This chapter summarizes the findings and conclusions of the study. Primarily, it covers chapter-wise summary i.e. Introduction, Review of Literature, Tests of Stationarity, Seasonality in BSE & NSE and Opinion Survey together with abridgement of findings of the study. It also includes scope of further research.

6.1 SUMMARY OF FINDINGS AND CONCLUSIONS

Summary of findings and conclusions of present study have been presented on following lines:

6.1.1 Present Study

At the outset introduction of Indian financial system, stock exchanges in India and the concept of seasonality have been explained in the first chapter. There are quite a few theories existing on stock prices’ behaviour and various calendar effects prevailing around the world. Therefore it was tried to give an overview of them. Then importance of studying seasonality and the possible factors behind seasonality have been elaborated. Lastly the detailed research methodology has been discussed.

The objectives of the study were to explore four types of calendar effects prevailing in Indian stock market namely day-of-the-week effect, month-of-the-year effect, quarterly effect and monthly effect and also to find out whether these seasonal patterns have changed over the years. Further, it was also endeavored to uncover the perceptions of stock market participants regarding investment strategies adopted by them. Then data and its collection sources (both for secondary and primary data), samples, various tools and techniques applied have been detailed. The extensive process of checking stationarity, making the series stationary, formulating dummy variable regression equation, checking the existence of serial correlation, ARIMA model for removal of serial correlation, checking the existence of heteroskedasticity and applying GARCH (p, q) model have been explained. Due care was taken in elaborating the process of identifying AR and MA terms, order for ARCH-LM test and identification of p and q terms for GARCH model. Thereafter a detailed introduction of our sample which consists of indices of BSE and NSE has been given.
6.1.2 Review of Available Literature

In this chapter various reviews have been classified as per the calendar effects confirmed or rejected in their study. The following were the major areas of classification of the reviews: Month-of-the-year Effect, Day-of-the-week Effect and Other Effects. Before describing the reviews in detail, a tabular presentation has also been given before each section so as to have a quick view of them. It was found that most of the researchers have tested two or more effects together. In large number of work already done, January effect, Monday, Friday, first-half of the month, holiday effects etc. were tested and confirmed also.

It was also observed that work done before 1980s were largely based on traditional techniques, parametric and non-parametric tests where only stationarity was used to check. From late 1980s a major shift was observed from traditional to econometric techniques to analyze the time series data. This was the era when data collection was no more a tedious job. Further, various latest econometric software were available. Therefore it gradually became very easy to incorporate serial correlation, heteroskedasticity etc. into researches covering large samples. In the beginning of this century, econometrics application in time series data became the basic need. This is the reason that large amount of researches done during last 25-30 years were based on econometric application. It was also observed that in majority of cases, when non-parametric tests were used seasonal effects were not detected while reverse is the case when econometric techniques were used.

After reviewing earlier work on calendar anomalies, a few points were identified as research gaps. There are very few studies undertaken on Indian stock markets. Secondly, closing price was generally used by earlier researchers as if trading is done at closing prices only whereas average is always considered better. Thirdly, sectoral indices were not the area of interest of previous studies and lastly, reviews could not be found for investors’ perceptions regarding trading strategies.

6.1.3 Tests of Stationarity

This chapter inaugurates the detailed application of econometric techniques over the sample data by checking stationarity. Firstly, stationarity was checked for original series of both BSE and NSE indices. For this purpose three popular
diagnoses were used namely graphical analysis, correlogram and ADF test. When it was found that all the indices of both the series were not stationary, their returns were calculated by working out log differences of the averages. Again stationarity was checked for the return series using all the three mentioned tests. It was established using all the three tests that the return series were stationary so it was decided to continue the remaining analysis with the return series.

### 6.1.4 Seasonality in BSE & NSE

In this chapter sample detailed process of all the remaining analysis techniques for day-of-the-week effect like dummy variable regression model, serial correlation test, ARIMA modeling, heteroskedasticity and GARCH (p, q) model has been elaborated for BSE SENSEX. So that an understanding of using the techniques and estimating the parameters may be developed. Thereafter, only final summarized results of GARCH (p, q) model have been presented for all the indices of BSE and NSE. These final summarized tables were presented for each of the effect tested i.e. day-of-the-week effect, month-of-the-year effect, quarterly effect and monthly effect.

It was observed that all the series were having autocorrelation in their regression results as was confirmed from Serial Correlation LM-Test and to remove that different AR and MA terms were identified for different indices for the purpose of ARIMA modeling. Thereafter it was revealed from the ARCH-LM test that all the series were having heteroskedasticity. Hence GARCH model with different specification of $p$ and $q$ for different indices were estimated. As these final results were free from both serial correlation and heteroskedasticity, these may be accepted. Table 6.1 summarizes the findings of the analysis.

