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Testing of Calendar Market Anomalies in Indian Stock Market (2012-2017): "Day of the Week Effect" and "Month of the Year Effect"

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ABSTRACT

The Calendar anomalies in the stock markets both in developed and developing countries are a well-documented phenomenon. The study aimed to empirically examine presence of 'day of the week' and 'month of the year' effect in the Indian leading stock market, National Stock Exchange (NSE) during the six-year period from Jan 1, 2012 to Dec 31, 2017, using Descriptive statistics, Ordinary Least Square (OLS)and Garch(1,1)framework. The study utilizes the daily and monthly return data of the National Stock Exchange's Nifty 500 Index for analysis. The results indicate that the 'day of the week' and 'month of the year' is non-existent in the market index for the entire sample period and the market is efficient with no opportunity for the investors to beat the market by studying certain patterns in daily or monthly return series.

Keywords: Day-of-the-Week effect, Month-of-the-Week effect, Efficient Market Hypothesis; Calendar anomalies.

INTRODUCTION:

Efficient Market Hypothesis (EMH):

EMH says that if the market is information efficient, that is information is available and accessible to all investors at all times, no one can outperform the market and earn supernormal profits. No one has access to additional information sources, and thereby individual investors cannot influence the market. As per Fama, 1970 and Irwin, 1979, there are three levels of market efficiency: weak-form, semi-weak form, and strong-form efficient markets.

Weak form of Market efficiency:

Analysis of past information (technical analysis) does not permit investors to earn excess returns as past information is already reflected in share prices. EMH asserts that the future price movements of stock issues move randomly viz they are independent of the past history of price movements (see, for instance, Othman Yong, 1994; Poshakwale, 1996; and Fawson et al., 1996).Stock returns are serially un-correlated and have a constant mean.

Semi-Strong form of Market efficiency:

Publicly available information (for e.g. financial statements) is already incorporated in prices; hence fundamental analysis is worthless, as all public information is integrated into prices.

Strong form of Market efficiency:

Both public and private information are timely accessible to all the investors hence neither technical analysis nor fundamental analysis can help an investor to earn abnormal returns in such a market. All type of information (public and private) is fully reflected in share prices.

Calendar Anomalies:

Efficient Market Hypothesis assumes capital markets cannot be predicted and hence no specific consistent patterns can be assumed to exist. However, Calendar anomalies seem to contradict the weak form of Efficient Market Hypothesis (EMH). A calendar anomaly is any market anomaly which appears to be related to the calendar. A rational investor will take into account these anomalies and try to earn profits. Calendar effect shows apparently different behavior of stock markets on different days of the week, different times of the month, and different times of year (seasonal tendencies). Calendar anomalies suggests that stock returns do indeed exhibit a pattern during market trading days and investors could use these patterns on anomalies to predict stock market movements on given days or months. Day-of-the-week effect is said to exist if some consistent pattern is found on the certain day of the week. Similarly Month of the year effect is said to exist if some consistent pattern is found on the certain month of the year. Therefore, historical stock prices patterns can be used to predict the future movement of the stock prices. Historical stock prices thus have important implications for financial markets, especially the analysis of seasonal behavior which includes the 'day of the week' and 'month of the year' effects. This paper attempts to determine the existence of calendar anomalies, namely, Day of the week effect and Month of the year effect in Indian stock market.

Organization of the Paper

The paper is organized as follows:

First section is introductory and provides a conceptual framework of EMH and Calendar anomalies. Second section gives a brief account of already existing literature on Calendar anomalies in Indian Stock Market. Third section explains the research methodology, data and duration of the study. Fourth section shows the results followed by fifth section that concludes the study.

