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Impact of dividend announcements on share price behaviour among the selected companies in cement industry in india

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ABSTRACT: *This paper examines the impact of dividend announcement on share price among the selected companies' in Cement Industry in India. Cement is one of the key infrastructure industries in India. The Cement Industry in India plays a significant role in the country's economic development which generates substantial revenue for the Central and State Government through sales taxes and excise duties. The recent boom in infrastructure and the housing market has boosted our Cement Industry as the world's second largest producer. This study finds that majority of selected companies in cement industry shows that share price volatility is high in pre-dividend announcement. The company wise analysis depicts that out of six companies in Cement Industry five companies have shown positive impact on the share price and only one company have shown negative impact on the share price towards post-dividend announcements.*

KEYWORDS: *Dividend announcements, GARCH, GARMAN KLASS Model, Abnormal Returns*

1. INTRODUCTION

Dividend policy is a most widely researched topic in the field of finance. The question whether dividend announcement affects stock prices still remains debatable among managers, investors and researchers for many years. Dividend policy is important for investors because investors consider dividends not only as a source of income but also a way to assess company from its earnings point of view. Selecting a suitable dividend policy is an important decision for the company because flexibility to invest in future projects depends on the amount of dividends that they pay to their shareholders.

2. REVIEW OF LITERATURE

Many studies have been conducted on dividend policies which explicate the relationship between dividend policy and stock prices. These studies help the new researchers to explore the dividend policy in a new way. Linter (1956) and Miller & Modigliani (1961) introduced the concept of Dividend Irrelevance theory in which they explain that dividend policy does not affect the stock prices. Many researchers like Black & Scholes (1974), Chen, Firth, & Gao (2002), Adefila, Oladipo & Adeoti (2004), Uddin & Chowdhury (2005), Denis & Osobov (2008) and Adesola & Okwong (2009) provide strong evidence in the favour of the dividend irrelevance theory and does not consider it relevant to the stock prices.

Gordon (1963), Travlos, Trigeorgis, & Vafeas (2001), Baker, Powell & Veit (2002), Myers & Frank (2004), Dong, Robinson & Veld (2005) and Maditinos, Sevic, Theriou, and

Tsinani (2007) gave dividend relevance theory and said that the dividend policy will affect the value of the firm and the market price of shares.

Rahman and Rahman (2008) made a study on stock price behavior around ex-dividend date from Dhaka Stock Exchange. They concluded that ex-dividend price increased instead of dropped in Dhaka Stock Exchange and implies a clear preference for capital gains without having any focus on dividends by the stockholders. Chen, Huang & Cheng (2009) empirically analyzed the effect of Cash Dividend on Share Price for the period 2000-2004 in Pakistan. They established that Cash Dividend had a significantly positive effect on the Stock Prices.

Currently, the top players in Cement Indusry in India are ACC, Ambuja Cements and Century Textiles & Industries Ltd; collectively control more than half of the cement market in our country. Whatever may be the means of growth and income generation, the investor looks for better returns either long-term or short-term and here is the list of consequent dividend-paying companies for the period of 2000-2001 to 2009-2010 with index-based 365 days trading volume in descending order.

Distribution of Sample Companies in Cement Industry

S.No.,	Name of the Companies
1	A C C Ltd.
2	Ambuja Cements Ltd.
3	Century Textiles &Inds. Ltd.
4	K C P Ltd.
5	Kakatiya Cement Sugar &Inds. Ltd
6	Madras Cements Ltd.

(Data Compiled from PROWESS)

3. RESEARCH OBJECTIVES

The study has been undertaken with the following objectives:

- To measure the impact of pre- and post-dividend announcement on share price of consequent dividend paying companies in cement industry for past 10 years from the year 2005 to 2015 in Indian Capital market popularly traded at NSE India.
- To measure the impact of pre- and post-dividend announcement on share price companywise.
- To measure the extent of abnormal returns during pre- and post-dividend announcement period.
- To compute the extent of stock volatility during pre- and post-dividend announcement by using **GARCH Model.**
- To compute the extent of stock volatility during pre- and post-dividend announcement by using **GARMAN KLASS Model.**

4. METHODOLOGY

This section is divided into the following parts: Data sources, Period of study, Framework of Analysis.

