HETEROGENEOUS EVIDENCE: AN ANALYSIS OF MONTHLY ANOMALY

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Abstract: This paper examines the persistence of Month of Year effect in BSE Sensex, Small Cap and Mid-Cap stock for the period of year 2006 to 2013.Generalized Autoregressive Conditional Heteroskedasticity (GARCH) (1, 1) model is used to study the continuous pattern of returns in various Months of Years. It is found that the September effect is present BSE Sensex, BSE Mid-Cap and BSE Small Cap. The returns in the month of April are found significant only for Mid-Cap and Small Cap stocks.There is no April Anomaly in Stocks listed at BSE Sensex. Negative February effect in Small Cap and MID Cap stock. Again this effect is not there in BSE Sensexlisted Stocks. GARCH model confirms that Indian stock market doesn't follow the random walk and there exist opportunities to earn abnormal returns.

Key words: Stock Market Returns, Sensex, Mid Cap, Small Cap, Information and Market efficiency, Month of Year, Dummy variable, GARCH Model

JEL Classification: G120, G1, G140, Y9

INTRODUCTION

Shares of public company are issued and traded in the stock market. It is the Mechanism whichmake it possible to invest in business for the growth of capital without having the knowledge of business with minimum risk. Therefore stock market is of the pillar of economy. To attract more participant in the share market for the growth of economy. Market needs to be efficient and should follow random walk. Participantsshould get equal opportunity to gain or lose from market operations. Efficient market is the market where all the stocks in the stock market reflect all the available information in form of prices. Security prices rapidly adjust to new information as and when it reaches the market.Efficient market is the market where prices of securities are unbiased approximations of the true and fair value of investment. It doesn't mean prices to be equal to true value at every point but it means prices of investment can be greater than or less than from original price however it should be random. Stocks can be over or undervalued only in random occurrences but they ultimately revert back to their mean values. Chances of over and under valuation of stocks are equal and there should be no-correlation between

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valuation and observed variables at any point of time. Ultimately, there is no strategy available for investor to find over and undervalued stocks regularly.

In real word of Investment, there are numerous challenges to the efficient market hypothesis. There are several examples of investor who make fortune in the stock market. There are mutual funds which have track record better than others and which provide consistent abnormal return to investor. There are famous researcher working for asset management companies. So, it is obvious to doubt on randomness of market prices when people and organisation prove and claim to beat the market.

Critics of Efficient market hypothesis come out with various consistent pattern present in market giving abnormal return to investor. These consistent pattern are the Anomalies in the stock Market. In January, Marketsaround the world give higher returns as compared to the other months of the year. Same way Monday effect states that Monday returns are lower where Friday effects states Friday return will be higher. All these Consistent pattern put challenge to efficiency in the stock market.

Generally Regular pattern or Seasonal movement takes place at definite interval in a Calendar Year. These movements or pattern makes the stock market predictable for investor regularly. These regular predictability is known as "Calendar Effect". These regularities are one of the prime threat to "Efficient Market Hypothesis" as these Anomalies or patterns permits the observers to beat the market by spotting the pattern. In this way Anomalies goes in contradiction of the preliminary notion of Efficient Market hypothesis that it is impossible to beat the market and no abnormal returns are available. "Day of week", "Month of year", "Quarter of year", "Festive effect", are covered under calendar anomalies.

LITERATURE REVIEW

Keim (1982) scrutinised the "January effect" using dummy variable ordinary least square regression, Scholes-Williams betas and Dimson-beta. It was found that half of the anomalous return of small companies was due to the "January effect". He also found that more than half of abnormal return of January was in first week of trading year and about eleven percent was in first trading day of the year. Roll (1983) examined January effect. He applied cross-sectional regression and T-statistics. It was found the returns are generally higher so as volatility. However it was observed that the yields of stocks of Small companies were significantly higher as compared to large companies in the Month of January. The possible reason for January effect was Tax- loss selling Hypothesis where stockholder incurs short-range capital losses for income tax reasons before the end of the year. Reinganum (1984) investigated that size effect with January anomaly. It was found that small firm had shown the tendency to provide bulky returns in the month of January

