ISO 9001 - 2015

ISSN 2349 - 4891

Monthly

IJRRAS

IF
4.665

Volume 4,Issue 2, February 2017

International Journal of

Recent Research and Applied Studies

SURRAGH PUBLICATIONS

ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Stock Market Anomaly: Evidence from Holiday Effect of Indian Stock Market

Abreha, G. Rufael[1] & Dr. V. Prabakaran[2]

[1]*Lecturer, Head, Department of Accounting and Finance, College of Business and Economics, Adigrat University, Adigrat, Ethiopia.*
[2]*Assistant Professor, Department of Accounting and Finance, College of Business and Economics, Adigrat University, Adigrat, Ethiopia.*

Received 25th December 2016, Accepted 1st February 2017

Abstract

This paper analyses the presence of the calendar anomaly, like Holiday effect in the Indian stock market over a past decade during 2006 to 2015 based on market returns. The sample constitutes of the BSE Sensex and NSE Nifty. The study empirically defines the existence of the Holiday effects on the returns of the index. In this study Regression test were used to find the significant difference among the returns of Pre, Post-Holidays and weekdays. In the findings of the study the returns among the Post-Holidays and Pre-Holiday are significant in the BSE Sensex and there was no significant difference between the returns of Pre-Holiday and weekdays in NSE Nifty. The significant F-value (2.357) clearly indicates that the overall fit is moderate. The Pre-Holiday was recorded good returns in Sensex and Nifty during the study period. Hence, the investor considers and note evidences before investing the market.

Keywords: Market Anomalies, Holiday-effect, Efficient Market Hypothesis.

Introduction

Stock market efficiency is an important concept because it helps us to know the working of the markets. The term, market efficiency, explains the relationship between information and share prices in the stock market. Market efficiency influences the investment strategy of an investor because in an efficient market, there would be no undervalued or overvalued stocks. It indicates that the stocks will not yield returns higher than the deserved expected returns. Efficient Market Hypothesis (EMH) suggests that all securities are priced efficiently to fully reveal the intrinsic value of the stocks. An efficient market is one where all unemployed returns are eliminated by arbitrage. However, in the perspective of financial markets, especially in the case of equity returns, several seasonal effects, that create higher or lower returns depending on the time, have been noted. They are called 'Anomalies' because they cannot be explained by traditional asset pricing models. The investors aim to develop trading plans which enable them to earn abnormal profits on the basis of such anomalies.

Anomalies are one of the features of financial market. It exists due to deviation in normal behaviors of stocks with respect to time periods. These include turn-of-year, turn-of week effect, weekend effect, Monday effect, January effect, Holiday effect and so on., there are different possible causes of theses anomalies such as new information is not adjusted quickly, different tax treatments, cash flow adjustments and behavioral restrictions of investors. According to the Holiday effect, the stock shows abnormally high return on days prior to Holiday. To measure the Holiday effect, the trading days have been classified into three categories like, Pre, Post-Holiday and weekdays. 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 and weekdays is the day which has both at least one preceding and one succeeding day as trading days.

Correspondence
Abreha, G. Rufael
Adigrat University, Adigrat, Ethiopia

Review of Literature

A few studies had been made which are indirectly helpful to this study such as Ariel (1990) showed using US stock market that more than one-third positive returns each year registered in the eight trading days prior to a market-closed Holiday and similar conclusion was brought by Cadsby and Ratner (1992) which documented significant Pre-Holiday effects in the European stock markets. In the study conducted by Nageswari and Selvam (2013) it is found that there was significant difference in the mean returns among the different months of the year. The analytical results of seasonality indicate that there is absence of January anomaly during the study period. Vandana Khanna (2016) examines the impact of Make in India movement on stock market anomalies with reference to BSE Sensex. The closing prices for Sensex have been taken for the purpose of analysis. However, the investor must keep in mind that these anomalies can persist or

disappear in a certain course of time. Shveta Singh and Himanshu Govil (2016), in the study reveals that the returns on different days of the week and different months of the year were not statistically different hence indicating the non-existence of any calendar anomaly in the BSE 100 index, over the period of the study. The findings are in similarity with those of some recent studies of calendar anomalies in the Indian stock markets. Sanjeet Sharma (2011) studied that the day of the week effect do not exist in the Indian stock market and this market can be considered as informational efficient. Chawla Deepak and Munish Makkad (2000) attempted to test the weak form of efficiency in India. Serial correlation and run tests were conducted on price changes and log price changes to test the random walk hypothesis. The results indicated a tilt in favour of weak form efficiency in the Indian stock market. Nath and Dalvi (2005) examined the day of the week effect anomaly during 1999 to 2003 for Nifty and found that market inefficiency exists.

