcements varies from market to market & depends upon characteristics of the firm under study. Thus the effect of corporate announcements is important pragmatic issues in capital market, influencing the movement of share prices. The question of “How wealth and liquidity changes with financial announcements” remain unresolved as the findings of previous studies are divided in to positive and negative effects of these announcements. Delayed responses or overreaction to new public information projects a violation of the semi strong form EMH. The aim of this study was to capture the impact of some financial announcements (such as right issue, stock split, bonus issue and buy-back of own shares) on shareholders wealth along-with market liquidity and volatility. Though details about data analysis and finding of the study are given in previous chapters, the present chapter is an attempt to summarise the same in a significant manner for the benefit of users of the results emerging out of this research work. First, a brief about objectives, hypothesis, database used and tools of data analysis used is given and then follows the major findings, conclusion and future areas of research of the study.
8.2 Objectives and Hypotheses

Broadly, this study was aimed to empirically analyse the effects of selected corporate announcements (namely Stock Split, Buyback, Bonus Issue, and Right Issue) on share price volatility & liquidity. Its objective was also to conclude whether Indian stock market is efficient in weak form and semi – strong form based on the results of the study. In sync to the objectives, the following hypotheses were tested:

1) Corporate announcements (Stock Split, Buyback, Bonus Issue, and Right Issue) do not create shareholders’ wealth for Banking & IT (Information Technology) companies’ i.e. AAR = 0 & CAAR = 0

2) There is no significant difference during before and after the announcement of corporate events regarding average abnormal returns, measures of liquidity and volatility.

3) There is no significant information content in the corporate announcements under study for valuation of stock i.e. ASRV = 1

4) Effect of corporate announcements on AAR, liquidity and volatility does not differ across their size of firm.

5) Indian stock market is efficient in weak form and semi – strong form.

8.3 Scope of the Study

There are numerous types of corporate actions that a firm can choose to initiate with varied objectives. These actions may include the announcement regarding right issue, bonus shares, stock split, buyback of shares, dividend, merger and acquisitions, etc. These actions are the events that convey information that potentially influences the stock prices & the investigators would like to study. The information content of events and its diffusion determine the efficiency of the capital market. Keeping in mind the above theoretical background and literature on various corporate actions, four announcements - Stock Split, Buyback, Bonus Issue, and Right Issue, were considered as a subject of investigation in current research work. This study covered the companies listed on NSE belonging to Banking & IT sectors. These sectors were considered because of their major contribution in GDP & major representative of BSE 500 and NIFTY 500 Indices.

8.4 A brief about Research Methodology

Sources of data and sample size: To achieve the objectives of the study, secondary data was used which was collected from various sources including Capitaline Data Base, websites of BSE, NSE and Money Control etc. The reference period for this study ranged from January 2005 to December 2016. In aggregate, sample consists of 146 companies.
belonging to Banking and Information Technology sectors. Segregation of them shows 28 companies were related to right issue, 44 companies to stock split, 40 companies to bonus issue and 34 companies to buyback from Banking & IT industries. To measure the announcement effect of selected events on share prices and liquidity, the sample companies were selected from the companies listed on NSE with availability of the data of event announcements. Therefore, to include in the sample, the company must have 141 days stock price data.

Research approach: The study was empirical in nature. The event study approach was used for the analysis and the window for this study was 21 days (+/- 10 days) and estimation period is 120 days before event window. The analysis was done for share price volatility and liquidity during 10 days before event announcement & 10 days after event announcement. The actual returns of the stocks were compared with expected stock returns based on market Index (Nifty 500).

Model and Tools of analysis used: Market Model and OLS Regression Model were used to find out the extent of abnormal returns given by the stocks under study in the event window of 21 days and with clean period of 120 days. To study the Announcement effect on returns, the variable used are: AAR, CAAR, WAAR & PWCAAR. While, for Liquidity, proxy variables were Mean Trade & Mean Amivest, the measures of volatility considered were historical volatility (Variance of AAR) & time varying volatility (using e-views).

The analysis of data was made using descriptive and tests of significance. Kolmogorov-Smirnov test (KS-Test), a non-parametric test, was used to check the normality of data related to the proxy variables. Run test and serial correlation test were applied for finding weak form of market efficiency and the stationarity of time series data was examined using ADF test. After that Pre and Post CAAR regression analysis was carried out to check the relationship between both intervals.

To determine the statistical significance of market adjusted average abnormal return of selected events, Parametric & Non-parametric, both tests were used. For testing significance of each day’s AAR & CAAR; t-statistic values were calculated as per the traditional Brown and Warner (1980) method, Brown & Warner (1985), Patell (1976) and Boehmer et al. (1991). Generalised Sign statistic and Rank statistics were undertaken as per Cowan (1992) and Corrado (1989) respectively. Further Paired t-test, Wilcoxon Paired Signed Rank test & Single factor ANOVA were also used. To determine whether
there is informational content in various announcements average security return variability model (ASRV) was used. To study the impact of various events on liquidity, following two measures were applied: trade to total trade ratio and Amivest ratio. These measures apply trading volume and stock price data to depict liquidity; higher the value of the measure higher is the liquidity.

Econometric tools of data analysis were used for investigating the effect of selected corporate announcements on time varying volatility. For this, stationarity of the time series data was checked by applying ADF test. Further, regression equations were standardised as per residual diagnostic through correlogram Q-statistic, correlogram squared residuals and heteroskedasticity test. After verifying whether the necessary conditions are satisfied for regression, the researcher went for running the Arch family models i.e. ARCH5, GARCH (1, 1), and TARCH & EGARCH. The best fitted models were selected based on minimum Akaike info criterion & Schwarz criterion value.

A diagnostic test to check whether all the following conditions are fulfilled or not by a selected model, to be a best model, was performed: (a) There should be no serial correlation and no ARCH effect; and (b) Data must be normally distributed. A model if meets above conditions, then same is said to be best fitted model and even if any two conditions met then better model could be interpreted.

8.5 Major Findings of the Study

This section presents findings of the study for various corporate announcements under reference.