Table 6.1 clearly indicates that all the indices except CNX Metal, CNX Media and BSE Realty, all the indices exhibit two or more calendar effects. In case of day-of-the-week effect, Monday is observable in majority of cases so is September in case of month-of-the-year effect. For quarterly effects, first quarter is evidenced for several indices. It was observed in case of monthly effects that first half of the month was found significant for some indices whereas both halves were found to be significant for other few indices.
Table 6.1: Summarized Results of the Confirmed Calendar Effects in Different Indices of BSE & NSE

<table>
<thead>
<tr>
<th>Indices</th>
<th>Day-of-the-week Effect</th>
<th>Month-of-the-year Effect</th>
<th>Quarterly Effects</th>
<th>Monthly Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSE – SENSEX</td>
<td>Monday &amp; Tuesday</td>
<td>September, June November &amp; December</td>
<td>First &amp; Fourth</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE -100</td>
<td>Monday, Tuesday &amp; Thursday</td>
<td>September, June &amp; December</td>
<td>First &amp; Fourth</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE-200</td>
<td>All days</td>
<td>September &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE-500</td>
<td>Monday &amp; Tuesday</td>
<td>September, November &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE MIDCAP</td>
<td>Monday</td>
<td>September</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE SMLCAP</td>
<td>Monday &amp; Friday</td>
<td>--</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE Auto</td>
<td>Monday</td>
<td>September, August November &amp; December</td>
<td>Second</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE Bankex</td>
<td>Monday</td>
<td>September &amp; November</td>
<td>Second</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE CD</td>
<td>All Days</td>
<td>September, May, April, August &amp; December</td>
<td>First &amp; Fourth</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE CG</td>
<td>All Days except Friday</td>
<td>--</td>
<td>First &amp; Fourth</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE FMCG</td>
<td>Monday</td>
<td>June, September &amp; November</td>
<td>First &amp; Fourth</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE HC</td>
<td>Monday &amp; Friday</td>
<td>September, May, November &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE IT</td>
<td>Monday</td>
<td>April</td>
<td>Second &amp; Third</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE Metal</td>
<td>Monday</td>
<td>September, December</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>BSE Oilgas</td>
<td>Monday</td>
<td>September</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>Indices</td>
<td>Day-of-the-week Effect</td>
<td>Month-of-the-year Effect</td>
<td>Quarterly Effects</td>
<td>Monthly Effects</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>BSE Power</td>
<td>--</td>
<td>September &amp; December</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>BSE PSU</td>
<td>Monday</td>
<td>January</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>BSE Realty</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Both Halves</td>
</tr>
<tr>
<td>Nifty-50</td>
<td>Monday &amp; Wednesday</td>
<td>September, June, November &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>Nifty Junior</td>
<td>Monday, Tuesday &amp; Friday</td>
<td>February, September &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>CNX -100</td>
<td>Monday</td>
<td>September</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX-200</td>
<td>Monday</td>
<td>September</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX-500</td>
<td>Monday &amp; Tuesday</td>
<td>September, November &amp; December</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>CNX Midcap</td>
<td>Monday</td>
<td>September</td>
<td>--</td>
<td>Both Halves</td>
</tr>
<tr>
<td>Nifty Midcap</td>
<td>Monday</td>
<td>September</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CNX Smallcap</td>
<td>Monday &amp; Tuesday</td>
<td>February</td>
<td>First</td>
<td>Both Halves</td>
</tr>
<tr>
<td>CNX Auto</td>
<td>--</td>
<td>September</td>
<td>Second</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX Bank</td>
<td>Monday</td>
<td>September, February</td>
<td>Second</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX Energy</td>
<td>Monday</td>
<td>--</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX Finance</td>
<td>Monday</td>
<td>September, November</td>
<td>First</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX FMCG</td>
<td>--</td>
<td>April, June &amp; December</td>
<td>All except Third</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX IT</td>
<td>Monday</td>
<td>January, April &amp; July</td>
<td>All except First</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX Media</td>
<td>--</td>
<td>February</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CNX Metal</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CNX PHARMA</td>
<td>Monday</td>
<td>November, December &amp; April</td>
<td>Second</td>
<td>First-Half</td>
</tr>
<tr>
<td>Indices</td>
<td>Day-of-the-week Effect</td>
<td>Month-of-the-year Effect</td>
<td>Quarterly Effects</td>
<td>Monthly Effects</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>CNX PSUBANK</td>
<td>--</td>
<td>September</td>
<td>--</td>
<td>First-Half</td>
</tr>
<tr>
<td>CNX Realty</td>
<td>--</td>
<td>September</td>
<td>--</td>
<td>Second-Half</td>
</tr>
</tbody>
</table>

A different view of the above table has been presented in the Table 6.2, which shows the number of BSE & NSE indices for which different calendar anomalies were proved.

