The Journal of Sri Krishna Research & Educational Consortium
INTERNATIONAL JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT RESEARCH
Internationally Indexed & Listed Referred e-Journal

HOLIDAY EFFECTS AND INDEX RETURNS: EVIDENCES FROM THE INDIAN STOCK MARKET

DR.P.NAGESWARI*; DR.M.SELVAM**

*Guest Faculty,
Department of Commerce and Financial Studies,
Bharathidasan University,
Tiruchirappalli - 620024.
**Associate Professor and Head,
Department of Commerce and Financial Studies,
Bharathidasan University,
Tiruchirappalli - 620024.

ABSTRACT

The Holiday Effect Anomaly in stock returns is well-documented in financial literature. When a Calendar Anomaly is detected in stock returns, it is not always necessary that a trading rule, resulting from that anomaly, will be advantageous to the investors because of the impact of increased transaction costs. The Holiday Effect indicates that Pre-Holiday returns generate substantial percentage of the total return of the stock market while exhibiting below-average variation in returns. For the purpose of this study, the S&P CNX 500 Index data were collected and analyzed for a period of ten years. This study found that there was highest and insignificant Pre-Holiday Returns recorded during the study period.

KEYWORDS: *Holiday Effect, Calendar Anomaly, Indian Stock Market, Pre-Holiday Returns, S&P CNX 500 Index.*

INTRODUCTION

The calendar-based regularities such as the positive and significant Pre-Holiday Return Effect were a staple of the finance literature during the late 1980s and early 1990s. The findings for the US, as documented in Lakonishok and Smidt (1988) and Ariel (1990), triggered a welter of studies across markets. In general, the Stock Market Anomalies challenge the concept of Stock Market Efficiency. A unique stock market anomaly that has been previously detected by researchers is referred as the Holiday Effect in stock returns. The Holiday Effect indicates that the pre-holiday returns generate substantial percentage of the total return in the stock market. Many researchers indicate that there was a strong holiday effect up to 1987 in the U.S. stock market. However, this return anomaly became somewhat less significant since 1987. Additionally, some researchers indicate that the holiday return effect is not generally

interrelated with other calendar regularities (Jayen B. Patel, 2010). A number of stock market advisors have also noted the pre-holiday strength.

The Holiday Effect Anomaly in stock returns has been extensively examined and has been largely detected during different time periods. The Stock Market Anomaly should disappear after it is well-publicized because more investors will trade based on that anomaly. The anomaly will then be not profitable to the investors. The findings of previous research indicate that the holiday effect is not prevalent in recent years in the U.S. stock market. However, the existence of the holiday effect in non-U.S. stock markets is less clear and is somewhat mixed. In the next section, the study briefly discusses the relevant literature (Jayen B.Patel -2010).

The holiday effect has been one of the most persistent and best documented anomalies of efficient market theory. Trading on the day before holidays has produced consistently high returns, measured for various time periods along many indices. For example, Fosback (1991) examined rates of return on the two trading days before holidays, using the S&P 500 Index, which advanced from 17.53 in 1928 to 90.19 in 1975, an increase of 414%. He found excess returns that can only be described as astonishing. He discovered that the S&P 500 increased a total of 778% on the two days before holidays and decreased a total of 41% on all other days. Thus, an investor in the market only 16 to 18 days per year would have earned almost double the return of an investor in the market for the entire 48 years (Roger C. Virgin et al - 1999).