4.1. DATA SOURCES

The data used in the study are secondary in nature. The data were collected from the PROWESS corporate database and various websites, books and journals. Closing share price,

annual dividend payments, the dates of annual dividend announcements, and the values of S&P CNX were obtained.

4.2. PERIOD OF STUDY

The study covers a period of 10 years from spanning 2005-06 to 2014-15. The rationale behind the choice of this study period is based on the fact that the period captures a complete business cycle that has witnessed both bullish and bearish trend. In each year, 31 days scripts were captured based on dividend announcement date during the financial year.

4.3. FRAMEWORK OF ANALYSIS

In this paper, the date of dividend announcement is defined as day 0 or event day. If event day is a non-trading day then the immediately following trading day is considered as an event day. Pre-announcement period includes 15 trading days prior to the dividend announcement date, i.e., days -15 to -1. Post announcement period includes 15 trading days after the dividend announcement i.e., days +1 to +15. Thus, we have taken the event window of 31 trading days (including day 0 as the event day). The estimated abnormal returns are averaged across securities to calculate Average Abnormal Returns (AARs) and average abnormal returns are then cumulated over time in order to ascertain Cumulative Average Abnormal Returns (CAARs). In this paper Sharpe Market model was used and it can be expressed mathematically as:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} + e_{it} \text{ for } i = 1 \ldots N$$

Where,

$E(R_{it})$ = Expected return on security „i" during time period „t".

α_i = Intercept of a straight - line or alpha coefficient of i_{th} security.

β_i = Slope of a straight - line or beta coefficient of i_{th} security.

R_{mt} = Expected return on index during period „t".

e_{it} = Error term with a mean zero and a standard deviation which is a constant during time period „t".

The **Abnormal Returns** are computed using the following model:

$$AR_{it} = e_{it} = R_{it} - E(R_{it})$$

Where, R_{it} = Actual Returns

The abnormal returns of individual security are averaged for each day surrounding the event day i.e., 15 days before and 15 days after the event day. The AAR is the average deviation of actual returns of a security from the expected returns. The following model is used for computing the **Average Abnormal Returns (AARs)**:

$$AAR_{it} = \sum_{i=1}^{n} AR_{it} / n$$

Where,

i = the number of securities in the study;

N = total number of securities in the portfolio.

t = the days surrounding the event-day

Since the security‟s overall reaction to the dividend announcement or the event will not be captured instantaneously in the behavior of average abnormal return for one specific day, it is necessary to accumulate the abnormal returns over a long period. It gives an idea about average stock price behavior over time. Generally, if market is efficient, the **Cumulative Average Abnormal Return (CAAR)** should be close to zero. The model used to ascertain CAAR is

$$CAAR_t = \sum_{t=-30}^{k} APP_{it} \text{ Where } t = -15,\ldots 0, \ldots + 15.$$

Beta is calculated using following equation:

$$\beta_i = \frac{N\sum_{t=1}^{n} R_{mt} R_{it} - [\sum_{t=1}^{n} R_{mt}] - [\sum_{t=1}^{n} R_{it}]}{N[\sum_{t=1}^{n} R^2_{mt}] - [\sum_{t=1}^{n} R_{mt}]}$$

Where,

β_i = Slope of a straight line or beta coefficient of security „i‟

N = Number of observations

R_{mt} = Return on market index „m‟ during time period„t‟

R_{it} = Return on security „i‟ during time period„t‟

4.4. Parametric Significance Test

The cumulative average abnormal return provides information about the average price behavior of securities during the event window. If markets are efficient, the AARs and CAARs should be close to zero. Parametric „t test‟ is used to assess significance of AARs. The 5% level of significance with appropriate degree of freedom was used to test the null hypothesis of no significant abnormal returns after the event day. The conclusions are based on the results of t values on AARs for the event window. The t test statistics for AAR for each day during the event window is calculated as:

$$t = \frac{AAR}{\sigma(AAR)}$$

AAR = Average abnormal return

σ (*AAR*) = Standard error of average abnormal return

The standard error is calculated by using the following formula:

$$S.E = \frac{\sigma}{\sqrt{n}}$$

4.5. GARCH Volatility

- The Generalized Autoregressive Conditional Heteroscedasticity model (GARCH) has been introduced by Tim Bollerslev in 1986. It is the generalization of the Autoregressive

