

Calendar Anomaly in Indian Stock Market With Respect to Empirical Study of Quarter of the Year Effect, Month of the Year Effect, Day of the Week Effect on NIFTY For The Years Jan. 1996- Mar. 2013

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Key Words :

1. Quarter of the year effect
2. Month of the year effect
3. Day of the Week effect
4. Volatility

Abstract

Calendar anomalies in stock market returns and risk have been of considerable interest during the last three decades. This study tests the presence of the 'quarter of the year effect', 'month of the year effect', 'day of the week effect' on stock market volatility by using the NIFTY i.e. National Stock Exchange's index during the period of January 1996 to 31st March 2013. Data was analysed using descriptive statistics and inferential statistics. Thus findings revealed that quarter of the year effect, month of the year effect, day of the week effect is present in both market volatility and market returns. The maximum and minimum returns are observed in Quarters 3 and 4 respectively whereas, the maximum volatility is observed in Quarters 1 and 2. The maximum and minimum returns are observed in December and January respectively whereas, the maximum volatility is observed in May and October. The maximum returns are observed on Wednesdays and Mondays whereas the maximum volatility is observed on Fridays and Wednesdays. (165 words)

INTRODUCTION

Calendar effects are trends seen in stock returns and volatility, where the returns tend to rise or fall in a particular quarter, month or day, as compared to the mean and volatility tend to rise or fall in a particular quarter, month or day as compared to the standard deviation. They are called anomalies because they cannot be explained by traditional asset pricing models and they violate the 'weak-form' of market efficiency (i.e. asset prices fully reflect all past information). Examples of such patterns include the Quarter of the year Effect, Month-of-the-year effect, Day-of-the-week effect, Intra-month effect, Turn-of-the-month effect, Holiday effect, Halloween effect, and Daylight saving effect. This paper focuses on the Quarter of the year Effect, Month of the year Effect, Day of the Week Effect. As the name suggests, the side effect is a seasonal phenomenon where exchange traded equities tend to produce abnormal returns during particular quarter, month and day. The objectives of this study is to test for the Quarter-of-the-year effect, month-of-the-year effect and day-of-the-week effect in India using quarterly, monthly, daily returns of the Nifty Index for the period January 1996- March 2013.

REVIEW OF LITERATURE

Calendar anomalies (weekend effect, day of the week effect and January effect) in stock market returns has been widely

studied and documented in the finance literature. These investigations have covered equity, bonds, foreign exchange, different types of derivatives and the T-bill markets. Studies by Cross (1973), French (1980), Gibbons and Hess (1981), Keim and Stambaugh (1984), Lakonishok and Levi (1982), and Rogalski (1984) demonstrate that there are differences in the distribution of stock returns as well as risk for each day of the week.

Hakan Berument, Halil Kiyamaz (2001) found that the day of the week effect is present in both volatility and return by using the S&P 500 market index during the period of January 1973 and October 1997. The study argued that the highest and lowest returns are observed on Wednesday and Monday, the highest and the lowest volatility are observed on Friday and Wednesday, respectively. S Amanulla, M Thiripalraju (2001) the study tests whether the carry-forward transactions in different periods have any impact on week-end effect in the Indian stock market during the period January 1990-December 1999. Yeliz Yalcin, Eray M. Yucel (2003) this paper indicates statistically significant evidence that the day of the week effects exists for 20 emerging stock markets in the sample for either market return or market volatility. The day of the week effects is present in market returns from 11 countries and in market volatility in 15 countries. They are present in both return and variance specifications for 6 countries in the sample. In 20 countries the day of the week effects exists for at least one of the return or variance specifications.

Mahendra Raj, Damini Kumari (2006) in this study seasonal effect in the Indian market has been examined by two

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major indices, viz the Bombay Stock Exchange Index and the NSE Index. This study results revealed that the negative Monday effect and the positive January effects are not found in India. Instead the Monday returns are positive while Tuesday returns are negative.

This study indicates that the Indian stock market does not exhibit the usual seasonal anomalies such as Monday and January effects. The absence of the Monday effect could be due to the settlement period in Indian market. That the tax year ends in March and December has no special significance may explain the non-existence of January effect. Dr. Rengasamy Elango, Nabila Al Macki (2008) investigates the anomalous 'weekend effect' found in many developed and developing markets around the world and is also present in the rapidly emerging Indian equity market. He concluded that lower returns on Mondays and Fridays whereas Wednesdays have yielded the maximum returns across indices. He has given suggestions to investors that buying the scrip's on Mondays (buy low) and selling them on Wednesdays (sell high) will yield high returns.

