# **Stock Price Reaction to Dividend Announcements**

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#### Abstract

Dividend declaration is considered as one of the key focus areas of the organisation's financial policy. Majority of the companies consider it advantageous to declare the dividends, as it will have positive impact on its goodwill and the share prices. The dividend surprise conveys the same information as earnings surprise. Managers use the increase of dividends to signal about the firm. It means that firms announcing dividend initiations and increases should experience positive abnormal returns, while firms cutting and reducing dividend suffers negative abnormal returns. In this background, the present study is an attempt to study the stock price reaction to 65 dividend announcements (increase) by 28 companies during the period 2006-09 listed on BSE 30 Sensex. The analysis had been undertaken using Event study methodology. The study exposed the fact that stock prices do react to increase in dividend announcements and dividend announcements do possess signaling property. The study also found out that Indian stock market is inefficient.

**Keywords:** Dividend, Information Content, signalling theory.

#### 1. Introduction

Dividend declaration is considered as one of the key focus areas of the organisation's financial policy. The core of dividend policy includes the decision like whether to distribute profits to the shareholders in the form of dividend or to retain it in form of retained earnings. Dividend policy adopted by a firm has inference in the practical life for all, whether a manager or the organization's stakeholders. Similar is the case with investors who consider dividends not only as a source of income but also an important determinant for purpose of firm's valuation. At the time of declaration of dividends, two factors are given due consideration, one is the motives behind it and second is the market reaction after its declaration.

Majority of the companies consider it advantageous to declare the dividends, as it will have positive impact on its goodwill and the share prices. In an ideal business world as per Modiglani and Miller (1961), investors may be indifferent about the amount of dividend, as it does not influence the value of a firm and hence, is irrelevant. In a study conducted in Malaysia, the results evidenced that firms increase payment of dividends when their earnings increase; and they are reluctant to skip dividends when earnings fall. However, they do tend to omit dividends when they suffer losses (Pandey, 2003).

The reason behind the decision to distribute dividends is based on market imperfections due to the information asymmetry between management and investors.

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Management is supposed to have better information about the current and future financial position of the firm than investors. Therefore, dividend change announcements convey valuable information to the market since they are considered to reflect management's expectations about current and future cash flows. Subsequently, dividend increases (decreases) convey positive (negative) information to the market about the future prospects of the firms that distribute dividends. Thus, an announcement of dividend increase (decrease) is accompanied with a rise (fall) in stock prices. The above argument is considered the key premise of the so-called information content of dividends hypothesis or the dividend signaling hypothesis that was initially proposed by Lintner (1956) and further developed by Fama et al. (1969), Bhattacharya (1979 and 1980), Miller and Scholes (1982), John and Williams (1985), Miller and Rock (1985) and Ambarish et al. (1987).

Ross (1977) and Bhattacharya (1979) have explored the properties of dividends arising from signaling models. As per the dividend signaling hypothesis, dividend change announcements trigger share returns because they convey information about managements' assessment on firms' future prospects. This will result into an improvement (reduction) in a firm's value due to dividend increase (decrease). The empirical evidence makes it clear that dividends affect market valuations. However, it is not clear whether management use dividends intentionally as a signal or not.

Signaling models have been proposed by the researchers like Bhattacharya, (Bhattacharya, 1979); John and Williams (John and Williams, 1985); Asquith and Mullins (Asquith and Mullins, 1986). One of the most promising theories on signaling hypothesis by Miller and Rock (1985) illustrated that dividends and external financing are merely two sides of a single coin. The dividend surprise conveys the same information as earnings surprise. Managers use the increase of dividends to signal that the firm is undervalued, and because firms performing poorly cannot mimic the signaling due to their inability to sustain increased dividends, the signaling is credible. The implication of this theory is that firms announcing dividend initiations and increases should experience positive announcements abnormal return, while firms cutting and reducing dividend suffer negative abnormal returns. It also predicts the larger the dividend changes, the more pronounced the announcement abnormal returns would be (Liu, Szewczyk, and Zantout, 2002). However, Francis, Schipper and Vincent (2005, p. 345) predicted that