8.5.1 Findings related to Effect of Right Issue Announcement

The major findings related to the objective of analysing empirically the effect of right issue announcements on share price volatility are as follows:

1. The average abnormal returns were found positive for nine days starting from day $t_{(-10)}$ to day $t_{(-1)}$ and negative on one day during 10 days of pre-announcement window. On announcement day $t_0$, ARR was seen nearly -1.5%. However, during the post-announcement window from day $t_1$ to day $t_{(10)}$, the pattern of positive AARs changed to negative pattern as the same were negative for seven days and positive for only three days. The similar trend of weighted average abnormal returns was found for whole event window except during the post-announcement window from day $t_1$ to $t_{(10)}$, the negative AARs were for eight days and positive for only two days. The results of AARs and WAARs being almost same proved the absence of high event induced variance in event window. The values of average abnormal returns resulted
significant at either one percent or five percent or ten percent level for 14 days out of 21 days of event window which lead to rejection of the null hypothesis of zero average abnormal returns during the event window. The results of Paired t-test (parametric) & Wilcoxon Paired Signed Rank test (non-parametric) which were applied to test the significance of difference in ARR during pre and post right issue announcement revealed a significant difference. However, Single factor ANOVA used to check the significance of variance in AAR across size of firm i.e. large cap, mid cap & small cap companies, indicated insignificant variance in so far as before & after the right issue announcement was concerned.

2. The average of the AARs for the pre-announcement was found 0.90 per cent and for post announcement -0.38 per cent. The average of the WAARs for the pre-announcement was worked out 0.84 per cent and for post announcement window -0.36 per cent. Thus on an average both AARs and WAARs were positive and higher for pre-announcement as compared to post-announcement. This leads to the conclusion that the right issue did not come to the expectations of investors and resulted in price decline in post announcement.

3. For pre-announcement event windows (-10; -1) and (-1; 0) the CAAR values were 9.02% and -0.21% respectively. While CAAR on 8th day prior to announcement till 10 days after the announcement were found significant either at 1%, or 5% or 10% level of significance, it stood 7.56 per cent on announcement day which was found significant at 1% level of significance. For post announcement event windows, there was higher return in larger event window i.e. 4.97% in (-10; +10) than of smaller windows. The results across almost all the windows were statistically significant at one percent level of significance indicating that the null hypothesis of zero cumulative abnormal returns during this event window was rejected.

4. *Cumulative average abnormal returns* was consecutively positive during whole event window but at varied percentage. Maximum CAAR was seen 9.02% on 1 day prior to announcement, followed by 7.77% on day $t(-2)$, 7.56% on day $t(0)$, 7.32% on day $t(5)$, 7.27% on day $t(6)$, 7.15% on day $t(2)$& 7.01% on day $t(1)$. Almost same trend and pattern of PWCAAR was seen from the results. Maximum PWCAAR was 8.74% on 1 day prior to announcement, followed by 7.79% on day $t(5)$, 7.74% on day $t(0)$, 7.46 on day $t(6)$, 7.39% on day $t(2)$, 7.33% on day $t(3)$, 7.26% on day $t(4)$, 7.15 on day $t(1)$ & 7.14 on day $t(-2)$. In short horizon period CAAR & PWCAAR were ranging to 7%
approximately. Thus, Signalling hypothesis hold true as positive CAAR indicates the positive signal of right issue to the market. Moreover, the similarity in results for CAAR and PWCAAR indicated the absence of high event induced variance in event window.

5. Company-wise Pre right issue announcement CAAR values were found positive in case of 17 companies out of 28, whereas in post right issue announcement window there were 9 firms with positive and 19 with negative CAARs. Average of CAARs during pre and post-right announcement were found 0.08 per cent and -0.05 per cent respectively. It means investors get higher returns during pre-announcement than in post announcement. It could be due to information leakage for announcement.

6. The results about average security return variability (ASRV) model which was used to analyse the speed at which the stock market absorbed the right issue announcement in its prices, indicated that the highest value of ASRV (1.56) was recorded on day $t_{(-8)}$ followed by day $t_{(-6)}$, $t_{(0)}$, $t_{(10)}$, $t_{(1)}$ and $t_{(9)}$ with ASRV value of 1.48, 1.46, 1.37, 1.28 and 1.27 respectively. As on and around the announcement days the value of ASRV was greater than one; therefore, it was concluded that the market captured the information contained in right issue decision immediately with its announcement. Therefore, it may inferred that the right issue announcement contained the information which is relevant for valuation of Banking & IT stocks (Beaver; 1968).

7. The post right issue announcements CAARs were regressed on preannouncement so as to determine the linkage between the two sets of data. The results for regression analysis indicated that post right issue announcement CAAR don’t relate to preannouncement. Thus, according to regression analysis there was absence of relationship between pre and post right issue announcement event cumulative average abnormal returns.

8. The average value of the historical volatility/risk for pre-announcement was higher than that of post announcement of right issue and at overall level; it turned positive meaning thereby the volatility increases during right issue announcement. Further, the results of both Paired t-test and Wilcoxon paired sign rank test indicated a significant difference in historical volatility for pre announcement days and post announcement of right issue. It refers that right issue announcement has impact on risk. A significant variance was found across size of firm (small, mid & large cap companies), in so far as risk around right issue announcement was concerned.
9. For analysis of time varying volatility, referenced variables were used as dependent variables and right issue announcement was taken as independent variable (dummy variable) i.e. if event occurs then value is 1; otherwise it is 0. For application of time varying volatility, the e-views tools was used in the sequence as ADF test for stationarity of time series data, standardised regression as per residual diagnostic, Arch family models, selection of best fitted model as per diagnostic test of Arch model.

10. As per results of ADF test, time series data was found stationary. Regression equations were applied to check the status of residuals & the results shows that there is a negative impact of right issue announcement on time varying volatility for stock returns and risk. As per residual diagnostic through correlogram Q-statistic, correlogram squared residuals and heteroskedasticity test of regression equations; the results were found to be satisfactory for further application of Arch family models.

11. Now, for the best fitted ARCH Family models, EGarch was selected for AAR, PWCAAR & Risk as per the AIC and SIC minimum values criteria.

12. EGarch was selected for AAR. Constant with positive value significant at 5% level show the presence of positive abnormal returns in the market. The negative coefficient of dummy variable significant at 1% level indicated the negative effect of right issue announcement on AAR volatility. The sum of coefficients i.e. alpha & beta, which revealed the parameters of constant and sensitivity for volatility in time series, was close to unity indicate that shock will persist for future periods. There was inverse effect of current period volatility on future period volatility along with persistence of long time volatility.

13. EGarch was selected for PWCAAR. The negative coefficient of dummy variable significant at 1% level indicated the negative effect of right issue announcement on PWCAAR volatility. The sum of coefficients i.e. alpha & beta, which revealed the parameters of constant and sensitivity for volatility in time series, was close to unity indicate that shock will persist for future periods. There was inverse effect of current period volatility on future period volatility. There was asymmetry in good/bad news of announcement on volatility. It means that there was more impact of bad news on volatility than good news.

