

JANUARY ANOMALY: A MYTH OR REALITY?

Gurloveleen Kaur^{*}

ABSTRACT

The EMH assumes that the stock market is free from the impact of various anomalies. It is efficient and working normally, no one can earn extra profits by using the extra information and exploiting it. One of the most crucial anomaly identified by the researchers is January effect, believe that more investment and returns in the month of January and least returns in December with higher selling. The same anomaly with tax loss selling hypothesis effect was tested in the research. The study did not find the existence of this anomaly in the Indian Stock Market. Though, the seasonality was observed in the stock market but not the January anomaly effect as presumed by the researchers.

Key words: EMH, January Effect, Tax Loss Selling Hypothesis, Calendar Anomaly

INTRODUCTION

According to EMH, the stock markets are rational and the stock prices fully reflect the available and relevant information. When the new information is available in the market, the stock prices immediately absorb the same. But the behavioral finance claims the presence of anomalies in the stock markets. These anomalies are the deviations. It means an irregular occurrence or abnormality in a smooth pattern of the stock markets. Birau (2012) reported that no arbitrage opportunities, after costs, after risk premium can be achieved using ex ante information as a result of the fact that all information available at any time is fully reflected in current prices. EMH highlight the fact that absolute rationality of the capital market characterized by the fact that all investors are rational, it is a statement of fact and must be generally accepted.

^{*} Assistant Professor, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, E-mail: gurlovemaan@gmail.com.

An alternative solution to the problems faced by the classical finance theory in elucidating certain financial facts is “Behavioral finance”. The behavioral finance presumes that investors may irrationally behave at the time of taking investment decisions after considering the new available information in the market. The three themes prevail in behavioral finance, such as: Heuristics, Framing and Market Inefficiencies.

- Heuristics: Investors take their investment decisions by considering rule of thumb and ignore the logical reasoning.
- Framing: Investors recognize and react to events by collecting stereotypes and anecdotes. It emotionally sets their mind to depend on such events.
- Market Inefficiencies: it comprises mispricing, irrational decision making and return anomalies.

In layman's language, an anomaly is a strange or unexpected occurrence of any event which deviate the performance of a stock or a group of stocks from the assumptions of EMH. These are also known as financial market anomalies. The various kinds of anomalies are pointed out by the different academicians and researchers from time to time according to their nature, characteristics and impact on the performance of the stock market, etc. The present study checked the existence of one calendar anomaly- January effect in the Indian Stock Market.

REVIEW OF LITERATURE

Recep (2004) observed whether the calendar anomalies were still alive in Istanbul stock market. The day of the week effect, turn of the month effect, turn of the year effect, holiday effect and intra month effect were studied. The daily closing values of the stock along with traded volume were selected for the period of January 1988 to January 1999. The author had found the low and negative returns in the first part of the week (from Monday to Tuesday) and positive returns in the second half of the week (from Wednesday to Friday) in the case of day of the week anomaly. In turn of the month effect, the first part of the month means the first fifteen days of the month exhibited the significant and positive returns as compared to second half. The holiday effect, intraday effect and January effect were also found significant during the study. In holiday effect, the large number of stocks found to be sold

before the holiday days with significant returns against the post-holiday days.

Self & Mathur (2006) developed a procedure for identifying the asymmetric and symmetric periods from the data series by using the Enders and Granger asymmetric (E-G) stationarity test and the Augmented Dickey Fuller test. The stock indices of six countries such as Canada, Germany, France, Japan, Italy and the United States were chosen. The data related to daily closing prices from 1 January 1992 to 12 June 2003 has been collected from Dow Jones Global Indices database. The Momentum Threshold Autoregressive Model (MTAR) was used to check the momentum effect in stock prices. The results of the study had proven the existence of inefficiencies in the stock markets.

Garg et al. (2010) examined the presence of seasonal anomalies in the U.S and Indian stock markets January 1998 to December 2007. The five anomalies i.e. turn of the month effect, semi-monthly effect, monthly effect, Monday effect and Friday effect has been chosen. The S&P 500 and BSE were taken as a proxy to obtain the results. The semi monthly effect and turn of the month effect have been found in both the markets. The Monday effect was present in the Indian market only. The month effect and Friday effect did not exist in any stock markets.