# "...the informativeness of earnings declines as dividends increase"

The signaling theory propounds that the investors evaluate the dividend announcements on the basis of sign of dividend change, the impact of change and role of dividend signal. Table 1 highlights these three evaluation criteria used by the investors:

Table 1	<b>Classification of Events into Dividend</b>
	Signals

Dividend Change	Signaling Role	Attribute Clarity	Expected Stock Reaction
Change in Divi- dend > 0	Confirmatory	Clear (High)	No/Low/Medi- um (Positive/
(with more margin)			Negative)
Change in Divi- dend > 0 (with less margin)	Clarificatory	Clear (Low)	Medium/High (Positive/ Negative)
Change in Divi- dend <= 0	Unclear	Unclear (Low)	Low/Medium (Net-Positive/ Negative)

Gordon (1961, 1962) argued that the outside shareholders prefer high dividend policies over a highly uncertain capital grain from a questionable future investment. As per Aivazian et al. (2001), this argument is often referred to as the "bird in the hand" argument. A number of studies demonstrated that this model is preferred by the market with investors who behave according to notions of rational behavior (Miller and Modigliani) (1961) and Bhattacharya (1979). This is often stated that the dividend yield takes a substation part of the total stock return, especially in the down markets (Dong, Veld and Robinson 2002).

## 2. Literature Review

Dividend is considered as an important facet of organisation's financing decision and has attracted the researchers all over the world to find its underlying secrets. Despite a lot of research been undertaken in this field, yet till now, no conclusive answer is there as to the reasons behind dividend distribution and its impact. There is abundant literature that has examined market reaction to dividend announcements. And majority of the studies have concluded the presence of a positive association between announced changes in dividend policy and stock price movements.

*Petit* (1972) was the first who demonstrated that positive (negative) changes in dividend payments induce positive (negative) abnormal returns. *Watts* (1973) disputed the results of *Petit* (1972). He studied 310 firms during 1945-67 for the informational signaling hypothesis of dividend increases, and found that on average the relationship between future earning changes and current unexpected dividend changes was positive.

Since then, a lot many studies have been conducted focusing on stock price reaction to dividend announcements. Kwan (1981) studied 183 announcements of regular and extra dividends of NYSE listed firms during 1973-77 and tested them for information content. Empirical evidence in this study was found to be consistent with the widely held position of dividend and future earning relationship as non trivial.

*Woolridge* (1983) studied dividend announcements of 225 firms from NYSE during 1970-77 by employing comparison period research approach. He studied the impact of dividend changes on share prices and found that with an increase in dividends the stock prices produce positive returns and with a decrease in dividends, returns were negative. He attributed this stock price response to signaling as well as to wealth transfer hypothesis.

*Ofer and Siegel (1987)* in a study conducted during a period of 1976-84 for BYSE and AMEX listed brokerage firms' documented relationship between announcements of unexpected changes in financial policies and unexpected changes of performance of firm. They provided the evidence that analysts revise their earnings forecasts following the announcements of an unexpected dividend change by an amount which is positively related to the size of the unexpected dividend changes. Their results provided direct evidence consistent with the hypothesis that unexpected dividend changes signal information about firm performance to market participants.

Lang and Litzenberger (1989) attempted to disentangle between signaling and agency explanations by separating firms that are presumably over investing from all other value maximizing firm. They found higher abnormal returns for over investing firms for which the agency related benefits of a dividend payout increase are higher compared to value maximizing firms.

*Lorder and Mauer (1992)* studied 450 offerings of 350 firms which were listed on NYSE or American stock exchange during 1980-84 to investigate whether managers rely on dividends to obtain higher place in stock offering and whether the stock price dividends and offering announcements justify such coordination. The results did not support either conjecture.

Akhigbe, Stephen and Madura (1993) measured the common share prices response to dividend increase for both insurance firms and financial institutions relative to unregulated firms. They found that insurance firms' stock prices react positively to increase in dividends over a four day interval surrounding the announcements, but these reactions differ depending upon the insurer's primary line of business. Their results showed that the market reaction for each segment is greater than the market reaction for financial institutions.

