# Share Price Volatility around Dividend Announcements in Indiaan Empirical investigation of S\&P BSE 500 Index Companies 

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#### Abstract

Market efficiency is one of the thrust areas of research for academicians, professional analysts, and research scholars. A dividend announcement is considered public information which is included in the semi-strong form of the efficient market. The present paper is focused on examining the share price volatility around dividend announcements for a sample of 50 firms made from 2018 to 2022. To test the stock price movement for the sample firms, the Ordinary least square (OLS) regression model has been applied to reach the alpha and beta values and employ this value to evaluate the expected return, Abnormal return (AR), and Cumulative Average Abnormal Return (CAAR). The present event study methodology employs the S\&P BSE 500 as a proxy to determine the excess return for the sample firms. The study also uses the estimation Window of 200 days ( -230 to -30 days) and 61 days of event window i.e. ( -30 trading days, 0 day and +30 trading days) for the analysis by applying the market model. The result of the research reported that AAR is 0.15 percent on the declaration day and cumulative abnormal return (CAR) is 7.57 percent on the declaration day. Cumulative Average Abnormal Return (CAAR) is also shown a positive return which is 4.11 percent on the declaration date and 2.69 percentages for the whole event window. However, the abnormal return is small but Cumulative excess return and Cumulative average abnormal return (CAAR) provide enough evidence to exhibit the positive relation between the dividend announcement and share prices of the companies.


Keywords - Event study methodology, S\&P BSE 500, Ordinary Least Square (OLS) regression, Estimation window, Event Window, Cumulative Average Abnormal Return (CAAR).

## Introduction

Dividend distribution is considered one of the prominent ways of allocating cash flows to its shareholders. The news of dividend announcements is recognized as public information which comes into the semi-strong form of the efficient market. It has been the thrust area of financial research for different professionals, researchers, and academicians. Fama (1970) elucidates in his narration regarding the three distinct forms of the market hypothesis- weak form, semi-strong form, and strong form. The first form of the stock market hypothesis represents a position where all historical facts are replicated in the security price of a company. When all the information which is newly announced by the companies is expected to adjust itself into the share price of the companies as swiftly as it can. It means that there is no profitmaking opportunity for the trader to earn an abnormal return in this way. This is said to be the
semi-strong form of the market. The strong form of market efficiency is representing the situation where all information (Historical and Public) is fully replicated in the stock price. Further, even insider information is also not provided a profitable opportunity to investors in the long run. This is said to be a strong form of market efficiency. A dividend declaration is a type of public announcement which is fall in semi-strong form. The study proposes to examine the semi-strong form of the present hypothesis. For this purpose, it investigates the stock price volatility and its fluctuation before and after the dividend announcement.

Three different theories are prevalent regarding the dividend payout and the share prices in the stock market. The first theory elucidating the positive relationship between the dividend payout and the security price (Lintner, 1956, Myron Gordon, 1963) (Neetu Mehndiratta and Shuchi Gupta, 2010), (Aditya R. Khanal and Ashok K. Mishra, 2017), (T.Mallikarjunappa and T. Manjunatha, 2009), (Dinh Bao Ngoc and Nguyen Chi Cuong 2015), (Nickolaos Travlos et al. 2001) and (Gupta et al. 2012). The second theory is explained by Modigliani and miller in 1961 which states the no impression of dividend declaration on the stock prices of the firms. It is the earning of the companies which affect the security price, not the dividend policy. The Third theory presents a negative (opposite) relation between the two (Hashemijoo et al. 2012) (Abdullahi Mamun et al. 2013) (N Bhana, 2015) (Sanjay S. Joshi, 2017). All three views create a puzzle in the mind of the investors and stakeholders. The prime objective of the present investigation is to find the effect of the dividend declaration on the company's stock prices registered in the Indian stock exchange.