Conditional Heteroscedasticity model (ARCH) proposed by Robert Fry Engle in 1982. These models are used to characterize observed time series. They are part of the most popular class of econometric models for describing a series with time varying conditional variance. They are used to simulate the historical volatility of a share price over a period of time. The following equation is used to compute GARCH Volatility.

$$h_{t+1} = \omega + \alpha\, \varepsilon_t^2 + \beta\, h_t$$

Where, h is variance,
ε is the residual squared,
t denotes time,
ω, α and β are empirical parameters

4.6. Garman Klass model Volatility

- Another method that has been frequently used to measure volatility of share price is the Garman and Klass [1980] extreme-value estimator. This is said to be 8.4 times more efficient than the classical estimator. It not only incorporates the close to close information but also combines the Parkinson measure. Garman Klass model comprises of open, high, low and close share prices. In this model a high positive value indicates that there is high positive volatility in open, high, low and close stock price and a high negative value indicates that there is high negative volatility in open, high, low and closing share price.

$$\sigma^2_{gk} = \frac{1}{T}\sum_{t=1}^{T}(0.511(\ln(H_t/L_t))^2 - 0.019\ln(C_t/O_t)\ln(H_tL_t/O_t^2) - 2\ln(H_t/O_t)\ln(L_t/O_t)).$$

4.7. Sample

- Sample is drawn from companies listed on the National Stock Exchange that have announced consequent dividend for 10 years from the year 2005-06 to 2014-2015. There were 551 consequent dividend paying companies out of which 155 companies were found to be high trading volume companies and based on the availability of data only 7 companies in cement industry were considered for the present study.

4.8. Sampling Technique Used

Purposive Sampling technique is adopted for selecting high trading volume shares which observed to produce abnormal gains.

4.9. Period of study

- The study covers a period of 10 years from spanning 2005-06 to 2014-2015.
- The rationale behind the choice of this study period is based on the fact that the period captures a complete business cycle that has witnessed both bullish and bearish trend.
- In each year, 31 days scripts were captured based on dividend announcement date during the financial year.

5. EMPIRICAL ANALYSIS AND FINDINGS

This chapter describes various analyses carried out to predict the market reaction towards dividend announcement in cement industry. The subsequent sections are organized based on the objectives considered for this study.

Table 1 Showing the mean of share prices of Cement Industry during the pre-event period, event period and post-event period for the year 2005-06 to 2014-2015

Cement Industry	Event Type	Share Price			
		Open	High	Low	Close
2005 - 2006	Pre	720.71	739.16	687.20	704.72
	Event	673.20	674.32	644.84	647.18
	Post	729.57	761.55	714.82	743.68
2006 – 2007	Pre	825.33	835.78	813.99	822.67
	Event	795.57	797.66	771.59	783.80
	Post	775.95	785.57	765.97	777.18
2007 – 2008	Pre	758.98	775.97	751.97	914.45
	Event	779.02	780.21	762.30	916.97
	Post	773.95	787.61	768.17	929.45
2008 – 2009	Pre	858.75	877.68	845.96	1027.57
	Event	893.52	912.66	892.17	1082.59
	Post	979.26	992.22	960.29	1161.30
2009 – 2010	Pre	242.37	245.18	235.40	266.39
	Event	245.77	249.13	242.91	271.41
	Post	245.27	248.19	237.54	266.48
2010 – 2011	Pre	376.23	379.01	368.19	399.03
	Event	385.03	389.24	375.48	411.10
	Post	388.66	394.33	382.69	417.17
2011 – 2012	Pre	719.77	724.10	695.18	738.37
	Event	677.53	684.50	661.70	692.41
	Post	621.85	626.57	601.79	633.07
2012 – 2013	Pre	813.70	818.78	801.33	868.81
	Event	843.47	853.36	811.08	880.76
	Post	803.80	810.64	784.36	850.34
2013 - 2014	Pre	750.23	773.02	732.33	743.43
	Event	817.31	823.23	777.33	776.74
	Post	752.59	755.17	725.20	727.15
2014 - 2015	Pre	254.28	257.98	246.77	258.99
	Event	279.42	284.73	273.12	288.24
	Post	306.41	306.53	296.71	301.53

The above table displays the summary of share price of Cement Industry during the study period from 2005-06 to 2014-15.