especially in first few trading days of January. Lakonishok and Smidt (1984) inspected the trading features of companies listed by size. They also tested performance of stocks at turn of year. It was found that there were no trades on nearly twenty five percent of the days for the smallest corporations at the end of year. However "Turn of year" was dynamic transaction period for small cap stocks. As a consequence of prices of small cap enterprises required some days to completely replicate equilibrium price changes. All those hurdles leads to create seasonal pattern in rates of return for small Cap Stocks. They also raised doubt that there may be a seasonal pattern for stocks of big corporations as well.Kato and Schallheim (1985) scrutinized January and size effect in Japanese stock exchange. It was found that "January size" effect varies depending upon the type of indices used. They raised doubt on "tax loss selling hypothesis" for "January size effect". Further they also found the presence of June effect in Japanese stock market. Abraham and Ikenberry (1994) examined and confirmed weekend effect in NYSE. Chui and Wei (1998) examined and confirmed Month of year effect in Malaysia, Thailand, Hong-Kong, Korea and Taiwan stock exchange. However it varies from country to country.Schwert (2001) examined the January effect using Jensen's alpha, regression, ARMA and found that small firms outperform large firms in the influence of January effect. Further small-firm turn-of-the-year effect became weaker in the years after it was first documented in the academic literature, even though there werecertain evidence that January effect still exists. Amanulla and Thiripalraju (2001) examined and confirmed day of week effect in India. Jacobsen (2005) studied and confirmed Halloween effect in USA.Serletis and Rosenberg (2004) examined the monthly effect in stock returns using NYSE value weighted index and monthly data of US business cycle expansion and contraction from National Bureau of economic research. They presented the result using GARCH model which provide improved result on problem by including Hetroskedasticity in the model. They found monthly effect was related with Marco-Economic variable. They also found the Monthly anomaly was present during the business cycle expansion and it disappear during business cycle contraction. Ng and Wang (2004) found that the institutional shareholders used to sell the loser stocks enormously in the last quarter and repurchase as many shares in the next quarter. Hansen *et al.,* (2005) studied calendar effects in equity returns and contribute to the calendar effects literature by applying new approach to test for calendar effects. They implemented bonferroni bound test and bootstrapping methods to stock indices from 16 countries from three continents. Bootstrap p-values reveal that calendar effects was significant for returns in most of these equity markets, but end-of-the-year effects was predominant. They calendar effects had been diminishing except in small-cap stock indices. Freund *et al.* (2007) examined and confirmed the turn of month effect in India.Gerlach (2007) examined and confirmed month of year effect in USA.Ali and Akbar (2009) examined the calendar anomalies in Pakistan using various tools such as one way ANOVA, ordinary

least regression, ARIMA and Durbin Watson test. It was found that there was no monthly or Weekly effect in stock Market. However stock market is not fully efficient as day of the week anomaly was present in the market. Fourth and fifth day of the week gives abnormal returns which were confirmed by autoregressive modeling. Ullah *et al.,* (2010) examined and confirmed day of week effect in Pakistani stock market. Blandon (2010) examined seasonality in Latin American stock market by investigating the day of the week, turn of the year and holiday effect in Latibex. He used GARCH Model. Result established that these calendar anomalies were getting weaker in Latibex market but it was still reported around the world.Hajieh et.al (2011) examined Ramadan effect in Middle East economies and established that the mean returns were significantly higher in first and last trading day of Ramadan. Gahlot and Dutta (2012) examined in BRICS countries and confirmed day of week effect in India. Deepak and Viswanath (2012) examined and confirmed month of year effect. Chougule and Khamborkar (2014) investigated the impact of 'Diwali-effect' on the Indian stock market. The result of the study concludes that Diwali effect was not statistically significant in the stock market of India. It was also found that the Halloween effect was more intense in Low yield portfolios.Almonte (2012) examined and denied the quarter of year effect in Asian stock market. However India was not the part of that study. Sharma and Narayan (2012) examined the calendar anomalies in New York stock exchange using ordinary least square regression and GARCH Model. They had reported heterogeneous effect of calendar anomalies depending on Sectoral location of firm against the assumption that firm's returns were homogeneous in nature. They also reported that the effect of calendar anomalies also varies on returns depending upon size of firm. Auer and Rottmaan (2014) examined 13th Friday effect in Asia and found the presence only in Philippines.Floros and Salvador (2014) examined the presence of seasonal pattern in four stock exchanges of three countries that were Greece, United Kingdom and United states. They used data for the period of 2004 to 2011. They Regime-Switching and found that the low volatility in market leads to positive Calendar effects. However these effects changed to negative in highly volatile markets. It was also found that the calendar effect varies based to volatility situation in the market.