## Literature Review

There is numerous studies are available on the various aspect of the dividend policy and dividend announcement in response to check out its impact on the share behavior and valuation of the firms. Following is a brief review of the various literature regarding the various aspects of the dividend:

Nagendra Marisetty (2017) explores the association between dividend payout and the share prices of the firms registered in the Indian share market. The present paper studied the share prices of the 120 companies that announce the cash dividend during the 2016 year in the stock market. The study uses the Average abnormal return (AAR) to calculate the gain or loss in the prior phase and post-phase of the announcement. The result of the study presents that the average abnormal return is negative on declaration day for small and medium caps and shows the gain on declaration day for the large cap.

Ngoc D.B. and Chi Cuong N. (2016) documented the influence of the dividend declaration and ex-dividend day on the share prices of the firms. The present research uses the sample of 432 companies during the years 2008 to 2015 in Vietnam to check the excess return around the dividend declaration date and date of ex-dividend. The finding of the study shows that the share prices of the sample firms started to increase after the announcement and the share price behave negatively from the ex-dividend date onwards.

Nickolaos Travlos, et al. (2001) studied the reaction of the stock (bonus share) dividend and a cash dividend in the stock market of Cyprus. The present research includes the analysis of 81 cash dividend announcements by the 31 different companies in the Cyprus share market during the period of 1985 to 1995. The present study comprises both cash and stock (bonus issues) dividends for inspection purposes. The finding and results of the study documented that there is a productive impact of both announcements on the company's share prices.

Aditya R. Khanal and Ashok K. Mishra (2017) explore the share price movement due to the dividend announcement during the period of crises. The present research analyzes 460 events of the dividend announcement during the period of 2006-2012. The present research is focused on figuring out the connection between the two in the sluggish period which includes the financial crises of 2008. The result of the study exhibits the statistically positive influence of dividend declaration on the firm's share prices. A 61 -day of event window $(-30$ to +30$)$ is used to figure out the excess returns. However, the abnormal return is small ( $1.81 \%$ ) compare to the previous findings (5.90\%).
T.Mallikarjunappa and T. Manjunatha (2009) try to explore the efficiency of the semistrong market. The current study tries to explore the association between dividend announcement which is considered public information and the share prices of the firms. The study observes the fluctuation of stock price 29 days before the declaration and 30 days after post announcement. The study concludes that the Average excess return is significant on the event day and the cumulative average excess return shows wide fluctuation during the event window. The result and discovery of the present study state that there is optimistic excess return in the post phase of announcement of dividend.

Debasish Maitra and Kushankur Dey (2012) examine the statistically significant fluctuation in stock prices due to dividend declaration. The present study encompasses the event window of 31 days, which studies the stock price fifteen days prior and fifteen days post the event. It has been observed that the average excess return is showing negative for 6 days before the announcement and positive for 9 days during the prior phase of declaration and post phase of the declaration period AAR is positive for ten days and negative for five days. However, AAR is very small $(0.2 \%)$ on the event day. The value of AARs and CAARs are examined under the market model and CAPM Model both. It is found that under the market model, AAR provides a negative abnormal return and by using the CAPM Model it provides a healthy average abnormal return.

Eyup Kadioglu et al. (2015) used the survey to solve the ambiguity of share reaction to dividend declaration by analyzing the excess return around the dividend declaration of the sample firms of Borsa Istanbul. The study employs the panel regression method to calculate the abnormal return of the data set of 118 companies during the period from 2003 to 2015. The empirical study of the fact represents the opposite relationship between the announcement and stock prices and it has been observed that investors started to sell their shares after the announcement to avoid the taxes.

Mehndiratta N. and Gupta S. (2010) investigated the fact of relationship between dividend declaration and the security prices of 15 different companies during the year 2009. The study uses the event window of sixty-one days ( 30 trading days ahead of the event and 30 days of post-event). The present investigation reported that AAR is certainly positive for fifteen days and also negative for fifteen days ahead of the announcement and post announcement AAR is positive for nineteen days and negative for eleven days. CAAR is gloomy for twentyseven days and positive for 3 days ahead of the announcement and post the announcement CAAR is positive for eighteen days and negative for twelve days. As a result of the analysis study concludes with a positive relationship between the two.