M. Dharani, P. Natarajan (2011) this study reveals that there is a significant difference between average return of the Nifty Shariah and Nifty indices in the month of July and September. It is derived from the study that the Muslim investors are evincing more interest to sell the shares in the market from July to September. The study confirms that Ramadan effect has been prevailing in the Indian Stock Market. This study disclosed that the seasonal variation exists very much in Shariah Index. Mihir Dash, Anirban Dutta and Mohit Sabharwal argued that a month-of-the-year effect has existed in Indian stock market. He has indicated positive November, August and December effects and a negative March effect. He concluded that the end-of-the-year effect (i.e. positive November and December effects) could be a Diwali effect, with a huge surge in the purchase of household goods, electronic equipments, and gold in India, usually in November.

Statement of Problem

The efficient-market hypothesis was developed by Professor Eugene Fama. There are three major versions of the hypothesis: "weak", "semi-strong", and "strong". According to weak-form Efficient Market Hypotheses (EMH), the security prices reflect all past publicly available information on the market. EMH ensures that the stock returns across all Day of the Weeks and Months are equal. Hence the market participant, the rational financial decision maker, cannot earn any extra-normal profits. It is to be noted that the returns constitute only one part of the decision making process. Another part of decision making is

the calculation of risk or volatility of returns. It is important that there are variations in volatility of stock returns of the day of the week, month of the year, quarter of the year. Besides, a high (low) return is associated with a correspondingly high (low) volatility for a given day. If the investors can identify a certain pattern in volatility, then it would be easier to make investment decisions based on both return and risk. This study examines whether the calendar anomaly exists in Indian Stock Market

OBJECTIVES OF THE STUDY:

To Measure the relationship between return and risk of the stock market for the period of 1st January 1996 to 31st March 2013 with reference to NIFTY returns.

To study and identify the reasons of Quarter of the year Effect, Month of the year Effect, Day of the Week Effect.

Hypotheses

There is no significant difference in the returns among the different quarters of the year for the CNX NIFTY index.

There is no significant difference in the returns among the different months of the year for the CNX NIFTY index.

There is no significant difference in the returns among different trading days of the week for the CNX NIFTY index.

RESEARCH METHODOLOGY

Research Methodology adopted was qualitative with secondary data analysis where data was taken from NSE website.

Research type : Qualitative

Research Design : Exploratory

Type of Data : Secondary

DATA COLLECTION

Data was collected from NSE index i.e. NIFTY daily closing prices from 1st January 1996 to 31st March 2013, total 4306 trading days. For quarter of the year effect, First day and Last day Closing prices of respective quarters during the year were taken. For month of the year effect first day and last day closing price of the respective month during the year has been taken. For day of the week effect first day and last day closing price of the respective day of the week was taken.

Statistical Tools

Statistical tool used for this study include descriptive statistics and inferential statistics. The standard deviation tool was used to measure risk and mean as a tool was used to measure return.

HYPOTHESIS

H1 - There is no significant difference in the returns among the different quarters of the year for the CNX NIFTY index.

Observation

There is positive weak Karl Pearson's coefficient of correlation between return and risk (Volatility) for quarter of the year effect on NIFTY.

The maximum and minimum returns are observed in quarter 3 and quarter 4 respectively.

The maximum risk (volatility) is observed in quarter 1 and Quarter of the year effect:

Table 1: Descriptive Statistics for Quarter 1, 2, 3, 4

QUARTER Q1 (April to June)		QUARTER Q2 (July to Sept.)		QUARTER Q3 (Oct to Dec.)		QUARTER Q4 (Jan to March)	
Mean	3.0415	Mean	3.977	Mean	5.123	Mean	-0.204
Standard Error	3.8127	Standard Error	3.493	Standard Error	3.109	Standard Error	2.703
Median	-0.7334	Median	8.046	Median	3.258	Median	-3.752
Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A
Standard Deviation	15.7202	Standard Deviation	14.403	Standard Deviation	12.820	Standard Deviation	11.143
Sample Variance	247.1236	Sample Variance	207.449	Sample Variance	164.362	Sample Variance	124.164
Kurtosis	0.3394	Kurtosis	-1.639	Kurtosis	1.446	Kurtosis	0.511
Skewness	0.7121	Skewness	-0.187	Skewness	-0.077	Skewness	0.351
Range	58.3405	Range	42.309	Range	57.397	Range	43.966
Minimum	-18.1245	Minimum	-16.979	Minimum	-25.099	Minimum	-22.945
Maximum	40.2160	Maximum	25.329	Maximum	32.298	Maximum	21.020
Sum	51.7056	Sum	67.611	Sum	87.085	Sum	-3.473
Count	17	Count	17	Count	17	Count	17
Confidence Level (95.0%)	8.083	Confidence Level (95.0%)	7.405	Confidence Level (95.0%)	6.595	Confidence Level (95.0%)	5.729

Table 2: Return and Risk for Quarter 1, 2, 3, 4

QUARTER	Return_ Quarterly	Risk_ Quarterly
QUARTER1	3.042	15.720
QUARTER2	3.977	14.403
QUARTER3	5.123	12.820
QUARTER4	-0.204	11.143

quarter 2.

Interpretation

Karl Pearson's coefficient of correlation value between Risk and Return is 0.521 indicates moderate correlation (range of moderate correlation 0.50 to 0.80) and $p=0.479$ is greater than 0.05 then the test is not significant. It can be concluded that Quarter 3 is giving maximum returns with minimized risk. Here it is a healthy sign of the market for the investors to invest in Quarter 3. Quarter 3 is giving the maximum returns as compared with other quarters. Hindu calendar determines Diwali is celebrated each year in third

quarter i.e. in October or November month, Diwali is the one festival that is celebrated across the country in a significant way. 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. Another point to mention here is that all jobs in India pay a 'bonus' to employees in the months of November or December depending on the company. 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. 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 industrial production after clearing out the backlogs from the previous period. Thus, the entire economy is reinvigorated. By December the markets look interesting again, and investors are bullish about the next period returns, making the stock market the right place to invest in during December. There has been a significant growth in the foreign mutual funds in India during this period. In Quarter 3 of 2012 FIIs invest over \$5 bn in Indian stock market. Quarter 4 is giving minimum returns compared with other quarters. Union Budget is announced exactly in the middle of this quarter i.e. 28th or 29th February. In India lot of pre-budget discussions take place every year. Due to fractured politics and vote bank politics union budget becomes a political event rather than finance or economic event. In the month of March lot of post budget analysis and discussions take place. Due to that pessimism among investors is high during that period. Quarter 1 is highly volatile quarter compared to other quarters because in this quarter Government is implementing the Fiscal Policy decisions. In Quarter 2 risk and returns both are minimized. There is a significant difference in the returns among the different quarters of the year for the CNX NIFTY index; hence the hypothesis gets rejected for CNX NIFTY Index because it shows maximum returns in the Quarter 2 as

compared to other quarters.

HYPOTHESIS

H2 - There is no significant difference in the returns among the different months of the year for the CNX NIFTY index.

Observation

There is negative Karl Pearson's coefficient of correlation between Return and Risk (Volatility) for Month of the year Effect on NIFTY.

There is negative Karl Pearson's coefficient of correlation between Risk and Return

The maximum and minimum returns are observed in December month and January month respectively.

The maximum risk (volatility) is observed in May and October month.

Interpretation

Karl Pearson's coefficient of correlation value between Risk and Return is -0.697 indicates moderate negative correlation (range of moderate negative correlation -0.50 to -0.80) and $p=.012$ is less than 0.05 than the test is significant. It can be concluded that December month is giving maximum returns with calculated risk. From the investor's point of view December is the best month to invest because it gives good returns with a minimum risk. Negative correlation depicts that it disproves the theory i.e. High risk high returns. December is giving maximum returns in Indian stock market whereas in the USA stock market December is giving the minimum returns because the December month is financial year ending month for US whereas in India March is the year ending month as well as the most significant annual economic event of the year i.e. Union Budget which is announced in February end. The investors, therefore, should keep away from the market during March after having booked profits in February itself, so in India second minimum returns are seen in the month of March. January, March, May and October months are

Table 3: Correlation between Quarterly Return and Risk

	Correlations	Return_ Quarterly	Risk_ Quarterly
Return_ Quarterly	Karl Pearson's coefficient of correlation	1	.521
	Sig. (2-tailed)		.479
Risk_ Quarterly	Karl Pearson's coefficient of correlation	.521	1
	Sig. (2-tailed)	.479	