14. EGarch was selected for Risk. As all coefficients indicated the insignificant values except the dummy variable, so, there was negative effect of right issue announcement
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on time varying volatility for Risk. But no proof was found for positive effect of current period volatility on future period volatility.

15. The selected models based on minimum AIC & SIC values depicts normality of data as per JarqueBera’s, no ARCH effect as per LM-ARCH test and no serial correlation. Based on all diagnostic conditions, the selected models proved as best fitted models for AAR, PWCAAR and Risk.

The findings related to the impact of right issue announcements on stock market liquidity are mentioned as follows:

1. The values of Mean Trade and Mean Amivest, the measures of liquidity were found positive for complete event window of 21 days which is an indication of increased liquidity on or surrounding the announcements date. Further the mean liquidity for pre-announcement window was found lower than in post-announcement window, but the difference resulted insignificant when tested by paired t-test as well as Wilcoxon Paired signed rank test. It means there is no confirmation for any impact of right issue announcement on liquidity. Application of Single factor ANOVA to check the significance of variance in mean difference of liquidity across market-cap i.e. large cap, mid cap & small cap companies of selected sample indicated a significant variance in liquidity in case of sample firms across their size in so far as before & after the right issue announcements were concerned.

2. Further for analysis of time varying volatility, referenced variables were used as dependent variables and right issue announcement was taken as independent variable (dummy variable) i.e. if event occurs then value is 1; otherwise it is 0. For application of time varying volatility, the e-views tools was used in the sequence as ADF test for stationarity of time series data, standardised regression as per residual diagnostic, Arch family models, selection of best fitted model as per diagnostic test of Arch model.

3. As per results of ADF test, time series data was found stationary. Regression equations were applied to check the status of residuals & the results shows that there was not any impact of right issue announcement on time varying volatility for liquidity. As per residual diagnostic through correlogram Q-statistic, correlogram squared residuals and heteroskedasticity test of regression equations; the results were found to be satisfactory for further application of Arch family models.
4. Now for the best fitted ARCH Family models, EGarch was selected for Mean amivest and Tarch was selected for Mean Trade as per the AIC and SIC minimum values criteria.

5. EGarch was selected for Mean Amivest as proxy variable of liquidity. There was positive effect of right issue announcement on mean amivest. There was positive effect of current period volatility on future period volatility along with persistence of long time volatility. There was more impact of bad news on mean amivest volatility than good news.

6. Tarch was selected for Mean Trade. All coefficients indicated the insignificant values. Thus; there was no proof for any impact of right issue announcement on volatility for mean trade.

7. The selected models based on minimum AIC & SIC values depicts no ARCH effect as per LM-ARCH test, no serial correlation and JarqueBera’s p-values are also more than 5% except Mean Amivest-EGARCH. Based on all diagnostic conditions, the selected models proved as best fitted models for Mean Trade and Mean Amivest.

The findings related to the impact of right issue announcements on stock market efficiency are mentioned as follows:

1. For testing of Semi-Strong form of market efficiency; weak form of efficiency was tested. To conclude the remarks for weak form of market efficiency first randomness & stationary of time series data and serial correlation was tested. After that Pre and Post CAAR regression analysis was carried out to check the relationship between both intervals. As per results of Run test, ADF test and serial correlation, null hypothesis for randomness of data and serial correlation was accepted and presence of unit root was rejected. Further as per results of Pre and Post CAAR regression, no relationship was found between cumulative event returns. Thus, it was concluded that that Indian Stock Market is efficient in weak form. It means that the present security prices reveal all the present as well as the historical prices, so the past data cannot be used to forecast future prices. This indicates that any new information based on past data is ineffective and cannot be used to earn abnormal profit.

2. Next, to conclude the remarks for Semi-Strong form of market efficiency event study was used. It states that all the published as well as the historical information is reflected in the security prices, so no investor can earn superior profit by making use of any new information. According to results of this study the investors were able to
generate significant positive cumulative average abnormal returns. It means right issue announcement conveys positive signal to the market. If any corporate action respond significantly either positive or negative to the market, then market is said to be inefficient. Here, on the basis of all discussion it has been concluded that Indian stock market has not been proved as semi-strong form.

8.5.2 Findings related to Effect of Stock Split Announcement

The major findings related to the objective of analysing empirically the effect of stock split announcements on share price volatility are as follows:

1. The average abnormal returns were found positive for 6 days starting from day t(-10) to day t(-1) and negative on 4 days during 10 days of pre-announcement window. On announcement day t(0), ARR was seen nearly -0.09%. However, during the post-announcement window from day t(1) to day t(10), the pattern of positive AARs changed to negative pattern as the same were negative for 8 days and positive for only 2 days. The similar trend of weighted average abnormal returns was found for whole event window. The results of AARs and WAARs being almost same proved the absence of high event induced variance in event window. The values of average abnormal returns resulted significant at either one percent or five percent or ten percent level for 4 days out of 21 days of event window which lead to acceptance of the null hypothesis of zero average abnormal returns during the event window. The results of Paired t-test (parametric) & Wilcoxon Paired Signed Rank test (non-parametric) revealed a significant difference. However, Single factor ANOVA across size of firm, indicated insignificant variance in so far as before & after the stock split announcement was concerned.

2. The average of the AARs for the pre-announcement was found 0.24 per cent and for post announcement -0.31 per cent. The average of the WAARs for the pre-announcement was worked out 0.20 per cent and for post announcement window -0.24 per cent. Thus on an average both AARs and WAARs were positive and higher for pre-announcement as compared to post-announcement. This leads to the conclusion that the stock split did not come to the expectations of investors and resulted in price decline in post announcement.

3. For pre-announcement event windows (-10;-1) and (-1; 0) the CAAR values were 2.41% and 0.63% respectively. For post announcement event windows, there was higher return in larger event window i.e. 1.84% in (-4; +4) than of smaller windows. The results across almost all the windows were statistically insignificant at 5 percent
level of significance indicating that the null hypothesis of zero cumulative abnormal returns during this event window was accepted.