Nageswari and Babu (2011) examined the Week end effect in the Indian stock market. The study found that the mean returns were positive for all days of the week, highest on Friday and lowest on Monday. It was inferred that the day of the week pattern did not exist in the Indian stock market during the study period. Nageswari P and Selvam M (2011) examined the day of the week effect during the post rolling settlement period. The study found that the highest mean return on Friday and the lowest mean return on Tuesday were observed during the study period. Further, there was strong significant positive relationship between Monday and Friday and no significant relationship among other days of the week. Olga Dodd and Alex Gakhovich (2011) investigated the Holiday effect in 14 emerging Central and Eastern European (CEE) markets showing abnormal Pre-Holiday returns. The Pre-Holiday effect is most pronounced in the earlier years of financial market operations, and its importance is declining over time but New Year and Christmas produce the highest returns and the liquidity before Holiday goes down. Nopphon Tangjitprom (2011) examines the Holiday effect in Thailand shows that Pre-Holiday returns and volatility are abnormally high. Furthermore, the longer Holiday periods tend to show higher Pre-Holiday returns. It has been noted from the review of literature very few formal attempts were made to test the Holiday effects on the Indian stock market. Beside this framework this study aims to attempt to test the presence of Holiday effects in the Indian stock market.

Objective of the study

The following is the objective of the present study.

- To analyse day of the Holiday effect in selected index in Indian stock market.

Hypothesis

In this study tested the following hypothesis.

H_0 = There is no significant difference among the returns ofPre, Post-Holiday and weekdays in BSE Sensex.

H_0 = There is no significant difference among the returns of Pre, Post-Holiday and weekdays in NSE Nifty.

Methodology of the Study

The purpose of present study was to examine the presence of the day of the Holiday effect close to observation form Indian stock market. The study was based on the secondary data and the required information for the study was daily closing prices of BSE Sensex and NSE Nifty they were collected from the concern websites.

Period of the Study

The present study covered for a period of ten years from January2005 to December 2015.

Tools for Analysis

The daily returns were calculated using log difference of the index formula as follows

$$\mathbf{R_t = In\ (P_t / P_t\ -1)*100}$$

Where,

R_t = Daily return on the Index.

In = Natural log of underlying market securities.

P_t = Closing value of Index on specific trading day

P_t-1 = Closing value of Index on preceding trading day (t-1).

a. Descriptive Statistics

In this study, mean value of daily returns in Pre, Post-Holiday and weekdays and standard deviations, Skewness and Kurtosis were used for the purpose of analysis.

b. Regression Analysis

A methodology is originally employed to test the Holiday effect in stock market adjusted returns by estimating the following regression formula.

$$Rit = \alpha_{1i}\ D1t + \alpha_{2i}D2t + \alpha_{3i}\ D3t + V_{it}$$

In this model, Rit is the return of the index on day t, D_{1t} is a dummy variable for Pre-Holiday taking the value of one for all Pre-Holiday observations and zero otherwise. D_{2t} is a dummy variable for Post-Holiday taking the value of one for all Post-Holiday observation and zero otherwise and D_{3t} is a dummy variable for weekdays taking the value of one for all week days observation and zero otherwise so on. The value of α is the coefficient that is estimated for each day of the Pre, Post- Holiday and weekdays Vit is the disturbance term.

Descriptive Statistics for BSE Sensex and NSE Nifty Index Return

The descriptive statistics of mean, standard deviation, skewness and kurtosis test for BSE Sensex daily returns for the study period from January 2006 to December 2015. It is understood that the Pre-Holiday mean returns was higher (0.110045) than the returns for Post-Holiday and weekdays. The highest value (1.80901) of standard deviation was recorded for the Post-Holiday.

The kurtosis measure of return distribution was leptokurtic for all days of the week, showing the highest value (10.269) on Post-Holiday. The return distribution is positively skewed for Post-Holiday and negatively skewed for other trading Pre-Holiday and weekdays. In case of Nifty daily returns for the same period, it shows that the Pre-Holiday mean returns was higher (0.11350) than the returns for Post-Holiday and weekdays. The highest value (1.82475) of standard deviation was recorded for the Post-Holiday, which is implies that highest risks involved in the trading day. The kurtosis measure of return distribution was leptokurtic for all days of the week, showing the highest value (12.193) on Pre-Holiday. The return distribution is positively skewed for Post-Holiday and negatively skewed for other trading Pre-Holiday and weekdays.

It is to be noted that the abnormal Pre-Holiday return was not attributable to the increased risk. Hence, the investors are advised to sell their holdings on Pre-Holiday and it will earn better returns. The most possible reason for the Pre-Holiday effect is the reports of depressed stock prices that tend to come at the weekend. It is to be noted that the good information are generally released only on the days before the market closure.