Hashemijoo et al. (2012) pointed out the relationship amid stock price fluctuation and dividend declaration in Malaysia's share market for the case of 84 firms for a period of 6 years from 2005 to 2010. The present investigation employs multiple regressions to reveal the reaction of cash distribution on the share price movement of the sample firms. It has been

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observed from the investigation that both dividend yield and dividend percentage have an opposite reaction to the share prices of the sample firms.

Dr. Ravi Shankar Kummeta and Dr. Rose Mary Dara (2016) explore the reaction of dividend declaration on the GAIL company share price. The present study uses the thirty-oneday event window i.e. ( 15 trading days ahead of declaration and 15 trading days post the declaration) and one day of the event to figure out actual return and abnormal return. The data has been analyzed by using a t-test for a significant result. The study reported the opposite relationship between the security price and the declaration of dividends. The actual return for the GAIL is negative ( $-3.64 \%$ ) on the event day.

The study of various pieces of literature is also providing the mixed theory of dividend declaration and its influence on the share prices of the firms. That encourages proceeding with the analysis of the dividend puzzles to clear the ambiguity.

## Research Methodology

The present investigation intends to explore the share price volatility around the dividend announcement of firms registered in the share market of India. The present research employs the S \& P BSE 500 as a proxy for the market model to figure out the excess return for the sample firms. Companies registered on the BSE are included in the sample size that was announced during the year 2018 to 2022. The information of dividend announcements and other financial information is taken from the BSE website, money control, and yahoo finance for the 50 companies of the sample size. The following criteria are considered for the selection of the sample size-
i. The companies with purely cash dividend announcements are included not a stock dividend.
ii. The study includes the final dividend announcements only not the interim dividend.
iii. The companies must have trading data for the event and estimation window.
iv. No other major announcements like stock splits, Bonus issues, buybacks, etc are made during the event period.

The Present study uses the estimation window of 200 days ( -230 to -30 trading days) to calculate the regression coefficient i.e. alpha and beta and uses this alpha and beta to anticipate the expected returns in the event window by applying the ordinary least square (OLS) regression model. The event window consists of 61 days i.e. ( -30 to +30 and 0 days). The announcement day 0 is considered an event day.


## Hypotheses of the study

For an empirical study of the fact of stock price behavior around dividend announcements following the null hypothesis being used-
$\mathbf{H}_{01}$ : There is no significant reaction to dividend declaration on the stock prices of the listed firms.
$\mathbf{H}_{02}$ : The cumulative average abnormal return is equal to zero.
$\mathrm{H}_{0}:$ CAAR $=0$
$\mathrm{H}_{1}:$ CAAR $\neq 0$

## Analytical Tools used for the Analysis

The study computes the log returns by applying the following formula:

$$
\mathrm{R}_{\mathrm{i}}=\operatorname{In}\left(\mathrm{P}_{\mathrm{t}}\right)-\operatorname{In}\left(\mathrm{P}_{\mathrm{t}-1}\right)
$$

$\mathrm{R}_{\mathrm{i}}=$ stock actual return $\mathrm{I}, \mathrm{P}_{\mathrm{t}}=$ Today's closing price, $\mathrm{P}_{\mathrm{t}-1}=$ Yesterday closing price, $\mathrm{In}=\log$ value

## Computation of Expected Return by using the OLS Regression Model:

For the calculation of the expected return various methods are available but the present study applies the ordinary least square regression (OLS) model. The expected return is calculated as:

## Expected Return (ER)

$E R=\alpha+\beta\left(\mathrm{R}_{\mathrm{m}}\right)+\mathrm{e}_{\mathrm{it}}$
$\mathrm{E}(\mathrm{R})=$ Expected Return on the day t by applying the market model.
$\alpha=$ Alpha (Intercept)
$\beta=$ beta (slope)
$\mathrm{R}_{\mathrm{m}}=$ market return on the day t using the market model
$\mathrm{e}_{\mathrm{it}}=$ residual return or error term