4. Cumulative average abnormal returns were consecutively positive starting from 4 days prior to announcement till 6 days after the announcement but at varied percentage. Maximum CAAR was seen 2.41% on 1 day prior to announcement, followed by 2.32% on day \( t(0) \), 2.096% on day \( t(1) \), 1.962% on day \( t(2) \), 1.690% on day \( t(-2) \), 1.343% on day \( t(4) \) & 1.14% on day \( t(3) \). Almost same trend and pattern of PWCAAR was also seen from the results. Maximum PWCAAR was 1.954% on 1 day prior to announcement, followed by 1.915% on day \( t(2) \), 1.908% on day \( t(0) \), 1.898% on day \( t(1) \), 1.444% on day \( t(-2) \), 1.198% on day \( t(4) \), & 1.170% on day \( t(3) \). Thus, signalling hypothesis fails to prove the efficiency as, the same indicates the negative signal of stock split to the market. Moreover, the similarity in results for CAAR and PWCAAR indicated the absence of high event induced variance in event window.

5. Average of CAARs during pre and post-stock split announcement were found 0.024 and -0.034 per cent respectively. It means investors get higher returns during pre-announcement than in post announcement.

6. The results about average security return variability (ASRV) model which was used to analyse the speed at which the stock market absorbed the stock split announcement in its prices, indicated that the highest value of ASRV (2.330) was recorded on day \( t(-4) \) followed by day \( t(0), t(9), t(1), t(-5), t(2), t(3), t(-1) \) and \( t(9) \) with ASRV value of 1.437, 1.369, 1.361, 1.266, 1.248, 1.216, 1.053 and 1.037 respectively. As on and around the announcement days the value of ASRV was greater than one; therefore, it may inferred that the stock split announcement contained the information which is relevant for valuation of Banking & IT stocks.

7. The results for regression analysis indicated that post stock split announcement CAAR don’t relate to preannouncement.

8. The average value of the historical volatility/risk for pre-announcement was equal than that of post announcement of stock split and at overall level; it turned zero meaning thereby the volatility remains same during stock split announcement. It refers that stock split announcement has no impact on risk. A significant variance was found across size of firm (small, mid & large cap companies), in so far as risk around stock split announcement was concerned.
9. As per results of ADF test, time series data was found stationary. Regression equations were applied to check the status of residuals & the results shows that there is a negative impact of stock split announcement on time varying volatility for stock returns and liquidity. As per residual diagnostic; the results were found to be satisfactory for further application of Arch family models.

10. Now, for the best fitted ARCH Family models, Garch was selected for AAR and EGarch were selected for PWCAAR & Risk as per the AIC and SIC minimum values criteria.

11. Garch was selected for AAR. Constant with positive value significant at 1% level show the presence of positive abnormal returns in the market. The negative coefficient of dummy variable significant at 1% level indicated the negative effect of stock split announcement on AAR volatility. There was inverse effect of current period volatility on future period volatility along with persistence of long time volatility.

12. EGarch was selected for PWCAAR. After re-standardization of equation, results shows that previous day return was affected by current day return. The negative coefficient of dummy variable significant at 1% level indicated the negative effect of stock split announcement on PWCAAR volatility. There was inverse effect of current period volatility on future period volatility along with persistence of long time volatility. There was symmetry in good/bad news of announcement on volatility.

13. EGarch was selected for Risk. All coefficients indicated the insignificant values. Thus; there was no proof for any impact of stock split announcement on volatility for risk.

14. The selected models based on minimum AIC & SIC values depicts normality of data as per Jarque Bera’s, no ARCH effect as per LM-ARCH test and no serial correlation. Based on all diagnostic conditions, the selected models proved as best fitted models for AAR, PWCAAR and Risk.

The findings related to the impact of stock split announcements on stock market liquidity are mentioned as follows:

1. The values of Mean Trade and Mean Amivest, the measures of liquidity were found positive for complete event window of 21 days which is an indication of increased liquidity on or surrounding the announcements date, but the difference resulted insignificant when tested by paired t-test as well as Wilcoxon Paired signed rank test.
It means there was no confirmation for any impact of stock split announcement on liquidity. Application of Single factor ANOVA across size indicated a insignificant variance in liquidity in case of sample firms across their size in so far as before & after the stock split announcements were concerned.

2. As per results of ADF test, time series data was found stationary. Regression equations results show that there was a negative impact of stock split announcement on time varying volatility for liquidity. As per residual diagnostic; the results were found to be satisfactory for further application of Arch family models.

3. Now, for the best fitted ARCH Family models, EGarch was selected for liquidity as per the AIC and SIC minimum values criteria.

4. EGarch was selected for Mean Trade. After re-standardization of equation, results shows that previous day liquidity was affected by current day liquidity. There was inverse effect of current period volatility on future period volatility for liquidity measured by mean trade. Both leverage effect in terms of arch sign and Garch coefficient for persistence of volatility are insignificant.

5. EGarch was selected for Mean Amivest. All coefficients indicated the insignificant values. Thus; there was no proof for any impact of stock split on announcement on volatility for liquidity measured by mean trade.

6. The selected models based on minimum AIC & SIC values depicts normality of data as per Jarque Bera’s, no ARCH effect as per LM-ARCH test and no serial correlation. Based on all diagnostic conditions, the selected models proved as best fitted models for both Mean Trade and Mean Amivest proxy variables of liquidity.

The findings related to the impact of stock split announcements on stock market efficiency are mentioned as follows:

1. For testing of Semi- Strong form of market efficiency; weak form of efficiency was tested. To conclude the remarks for weak form of market efficiency, first, randomness & stationary of time series data and serial correlation was tested. After that Pre and Post CAAR regression analysis was carried out to check the relationship between both intervals. As per results of Run test, ADF test and serial correlation, null hypothesis for randomness of data and serial correlation was accepted and presence of unit root was rejected. Further, as per results of Pre and Post CAAR regression, no relationship
was found between cumulative event returns. Thus, it was concluded that that Indian Stock Market is efficient in weak form.

2. Next, to conclude the remarks for Semi-Strong form of market efficiency event study was used. According to results of this study the investors were not able to generate significant positive cumulative average abnormal returns. It means stock split announcement conveys negative signal to the market. Here, on the basis of all discussion it has been concluded that Indian stock market has been proved as semi-strong form.

8.5.3 Findings related to Effect of Bonus Issue Announcement

The major findings related to the objective of analysing empirically the effect of bonus issue announcements on share price volatility are as follows:

1. The average abnormal returns were found positive for 6 days starting from day \( t(-10) \) to day \( t(-1) \) and negative on 4 days during 10 days of pre-announcement window. On announcement day \( t(0) \), ARR was seen nearly 1.18%. However, during the post-announcement window from day \( t(1) \) to day \( t(10) \), the pattern of positive AARs changed to negative pattern as the same were negative for 8 days and positive for only 2 days. The similar trend of weighted average abnormal returns was found for whole event window except positive for 9 days starting from day \( t(-10) \) to day \( t(-1) \) and negative on 1 day during 10 days of pre-announcement window. However, during the post-announcement window from day \( t(1) \) to day \( t(10) \), the pattern of positive WAARs changed to negative pattern as the same were negative for 7 days and positive for 3 days. The results of AARs and WAARs being almost same proved the absence of high event induced variance in event window. The values of average abnormal returns resulted significant at either one percent or five percent or ten percent level for 13 days out of 21 days of event window which lead to rejection of the null hypothesis of zero average abnormal returns during the event window. The results of Paired t-test (parametric) & Wilcoxon Paired Signed Rank test (non-parametric) revealed an insignificant difference. However, Single factor ANOVA across size of firm, also indicated insignificant variance in so far as before & after the bonus issue announcement was concerned.