REVIEW OF LITERATURE:

Table I: Summary of previous studies on calendar anomalies

Author	Day of the week effect
Mohit Gupta, Navdeep Aggarwal (2004)	Wednesday Effect: National Stock Exchange of India's Nifty index data revealed that day of week effect is very well prevalent in India and Wednesday is the day when the returns were found to be significantly different from others. In the absence of any plausible explanations for this, authors relate this observation to unique psychology of Indian investors who see Wednesday as most optimistic day.
Amitabh Gupta(2006)	Friday Effect: This paper reexamines the day-of-the-week effect on the Indian stock market after the introduction of the compulsory rolling settlement for a three-year period, i.e., 2002-05. The study uses a non-parametric test to provide mixed inference on the existence of the phenomenon. The results show the returns to be the highest on Friday for all the indices and provide evidence of the day-of-the-week effect for BSE 100 and S&P CNX 500 index for the Indian stock market.
Srinivasan P. and Kalaivani M(2013)	Monday and Wednesday effects: This paper investigates empirically the day-of-the-week effect on stock returns and volatility of the Indian stock markets. The GARCH (1,1), EGARCH (1,1) and TGARCH (1,1) models were employed to examine the existence of daily anomalies over the period of 1stJuly, 1997 to 29thJune, 2012. The empirical results derived from the GARCH models indicate the existence of day-of-the-week effects on stock returns and volatility of the Indian stock markets. The study reveals positive Monday and Wednesday effects in the NSE-Nifty and BSE-SENSEX market returns.
Shivani Inder, J.S.Pasricha(2014)	Wednesday Effect: The paper investigated the calendar anomaly or the day of the week Effect in Indian capital market, using observations of S&P CNX Nifty On daily basis from January 2000 to June, 2012. The study employs the multiple regressions with dummy variables along with the t-test, Kruskal-Wallis test and Levine's test for testing the equality of Mean returns and the variances of the returns. The study shows that the Wednesday returns appeared to be higher relative to other trading days. While on the other hand, the returns on Mondays were comparatively lower and showed an apprehensive mood of the market.

Tariq Aziz* and Valeed Ahmad Ansari (2015)	Monday and Wednesday effects: This study investigates the presence of this effect in the Indian stock market during 1990 to 2013, using GARCH framework with three distribution assumptions. The results indicate that the traditional Monday effect is non-existent in the two leading market indices. In contrast, a positive Monday effect in Sensex and a positive Wednesday effect in Nifty are present in the entire sample period. The results remain robust to the distribution assumptions and sub-periods.
J. Sudarvel Dr. R. Velmurugan Dr. K. Kumuthadevi (2016)	Tuesday and Thursday Effect: The study utilizes the Daily return data of the Bombay Stock Exchange's Sensex Index and National Stock Exchange's Nifty Index for the period ranging from April 2015 to March 2016 for analysis. The collected secondary data are analyzed by applying Descriptive statistics and Ordinary Least Square (OLS). The results of the study confirm the existence of seasonality in stock returns in India and prevalence of the day of the week effect in Indian Stock Market. The result of OLS disclose that BSE Sensex and NSE Nifty index Thursday return is found to be significant at the 5 percent level and Tuesday return is found to be significant at the 1 percent level.
Akhtar, Samreen; Ansari, Valeed Ahmad; Ansari, Saghir Ahmad(2017)	This paper explores the presence of a day of-the-week effect in the volatility index and its underlying equity index, Nifty 50 (earlier known as S&P CNX Nifty).