## Computation of Abnormal Return

To examine the stock price volatility around dividend declaration, the present paper calculates the abnormal gain and loss for the event window. Abnormal Return is figured out by using the following equation:

Abnormal Returns $=$ Actual return (AR) - Expected Return(ER)
Abnormal return is used to find out that securities abnormal gain or loss around the event day. Both actual return and expected return are mentioned in the above equations.

Computation of Average Abnormal Returns (AAR), Cumulative Abnormal Returns (CAR), and Cumulative Average Abnormal Returns (CAAR)

Average Abnormal (Excess) Return (AAR) is figured out for the 61 days of the event window by using the following equation-

$$
\mathrm{AAR}_{\mathrm{t}}=1 / \mathrm{N}\left({ }^{\mathrm{n}} \mathrm{t} \Sigma \mathrm{AR}_{\mathrm{it}}\right)
$$

$\mathrm{t}=$ Size of event window ( -30 trading days 0 day +30 trading day), $\mathrm{i}=$ number of specific security ( 1 to N )

Cumulative Abnormal Returns (CAR) are figured out for the 61 days of the event window by using the following equation-

$$
\operatorname{CAR}_{\mathrm{i}(\mathrm{r} 1, \mathrm{r})}=\Sigma_{\mathrm{t}=\mathrm{r} 1} \mathrm{AR}_{\mathrm{i}, \mathrm{t}}
$$

Cumulative Average Abnormal (Excess) Return (CAAR) is figured out for the 61 days of the event window by using the following equation-

$$
\operatorname{CAAR}_{(t 1,12)}={\underset{N}{N}}^{\frac{1}{N}}{ }_{\mathrm{i}=1} \operatorname{CAR}_{\mathrm{i}(\mathrm{t}, \mathrm{t})}
$$

## T-Test

The equation for the paired $t$-test is given by

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$$
t=\frac{\sum d}{\sqrt{\frac{n\left(\sum d^{2}\right)-\left(\sum d\right)^{2}}{n-1}}}
$$

Where $\Sigma \mathrm{d}$ is the sum of the differences.

## Data Analysis and interpretation

To explore the reaction of the dividend declaration on the security prices of the sample firms, the study intended to calculate the expected return by applying the Ordinary least square (OLS) regression on the log return of sample companies relying on the estimation window of 200 days ( -230 to -30 ). The result of the market model shows the regression parameters i.e. alpha and beta for the sample firms mentioned below:

| S. No. | Company <br> Name | Alpha <br> Value $(\boldsymbol{\alpha})$ | Beta <br> Value $(\boldsymbol{\beta})$ | S. No. | Company <br> Name | Alpha <br> Value $(\boldsymbol{\alpha})$ | Beta Value <br> $(\boldsymbol{\beta})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Aggarwal India | 0.0029 | 1.8311 | 26 | Linde India | 0.0012 | 0.8281 |
| 2 | Ambuja cement | 0.0006 | 0.9517 | 27 | Manglam org | 0.0006 | 0.4938 |
| 3 | Anant Raj | -0.0015 | 2.0020 | 28 | MCX India | -0.0003 | 1.3945 |
| 4 | Ashok Leyland | 0.0017 | 1.1827 | 29 | Nestle India | 0.0005 | 0.3508 |
| 5 | Asian Paints | 0.0006 | 0.7404 | 30 | oil India | -0.0025 | 0.9013 |
| 6 | Astral Ltd. | 0.0013 | 0.3901 | 31 | ONGC | 0.0012 | 0.5779 |
| 7 | Atul Auto | -0.0011 | 0.9806 | 32 | Pfizer | -0.0014 | 0.4791 |
| 8 | Bajaj Finsev | 0.0009 | 1.4583 | 33 | PNB Housing | -0.0014 | 1.0624 |
| 9 | Berger paints | -0.0011 | 0.8504 | 34 | FBL Bance | -0.0012 | 1.0519 |
| 10 | Birla | 0.0003 | 1.1151 | 35 | Relaxo | 0.0004 | 0.5044 |
| 11 | corporation | Cipla | -0.0003 | 0.9577 | 36 | Rico Auto | -0.0024 |
| 12 | Cybertech | -0.0021 | 1.0806 | 37 | Sangam India | -0.0008 | 0.3228 |
| 13 | DIC India | -0.0011 | 0.7355 | 38 | Satia Ind | 0.0014 | 1.3077 |
| 14 | Finolex Indu | 0.0000 | 0.6735 | 39 | SMS Pharma | -0.0013 | 1.2055 |
| 15 | Gillette India | -0.0016 | 0.4287 | 40 | TATA | 0.0028 | 0.8414 |
| 16 | Global Space | -0.0015 | 0.5894 | 41 | Chemical | TATA Power | 0.0013 |
| 17 | Gujrat Gas | -0.0006 | 0.8758 | 42 | Valson ind | -0.0010 | 1.5463 |
| 18 | Hdfc Ltd. | 0.0005 | 0.7976 | 43 | Glenmark | -0.0008 | 0.7409 |
| 19 | Hindustan | -0.0004 | 0.3550 | 44 | Nector Life | -0.0018 | 1.7247 |
| 20 | unilever | ICICI Bank | -0.0005 | 1.2651 | 45 | vadilal | 0.0000 |
| 21 | ITC | -0.0012 | 0.7720 | 46 | NCL Industry | -0.0011 | 1.3259 |
| 22 | Jindal poly | 0.0015 | 0.3633 | 47 | Rajesh Export | -0.0011 | 0.2094 |
| 23 | Jindal steel | -0.0003 | 1.4840 | 48 | Jai | -0.0003 | 1.2508 |
| 24 | Jubilant Food | 0.0007 | 0.9998 | 49 | Reliance |  | -0.0004 |
| 25 | Giri Industry | 0.0016 | 2.3492 | 50 | Industry | 0.9436 |  |
|  |  |  |  | Tata Steel | 0.0013 | 1.3234 |  |

Source- Author's Computation
Further, the study uses these regression parameters i.e. alpha and beta to figure out the expected returns for the 50 sample firms during the period 2018 to 2022, and then expected

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return is used to figure out the excess return for 61 days event window ( -30 days, 0 days, +30 days). Thus the following table shows the value of AAR, CAR, and CAAR (Log Return) for the specimen firms around the dividend announcement ( 30 days before and 30 days after) from 2018 to 2022:

| Days | Average <br> Abnormal Return (AAR) | Cumulative <br> Abnormal Return (CAR) | Cumulative <br> Average <br> Abnormal <br> Return <br> (CAAR) | Days | Average <br> Abnormal Return (AAR) | Cumulative <br> Abnormal Return (CAR) | Cumulative Average Abnormal Return (CAAR) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -30 | 0.0025 | 0.1227 | 0.0025 | 0 | 0.0015 | 0.0757 | 0.0411 |
| -29 | 0.0002 | 0.0098 | 0.0027 | 1 | 0.0027 | 0.1373 | 0.0438 |
| -28 | -0.0022 | -0.1085 | 0.0005 | 2 | 0.0009 | 0.0445 | 0.0447 |
| -27 | 0.0022 | 0.1122 | 0.0028 | 3 | 0.0006 | 0.0302 | 0.0453 |
| -26 | -0.0032 | -0.1600 | -0.0004 | 4 | 0.0018 | 0.0880 | 0.0471 |
| -25 | 0.0039 | 0.1938 | 0.0034 | 5 | -0.0032 | -0.1607 | 0.0439 |
| -24 | 0.0008 | 0.0376 | 0.0042 | 6 | -0.0048 | -0.2409 | 0.0390 |
| -23 | 0.0006 | 0.0304 | 0.0048 | 7 | -0.0044 | -0.2204 | 0.0346 |
| -22 | -0.0008 | -0.0383 | 0.0040 | 8 | 0.0049 | 0.2445 | 0.0395 |
| -21 | -0.0027 | -0.1344 | 0.0014 | 9 | -0.0050 | -0.2480 | 0.0346 |
| -20 | -0.0025 | -0.1257 | -0.0012 | 10 | 0.0101 | 0.5054 | 0.0447 |
| -19 | 0.0035 | 0.1770 | 0.0024 | 11 | -0.0020 | -0.0999 | 0.0427 |
| -18 | 0.0018 | 0.0909 | 0.0042 | 12 | -0.0021 | -0.1031 | 0.0406 |
| -17 | 0.0043 | 0.2129 | 0.0085 | 13 | -0.0030 | -0.1493 | 0.0376 |
| -16 | -0.0023 | -0.1146 | 0.0062 | 14 | -0.0005 | -0.0253 | 0.0371 |
| -15 | 0.0036 | 0.1779 | 0.0097 | 15 | 0.0026 | 0.1314 | 0.0397 |
| -14 | -0.0011 | -0.0544 | 0.0086 | 16 | 0.0006 | 0.0317 | 0.0404 |
| -13 | 0.0021 | 0.1038 | 0.0107 | 17 | -0.0052 | -0.2576 | 0.0352 |
| -12 | 0.0034 | 0.1707 | 0.0141 | 18 | -0.0010 | -0.0486 | 0.0343 |
| -11 | -0.0002 | -0.0096 | 0.0139 | 19 | 0.0034 | 0.1681 | 0.0376 |
| -10 | 0.0067 | 0.3325 | 0.0206 | 20 | -0.0025 | -0.1236 | 0.0351 |
| -9 | 0.0040 | 0.2017 | 0.0246 | 21 | 0.0004 | 0.0219 | 0.0356 |
| -8 | 0.0015 | 0.0731 | 0.0261 | 22 | -0.0047 | -0.2359 | 0.0309 |
| -7 | -0.0003 | -0.0159 | 0.0258 | 23 | -0.0042 | -0.2080 | 0.0267 |
| -6 | 0.0024 | 0.1179 | 0.0281 | 24 | -0.0027 | -0.1333 | 0.0240 |
| -5 | 0.0005 | 0.0230 | 0.0286 | 25 | 0.0078 | 0.3886 | 0.0318 |
| -4 | 0.0037 | 0.1853 | 0.0323 | 26 | 0.0021 | 0.1034 | 0.0339 |
| -3 | 0.0011 | 0.0549 | 0.0334 | 27 | -0.0008 | -0.0408 | 0.0331 |
| -2 | 0.0057 | 0.2873 | 0.0391 | 28 | -0.0026 | -0.1293 | 0.0305 |
| -1 | 0.0004 | 0.0213 | 0.0396 | 29 | -0.0033 | -0.1659 | 0.0272 |
| 0 | 0.0015 | 0.0757 | 0.0411 | 30 | -0.0003 | -0.0151 | 0.0269 |

Source- Author's Computation
The above table shows the Average abnormal returns (AAR), Cumulative abnormal (Excess) returns (CAR), and Cumulative abnormal returns (CAAR) of the sample firms using the dividend declaration for the event window of 61 days. The movement of AAR in the prior phase of the announcement is certainly optimistic for 21 days while negative for 9 days and 0.15 percent on the event day. During the post-announcement, AAR is positive (definite) for 12 days while showing negative (gloomy) for 18 days. The movement of the CAR in the prephase of the announcement is positive for 21 days while negative for 9 days and on the

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announcement day CAR is 7.57 percent. During the post phase of the announcement, CAR is positive (definite) for 18 days and negative (gloomy) for 12 days. Likewise, the movement of CAAR in the pre-phase of the announcement is positive for 28 days while negative only for two days ( -26 days and -20 days) and on the declaration day, it is 4.11 percent. During the post phase of the announcement, CAAR is positive for all 30 days of the event window. However, the Average excess return is very small on the declaration date but cumulative abnormal (excess) return and cumulative average excess return provide enough to benefit the shareholders of the sample firms.

