

## DIVIDEND SIGNALLING & IMPACT ON SHARE PRICES: AN EVENT STUDY OF INDIAN INFORMATION TECHNOLOGY SECTOR

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### ABSTRACT

*Dividend Policy is an important decision area in the field of corporate finance. A large body of empirical research has documented that in imperfect capital markets with information asymmetries, the announcement of dividend changes affects shareholder value. However, very little research efforts have been made so far on the dividend behavior of IT sector in India. The present study is an attempt in this direction. This study investigated whether the dividend announcements in the forms of interim and final convey any information to the Bombay Stock Exchange. Fulfilling the study, the cumulative abnormal returns and the average abnormal return were calculated by applying the event study analysis on daily data with market model adjustments on 724 dividend announcements of 48 firms during the period 2000 to 2016. This paper utilizes event study methodology to examine stock price reactions of IT Sector surrounding 21 days event window of the announcement. The empirical analysis of IT Sector firms for the period of sixteen years reveals that the dividend announcement signals and investors do react on the basis of information revealed resulting in to impact on share prices. T test conducted statistically signifies impact of dividend announcement on share prices. The Section I, presents theoretical background and literature review. Section II describes the data and methodology. In Section III, we examine empirical results of the relation between dividend announcement and stock prices in Service sector measured in terms of abnormal earning. The t-test is used for analyze statistical significance. Section IV concludes the paper.*

### KEYWORDS

dividend signalling, indian it sector, event study, abnormal return, t test.

### 1. INTRODUCTION

 Shareholders wealth maximization, in other words, maximizing value of company as measure by the price of common stock is the ultimate goal of financial management which can be achieved by giving the shareholders a fair payment on their investments. The objective of the finance management should be to discover an optimal dividend policy that will increase value of the firm. It is often argued that the stock price tends to be increase whenever there is a increase in the dividend payments. The announcement of dividend decreases makes abnormal negative returns, and announcement of dividend increases generate abnormal positive returns (M&M, 1968). A fall in stock price happens because dividend payout is a signaling effect. Investors consider dividend not only as source of income but also as a signal of firms future performances. Therefore, when managers want to convey positive news about company, they will give signal to outsider shareholders that may be in the form of dividend increase, which will cause an increase in the stock price. Investors do prefer present dividend more than future capital gains to avoid risk of uncertainty, thus even if internal rate of return and required rate of return are equal, there is a direct relationship between dividend policy and market value of share (Gordon, 1962). However, the impact of dividend policy on shareholders wealth is still unsolved. This study examines the implications of dividend announcements in the Indian Stock market. The objective of this study is to see how the signaling hypothesis manifests itself in the Indian health care sector. In this paper, we tried to analyze, whether stock price reacts to the announcement of dividend in different service sectors such as IT, Healthcare, Banking and Realty in Bombay Stock Exchange.

### 1.2 LITERATURE REVIEW

There are two schools of thought of dividend policy: (1) dividend irrelevance theory (Miller and Modigliani (M&M) – 1961) and (2) dividend relevance theory. Both of the thoughts have conflict with each other and none of them provides complete and satisfactory guidelines. However, both of the schools are trying to establish their thoughts, which led to dividend controversy.

One imperfection which is critical to the development of theories related to dividend is the asymmetric information problem which lends importance to the *Signaling Theory*. Gordon (1962 and 1963) and Walter (1963) support the dividend relevance doctrine. The cash flow signaling theory, developed by Bhattacharya (1979, 1980), Easterbrook (1984), John and Williams (1985) and Miller and Rock (1985), theorized that dividend changes are explicit signals about the current and/or future cash flows, sent intentionally and at some costs by management to the company and its stockholders. Aharony and Swary (1980), Kwan (1981), Eades (1982), and Woolridge (1982), have found a significant positive association between announcement of dividend changes and the stock return, using the dividend announcement made in isolation of other firm news report.

John Lintner in 1956 being first to apply regression analysis showed that firms adopted and tended to adhere to optimal long-term dividend payout ratios which were relatively stable, suggested that managers would only raise a firm's dividend if they were confident that the firm's future earnings could be maintained at a consistently higher level in the future. A more convincing argument in favour of dividends is the signalling hypothesis, which is associated with propositions put forward in Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985). In general, these models are based on several assumptions. There is asymmetric information between corporate insiders (managers) and outside investors (shareholders). Dividends contain information about the firm's current and future cash flows, and managers have incentives to convey their private information to the market through dividend payments in order to close the information gap. The announcement of a dividend increase will be taken as good news and the market will bid up share prices accordingly.

