Chapter VI
Analysis of the Holiday Effect
An attempt has been made in this Chapter to investigate the Holiday Effect in the Indian Stock Market. According to the Holiday Effect, the stock shows abnormally high return on days prior to Holidays. To measure the Holiday Effect, the trading days have been classified into three categories such as, Weekdays, Pre-Holidays and Post Holidays. Weekday is the day which has both at least one preceding and one succeeding day as trading days. Pre-Holiday is the day which has at least one preceding day as trading day but at least one succeeding day as holiday. Post-Holiday is the day which has at least one preceding day as holiday, but at least one succeeding day as trading day.

Analysis of the Holiday Effect

As stated earlier, the analyses of the Holiday Effect were tested with the help of OLS Regression Model. The analysis of the Holiday Effect is arranged as follows.

6.1 Analysis of Descriptive Statistics for S&P CNX Nifty Index
6.2 Analysis of Linear Regression Model for S&P CNX Nifty Index
6.3 Analysis of Descriptive Statistics for S&P CNX 500
6.4 Analysis of Linear Regression Model for S&P CNX 500 Index
6.5 Analysis of Descriptive Statistics for BSE Sensex Index
6.6 Analysis of Linear Regression Model for BSE Sensex Index
6.7 Analysis of Descriptive Statistics for BSE 500 Index, and
6.8 Analysis of Linear Regression Model for BSE 500 Index

6.1 Analysis of Descriptive Statistics for S&P CNX Nifty Index

The Results of Descriptive Statistics for S&P CNX Nifty Index from April 2002 to March 2010 are presented in Table-6.1. The analysis clearly shows that the Pre-Holiday mean returns was higher (0.2040) than the returns for Other Days i.e. Post-Holidays and Week Days. The Highest Value (2.1194) of Standard Deviation was recorded for the Post Holidays and the Least Value (1.5627) of Standard Deviation was recorded for the Weekdays. It is to be noted that the abnormal Pre-Holiday return was not attributable to the increased risk. Hence investors are advised to sell their holdings on Pre-Holidays. It will give better returns to the investors. The most plausible reason for the Pre-Holiday Effect is the news of depressed stock prices that tend to come at the Weekend. It is to be noted that the Good News are generally released only on the days before the market closure.
**Chart-6.1** elucidates the Results of Average Daily Returns during Pre-Holidays, Post-Holidays and Weekdays for S&P CNX Nifty Index from April 2002-March 2010. It clearly shows that the Pre-Holiday return was higher than the mean return of Other Days. The least return was reported for Weekdays during the study period.

### 6.2 Analysis of Linear Regression Model for S&P CNX Nifty Index

The Results of Linear Regression for S&P CNX Nifty Index from April 2002 to March 2010 are presented in **Table-6.2**. It is to be noted that the benchmark in the model is Pre-Holiday represented by the Intercept. The coefficient of Pre-Holidays was positive and significant at 5% level. It is found from the above Table that there was significant difference between the returns of Pre-Holidays and Other Trading Days. Besides, the Post-Holidays and Weekdays returns were negative and also insignificant. The insignificant F-value (1.4999) clearly indicates that the overall fit of the model is poor. Hence the Null Hypothesis (NH₃), “The returns among the pre and post holidays are not significant”, is accepted. The Pre-Holiday Effect was not observed in the S&P CNX Nifty Index Returns during the study period. Hence investors are advised to note the above facts before investing.

### 6.3 Analysis of Descriptive Statistics for S&P CNX 500 Index

**Table-6.3** exhibits the Results of Descriptive Statistics for S&P CNX 500 Index from April 2002 to March 2010. The highest mean returns (0.2163) in Pre-Holidays and lowest mean return (0.0419) in Post-Holidays were recorded during the study period. But the Standard Deviation of returns on Pre-Holiday was lower than Post-Holidays. Thus higher returns were accompanied by lower risks for Pre-Holidays but lower returns by higher risks for the Post-Holidays. The results go against the Capital Asset Pricing Model which states that higher risk is compensated by higher return and lower risk by lower return. It is suggested that the Market Regulator may take necessary steps to control the Risk and Return Tradeoff.

The Results of Average Daily Returns by Pre-Holidays, Post-Holidays and Weekdays for S&P CNX 500 Index from April 2002-March 2010 are given in **Chart-6.2**. The above Chart clearly reveals the fact that the Pre-Holiday return was higher than the mean return of Post-Holidays and Weekdays. The least return was recorded in Post-Holidays during the study period.
Table-6.1
The Results of Descriptive Statistics for S&P CNX Nifty Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading Days</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-holiday</td>
<td>432</td>
<td>0.2040</td>
<td>1.7722</td>
<td>0.0853</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>471</td>
<td>0.0430</td>
<td>2.1194</td>
<td>0.0977</td>
</tr>
<tr>
<td>Weekdays</td>
<td>1092</td>
<td>0.0407</td>
<td>1.5627</td>
<td>0.0473</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS

Chart-6.1

Source: Computed from Table-6.1.
Table-6.2
The Results of Linear Regression Analysis for S&P CNX 500 Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading days</th>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.2059</td>
<td>0.0844</td>
<td>2.4403</td>
<td>0.0148**</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>-0.1623</td>
<td>0.1168</td>
<td>-1.3892</td>
<td>0.1649</td>
</tr>
<tr>
<td>Weekdays</td>
<td>-0.1660</td>
<td>0.0996</td>
<td>-1.6669</td>
<td>0.0957</td>
</tr>
<tr>
<td>R Square</td>
<td>0.0015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R Sq.</td>
<td>0.0005</td>
<td>P-value</td>
<td></td>
<td>0.2234</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS

**Significant at 5% level.

Table-6.3
The Results of Descriptive Statistics for S&P CNX 500 Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading Days</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-holidays</td>
<td>431</td>
<td>0.2163</td>
<td>1.6931</td>
<td>0.0816</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>468</td>
<td>0.0419</td>
<td>2.0975</td>
<td>0.0970</td>
</tr>
<tr>
<td>Weekdays</td>
<td>1094</td>
<td>0.0527</td>
<td>1.5344</td>
<td>0.0464</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS

Chart-6.2
Average Daily Returns of Pre, Post-Holidays and Weekdays for S&P CNX 500 Index from April 2002 to March 2010

Source: Computed from Table-6.3.
6.4. Analysis of Linear Regression Model for S&P CNX 500 Index

Table-6.4 shows the Results of Linear Regression for S&P CNX 500 Index from April 2002 to March 2010. The above Table clearly states that average Pre-Holiday return was positive and significant at 1% level. It indicates that there was significant difference between the Pre-Holidays return. But the R square value was low and also the F-value of 1.6663 was not significant at 5% risk level. In other words, there was no clear evidence to reject the Null Hypothesis (NH3), “The returns among the pre and post holidays were not significant”.

6.5. Analysis of Descriptive Statistics for BSE Sensex Index

From the examination of the Table-6.5, it is clear that the minimum average return was recorded on Weekdays and maximum return was registered on Pre-Holidays. The Highest Standard Deviation (2.1097) was recorded in Post-Holidays and the Lowest Standard Deviation (1.5404) was recorded for Weekdays during the study period. It indicates that the market was more volatile during Post Holidays and least volatile on Weekdays. The reasons for high Pre-Holidays returns may be due to psychological reasons.

Chart-6.3 gives the diagrammatic representation of the Average Daily Returns during Pre-Holidays, Post-Holidays and Weekdays for BSE Sensex Index from April 2002 to March 2010. The above Chart clearly shows that the highest mean return was recorded during Pre-Holidays and lowest mean return was recorded on Weekdays during the study period.

6.6 Analysis of Linear Regression Model for BSE Sensex Index

Table-6.6. demonstrates the Results of Linear Regression for BSE Sensex Index from April 2002 to March 2010. It is to be noted that the results of BSE Sensex are similar to the Results of S&P CNX 500 and Nifty Index returns, as discussed earlier. The above Table clearly shows that the coefficients of Post-Holidays (-0.1632) and Weekdays returns (-0.1769) were negative and also insignificant during the study period. The Pre-Holiday return was higher than that of Post-Holidays and Weekdays and statistically significant at 1% level. It indicates that there was significant difference between the Pre-Holidays return. However, the insignificant F-value (1.6923) did not confirm the Pre-Holiday Effect during the study period.
Table-6.4
The Results of Linear Regression Model for S&P CNX 500 Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading days</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.2185</td>
<td>0.0825</td>
<td>2.6471</td>
<td>0.0082*</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>-0.1769</td>
<td>0.1143</td>
<td>-1.5481</td>
<td>0.1218</td>
</tr>
<tr>
<td>Weekdays</td>
<td>-0.1666</td>
<td>0.0974</td>
<td>-1.7107</td>
<td>0.0873</td>
</tr>
<tr>
<td>R Square</td>
<td>0.0017</td>
<td>F-statistic</td>
<td></td>
<td>1.6663</td>
</tr>
<tr>
<td>Adjusted R sq.</td>
<td>0.0007</td>
<td>P-value</td>
<td></td>
<td>0.1892</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS.
* Significant at 1% level.

Table-6.5
The Results of Descriptive Statistics for BSE Sensex Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading Days</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-holidays</td>
<td>432</td>
<td>0.2137</td>
<td>1.7491</td>
<td>0.0842</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>471</td>
<td>0.0525</td>
<td>2.1097</td>
<td>0.0972</td>
</tr>
<tr>
<td>Weekdays</td>
<td>1092</td>
<td>0.0404</td>
<td>1.5404</td>
<td>0.0466</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS

Chart-6.3
Average Daily Returns of Pre, Post-Holidays and Weekdays for BSE Sensex from April 2002 to March 2010

Source: Computed from Table-6.5.
Table-6.6
The Results of Linear Regression Model for BSE Sensex Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading days</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.2163</td>
<td>0.0835</td>
<td>2.5908</td>
<td>0.0096*</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>-0.1632</td>
<td>0.1156</td>
<td>-1.4120</td>
<td>0.1581</td>
</tr>
<tr>
<td>Weekdays</td>
<td>-0.1769</td>
<td>0.0985</td>
<td>-1.7957</td>
<td>0.0727</td>
</tr>
<tr>
<td>R Square</td>
<td>0.0017</td>
<td></td>
<td></td>
<td>1.6923</td>
</tr>
<tr>
<td>Adjusted R Sq.</td>
<td>0.0007</td>
<td></td>
<td></td>
<td>0.1844</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS
* Significant at 1% level.

