A Study to Analyse Effect of Corporate Actions on Stock Market Returns of Selected Indian IT Companies

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Abstract

A primary reason an investor holds any company share is for capital gains. If there is an event which is going to bring a real change in equity or debt of listed company, that event is termed as corporate action. These corporate actions are to be agreed by the shareholders. The objective of this study is to find out if dividend announcements, bonus issues and stock splits lead to any abnormal returns for selected Indian IT companies.

This study tries to find out if such corporate actions have an impact on the market price of the company share, using event study methodology. This study uses Market Model developed by William Sharpe, to measure the stock market's reaction to corporate actions.

The study uses the data collected of last 10 years i.e. FY 2008-09 to 2017-18. This study includes 120 dividend announcements, 7 bonus issues and 1 share split of top 5 IT companies publically traded in India.

The result of this study shows that, abnormal returns at individual event level vary between approx. -30% to +20%. In many cases however, it is less than 1%. The mean abnormal returns, over period of 10 years of the stock, is between -4% to +3%. This means that chances of any investor making significant abnormal gains or losses during dividend announcements windows is very minimal.

Keywords: Corporate Actions, IT Companies, Abnormal Returns, Event Study, Dividends, Market Model

Introduction

Dividend decision is critical to financial management for any company. A vital attribute of this dividend policy is ascertaining degree of earning to be shared with shareholder as well as the level of retention. The retention of earning is very important internal source of finance for the development of a company. Furthermore, dividend is also desired from shareholder perspective because it helps to enhance their current returns. Hence, the dividend policies involve a balance between shareholder perspective of enhancement of the return and desire by the current company to retain a percent of dividend for company's growth development.

In theory, the objective of a dividend policy should be to maximize value of shareholders' investment. Shareholder returns consist of a couple of things: dividend & capital gain. Dividends policies have direct impact on the two component of returns.

Often it is claimed that dividend is desired as it provides informational values to the company. An organization may prepare statement regarding its anticipated rise in earning to notify the shareholders so that they form good impression about it. But, the statement needs to be prepared carefully if the organization wants to undertake, which means handing over the money. Payments in cash as dividend send the message to shareholder about the organization, which means that is profit making and has strong finances. If the organization alters the dividend policies remarkably, an may investor assumes that it is a result of some anticipated changes on its profits and financial strength which many not last. If there is a hike in terms of payout ratios, then it sends a message to the investors that there is a long-term enhancement in the organization's anticipated earning. Hence, one can argue that statement on alteration on dividend policies influence share price, and so a manager may utilize this dividend change to send a message on anticipated earning of the organization. The arguments of this type is called **dividend-signalling hypothesis**. Such type of hypothesis means that the highly regarded dividend policies are the one that provide message which may not be efficiently informed through some other manner. A dividend policy may probably be the one which is very closely reflecting an organization's long-term profitability.

In practice, every firm follows some kind of dividend policy. It depends on their needs to finance their long-term investment opportunities. **Mature organizations** having lesser investments opportunity are in general showing high payout ratio. Hence, investors are likely to be looking for dividend policy. Therefore, share price of these organizations are too sensitive on dividend change. However, the **Growth companies** are those that have lots of investments opportunity and so these companies show a low payout ratio. Investors in this case are inclined towards high return in terms of capital gain. At times, growth companies are retaining major portion of the earning and provide bonus share to satisfy dividend need of their shareholders.

Types of Dividend

The Companies Act, 2013 transacts 2 types of dividends – the Interim dividend and Final dividend.

A.   Interim Dividends: these dividends are declared by Board within 2 Annual General Meetings at the time at which Board thinks it as appropriate. The Board can also suggest for a Special Dividend at the time at which Board thinks it as appropriate.
B.   Final Dividends: these dividends are suggested for financial year at time of approval of Annual Financial Statement.

Event Studies

The event studies describe techniques about empirical financial research. The research lets observers to make an assessment on effect of certain events on the company's stock prices. For instance, the stock market analysts may like to examine effects of dividend change over the stock price.

Generally, this technique commences with the proxy for whom stock returns might have been within absence of events. A**bnormal returns** because of event is calculated as difference amongst stock actual returns and the benchmark.

A lot of researchers have utilized "market model" to calculate abnormal return. It is given by equation:

$$AR_i = R_i - [\alpha + \beta * R_m]$$

where AR_i is Abnormal Return of security, R_i is actual return of security and R_m is broader market return like BSE SENSEX or NSE NIFTY.

An issue, which makes event studies complex, comes from leaks of information, before the event. Also, in certain cases, markets take few days to react to any announcement, after more details are available. An abnormal return on announcement date becomes poor indication of complete effect of information release. Good indicators may be cumulative abnormal return that is just sum of all abnormal return in the period of interest. C**umulative abnormal return** (CAR) attempts to capture total company related stock movements for complete time period at the time at which market may respond to new information.

Event study methodologies are the widely acknowledged tools to estimate economic influence of broader ranges of event. They may be utilized in fraud case wherein court should make the assessment of damage due to the fraudulent activities.