The results of the above table shows that during the years 2005-06, 2007-08, 2008-09, 2010-11 and 2014-15, the share price had shown an increase in post-event period. This implies that during the post-event period the share price has got positive impact towards dividend announcement for the above said years

On the other hand, during the years 2006-07 and 2011-12, the share price of the Cement Industry had shown an increase in pre-event period. This implies that share price reacted positively during the pre-event period towards dividend announcement. Furthermore, in the years 2009-10, 2012-13 and 2013-14 the share price of the Cement industry had shown an increase in event period for the above said years.

The overall observation of Cement Industry share price shows that 50 percent of dividend announcement was favourable to post-event period, 30 percent favourable to event date and only 20 percent of dividend announcement was favourable to pre-event period.

To conclude, it has been observed that share price volatility is high during post-dividend announcement for majority of the selected companies in the Cement Industry.

Table 2 Showing Paired t-test for High-Low Share Price in Cement Industry

Cement Industry		Mean	N	SD	t-value	df	p-value	S/NS
Pair 1	Pre	24.83	10	13.84	0.302	9	0.769	NS
	Event	23.65	10	12.79				
Pair 2	Pre	24.83	10	13.84	1.083	9	0.307	NS
	Post	23.08	10	11.47				
Pair 3	Event	23.65	10	12.79	0.170	9	0.868	NS
	Post	23.08	10	11.47				

N – Number of years, SD – Standard Deviation, df – Degree of Freedom,
S – Significant, NS – Not Significant

It is observed that all the p-values of pair-1, pair-2 and pair-3 are 0.769, 0.307 and 0.868 are greater than the level of significance tested for this study (5% level of significance); hence Ho is accepted for all the three pairs for the study period.

From the above calculations it is clear that the dividend do not affect the share prices, i.e., there is no significant change in the share prices after announcing dividend in all the three pairs. High-low share price indicator of Cement Industry exhibits that none of the pairs had found significant difference of mean value during the study period.

Table 3 showing the yearwise analysis of the Impact on closing prices after the announcement of dividend of Cement Industry during the pre-, event and post-period for the year 2005-06 to 2014-2015

Cement Industry	Pre	Event	Post
2005 - 2006	704.72	647.18	743.68
2006-2007	822.67	783.80	777.18
2007-2008	768.27	770.39	781.11
2008-2009	864.36	910.88	977.52
2009-2010	240.58	246.73	243.10
2010-2011	374.03	383.19	388.73
2011-2012	708.88	674.58	614.77
2012-2013	813.26	822.43	796.28
2013-2014	753.03	787.79	737.33
2014-2015	253.04	282.21	302.99
Mean	630.28	630.92	636.27
SD	242.89	239.26	243.14
CV	38.54	37.92	38.21
Skewness	-0.95	-0.76	-0.59
Kurtosis	-0.97	-1.05	-0.89

The results presented in the above table show the overall mean value of the closing prices of the Cement Industry for ten years.

The closing price of Cement Industry on the event day shows a gradual increase from the year 2004 to 2007 ranging from 246.73 to 822.43. But, during the year 2011, the closing price had shown an abnormal increase ranging from 383.19 to 674.58 when compared to the previous year 2010. Similarly, during 2014, the closing price had shown a abnormal decrease when compared to previous year ranging from 787.79 to 282.2. This shows clearly, the year 2011 there is an increasing impact on share price towards dividend announcements and the year 2014 there is a decreasing impact on share price towards dividend announcements.

When the closing price of Cement Industry on the pre-event period is analyzed it is found that there is a gradual increase in the closing prices for the years 2009 to 2012 ranging from 240.58 to 813.26. But, during the year 2011, the closing price had shown an abnormal increase in share price ranging from 374.03 to 708.88. The year 2014, had shown a decreasing trend when compared to the previous years ranging from 753.03 to 253.04. This shows clearly that during the year 2011, there is an increasing impact on share price towards dividend announcements and the year 2014, there is a decreasing impact on share price towards dividend announcements.