Similarly, an announcement that a dividend will be cut suggests unfavourable prospects and will tend to see the firm's share price fall. Dividends are considered a credible signalling device because of the dissipative costs involved. For example, in Bhattacharya's (1979) model the cost of signalling is the transaction cost associated with external financing. In Miller and Rock's (1985) model the dissipative cost is the distortion in the optimal investment decision, whereas in John and William's (1985) model the dissipative signalling cost is the tax penalty on dividends relative to capital gains.

The Efficient Market Hypothesis proposed by Fama (1965) suggests three types of market efficiency: (i) weak, (ii) semi-strong, and (iii) strong. The weak form of market efficiency proposes that current stock prices reflect all past information. It also suggests that changes in stock prices are random and no investment strategy that is based on past information can yield above average returns to the investor. The semi-strong form of market efficiency (informational efficiency) proposes

that current stock prices incorporate material public information and changes in stock prices will only lead to unexpected public information. The semi-strong form of efficient market hypothesis states that stock prices reflects all the publicly available information instantaneously and accurately. Finally, the strong form of market efficiency proposes that insider trading will not be rewarded as current stock prices incorporate all material nonpublic information (Reilly and Brown, 2008).

**SIGNALLING MODELS**

Akerlof’s model (1970) of the used car industry as a pooling equilibrium in the absence of signaling activities serves as a primer to signaling models in the financial economics considering the costs of informational asymmetries. The generalization of Akerlof’s model by Spence (1974) became the prototype for all financial models of signaling. Bhattacharya (1977) developed a model in which managers signal the quality of an investment project by “committing” to a dividend policy. The project quality, measured, as the expected profitability of the project is the private information known only to managers. The John and Williams (1985) model provide a compelling explanation for the generous dividend payout policies pursued by firms even when cash dividends have adverse tax consequences. It explains why firms pay cash dividends even when alternative methods of distributing cash exists, such as share repurchase, which do not have adverse tax consequences. Miller and Rock (1985) picked up the concept of costliness and argued that the relative cost of signalling any particular level of earnings would increase as the level of actual earnings achieved by a firm decreased.

Other theoretical models include Dividend smoothing model, where the firm’s dividend policy may not change over a period of time, even though earnings may change substantially. The J&W model provided rationale for using cash dividends rather than share repurchases. Under choice of signal model, the role of dividends as a signal of a firm’s prospects when corporate insiders have more information than the market does is well accepted.

According to the background on the relevance of dividend and stock prices argument that stock prices incorporate all expected future dividends, thus one of the most significant corporate events, announcement of dividend interests’ academics in addition to investor to conduct event studies to examine the resulting stock price reaction.

**2. DATA AND METHODOLOGY**

To examine the impact of the event - “Dividend announcement” (dividend signaling) - on the stock prices, we analyzed the stock price behavior of the selected companies in various service sectors surrounding 20 days of the date of dividend announcement. Our null hypothesis is that dividend announcement doesn’t have any significant impact on the stock price movement of the companies listed in BSE. Symbolically,

Ho: Dividend announcement does not impact share price.

Hä: Dividend announcement does impact share price.

**2.1 Sample and Data Selection**

This study covers 48 most actively traded companies listed in Bombay Stock Exchange during the year 2001 to 2016 which have been selected on random basis from A and B listed companies. This time span coincided with spells of recession, recovery and boom in the Indian economy and during the period there was a considerable influx of foreign direct investment into India. Accordingly, the results should not be specific to anyone stage in the business cycle, but reflective of all economic conditions. We have used three sets of data in this study. The first set of data consists of dividend announcement made by the sample companies. The second set of data consists of daily adjusted closing prices of the stocks selected for the study at the Bombay Stock Exchange for the period covered by this study. The third set consists of the S&P BSE IT, Sector Index of ordinary share prices compiled and published by the Bombay Stock Exchange on daily basis. Data is collected from BSE website.

Companies that have any price sensitive information during the event window (- 10 days to +10 days) are eliminated which are (Ali *et al* 2010) referred as ‘contaminated events’. The following items caused a dividend announcement to be dropped from the sample:

1. Announcements of special dividends, impending mergers and take-over’s
2. Announcements of changes in capital structure with respect to debt
3. Share buybacks and other announcements of capital reduction
4. Announcements of issue Bonus share, Rights issue, Stock splits
5. Announcements of company revaluations
6. Follow-up announcements of revisions of erroneous data in an announcement
7. Requests published by the BSE requiring a company to explain unusual (and potentially suspicious) changes in the market price of its shares.

Number of final observation considered is 671 after filtration from available 724 observations.