2. The average of the AARs for the pre-announcement was found 0.31 per cent and for post announcement -0.12 per cent. The average of the WAARs for the pre-announcement was worked out 0.39 per cent and for post announcement window -0.19 per cent. Thus on an average both AARs and WAARs were positive and higher
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for pre-announcement as compared to post-announcement. This leads to the conclusion that the bonus issue did not come to the expectations of investors and resulted in price decline in post announcement.

3. For pre-announcement event windows (-10; -1) and (-1; 0) the CAAR values were 3.09% and 2.12% respectively. While CAAR stood 4.27 per cent on announcement day which was found significant at 1% level of significance. For post announcement event windows, there was higher return in larger event window i.e. 3.03% in (-10; +10) than of smaller windows. The results across almost all the windows were statistically significant at one percent level of significance indicating that the null hypothesis of zero cumulative abnormal returns during this event window was rejected.

4. *Cumulative average abnormal returns* was consecutively positive during whole event window but at varied percentage. Maximum CAAR was seen 4.27% on announcement day, followed by 4.04% on day \( t_{(1)} \), 3.09% on day \( t_{(-1)} \), 3.03% on day \( t_{(10)} \), 2.98% on day \( t_{(5)} \), 2.82% on day \( t_{(3)} \), 2.66% on day \( t_{(4)} \) & 2.14% on day \( t_{(-2)} \). Almost same trend and pattern of PWCAAR was also seen from the results. Maximum PWCAAR was seen 5.20% on day \( t_{(1)} \), followed by 4.97% on day \( t_{(0)} \), 4.35% on day \( t_{(2)} \), 4.03% on day \( t_{(3)} \), 3.94% on day \( t_{(-1)} \), 3.72% on day \( t_{(4)} \), 3.24% on day \( t_{(-2)} \) & 3.02% on day \( t_{(10)} \). Thus, Signalling hypothesis hold true as positive CAAR indicates the positive signal of bonus issue to the market. Moreover, the similarity in results for CAAR and PWCAAR indicated the absence of high event induced variance in event window.

5. Average of CAARs during pre and post-bonus announcement were found 0.022 per cent and 0.006 per cent respectively. It means investors get higher returns during pre-announcement than in post announcement. It could be due to information leakage for announcement.

6. The results about *average security return variability (ASRV)* model which was used to analyse the speed at which the stock market absorbed the bonus issue announcement in its prices, indicated that the highest value of ASRV (3.260) was recorded on day \( t_{(0)} \) followed by day \( t_{(-4)} \), \( t_{(-5)} \), \( t_{(1)} \), \( t_{(10)} \), \( t_{(-3)} \), \( t_{(8)} \), \( t_{(-6)} \), and \( t_{(-1)} \) with ASRV value of 1.470, 1.390, 1.350, 1.250, 1.140, 1.110, 1.070 and 1.050 respectively. As on and around the announcement days the value of ASRV was greater than one; Therefore, it may
inferred that the bonus issue announcement contained the information which is relevant for valuation of Banking & IT stocks.

7. The results for regression analysis indicated that post bonus issue announcement CAAR don’t relate to pre announcement.

8. The average value of the historical volatility/risk for pre-announcement was lower than that of post announcement of bonus issue and at overall level, it turned positive meaning thereby the volatility increases during bonus issue announcement. Further, the results of both Paired t-test and Wilcoxon paired sign rank test indicated a no significant difference in historical volatility for pre announcement days and post announcement of bonus issue. It refers that bonus issue announcement has no impact on risk. A no significant variance was found across size of firm (small, mid & large cap companies), in so far as risk around bonus issue announcement was concerned.

9. As per results of ADF test, time series data was found stationary. Regression equations results shows that there was no impact of bonus issue announcement on time varying volatility for stock returns and risk. As per residual diagnostic of regression equations; the results were found to be satisfactory for further application of Arch family models.

10. Now, for the best fitted ARCH Family models, EGarch was selected for AAR, PWCAAR & Risk as per the AIC and SIC minimum values criteria.

11. EGarch was selected for AAR. Constant with positive value significant at 5% level show the presence of positive abnormal returns in the market. The negative coefficient of dummy variable significant at 1% level indicated the negative effect of bonus issue announcement on AAR volatility.

12. EGarch was selected for PWCAAR. The positive coefficient of dummy variable significant at 1% level indicated the positive effect of bonus issue announcement on cumulative returns volatility. After re-standardization of equation, results shows that previous day return was affected by current day return. There was inverse effect of current period volatility on future period volatility. There was more impact of bad news on volatility than good news.

13. EGarch was selected for Risk. As all coefficients indicated the insignificant values except the arch and leverage coefficients, so, there was inverse
Major Findings and Conclusion

The findings related to the impact of bonus issue announcements on stock market liquidity are mentioned as follows:

1. The values for the measures of liquidity were found positive for complete event window of 21 days which is an indication of increased liquidity on or surrounding the announcements date. Further, the mean liquidity for pre-announcement window was found lower than in post-announcement window, but the difference resulted insignificant when tested by paired t-test as well as Wilcoxon Paired signed rank test. It means there was no confirmation for any impact of bonus issue announcement on liquidity. Application of Single factor ANOVA across size indicated a significant variance in liquidity in case of sample firms across their size in so far as before & after the bonus issue announcements were concerned.

2. As per results of ADF test, time series data was found stationary. Regression equations results show that there was positive impact of bonus issue announcement on time varying volatility for liquidity. As per residual diagnostic of regression equations; the results were found to be satisfactory for further application of Arch family models.

3. Now, for the best fitted ARCH Family models, EGarch was selected for Mean amivest and Tarch was selected for Mean Trade as per the AIC and SIC minimum values criteria.

4. EGarch was selected for Mean Amivest as proxy variable of liquidity. There was positive effect of bonus issue announcement on mean amivest. There was positive effect of current period volatility on future period volatility. There was symmetry for impact of good/bad news on volatility for mean amivest.