Examining the closing prices of the post-event period shows an abnormal increase during the years 2009 and 2012 when compared with previous years ranging from 243.10 to 796.28. But, during the year 2011, the closing price had shown an abnormal increase in share price ranging from 388.73 to 614.77. The year 2014, the closing price on the post-event period had shown a decrease in share price ranging from 737.33 to 302.99. Similarly during the year 2009, the closing price on the post event period had shown a decrease in share price ranging from 977.52 to 243.10. This shows that, the year 2011 there is an increase in the closing because of

impact on dividend announcements. But, during the year 2009 and 2014, it shows a decreasing impact on share price towards dividend announcements.

The Skewness value shows that the closing prices are not normal during the study period. It is observed that the closing price values started to fall on the event day and post-event period, but have shown an increase during the pre-event period of the dividend announcement.

The volatility part of the periods can be known with Co-efficient of Variation and Kurtosis value. Normally, if the fluctuations are less, the volatility will also be lesser. For all three periods post-, pre- and on the event date the volatility was high. The above analysis helps to make an inference that the impact of closing share price towards dividend announcement is more during the pre-, post- and event period for the years 2009, 2011 and 2014.

Table 4 showing the impact of Share price towards dividend announcements among the select companies under Cement Industry

Cement Industry		Mean	Skewness	Kurtosis
A C C Ltd.	Pre	409.3960	0.9915	0.1170
	Post	427.5950	0.8063	-0.6361
Ambuja Cements Ltd.	Pre	196.6370	0.9001	-0.0388
	Post	197.6210	1.2755	1.1140
Century Textiles &Inds. Ltd.	Pre	264.4327	1.0275	-0.2038
	Post	270.2710	0.9409	-0.1898
K C P Ltd.	Pre	115.5700	0.7733	-1.0446
	Post	129.3471	0.7389	-1.2314
Kakatiya Cement Sugar &Inds. Ltd.	Pre	63.8090	-0.0667	-1.9643
	Post	69.0087	-0.1636	-1.6885
Madras Cements Ltd.	Pre	2731.8563	-0.4185	-1.1884
	Post	2723.7630	-0.0559	-1.1543

The above table shows the impact of share price towards dividend announcements among the select samples under the study. ACC ltd, Ambuja Cements Ltd, Century Textiles & Inds. Ltd, KCP Ltd, Kakativa Cement Sugar & Inds. Ltd had shown a positive impact when compared with pre-event period with post-event period under study. It can be observed that Madras Cements Ltd closing prices were falling down during the post-announcement period when compared with the pre-announcement period.

Fundamentally all the industries have been affected by the dividend announcement except for Madras Cements and also notably there was immediate effect after the announcement of dividend.

Therefore, it can be noted that announcement of dividend prices has impact on share prices in the Cement Industries during the period of ten years taken into consideration. Out of 6 companies in Cement Industry, 5 companies had shown positive impact on the share price and the remaining 1 company had shown negative impact on the share price towards post-dividend announcements.

Table 5 Showing results of Average Abnormal Return, t-stat and Variance of stock prices for dividend announcement of Cement Industry

Cement Industry	Pre-Event			Post-Event		
	AAR	t-stat	Variance	AAR	t-stat	Variance
2005 - 2006	0.1776	0.0648	0.1916	0.1959	-0.0054	0.2554
2006-2007	0.0931	0.0235	0.4313	-0.0150	0.1177	0.2924
2007-2008	0.0190	0.0550	0.0497	0.0023	-0.0417	0.0713
2008-2009	-0.5742	-0.1713	0.0929	-0.3758	-0.1710	0.0966
2009-2010	-1.1204	-0.3297	0.1211	-0.0073	-0.0336	0.1494
2010-2011	-0.3816	-0.1559	0.0609	-0.4881	-0.1767	0.0597
2011-2012	-0.9151	-0.3520	0.0605	0.6919	0.1027	0.1494
2012-2013	-0.2808	-0.1515	0.1350	-0.2565	-0.0158	0.1238
2013-2014	-1.3225	-0.4904	0.0786	0.5616	0.1721	0.1244
2014-2015	-0.4318	-0.1316	0.1385	-0.7721	-0.1493	0.1571