Many studies have been conducted in the area on various calendar Anomalies like there are studies on day of the week month of year and holiday effect. All those studies treat stock market as homogeneous and attempts to find single anomaly for whole stock market. However there is no attempt made to study the Calendar Anomaly individually for Sensex Cap, Mid Cap and Small Cap stocks. Hence present study will fill the gap in the area by Cross analysis of Calendar anomalies in the Small Cap, Mid Cap and Sensex stocks. Bombay Stock exchange has three main stock indices as representative of stock with different nature. Sensex Represent whole stock Market. Mid-Cap and Small Cap Index represent Small

Cap and Mid Cap Stocks. This study will helps the investor to manage its portfolio in better way. Investor can plan its investment strategy on the basis of anomalies in the Stock market. Brokers and investment advisors can reframe there investment calls according to the anomalies in the Market.

MATERIALS AND METHODS

Data has been taken from official website of BSE for the period of January 2006 to December 2013. BSE Sensex, BSE Mid-Cap and BSE Small Cap has been selected for the purpose of comparison. Daily closing values of each index is used to calculate the returns.

Estimation of Empirical Model

Numerous researchers has tested Monthly anomaly using dummy variable ordinary least square regression but this technique gives erroneous results and contains shortcoming of error term being not regular over the long period of time which is also termed as problem of heteroskedasticity. In (1982) Engle developed the model to deal with the problem heteroskedasticity which is written as following equation.

$$h_t = c + \alpha \varepsilon^2 t_{-1}$$

Model is also Known as ARCH Model. Later on Bollerslev (1986) comes out with generalized Model of ARCH known as GARCH Model. Following is the equation for GARCH (1,1) Model.

$$h^2 t = c + \alpha \varepsilon^2 t\text{-}1 + y h^2 t_{-1}$$

In this study we have used GARCH model with mean equation.

Modeling Month of Year effect

Month of year effect is examined using dummy variables in the model $D_1 D_2 D_3 D_4 D_5 D_6 D_7 D_8 D_9 D_{10} D_{11} D_{12}$ represents January, February, March, April, May, June, July, August, September, October, November and December. For examining the month of year effect we have taken all the months in model without Constant term. It is done to deal with problem of Dummy trap or multicollinearity. The presence of month of year effect will confirmed when co-efficient of at least of the dummy variable is statistically significant.

$$Rt = \beta1D + \beta2D2t + \beta3D3t \text{ ------} \beta12D12t + \varepsilon i \tag{1}$$

Rtis the daily logarithmic return of the index

Di = 1 for the ith month of year (i = January, February, March...........December)

Di = 0; otherwise

D1-D12 are monthly dummy variable, e is the error term in equation it is normally distributed with mean zero.

Above equation tells the statistically significant month of year in stock returns. However to access the month of year effect in Variance and to deal with problem of heteroskedasticity. We have used following variance equation.

$$h^2t = c + \alpha\varepsilon^2t\text{-}1 + yh^2t\text{-}1 \qquad\qquad (2)$$

Calculation of Stockreturns

For Calculation ofreturns followingformulaewill be used: Rt=(Pt/Pt-1)*100

WhereRtwillbethe return on respectiveindex

Pt =Closingvalue ofIndexfor Month

Pt-1 =Closingvalue ofIndexfor Month.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 demonstrates the descriptive statistics for Monthly effect in BSE Sensex for period of 2006 to 2013. Mean, Median, maximum, minimum, Skewness, kurtosis and standard deviation are reported in the table. Mean returns are found positive only in months of March (0.141), April (0.262), July (0.113), September (0.246) and December (0.106) and other month's shows negative returns.Maximum returns are found in the month of May with about (15.990) percent returns. Minimum returns are found in the month of October with (-11.604) percent returns. Highest standard deviation is found in October (2.3)which means October is most volatile month.Kurtosis are maximum in month of May (25.25).

