



# Dividend Announcements-Impact on Average Abnormal Returns on Announcement Day

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## Abstract:

*Dividend refers to a reward in the form of cash or otherwise, that a company announces to distribute among its shareholders. Theoretically dividend announcements should not have any effect on share prices and stock returns. But significant effect on share prices and positive ARs are observed on and around announcement of cash dividends. Announcement day is the day on which dividend announcement information first comes into the market. The study below focuses on the cash dividend announcements in India. The result of the analysis shows that AAR around announcement day is positive. There is presence of significant positive change in AARs in pre-announcement and post – announcement period.*

## 1. Introduction

Dividend announcements are regarded as one of the key focus areas of the corporate financial policy. The core of dividend policy includes the decision like whether to distribute profits to the shareholders in the form of the dividend or to retain it in the form of retained earnings. Dividend policy adopted by a company communicates the policies of the managers of the organization. Investors consider dividends as a source of income and also an important factor for the purpose of valuation of the company. At the time of the declaration of dividends, two factors are taken into account: one the objective behind it and second the market reaction after its declaration.

Dividend refers to a reward in the form of cash or otherwise that a company announces to distribute among its shareholders. Dividends may be granted by a company in various ways like cash payment, stocks or any other form. The decision of dividend announcement is taken by the board of directors of the company. This decision is made subject to approval by the shareholders. However, it is not obligatory for a company to pay the dividend. The dividend is usually a part of the profit that the company shares with its shareholders. Some studies suggest that dividend announcements are done by managers to communicate positive information about prospects of their company.

This hypothesis is termed as signalling hypothesis or information hypothesis. It was first offered by Fama, Fisher, Jensen and Roll (1969). It was later encouraged by researchers like Brennan and Copeland (1988), McNichols and Dravid (1990), and Brennan and Hughes (1991).

Theoretically dividend announcements should not have any effect on share prices and stock returns. But significant effect on share prices and positive ARs are observed on and around stock splits.

One of the earliest studies to evaluate if any particular return behavior is associated with corporate announcements was done by Fama et al. (1969) using stock splits. They tried to find whether there is presence of ARs when a stock split is announced and whether these returns are result of stock split announcement.

McNichols and Dravid (1990) tested whether stock splits and stock dividend signal about future

earnings. According to them stock splits are indicators of projected revenues and profits. Their result indicated that stock splits excite the market and increase interest in company leading to higher trading in shares. According to them stock splits is undertaken by companies performing unusually well as compared to general market in boom period. If after some time it becomes clear that dividend is not forthcoming then stock returns revert to normal in relation to market returns. They provided evidence that companies signal their private information about future earnings by their choice of split factor.

Rankine and Stice (1997) suggested that signalling value was larger for stock dividend as compared to stock splits. Changes in dividend usually reflect the prediction in changes of earnings (Ofer and Siegel, 1987). When a firm anticipates, it would have stable cash flows in the future it would tend to pay out cash dividends (DeAngelo, 1992). Of course, one can argue that firms may mislead investors by overstating earnings and paying generous dividends. But it is practically unaffordable for a company to continue this practice in the long-run, without having substantial cash flow back up. If that happens, the firm will have to either reduce its investment plans or will have to raise funds through additional equity or debt financing, which may have costly consequences to the company. Hence, most managers do not enhance the dividend rates unless they are sufficiently confident about the future earnings and cash flow. This is why cash dividend announcement is believed to give a clear signal to the investors about future profitability and cash flow position of the announcing firms.

## 2. Research Methodology

The research papers and studies in the past are primarily used as basis to decide appropriate methodology used for analysing the impact of dividend announcement on share prices. The use of event study methods for analysis is well documented and evaluated in previous work. The event study is a methodology used to study share price behaviour around specific events and share price reaction to such events as stated by Binder (1998). The methodology starts with the hypothesis whether a particular event affects company value or not. It helps in determining whether an event generates abnormal returns after a company makes a financial decision in relation to an asset or whether an event affects value of that asset. It must be noted that at a given point of time share prices are affected by a number of randomly generated new information. Main advantage of using ARs as measure of finding changes in value is that, ARs uses share prices as basis of calculation. The share prices are valid measure as compared to any other accounting measures because it can evaluate all available information at a time.