**2.2 Methodology – Event Study Approach**

We measure the stock price reaction to the announcement of dividend payments using standard event-study methodology. Using capital market data, an event study measures the impact of a specific event on the market. In conducting the event study it is important to identify the period over which the prices of relevant financial instruments will be examined. This period is referred to as ‘event window’ (Rony *et al* 1997). For the purpose of this study, an event window is set equal to 21days starting from 10 days before the dividend announcement date and ending 10 days after the announcement. The date of dividend announcement is defined as  $t=0$ , a window of 10 days before the event as ‘pre-event window’ and a window of 10 days after the event as ‘post-event window’. The date of dividend announcement i.e.  $t=0$  has been considered as the date of declaration related to dividend distribution by the respective Board of Directors of the companies. Each firm’s observed event period returns are compared to the market’s return to identify any investor reaction to the event. Expected return is estimated by employing the market model.

The Market model can be expressed mathematically as:

$$AAR = AR_{it} - E(R_{i,t}), t = (-10, -1, \dots, 1, 10) \tag{1}$$

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1} \tag{2}$$

$$R_{mt} = (I_t - I_{t-1}) / I_{t-1} \tag{3}$$

$R_{it}$  is security changes  $I_t$ ;  $P_{it}$  is the adjusted closing price of the stock ‘ $i$ ’ on day  $t$ .

$P_{it-1}$  is the adjusted closing price of stock  $i$  on day  $t-1$  and  $R_{mt}$  is Market Index.

OLS estimates obtained from regressions of firm  $i$ ’s daily returns on the market return over the estimation window from  $t = -121$  till  $t = -11$

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

Where,

$E(R_{it})$  = Expected return on security ‘ $i$ ’ during time period ‘ $t$ ’

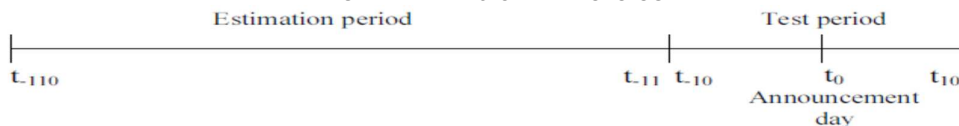
$\alpha_i$  = Intercept of a straight - line or alpha coefficient of ‘ $i$ ’ th security.

$\beta_i$  = Slope of a straight - line or beta coefficient of ‘ $i$ ’ th security

$R_{mt}$  = Expected return on index (Ex; S&P BSE Healthcare in this study) during period ‘ $t$ ’,

We use two measures of abnormal returns, the cumulative average abnormal returns, CAAR-10;10, measured over the 21-day interval from  $t = -10$  till  $t = +10$ , and the average abnormal return on the announcement day, AAR0. The statistical significance of these returns is measured by the standardized cross-sectional  $t$  statistic as proposed by Boehmer *et al.* (1991).

**DIAGRAM 1: EVENT STUDY METHODOLOGY**



**3. EMPIRICAL RESULTS**

The empirical results in this study are obtained in terms of the event study methodology with a view to study the impact of dividend announcement. In order to investigate the occurrence of abnormal return (AAR) and cumulative abnormal return (CAAR) centric to dividend announcement date were obtained for sample stocks for the study period. The same were concentrated for 21 days event window comprising 10 days prior/ post to dividend announcement, shown in the below tables for each of the sector. Table shows that the abnormal return around the dividend announcement. The t-test value on AAR in the pre and post event period for each sector show that nearer to the announcement days the, significant at 5% level.

**IT Sector**

The Event study conducted for IT Sector indicates that though there is negative AAR and CAAR on 10<sup>th</sup>, 9<sup>th</sup> and 7<sup>th</sup> day pre announcement, abnormal returns turned positive nearing to the date of announcement with expectation of good news or increased dividend announcement but from the date of announcement onwards, for all the days post announcement returns are negative. This could be due to the fact that information of dividend payment leaks out to the market few days before the company makes the announcement. Hence, announcement of dividend normally carries no surprise to the market. One thing that influence stock returns is the leakages of information, which occurs when information regarding dividend announcements is known to a small group of investors before the same is officially announced. In such a case, the stock price might start to increase in case of a “good news” announcement, days before the official announcement date. Any abnormal return on the announcement date is then a poor indicator of the total impact of the information release. In these situations, a better indicator would be cumulative abnormal returns, which is simply the sum of all abnormal returns over the time period of interest and thus capture the firm specific stock movement for an entire period when the market might be responding to new information.

Table No.1 indicates that under Market adjusted model Average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) are statistically significant at 5% level. On 5<sup>th</sup> and 2<sup>nd</sup> day pre announcement as well as on day of dividend announcement and on 1<sup>st</sup>, 2<sup>nd</sup> day post announcement abnormal returns are statistically significant. This shows dividend announcement does signal and investors do react on the basis of information revealed.