Table 2 illustrates the descriptive statistics of all twelve months of years for the period of 2006 to 2013 for BSE Midcap. It is evident from the given table that mean returns are found negative only in month of January (-0.131) February (-0.137) June (-0.104) and October (-0.068). Other months exhibits positive returns with highest mean positive returns in April (0.327). Maximum returns are found in the month of May (11.81) and lowest are found in the month of January (-14.83). January is found to be most volatile month with highest standard deviation. Kurtosis are also found highest for January.

Table 3 elucidates the descriptive statistics of BSE Small Cap for the period of 2006 to 2013. Mean returns are found negative for the month of January (-0.140), February (-0.156), June(-0.156), October (-0.158) and November (-0.048). Maximum positive returns is found in the month of May (10.03). Minimum positive return is found in the month of January (-11.24). January is also found to be most volatile

month with highest standard deviation. Kurtosis value is also maximum for the month of January.

Table 1
Descriptive Statistics of Daily Stock Return of BSE SENSEX

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean	-0.095	-0.081	0.141	0.262	-0.008	-0.035	0.113	-0.012	0.246	-0.035	-0.060	0.106
Median	-0.066	0.061	0.268	0.222	0.026	0.139	0.074	0.041	0.292	-0.021	-0.053	0.072
Maximum	6.409	4.711	5.893	4.414	15.990	6.667	5.772	3.609	5.314	7.901	5.581	5.367
Minimum	-7.696	-4.893	-6.224	-4.833	-7.003	-4.840	-6.008	-4.379	-4.213	-11.604	-6.839	-3.917
Std. Dev.	1.789	1.471	1.801	1.378	2.083	1.778	1.807	1.382	1.459	2.300	1.740	1.425
Skewness	-0.592	-0.373	-0.497	-0.230	2.820	0.187	-0.064	-0.313	-0.217	-0.716	0.074	0.405
Kurtosis	7.360	4.133	5.132	4.105	25.253	4.401	4.628	3.960	4.759	8.550	5.670	5.015
Observations	153	153	153	153	153	153	153	153	153	153	153	153

Source: Authors' Computation

Table 2
Descriptive Statistics of Daily Stock Return of BSE MIDCAP

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean	-0.131	-0.137	0.111	0.327	0.081	-0.104	0.127	0.032	0.216	-0.068	0.039	0.195
Median	0.142	-0.011	0.331	0.328	0.057	0.059	0.122	0.055	0.367	0.170	0.229	0.187
Maximum	8.777	5.268	6.873	4.145	11.811	6.911	6.390	3.301	3.423	5.502	4.960	3.412
Minimum	-14.831	-6.220	-7.013	-3.783	-7.427	-8.489	-5.058	-4.587	-4.451	-9.452	-5.171	-5.158
Std. Dev.	2.245	1.536	1.747	1.234	1.955	1.944	1.620	1.343	1.248	2.026	1.540	1.360
Skewness	-1.719	-0.371	-0.623	-0.369	0.834	-0.511	-0.076	-0.505	-1.003	-1.095	0.009	-0.596
Kurtosis	17.135	4.995	6.756	4.423	12.348	6.143	5.604	4.235	5.168	7.160	3.832	4.709
Observations	153	153	153	153	153	153	153	153	153	153	153	153

Source: Authors' Computation

Table 3
Descriptive Statistics of Daily Stock Return of BSE SMALL CAP

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean	-0.140	-0.156	0.071	0.353	0.101	-0.157	0.091	0.049	0.178	-0.158	-0.048	0.182
Median	0.117	-0.065	0.287	0.416	0.042	0.150	0.186	0.114	0.426	0.164	0.043	0.359
Maximum	6.668	5.073	5.786	4.402	10.036	5.121	4.888	3.575	2.869	5.022	4.638	3.882
Minimum	-11.247	-5.401	-7.120	-4.985	-6.832	-8.203	-5.147	-3.836	-4.864	-8.938	-4.617	-5.307
Std. Dev.	1.999	1.483	1.640	1.269	1.873	1.947	1.468	1.264	1.180	1.962	1.482	1.398
Skewness	-1.736	-0.296	-0.858	-0.492	0.720	-0.928	-0.382	-0.413	-1.447	-1.674	-0.228	-0.733
Kurtosis	12.088	4.679	7.010	5.560	10.164	5.911	5.235	3.570	6.761	8.808	3.651	4.747
Observations	153	153	153	153	153	153	153	153	153	153	153	153