Latif et al. (2011) discussed the views of various researchers about the causes of anomalies, how it should be dealt and the behavioral aspects of the same. The authors opined that the efficient market is that where all investors have same and relevant information about the stocks and they behave rationally according to that. So, in this context, no investors can earn unexpected profits. But it was found that many stock markets of the world could not follow the assumptions of EMH. These are known as anomalies. Anomalies could arise once and disappear, or could occur again and again. The study concluded that the investors can beat the market and earn excess returns through technical and fundamental analysis.

Nageswari & Selvan (2011) analyzed the presence of seasonality in the stock returns of BSE Sensex Index. The study investigated the day of the week effect and monthly effect from 1st April 2000 to 31st March 2010. The day of the week effect and monthly effect did not exist in Indian stock market was found. The results of the study had proven that the Indian stock market was weak form efficient.

Yadav (2013) measured the relationship between return and risk of the stock market. The study also examined the existence of quarter of the year effect, month of the year effect and day of the week effect in NSE. The highest quarterly mean returns were found in the third quarter and least in the fourth quarter. The maximum mean returns in the month of December and negative returns in January, March, May and October were observed. The highest mean returns were seen on Wednesday and minimum on Tuesday. The results depicted that the market was not efficient and the abnormal profits can be earned by the investors.

Amarnani & Vaidya (2014) studied the existence of calendar anomalies in the Indian stock market by selecting BSE Sensex and NSE Nifty during the period of 1993 to 2013. The day of the week effect was found in Nifty but not in Sensex. The negative returns were observed on Monday in Nifty only. Contrary, the month of the year effect was not seen in both indices. The lowest returns in the month of March due to tax-loss selling effect were not found. But, the presence of turn of the month effect was significantly confirmed in BSE Sensex and NSE Nifty. The study has reported that the seasonality exists in the Indian stock market.

Seif et al. (2015) tested the seasonality existence in the stock returns of nine emerging stock markets, i.e. Brazil, Poland, Czech Republic, Hungary, Malaysia, Mexico, Taiwan, South Africa and Turkey. The existence of five anomalies month of the year, January effect, day of the week effect, holiday effect and 44th week effect have been tested in the selected markets. The study admitted the strong evidence of higher returns in December. The day of the week effect was also confirmed in six out of nine stock markets and holiday effect in seven stock markets. In fact, the effect of post holiday was found more prevalent than the pre holiday effect. The study did not support the presence of other January effect in any selected stock market.

RESEARCH METHODOLOGY

Need of the Study

The stock market of an economy plays a pivotal role in its development and growth. It affects every sector of the economy, whether financial or industrial sector or others. It provides a number of opportunities to investors to earn profits and enhance the worth of their investments. It becomes the basis for the government and regulatory authorities to plan their

policies. It plays an important role in the mobilization of capital from the domestic as well as from foreign investors. The importance of this research stems from the crucial role played by the Indian stock market in developing Indian economy.

The various anomalies that always prove that the investors are not rational decision makers were studied. So to execute the present study, data for the period of 2006 to 2015 was taken into consideration.

The international investors are concerned with the market efficiency, timing of investment, and the market integration with other developed countries (Nageswari & Selvan, 2011). This work would be helpful to the investors at the time of making their investment decisions because they can consider all those effecting variables and take suitable actions. Individual investors, institutional investors, portfolio managers and foreign investors may use this study as an assistant in their work. The firms whether already listed or going to be listed on any stock exchange might refer all those variables which will affect the performance of stock market prices. The Indian Government and other regulatory authorities can use the study results to make their policies and take any specific decisions related to the stock market.

Objective of the Study

To check the existence of January anomaly in the Indian stock market

Scope of the Study

The scope of the study is limited to BSE 500 stock market index. A time span of ten years from April 2006 to March 2015 has been selected. The Global Financial Crisis which started from U.S economy in 2006 was the sole cause behind the selection of this period. The Indian Stock Market performs efficiently or not was tested during the period of this crisis. The study considered the manufacturing firms of BSE 500 only. The daily data of closing prices was used to attain the objective of the study. One of the most crucial calendar anomaly, i.e. January effect was studied. Since Saturday and Sunday were considered to be exceptional trading days in India. The stock market is non-operational on Saturday and Sunday of every week. Sometimes, it is operational on these days and then it is considered as exceptional trading days. For the present study, observations of these two days were not included. The daily observations were grouped on the basis of months, i.e. January, February, etc.

