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Festival Effect in the Indian Stock Market

*Dr. Dhaval Maheta**

The researcher carried out this study to measure effect of festivals on the return of selected stock indices of Indian stock market. The researcher took the closing price of two indices i.e. Sensex and Nifty from January 2003 to December 2012 and applied paired t test on daily return series. The main findings of this paper are there is significant influence of festivals like Holi, Janmashthami and Diwali on the mean return of selected indices.

KEYWORDS: Anomaly, Efficient Market Hypothesis, Festival Effect

Introduction

The study of equity returns has been an ever-intriguing field for researchers. Prediction of equity price movements and finding patterns if there exist any, is a largely explored area in finance research studies. The main aim of these researches is acceptance or rejection of efficient market hypothesis. The Efficient Market Hypothesis (EMH) relates to how swiftly and precisely the market acts in response to new information. New data are constantly flowing in the market place via economic information, company statements, political declaration, or public survey. If the market is informationally efficient then security prices adjust rapidly and accurately to new information. According to this hypothesis, security prices reflect entirely all the information

that is obtainable in the market. Since all the information is already integrated in prices, a trader is not able to make any excess profits. Thus, EMH proposes that it is not possible to do better than the market through market timing or stock selection. Against this Seasonal variations in different economies of world are a well-known fact. In recent years certain patterns have been found to exist in stock returns. Stock markets of different countries have exhibited regular and repetitive fluctuation in a time series, which occurs periodically over a span of time. This strong seasonal effect in stock market returns has been clearly established through a large number of studies. The occurrence of such a phenomenon is referred in finance literature as “seasonal Anomaly”.

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This strong seasonal effect in stock market returns has been clearly established through a large number of studies. The occurrence of such a phenomenon is referred in finance literature as “Seasonal Anomaly”. This anomaly has strong implications for stock market efficiency as well as trading strategies in the market. The most common of these are monthly patterns; certain months provide better returns as compared to others i.e. the month of the year effect. Similarly, some days of the week provides lower returns as compared to other trading days i.e. days of the week effect etc.

Many researchers investigate the calendars anomalies which are based on Gregorian calendar. However, different countries and societies also follow their own calendar, which are based on religion in addition to Gregorian calendar. For example, Jewish society follow Hebrew calendar, which strictly based on luni-solar, the Christen society follows Gregorian calendar, which based on solar, Muslims and Chinese follow their own calendar

Hindus also follows their own calendar is called ‘*panchanga*’ and it is based on both movements of sun and moon. Calendar contains various festivals which are based on particular day of ‘*panchanga*’ which also known as ‘*teethi*’. In whole Hindu

year festivals are celebrated almost every month with lot of enthusiasm.

Review of Literature

There is an extensive literature documenting several forms of market anomaly, the following are review of some of the prominent literature on seasonality in stock returns. **Bondt, Werner and Richard Thaler (1985)** conclude that most people ‘overreact’ to unexpected and dramatic news events and question the efficiency of the market. **Watchel(1942)** found that stock market returns are abnormally high on Fridays and abnormally low on Mondays. **Rozeff and Kinney (1967)** discovered the January effect. **Agrawal, A. and K. Tandon (1994)** examines five seasonal patterns the week, turn of the month effect, end of the December, monthly, and Friday- thirteenth effect in eighteen stock market. **Dash Mihir, Dutta Anirban and Sabharwal Mohit (2011)** studied a month-of-the-year effect in Indian stock markets found positive November, August, and December effects, and a negative March effect. **Kaur (2004)** examine the day-of-the-week effect and the monthly effect in Sensex and CNX Nifty. Whereas **Sarma (2004)** investigated the BSE 30, the BSE 100, and the BSE 200 stock Indices to detect the day-of-the-week effect. **Bodla and Jindal (2006)** found monthly effect in

S&P CNX Nifty Index for the period January 1998 to August 2005. **Patel Jayen (2008)** identified two separate calendar effects. First, Nov-Dec effect generating positive higher return and Second Mar-to-May effect generating low return. **Hussain(1998)** studied the Ramadan effect on Pakistan's stock market and found that there is less volatility during the Ramadan effect. **Seyyed, Abraham and Al-Hajji (2005)** studied the Ramadan effect in Saudi Arabia's stock market. **Chan et al (1996)** found the Chinese New Year effect in Chinese stock Market. **McGowan Carl B and Jakob Noor Azzudin (2010)** test the Eid al-Fitr Calendar Effect for the Syariah Index of the Kuala Lumpur Stock Exchange and conclude non the existence of this calendar effect in the Malaysian stock market. **Kumar Umesh (2012)** concludes the evidence of Diwali effect Indian stock market. **Dharani M. and Natarajan P. (2010)** find that there is no day effect during the study period but they find monthly seasonal anomalies in Nifty Shariah Index and conclude that the seasonal variation exists very much in Shariah Index.

