IMPACT OF DIVIDEND ANNOUNCEMENTS ON STOCK PRICES – AN ANALYSIS OF INFORMATION TECHNOLOGY SECTOR

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ABSTRACT

Dividend announcements are an important piece of information to the investors in the stock market. According to the dividend signalling theory, an announcement about the increase in the dividend payout indicates positive future prospects of the organisation. This information is perceived to be a good news among the investor community and hence should have a positive impact on the stock prices. However, analysts and investors view this theory sceptically. In this background, this paper analyses the impact of dividend announcement of 22 Information Technology (IT) companies on the stock prices for the period 2015 and 2016. We use event study methodology to estimate the expected return from a security. It was found that the dividend announcements made by IT companies had minimum impact on their stock prices, which shows that the dividend signalling theory has not been successful during the period of study for the said sectors.

Keywords

Dividends, Event Study, Average Abnormal Returns, Cumulative Average Abnormal Returns, Stock Prices, T Test.

1. Introduction

The objective of any business entity is to maximise the wealth of the stakeholders. In the long run, the investment, the financing and the dividend decisions do create value and have an impact on the wealth creation. Of the three, dividend decisions have an direct impact on the shareholders, apart from being an important determinant of corporate growth and economic development. Dividend refers to a portion of company's earnings that is being distributed to the class of shareholders as decided by the Board of Directors. The most simple and easy way of identifying wealth being created is through market capitalisation. This in turn is influenced by number of factors (growth, innovation etc) that affect share prices.

Dividend signaling theory suggests that when a company announcement pertaining to an increase in dividend payouts is made, it is an indication of positive future prospects. This theory is directly tied to game theory; where, managers with good investment potential are more likely to signal. Poterba and Lawrence (1984) developed a "traditional view" of dividends, which highlights that dividends signal some private information about profitability; and stock prices tend to rise when a company announces an increase in dividend payouts and fall when dividends are to be decreased. They also concluded that there is no discernible difference between the hypothesis that an increased dividend conveys good news and the hypothesis that the dividend increase is good news for investors. In this backdrop of diametrically opposing opinion/views, an attempt is made to study the impact of dividend announcements on IT companies stock prices.

2. Literature Review

There are several works that have analysed the impact of dividend announcements on stock prices, and many of the works concluded that there is a positive/negative association between increase/decrease in dividend announcement information and movement of stock prices (Petit, 1972).

Woolridge (1983) studies the impact of both increase and decrease in dividend change announcement on stock prices. He observed that the announcement pertaining to increase in dividend yielded positive returns and information pertaining to decrease in dividend resulted in decrease in stock prices. The author thus, attributed the movement of stock prices to dividend signaling theory and wealth transfer hypothesis

Lorder and Mauer (1992) study the firms that are listed on New York Stock Exchange for a period during 1980-84. The main objective of the paper was to test two hypothesis – a) Do managers rely on dividends to obtain higher place in stock offering and b) Does dividend change announcements have an impact on the stock prices. The results did not support either conjecture.

Rao (1994) study dividend announcements, bonus announcements and right issue announcements for the firms listed on Bombay Stock Exchange for the period 1988-89. He found that stock prices began to increase two days prior the formal announcements of dividend increase are made and continued further. In the case of 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 ascribed the reaction of stock prices to signaling theory.

Travlos and Vafeas (2001) examine the effect of increase in cash dividend and bonus issues on stock prices. The study was conducted during 1985-95. The study showed that the stock prices increased with increase in cash and in stock dividends announcements. It was concluded that the there exists information asymmetry and the dividend payout policies and dividend signalling theory attempts to bridge this information asymmetry gap.

Gupta et al (2012) study the stock price reaction to 65 dividend announcements (increase) by 28 companies during the period 2006-09 listed on BSE 30 Sensex. 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.

Pradhan (2014) investigate the effect of dividend announcement on share price during 2009 to 2011. The results show that there is a increase in the stock price after the announcement but that rise in stock price is mainly due to market conditions rather than dividend. The increase or decrease in share price is not reflecting the amount of dividend. The CAR is positive in the long run after dividend announcement.

Joshi and Mayur (2017) study the share price movements of top 20 PSU during the year 2013-2016. They reported that there is a significant difference in the impact of dividend announcements in pre and post announcement period on the share prices of the selected

companies. They suggest that investors should follow dividend decisions in order to make wiser profits and wiser investment decisions.

Uddin (2008) examine the effect of dividend announcement on shareholders' value: evidence from Saudi Arabian stock exchange during 2001 and 2005. The results showed that investors lost 2.20 percent of market value after the dividend announcement, although the lost value is recovered from the cash dividend received, and they earned 7 percent of net cash return after recovering the loss of market value.