*Rao (1994)* in a study conducted on BSE listed companies during 1988-89 found that stock prices react positively to dividend increase announcements and this reaction starts even two days before formal announcements are made. For bonus announcements, the adjustments of stock prices occurred exactly on announcement day itself; where as in case of right issue announcements, the adjustment started one day late and it continued till the next day. He attributed this reaction of stock prices to signaling.

*Bajaj and Vijh (1995)* in a study conducted in NYSE listed firms over the period of July 1962 to June 1987, found a 0.21% average excess return over the three day announcement period. Further, they found evidence of increased information production around dividend announcement days, resulting in greater trading volume and increased price volatility. The excess returns, price volatility and trading volume were positively correlated. It was found that positive excess returns were higher for small firms and low priced stocks. They attributed the excess return to absorption of dividend information.

*Yoon and Starks (1995)* found a positive relation between dividend policy changes and capital expenditure changes, interpreting their evidence as being supportive of information signaling over a free cash flow explanation of dividend policy.

Below and Jhonson (1996) examined the differential share price reaction to dividend increase and decrease announcements with respect to market phase. They found that market phase has a significant impact on abnormal returns around the announcement, and it appears that more information is conveyed by dividend change announcements which run counter to market phase. These results were consistent with the information content of dividends hypothesis, and have important implications for event studies where clustering is problematic.

Lonie et al. (1996) investigated the stock market response to interactive dividend and earnings announcements by a sample of 620 UK companies over the period January to June 1991. First, they examined the possibility that the response to a dividend announcement may be influenced by whether the dividend is being increased, decreased or left unchanged. Second, they recognized that identifying a unique dividend information announcement effect is particularly difficult in the UK because dividends are almost invariably announced simultaneously with information about corporate earnings. The influence of combinations of dividend and earnings news was found to be important in explaining the share price reaction on the announcement day.

Bord, Atkinson and Byrd (1999) assessed the stock price reaction to the announcements of dividend increases by firms in the hospitality industry using a standard event study methodology. Results indicated that dividend increases are favourably received by market participants because a statistically significant positive market reaction was observed. Results of a cross-sectional analysis showed that the size of the market reaction across firms is positively related to the magnitude of the dividend increase.

Travlos and Vafeas (2001) examined the stock market reaction to announcements of cash dividend increases and bonus issues over an 11 years period i.e., 1985-95. The study revealed significantly positive stock market returns for firms announcing increase in cash and in stock dividends. It was concluded that positive impact of dividend increases might reflect apparently effective attempts by Cyprus-listed firms to bridge the information asymmetry gap with the investors via their dividend payout policy.

Ayers, Cloyd and Robinson (2002) investigated the stock price reaction to the 1993 increase in the top U.S. statutory

dividend yield, the more negative will be the firm's stock price reaction to the rate increase. They found that the higher a firm's dividend yield, the more negative the stock price reaction over their event period, but that the returns were more negative for stocks in which the marginal investor is likely to be an individual taxpayer.

Goldstein and Fuller (2003) investigated whether investors prefer dividend paying stocks to non-dividendpaying stocks in declining markets using S&P 500 monthly returns as a proxy for market conditions. They found that dividend paying firms have higher returns than non- dividend -paying firms, especially in declining markets. Furthermore, they found that the simple payment of dividends, and not the level of the dividend yield, drives returns' asymmetric behaviour relative to market movements, consistent with the signaling hypothesis of dividends.

Docking and Koch (2004) investigated whether investor reactions are sensitive to the recent direction or volatility of underlying market movements. They found that dividend-change announcements elicited a greater change in stock price when the nature of the news (good or bad) goes against the grain of the recent market direction during volatile times.