Regression Analysis for BSE Sensex and NSE Nifty Index Return

The results of linear regression for BSE Sensex, it is to be noted that the Pre-Holiday represented by the dependent variable. The coefficient of Pre-Holiday was positive with insignificant at 5 per cent level and there was no significant difference between the returns of Pre, Post-Holiday and weekdays. Besides, the Post-Holiday were positive coefficient with significant and Weekdays returns were negative and insignificant. The significant F-value (3.328) clearly indicates that the overall fit of the model is good. Hence, the null hypothesis is rejected. The returns among the Pre and Post-Holiday are significant. In case of NSE Nifty index shows that the co-efficient of Pre-Holiday was positive value with insignificant at 5 per cent level. There was no significant difference between the returns of Pre-Holiday and other trading days and the Post-Holiday were negative coefficient with insignificant. The significant F-value (2.357) clearly indicates that the overall fit is moderate. "The returns among the Pre and Post-Holiday are insignificant" hence, null hypothesis is accepted. The Pre-Holiday was observed in both Sensex and Nifty returns during the study period.

Findings of the Study

The following are important findings and suggestions of the study

1. The study found that Sensex earned highest mean return of 0.110045 on Pre-Holiday and negative mean return on weekdays during the study period. Similarly, Nifty also earned maximum mean return of 0.11350 on Pre-Holiday and negative returns on weekdays. Hence, the investors would earn good returns on Pre-Holiday.
2. The study also found that the maximum value of standard deviation was recorded on Post-Holiday and least value of standard deviation on week days for both Sensex and Nifty returns. It implies that the market was high volatile on Post-Holiday and less volatile on weekdays during the study period.
3. The kurtosis measure of return distribution was leptokurtic for Pre and Post-Holiday for Sensex and Nifty respectively.
4. It is to be noted that the return distribution is positively skewed for Post-Holiday period for both Sensex and Nifty.
5. According to the Regression analysis reveals that only one variable recorded as negative co-efficient value for weekdays and other variables like Pre and Post-Holiday show the positive co-efficient for Sensex, but NSE Nifty recorded only one positive co-efficient value for Pre-Holiday during the study period.
6. The Sensex co-efficient were significant at 5 per cent level, which implies that, there is Pre-Holiday effect among the other trading days and Nifty co-efficient were insignificant at 5 per cent level, which means there is no Pre-Holiday effect during the study period.

Conclusion

Market anomalies refer to the situation when security or group of securities performs contrary to the concepts of market efficiency. In this study to examine the Holiday-effect in Indian stock market specifically Pre, Post-Holiday and weekday's effects with BSE Sensex and NSE Nifty index returns. The importance of this study is to find out that either Holiday effect exists in Indian stock market or not and according to results of various analyses, the effect of Pre, Post-Holiday or weekdays, in which Post-Holiday was weakened. Reason behind of the weak form of Post-Holiday can be that investors avoid investing in stock market. The Pre-Holiday show the good returns among other trading days. However, the Sensex gave the better returns as compared to the Nifty Index as Post-Holiday (0.041521) during the study period.

Table 1
The Results of Descriptive Statistics for BSE Sensex Index Daily Returns for Pre, Post-Holiday and Weekdays from 1.1.2006 to 31.12.2015

Trading Days	N	Mean	Standard Deviation	Skewness	Kurtosis
Pre-Holiday	538	0.110045	1.60227	-0.576	8.195
Post-Holiday	551	0.041521	1.80901	0.342	10.269
Weekdays	1390	-0.007260	1.43794	-0.300	3.574

Source: Computed Data.

Table 2
The Results of Descriptive Statistics for NSE Nifty Index Daily Returns for Pre, Post-Holiday and Weekdays from 1.1.2006 to 31.12.2015

Trading Days	N	Mean	Standard Deviation	Skewness	Kurtosis
Pre-Holiday	538	0.11350	1.59297	-1.009	12.193
Post-Holiday	551	0.03445	1.82475	0.241	10.897
Week days	1390	-0.00867	1.44371	-0.310	3.227

Source: Computed Data.

Table 3
The Results of Linear Regression Analysis for BSE Sensex Index Daily Returns for Pre, Post-Holiday and Weekdays from 1.1.2006 to 31.12.2015

Trading Days	Co-efficient	Standard Error	T-Stat	P-Value
Intercept	0.1072	0.0690	1.5500	0.122
Post-Holiday	0.0830	0.0380	2.2170	0.027
Week days	-0.0480	0.0360	-1.3500	0.178
R^2	0.12	F- Statistic		3.328
Adjusted. R^2	0.009	P – Value		0.037

Source: Computed Data.