Sample Size

The sample size of 150 manufacturing firms has been selected on the basis of higher closing prices of stocks on 31 March, 2015. All the manufacturing firms traded on BSE 500 were identified as per the classification given by National Industrial Classification (NIC), 2008. It was found that 258 firms belong to manufacturing industry. Out of these 258 firms, 124 firms fall in small cap, 46 firms in mid cap and 88 firms in large cap categories. Proportionately, 150 firms were picked: 72 from small cap, 27 from mid cap and 51 from large cap. The homogenous sample was chosen by taking the manufacturing firms only. The literature survey indicated that not many studies have been conducted on manufacturing sector.

Research Design and Sampling Technique

The research exhibits all the characteristics of descriptive study. So, the research design was descriptive in nature. The sampling technique was stratified. In this sampling technique, the strata's or groups were created from the universe or entire population and then sample was picked from the created strata's or groups. BSE has been selected as a sample from the Indian capital market and one index BSE 500 of BSE was picked for the study. Further, 150 manufacturing firms of BSE 500 were chosen for the study. The three strata's - large cap, mid cap and small cap have been made and companies were taken from these strata's as per the need of the study.

Data Used and Collected

The secondary data was used for the entire study. Data regarding closing prices of stocks of the manufacturing firms was collected from the website of money control. The daily data of closing stock prices was used to study the existence of January anomaly in the Indian Stock Market.

Research Hypothesis

The following Null hypothesis was built to fulfill the objective of the research.

Null Hypothesis (H_0) - January anomaly is not present and has no impact on the performance of Indian Stock Market

Statistical Tools used

An effort has been made to test the above observations by analyzing the stock market daily data with the help of Descriptive Statistics, Graphs, Kruskal Wallis Test and Dummy Variable Regression Model. A basic description and normality of return series was checked through descriptive statistics. After this, the non-parametric test - Kruskal Wallis and parametric test - Dummy Variable Regression were used to see the existence of the anomalies in the Indian Stock Market. Kruskal Wallis test was employed for analyzing the equality of mean returns of the different months of the year. Dummy Variable Regression Model was used to test the seasonality in the Indian Stock Market due to selected anomalies.

The daily returns from the closing prices of the stocks were calculated by using the following formula:

$$R_t = \ln(Y/Y_{t-1}) * 100$$

Here,

R_t = Daily return in the period t, \ln = natural logarithm, Y_t = closing value of a given index on current trading day (t), Y_{t-1} = closing value of a given index on preceding trading day

The following model was used to study the existence of January effect:

$$R_{it} = \alpha_{1i}D_{1t} + \alpha_{2i}D_{2t} + \alpha_{3i}D_{3t} + \alpha_{4i}D_{4t} + \dots + \alpha_{11i}D_{11t} + \alpha_{12i}D_{12t} + V_{it}$$

Here, R_{it} is the monthly return of the index, D_{1t} to D_{12t} are the dummy variables from January to December, D_{1t} considered a value of 1 for all the January returns and 0 for all the other months returns and so on. The coefficients from α_{1i} to α_{12i} are estimates of the returns for all months from January to December. V_{it} is the disturbance term.

Every dummy variable considered the value 1 for the corresponding month and 0 for the other months. The effect of January would be considered, if estimated coefficient of this month will be either (a) higher than the returns of other months, or (b) may be or not positive, (c) statistically significant.

DATA ANALYSIS AND INTERPRETATION

Although Wachtel (1942) provided the evidence of the abnormal stock returns in January for U.S stock markets, Rozeff & Kinney (1976) were the first who formally reported this effect in the U.S equity market, they found that returns on an equally weighted index of NYSE stocks were much higher in January than in other months of the year (Bankoti, N, 2012). Gajdosova, et al (2011), Ray, S (2012) and Sharma, et al (2014), etc had also proved the anomalous behavior in the trading of different months of the year. The January anomaly states that the January ends with higher returns and December with lower returns. So, the investors are always keen to buy stocks in the January month and sell in the December month.

The reasons behind this anomaly are tax loss selling hypothesis, window dressing by institutional investors and release of positive information at the start of a year by the corporate sector, etc. The investors tend to sell their declined value shares to realize tax losses before the end of tax year (December or March, depends upon the selection of financial year by different countries) and buy the high value shares in the first month of new financial year (January or April). With this, the selling pressure of stocks declines in the month of January or April, increases the share prices and returns become positive. On the other side, Institutional investors are always eager to sell their loss making shares in December and buy profit making shares in January. They do not want to present loss making shares in their financial reports and do window dressing for maintaining their respectable position in the market. It puts downward pressure on the prices of loss making shares. The companies want a lead in the market at the start of a year to set good image in the mind of their investors. So, the positive news about the companies is released during this time.