Month of the year effect

Table 4: Descriptive Statistics for all 12 months (January to December)

Month of the year effect:
Table 4: Descriptive Statistics for all 12 months (January to December)

JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
Mean	-1.737	Mean	2.518	Mean	-1.367	Mean	1.382	Mean	-0.386	Mean	2.144
Standard Error	1.913	Standard Error	1.236	Standard Error	1.854	Standard Error	1.817	Standard Error	2.460	Standard Error	1.814
Median	-2.889	Median	2.107	Median	-1.418	Median	-1.129	Median	-2.476	Median	1.736
Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A
Standard	7.888	Standard	5.096	Standard	7.644	Standard	7.494	Standard	10.143	Standard	7.478
Deviation		Deviation		Deviation		Deviation		Deviation		Deviation	
Sample	62.221	Sample	25.966	Sample	58.428	Sample	56.154	Sample	102.886	Sample	55.915
Variance		Variance		Variance		Variance		Variance		Variance	
Kurtosis	-0.641	Kurtosis	1.960	Kurtosis	-0.376	Kurtosis	-1.145	Kurtosis	0.238	Kurtosis	0.293
Skewness	0.114	Skewness	0.001	Skewness	-0.027	Skewness	0.497	Skewness	0.590	Skewness	-0.806
Range	28.519	Range	23.615	Range	28.402	Range	21.868	Range	37.780	Range	26.717
Minimum	-16.387	Minimum	-9.473	Minimum	-15.452	Minimum	-8.353	Minimum	-16.024	Minimum	-14.749
Maximum	12.131	Maximum	14.142	Maximum	12.950	Maximum	13.515	Maximum	21.756	Maximum	11.968
Sum	-29.524	Sum	42.804	Sum	-23.239	Sum	23.489	Sum	-6.569	Sum	36.445
Count	17	Count	17	Count	17	Count	17	Count	17	Count	17
Confidence		Confidence		Confidence		Confidence		Confidence		Confidence	
Level (95.0%)	4.056	Level (95.0%)	2.620	Level (95.0%)	3.930	Level (95.0%)	3.853	Level (95.0%)	5.215	Level (95.0%)	3.845
JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
Mean	1.101	Mean	1.029	Mean	1.418	Mean	-1.282	Mean	1.994	Mean	4.359
Standard Error	1.554	Standard Error	1.521	Standard Error	2.005	Standard Error	2.353	Standard Error	1.743	Standard Error	1.281
Median	1.754	Median	-0.445	Median	2.991	Median	-1.992	Median	4.159	Median	4.527
Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	#N/A
Standard		Standard		Standard		Standard		Standard		Standard	
Deviation	6.406	Deviation	6.272	Deviation	8.268	Deviation	9.702	Deviation	7.185	Deviation	5.281
Sample Variance	41.038	Sample Variance	39.343	Sample Variance	68.366	Sample Variance	94.137	Sample Variance	51.621	Sample Variance	27.889
Kurtosis	-0.331	Kurtosis	0.066	Kurtosis	-1.196	Kurtosis	2.273	Kurtosis	-1.398	Kurtosis	-0.453
Skewness	-0.343	Skewness	0.041	Skewness	-0.484	Skewness	-0.722	Skewness	-0.316	Skewness	-0.067
Range	22.055	Range	23.785	Range	25.020	Range	43.368	Range	20.610	Range	19.729
Minimum	-10.861	Minimum	-10.338	Minimum	-12.805	Minimum	-26.961	Minimum	-9.486	Minimum	-6.331
Maximum	11.194	Maximum	13.448	Maximum	12.215	Maximum	16.408	Maximum	11.124	Maximum	13.398
Sum	18.711	Sum	17.497	Sum	24.103	Sum	-21.788	Sum	33.895	Sum	74.108
Count	17	Count	17	Count	17	Count	17	Count	17	Count	17
Confidence Level (95.0%)	3.294	Confidence Level (95.0%)	3.225	Confidence Level (95.0%)	4.251	Confidence Level (95.0%)	4.989	Confidence Level (95.0%)	3.694	Confidence Level (95.0%)	2.715

giving negative returns. February, April, June, July, August, September, November and December months are giving positive returns. December month is giving maximum return with minimum risk. FIIs also prefer December month to enter in Indian stock market due to December effect. FIIs invested \$2.44 bn in December 2012. December month is the safest month for investors to invest due to minimum volatility. There is a significant difference in the returns among the different months of the year for the CNX NIFTY index; hence the hypothesis gets rejected for CNX NIFTY Index because it shows maximum returns in the month of December as compare to other months.