# 3. Need and Objectives of the Study

The perusal of review of literature revealed that stock prices react positively to the dividend increase announcements but it did not specify whether changes in dividend policy and role of dividend signal affect the efficiency of the stock market announcing these changes; via stock prices. This review gap was the motivation of the current research study. The study has covered 28 companies listed on BSE Sensex covering the time period 2006 - 2009. The present paper focused on the primary objective of studying the stock price reaction to dividend announcements. The specific objectives of the study were:

- 1. To examine the role and impact of dividend announcements on stock prices.
- 2. To analyze the stock price behavior around one particular dividend policy i.e. dividend increase.
- 3. To analyze whether changes in dividend policy affect the efficiency of the stock market on announcements.

# 4. Hypotheses of the Study

To empirically prove the above objectives, the null hypotheses were framed as follows:

Watts (1973), Woolridge (1983), Rao (1994) and Bjaj and Vijh (1995) recognized the positive impact of dividend increase announcements on stock prices as a confounding event and assessed whether dividend announcements have greater information content. Travles and Vafeas (2001) found a positive market reaction to dividend increase announcements and experienced higher abnormal returns in response to dividend change. According to McClusky et al. (2006), if the information content of dividends hypothesis is valid, the event period (t = 0, +1) abnormal returns should be significantly different from zero. The hypothesis predicts that the stocks of those companies which announce dividend increases should, on average, earn positive abnormal returns.

 $H0_1$ : There is insignificant (zero) share price response to dividend increase announcements.

 $H0_2$ : The role of dividend signal (confirmatory, clarificatory and unclear) does not affect the share price following dividend announcements.

**H0**<sub>3</sub>: The Indian stock market is inefficient.

# 5. Data Base and Methodology

#### Data Base

This paper focuses on the relationship between stock price reactions to dividend announcements by the companies. For this purpose, secondary data was collected of 28 companies listed on BSE 30 Sensex, which have increased dividends during 2006 - 2009. The following criteria have been followed for selecting the sample:

- a) The company must be listed with Bombay Stock Exchange (BSE 30 Sensex)
- b) The company must have gone for increase in cash dividends during 2006-09.
- c) The company must have only dividend increase announcements without any other corporate event (e.g. stock splits, share repurchases, stock dividends and right issues).

The criteria resulted in a final sample consisting of 65 dividend announcements (dividend increase) by 28 companies. Following Kalay and Lowenstein (1985),

newly initiated dividends are treated as increases in dividends.

The data has been taken from the websites www.nseindia. com and www.bseindia.com and the data regarding the share prices and Sensex has been taken from the website www.bseindia.com. Besides these sources, the data has also been collected from *The Economic Times*.

Similar to Gurgul et al. (2003), the announcement (event) date has been considered as the occasion of the very first official statement on dividends of the executive board of the analyzed firm that can be identified in press releases such as daily newspapers that are nationally circulated. Depending on the mean of publication (daily press or website) the observed announcement date can deviate from the actual announcement date. For that reason, in the current study, dividend announcement (event) period has been considered as the two-day period around the announcement day, namely, day 0 and day +1. Finally, the examined period is restricted to four years due to data unavailability.

#### **Statistical Tools and Techniques**

The data in the present study has been analyzed by using Event Study. The procedure for event studies is to investigate whether there are abnormal returns around the announcement date. The announcement effect exists only if abnormal returns are significant. Cable and Holland (1999) argued that the market model compares favorably to other models proposed in the literature. For that reason, the reference has been made only to the results from the market model.

#### **Standard Event Study Methodology**

The market model assumes a linear relationship between the return of the security to the return of the market portfolio. The BSE 30 Sensex had been taken as the benchmark index. The stock returns had been regressed to BSE 30 Sensex returns for a period of 100 trading days ending ten trading days before the announcement date. The ' $\alpha$ ' and ' $\beta$ ' so calculated had been used to calculate the expected abnormal returns for the event window, starting ten trading days before the event to ten trading days after the event.