Descriptive Statistics

The following table 1 presents the Descriptive Statistic values for the daily stock returns of 150 manufacturing firms listed on BSE 500 from April 2006 to March 2015. The values of Mean, Median, Maximum, Minimum, Standard Deviation, Skewness, Kurtosis and Jarque Bera are given for all the respective months of the year - January, February, March, April, May, June, July, August, September, October, November and December.

Table 1: Descriptive Statistics of January effect

	January	February	March	April	May	June	July	August	September	October	November	December
Mean	99.847	100.36	100.13	100.29	100.09	100.05	100.14	100.18	100.22	100.01	100.03	100.32
Median	100.05	99.99	100.09	100.33	100.08	100.03	100.11	100.18	100.29	100.15	100.1326	100.29
Maximum	106.26	224.81	104.36	102.79	110.33	151.67	135.90	135.90	102.69	105.0	103.72	163.33
Minimum	88.54	44.94	94.51	96.76	93.87	66.89	72.96	72.98	96.92	92.2	95.80	62.17
Std. Dev.	1.62	10.60	1.34	0.93	1.49	4.72	3.40	3.45	1.00	1.58	1.09	5.52
Skewness	-1.99	8.56	-0.55	-0.37	1.12	5.00	3.27	3.26	-0.69	-1.06	-0.45	6.21
Kurtosis	18.04	114.73	5.94	4.23	15.80	87.53	82.04	81.53	4.21	8.42	4.23	103.68
Jarque-Bera	1915.87	92630.98	75.19	14.57	1344.22	7962.68	2156.46	9422.57	26.34	255.35	17.68	80189.69
Probability	0	0	0	0.000684	0	0	0	0	0.000002	0	0.000144	0

Source: Computed from the data taken from Moneycontrol

The information given in the table 1 shows that the highest mean return (100.36) was earned in February and the lowest mean return (99.85) in January. In all the other months, the positive mean returns were earned with minor variations from each other. The highest median value of 100.33 was observed in April and least in February. The maximum (224.81) and minimum (44.94) returns were found for the month of February.

It is to be noted from the above table that the standard deviation for the month wise mean returns ranged from 0.94 to 10.60. The highest standard deviation value (10.60) was recorded in February month and the least (0.94) in April month. It indicates the presence of non-linearity relationship between risk and return of BSE 500. It also depicts that the market was more volatile in February and minimal in April.

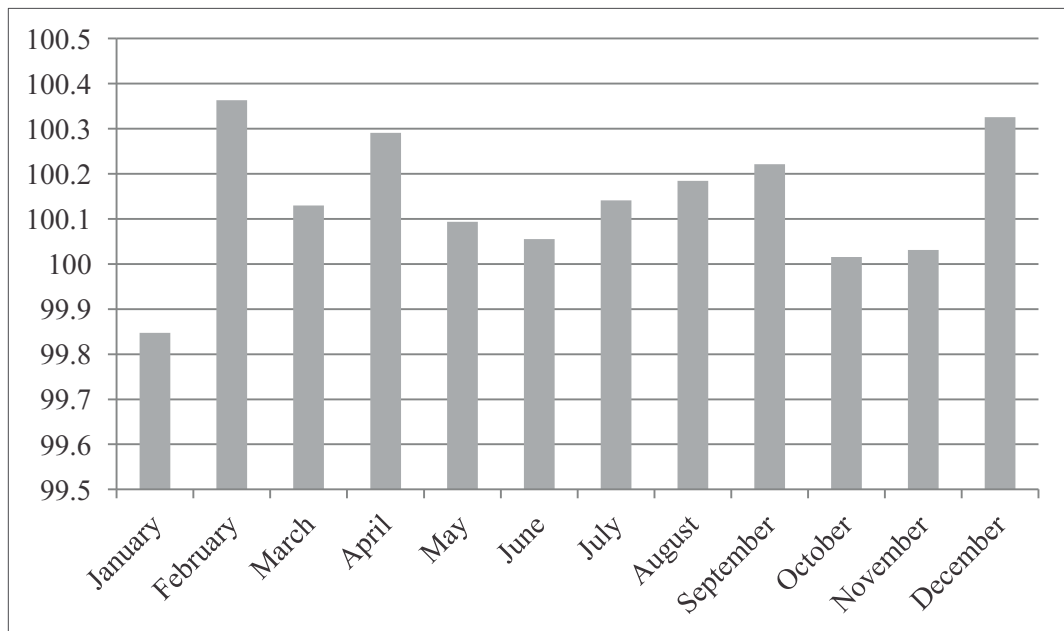
The return distribution was observed positively skewed for the months of February, May, June, July, August and December, negatively skewed for January, March, April, September, October and November months along with their respective values. It can be concluded that