HYPOTHESIS

Table 5: Return and Risk for January to December

MONTH	Return_Monthly	Risk_Monthly
JAN	-1.73668	7.8880094
FEB	2.517863	5.095646
MARCH	-1.36699	7.6438243
APRIL	1.381714	7.4936081
MAY	-0.38643	10.143275
JUNE	2.143805	7.4776585
JULY	1.100642	6.4061223
AUGUST	1.029226	6.2723612
SEPTEMBER	1.417813	8.2683705
OCTOBER	-1.28165	9.7024111
NOVEMBER	1.993821	7.1847692
DECEMBER	4.359269	5.2809877

Table 6: Correlation between Monthly Return and Risk

	Correlations		
		Retrun_Monthly	Risk_Monthly
Retrun_Monthly	Karl Pearson's coefficient of correlation	1	-.697*
	Sig. (2-tailed)		.012
	N	12	12
Risk_Monthly	Karl Pearson's coefficient of correlation	-.697*	1
	Sig. (2-tailed)	.012	
	N	12	12
*. Correlation is significant at the 0.05 level (2-tailed).			

Month of the year effect:

Table 4: Descriptive Statistics for all 12 months (January to December)

H3 - There is no significant difference in the returns among different trading days of the week for the CNX NIFTY index.

Observation:

- There is positive Karl Pearson's coefficient of correlation between Return and Risk (Volatility) for Day of the week Effect on NIFTY.
- The maximum and minimum returns are observed on Wednesdays, Mondays and Tuesdays, Fridays respectively.
- Wednesdays and Fridays are more volatile than the any other day of the week, so they show high standard deviation.

Interpretation

Monday	Tuesday		Wednesday		Thursday		Friday	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
14.626	13.951	15.285	14.480	14.426	8.518	8.864	8.585	8.805
8.518	8.514	8.864	8.864	8.805	14.638	14.740	8.378	14.405
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
35.122	35.103	36.548	35.395	36.306	1233.555	1335.763	1252.792	1318.099
-0.698	-0.660	-0.736	-0.898	-0.876	0.021	0.084	0.006	0.067
126.289	124.669	129.124	121.918	123.060	53.461	52.113	50.462	54.461
72.827	73.160	77.012	71.457	68.599	248.640	259.849	246.158	245.245
17	17	17	17	17	18.058	18.791	18.198	18.667
Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)	Confidence Level (95.0%)

The correlation value between Risk and Return is 0.672 indicates moderate correlation (range of moderate correlation 0.50 to 0.80) and $p=0.214$ is greater than 0.05 then the test is not significant. It can be concluded that Wednesday is giving maximum returns with maximum risk. For Wednesday risk and returns both are high and after Wednesday, Monday gives the next best return. In the USA, generally Mondays are giving negative returns due to unfavourable news appearing during weekends. These unfavourable news influences the majority of investors negatively, causing them to sell on the following Monday. Whereas in India Monday is giving second highest returns with 2nd lower risk. When we took the entire period of analysis, we found that Wednesdays' indicating existence of clear arbitrage opportunity for investors who can buy in other days and sell on Wednesdays where the chance of making profit is higher. It is advised that the investors should buy the shares on Tuesday and sell these shares on Wednesday in NIFTY, here investors can do BTST transaction i.e. Buy Today Sell Tomorrow. There is a significant difference in the returns among different trading days of the week for the CNX NIFTY index hence the hypothesis gets rejected for CNX NIFTY index because it shows maximum returns on Wednesdays' as compare to other trading days.

FINDINGS

The following are important findings of the study

Table 8: Return and Risk for Monday to Friday

Daily	Return_Daily	Risk_Daily
Monday	14.62587	35.122
Tuesday	13.95071	35.10284
Wednesday	15.28525	36.54809
Thursday	14.47987	35.3948
Friday	14.42619	36.30564

Table 9: Correlation between Daily Return and Risk

	Correlations		
		Retrurn_Monthly	Risk_Monthly
Return_Daily	Karl Pearson's coefficient of correlation	1	.672
	Sig. (2-tailed)		.214
	N	5	5
Risk_Daily	Pearson Correlation	.672	1
	Sig. (2-tailed)	.214	
	N	5	5

The study found that the NSE NIFTY index earned a maximum quarterly mean return of 5.123 in Quarter 3 and minimum quarterly mean return recorded in Quarter 4 during the study period. Therefore it is suggested that the investors would yield good returns Quarter 3.