CAAR $(-30,+30)$


Figure- Showing Movement of CAAR of Sample firms during the 61-day event window (-30 days, 0 days, and +30 trading days)

The above figure shows the movement of CAAR of 61 days event window ( -30 trading days, 0 days, and +30 trading days) for the 50 sample firms from April 2015 to March 2020 and it shows that the CAAR started to increase before the announcement and it increases even after the announcement for 6 days. Overall CAAR shows a mixed trend after the 0 days but still, it is showing an increasing trend compared to the prior 0 day.

## Hypothesis Testing and Empirical Results

The present study includes the null hypothesis and its testing mentioned below-
$\mathbf{H}_{01}$ : There is no significant reaction to dividend declaration on the stock prices of the listed firms.
$\mathbf{H}_{02}$ : The cumulative average abnormal return is equal to zero.
$\mathbf{H}_{\mathbf{0}}:$ CAAR $=0$
$\mathbf{H}_{1}: \operatorname{CAAR} \neq 0$
To check the hypothesis, the study makes use of the parametric t-test at a significance level of $5 \%$ to accept or reject the null hypothesis.

| Date | CAAR | t- Stat | P-Value | Null Hypothesis |
| :---: | :---: | :---: | :---: | :---: |
| $(-30 \ldots+30)$ | 0.0269 | -6.9582 | 0.0001 | Reject |
| $(-20 \ldots+20)$ | 0.0338 | -6.1105 | 0.0002 | Reject |
| $(-10 \ldots+10)$ | 0.0308 | -4.0033 | 0.0031 | Reject |
| $(-05 \ldots+05)$ | 0.0158 | -5.424 | 0.0056 | Reject |
| $(-04 \ldots+04)$ | 0.0185 | -6.7687 | 0.0066 | Reject |
| $(-03 \ldots+03)$ | 0.013 | -4.5652 | 0.0448 | Reject |
| $(-02 \ldots+02)$ | 0.0113 | -21.1531 | 0.0301 | Reject |

Source- Authors' computation (significant at the two-tailed 5\% level)

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The above table shows the standardized and non-standardized ARs method for testing under different event windows based on CAARs of sample firms in response to dividend announcements:

Cumulative average abnormal return (CAAR) is showing overall average excess gains in response to the dividend declaration to the stockholders of the sample firms. The null hypothesis is being tested under the larger event window of 61 days $(-30 \ldots+30)$ to a smaller event window of 5 days $(-02 \ldots+02)$. For 61 days event window overall CAAR is showing 2.69 percent and on the dividend announcement day, it is showing 4.11 percent. CAAR is showing negative only for two days ( $-26^{\text {th }}$ day and $-20^{\text {th }}$ day) and positive for the rest of 59 days. The CAAR is positive and statistically significant for the main 61 days event window. For the 41 days event window, CAAR is showing 3.38 percentages and it is negative only for one day ( $20^{\text {th }}$ day) and positive for the rest of 40 days. The CAAR is positive and shows a significant result for the 41 days event window. Likewise, the $t$-test shows positive and statistically significant CAAR results at a $5 \%$ significance level for the smaller event window such as -10 to $+10,-5$ to $+5,-4$ to $+4,-3$ to +3 , and -2 to +2 . As the CAARs are showing statistically significant results for complete event windows, the null hypothesis is rejected.