The sample comprises of dividend announcements made by companies listed on Bombay Stock Exchange (BSE) which became effective during period starting from 1st January 2009 and till 30th June 2014. The closing share prices data for the sample along with values of BSE Sensitive Index<sup>1</sup> is collected from Prowess 19.1, a database of Centre for Monitoring Indian Economy (CMIE)<sup>2</sup>.

The dividend announcement dates are not directly published in any of the leading business dailies. The dates of announcement day are taken from Prowess database, Capital line and press reports of Economic Times. Additional information is obtained from bseindia.com (official website of BSE). There are **392** dividend announced in period of study. After applying conditions of event study, we obtain a sample appropriate for use of Event Study Methodology. The sample companies used for analysis are reduced to **54**.

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<sup>1</sup> BSE Sensitive index is a robust representative of Indian stock market and used as proxy for market portfolio because it is value weighted index which uses free float market capital as value weights and appropriate for such type of analysis same is suggested by Womack et al. (1996) and Fama (1998).

<sup>2</sup> CMIE is an independent private sector economic research organization. It has built largest database on Indian economy and companies in form of databases and research reports. It is widely used by academics and industries in India..

The chapter below first mentions the hypothesis tested and presents findings relating to impact of dividend announcements on share prices and Abnormal Returns on and around announcement day for a period starting from 2009 to June 2014. The research hypothesis tested in the present chapter is:

•**HYP: 1**-Dividend announcements have impact on share prices.

Impact of dividend announcement on share prices is analysed through stock returns. The study tries to find effect around announcement day and same is discussed below.

Impact of dividend announcements around<sup>3</sup> announcement day is studied through abnormal returns (ARs) calculated using market model as a part of Event Study. Abnormal return is defined as actual return ( $R_{it}$ ) minus normal return ( $NR_{it}$ ).

$$AR_{it} = R_{it} - NR_{it} \quad (1)$$

Normal Return is calculated using Market model which is –

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

And,

$$NR_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{mt} \quad (2)$$

$R_{mt}$  is return on market index for day  $t$ .  $\alpha_i$  measures mean returns not explained by market.  $\beta_i$  measures sensitivity of return (company  $i$ ) to market return and  $\epsilon_{it}$  is the statistical error whose expectation is assumed to be zero.

Using Eq.(1) and Eq.(2), abnormal returns are defined as residuals or prediction errors of model which is as under:

$$AR_{it} = R_{it} - NR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (3)$$

Where,  $\hat{\alpha}$  and  $\hat{\beta}$  are OLS estimators of regression coefficient estimated over estimation window.

The un-weighted cross-sectional average abnormal returns in period  $t$  are calculated using:

$$AAR_{it} = \frac{\sum_{i=1}^N AR_{it}}{N} \quad (4)$$

Where,  $N$  is number of shares for which ARs are present on an event day in the event window. The event window is from  $t_{-20}$  to  $t_{+20}$ . The null hypothesis tested is:

$$H_0 : E(AAR_{it}) = 0$$

Z-test is used to test statistical significance of AARs on an event day. It assumes that AARs are independently and identically distributed, have same mean and variances and are cross-sectionally uncorrelated.  $\sigma$  is unknown and estimator of  $\sigma$  can be constructed from cross-sectional variance of ARs in period  $t_i$ . The Z-statistics is calculated as under:

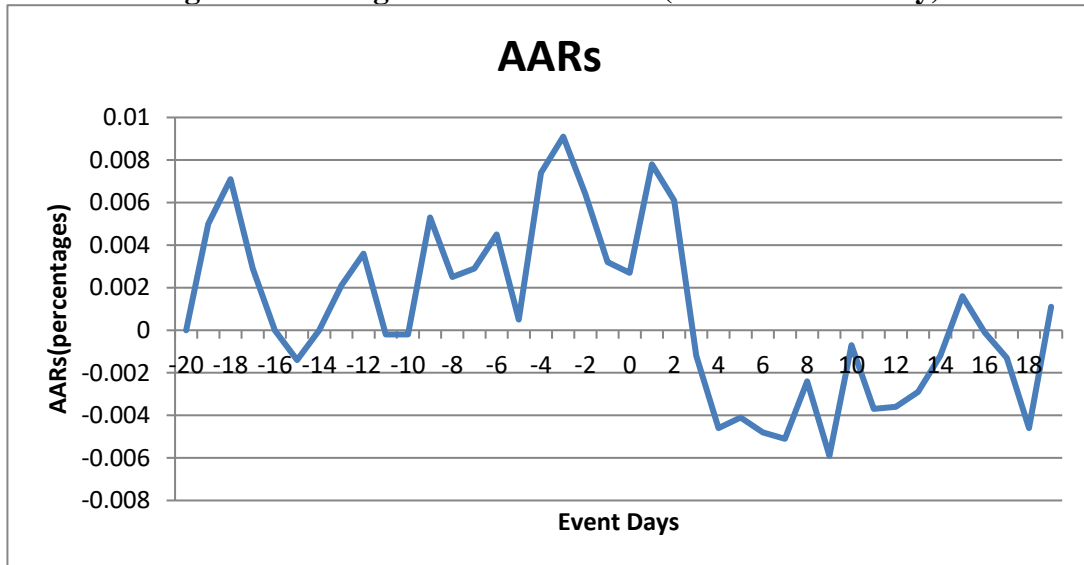
$$Z = \sqrt{N} \left( \frac{AAR_{it}}{s_t} \right) \approx N(0,1) \quad (5)$$