Objective of the Study

The main objective of the research to study the effect of festivals on the mean daily return of the selected indices of the stock market. The reason for selection for S&P

CNX Nifty is that it has got the most liquid stocks in the portfolio. Further National Stock Exchange is the largest in terms of market capitalization and volume. Whereas Bombay Stock Exchange (BSE) Index S&P BSE SENSEX is oldest stock index and stock market with the popularity and decades of experience of the stock market. The researcher assumes the selected data are normally distributed for our connivances use tools to analyze data. Daily return series were generated from closing prices. The mathematical calculation for two return series areas follows

$$R_t = \frac{P_1 - P_0}{P_0} * 100$$

R_t = daily return at time t

P_1 = daily closing price at time t

P_0 = daily closing price at time t-1.

From this daily return series, separate return series for each festival were generated. The pre festival and post festival daily return are arranged for ten years respectively for seven, fifteen thirty days in which pre festival data also include daily return of festival day if the market is working on that day. The researcher used two statistical tools one is **Descriptive statistics**: to analyze basic characteristic of series and second one is **Paired sample t test**: to analyze festival effect through

comparison of mean return before and after festival for different period

Hypothesis of the Study

H₀: There is no significant effect of festival on the mean return of stock indices before and after the festival.

Data Collection

Sample and Sampling Method

The researcher has employed non probabilistic convenience sampling to collect the data. The festivals selected under study are as follows:

Makar-Sakranti	Holi	Rakha Bandhan	Navaratri
Vasant-Panchami	Rama Navami	janmasthanami	Dushera
Shiva-Ratri	Akshay –Tritiya	Ganesh-Chaturthi	Diwali
Note: Year wise date of each festivals is given in the annexure			

Data Analysis and Interpretation

Descriptive statistics

Descriptive statistics is important to analyses the characteristics of the series. Skewness measure indicates the level of non-symmetry. Kurtosis is a measure of the peakedness of the data. Whereas, the mean and standard deviation are the first two steps of analysis.

The researcher in this study uses closing prices of the National Stock Exchange of India (NSE) Index S&P CNX Nifty and Bombay Stock Exchange (BSE) Index S&P BSE SENSEX from January 2003 to December 2012. The data was acquired from respective official portal of the stock exchanges.

Interpretation

The average daily return for both indices is near to 0.07% over the period under study. Whereas standard deviation for both series is around 1.65% which reflects variability of observation from mean. Thus over the period the daily return fluctuate around 2%. However the maximum return for daily return is around 12% and minimum return is -16%. Value of kurtosis is around 8 and 9 for both Indices for daily return series describes that its leptokurtic distribution with negative skewness.

H₀: There is no significant difference between in the mean return of sensex before and after 7 days of festival.

TABLE B: result of paired T test for 7 days before and after festival for two index under study for the period of January 2003 to December 2012

festival	Sensex			Nifty		
	mean diff.	T-Value	Significance *	mean diff.	T-Value	Significance *
Makar Sakranti	-0.175	-0.588	0.558	-0.139	-0.463	0.645
Vasant panchami	0.172	0.725	0.471	0.185	0.748	0.457
Shiva Ratri	-0.37	-1.467	0.147	-0.388	-1.567	0.122
Holi	0.867	2.859	0.006	0.836	2.875	0.005
Rama Navami	0.117	0.468	0.641	0.078	0.308	0.759
Akshay tritiya	-0.147	-0.601	0.55	-0.107	-0.453	0.652
Raksha bandhan	0.101	0.501	0.618	-0.066	-0.919	0.362
Janmasthanmi	0.365	1.88	0.064	0.322	1.669	0.1
Ganesh chaturthi	-0.182	-0.751	0.455	-0.158	-659	0.512
Navaratri	-0.419	-1.595	0.115	-0.408	-1.486	0.142
Dashera	-0.044	-0.119	0.905	-0.054	-0.146	0.885
Diwali	0.602	2.079	0.041	0.5	1.957	0.054