the daily stock returns were asymmetrically distributed for all the trading months.

According to the analysis of Kurtosis, the return series was found leptokurtic. The Kurtosis values for all the months of the year were observed greater than 3 which shows that the data was not normally distributed. The p-values of the Jarque Bera test for all the twelve months were found zero. The values were lesser than the critical value of 0.05; hence the data was not confirmed symmetric and normally distributed. The mean values of different trading months of the year are not useful in predicting the future returns, because the data was found asymmetric and skewed. On the other side, it can be said that the future returns are not dependent on its past.

Graph 1 shows the results of returns fetched by all the months of the year. It has been observed that the highest mean returns were attained by February month, followed by December, April, September, August, July, March, May, June, November, October and January.

Graph 1: Returns on different months of year



Kruskal Wallis test

Tables 2 and 3 show the results of Kruskal Wallis test employed to check the existence of January effect in the Indian stock market during the period of April 2006 to March 2015. The mean returns for twelve months were calculated. The enlisted hypothesis was used to see the significant difference in the mean returns of all months.

Null Hypothesis (H_0): There is no significant difference in the mean returns of different trading months of the year.

Table 2: Kruskal Wallis Test of January effect

Ranks			
	Group	N	Mean Rank
January effect	January	190	1012.39
	February	174	1019.95
	March	183	1124.15
	April	170	1232.09
	May	191	1090.53
	June	192	1052.09
	July	199	1111.16
	August	191	1145.51
	September	185	1207.48
	October	181	1101.19
	November	181	1086.61
	December	187	1174.40
	Total	2224	

Source: Computed from the data taken from Money control

Table 3: Test Statistics^{a,b} of January effect

	January effect
Chi -square	22.751
Df	11
Asymp. Sig.	0.079

Source: Computed from the data taken from Moneycontrol

The results of the trading returns of the different months of the year for the selected period are given in tables 2 and 3. The Null hypothesis was accepted with .079 asymptotic significant value at 5% level of significance. It confirms that the returns fetched by the different trading months were not statistically significant. The mean rank of 1012.39 was found for the month of January was not the highest one as assumed by January anomaly. Hence, this anomaly did not exist in the Indian Stock Market and the market was found efficient. The investors cannot rely on past data to earn abnormal returns.

Dummy Variable Regression

Table 4 depicts the results of dummy variable regression model employed to check the existence of January effect in the Indian stock Market. The Null hypothesis created to test the significant relationship between the returns of the months, is as given below:

Null Hypothesis (H₀): There is no significant difference between the returns of all the months

Table 4: Dummy Variable Regression of January effect

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
January (Constant)	.487	.294		.340	.567
February	.516	.425	.034	1.216	.224
March	.283	.419	.019	.675	.499
April	.444	.427	.029	1.039	.299
May	.247	.415	.017	.595	.552
June	.208	.414	.014	.503	.615
July	.294	.410	.021	.717	.473
Aug	.338	.415	.023	.814	.416
Sept	.374	.418	.026	.895	.371
Oct	.168	.420	.011	.400	.689
Nov	.184	.420	.012	.438	.661
Dec	.478	.417	.033	1.148	.251
R-Squared (.001)		F-Stat (.242) , Prob.(F-stat)-(.994)		DW Value (2.612)	

Source: Computed from the data taken from Moneycontrol

The positive coefficient values for all the months of the year were found during the study period of 2006 to 2015. The highest coefficient value was observed in the month of February and least in the October month. The p-values for all the months were found greater than level of significance of 5 %.