Author	**Month of the year effect**
Anokhi Parikh(2009)	December effect: The study rejected the weak-form market efficiency in India. The results seen in the GARCH and EGARCH model estimates clearly indicate the presence of seasonality in the Nifty return series, and confirm the absence of asymmetries in the Indian stock market. The presence of the December effect during the period 1999-2008 is largely attributed to the high cash in hand due to the post festive period. The increasing number of foreign mutual funds trading on the Indian stock market and the pre-budget rally are other reasons supporting this calendar effect.
Rakhi(2012)	November effect: This study attempts to investigate the existence of seasonality in return series of Shanghai Composite Index (China), and BSE Sensex (India). The study analyses the monthly closing prices of these two indices for the period from January 2003 to December 2010 by applying a variety of statistical tools. Along with summary statistics, the non-parametric rank based Kruskal-Wallis test have been used to study equality of mean returns. The results are interesting and contradict the findings shown by international studies. The positive January effect is not found in India and China. But a positive November effect is persistent in Indian Stock Market.
Gagan Deep Sharma, Sanjiv Mittal and Prachi Khurana(2014)	April and December effect: For this purpose, two indices, S and P CNX Nifty and S and P CNX Nifty Junior and top nine companies (according to market capitalization) from both the indices have been selected. In Nifty, Reliance, HDFC, ICICI and SBI, highest mean return is reported in the month of September. And Infosys, Tata Motors and Wipro report the highest mean return in December. Though, neither Nifty nor any stock is gaining highest mean return in April; April and December are the only two months in which all the stocks and Nifty have positive returns. In the months of February and October, almost all the companies are showing negative mean returns
Som Sankar Sen(2014)	September and November effects: The study in this context has sought to address the issue of the month-of-the-year effect in Indian Stock Market represented by BSE SENSEX during the period ranging from January 2, 2004 to December 28, 2012. The GARCH (1,1)-M model has been used to model the conditional volatility. The results indicate the presence of September and November effects in the SENSEX returns during the study period. Moreover, in the volatility equation the coefficients of March, June, August, October, November and December dummy variables are negative and significant. Hence, it is confirmed that the month- of- the year effect is also present in the variance (volatility or risk) equation.

Author	Month of the year effect
G. Raghuram (2017)	February, November and April effect: The study divided the past 25 years (from 1990 till the present) into three almost equal time periods and studied the 'month of the year' effect within them in the Indian context by use of the indices - BSE Sensex, BSE 500, BSE MidCap, and BSE SmallCap. The study observed that the 'month of the year' effect is different in each of the three time periods - 'February' effect for the period from January 01, 1990 – December 31, 1998 ; the 'November' effect for the period from January 01, 1999 – December 31, 2006 ; and the 'April' effect for the period from January 01, 2007 – April 01, 2015. However, for a given time period, the same 'month of the year' effect is present for all the indices studied. It was also observed that the 'month of the year' effect is stronger for small caps when compared to large caps.
Harshita, Shveta Singh, Surendra S. Yadav, (2018)	November effect Though the financial year in India stretches from April to March, the stock market exhibits a November effect (returns in November are the highest). Cultural factors, misattribution bias and liquidity hypothesis seem to explain the phenomenon.

RESEARCH METHODOLOGY:

Purpose of the Study:

1. To provide a conceptual background of Efficient Market Hypothesis and Calendar Anomalies.
2. To investigate the existence of Calendar Anomalies (Day of the week effect and Month of the Year Effect) in Indian Stock Markets.

Data:

The study examines the presence of calendar anomalies in the NSE of India. The NSE contains many broad-market indices consisting of the large, liquid stocks listed on the Exchange. But the focus of our study is NIFTY 500. It represents the top 500 companies based on full market capitalisation from the eligible universe.

- The NIFTY 500 Index represents about 95.2% of the free float market capitalization of the stocks listed on NSE as on March 31, 2017.
- The total traded value for the last six months ending March 2017, of all Index constituents is approximately 91.7% of the traded value of all stocks on NSE. (NIFTY 500 Index)

The main source of data and index closing prices was the official NSE website: www.nseindia.com and Yahoo finance website: *in.finance.yahoo.com.There* were a total of 1487 daily observations and 56 monthly observations.

Duration of the Study:

To examine anomalies in the Indian market the analysis covered six years (2012-2017) specifically, from January 3, 2012 to December 31, 2017.