If AARs are not zero and statistically significant it indicates that share prices behave positively or negatively to dividend announcements and affect wealth of shareholders.

**Figure 1** plots AARs for announcement window from  $t_{-20}$  to  $t_{+20}$  and shows that AARs are positive before announcement day of dividend announcements besides an occasional descent to negative side on event days -  $t_{-17}$  to  $t_{-13}$ .

<sup>3</sup> Around - here and in rest of chapters 5, 6, 7 and 8 means event window and includes event day.

**Figure 1: Average abnormal returns (announcement day)**



**Table 1** depicts that during the 20-day pre-announcement window, starting from day  $t_{-20}$  to  $t_{-1}$  there is a pattern of positive average abnormal returns. The returns are positive for 17 days while they are negative for only 3 days. Out of these 17 positive AAR values, are significant at 5% level of significance. The negative returns are not significant on any of the four days. The AAR on announcement day  $t_0$  is nearly 3 percent and highly significant. During the post-announcement window from day  $t_1$  to day  $t_{20}$ , the pattern of positive AARs changes to negative pattern of returns. It has been observed that the AARs are negative for 16 days and positive for only four days. The value of one day's stock return is 0.0 percent.

**Table 1: Average abnormal returns (AARs) and Z-values (announcement day)**

Event Day	AARs (%)	Standard deviation (%)	Z-values*
-20	0.50%	3.62%	<b>2.03</b>
-19	0.71%	4.03%	<b>2.56</b>
-18	0.29%	4.00%	1.06
-17	0.00%	3.91%	0.01
-16	-0.14%	3.28%	-0.61
-15	0.00%	3.20%	-0.01
-14	0.21%	3.74%	0.80
-13	0.36%	3.71%	1.41
-12	-0.02%	3.72%	-0.07
-11	-0.02%	3.44%	-0.08
-10	0.53%	3.38%	<b>2.32</b>
-9	0.25%	3.81%	0.97
-8	0.29%	3.38%	1.27
-7	0.45%	3.34%	1.95
-6	0.05%	3.40%	0.21
-5	0.74%	4.18%	<b>2.60</b>
-4	0.91%	4.04%	<b>3.28</b>
-3	0.64%	4.21%	<b>2.23</b>
-2	0.32%	3.70%	1.28
-1	0.27%	3.80%	1.06
0	0.78%	4.09%	<b>2.80</b>
+1	0.61%	4.17%	<b>2.14</b>

+2	-0.12%	3.39%	-0.51
+3	-0.46%	3.45%	-1.95
+4	-0.41%	3.73%	-1.61
+5	-0.48%	3.22%	<b>-2.18</b>
+6	-0.51%	3.11%	<b>-2.38</b>
+7	-0.24%	2.91%	-1.23
+8	-0.59%	3.21%	<b>-2.67</b>
+9	-0.07%	3.16%	-0.34
+10	-0.37%	2.98%	-1.80
+11	-0.36%	3.56%	-1.49
+12	-0.29%	3.10%	-1.38
+13	-0.12%	2.82%	-0.64
+14	0.16%	3.05%	0.76
+15	-0.01%	3.62%	-0.03
+16	-0.13%	3.48%	-0.56
+17	-0.46%	3.18%	<b>-2.13</b>
+18	0.11%	3.23%	0.52
+19	-0.30%	3.01%	-1.47
+20	-0.51%	3.39%	<b>-2.21</b>

\* Values in bold are significant at 5% level of significance.