Hence, the constructed Null hypothesis was accepted and no significant difference in the returns of different months had seen. The R-squared value of .001 denotes the variation explained by all the independent variables in the model and it was found least. The F-statistics p-value (.994) was also found insignificant at .05 level. The model was observed

poor fit. The autocorrelation problem did not exist in the data series as the calculated Durbin Watson value (2.612) was found greater than 2.

The results confirmed that the returns of different trading months of the year were not significant. The market has been found efficient, the returns earned on different trading months of the year were observed almost same. The extra profits cannot be earned by analyzing the past performance of different months of the year. The market has already adjusted with the past records and behaving after that. The past data is not required for making the future decisions.

Heteroskedasticity test

The Heteroskedasticity problem in the data was checked through Breusch-Pagan-Godfrey test. The Null hypothesis created to check this, is stated below:

H_0 : There is homoskedasticity

Table 5: Breusch-Pagan-Godfrey Test of January effect

F -statistic	0.107713	Prob. F(11,157)	0.9999
Obs*R ² -squared	1.265849	Prob. Chi ² -Square(11)	0.9998
Scaled explained SS	6.55893	Prob. Chi ² -Square(11)	0.8336

Source: Computed from the data taken from Moneycontrol

The Null hypothesis has been accepted as the detected p-value (0.9999) was found greater than the significant value (0.05). It denied the existence of the heteroskedasticity problem in the observed series. The error term was observed same across the values of independent variables. The noise or random disturbance caused by independent variables in the performance of dependent variable was not found different.

Tax Loss Selling Hypothesis

In most of the developed countries financial year starts in January and ends in December considered as the most effective reason behind the January Effect. This is due to the interest of the investors to sell the stocks in the month prior to pay the taxes and re-buy the same in the next month. It is also known as Tax loss selling hypothesis anomaly. But in India, the tax year ends in March and starts in April. Therefore, if this anomaly is based on this assumption, then it must be presented in March and April.

Dummy Variable Regression

Table 6 shows the results of dummy variable regression model in which the month of April was considered as benchmark month. Table 6 shows the results of heteroskedasticity.

The following hypothesis was made:

Null Hypothesis (Ho): There is no significant difference between the returns of all the months

Table 6: Dummy Variable Regression of Tax Loss Selling Hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
April (Constant)	.291	.310		.323	.721
May	-.197	.427	-.014	-.462	.644
June	-.236	.426	-.016	-.553	.580
July	-.149	.423	-.011	-.354	.724
Aug	-.106	.427	-.007	-.249	.803
Sept	-.070	.430	-.005	-.162	.871

Oct	-.276	.432	-.019	-.638	.524
Nov	-.260	.432	-.018	-.601	.548
Dec	.035	.429	.002	.081	.936
January	-.444	.427	-.031	-1.039	.299
February	.073	.436	.005	.166	.868
March	-.161	.431	-.011	-.373	.709
R-Squared (.001)		F-Stat (.242), Prob.-F-stat.(.994)		DW Value (2.612)	

Source: Computed from the data taken from Moneycontrol

According to the results of table 6, the effect of tax loss selling hypothesis did not exist in the Indian Stock Market. The Null hypothesis has been accepted which implies that returns earned on different months of the year were not significantly different. The coefficient values for all the months except December and February were found negative. The t-values for all the months of the year have been observed statistically insignificant at 5% level of significance. The market is performing efficiently, the higher returns in the month of April and least in March were not observed. Secondly, the historical data related to different months of the year for further investment is not required. The investors can take their decisions by checking the present performance of the market, the present work of the market is already depicting its past behaviour.

Heteroskedasticity test

The following Null hypothesis was created to check the heteroskedasticity problem in the data of stock returns.

H_0 : There is homoskedacity

Table 7: Breusch-Pagan-Godfrey Test of Tax Loss Selling Hypothesis

F-statistic	0.244987	Prob. F(11,157)	0.9937
Obs*R-squared	2.851878	Prob. Chi-Square(11)	0.9925
Scaled explained SS	4.898395	Prob. Chi-Square(11)	0.936

Source: Computed from the data taken from Moneycontrol

The heteroskedasticity problem was not confirmed in the data. The calculated p-value (0.9937) has been found greater than significant value (0.05), therefore the Null hypothesis was accepted here. The error term was found same across all values of independent variables which describe the random disturbance or noise in the relationship of dependent and independent variables.