Tools used in the study:

Table II: Description of the tools used in the study

Tool	Equation
Daily(Monthly) returns The data used in this research consist of daily (monthly) index returns using values for the NSE 500 Index, considering trading period between Monday to Friday.	The daily returns Rt computed from NSE 500 Index as follows. $R_t = In\left(\frac{P_t}{P_{t-1}}\right)$ Where: Rt = Index's return on day(month)'t' Pt = Index's Closing Price on day(month)'t' P t-1 = Index's Closing Price on day(month)'t-1' ln = the natural logarithm
Descriptive analysis In order to have an initial look at the dataset	Mean= Σ xi / n The symbol 'Σ xi' used in this formula represents the

Tool	Equation
Summary statistics was computed for the daily and monthly returns. Next, the results were interpreted to see whether seasonal anomalies were present.	represents the sum of all returns present in the sample. The symbol 'n,' represents the total number of observations in the sample
	standard deviation= $s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(x_i - \overline{x})^2}$
	Skewness= $\frac{\sum(y_i - y)^3}{(n-1)^3}$ The symbol 'Σ (yi -y)' used in this formula represents the sum of Subtraction of the mean from each raw score of returns present in the sample. The symbol 'n,' represents the total number of observations in the sample. Raise each of these deviations from the mean to the third power and sum.
	Kurtosis= $K = \frac{n(n+1)(n-1)}{(n-2)(n-3)}\frac{\sum_{i=1}^{n}(X_i - X_{avg})^4}{(\sum_{i=1}^{n}(X_i - X_{avg})^2)^2}$
Regression model To conduct further tests to confirm the existence of such anomalies the study employed a linear regression model and the OLS method. Independent variable viz. Monday….Friday, or January…..December, was represented numerically by using dummy variables coded as either 0 or 1. H0: There are no differences exists in the daily (monthly) returns across the days (months) of the year. H1: A difference exists in the daily (monthly) returns across the days (months) of the year.	The general regression equation was as follows: $\boldsymbol{Rt=c+\alpha 2D2+\alpha 3D3+\cdots \alpha nDn+et}$ (2) Where: Rt = the mean return, either daily or monthly (dependent variable) C = the mean return for a specific time, when αn is the return in Dn Dn = dummy variable representing a specific time (day or month) et = residual error
Normality tests Regression model produces misleading results if the returns do not follow a normal distribution. Therefore several tests were conducted to assess the normality of the returns. The null hypothesis stated that the mean returns were normally distributed, meaning that the data was stationary.	Correlogram H0 = there is no autocorrelation between the residuals Ha = there is autocorrelation between the residuals
	.Jarque-Bera test: The null hypothesis for the test is that the data is normally distributed; the alternate hypothesis is that the data does not come from a normal distribution. JB = n [(√b1)2 / 6 + (b2 – 3)2 / 24]. Where: n is the sample size, √b1 is the sample skewness coefficient, b2 is the kurtosis coefficient.
	Shapiro-Wilk tests. The test rejects the hypothesis of normality when the p-value is less than or equal to 0.05. $W = \frac{\left(\sum_{i=1}^{n} a_i x_{(i)}\right)^2}{\sum_{i=1}^{n}(x_i - \overline{x})^2}$ where: xi are the ordered random sample values ai are constants generated from the covariances, variances and means of the sample (size n) from a normally distributed sample

Tool	Equation
The GARCH model In case the data does not follow a normal distribution, GARCH (1,1) model is introduced. This model eliminates the autocorrelation effect in the residuals. GARCH (1, 1) "lags" or regresses on last period's squared return (i.e., just 1 return) and last period's variance (i.e., just 1 variance). H01 = there were significant differences in mean returns between a specific day(month) and other days(months) of the week(year). Ha1= there were no significant differences in mean returns between a specific day(month) and other days(months) of the week(year).	$\sigma_t^2 = a + br_{t-1,t}^2 + c\sigma_{t-1}^2$ Where r2t-1 =squared return of the period t-1 σ2t-1= variance of the period t-1
Software used for the study	E Views: to implement linear regression with the dummy variables, as well as the GARCH model. Excel: calculate the returns, code the dummy variables and to conduct the descriptive tests.