It is clear from the Table 6.2 that Monday effect is confirmed for 16 out of 18 BSE indices and for 13 out of 19 NSE indices. Similarly September effect is confirmed for 13 BSE indices and 12 NSE indices, December effect is evident for 8 BSE and 5 NSE indices and November is found to be significant for 6 BSE and 4 NSE indices. First Quarter was evidenced as significant for 11 BSE and 6 NSE indices. Lastly first-half was found to be significant for 7 BSE and 10 NSE indices. Thus all the four effects have been confirmed both in NSE and BSE and accordingly all the four null hypotheses have been rejected. There are strong evidences of existence of seasonality in Indian stock market. The findings may be summarized as follows:

(i) **Day-of-the-week Effect:** It is clearly evident from Tables 6.1 and 6.2 that in case of every index where any weekday effect is confirmed, Monday effect is there. Monday effect is confirmed in case of 16 out of 18 indices of BSE whereas in case of NSE it was confirmed for 13 out of 19 indices. Monday-Tuesday relationship was also observed for some indices. In total, 8 indices (all sectoral) did not manifest day-of-the-week effect. Monday is the day when stock market gets opened after a two days long holiday. Therefore any good or bad information (company related, industry specific, economic, political, national or international) affects significantly the returns earned on Monday. But there are chances of earning excess returns on Monday due to some other reasons also which is left for future research.
## Table 6.2: Number of BSE & NSE Indices Confirming Different Calendar Anomalies

<table>
<thead>
<tr>
<th>Day-of-the-week Effect</th>
<th>Month-of-the-year Effect</th>
<th>Quarterly Effect</th>
<th>Monthly Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Indices</td>
<td>Quarter</td>
<td>Part of Month</td>
</tr>
<tr>
<td>Day</td>
<td>Indices</td>
<td></td>
<td>Indices</td>
</tr>
<tr>
<td>Monday</td>
<td>BSE 16</td>
<td>First</td>
<td>First-half</td>
</tr>
<tr>
<td>NSE 13</td>
<td></td>
<td></td>
<td>BSE 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NSE 10</td>
</tr>
<tr>
<td>Tuesday</td>
<td>BSE 6</td>
<td>Second</td>
<td>Second-half</td>
</tr>
<tr>
<td>NSE 3</td>
<td></td>
<td></td>
<td>BSE --</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NSE 1</td>
</tr>
<tr>
<td>Wednesday</td>
<td>BSE 3</td>
<td>Third</td>
<td>Both</td>
</tr>
<tr>
<td>NSE 1</td>
<td></td>
<td></td>
<td>BSE 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NSE 5</td>
</tr>
<tr>
<td>Thursday</td>
<td>BSE 4</td>
<td>Fourth</td>
<td>None</td>
</tr>
<tr>
<td>NSE 3</td>
<td></td>
<td></td>
<td>BSE 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NSE 3</td>
</tr>
<tr>
<td>Friday</td>
<td>BSE 4</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>NSE 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>BSE 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSE 6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>
(ii) **Month-of-the-year Effect:** In case of month-of-the-year effect, the well known January effect was confirmed only in case of BSE PSU and CNX IT. With these exceptions, it can be concluded that January effect is no more existing in Indian stock market. Instead, September, November, December and April months are yielding significantly excess returns than those of other months and this holds true for both the markets. March and October are not significant for any of the indices of BSE and NSE. September emerged to be significant month in 13 indices of BSE and 12 indices of NSE. Two possible reasons behind significant returns in September may be the end of first six months and beginning of festive seasons in India. April effect may be associated with tax loss selling hypothesis as in India tax year ends in March and investors again start buying stocks which they have sold in March in order to book losses and reduce tax liability.

(iii) **Quarterly Effect:** It can be concluded from the above tables that first quarter is yielding abnormal returns for majority of cases, but for some indices it is in combination with fourth quarter. For BSE Auto, BSE Bankex, BSE IT, CNX Auto, CNX Bank and CNX Pharma second quarter is yielding significant returns. Overall quarterly effect was confirmed in 24 indices.