REVIEW OF LITERATURE

A brief review of select studies is presented here. Lakonishok and Smidt (1988) examined the holiday effect in the U.S. stock market. They documented pre-holiday returns in the Dow Jones Industrial Average (DJIA) are significantly higher than that of the other trading days for the 1897 to 1986 period. More specifically, they found pre-holiday returns were approximately twenty-three times greater than the returns of other trading day. They further revealed preholiday returns generated around fifty percent of the total returns of the DJIA for the overall time period examined in their study. Ariel (1990) explains that stock returns on days before holidays are approximately nine to fourteen times larger than that of an average trading day of the year. The study used CRSP (Center for Research in Security Prices) equally-weighted and value-weighted stock indices and found that stock returns generated one third of the total return of a year in eight trading days before holidays (pre-holidays) for each year. Chan-Wung Kim and Jinwoo Park (1994), provided evidence of the holiday effect in stock return. The study reported that there was abnormally high return in the trading markets in USA, namely, the NYSE, AMEX and NASDAQ. The holiday effect was also present in the UK and Japanese stock markets. According to them, the anomaly is not unique to institutional factors or any unique country's Stock Market. Roger C.Vergin and John McGinnis (1999) found that the holiday effect was disappeared for large corporations but persisted for small corporations. The study also found that there was no longer a holiday effect large enough to offset transactions costs, even for small stocks and the profit potential of this anomaly essentially disappeared. Madhusudan Karmarkar and Madhumitha Chakra Borty (2000) examined the holiday effect which implied that stock showed abnormally high return on days prior to holidays. This study investigated holiday effect in Indian Stock Market by comparing the mean return of pre holiday, post holiday and weekday. McGuinness (2005) finds a robust pre-holiday return effect for the Hong Kong stock returns for the period March 1975 to February 2005.

It seems that many researchers have indicated that the holiday effect has largely diminished in the American Stock Market after 1987. Alternately, some researchers indicate that the holiday effect continues to be present in recent years in some foreign stock markets. The above studies provide an overview of the earlier studies carried out in the area under study. This study examines recent data of the Indian Stock Market for the holiday effect. The Indian Stock Market is uniquely different from other major developed as well as emerging stock markets. Therefore, this study will provide additional evidence on the holiday effect by examining the Indian Stock Market.

STATEMENT OF THE PROBLEM

Firms, Government and other stakeholders generally release good and bad news announced during pre and post-holidays. The bad news is reflected in lower stock prices and good news is reflected in higher stock prices. The results from previous studies relating to the significance of higher pre-holiday returns than other trading days that appears to be unclear. It seems, many researchers have indicated that the holiday effect has largely diminished in the American Stock Market after 1987. Some researchers indicate that the holiday effect continues to be present in recent years in some foreign stock markets. In general, there has been little published work on holiday effect in the Indian Stock Market. In this environment, it is necessary to study the Holiday Effects in Indian Stock Market. Hence this study gains importance.

OBJECTIVES OF THE STUDY

The present study intends to discover whether the Holiday Effect exists in Indian Stock Market.

HYPOTHESIS OF THE STUDY

The study tested the following Null Hypothesis.

NH_1: There is no significant difference among the returns of pre, post-holidays and weekdays.

METHODOLOGY OF THE STUDY

A) SAMPLE SELECTION

The S&P CNX 500 is India's first broad based benchmark. Hence, for the purpose of this study, S&P CNX 500 Index was considered as the sample Index. Besides, this is the best indicator of the performance of the whole economy.

B) SOURCES OF DATA

The required information for the present study was the daily closing prices of S&P CNX 500 Index. They were collected from the Prowess, a corporate database maintained by CMIE.

C) PERIOD OF THE STUDY

The present study covered for a period of ten-years from 1st January 2001 to 31st December 2010.

HOLIDAY EFFECT

Holiday Effect implies that the stock shows abnormally high return on days prior to holidays. To measure the holiday effect, the trading days were 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.

TOOLS USED FOR ANALYSIS

In this study, independence of return series was investigated for S&P CNX 500 Index. The following were calculated.

1. RETURNS

To compute the daily returns for each of the index series, the following formula was used:

$$R_t = \ln\left[\frac{I_t}{I_{t-1}}\right] * 100 \quad \text{----------(1)}$$

Where,

R_t = Daily return on the Index (I), ln = Natural log of underlying market series (I),

I_t = Closing value of a given index (I) on a specific trading day (t), and

I_{t-1} = Closing value of the given index (I) on preceding trading day (t-1).

2. DESCRIPTIVE STATISTICS

In this part, statistics of the Daily Return (mean), Standard Deviation, Skewness, Kurtosis and Jarque-Bera Tests were used for analysis.