Table-6.7
The Results of Descriptive Statistics for BSE 500 Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading days</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-holidays</td>
<td>432</td>
<td>0.2215</td>
<td>1.6984</td>
<td>0.0817</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>471</td>
<td>0.0448</td>
<td>2.0967</td>
<td>0.0966</td>
</tr>
<tr>
<td>Weekdays</td>
<td>1092</td>
<td>0.0536</td>
<td>1.5332</td>
<td>0.0463</td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS

Chart-6.4
Average Daily Returns of Pre, Post-Holidays and Weekdays for BSE 500 Index from April 2002 to March 2010

Source: Computed from Table-6.7.
6.7 Analysis of Descriptive Statistics for BSE 500 Index

The Results of Descriptive Statistics for BSE 500 Index from April 2002 to March 2010 are presented in Table-6.7. It is observed from the above Table that the average return of Pre-Holidays was higher than the returns of Post-Holidays and Weekdays. The lowest mean return (0.0448), with high Standard Deviation (2.0967), were recorded for Post-Holidays return. It indicates that there was non-linear relationship between risk and return. In other words, there was high return, for low risk. Hence it is suggested that Regulators should control the same. The high Pre-Holiday return was the result of the good news which was similarly associated with the Friday Effect (Karmakar, Chakraborty, 2000). Another possibility for this is that Holiday euphoria leads to short covering and general buying pressure.

The Results of the average daily returns during Pre-Holidays, Post-Holidays and Weekdays for BSE 500 Index from April 2002 to March 2010 are presented in Chart-6.4. The above Chart clearly shows that the highest return was recorded for Pre-Holidays and the lowest return recorded for the Post-Holidays during the study period.

Table-6.8
The Results of Linear Regression Model for BSE 500 Index Daily Returns for Pre, Post-Holidays and Weekdays from April 2002 to March 2010

<table>
<thead>
<tr>
<th>Trading Days</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.2236</td>
<td>0.0826</td>
<td>2.7066</td>
<td><strong>0.0069</strong>*</td>
</tr>
<tr>
<td>Post-holidays</td>
<td>-0.1789</td>
<td>0.1144</td>
<td>-1.5637</td>
<td>0.1181</td>
</tr>
<tr>
<td>Weekdays</td>
<td>-0.1705</td>
<td>0.0975</td>
<td>-1.7485</td>
<td>0.0805</td>
</tr>
<tr>
<td>R Square</td>
<td>0.0017</td>
<td>F-statistics</td>
<td>1.7256</td>
<td></td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.0007</td>
<td>P-value</td>
<td>0.1783</td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed from PROWESS
* Significant at 1% level.

---

6.8. **Analysis of Linear Regression Model for BSE 500 Index**

Table-6.8 exhibits the Results of Linear Regression for BSE 500 Index from April 2002 to March 2010. The above Table clearly reveals that the Coefficient of Intercept was high and positively significant at 1% risk level. The Post-Holidays and Weekdays witnessed negative and insignificant returns. Therefore investors are advised to buy shares on Pre-Holidays rather than on Other Days (Post Holidays and Weekdays). The analysis indicates that there was significant difference between the Pre-Holidays return. The study also found that there was no significant difference between the returns of Post-Holidays and Weekdays return. But the F-value is not significant at 5% risk level and hence the Null Hypothesis (NH₅), “The returns among the Pre and Post Holidays are not significant”, is accepted. In short, the Holiday Effect did not exist in BSE 500 Index Returns during the study period.

**Testing of Null Hypothesis (NH₅)**

The Pre-Holiday returns were significant in all sample indices. But the F-value was not significant and hence the Null Hypothesis (NH₅), “The returns among the Pre and Post Holidays are not significant”, is accepted.

The overall analysis of the Holiday Effect clearly indicates that the average Pre-Holidays return was significantly higher than the mean returns of Other Days. The Standard Deviation of returns on Pre-Holiday was lower than Post-Holidays. Thus higher returns were accompanied by lower risks for Pre-Holidays but lower returns by higher risks for the Post-Holidays. The Linear Regression Analysis clearly shows that there was significant difference between the Pre-Holidays returns. But the F-Value was not significant at 5% risk level and hence the Holiday Effect did not exist for all the sample indices during the study period. The finding of the study may serve as a guide to the investors, both individual and institutional. The trading strategy based on the results of this study should be to sell the stocks on Pre-Holiday and to defer purchases planned on Pre-Holiday, to Other Days.