5. Tarch was selected for Mean Trade. All coefficients indicated the insignificant values except the dummy variable and re-standardisation through AR (1). Thus; there was
positive effect of bonus issue announcement on mean trade. After re-standardization of equation, results shows that previous day liquidity was also affected by current day liquidity.

6. The selected models based on minimum AIC & SIC values depicts normality of data as per Jarque Bera’s, no ARCH effect as per LM-ARCH test and no serial correlation. Based on all diagnostic conditions, the selected models proved as best fitted models for Mean Trade and Mean Amivest.

The findings related to the impact of bonus issue announcements on stock market efficiency are mentioned as follows:

1. For testing of Semi- Strong form of market efficiency; weak form of efficiency was tested. To conclude the remarks for weak form of market efficiency first randomness & stationary of time series data and serial correlation was tested. After that Pre and Post CAAR regression analysis was carried out to check the relationship between both intervals. As per results of Run test, ADF test and serial correlation, null hypothesis for randomness of data and serial correlation was accepted and presence of unit root was rejected. Further as per results of Pre and Post CAAR regression, no relationship was found between cumulative event returns. Thus, it was concluded that that Indian Stock Market is efficient in weak form.

2. Next, to conclude the remarks for Semi-Strong form of market efficiency event study was used. According to results of this study the investors were able to generate significant positive cumulative average abnormal returns. It means bonus issue announcement conveys positive signal to the market. Here, on the basis of all discussion it has been concluded that Indian stock market has not been proved as semi- strong form.

8.5.4 Findings related to Effect of Buyback Announcement

The major findings related to the objective of analysing empirically the effect of buyback announcements on share price volatility are as follows:

1. The average abnormal returns were found positive for 7 days starting from day $t_{(-10)}$ to day $t_{(-1)}$ and negative on 3 days during 10 days of pre-announcement window. On announcement day $t_0$, ARR was seen nearly 0.597%. However, during the post-announcement window from day $t_1$ to day $t_{10}$, the pattern of positive AARs changed to negative pattern as the same were negative for 6 days and positive for 4 days. The similar trend of weighted average abnormal returns was found for whole event
window. The results of AARs and WAARs being almost same proved the absence of high event induced variance in event window. The values of average abnormal returns resulted significant at either one percent or five percent or ten percent level for 19 days out of 21 days of event window which lead to rejection of the null hypothesis of zero average abnormal returns during the event window. The results of Paired t-test (parametric) & Wilcoxon Paired Signed Rank test (non-parametric) revealed a significant difference. However, Single factor ANOVA across size, indicated insignificant variance in so far as before & after the buyback announcement was concerned.

2. The average of the AARs for the pre-announcement was found 1.02 per cent and for post announcement -0.31 per cent. The average of the WAARs for the pre-announcement was worked out 0.87 per cent and for post announcement window -0.35 per cent. Thus on an average both AARs and WAARs were positive and higher for pre-announcement as compared to post-announcement. This leads to the conclusion that the buyback did not come to the expectations of investors and resulted in price decline in post announcement.

3. For pre-announcement event windows (-10;-1) and (-1; 0) the CAAR values were 10.23% and 2.69% respectively. While CAAR stood 10.83 per cent on announcement day which was found significant at 1% level of significance. For post announcement event windows, there was higher return in larger event window i.e. 7.49% in (-7; +7) than of smaller windows. The results across almost all the windows were statistically significant at one percent level of significance indicating that the null hypothesis of zero cumulative abnormal returns during this event window was rejected.

4. Cumulative average abnormal returns was consecutively positive during whole event window but at varied percentage. 10.83% on announcement day, followed by 10.23% on day t(-1), 9.69% on day t(1), 8.92% on day t(2), 8.29% on day t(3) & 8.14% on day t(2). Almost same trend and pattern of PWCAAR was also seen from the results. Maximum PWCAAR was seen 8.83% on day t(0), followed by 8.65% on day t(-1), 7.43% on day t(1), 7.01% on day t(2), 6.93% on day t(2) & 6.49% on day t(3). Thus, Signalling hypothesis proves to be hold true as positive CAAR indicates the positive signal of buyback to the market. Moreover, the similarity in results for CAAR and PWCAAR indicated the absence of high event induced variance in event window.
5. Average of CAARs during pre and post-buyback announcement was found 0.102 per cent and -0.035 per cent respectively. It means investors get higher returns during pre-announcement than in post announcement. It could be due to information leakage for announcement.

6. The results about *average security return variability (ASRV)* model which was used to analyse the speed at which the stock market absorbed the buyback announcement in its prices, indicated that the highest value of ASRV (2.843) was recorded on day t(-2) followed by day t(1), t(0), t(-3), t(-4), t(-6), t(-10), t(-7) and t(-9) with ASRV value of 2.315, 1.901, 1.338, 1.307, 1.223, 1.192, 1.162, 1.039 and 1.037 respectively. As on and around the announcement days the value of ASRV was greater than one; therefore, it was concluded that the market captured the information contained in bonus issue decision immediately with its announcement.

7. The results for regression analysis indicated that post buyback announcement CAAR don’t relate to pre announcement.

8. The average value of the historical volatility/risk for pre-announcement was higher than that of post announcement of buyback and at overall level; it turned positive meaning thereby the volatility increases during buyback announcement. Further, the results of both Paired t-test and Wilcoxon paired sign rank test indicated a no significant difference in historical volatility for pre announcement days and post announcement of buyback. But significant variance was found across size of firm, so far as risk around buyback announcement was concerned.

9. As per results of ADF test, time series data was found stationary. Regression equations results shows that there was negative impact of buyback announcement on time varying volatility for stock returns. As per residual diagnostic of regression equations; the results were found to be satisfactory for further application of Arch family models.

10. Now, for the best fitted ARCH Family models, Garch was selected for AAR & Risk and EGarch was selected for PWCAAR as per the AIC and SIC minimum values criteria.

11. Garch was selected for AAR. Constant with positive value significant at 5% level show the presence of positive abnormal returns in the market. The negative coefficient of dummy variable significant at 5% level indicated the negative effect of
buyback announcement on AAR volatility. There was inverse effect of current period volatility on future period volatility.

12. EGarch was selected for PWCAAR. After re-standardization of equation, results shows that previous day return was affected by current day return. There was inverse effect of current period volatility on future period volatility. Insignificant leverage effect shows symmetry for good/bad negative news impact of announcement on volatility.