3. Problem Statement

Owing to the investors and analysts being sceptical about dividend signaling theory, there has been regular testing of the theory. On the one hand, we have empirical results showing that dividend announcements carry positive information about the organisation's growth and earnings and thereby bring about surge in the stock prices (Pettit, 1972). Similar results were found in the works of Gordon (1959), Ball & Brown (1968), Ariff & Finn (1986), Stevens & Jose (1992), Ogden (1994), Kato & Loewenstein, (1995), Lee (1995), Koerniadi & Tourani-Rad (2011). On the contrary the works of Loughlin (1982) and Easton & Sinclair (1989) found negative effect on the dividend announcement. There are certain other works which show that the stock prices do not react for dividend announcements (Pichardo & Bacon, 2009) and (Mahadevan & Saravanakumar, 2011). On the whole, there are studies that indicate that dividend signaling does occur. Increase in company's dividend payout generally forecast positive future performance of the company's stock. Conversely, decrease in dividend payout tends to accurately portend negative future performance by the company. In this backdrop, this study attempts to examine the impact of dividend announcements on IT companies' stock prices.

4. Objectives of the study

1) To examine the impact of dividend announcements on stock prices of IT companies.
2) To investigate whether there are any significant abnormal returns (whether positive or negative) related to the dividend announcements of IT companies
3) To study the behaviour and fluctuations of IT companies stock prices

5. Hypothesis

1. H_0: Dividend announcements have no impact on select IT companies stock prices
   H_1: Dividend announcements have an impact on select IT companies stock prices

2. H_0: There is no significant abnormal return associated with dividend announcements of IT companies, i.e., AARt = 0
   H_2: There is a significant abnormal return associated with dividend announcements of IT companies, i.e., AARt ≠ 0

3. H_0: The AARs occurred randomly for IT companies.
   H_3: The AARs of IT companies did not occur randomly.

6. Research Methodology

6.1 Scope and period of study: The Semi Strong form of information efficiency of Indian Stock Market is tested in this paper. The dividend announcements of IT, companies for the period 2014 and 2015 are chosen for the study.

6.2 Data Sources: Yahoo finance portal, Bombay Stock Exchange. Daily stock prices are taken from BSE historical prices and Yahoo finance portals for each of the event from day – 280 to + 30. The Benchmark Index considered for the study is BSE SENSEX.

6.3 Sample Size: Our initial sample consisted of 31 IT events. The sample was checked for other major events (such as merger or acquisition, divestment, buyback of shares, stock split etc) during the period, if found, the event is said to be contaminated. After applying the above criteria, the final sample consisted of 22 dividend announcement events of IT companies.

6.4 Methodology: The methodology used here is event study. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return

that stems from the price fluctuation of the market as a whole. (Ronald and Bernard 1995).

6.4.1 Event Window

In this study, we have used 61 day event window, 30 days before (-30) and thirty days after (+30) the date of rating change announcement (0).

a. Calculating expected returns and Abnormal returns

Market adjusted model developed and suggested by Sharpe (1963) is used to calculate the expected return. The prior studies use extensively the market model to determine the expected return on specific asset, given the return on market and the two parameters of the market model (alpha and beta of the security). Market model is based on the fact that the most important factor affecting stock returns is market factor and it is captured in the market model in the form of the parameters.

The market model for calculating expected return is given by the following regression equation:

$$E(R_{jt}) = \alpha_j + \beta_j R_m$$

Where,

$E(R_{jt})$ is the expected return on security j,
α_j is intercept. (Mean return over the period not explained by the market).
R_m is the expected market return,
β_j is the slope of the regression

Daily returns/actual returns are calculated as below:-

$$R_{jt} = \ln (P_{jt}/ P_{ij-1})$$

Where,

R_{jt} is the daily return on security ‘j’ on day ‘t’.

P_{it} is the daily adjusted price of the security 'i' at the end of period't'.

P_{it-1} is the daily adjusted price of the security 'i' at the end of period't-1'.

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

Where,

R_{mt} is the daily return on market index on day 't'. I_t and I_{t-1} is the closing index value on day 't' and 't-1' , respectively.

The abnormal return is the difference between the actual return on day t and the expected return i.e.,

$AR_{jt} = R_{jt} - E(R_{jt})$

Where,

AR_{jt} is the abnormal return

Abnormal returns represents that part of the return which is not predicted and is, therefore, an estimate of the change in firms share price on that day which is caused by the announcement of credit rating.