The stock markets behave efficiently in all the months of the year and provide same returns in January, February, March and so on is assumed by EMH. But, the studies of Garg, et al (2010), Ray, S (2012) and Yadav, P (2013) found different trading returns in different months. They observed high selling of shares in December and high buying in January. This effect is familiar with the name of January effect which checked in the present study. The study did not find different returns on different months of the year. The returns were found equally distributed over the period of study. In this situation, no-one can exploit the market which helps in earning the extra profits in January. No doubt, seasonality was observed in the stock returns of different months, but not the January effect and tax loss selling hypothesis. The same results were observed in the studies of Nageswari, P (2011), Bankoti, N (2012), Archana, et al (2014) and Khan & Gholam (2014). Bankoti, N (2012) opined that although high significant difference between the returns of different months was observed in some cases, but, did not find any month in which returns behaved consistently in abnormal way.

FINDINGS OF THE STUDY

- The mean returns for February month were found highest with 100.36 value, followed by December with 100.32, April with 100.29, September with 100.22, August with 100.18, July with 100.14, March with 100.13, May with 100.09, June with 100.05, November with 100.03, October with 100.01 and January with 99.85. It can be summarized that the mean values of all the months were very close to each other. The month of February was considered more volatile with S.D value of 10.60 and April was least volatile with S.D value of 0.94. The data was not found normally distributed and symmetric as observed from the results of skewness, kurtosis and Jarque bera test. The ascertained mean values of different months cannot become the base of calculating the future values and making investment decisions according to that.
- The results of the Kruskal Wallis test accepted the Null hypothesis as the ascertained p-value of .079 was found greater than 0.05 critical value. The different mean returns for different trading months were calculated, but statistically proven insignificant. As per the results, the highest mean return of 1232.09 was observed in the month of April and next in September (1207.48). After this, it was 1174.40 for December, 1145.51 for August, 1124.15 for March, 1111.16 for July, and 1101.19 for October, 1090.53 for May, 1086.61 for November, 1052.09 for June and 1019.95 for February. The least return 1012.39 was found in the month of January. The outcome of this test acknowledged that there was no significant difference between the mean returns of different months. It approved the existence of seasonality in the Indian Stock Market but not the January effect during the study period of 2006 to 2015.
- The positive coefficient values for all the twelve months of the year were observed through the dummy variable regression model. The highest returns were found in February month with coefficient value of .034, followed by December with .033 and April with .029. Then next months were September (.026), August (.023), July (.021), March (.019), May (.017), June (.014) and November (.012). The least returns were fetched in October month with .011 coefficient value. The p-values for all the months were found greater than 0.05 values, hence accepted the Null hypothesis. The result depicted that the seasonality exist in the market, but statistically not significant.

- The starting of financial year from January was considered as the crucial reason behind the January effect by the eminent researchers. In most of the developed nations, the financial year starts in January and ends in December but in India it started in April and ended in March. This effect is famous with the name of Tax loss selling hypothesis. It was tested in the present study from the period of 2006 to 2015. But the results did not confirm its existence in the Indian stock market.

LIMITATIONS OF THE STUDY

The time span of the study was ten years only from April, 2006 to March, 2015. The limited time period restricted the findings of the study to be generalized. The entire study was done by taking one index of BSE, i.e. BSE 500. Further, 150 manufacturing firms listed on it were selected for the study. The entire results were drawn according to the performance of the selected companies only. The best 150 manufacturing firms were adjudged as per their performance on 31st March, 2015. The higher market capitalization was the basis of selection of firms. Further, the large cap, mid cap and small cap companies were chosen proportionality. The few companies could not become part of the study because of unavailability of the data. These companies came into existence or were listed on BSE 500 after 2006 and full data for the selected research period was unavailable.

Again, the study has limited its scope around the January effect anomaly and the results were generalized on their basis only. This is also one of the limitations of the study. The secondary data was collected from the website of, Money control. The procedure of collection of data may have some constraints which may affect the outcome of the study.