Objective

This research is being carried out:

❖   To find out if dividend announcements for Indian IT companies lead to any abnormal returns
❖   To study stock price and abnormal returns if any, during bonus issue and stock split announcements

Review of Literature

Walter (1963) argues about selection on the dividend policy that is frequently indicates the value of a company. Walter's model is relatively an early theoretical work that illustrates significance of relation amongst company's rate of return and the cost of capital to ascertain dividend policy which would maximize wealth of investors. As per the Walter model dividend policy of company is based on availability of investments opportunity and relation amongst company's internal rate of return (*r*) and the cost of capital (*k*). We can, therefore say that:

- Retention of earning if r > k
- Distribution of the earning if r < k
- Dividends (retain) policies have no effect if r = k

Gordon (1959) indicated that the shareholder has required rate of return "r" that increases as retention of earning and investments increases. But, future dividend streams may be higher since there may be increase in investments, and larger required rate of return may overshadow the effect. There may be increment in r as there could be higher uncertainties associated with increased investments for the security of dividend. So, there is a conclusion by Gordon that dividend policies may not influence value of share even as r = k. The conclusion is linked to an assumption with the condition of uncertainties, investor tends to discount distant dividend (capital gain) at higher rate than the discount near dividend.

Krishman (1933) puts it in following words: "Of two stocks with identical earnings record, and prospects but the one paying a larger dividend than the other, the former will undoubtedly command a higher price merely because stockholders prefer present value to future values. Myopic vision plays a part in the price-making process. Stockholders often act upon the principle that a bird in the hand is worth two in the bush and for this reason are willing to pay a premium for the stock with higher dividend rate, just as they discount the one with the lower rate."

Graham and Dodd (1934) also hold similar view when they state: "The typical investor would most certainly prefer to have his dividend today and let tomorrow take care of itself. No instances are on record in which the withholding of dividends for the sake of future profits has been hailed with such enthusiasm as to advance the price of the stock. The direct opposite has invariably been true. Given two companies in the same general position and with same earning power, the one paying the larger dividend will always sell at a higher price."

As per Miller and Modigliani (1961), in perfect market conditions, dividend policies of company is not relevant. This is so is it will not make any influence on the value of the firm. Here, the crucial point of MM dividend hypothesis is that investors may not necessarily rely on dividend for getting cash. Therefore, companies that pay high dividend may not command high price for the share.

As per Aharony and Swary (1980), market response to dividend announcement is significant and is immediate. As per Asquith and Mullins (1983), price reactions to dividends initiation is positive. They found remarkable positive abnormal return on the announcement day itself but not subsequently.

A.A. Lonie, G. Abeyratna, D.M. Power, C.D. Sinclair, (1996) examined capital market reactions to a variety of combinations of simultaneous dividend and earnings announcements of 620 UK based firms within time-period from 1st January – 30th June, 1991. They examined that abnormal return in the 2-day announcements period are of order of magnitude anticipated by dividends signal contents: Good-news firms earn positive abnormal return. But, bad-news firms have negative abnormal return. These studies confirm that present earning constitutes significant signal to capital markets and that dividend announcements are partial and frequently inferior and are substituting the signalling mechanisms for managers to convey to investor the view related to future performance of the companies.

Sheel and Zhong (2005) examined the significance of cash dividend for public lodging and restaurant firm at the US equity market. They utilize event study methodology for investigating abnormal return for lodging and restaurant companies triggered by cash dividend announcement during the years from 1994 to 2002. Result suggests that cash dividends increase is positively acknowledged by shareholders in the lodging & restaurant sector.

Mehndiratta and Gupta (2010) examined the price reactions of 15 listed companies surrounding sixty days of the announcement. The market model, developed by Sharpe, was used to measure the abnormal returns of stock that is related to market movement. The study determines that shareholders would not get great value in the period preceding as well as on dividends announcement day. However, they can gain value in the post announcement period. They further concluded that dividend increases lead more positive abnormal returns, supporting the Efficient Market Hypothesis.

Chatterjee & Dutta (2017) empirically examine price behaviour on cash dividend announcement of companies listed at National Stock Exchange of India Ltd (NSE). They did this it ascertain as to whether dividends announcement actually influences stock return in markets and convey substantial information to investor in existence of corporate dividends taxes. This study utilizes the 'event study' method dependent on market model on the sample of about 210 dividends announcement. This article finds that cash dividends announcement does not essentially generates abnormal stock return in the emerging markets, like that of India.

Bodhanwala (2015) studied whether the stock splits generate value to shareholders. This article focuses on 719 stock splits (from year 2001 to 2013) and the effect on return, prices, trading volumes, number of trade, abnormal returns (ordinary least square method) and cumulative average abnormal returns. Event time method proves that 73% of firms report average AR on the ex-date and it is about 3% on the ex-date. Cumulative AR flatten out after ex-date. Statistics analyses support finding that AR occurs between –30 days and +2 days of ex-date.