The assumption that variance of all ARs is equal for all companies may not be true. Some shares may be more volatile than others lowering power of Z-test. So, weighted average of abnormal returns can be taken which puts lower weight on ARs with high variance. Reciprocal of estimated standard deviation of ARs of estimation window is used as weights to calculate SARs of individual company in following way:

$$SAR_{it} = \sum_{i=1}^N \frac{AR_{it}}{s_i} \quad (6)$$

And

$$ASAR_{it} = \frac{1}{N} \sum_{i=1}^N SAR_{it} = \frac{1}{N} \sum_{i=1}^N \frac{AR_{it}}{s_i} \quad (7)$$

The  $ASAR_{it}$  is cross sectional average of SARs. The ASARs are assumed to be uncorrelated across companies and used to test null hypothesis:

$$H_0 : E(ASAR_{it}) = 0,$$

For which following Z-statistic is constructed:

$$Z_s = \sqrt{N} (ASAR_{it}) = \frac{1}{\sqrt{N}} \left( \sum_{i=1}^N SAR_{it} \right) \quad (8)$$

**Table 2** shows that AAR on  $t_0$  day is positive with significant  $Z_s$ -values. The AARs are also positive with significant  $Z_s$ -value at 5% level of significance on days - t-7, t-6, t-5, t-4, t-3 and t-1.

**Table 2: AARs and  $Z_s$  -values (announcement day)**

Event Day	AAR (%)	$Z_s$ -values*
-20	0.50%	-0.289
-19	0.71%	0.351
-18	0.29%	-0.263
-17	0.00%	-0.419
-16	-0.14%	0.359
-15	0.00%	0.022
-14	0.21%	0.931
-13	0.36%	0.457

-12	-0.02%	1.930
-11	-0.02%	1.771
-10	0.53%	1.920
-9	0.25%	1.787
-8	0.29%	-0.663
-7	0.45%	<b>3.320</b>
-6	0.05%	<b>4.588</b>
-5	0.74%	<b>3.300</b>
-4	0.91%	<b>4.799</b>
-3	0.64%	<b>3.935</b>
-2	0.32%	2.037
-1	0.27%	<b>4.070</b>
0	0.78%	<b>5.684</b>
+1	0.61%	0.207
+2	-0.12%	-0.642
+3	-0.46%	-2.096
+4	-0.41%	-1.421
+5	-0.48%	-1.395
+6	-0.51%	-1.243
+7	-0.24%	-0.660
+8	-0.59%	-0.703
+9	-0.07%	-1.382
+10	-0.37%	0.006
+11	-0.36%	-0.826
+12	-0.29%	-0.279
+13	-0.12%	0.689
+14	0.16%	-0.719
+15	-0.01%	-0.415
+16	-0.13%	-0.506
+17	-0.46%	-0.232
+18	0.11%	-0.011
+19	-0.30%	0.468
+20	-0.51%	0.149
* Values in bold are significant at 5% level of significance.		

The observed results indicate that the investors perceive the announcement of stock dividends to be beneficial for them. Although the change of positive reaction prior to and on the announcement day to negative reaction after the announcement day indicates that the investors overreacted initially to these announcements, but a cor-rection (to this overreaction by the investors) takes place quickly. Such findings lead to the conclusion that the null hypothesis of zero average abnormal returns during the event window is rejected.

### 3. Conclusion

From the above results it can be concluded that the information about the stock dividend announcements reaches the investors prior to the decision date as it is mandatory for the issuing company to inform the exchange (where it is listed; in this case, it is Bombay Stock Exchange) about the board meeting and the date of the board meet-ing. It has been observed that the companies usually inform the exchange around seven days prior to the day of the board meeting. In fact, most of the times the companies provide the agenda item information along with the board meeting date to the exchange. In such a situation, the moment this information about the meeting and the agenda item is



given to the exchange, this becomes public information and investors start reacting to it. The positive reaction clearly indicates that investors perceive stock dividends to be beneficial for them. This further leads to an increase in the demand for the issuing company's shares leading to the positive abnormal returns. The magnitude of the average abnormal return on the day of announcement is also substantial (nearly 3 %), indicating that the moment the decision of issuing the stock dividend is announced, its stock price jumps high, providing positive abnormal returns to the investors. Later, a correction takes place and the AARs become negative.

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