RESULTS:

Descriptive Statistics:

Table III. Descriptive statistics for the whole dataset for Nifty 500 (daily returns)

	Daily Returns	Monthly Returns
Mean	0.000651	0.012642
Standard Deviation	0.009209	0.04101
Kurtosis	6.154224	-0.1222
Skewness	-0.574189	-0.15698
Count	1487	71

Source: Own calculation in E-Views

Interpretation:

The NIFTY 500 index's skewness and kurtosis values deviated from the norm. The normality tests indicated the return sets were not normally distributed as they did not match the general criteria of the normal distribution (kurtosis 3 and skewness 0).

Table IV: Descriptive statistics for NIFTY 500 (daily returns)

	Mon	Tue	Wed	Thurs	Fri
Mean	0.000611	0.000429	0.000586	0.000582	0.001007
Standard Deviation	0.00983	0.009701	0.007952	0.009338	0.009299
Kurtosis	8.331864	1.826133	0.81665	1.038316	1.279276
Skewness	-1.45391	-0.43866	-0.12509	-0.28405	-0.23839
Count	294	299	298	296	291

Source: Own Calculation in MS-Excel

Interpretation:

Table IV offers daily results for the Nifty 500.

Notably, Friday saw the highest mean returns (0.001007) followed by Monday (0.000611) during the study period, while Tuesday came in the last place with a figure (0.000429).

In regard to volatility, the standard deviation was the highest on Mondays (0.00983) but lower on Wednesdays (0.007952). In short, returns were higher on Monday, but they were also more volatile.
Also, the results for skewness and kurtosis indicated that the returns were not normally distributed on most days, especially Mondays. The kurtosis was significantly high (8.331864) on Mondays, while the skewness was negative. This indicated that the returns were not distributed normally, as they did not match the general criteria of the normal distribution (kurtosis 3 and skewness 0).
In addition, the following table which describes the data from a monthly perspective also suggests abnormality.

Table V. Descriptive statistics for NIFTY 500 (monthly returns)

	Jan.	**Feb.**	**Mar.**	**Apr.**	**May**	**June**	**July**	**Aug**	**Sept.**	**Oct.**	**Nov.**	**Dec.**
Mean	0.005	-0.004	0.037	0.005	0.015	0.017	0.016	-0.012	0.020	0.035	0.002	0.016
Standard Deviation	0.052	0.058	0.045	0.037	0.053	0.041	0.034	0.037	0.040	0.037	0.038	0.023
Kurtosis	-2.906	-1.761	-1.217	1.538	1.757	-1.626	-1.820	-1.548	-0.022	-0.671	0.312	-0.354
Skewness	-0.157	-0.798	0.353	-1.167	0.165	0.031	-0.173	-0.487	1.159	0.353	-0.367	-0.914
Count	5	6	6	6	6	6	6	6	6	6	6	6

Source: Own Calculation in MS-Excel

Interpretation:
Table 5 illustrates the returns were negative in February, and August (-0.004, and -0.012, respectively). However, mean returns were significantly high in October, September, June, Dec and July (0.035, 0.020, 0.017, 0.016 and 0.016, respectively), although March returns were the highest.
Volatility also varied from month to month and was the highest in February (0.058) and the lowest in July and Dec. (0.034and 0.023, respectively). These results indicate the presence of opportunities to achieve high returns for this index during certain months.
Both the kurtosis values and the skewness suggested abnormality. Hence, a need was felt to conduct more tests to verify normality.

Linear regression analysis (OLS) :

Table VI: Regression for the NSE 500(daily returns)

	Coefficients	**Standard Error**	**t Stat**	**P-value**
Intercept	0.002294	0.003074	0.746408	0.455539
m	-0.00168	0.003121	-0.53947	0.589643
t	-0.00187	0.00312	-0.59782	0.550054
w	-0.00171	0.00312	-0.54751	0.584111
th	-0.00171	0.00312	-0.54873	0.583271
f	-0.00129	0.003121	-0.4125	0.680029

Source: Own calculation in E-Views

Table VII. Regression for the NSE 500(Monthly returns)

	Coefficients	**Standard Error**	**t Stat**	**P-value**
Intercept	0.014668832	0.017131	0.85625	0.395324
Jan	-0.009346804	0.02541	-0.36784	0.71431
Feb	-0.018509951	0.024228	-0.764	0.44791
Mar	0.022112341	0.024228	0.912693	0.365119
Apr	-0.009942097	0.024228	-0.41036	0.683026
May	0	0	65535	#NUM!