AAR – Average Abnormal Return

*AAR @ 1, **t-stat @ 5% significant level

It is observed from the above table that during the pre-event period, the AAR ranged from -1.3225 to 0.1776. The highest positive AAR during the pre-event period was on 2005 - 06, followed by the years 2006 –07 and 2007 - 08 with value of 0.1776, 0.0931 and 0.019 respectively. The lowest negative AAR during the pre-event period was on years 2013 - 14, 2009 – 10, 2011 – 12, 2008 – 09, 2014 – 15, 2010 – 11 and 2012 – 13 with value of -1.3225, -1.1204, -0.9151, -0.5742, -0.4318, -0.3816 and -0.2808 respectively. It is clearly understood from the above analysis that the value of AAR is less than 1 for all the years. It reveals the fact that there are no significant reactions in Average Abnormal Return of share prices for dividend announcement during the pre-event period among the sample companies under study; hence H_o is accepted for the pre-event period.

Similarly, during the post-event window the AAR ranged from -0.7721 to 0.6919. The highest positive AAR during the post-event period was on 2011 - 12, followed by the years 2013 – 14, 2005 – 06 and 2007 - 08 with the value of 0.6919, 0.5616, 0.1959 and 0.0023 respectively. The lowest negative AAR during the post-event period was on years 2014 – 15, 2010 – 11, 2008 – 09, 2012 – 13, 2006 – 07 and 2009 – 10 with the value of -0.7721, -0.4881, -0.3758, -0.2565 and -0.015 respectively. It is clearly understood from the above analysis that the value of AAR is less than 1 for all the years. It reveals the fact that there are no significant reactions in Average Abnormal Return of share prices for dividend announcement during the post-event period among the sample companies under study; hence H_o is accepted for the post-event period.

T-statistics was performed to measure the significant difference among the companies in Cement Industry, especially in pre-event period the year 2006-07 found significant difference with the value of 0.0235. In the same way for the post-event period during the years 2005-06, 2007-08, 2009-10 and 2012-13, the t-value had found a significant difference with the value of -0.0054, -0.0417, -0.0336 and -0.0158 at 5% level of significance. It is observed from the table that high variance is extracted in the year 2006–07 in the pre-event period with the value of 0.4313 and the post-event period in the year 2006-07 with the value of 0.2924.

A final observation of the table exhibits that Cement Industry had found 10% impact on Average Abnormal Return during the pre-event period with reference to dividend announcement and 40% of impact was found in post-event period during the study period.

Table 6 Showing GARCH Volatility of Cement Industry during Pre- and Post-period of dividend announcement

Cement / Year	Pre-Event	Post-Event
2005- 2006	0.3725	0.6053
2006 -2007	0.1803	0.1568
2007 -2008	0.2423	0.2319
2008 -2009	0.3031	0.6759
2009 -2010	0.1347	2.4801
2010 -2011	0.1212	1.4833
2011 -2012	0.2282	1.0207
2012 -2013	0.1387	0.1671
2013 -2014	0.3358	0.3566
2014 -2015	0.3056	2.0959
Mean	0.24	0.93
SD	0.09	0.83
CV	38.40	89.81

SD – Standard Deviation, CV – Coefficient of Variance

It is illustrated from above table that financial volatility model GARCH has been computed for Cement industry. Here, Share prices are volatile in nature and during the pre-event period, high volatility has been predicted in the following years; 2006-07(0.1803), 2007-08 (0.2423), and 2014-15 (0.3056). Similarly, the post-event window has attained high volatility during the years 2005-06 (0.6053), 2008-09 (0.6759), 2009-10 (2.4801), 2010-11(1.4833), 2011-12(1.0207), 2012-13(0.1671), and 2013-14(0.3566).

The pre-event mean volatility is 0.24, standard deviation is 0.09, and coefficient of variance is 38.40. The post-event mean volatility is 0.93, standard deviation is 0.83, and coefficient of variance is 89.81. The overall observation of Cement Industry GARCH volatility states that during the post-event period the mean is high with the value of 0.93 compared with the pre-event period value of 0.24.