13. Garch was selected for Risk. As all coefficients indicated the significant values, so, there was inverse effect of current period volatility on future period volatility along with persistence of long term volatility for risk.

14. The selected models based on minimum AIC & SIC values depicts no ARCH effect as per LM-ARCH test, no serial correlation and Jarque Bera’s p-values are also more than 5%. Based on all diagnostic conditions, the selected models proved as best fitted model for AAR, PWCAAR and Risk.

The findings related to the impact of buyback announcements on stock market liquidity are mentioned as follows:

1. The values of liquidity were found positive for complete event window of 21 days which is an indication of increased liquidity on or surrounding the announcements date. Further, the mean liquidity for pre-announcement window was found lower than in post-announcement window, but the difference resulted insignificant when tested by paired t-test as well as Wilcoxon Paired signed rank test. It means there was no confirmation for any impact of buyback announcement on liquidity. Application of Single factor ANOVA across size indicated a no significant variance in liquidity in case of sample firms across their size in so far as before & after the buyback announcements were concerned.

2. As per results of ADF test, time series data was found stationary. Regression equations results shows that there was no impact of buyback announcement on time varying volatility for liquidity. As per residual diagnostic of regression equations; the results were found to be satisfactory for further application of Arch family models.

3. Now, for the best fitted ARCH Family models, Garch was selected for Mean Trade and Tarch was selected for Mean amivest as per the AIC and SIC minimum values criteria.
4. Garch was selected for Mean Trade as proxy variable of liquidity. All coefficients indicated the insignificant values. Thus; there was no proof for any impact of buyback announcement on volatility for liquidity measured by mean trade.

5. Tarch was selected for Mean Amivest. All coefficients indicated the insignificant values except the arch. Thus; there was inverse effect of current period volatility on future period volatility.

6. The selected models based on minimum AIC & SIC values depicts normality of data as per Jarque Bera’s, no ARCH effect as per LM-ARCH test and no serial correlation. Based on all diagnostic conditions, the selected models proved as best fitted models for Mean Trade and Mean Amivest.

The findings related to the impact of buyback announcements on stock market efficiency are mentioned as follows:

1. For testing of Semi- Strong form of market efficiency; weak form of efficiency was tested. As per results of Run test, ADF test and serial correlation, null hypothesis for randomness of data and serial correlation was accepted and presence of unit root was rejected. Further as per results of Pre and Post CAAR regression, no relationship was found between cumulative event returns. Thus, it was concluded that that Indian Stock Market is efficient in weak form.

2. Next, to conclude the remarks for Semi-Strong form of market efficiency event study was used. According to results of this study the investors were able to generate significant positive cumulative average abnormal returns. It means buyback announcement conveys positive signal to the market. Here, on the basis of all discussion it has been concluded that Indian stock market has not been proved as semi- strong form.

8.6 Conclusion and Managerial Implications of the Study

The results for average abnormal returns and WAARs indicate significant at either at one percent or five percent or ten percent level of significance for 14 days, 4 days, 13 days and 19 days out of 21 days of event window in case of right issue, stock split, bonus issue and buyback announcements respectively. Thus; except of stock split others (right issue, bonus, and buyback) created shareholders wealth.

The results indicate that cumulative average abnormal returns on announcement day were 7.56%, 2.32%, 4.27% & 10.83% in case of right issue, stock split, bonus issue and buyback announcements respectively. For pre-announcement run up event window of (-
10; -1); the CAAR values were 9.02%, 2.41%, 3.09% & 10.23% in case of right issue, stock split, bonus issue and buyback announcements respectively. For post announcement event windows there was higher return 4.97% (-10; +10), 1.84% (-4; +4), 3.03% (-10; +10) & 7.49% (-7; +7) in case of right issue, stock split, bonus & buyback respectively.

Pre and Post right issue CAAR values were also worked out company-wise and result reveals that investors get higher returns during pre-announcement than in post announcement. It could be due to information leakage for announcement.

There was a significant difference for AAR during before & after the announcement of right issue, stock split, buyback but was not significant difference for AAR during before & after the announcement of bonus issue announcement. There was no significant variance in various firms across their size in AAR during before & after the corporate announcements were concerned.

The mean difference for liquidity was negative in case of right issue, bonus issue & buyback announcements; while the same was positive in case of stock split. But the results found to be insignificant; thus there was no proof for any impact of announcement on liquidity. In other words, a corporate announcement has no effect on liquidity.

As per size effect, there was significant variance in various firms across their size in so far as liquidity before & after the right issue & bonus issue announcement were concerned. But there was no significant variance in various firms across their size in so far as liquidity before & after the stock split announcement and buyback were concerned.

There was no significant difference between risk before and after the announcement meaning thereby corporate announcement has no impact on risk except of right issue announcement. As per segregation of size wise (small, mid & large cap companies), there was significant difference between risk around right issue & stock split announcement. While, there was no significant difference between risk around bonus issue & buyback announcement.

There was positive effect of right issue & bonus issue announcement for current period volatility on future volatility for liquidity. Thus; there is asymmetry in impact of good/bad news on volatility. But there was inverse effect of current period volatility on future volatility for liquidity in case of stock split and buyback announcement. Further, there was symmetry in impact of good/bad news on volatility for liquidity.
Major Findings and Conclusion

As per results for time varying volatility regarding risk, there was negative effect of right issue, stock split & buyback announcements on time varying volatility. But there was positive effect of bonus issue announcement on time varying volatility. Except for buyback there was symmetry in impact of positive and negative news for the announcement on volatility.

Here, selected models based on minimum AIC & SIC values depicts no ARCH effect as per LM-ARCH test. Because p-value of all variables was greater than 5%. There was no serial correlation in time series for selected models because p-values of lags based on 36 are more than 5%. Jarque Bera’s p-values are also more than 5% for all variables. Based on all diagnostic conditions, the selected models proved as best fitted models for specified variables in case of all corporate announcements except of bonus issue (AAR, PWCAAR). AAR & PWCAAR for bonus issue announcement proved as better model because they satisfied by two conditions amongst three.

On the basis of results for Run test, ADF test, serial correlation and regression of pre & post CAAR; researcher concluded that Indian Stock Market is efficient in weak form for selected corporate actions. It means that the present security prices reveal all the present as well as the historical prices, so the past data cannot be used to forecast future prices.

Further, on the basis of results for event study; researcher concluded that Indian Stock Market is efficient in semi-strong form only for stock split and not for other corporate actions i.e. right issue, bonus issue & buyback. As per semi strong market efficiency all the published as well as the historical information are reflected in the security prices, so no investor can earn superior profit by making use of any new information.