	Coefficients	Standard Error	t Stat	P-value
Jun	0.002491876	0.024228	0.102853	0.918429
Jul	0.001279644	0.024228	0.052818	0.958056
Aug	-0.02689141	0.024228	-1.10995	0.271524
Sep	0.005085538	0.024228	0.209907	0.834463
Oct	0.020499943	0.024228	0.846141	0.400893
Nov	-0.013156732	0.024228	-0.54305	0.589143
Dec	0.000833385	0.024228	0.034398	0.972676

Interpretation:
Calendar anomalies were absent in all of the examined markets for both daily and monthly returns.No particular day or month effect was observable for the NIFTY 500, as the probability values in Tables 6 & & were not significant at the 5% level.
Conditions for applicability of linear regression model
There are certain conditions which need to be met in order to prove that the model is valid, and that it is not producing misleading results.
The series should be stationary in which the residuals follow a normal distribution.
There should not be any clustering or autocorrelation among residuals.
In order to check autocorrelation, correlogram (Liung-box statistic) has been calculated. Moreover, normality tests of the daily and monthly returns were conducted to prevent the inappropriate use of an OLS model.

Correlogram tests for the daily returns:

Table VIII: Correlogram Results(Daily Returns)

Included observations: 1487

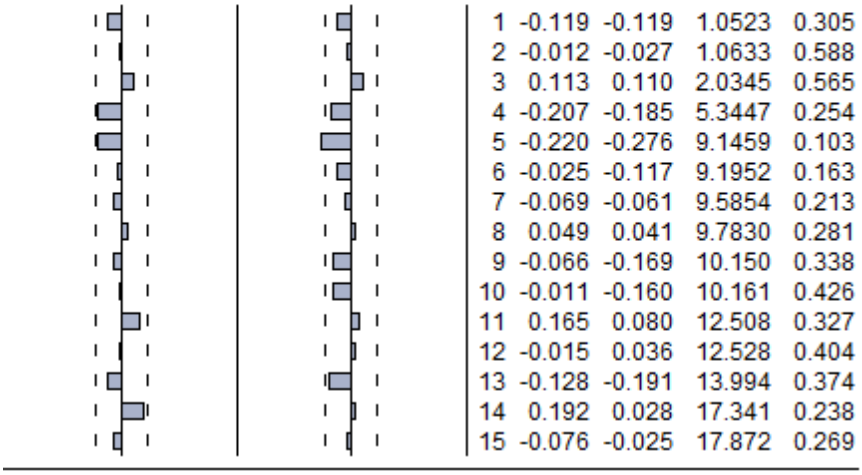
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.095	0.095	13.518	0.000
		2	-0.024	-0.034	14.404	0.001
		3	0.010	0.016	14.566	0.002
		4	-0.065	-0.069	20.839	0.000
		5	-0.000	0.014	20.839	0.001
		6	0.002	-0.004	20.843	0.002
		7	0.044	0.047	23.729	0.001
		8	-0.023	-0.037	24.497	0.002
		9	0.032	0.043	26.060	0.002
		10	0.009	-0.003	26.188	0.003
		11	-0.018	-0.008	26.654	0.005
		12	-0.005	-0.009	26.690	0.009
		13	-0.014	-0.008	26.978	0.013
		14	0.013	0.013	27.231	0.018
		15	-0.006	-0.008	27.284	0.027

Source: Own calculation in E-Views

Interpretation:
Results indicate the presence of autocorrelation in the residuals. Null hypothesis is hereby rejected that there is no auto correlation. The probability values were significant at the 5% level.
Results support strongly the conduct of a GARCH model to obtain valid results.
Linear regression was not a valid model for testing for anomalies.