Table 7 Showing Garman Klass Volatility of Cement Industry during Pre- and Post-period of dividend announcement

Cement / Years	Pre-event	Post-Event
2005- 2006	0.39	1.19
2006 -2007	0.05	0.06
2007 -2008	0.81	1.32
2008 -2009	0.39	0.95
2009 -2010	12.80	1.58
2010 -2011	0.83	0.68
2011 -2012	0.14	3.01
2012 -2013	0.67	0.34
2013 -2014	4.97	11.27
2014 -2015	0.36	1.86
Mean	2.14	2.23
SD	4.01	3.29
CV	187.51	147.58

SD – Standard Deviation, CV – Coefficient of Variance

It can be referred from the table that the pre-event window has predicted high volatility in the following years; 2009-10 (12.80), 2010-11 (0.83) and 2012-13 (0.67). Similarly, the post-event window has attained high volatility during the following years 2005-06 (1.91), 2006-07 (0.66), 2007-08 (1.32), 2008-09 (0.95), 2011-12 (3.01), 2013-14 (11.27) and 2014-15 (1.86).

The pre-event mean volatility is 2.14, standard deviation is 4.01, and coefficient of variance is 187.51. The post-event mean volatility is 2.23, standard deviation is 3.29, and coefficient of variance is 147.58. The overall observation of Cement Industry Garman-Klass volatility states that during the post-event period the mean is high with the value of 2.23 compared with the post-event period value.

6. DISCUSSION

- The results of the present study depict that after declaring dividend there is an impact on share prices either in pre-dividend announcement periods or in post-dividend announcement periods or in event date of the select sample units of an industry. The result of the present study supports earlier studies of Merton Miller and Kevin Rock, 1985; Bajaj and Vijh, 1990; Michael and Patricia, 1991 and Reddy, YS, 2002.
- The results of the present study support the earlier studies of Asquith and Mullins, 1983 and Sabri, 2008 that share prices increase for high dividends and on the other hand share prices fall for low or cut dividends.
- Some companies in Cement Industry show a positive Abnormal returns and a few companies show a negative Abnormal returns during the study period. This result is similar to the results of earlier studies of Ball, Ray and Philip Brown, 1968; Andrei, 1986; Jeffery A, Born, 1988; Lang, L and Litzenberger, R, 1989; Scott, 1991; Das

Prabina, S,Srinivasan and A,K, Dutta, 2000; Jijo Lukose and Narayan Rao, 2002; Mohamed Ariff and Frank J, Finn, 2006.

- An analysis of Stock volatility during the pre- and post-dividend announcements with the help of GARCH model shows that a majority of the select companies have shown high volatility during pre-dividend announcements which supports the results of earlier studies of Malkiel and Xu, 1999 and Batra, 2003.
- Similarly an analysis of Stock volatility during the pre- and post-dividend announcement with help of Garman Klass model shows that a majority of the select companies have shown high volatility during post-dividend announcements which supports the results of previous studies of Longin, 1996 and Bali, 2003.
- To conclude, it has been observed that significant impact on volatility of shares have found in all companies in cement industry. But, there is no significant abnormal return for all selected companies in Cement industry.

7. CONCLUSION

This study makes a number of contributions to the impact of dividend announcement on share price among the selected companies in cement industry during the study period. The results of paired t-test analysis shows that the dividend do not affect the share prices, i.e., there is no significant change in the share prices after announcing dividend in all the three pairs. High-low share price indicator of Cement Industry exhibits that none of the pairs had found significant difference of mean value during the study period. The yearwise analysis helps to make an inference that the impact of closing share price towards dividend announcement is more during all the periods for the years 2009, 2011 and 2014. The impact on Average Abnormal Return is more in post-event period for Cement industry. The Cement Industry GARCH volatility states that during the post-event period the mean is high with the value of 0.93 compared with the pre-event period value of 0.24. The GARMAN KLASS volatility states that during the post-event period the mean is high with the value of 2.23 compared with the post-event period value.

8. SIGNIFICANCE OF THE RESEARCH

Finally, the research study would be useful to the investors and will serve as a **guide for their future investments.** The attentions of the **investors are focused on the impact of dividend announcements** on share prices so that they can take a rational decision on their investment. The study would be a handy guide to the investors to choose the **timing of their investment**. It would also be useful to the management of the companies in formulating their dividend policy.

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