(iv) **Monthly Effect:** It is the last effect tested to know whether returns are significant in any of the two parts of a month. Mostly in case of non-sectoral indices, it was found that returns are significant in both halves of the month. For 17 indices in all, first-half of the month is proved to provide significantly different returns from those of second-half of the month. Only CNX Realty has significant returns during second-half of the month. Only 4 indices did not manifest monthly effect.

These findings of confirmation of seasonal or calendar anomalies may have important implications for individual as well as institutional investors and analysts. They can better time their trading strategies as per these seasonal effects and earn abnormal or excess returns. These findings also lead to employment opportunities to researchers who are studying these seasonal effects. They may be able to suggest their clients for trading strategies to be adopted in purview of seasonal effects.
Apart this, an attempt was also made to explore whether these seasonal patterns have changed over the years. In order to avoid vagueness it was decided to examine this using SENSEX and Nifty only as these are the representative indices of their respective markets. For this purpose the whole series of both the indices were split into three time periods i.e. 1st January 1991 – 7th June 2000, 8th June 2000 – 31st December, 2008 and 1st January 2008 – 31st May 2013. This segregation was done by keeping in mind the two important events i.e. introduction of futures and global financial crisis. Thereafter all the same tests and models were used for these sub-time periods as were used in confirming any of the four effects.

It is quite evident from Table 6.3 which provides the summary of changing patterns of seasonality that Indian stock market has witnessed significant changes in seasonal trends over the years. In case of day-of-the-week effect, SENSEX has Monday & Tuesday, Monday & Tuesday and none of the days providing significant returns for pre-futures, post-futures and post-crisis period respectively. On the other hand Nifty has Wednesday, Monday and none of the days as significant returns generating days for the three periods respectively.

While testing month-of-the-year effect, it was found that for SENSEX October, January, February and March whereas for Nifty March, April and December were providing significant returns in pre-futures period. In post-futures period SENSEX had significant returns in September, November and May whereas Nifty had those in November only. In post-crisis period, September was the only month providing significant returns in both the markets.

For quarterly effects SENSEX and Nifty both had none of the quarters as significant returns generating quarter both in pre-futures and post-crisis period. But in post-futures period, both indices had first quarter providing significant returns. In case of monthly effects, returns of neither halves of a month were significant for both SENSEX and Nifty. In the post-futures period, returns were significant in both of the halves for SENSEX and in first half for Nifty.

Thus seasonal trends have changed to a great extent over the years in Indian stock market. It was also observed that with the passage of time, SENSEX and Nifty showed increased co-integration amongst them in terms of seasonal trends.
Table 6.3: Changing Patterns of Seasonal Trends during Different Time Periods

<table>
<thead>
<tr>
<th>Periods</th>
<th>Day-of-the-week Effect</th>
<th>Month-of-the-year Effect</th>
<th>Quarterly Effect</th>
<th>Monthly Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Index</td>
<td>Days</td>
<td>Index</td>
<td>Months</td>
</tr>
<tr>
<td>Pre-futures</td>
<td>SENSEX</td>
<td>Monday, Tuesday, &amp; Friday</td>
<td>SENSEX</td>
<td>October, January</td>
</tr>
<tr>
<td>Post-futures</td>
<td>Nifty</td>
<td>Wednesday</td>
<td>Nifty</td>
<td>March, April, and December</td>
</tr>
<tr>
<td>Post-crisis</td>
<td>SENSEX</td>
<td>Monday</td>
<td>SENSEX</td>
<td>September, November &amp; May</td>
</tr>
<tr>
<td>Period</td>
<td>Nifty</td>
<td>Monday</td>
<td>Nifty</td>
<td>November</td>
</tr>
<tr>
<td></td>
<td>SENSEX</td>
<td>None</td>
<td>SENSEX</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td>Nifty</td>
<td>None</td>
<td>Nifty</td>
<td>September</td>
</tr>
</tbody>
</table>
identified. This co-integration may be devoted to computerized trading, growth of media and other communication channels and global linkages of stock markets all over the world.

In spite of the confirmation of calendar anomalies in Indian stock market, it is worthy to mention here that seasonality is not the ultimate factor which is leading the movements of stock prices. Seasonality is weather not the climate. It implies that the seasonal anomalies just tell for example it is the season of winter and it should be cold outside but the actual climate may vary. There may be high temperature or rainy winds may blow during December. Similarly just confirming that September is the most significant month for majority of the indices, it does not imply at all that trading of any kind of stock will be yielding excess returns. Thus due care should be taken while interpreting the results of the study.