The abnormal return for each of the day in the event window was the difference between the actual stock return during that day and the expected normal return according to the BSE 30 Sensex as per the ' $\alpha$ ' and ' $\beta$ ' of the concerned

stock. For being able to draw overall inference on the abnormal returns, the abnormal returns were summed up trading day wise resulting in the average abnormal return the market mode been made on Table 2 digraded to the summary of the summary of

(AAR) for each trading day 't' in the event window. Then, the cumulative average return (CAAR) was computed for each trading day 't' in the event window by adding AAR of each period. In brief, this approach involved the following sequence:

Daily abnormal returns for the security 'i' from 10 days before to 10 days after the announcement (including announcement day) of the dividend increase has been computed as:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

Where t = day measured relative to the dividend increase announcement day (t=0)

AR<sub>it</sub> = abnormal return on security 'i' for day 't'

 $R_{i,t}$  = raw return on security 'i' for day 't' which was calculated as:

$$R_{i,t} = \frac{MP_{i,t} - MP_{i(t-1)}}{MP_{i,t}}$$

Where MP<sub>i,t</sub> = market price of security 'i' on day 't'

 $MP_{i,(t-1)}$  = market price of security 'i' on day 't-1'

 $E(R_{i,t})$  = expected return on security 'i' during day 't' which had been estimated through market model using BSE 30 Sensex as follows:

$$E(R_{i,t}) = \alpha_1 + \beta_1 R_m + \varepsilon_i$$

Where  $R_m$  = return on the BSE 30 Sensex and  $\alpha_1$ ,  $\beta_1$  are the parameters of the market model and  $\varepsilon_i$  is assumed to indicate the abnormal returns.

$$AAR_{i} = \frac{1}{N} \sum_{i=1}^{N} AR_{i,t}$$

Average abnormal returns for each relative day had been calculated by:

$$AAR_i = i,t$$

Where N = Number of securities with abnormal returns during day't'.

## 6. Empirical Results

Abnormal returns are calculated using the market model. The study of Cable and Holland (1999) argued that the market model compares favorably to other models proposed in the literature. For that reason, reference has

been made only to the results from the market model. Table 2 displays abnormal returns around the dividend announcement day. In particular, it contains the mean abnormal return for each single day around the dividend announcement date and the corresponding t-statistic.

# Table 2Average Daily Average AbnormalReturns (%) for Event Window around Dividend<br/>Increase Announcements, where N = 65

N=65	Market Model		
Day	Average Abnormal Return (AAR in %)	t-statistic	
-10	-0.91371	.450	
-9	-0.12428	.628	
-8	-0.20693	.359	
-7	-0.12465	.583	
-6	0.37363	.187	
-5	-0.12075	.725	
-4	-0.41903	.119	
-3	-0.49711	.024	
-2	-0.66211**	.005	
-1	0.86710*	.000	
0	1.58837*	.000	
1	1.23797*	.000	
2	-0.66057**	.003	
3	-1.37145	.078	
4	-0.33086	.207	
5	-0.29776	.220	
6	0.08364	.705	
7	0.09628	.664	
8	0.44126	.171	
9	0.94364*	.000	
10	1.23548*	.000	

\*Significant at .001level

\*\*Significant at .05 level

The perusal of the results show positive stock price reaction on the dividend announcement day (day 0) which is 1.58837% and statistically significant at the 1% level (t = .000).

The next step is to identify the impact of event or announcement with a higher signaling power. Cumulative Abnormal Return surrounding payout announcements in different periods centered on the announcement day (announcement day = 0) are calculated. Table 3 presents cumulative abnormal returns around announcement day. All the analyses use the strongest abnormal returns of the 10- day announcement period.

# Table 3Cumulative Abnormal Returns around<br/>Dividend Announcements

Days	Mean CAR (%)	t-stat
-1 to +1	3.69344	5.912
-2 to +2	2.37076	.993
-3 to +3	0.5022	.167
-4 to +4	-0.24769	082
-5 to +5	-0.6662	222
-6 to +6	-0.20893	070
-7 to +7	-0.2373	079
-8 to +8	-0.00297	001
-9 to +9	0.81639	.258
-10 to +10	1.13816	.323

\*Significant at .05 level

A close examination of Table 3 reveals that dividend initiations have the most significant abnormal returns in the 1-day window, highest return being 3.693% and as the analysed time period widened the CAR decreased and reached 1.1386%. A possible explanation for the result in this study could be that the market reaction in the Indian market is complete within a day.