Abnormal returns are averaged across firms to produce AAR_t for day 't' using the following formula,

$$AAR_{jt} = \sum_{j-1}^{N} \frac{AR_{jt}}{N}$$

Where, N is the number of firms in the sample.

b. Parametric Significance test

Parametric t-statistic is used to examine the statistical significance of AARs and CAARs. It is tested at 5 percent level of significance and appropriate degree of freedom. It is given by

6.4.2 The t Test Statistic for AARs

The statistic is given by

t = AARt/ σAARt (Standard error of AAR)

Where AAR =average abnormal return, σAARt = standard error of average abnormal return.

The standard error is calculated by using following formula.
SE = σ/√n

Where, S.E = standard error, σ = standard deviation, n = number of observation

6.4.3 Non-Parametric Significance test

In addition to t test, non-parametric tests like, Runs and Sign tests are used to test the hypothesis.

6.4.3.1 Run test

This test is used to analyze the randomness of AARs. We apply run test on AARs before and after the event day for both upgraded and downgraded announcements.

The Runs test is calculated by using the following formula.

$$Z = \frac{r - \mu_r}{\sigma_r}$$

Where, μ_r is calculated as below:-

$$\mu_r = \left(\frac{2n_1 n_2}{n_1 + n_2}\right) + 1$$

Where, μ_r refers to the number of runs, n_1=number of positive AARs, n_2=number of negative AARs

And σ_r is calculated as below:-

$$\sigma_r = \sqrt{\frac{2n_1n_2(2n_1n_2 - n_1 - n_2)}{(n_1 + n_2)^2(n_1 + n_2 - 1)}}$$

7. Data Analysis and Interpretation

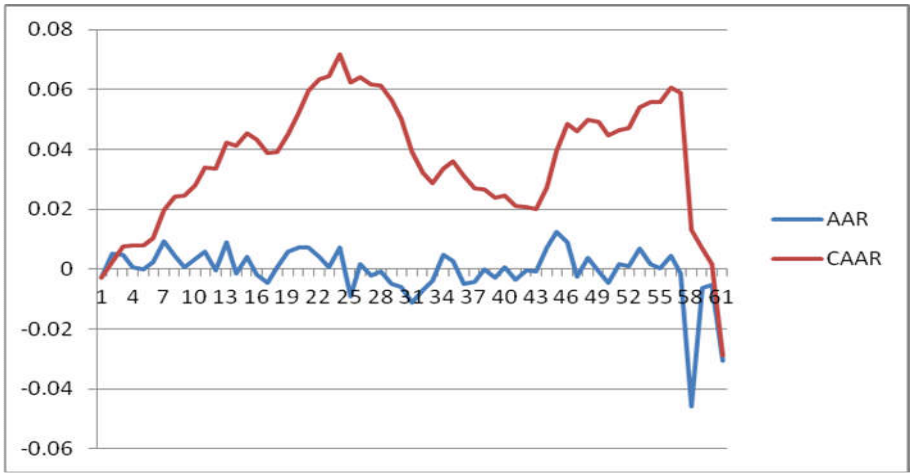
7.1 Information and Technology (IT) Companies

Table 1: Table showing the AARs, CAARs and T Test of IT Companies Dividend Announcement