## Summary and Conclusion

The present study examined the share price volatility around dividend declaration for a specimen of 50 companies registered in the stock market of India. To check the stock price volatility around the event announcement, the study calculates the excess return, Average excess return (AER), and "cumulative average abnormal return" (CAAR). The present investigation uses the 200 days ( -230 to -30 ) estimation window and 61 days ( -30 to +30 ) of the event window. The present event study methodology makes use of an ordinary least square (OLS) regression market model to conclude the result.

The study revealed the fact that there is a slow increase in the share price during the pre-phase of the declaration and it started to increase during the post-phase of the announcement. There is more fluctuation in the stock price in the post-phase of dividend declaration. The study found similar results to Neetu Mehndiratta and Shuchi Gupta (2010), Aditya R. Khanal and Ashok K. Mishra (2017), T.Mallikarjunappa and T. Manjunatha (2009), Gupta et al. (2012) in the Indian context. Further, the study found a statistically significant result for the sample firms. It clearly shows the existence of excess return in the post phase of the announcement. The analysis of CAAR shows that excess returns can be earned after the announcements. Thus dividend announcement study can be documented as a signaling hypothesis.

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## Appendix

The following are the names of the companies with their dividend announcement date-

| Sr. No. | Company <br> Name | Public <br> Announcement <br> Date | Sr. No. | Company <br> Name | Public <br> Announcement <br> Date |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Ashok Leyland | 18.05 .2018 | 26 | Global Space | 22.10 .2021 |
| 2 | HDFC Ltd. | 30.04 .2018 | 27 | ITC | 01.06 .2021 |
| 3 | PNB Housing | 03.05 .2018 | 28 | Asian Paints | 12.05 .2021 |
| 4 | Kirti Industry | 16.05 .2018 | 29 | Reliance | 30.04 .2021 |
| 5 | RBL Bank | 27.04 .2018 | 30 | HUL | 29.04 .2021 |
| 6 | Cipla | 22.05 .2018 | 31 | Tata Chemical | 03.05 .2021 |
| 7 | Astral Ltd. | 23.05 .2018 | 32 | Linde India | 01.03 .2021 |
| 8 | ICICI Bank | 07.05 .2018 | 33 | Tata Steel | 05.05 .2021 |
| 9 | Atul Auto | 27.05 .2019 | 34 | Tata Power | 12.05 .2021 |
| 10 | Anant Raj | 30.05 .2019 | 35 | Nestle | 17.02 .2021 |
| 11 | Bajaj Finserv | 30.05 .2019 | 36 | Ambuja Cement | 17.02 .2022 |
| 12 | SMS Pharma | 27.05 .2019 | 37 | DIC India | 11.02 .2022 |
| 13 | Relaxo Footwear | 10.05 .2019 | 38 | Pfizer | 20.05 .2022 |

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| 14 | Jubilant Food | 15.05 .2019 | 39 | ONGC | 30.05 .2022 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 15 | MCX India | 25.04 .2019 | 40 | Berger Paints | 26.05 .2022 |
| 16 | Gujrat Gas | 06.05 .2019 | 41 | Jindal Steel | 08.09 .2022 |
| 17 | Rajesh Export | 30.06 .2020 | 42 | Satia Industry | 27.05 .2022 |
| 18 | Jai Corp | 29.06 .2020 | 43 | Agarwal Ind | 30.08 .2022 |
| 19 | Sangam India | 24.06 .2020 | 44 | Birla Corp | 12.05 .2021 |
| 20 | Gillette India | 26.08 .2020 | 45 | Valson Industry | 30.05 .2019 |
| 21 | Rico Auto | 18.06 .2020 | 46 | Finolex Industry | 23.05 .2018 |
| 22 | Mangalam | 30.06 .2020 | 47 | Glenmark | 29.05 .2018 |
|  | Organ |  |  |  |  |
| 23 | Jindal Poly | Films | 29.06 .2020 | 48 | Nector Life |
| 24 | Oil India | 26.06 .2020 | 49 | Vadilal Industry | 26.05 .2018 |
| 25 | Cybertech | 18.06 .2020 | 50 | NCL Industry | 30.05 .2019 |

