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EVIDENCE OF STOCK MARKET ANOMALY: THE INDIAN STOCK MARKET'S HOLIDAY EFFECT

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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.

Key Words: Market Anomalies, Holiday-effect, Efficient Market Hypothesis.

Introduction:

The idea of stock market efficiency is crucial because it enables us to understand how the markets function. The connection between information and stock market share prices is explained by the concept of market efficiency. Because there wouldn't be any undervalued or overvalued stocks in an efficient market, market efficiency affects an investor's investment strategy. It suggests that the stocks won't produce returns that are greater than the well-earned anticipated returns. According to the Efficient Market Hypothesis (EMH), all securities are priced efficiently in order to fully disclose their intrinsic value. When arbitrage eliminates all unemployed returns, the market is said to be efficient. 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.

One of the characteristics of the financial market is anomalies. It exists as a result of a departure from the typical time-series behaviour of stocks. These include the turn-of-year, turn-of-week, weekend, Monday, January, holiday, and so forth effects. A number of factors, including delayed adjustment of new information, various tax treatment, cash flow adjustments, and investor behavioural constraints, may be responsible for these anomalies. The stock exhibits an unusually high return on days before the holiday, according to the Holiday effect. 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.

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 of Pre, 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

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

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.

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

Findings of the Study:

The following are important findings and suggestions of the study

- 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.
- 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.
- The kurtosis measure of return distribution was leptokurtic for Pre and Post-Holiday for Sensex and Nifty respectively.
- It is to be noted that the return distribution is positively skewed for Post-Holiday period for both Sensex and Nifty.
- 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.
- 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.

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