A) MEAN

Mean is the average value of the series, obtained by adding up the series and dividing by the number of observations. It is the most common measure of central tendency.

$$Mean = \frac{1}{n}\sum_{i=1}^{n} X_i \quad \text{----------(2)}$$

Where,

$\bar{x}$ = represents the mean. $\sum$ = Symbol of Summation

Xi =Value of the i^{th} item x, i= 1, 2, 3 ….n

n=total Number of items

3. OLS REGRESSION MODEL

In order to test the equality of mean returns across pre, post and week days and the following Ordinary Least Squares (OLS) regression was run for the study period.

$$R_{it} = \alpha_{1i} D_{1t} + \alpha_{2i} D_{2t} + \alpha_{3i} D_{3t} + V_{it} \quad \text{(3)}$$

In the model, R_{it} is the return of the index on day t, D_{1t} is a dummy variable for pre-holiday taking the value of 1 for all pre-holiday observations and zero otherwise. D_{2t} is a dummy variable for post-holiday taking the value of 1 for all post-holiday observation and zero otherwise and so on. The α is the coefficient that is estimated for each variable. V_{it} is the disturbance term.

The null hypothesis tested is: $H_o = \alpha_1 = \alpha_2 = \alpha_3 = (0)$ ----------(4)

RESULTS AND ANALYSIS OF THE STUDY

1. ANALYSIS OF DESCRIPTIVE STATISTICS FOR S&P CNX 500 INDEX

Table-1 exhibits the results of Descriptive Statistics for S&P CNX 500 Index from January 2001 to December 2010. It is to be noted that during the study period, the Highest Mean Returns (0.1134) was recorded for Pre-Holidays and the Lowest Mean Return (0.0526) was recorded for Weekdays. But the Standard Deviation of returns for these days was reverse. The Standard Deviation of returns on Weekday was lower than Pre and Post-Holidays. It is surprising that low returns were accompanied by higher risks during Post-Holidays but high reuturns with lower risks were recorded during the Pre-Holidays. These results seem contrary to the Capital Asset Pricing Model which states that higher risk is usually compensated by higher return and lower risk by lower returns. The above Table also shows that during the study period, the maximum (15.034) and minimum (-12.8847) returns were recorded during post-holidays. It is to be noted that the Skewness of the return distribution was negatively skewed for all Pre, Post and Weekdays. The Kurtosis measure of the return distribution was Leptokurtic and it was the highest(12.82) on post-holidays during the study period. Jarque-Bera Test clearly indicates that the returns for Pre, Post-Holidays and Weekdays were not normally distributed.

Chart -1 exhibits the average daily return of Pre, Post and Weekdays for S&P CNX 500 Index for the period from 1st January 2001 to 31st December2010. It is clearly understood that the mean return of Pre-Holiday was higher than that of Post-Holidays and Weekdays.

2. ANALYSIS OF OLS REGRESSION MODEL FOR S&P CNX 500 INDEX

The results of OLS regression for S&P CNX 500 Index are given in Table-2. The benchmark day in the model is pre-holiday, represented by the intercept (C) which provided a

return of 0.11 percent on an average of the sample period. The coefficient of pre-holiday was not significant at 5 percent level, which indicates that there was no Pre-Holiday Effect in S&P CNX 500 Index returns. Further, none of the coefficients was significant at conventional levels of significance, indicating that there was no Holiday Effect in the S&P CNX 500 Index returns. Hence the Null Hypothesis (NH_1), "There is no significant difference among the returns of pre, post-holidays and weekdays" is accepted. It is to be noted from the above Table that R^2 at 0.0002 was low. F-statistic indicates that the overall fit of the model was poor. Further, Durban-Watson Statistics of 1.86 indicates autocorrelation in the residuals.

SUMMARY OF FINDINGS AND SUGGESTIONS OF THE STUDY

The following are the important findings of the present study.

- The highest mean returns (0.1134) was recorded for pre-holidays and the lowest mean return (0.0526) was recorded for weekdays during the study period. Therefore, it is suggested that investors may sell their holdings on Pre-Holidays and plan their purchases on Pre-Holiday to Other Days (Post holidays and Weekdays). It will give better returns to the investors.