Source: Authors' Computation

Empirical Results

Table 4 précises the results of Month of year effect in BSE Sensex using data for period of 2006-2013. It is clear from the table that the returns from the month of September (0.37) are found significant at 5% level of Significance. Rest of the month does not show any anomaly. However Z-stat in month of February (-0.07) and May (-0.06) and August (-0.007) is negative indicating negative returns in February, May and August. However these returns are not statistically significant. Probability Value of ARCH and GARCH terms is zero which means previous stock returns information can affect the present stock returns volatility as well as pervious stock return volatility can affect present stock returns. Durbin Watson statistics indicate low level of auto-correlation between residuals.

Table 5 exhibits the results of equation (1) and equation (2) for Month of year effect in Mid-Cap stocks. Results shows that the Coefficient Value is significant and positive for April (0.21) and September (0.32) at 5 percent level of Significance. It approve the notion of Positive month of Year effect in Mid-Cap Stocks of BSE in the period of 2006-2011. However the returns of month of February (-0.18) are

Table 4
Results of Month of Year Effect in BSE Sensex using equation (1) and
GARCH (1, 1.) for the period of 2006-2013

Variable	Coefficient	z-Statistic	Prob.
JAN	0.051216	0.593911	0.5526
FEB	-0.074739	-0.840242	0.4008
MAR	0.172553	1.716322	0.0861
APRIL	0.110102	1.179642	0.2381
MAY	-0.060763	-0.809686	0.4181
JUNE	0.088850	0.952536	0.3408
JULY	0.023325	0.331858	0.7400
AUG	-0.007013	-0.078463	0.9375
SEP	0.375330	4.261617	0.0000
OCT	0.132983	1.462844	0.1435
NOV	0.099542	1.125795	0.2603
DEC	0.077000	0.860478	0.3895
Variance Equation			
C	0.026065	4.293409	0.0000
ARCH(1)	0.099803	11.19092	0.0000
GARCH(1)	0.893771	100.3096	0.0000
R-squared	0.000330		
S.D. dependent variable	1.685760		
Durbin-Watson stat	1.863170		

Source: Authors Calculations

Table 5
Results of Month of Year Effect in Mid-Cap Stocks using equation (1) and GARCH (1, 1.) for the period of 2006-2013

Variable	Coefficient	z-Statistic	Prob.
JAN	0.048877	0.603548	0.5461
FEB	-0.185866	-2.381361	0.0172
MARCH	0.183851	1.724688	0.0846
APRIL	0.219607	2.248858	0.0245
MAY	-0.013958	-0.166364	0.8679
JUNE	0.060174	0.603384	0.5463
JULY	0.040595	0.507386	0.6119
AUG	0.030842	0.342852	0.7317
SEP	0.321929	3.818649	0.0001
OCT	0.121486	1.413448	0.1575
NOV	0.086357	1.045318	0.2959
DEC	0.135787	1.383617	0.1665
Variance Equation			
C	0.028957	4.120633	0.0000
ARCH(1)	0.122677	13.23128	0.0000
GARCH(1)	0.873582	107.1101	0.0000
R-squared	0.002538		
S.D. dependent variable	1.649122		
Durbin-Watson stat	1.673401		

Source: Authors Calculations

found negative but statistically significant indicating negative February effect in Mid-CAP stocks. Negative returns are also found in the month of May but returns are not statistically significant. ARCH (0.122) and GARCH (0.87) with probability of zero indicates the presence of ARCH and GARCH effect in an Indian stock Market. Durbin-Watson statistics indicate lower level of auto-correlation between variables.

Table 6 exhibits the results of equation (1) equation (2) for Month of year effect in Small-Cap stocks. Durbin-Watson statistics indicates low level of Auto Correlation. Returns from the month of April (0.25) and September (0.30) are found positive and statistically significant at 5 percent level of Significance which means Indian stock market does not follow random walk. There exist Month of year effect. However the returns of February (-0.21) are statistically significant indicating negative February effect. Returns of any other month are not statistically significant.