Considering the momentum of the share price adjustment to the new information coming from dividend announcements, it has been observed that there is no lagging response to dividend announcements. This result suggests that the Indian stock market responds quickly and efficiently to the corporate news contained in dividend announcements. Similar finding was observed in the studies of Petit (1972), Divecha and Morse (1983) and McClusky et al. (2006).

On the basis of the results, the null hypothesis  $(H0_1)$  of insignificant (zero) share price response to dividend announcements has been rejected. The results are in absolute line with those found in the US and other developed markets (e.g, Aharony and Swary, 1980; Asquith and Mullins, 1983; Gurgul et al., 2003; McClusky et al., 2006).

The outcome of Table 4 is based on cumulative average abnormal returns (CAAR) results of 65 final cash dividend increase announcements for trading days -10 to +10.

Testing dividend signals using the conventional mean adjusted returns and t-test methodology, Hypothesis

 $H0_2$  examines the three roles of dividend signaling: confirmatory, clarificatory, and unclear (Table 4).

Table 4	Cumulative Average Abnormal Returns
	Results

Dividend Announcements	Cumulative Average Abnormal Return (CAAR in %)	Signaling Role	
Pre-Announcement (-10 to -1)	-1.83 (286)	Unclear	
Announcement (0 to +1)	2.81(.079)*	Clarificatory	
Post-Announcement (+2 to +10)	1.14(.95)	Confirmatory	
Note: The numbers in parentheses are p-values.			

\*Significant at .10 level

Inspection of Table 4 reveals that among the three types of dividend signaling roles, clarificatory signals induce the strongest market response. Throughout the event period, only clarificatory signals are significant at the 0.10 level of significance, while unclear signals are insignificant. It also shows that a confirmatory signal does not add to what the market already knows from other managerial decisions. Thus, as the dividend signal improves the clarity of the firm's state, the market reaction becomes stronger and thus, hypothesis H0<sub>2</sub> is partially supported.

Table 4 also confirm the notion that the pre-announcement and post-announcement periods contain little new information. It can be observed that the market witnessed positive abnormal returns on trading days -1, 0, and +1 (Table 2). CAAR came out to be 1.14 on the 10th day of trading (Table 3) that is far away from 0, which meant that stock market was inefficient over that time. The results also prove that usually the announcement effect occurs on the day of the announcement or one day later (event day). The results have resulted in the acceptance of hypothesis H0<sub>3</sub> on the basis of the findings that the stock market will be inefficient since the cumulative abnormal returns are far away from zero.

Since, it is the practice of the companies to announce the dividend simultaneously with earnings announcements, so the collaboration effect between earnings and dividend announcements cannot be ruled out.

# Conclusion

Corporate dividend policy certainly matters for the shareholders. The extent of its effect may be different for

different markets depending upon the different market microstructure, tax regime and control environments. There exists, no doubt, an information gap between the shareholders and the insiders, which leads to market inefficiency. The insiders are better possessed with the company related information, which they disseminate through dividend policy. This paper shows that the classification of dividend signal by the three components improves the understanding of the firm's value. In particular, the more the market understands about the firm's internal functioning before the dividend announcement, the clarifying role of dividend becomes minimal. Under these conditions, dividends are less efficient and have little value for the market. On the other hand, the less the market knows, the more eager it is to receive dividend signal and to assess its contents (as carrying good or bad news). The positive impact of dividend increase apparently has been reflected in Indian stock market. Findings also revealed that dividend signal sends good news to cause larger price movements than those involving bad news. This suggests that bad news may be discounted long before the dividend announcement, so later dividend may carry little information. An alternative explanation of the positive impact of dividend increase may be that they serve to reduce the potential exploitation of the smaller shareholders by the larger ones, with different policy implication regarding the need to enhance the transparency and public confidence. This study should be regarded as an attempt towards understanding the importance of corporate payout policy and its impact especially the cash dividend increase.

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