Note: *two tailed level

Interpretation

The researcher has carried out paired sample t test on the data of last ten years to measure the influence of festival on returns of Sensex and Nifty. The p-value in above table of the festivals i.e. Makar Sakranti, Vasant panchami ,Shiva Ratri, Rama Navami, Akshay-tritiya, Raksha-bandhan, Ganesh-chaturthi, Navaratri , Dashera is more than 0.1 which

means these festivals does not significantly influence the mean returns of the stock whereas Holi, Janmashtami and Diwali festivals p-value is less than 0.1 which means that null hypothesis is rejected and this festivals have significant influence on the mean returns of the stock. It is seen in most of the festivals that mean return increases by nearer 0.5% to 1%.

H₀: There is no significant difference between in the mean return of sensex before and after 15 and 30 days of festival.

In order to check the how long the identified festival affect the researcher analyzed 15 and 30 days return of Sensex and Nifty for festivals identified 7 days analysis. Below table shows result of T test for 15 and 30 days analysis for Holi, Janmasthanmi and Diwali.

TABLE C: result of paired T test for 15 days and 30 days before and after festival for two index under study for the period of January 2003 to December 2012

festival	Sensex			Nifty		
	mean diff.	T-Value	Significance	mean diff.	T-Value	Significance
For 15 days						
Holi	0.65	3.507	0.001	0.591	3.325	0.001
Janmasthami	0.192	1.33	0.185	0.173	1.187	0.237
Diwali	0.177	0.759	0.449	0.202	0.886	0.377
For 30 days						
Holi	0.372	2.939	0.004	0.327	2.564	0.011
Janmasthami	0.121	1.08	0.281	0.135	1.223	0.222
Diwali	0.192	1.368	0.172	0.208	1.47	0.142

Note: *two tailed level

Interpretation

The researcher find p-value of only Holi is smaller than specified alpha value of 0.1 for both the selected index for 15 and 30 days analysis. Therefore, researcher conclude that only holi effect long the last among holi, janmasthami and diwali effect. It is seen that around Holi mean return increases by nearer 0.5%.

Conclusion

In this study the researcher has examined seasonal anomalies pattern, i.e. festival effect for the period of January 1999 to December 2012. The researcher has used paired t test in order to see effect of festivals on the return of two Indices namely, Sensex and Nifty. The finding of the study shows the effect of Holi, Janmasthami and Diwali festivals on the

return of both Indices. Thus, there is existence of excess return during the post period of Holi, Janmasthami and Diwali. Further, the market is not informally efficient, and customer can avail the maximum opportunity in order to obtain greater returns during these festivals.

There are various reasons which help in understanding the result as well as behavior of investor during these periods. The festival is considered to bring with it good luck and is therefore, 'auspicious.' Most people buy new homes, new cars and expensive durables during this period. Also, the festival calls for the old tradition of distributing gifts. Even the poorest people in the country save their meager earnings all year to celebrate this festival. Secondly news paper and business channels get flooded with various buying

recommendations by brokers and experts, which may lure the some of the investor during this period. Thirdly, due to high cash in hand and the festive season, consumer selling shoots up in a significant way. As the selling of consumer durables increases, it gives impetus to the industry production after clearing out the backlogs from the previous period. Thus, the entire economy is reinvigorated.

During the Diwali all jobs in India pay a 'bonus' to employees. These jobs include government jobs, company jobs, and even domestic or labour intensive jobs. This means that consumers have extra cash in hand during this period. During the diwali period there an ritual of muhurat which also same for stock market the stock exchanges run special muhurat trading at diwali.

Where as in Janmashthami, which is also one of the popular festival we have ritual of betting on that day thus many investor do betting on the stock market which may shoot up prices of stock during the janmashthami. The one of the reason of high return after holi is may be that the market gives corrective action to the various government and economic action that has been announced during the February to April as during this period the annual budget is presented in the parliament.

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