ARCH (0.156) and GARCH (0.873) with probability of zero indicates the presence of ARCH and GARCH effect in an Indian stock Market.

Table 6
Results of Month of Year Effect in Small-Cap Stocks using equation (1) and
GARCH (1, 1.) for the period of 2006-2013

Variable	Coefficient	z-Statistic	Prob.
JAN	0.090387	1.223052	0.2213
FEB	-0.219883	-2.669415	0.0076
MARCH	0.151103	1.552486	0.1205
APRIL	0.248930	2.527318	0.0115
MAY	-0.054206	-0.684394	0.4937
JUNE	0.089616	0.929216	0.3528
JULY	0.046831	0.521369	0.6021
AUG	0.031929	0.362587	0.7169
SEP	0.301837	4.082340	0.0000
OCT	0.131631	1.670279	0.0949
NOV	0.083516	1.051253	0.2931
DEC	0.134624	1.575875	0.1151
Variance Equation			
C	0.044454	5.936972	0.0000
RESID(-1)^2	0.156553	12.75373	0.0000
GARCH(-1)	0.833226	91.22221	0.0000
R-squared	0.000474		
S.D. dependent variable	1.571508		
Durbin-Watson stat	1.525031		

Source: Authors Calculations

CONCLUSION

Efficient market hypothesis decides the patterns of returns from the stock Market. Therefore market efficiency is one of the decisive factors for Investment opportunities in the stock Market. There were numerous studies on market efficiency of Indian stock market. Maximum studies in the area treat the stock Market as homogeneous and try to relate the results of Base Indices with overall stock market efficiency. Singh(2014) found that there is no Month of year effect in an Indian stock market based on analysis of BSE Sensex. However we have collected some recent International evidence that the stock market is not homogeneous and anomalies are different for small cap and large cap stocks. Therefore the study will contribute in the area by re-examining the phenomena of calendar anomalies for Indian stock Market by Comparing stocks listed at BSE Sensex, Mid Cap and Small Cap. This study included Mid-cap and Small Cap stocks with Stocks listed at Sensex while analyzing the calendar anomalies for Indian stock market so, that we understand and Compare the behavior of Calendar Anomalies in better way.

The Inclusion leads to provide us very interesting results in the area of calendar anomalies. It is found that our analysis does not support the findings of Singh (2014) that there is no month of year effect in BSE Sensex. As we have found September presence of September effect in BSE Sensex. Further when we tested the month of year effect for Mid-Cap stocks. The returns of April and September are significant and Positive whereas the returns of month of February are Negative returns which are statistically significant. All these results indicated the presence of month of year effect in Mid-Cap stocks. Further when we analyzed the month of year effect in small Cap stocks we have again found Positive September and April Effect whereas February is still found negative and statistically significant.

It is very interesting that the calendar anomalies change its behavior from the type of stocks we selected for analysis. For BSE Sensex we have found September effect which is also present in Mid-Cap and Small Cap stock. Reason for September effect could be Festival Season in India which may leads to the positive attitude of Investors for Stock Market. However It is interesting that February is Negative and statistically significant at 5% level for both Small Cap and Mid Cap Stocks. It might be possible that extensive reporting of Turn of year effect around the world may leads to reversal of Turn of Year effect in Mid Cap and Small Cap stocks which is shown as Negative February effect in present study. April Month is found positive statistically significant for the month of April in both Small Cap and Mid Cap Stocks. April Anomaly might have occurred as reason of Tax Loss Selling Hypothesis. Therefore it can be concluded that the stock market is not homogeneous and integrated. Anomalies are still there in Indian stock market however they were more prominent in small cap stocks and Mid Cap Stocks. Therefore there are opportunities available for investor in an Indian stock Market. Investor can plan it portfolio strategy according to the anomalies to gain Abnormal returns from Indian stock Market.

References

Abraham, A., &Ikenberry, D. L. (1994), The individual investor and the weekend effect.*Journal of Financial and Quantitative Analysis*, *29*(02), 263–277.

Al-Hajieh, H., Redhead, K., & Rodgers, T. (2011), Investor sentiment and calendar anomaly effects: A case study of the impact of Ramadan on Islamic Middle Eastern markets. *Research in International Business and Finance*, *25*(3), 345–356.