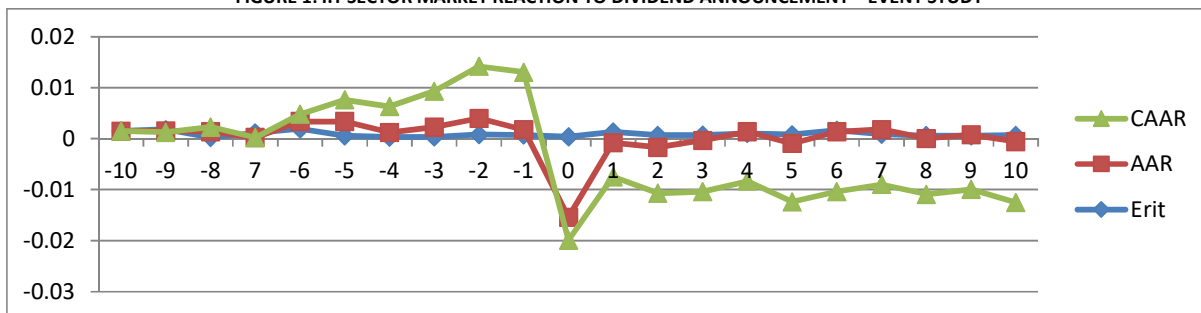
**TABLE NO. 1: EXPECTED RETURN, AVERAGE ABNORMAL RETURN, CUMULATIVE AAR, T TEST VALUE OF IT SECTOR OVER A WINDOW PERIOD STARTING FROM DAY -10 TO DAY +10 RELATIVE TO DIVIDEND ANNOUNCEMENT DAY (0-DAY)**

Pre Announcement					Post Announcement				
Days	E(Rit)	AAR	CAAR	T test	Days	E(Rit)	AAR	CAAR	T test
-10	0.001517	-1.2E-05	-1.2E-05	-0.011	0	0.00038	-0.01577	-0.00451	-6.890**
-9	0.001793	-0.00026	-0.00027	-2.52	1	0.001341	-0.00215	-0.00667	-2.029**
-8	0.000255	0.001142	0.000869	1.041	2	0.000684	-0.00236	-0.00902	-2.200**
-7	0.00111	-0.00088	-1.1E-05	-7.68	3	0.000708	-0.00104	-0.01006	-9.77
-6	0.001922	0.001443	0.001432	1.347	4	0.001013	0.000349	-0.00971	.340
-5	0.000558	0.002812	0.004244	2.405**	5	0.000799	-0.00173	-0.01144	-1.593
-4	0.000336	0.000866	0.00511	.636	6	0.00165	-0.00028	-0.01173	-2.60
-3	0.000357	0.001923	0.007033	1.500	7	0.000853	0.000949	-0.01078	.815
-2	0.000803	0.003178	0.010211	2.590**	8	0.000596	-0.00057	-0.01093	-4.71
-1	0.000714	0.001046	0.011258	1.068	9	0.00056	0.000215	-0.01071	.197
0	0.00038	-0.01577	-0.00451	-6.890**	10	0.000681	-0.00123	-0.01195	-1.061

\*\*denotes Statistical Significance at 5% level (p<.05) using 2 tailed test.

The behavior of CAAR is similar to the AAR during event window. 2 days prior to dividend announcement as well as on the day of announcement and two days post announcement t Test results show statistical significance.

**FIGURE 1: I.T SECTOR MARKET REACTION TO DIVIDEND ANNOUNCEMENT – EVENT STUDY**



A higher negative incidence of cumulative abnormal returns in post event period reflects over expectation and reaction to the new information disclosure concerning annual and interim dividends. The behaviour of CAARs in this figure revealed initial over reaction may be considered the case of leakage of information relating to dividend announcement. The tendency had fall around the announcement time and had resurfaced subsequently in the post announcement period in the form of over expectation regarding the corporate performance. However, the magnitude of overreaction was considered significant to validate stock market efficiency.

**4. CONCLUSION**

Informational efficiency of the market has always been an area of vital interest for financial economists. Fama (1998) described Efficient Market Hypothesis as “the expected value of abnormal returns is zero, but chance generates deviations from zero in both directions.” The EMH is based on the proposition that available information is reflected by stock prices and no investor is able to beat the market to attain abnormal returns. If the markets respond instantaneously, accurately, and in an unbiased manner, it is assumed to be more efficient. The time consumed by the market to get it adjusted to new information is the most crucial factor. The results highlight informational efficiency exists in the Indian capital market and findings also bring into picture that dividend announcement has information content and carry a signaling effect in IT Sector. The findings of the Market model strongly define the signalling hypothesis and information content of dividends. These results are in alignment with findings of many authors such as Aharony and Swary (1980), Eades (1982), and Woolridge (1982), Fama (1998), Kapoor (2008) who have considered the information role as important. Through the analysis one may be able to interpret the extent to which cash dividend announcement add to shareholder’s wealth. Thus, it can be stated that dividend announcements do carry information about future earnings and cash flows of the companies.

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