- The Standard Deviation of returns on Weekdays (1.5056) was lower than Pre and Post-Holidays (1.7241& 2.0084). In other words, lower returns were accompanied by higher risks for Post-Holidays but the higher reuturns with lower risks for the Pre-Holidays. It is suggested that the market regulator may take necessary steps to control the Risk & Return Tradeoff

- The skewness of the return distribution was negative for all Pre, Post-Holidays and Weekdays. The kurtosis measure of the return distribution was leptokurtic and highest(12.82) on Post-Holidays during the study period. Jarque-Bera Test clearly indicates the returns for Pre, Post-Holidays and Weekdays to be not normally distributed.

- The coefficient of Pre-Holiday was not significant at 5 percent level, which indicates that there was no Pre-Holiday Effect in S&P CNX 500 returns.

- It is to be noted that none of the coefficients was significant at conventional levels of significance, indicating that there was no Holiday Effect in the S&P CNX 500 Index returns during the study period.

- F-statistic indicates that the overall fit of the model was poor. Further, Durban-Watson Statistic of 1.86 indicates autocorrelation in the residuals.

CONCLUSION

This paper examined the existence of Holiday Effect (a Calendar Anomaly) in the Indian Stock Market. The findings of the study show that the Pre-Holiday returns in the Indian Stock Market were substantially higher than that of other days like Post-Holidays and Weekdays during the study period. The coefficient of Pre-Holiday return indicates that there was no Pre-Holiday Effect in S&P CNX 500 Index returns. Hence the Indian Stock Market is not being treated as fully efficient till now. The existence of these anomalies may provide opportunities to informed investors to formulate profitable trading strategies so as to earn abnormal returns. 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, would be to sell the stocks on Pre-Holiday and to delay purchases on Pre-Holiday to Other Days.

REFERENCES

1. Amanulla, S. and Thiripalraiu, M. 2001. Week End Effect: New Evidence from the Indian Stock Market. Vikalpa. 26(2), 33-50.

2. Amitabh Gupta 2006**.** Day of the Week Effect on the Indian Stock Market: New Evidence. The ICFAI J. of Applied Finance. 12(8), 5-14.

3. Ariel, R.A. 1990. High Stock Returns before Holidays: Existence and Evidence of Possible Causes. J. of Finance. 45, 1611–25.

4. Ash Narayan Sah. 2010. Stock Market Seasonality: A Study of the Indian Stock Market. www.nseindia.com/content/research/res_paper_final228.pdf.

5. Chan-wung Kim and Jinwoo Park. 1994. Holiday Effects and Stock Return: Further Evidence. J. of Financial and Quantitative Analysis. 29(1), 145–157.

6. Fosback, N.G. 1991. Stock Market Logic, Dearborn Financial Publishing, Inc., Chicago, IL, 159-164.

7. Hareesh Kumar, V. Malabika Deo. 2007. Efficiency of Indian Stock Market: A case of Day of the Week Effect. SMART J. of Business Management Studies. 3(2), 28-35.

8. Jayan, B. Patel. 2008. Calendar Effects in the Indian Stock Market. International Business & Economics Research J.. 7(3), 61-69.

9. Lakonishok, J. Smidt, S. 1998. Are Seasonal Anomalies Real? A Ninety Years Perspective. Review of Financial Studies. 1(4), 403-425.

10. Madhusudan Karmakar and Madhumitha Chakra Borty 2000. Holiday Effects in the Indian Stock Market. Fiancé India. 14(1), 165-172.

11. McGuiness, Paul B. 2005. A Re-Examination of the Holiday Effect in Stock Returns: The Case of Hong Kong. Applied Financial Economics. 15, 1107-1123.

12. Nageswari, P. Selvam, M. 2011. Re-Examination of the Day of the Week Effect on the Indian Stock Market: A Study With Reference to S&P CNX 500 Index. Management Trends. 8(1), 29-42.

13. Pandey, I.M. 2004. Stock Return Seasonality in the Emerging Malaysian Market. International J. of Business and Society. 5(2): 1-16.

14. Patel and Jayen, B. 2010. Holiday Effect and Daily Stock Returns in the Indian Stock Market. Available at SSRN website.

15. Roger, C. Vergin and john McGinnis. 1999. Revisiting the Holiday Effect: is it holiday?**.** Applied Financial Economics. 9, 477-482.