Ali, S., & Akbar, M. (2009), Calendar effects in Pakistani stock market.*International Review of Business Research Papers*, *5*(1), 389–404.

Almonte, C. K. S. (2012), The day-of-the-week effect in selected balanced funds in the Philippines. *International Journal of Information Technology and Business Management*, *3*(1), 40–49.

Amanulla, S., & Thiripalraju, M. (2001), Week-end effect: New evidence from the Indian stock market. *Vikalpa*, *26*(2), 33–50.

Auer, B. R., & Rottmann, H. (2014), Is there a Friday the 13th effect in emerging Asian stock markets? *Journal of Behavioral and Experimental Finance*, *1*, 17–26.

Blandon, J. G. (2010), Return's Seasonalities in the LATIBEX Market. *Revista de AnalisisEconomico*, *25*(1), 3–14.

Bollerslev, T. (1986), Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, *31*(3), 307–327.

Chougule, A., & Khamborkar, A. (2014), A Study of Seasonality in Stock Market: With Special Reference to Diwali Effect. *Journal of Business Management & Social Sciences Research*, *3*(6), 26–29.

Chui, A. C., & Wei, K. J. (1998), Book-to-market, firm size, and the turn-of-the-year effect: Evidence from Pacific-Basin emerging markets. *Pacific-Basin Finance Journal*, *6*(3), 275–293.

Engle, R. F. (1982), Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation.*Econometrica: Journal of the Econometric Society*, 987–1007.

Floros, C., & Salvador, E. (2014), Calendar anomalies in cash and stock index futures: International evidence. *Economic Modelling*, *37*, 216–223.

Freund, S., Jain, R., & Puri, Y. (2007), The turn-of-the-month effect in stocks trading on the national stock exchange of India. *Journal of Emerging Markets*, *12*(1), 14.

Gahlot, R., & Datta, S. K. (2012), Impact of future trading on stock market: a study of BRIC countries. *Studies in Economics and Finance*, *29*(2), 118–132.

Gerlach, J. R. (2007), Macroeconomic news and stock market calendar and weather anomalies. *Journal of Financial Research*, *30*(2), 283–300.

Hansen, P. R., & Lunde, A. (2005), A forecast comparison of volatility models: does anything beat a GARCH (1, 1)? *Journal of Applied Econometrics*, *20*(7), 873–889.

Jacobsen, B., & Visaltanachoti, N. (2009), The Halloween effect in US sectors. *Financial Review*, *44*(3), 437–459.

Kato, K., & Schallheim, J. S. (1985), Seasonal and size anomalies in the Japanese stock market. *Journal of Financial and Quantitative Analysis*, *20*(02), 243–260.

Keim, D. B. (1983), Size-related anomalies and stock return seasonality: Further empirical evidence. *Journal of Financial Economics*, *12*(1), 13–32.

Lakonishok, J., & Smidt, S. (1984), Volume and turn-of-the-year behavior.*Journal of Financial Economics*, *13*(3), 435–455.

Mahmoud, E. (1984), Accuracy in forecasting: A survey. *Journal of Forecasting*, *3*(2), 139–159.

Reinganum, M. R. (1984), Discussion: What the anomalies mean. *The Journal of Finance*, *39*(3), 837–840.

Roll, R. (1983), On computing mean returns and the small firm premium. *Journal of Financial Economics*, *12*(3), 371–386.

Rosenberg, M. (2004), The Monthly Effect in Stock Returns and Conditional Heteroscedasticity. *The American Economist*, *48*(2), 67–73.

Schwert, G. W. (2003), Anomalies and market efficiency.*Handbook of the Economics of Finance*, *1*, 939–974.

Singh, S. P. (2014), Stock market anomalies: Evidence from emerging BRIC markets. *Vision: The Journal of Business Perspective*, *18*(1), 23–28.

Ullah, S., Ullah, O., & Usman, A. (2010), Market efficiency anomalies: a study of day of the week effect in Pakistani stock market. *Interdisciplinary Journal of Contemporary Research in Business*, 2(6), 272.

Wang, C. (2004), Relative strength strategies in China's stock market: 1994–2000. *Pacific-Basin Finance Journal*, 12(2), 159–177.