Table IX: Correlogram tests for the Monthly returns of NSE 500

Sample: 1 72
Included observations: 71



Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.119	-0.119	1.0523	0.305
		2	-0.012	-0.027	1.0633	0.588
		3	0.113	0.110	2.0345	0.565
		4	-0.207	-0.185	5.3447	0.254
		5	-0.220	-0.276	9.1459	0.103
		6	-0.025	-0.117	9.1952	0.163
		7	-0.069	-0.061	9.5854	0.213
		8	0.049	0.041	9.7830	0.281
		9	-0.066	-0.169	10.150	0.338
		10	-0.011	-0.160	10.161	0.426
		11	0.165	0.080	12.508	0.327
		12	-0.015	0.036	12.528	0.404
		13	-0.128	-0.191	13.994	0.374
		14	0.192	0.028	17.341	0.238
		15	-0.076	-0.025	17.872	0.269

Source: Own calculation in E-Views

Interpretation:

Table IX displays there is significant autocorrelation in the residuals. Null hypothesis is accepted here that there is no autocorrelation. The GARCH model was not needed.In short, the correlograms for the daily returns exhibited autocorrelation in the residuals, thus violating the criteria for a normal distribution and supporting the case for Garch Model. On the other hand, monthly data series do not show any evidence towards autocorrelation so there was no need to use Garch Model.

Normality tests:

Table X: Normality tests for the NIFTY 500 daily returns

	Daily Returns		Monthly Returns	
	Score	**P Value**	**Score**	**P Value**
Jarque-Bera	698.1404	0.0000	.394252	.821087
Shapiro-Wilk	.97157	0.0000	.98410	.50897
Doornick Chi-Square	223.885	0.0000	.336	.8453

Source: Own calculation in Stata

Interpretation:

Tables X display results that Nifty 500 indices' daily returns were not normally distributed. Therefore it is proved here that OLS regression method was therefore inappropriate. However in monthly returns null hypothesis is accepted and the series are normal. So Garch Model is applied on daily return data series.

Garch: GARCH is utilized to search for any anomalies (e.g., Monday effect, Tuesday effect, or any other day effect).

Table XI: Garch Results

Variable	Co efficient	Prob.
Monday	.000365	.5111
Tuesday	-0.000372	.5018
Wednesday	.000101	.8653
Thursday	-0.000296	0.5730
Friday	0.000165	0.7562

Source: Own calculation in EViews

Table XI illustrates that no day was significant in the Nifty 500 index. Thus, we accepted the null hypothesis, and there were no significant differences in mean returns between a specific day and other days of the week. Thus, this index did not exhibit any day effect.

CONCLUSION:

This paper investigated the 'Day of the week' and 'Month of the year' effect by analyzing daily and monthly NSE (Nifty 500) returns in India. As mentioned earlier, the NIFTY 500 Index represents about 95.2% of the free float market capitalization of the stocks listed on NSE as on March 31, 2017 therefore this Index has been selected for the study. EMH has been tested empirically by many researchers in Indian Market and the results displayed weak-form market efficiency. Present study has tested this concept in the NSE by applying descriptive analysis, regression model, and GARCH model searching for 'Day of the week'and 'Month of the year'effect. Regression analysis accepted the primary null hypothesis stated that no significant differences existed for daily or monthly returns from a specific day of the week or month of the year during the period of study (2012-2017).However results of OLS could lead to misleading results as the model was not found fit for the daily return series. It failed to fulfill the conditions of normality and no auto correlation. Therefore,Garch Model was applied on daily return data series and it suggested that the NSE market was efficient, and no seasonality was found in daily and monthly returns. The study hereby concludes that Nifty 500 daily and monthly return series did not contain any calendar anomalies. Hence In an efficient market, no one can outperform the market using any analytical tools. Also, no chances exist to earn excess yields at a particular time, such as during a particular day or a month.

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