CONCLUSION AND IMPLICATIONS

The January effect anomaly was selected for confirming the existence and seasonality caused by it in the current research work for the research period of April, 2006 to March, 2015. Though the seasonality was confirmed in the study but the existence of this anomaly was not statistically proven. The results were drawn with the help of descriptive statistics, Kruskal Wallis test and dummy variable regression model. The highest returns were earned in the month April and least in January as per the results of non-parametric Kruskal Wallis test. On the other hand, the parametric test Dummy variable regression model gave the

maximum returns in February month and minimum in October month. The outcome of both the tests were different but rejected the January effect in the Indian Stock Market from 2006 to 2015. The January effect states that the returns in January month are higher than all the months in a year and least in December. It has been statistically disapproved. Similarly, the January effect was tested in the context of tax loss selling hypothesis to see is there any effect of it in the Indian stock market because of different financial year here. The study did not find any effect on the performance of market due to tax loss selling hypothesis.

The one calendar anomaly was picked for the present research work. Though, the existence of January effect was not statistically proven as assumed by the researchers in their work. But, the seasonality was observed in the behavior of the stock market. The higher returns were observed on February through dummy variable regression model. The investors and financial analysts would incorporate this information in their trading strategies. No doubt, the effect of January anomaly has been statistically refuted. But, the seasonality in the return series was observed. The Government should make policies to curb this seasonality. The market would act more efficiently if the seasonality is curbed. There is also need to control the herd behavior of the investors. The disbursement of the knowledge about the work and benefits of the Indian Stock Market amongst the investors is required.

The current study has limited itself to one index of BSE only. So many indices specifically designed to track the performance of specific industry; sector, etc are present in the Indian Stock Market. Those indices can be chosen to conduct further research. So, that more precise and specific results can be attained by putting more emphasis on that. This would help the investors, financial analysts and authorities to come up with more constructive decisions. To enhance the scope of the study more than one indices of BSE or indices of NSE can be chosen. The study has been done for the limited time period from 1st April 2006 to 31st March 2015 to check the efficiency of the Indian stock Market. The research period might be extended for further studies. The one calendar anomaly- January effect was selected for the present study. This number can be increased along with its types. The results were drawn on the basis of Descriptive Statistics, Graphs, dummy variable regression model. The different statistical techniques may be adopted to do the same study.

REFERENCES

- Amarnani, N., & Vaidya, P. (2014). Study of Calendar Anomalies in Indian Stock Markets. *Perspectives on Financial Markets and Systems - Market Efficiency, Behavioural Finance and Financial Inclusion*, 12 (3), 247-262.
- Birau, R. F. (2012). The Impact of Behavioral Finance on Stock Markets. *Annals of the Constantin Brancusi*, 1 (3), 45-50.
- Gajdosova, K., Heryan, T., & Tufan, E. (2011). Day of the Week Effect in the European Emerging Stock Markets: Recent Evidence from the Financial Crisis Period. *Journal Scientific Papers of the University of Pardubice*, 16 (1), 39-51.
- Garg, A., Bodla, B.S, & Chhabra, Sangeeta. (2010). Seasonal Anomalies in Stock Returns: A Study of Developed and Emerging Markets. *IIMS Journal of Management Science* , 1 (2), 165-179.
- Latif, M., Arshad, S., Fatima, M., & Farooq, S. (2011). Market Efficiency, Market Anomalies, Causes, Evidences and Some Behavioral Aspects of Market Anomalies. *Research Journal of Finance & Accounting*, 2 (9), 1-14.
- Nageswari, P., & Selvam, M. (2011). An Empirical Study on Seasonal Analysis in the Indian Stock Market. *International Journal of Management & Business studies*, 1 (4), 90-95.
- Ray, S. (2012). Investigating Seasonal Behavior in the Monthly Stock Returns: Evidence from BSE Sensex of India. *Advances in Asian Social Science*, 2 (4), 560-569.
- Recep, B. (2004). Are Calendar Anomalies still Alive?: Evidence from Istanbul Stock Exchange, Retrieved from <http://dx.doi.org/10.2139/ssrn.598904>.
- Seif, M., Docherty, P., & Shamsuddin, A. (2015). Seasonality in Stock Returns: Evidence from Advanced Emerging Stock Markets, Retrieved from <http://ssrn.com/abstract=2647950>.
- Self, K.J., & Mathur, I. (2006). Asymmetric Stationarity in National Stock Market Indices: An MTAR Analysis. *Journal of Business*, 79 (6), 3153-3174.

Sharma, A., & Deo, V. (2014). Seasonal Anomalies in Indian Stock Market. *International Research Journal of Finance and Economics*, 118(2), 74-101.

Yadav, S. P. (2013). 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. *Vishwakarma Business Review*, 3 (2), 76-85.