DAY	AAR	T TEST	CAAR	T TEST	DAY	AAR	T TEST	CAAR	T TEST
-30	-0.00275	-1.16135	-0.00275	-1.16135	0	-0.01108	-1.11132	0.039176	0.705885
-29	0.005245	0.953742	0.002499	0.321328	1	-0.00685	-0.93481	0.032324	0.779603
-28	0.004947	0.381207	0.007446	0.33126	2	-0.00375	-0.465	0.028572	0.616439
-27	0.000527	0.099703	0.007973	0.754051	3	0.004845	0.862139	0.033417	1.019794
-26	-1.4E-05	-0.00424	0.007959	1.068707	4	0.002762	0.518509	0.036179	1.148014
-25	0.002346	0.269704	0.010305	0.483703	5	-0.00493	-1.07086	0.031249	1.131323
-24	0.009377	2.294192*	0.019682	1.820039	6	-0.00433	-0.71577	0.026922	0.732022
-23	0.004511	1.010622	0.024193	1.916427	7	-0.00016	-0.02004	0.026763	0.548001
-22	0.000496	0.102894	0.024689	1.70619	8	-0.00295	-0.66457	0.023815	0.859598
-21	0.003441	0.276774	0.02813	0.71559	9	0.000758	0.096814	0.024573	0.496344
-20	0.005804	0.831125	0.033934	1.465058	10	-0.00347	-0.81232	0.021099	0.770482
-19	-0.00052	-0.0925	0.033418	1.727467	11	-0.00048	-0.17489	0.02062	1.162174
-18	0.008926	1.054564	0.042344	1.387495	12	-0.00059	-0.13695	0.020029	0.708505
-17	-0.00129	-0.22435	0.041053	1.907612	13	0.007258	1.219529	0.027287	0.691248
-16	0.004173	0.760667	0.045226	2.128721*	14	0.012352	1.644894	0.039639	0.786904
-15	-0.00189	-0.38804	0.04334	2.228716*	15	0.008888	2.261406*	0.048527	1.820395
-14	-0.0047	-1.77007	0.038637	3.527119*	16	-0.0026	-0.62457	0.045932	1.612235
-13	0.000525	0.061898	0.039162	1.088504	17	0.003905	0.601359	0.049836	1.107773
-12	0.005866	0.691903	0.045027	1.218511	18	-0.00074	-0.10466	0.049092	0.985649
-11	0.00726	1.476175	0.052287	2.377281*	19	-0.00448	-1.78647	0.044615	2.517736*
-10	0.007186	0.520758	0.059473	0.94052	20	0.001623	0.303333	0.046238	1.209874
-9	0.003998	0.713574	0.063471	2.415277*	21	0.000978	0.290649	0.047216	1.946369
-8	0.000798	0.216633	0.064269	3.63971*	22	0.006946	1.567443	0.054162	1.678786
-7	0.007296	1.277487	0.071565	2.557903*	23	0.001566	0.419884	0.055728	2.033318
-6	-0.00924	-0.93041	0.062324	1.255007	24	0.000188	0.023808	0.055916	0.956756
-5	0.001735	0.137524	0.064059	0.995868	25	0.004584	0.682348	0.0605	1.203496
-4	-0.0023	-0.26028	0.061761	1.346251	26	-0.00144	-0.38156	0.059059	2.071503
-3	-0.00061	-0.07112	0.061154	1.354157	27	-0.04584	-0.91189	0.013215	0.034514
-2	-0.00484	-0.37013	0.056317	0.800257	28	-0.00617	-2.14798*	0.007041	0.318977
-1	-0.00606	-0.91214	0.050253	1.380197	29	-0.00529	-0.55207	0.001751	0.023597
					30	-0.03072	-0.78565	-0.02897	-0.09486

Critical Value @ 5% is 2.0796, *Indicates significant at 5 per cent

Chart 1: Chart showing the movement of AARs and CAARs of IT Companies



AARs are negative for 11 days and positive for 19 days before the announcement of the event and negative for 17 days and positive for 13 days after the announcement of the event. AAR is negative on the day of event. During the whole event period, AARs are negative for 28 days and positive for 32 days (Refer Table 1). CAARs are positive for majority of the days in the event period. This shows that the stock movement had a random walk and continued to do so even after the announcement of dividend. The positive CAAR shows that the investors have earned profits. This implies that dividend announcement information of IT companies has not provided any new information to the market and has very minimal impact of the IT stock prices as seen in Chart 1. Further, it was seen that AARs are significant for 3 days (1 day before and two days after the event), while CAARs are significant for 8 days (7 days before and 1 day after the event).

Hence, we accept the null hypothesis 1 and 2 which states that "Dividend announcements have no impact on select IT companies stock prices" and "There is no significant abnormal return associated with dividend announcements of IT companies".

Run Statistics for three sectors

Event/Sector	IT
Before the announcement of event	0.4279
After the announcement of event	0.10095

The Run Statistic of AARs before and after the event for all the three sectors is found to be statistically insignificant as the test statistic is less than the critical value ± 1.96. Hence, we conclude that abnormal returns are statistically insignificant before and after the event. Therefore, the results do not lend full empirical support to hypothesis No 3, which states that AARs occurred randomly.

8. Conclusion

The study examines the impact of dividend announcements of IT companies on stock prices. Analysis reveals that AARs are negative and statistically insignificant for majority of the days in IT sector. The study clearly highlights that the dividend announcement information do not carry any new information to the markets and thereby has not provided any surprise movement of stock prices. The information pertaining to dividend announcements is seen to be factored in the stock prices much ahead of the information announcement. Thus, we summarise that there are no significant abnormal returns associated with dividend announcement information of select sectors during the study period.

9. Research Implications, Limitations of the Study and Directions for Further Research

The primary objective of this paper was to ascertain the impact of dividend announcement information of IT companies on stock prices. It was evident from the analysis that the stock markets are efficient and the stock prices have factored the dividend information. Thus, there was no astonishing behaviour of stock prices owing to dividend announcements.

The study employs market model designed by William Sharpe to compute the expected return from the stock, there is a wide scope to extend the study by using other models such as Mean adjusted model to analyze the impact of dividend announcement on stock prices. In addition to this, other sectors can also be included in future studies.

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