It is advised that the investors should buy shares in Quarter 3 and sell the same in Quarter 4 in NIFTY.

The study also found that the highest value of standard deviation was recorded in Quarter 1 and the least value of standard deviation Quarter 4. This indicates that Indian stock market was more volatile in Quarter 1 and least volatile in Quarter 4 during the study period.

It is to be noted that the return distribution is positively skewed for Quarter 1, Quarter 4 and negatively skewed for Quarter 2, Quarter 3.

The returns of month wise analysis revealed the fact that there is a higher mean return recorded for the month of December (4.359) and negative mean returns recorded for the month of January, March, May and October.

The study found that the months of December and February offer reasonably high returns. Thus, it is advised that the investors want to sell their holdings; these two months could be considered as the best period.

The Study provides evidence that the market was not able to price the risk appropriately as higher returns were

possible by taking less risk and this indicates market inefficiency. Hence the market regulators should take appropriate steps to stabilize the volatility for the benefits of long term and small investors.

The highest value (10.413) and lowest value (5.096) of Standard Deviation has been recorded in the month of May and February respectively. December months Volatility (5.281) is also lower. This found that the market (NSE) was more volatile in the month of May and least volatile in the month of February and December.

The study found that the NSE NIFTY index earned a maximum daily mean return of 15.285 on Wednesday and minimum daily mean return recorded on Tuesday during the study period. Therefore it is suggested that the investors should get good returns on Wednesdays.

Hence it is advised that the investors should buy shares on Tuesday and sell the same on Wednesdays in NIFTY. Investors should enter into BTST transaction i.e. Buy Today Sell Tomorrow

The study also found that the highest value of standard deviation was recorded on Wednesday and least value of a standard deviation on Tuesday. This indicates that Indian stock market was more volatile on Wednesday and least volatile on Tuesday during the study period.

It is to be noted that the return distribution is positively skewed for Tuesday, Wednesday and Thursday and negatively skewed for Monday, Friday.

With the help descriptive and inferential statistics it clearly indicates that the quarterly effect, monthly effect, day effect exists in the NSE (NIFTY) for the study period.

All 3 hypotheses are tested with the help of descriptive and inferential statistics for this study. All hypotheses are rejected and it clearly indicates that the quarter of the year effect, month of the year effect, day of the week effect exists in the CNX NIFTY index for the study period.

CONCLUSION

In this study returns are measured by mean and risk is measured by standard deviation. All 3 hypotheses are tested with the help of descriptive and inferential statistics for this study are rejected and it clearly indicates that the quarter of the year effect, month of the year effect, day of the week effect exists in the CNX NIFTY index for the study period. The optimism regarding market behavior along with availability of liquid cash in the hands of investors to take advantage of the opportunity of market movements has probably made December the month of significant returns in India since past many years. Due to high returns in the month of December Quarter 3 shows high returns

compared to other quarters, December month is showing high returns compared with the remaining 11 months. In any week Wednesdays and Mondays are giving better returns than rest 3 days. This study reveals that there is a significant difference in quarterly, monthly, daily returns of NIFTY compared with remaining quarters, months and days. Thus study reveals that the seasonal variation exists very much in NIFTY. The results established that the Indian stock market is not efficient and investors can improve their returns by timing their investment. Whereas calendar anomalies of US stock market are exactly opposite of Indian stock market, In the US Monday is the worst day to buy stocks whereas in India Monday is the second best day to buy after Wednesday. In US January is a good month to buy due to financial year starts from January whereas in India January month is giving minimum returns. As per this study January month is giving negative returns. In India December is the best month to invest due to excess liquidity in the market, whereas in US December month is giving negative returns. The present study would be useful to investors, traders and arbitrageurs who could formulate profitable trading strategies if they were able to predict the share price behavior with full information on these anomalies. The study also provides evidence that the market was not able to price the risk appropriately as higher returns were possible by taking less risk and this indicates market inefficiency to the extent

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