6.1.5 Opinion Survey

The fifth chapter is based on opinion survey conducted after getting confirmation of existence of seasonality in Indian stock markets. Survey was carried out with a structured questionnaire designed to have 21 strategies based on three dimensions of stock prices’ behaviour namely fundamental analysis, technical analysis and seasonality. The responses were analyzed using z-test and ANOVA and results have been summarized in following paragraphs.

Respondents’ preferences were analyzed on the basis of percentage for different points on the scale. The important conclusion was the refutation of seasonal trends by majority of respondents whereas fundamental attributes were accepted by many of them. The three most supported strategies were as follows:

- Buy Stock which has announced good quarterly results
- Buy Stock which is most actively traded
- Buy Stock for which good news is expected

On the other hand, the three least preferred strategies were as follows:

- Pre-holiday Effect
- Contrarian Effect
January Seasonality Effect

For overall opinion, significant opinion was received on agreement side for the following strategies – “Buy Stock for which good news is expected”, “Buy Stock which is most actively traded” and “Buy Stock which has announced good quarterly results” whereas opinion for following strategies were significant but on disagreement side – “Pre-Holiday Effect”, “Contrarian Effect”, “April Effect”, “January Seasonality Effect”, “Month End Effect”, “Buy Stock whose prices gone down by 20%” and “Leverage Effect”. Thus strategies for significant seasonal trends were all on disagreement side whereas significant opinion for strategies relating to fundamental and technical analysis had varied views.

For strategies - “Month End Effect”, “Follow the investment behavior of FIIs” and “Buy Stock on the basis of 30 days moving average” female respondents were more on disagreement side when compared to male respondents. On the contrary for “Buy Stocks whose prices gone down by 20%” male respondents were on disagreement side and female respondents were on agreement side. These show very dissimilar views of male and female respondents. When age-wise opinion was analyzed it was found that for – “Buy Stock which is expected to announce bonus issue and/or stock split” and “Buy Stock on the basis of 30 days moving average” opinion of only younger respondents (18-24 years of age) were on agreement side as compared to elder ones. For “Buy Stock which has announced good quarterly results” respondents of all age groups are on agreement side with younger respondents being highly agreed. Further it was also observed that with the increase in age the favored opinion gradually transforms to opposite opinion.

When opinions were analyzed on the basis of education, significant opinion was received for “Momentum Effect” for which only post graduates were on agreement side. Amongst others, those with senior secondary had highest disagreed opinion. Next, on the basis of experience, only one significant opinion could be received for “Buy Stock which is expected to announce bonus issue and/or stock split” and it was observed that less experienced respondents have opinion on agreement side which gradually turns out to be on disagreement side with the increase in experience. Again when responses were analyzed on the basis of trading
frequency only one significant opinion was received for “Value Effect” and opinion which is on agreement side for less frequent traders gets converted onto disagreement side for more frequent traders.

When responses were tested on the basis of category of participation of respondents, it was found that for – “Size Effect”, “Leverage Effect” and “Day of the week Effect” opinions of both equity analysts and individual investors are on disagreement side whereas those of fund managers are on agreement side. For opinions examined on the basis of portfolio value, it was found that for all significant strategies – “Value Effect”, “January Seasonality Effect” and “April Effect”, opinions of respondents with the lowest portfolio value group were on highly disagreement side. With the increase in portfolio value, opinions got converted onto agreement side.

6.2 SCOPE FOR FURTHER RESEARCH

Research often raises more questions than it does answer; therefore recommendations for future research are made where relevant questions were not answered by the data analyzed. The present study purports to investigate seasonality in Indian stock markets. However it could not cover certain aspects, which leave a starting point or a research gap for future researchers. In the view of limitations of the study, following areas may be of interests for further research:

i. As for some of the indices average data could not be used due to unavailability, in future when sufficient data are available, one can use average prices for those indices also and may come up with some interesting findings.

ii. Although seasonality in stock returns is proved in this study but study of calendar effects could be extended to derivatives and commodities market. This endeavor is left for future research.

iii. To overcome the limitations of GARCH model, newer variations of GARCH like EGARCH, TARCH etc. may be used in future researches.
iv. Holiday Effects and some other effects may also be tested as they may yield some interesting findings because India is the country of festivals and the holidays for festivals have a great significance for almost all businesses.

v. After liberalization, globalization and innovations in information technology, Indian stock markets now have strong linkages with international stock markets. For that a study may be conducted to analyze calendar effects in international markets and also their results can be compared with those of Indian stock markets.

vi. Although present study proves the existence of seasonality in Indian stock market but whether it can yield abnormal results when applied on individual stocks, is still left untested. Therefore, using a GARCH specification for an individual stock, a forecast may be made and then compared with actual price.
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