Table 4
The Results of Linear Regression Analysis for NSE Nifty Index Daily Returns for Pre, Post-Holiday and Weekdays from 1.1.2006 to 31.12.2015

Trading Days	Co-efficient	Standard Error	T-Stat	P-Value
Intercept	0.1150	0.069	1.6850	0.093
Post-Holiday	-0.0580	0.037	-1.5640	0.118
Week days	-0.0530	0.036	-1.4780	0.140
R^2	0.009	F- Statistic		2.357
Adjusted. R^2	0.005	P – Value		0.096

Source: Computed Data.

References

1. Archana S, Mohammed Safeer, "A Study on Market Anomalies in Indian Stock Market", *International Journal of Business and Administration Research, Review*, Vol. I, Issue No.3 pp.128-137.
2. Ariel, Robert. A, "High Stock Returns before Holiday: Existence and Evidence on Possible Causes", *Journal of Finance*, Vol. 45, pp. 1611–25.
3. Cadsby, Charles Bram, and Mitchell Ratner, "Turn-of-the-Month and Pre-Holiday Effects in Stock Returns", *Journal of Banking and Finance*, Vol. 16, pp. 497–509.
4. Chawla, Deepak and Munish Makkad, "Weak Form Efficiency in Indian Capital Market: An Empirical Investigation," *Management and Accounting Research*, Vol. 4, No. 2, pp. 67-90.

5. Cross, F, "The Behavior of Stock Prices on Friday and Mondays." *Financial Analysts Journal,* Vol. 29, pp. 67-69.
6. Gao L. and Gerhard Kling, Calendar Effects in Chinese Stock Market, *Journals of Economics and Finance,* Vol. 6, pp. 75-88.
7. Hakan, B and K. Halil, "The Day of the Week Effect on Stock Market Volatility." *Journal of Economics and Finance,* Vol. 25(2), pp. 181-190.
8. Keef. S and M. Roush, "Day of the Week Effects in the Pre-Holiday Returns of the Standard and Poor 500 Stock Index", *Applied Financial Economics*, Vol. 15, pp.107-119.
9. Kiymaz. H and Berument. H, "The Day of the Week Effect on Stock Market Volatility and Volume: International Evidence", *Review of Financial Economics,* Vol. 12(4), pp. 463-480.
10. Manish R Pathak, "Stock Market Seasonality: A Study of the Indian Stock Market (NSE)", *Indian Journal of Research*, Volume: 2, Issue: 3, pp. 200-202.
11. Nageswari and Selvam, "An Empirical Analysis of January Anomaly in the Indian Stock Market", *International Journal of Accounting and Financial Management Research (IJAFMR)* vol. 3, Issue 1, pp.177-186.
12. Nageswari, P. Babu, M, "Analysis of Week End Effect in Indian Stock Market", *SMART Journal of Business Management Studies,* Vol. 7(1), pp. 78-87.
13. Nageswari, P. Selvam, M., "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), pp. 29-42.
14. Nath, Golka C. and Manoj Dalvi, "Day of the week-effect and Market Efficiency: Evidences from Indian Equity Market Using High Frequency Data of National Stock Exchange", *The ICFAI Journal of Applied Finance,* Vol. 11, pp.21-27.
15. Nopphon Tangjitprom, "Pre-Holiday Returns and Volatility in Thai stock market", *Asian Journal of Finance & Accounting*, Vol. 2, No. 2, pp.41-54.
16. Olga Dodd, Alex Gakhovich, "The Holiday effect in Central and Eastern European financial markets", *Investment Management and Financial Innovations*, Vol. 8, Issue 4, pp. 29-35.
17. Ravi Anshuman, V and Ranadev Goswami, "Day of the Week Effects on the Bombay Stock Exchange", *the ICFAI Journal of Applied Finance*, Vol. 6(4), pp. 31-46.
18. Sanjeet Sharma, Day of Week Effect: Evidences from Indian Stock Market, *Indian Journal of Commerce & Management Studies,* Vol. 2 Issue-6, pp. 25-30.
19. Sarma, S.N, "Stock Market Seasonality in an Emerging Market", *Vikalpa*, 29(3), pp. 35-41.
20. Selvarani M and Leena Jenefa, "Calendar Anomalies in the National Stock Exchange (NSE) indices", *The ICFAI Journal of Applied Finance*, 15(1), pp. 56-67.
21. Shveta Singhand Himanshu Govil, "Market Anomalies in the Indian Stock Market: A Study of the Calendar Effect in the Bombay Stock Exchange", *Asian Research Journal of Business Management*, Issue3 (Vol. 3), pp. 170-186.
22. Vandana Khanna, "An Examination of Stock Market Anomalies: A Study in the Context of Make in India Movement", *IOSR Journal of Business and Management*, Special Issue -AETM'16, pp. 31- 36.