16. Sarma, S.N. (2004). Stock Market Seasonality in an Emerging Market. Vikalpa. 29(3), 35-41.

17. Selvarani, M. Leena Jenefa. 2009. Calendar Anomalies in the National Stock Exchange (NSE) Indices. The ICFAI J. of Applied Finance. 15(1): 56-67.

TABLE-1

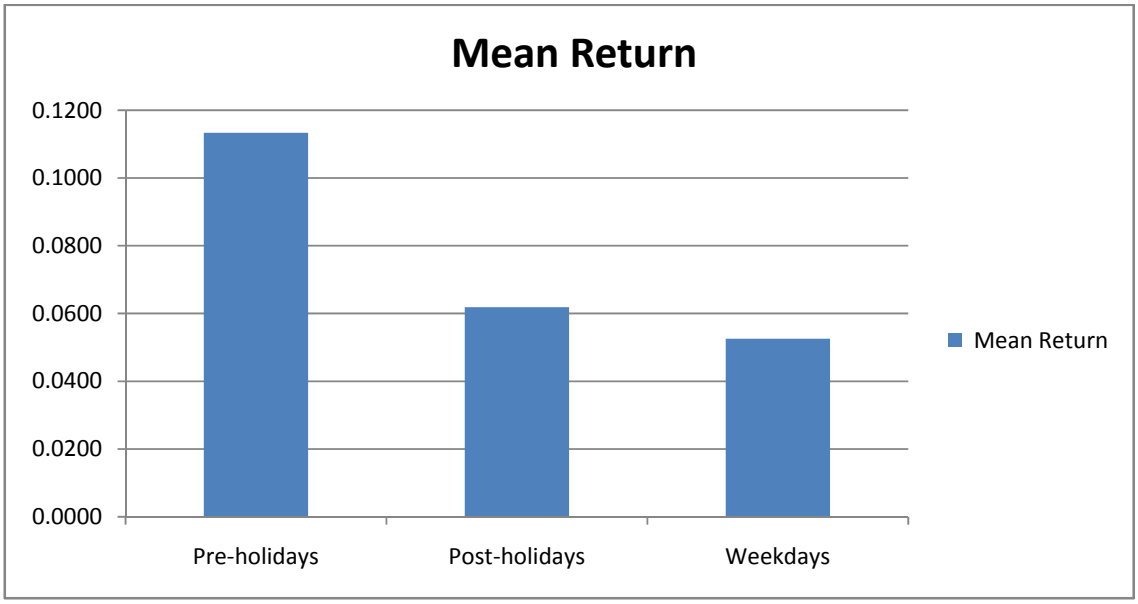
RESULTS OF DESCRIPTIVE STATISTICS FOR S&P CNX 500 INDEX FROM 1ST JANUARY 2001 TO 31ST DECEMBER 2010

Statistics	Pre-holidays	Post-holidays	Weekdays
Mean	0.1134	0.0618	0.0526
Median	0.2861	0.3183	0.1363
Maximum	6.7966	15.0340	7.6945
Minimum	-11.5922	-12.8847	-7.0410
Std. Dev.	1.7241	2.0084	1.5056
Skewness	-1.3921	-0.4730	-0.2201
Kurtosis	7.8263	9.9239	3.2878
Jarque-Bera	1523.39	2360.15	624.30
Probability	0	0	0
Observations	540	581	1375

Source: Computed from PROWESS

CHART-1

AVERAGE DAILY RETURNS BY PRE, POST-HOLIDAYS AND WEEKDAYS FOR S&P CNX 500 INDEX FROM 1ST JANUARY 2001 TO 31ST DECEMBER 2010



Source: Computed from Table-1

TABLE-2

RESULTS OF OLS REGRESSION FOR S&P CNX 500 INDEX FROM 1ST JANUARY 2001 TO 31ST DECEMBER 2010

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Post-Holidays	-0.0534	0.1004	-0.5314	0.5952
Weekdays	-0.0635	0.0853	-0.7445	0.4566
C	0.1153	0.0723	1.5944	0.1110
R-squared	0.0002	F-statistic		0.2820
Durbin-Watson statistics	1.7834	Prob(F-statistic)		0.7543

Source: Computed from PROWESS.