As already interpreted that investors were able to generate significant positive cumulative average abnormal returns in case of right issue, bonus issue & buyback. It means they conveys positive signal to the market. If any corporate action respond significantly either positive or negative to the market, then market is said to be inefficient. Here, on the basis of all discussion it has been concluded that Indian stock market has not been proved as semi- strong form for all except of stock split.

As per results for impact of corporate actions on liquidity, there was no no significant difference during before and after the announcement. But the same liquidity hypothesis proves to be hold only for stock split and buyback announcement across size of firm as large cap, mid cap & small cap companies of selected sample.
The results, Increasing trend of AAR before the announcement and decreasing trend of AAR after the announcement, shall be tested with effect of insider trading through strong form of Market efficiency. Moreover Signalling hypothesis proves to be hold as positive CAAR indicates the positive signal of corporate actions to the market except of stock split. But Liquidity hypothesis also failed; as before and after announcement liquidity remains unaffected.

This study will be highly useful for corporate, investors, fund managers, corporate executives & administrators of financial institutions in decision making in line with the results of about impact of various important announcements. From fund managers/investors’ perspective, the study will help them in designing their trading strategies for different sectors. Changes in daily return volatility not only affect systematic risk but also important to underlying traders who hold undiversified portfolios. From firms’ perspective, the study will help to achieve the objective of shareholder’s wealth maximization. This is possible through Signalling device by sending a message to investors who undervalued the same while valuing the shares.

An important managerial implication of this study is that, policy makers may frame corporate actions to control their security’s risk. In fact, it may be possible for them to use corporate actions as important tool for influencing their share price volatility. These results can also help an investor to make a decision whether to invest for short-term or long term to maximize their wealth according to the company’s prospects. This study directs a short term investor about the relevant period for making investment/disinvestment decisions and run up event windows helps in framing the main trading strategy. With the help of risk-return trend around the corporate announcement dates investors can also maximise their capital gains. This research reveals that about the time considered (10 days before and 10 days after the event), significant/insignificant abnormal returns generated due to market sentiments for the group of sample companies. Further, investor needs to consider company’s future prospects for long-term investment. The role of regulatory bodies like SEBI can be influential in restricting insider trading to build the confidence of investors so that stock market can become efficient. To establish the efficiency in Indian stock market, the policy makers may arrange the awareness campaign programmes regarding knowledge of market and market instruments for accessing to the relevant information which must impound in the market quickly and accurately.
8.7 Suggestions

In the light of the findings of this study, we are able to offer suggestions which may act as useful inputs for the investors, companies and regulators of the security market for understanding and enhancing the efficiency and liquidity of Indian stock market along with a check on the volatility. It may also further help them in framing a congenial investment policy with a potential to create supportive investment environment for investors. Some of the important suggestions are listed below:

- According to the present study, right issue announcement as well as stock split announcement had no immediate impact on the security prices of sample companies. Therefore, for investors’ perspective, it is recommended that when the company go for right issue announcement and stock split announcement, the shareholders should wait for some time and take investment decision according to the good or bad informational content of the announcements. In contrast to the above, when a company go for bonus issue announcement then investors need to take immediate investment decision (buy or sell) because as per the findings of the study (as per ASRV model) market capture the informational content of these actions of firms immediately.

- The findings also suggest, when the companies go for buyback announcement, the investors can take their investment decision few days away from the announcement because of high fluctuation in the security price around the announcement day.

- As per findings of the study, the corporate announcements generally result in to negative reaction in the shares prices during the post announcement period. Accordingly, it is recommended that whenever companies come up with any event announcement, the investor should observe very closely the informational content (good or bad) of these announcements and then take appropriate investment decision (buy or sell).

- As per investors’ perspective, they must follow the rule of fundamental analysis for calculation of true pricing of securities.

- As per size analysis observed in this study, Investors should diversify their investment portfolio as per market conditions.

- As per firm’s perspective, managers should carefully watch and observe the investors’ response and accordingly release the true and reliable information at the time of any event announcement. Further, the management must file all important
documents correctly to the authorities like SEBI, RBI, and Ministry of Finance and must adhere to the all rules & regulations.

- The existence of information leakage can wear down the confidence of investors. Thus, SEBI should think over the listing rules and suitable amendments to curb such practices.
- To control the volatility in stock market, SEBI shall frame such type of policies so that short selling can be reduced.
- To maintain the secrecy for announcement of new information SEBI should reduce the time period required for official intimation on the part of companies.
- The literature indicates that beside others, market efficiency largely depends on the number of investors in the market, particularly the institutional investors and the number of analysts. Due to liberalization, already many domestic as well as foreign institutional investors have entered the market. However, there is a scarcity of trained professional analysts are in Indian stock market. Hence, there is a need to promote programmes that will produce professional analysts.

8.8 Future Research Areas

As per the results of reviewed literature, it has been found that, in India, there has been a comparatively less work undertaken on market efficiency from various perspectives. Even many of the research studies consider only one variable or the other; and not much comprehensive and parallel work has been undertaken on various dimensions relating to corporate actions. However the present study has an attempt to study market efficiency from various perspectives along with many variables taken together; there are still many dimensions on which future research can be undertaken. Some of the main dimensions for future research are as follows:

- The present study is based on the testing of Weak form and Semi strong form of market efficiency. But due to positive AAR in pre announcement event window there is need to test through strong form of market efficiency as future scope of the study.
- The present study is based on the impact of corporate financial announcements on share price volatility and liquidity in India. But there are so many factors like Exchange rates, inflation, money supply, Interest rates, change of CEO, strike & lockout etc. on which future research can be undertaken.
The future study can also be made on the corporate actions and market efficiency for more number of sectors in India like Textiles, FMGC, Pharmaceutical, Cement and Steel industry etc.

The present study considers the size effect for significant variances in abnormal returns. But the same can be studied through different market conditions such as bull and bear as further scope for the study.

Future studies can be undertaken as comparative study of single factor market model with two factor market model.

The present study has included the sample companies listed on NSE only from India. Thus, further comparative study can also be made on sample companies listed on NSE and BSE in India.

The current study used the NSE-500 as the market benchmark. Further the research may be attempted to test the efficiency of Indian stock market with other index as a benchmark, i.e. BSE Sensex, BSE-100, BSE-200 etc.

The referenced study examined the impact of corporate announcements in the short run only, future studies can be conducted in long run with larger event window.

The present study has applied various parametric, non-parametric and econometric tools which can be compared to check the robustness of the results under the Indian capital market conditions.