Madhumita Chakraborty (2012) examined the market behaviour surrounding split execution in the Indian market from March 1999 - December 2008. Dependent on the availability of data, analyses were feasible for 234 splits. As per results of several different studies, significant abnormal return was found on day of split execution. Results for post-split period was figured by abnormal high negative return which washes off much more than positive gain at the split execution.

Chhavi Mehta, P K Jain, and Surendra S Yadav (2014) analysed market reactions related to stock dividend decision in Indian environment. Market reactions are seen related to the impact on return, liquidity and risks. Sample include 51 'pure' stock dividends announcement from the period of 1st January 1, 2002 – 30th June, 2010. The conclusion is that announcements of stock dividend induce a hike in wealth of Indian investors. The steady patterns of positive average abnormal return at pre-announcement window until

announcement day and patterns of negative average abnormal return at post-announcement window is seen. Summing up this result, it is seen that the investors of firms that issued stock dividend find significant return.

Jyoti Sharma and Rohini Singh (2009) tried to ascertain market reactions of bonus issue announcement over Indian stock markets from the period between April, 2002 & March, 2007, with the help of event study method. Patterns of CAAR illustrates that at the announcement date, reactions of market participants to bonus issues announcements is positive. Hence, the conclusion is made by them that Indian stock markets are efficient in semi strong form.

Research Methodology

Fama, Fisher, Jensen and Roll provided a method for event study. Below method is taken into account:

1.   Anticipated and actual returns, before and after event, utilizing market model or capital asset price model is estimated.
2.   Abnormal return (AR) -- difference amongst anticipated return & actual return -- is estimated
3.   Cumulative abnormal return (CAR) is estimated.

Aniticpated returns on security in general is calculated by utilizing market model (or single index model) as indicated by William Sharpe. This model is utilized for calculating expected return as follows:

$$E(R_i) = \alpha_i + \beta_i\, R_m + e_i \qquad\qquad ----------------------- \quad (1)$$

here $E(R_i)$ = Expected return on security i

R_m = Return on a market index (e.g. NSE NIFTY, BSE SENSEX)

α_i & β_i are constants and estimated by regressing stock and market return over calculation window. α denotes intercept and β denotes the slope of regression equation. The e_i is random error, assumed to have 0 mean and constant standard deviation in the time period.

Therefore, actual equation utilized for the estimation is as under:

$$E(R_i) = \alpha_i + \beta_i\, R_m \qquad\qquad ----------------------- \quad (2)$$

So Abnormal Returns estimated as under:

$$AR_i = R_i - E(R_i) \qquad\qquad ----------------------- \quad (3)$$

Also, Cumulative Abnormal Returns estimated over time period t as under:

$$CAR_{it} = \sum AR_i \qquad\qquad ----------------------- \quad (4)$$

This gives a sense of how much AR has accumulated over a time period, hence gives real effect of the event on the market price.

3.1 Scope

The NIFTY IT index captures the performance of the Indian IT companies. It comprises of 10 companies listed on the National Stock Exchange (NSE). The top 5 constituents of the index by weightage are:

Table 1: NIFTY IT Index Constituents

Symbol	Company Name	Weight (percent)
INFY	Infosys Ltd.	24.99
TCS	Tata Consultancy Services Ltd.	24.14
HCLTECH	HCL Technologies Ltd.	16.64
TECHM	Tech Mahindra Ltd.	13.72
WIPRO	Wipro Ltd.	9.73

As per Bombay Stock Exchange (BSE) website, as on 20th Sep 2018, the top 5 IT companies by Market Capitalization are:

Table 2: Ranking as per Market Capitalisation of Indian IT companies

Overall Rank	Security Name	Market Cap (□ Cr.)
1	TATA CONSULTANCY SERVICES LTD.	795156.78
6	INFOSYS LTD.	314698.31
17	HCL TECHNOLOGIES LTD.	151415.84
18	WIPRO LTD.	150537.67
43	TECH MAHINDRA LTD.	75506.52

Hence above companies have been considered for this study, as they are leaders in the Indian IT sector. They collectively indicate direction of IT sector in India.

Price & Corporate action data of last 10 years i.e. FY 2008-09 to 2017-18 of above companies has been studied. Corporate Actions considered are:

1. Dividend

2. Bonus Shares

3. Share Splits

Table 3: Number of Events considered for this study

Company	No. of Dividends	No. of Bonus Issues	No. of Splits
TCS	38	2	-
INFY	18	2	-
HCLTECH	39	1	-
TECHM	10	-	1
WIPRO	15	2	-

3.2 Hypothesis

H1. The stock price reactions (quantified in terms of abnormal returns) is in the same direction as dividend change announcement during the event time window.

H2. Over long term period of almost 10 years, the mean abnormal returns, calculated during each dividend announcement event window, is zero or close to zero (less than 1%)

H3. On announcement of bonus share issue or share split, there are no abnormal returns, as these corporate actions do not affect actual firm value.

3.3 Data Collection

In order to calculate abnormal returns, as per above described market model, there are two types of data have been downloaded from NSE website (https://www.nseindia.com) of last 10 years (Jan 2008 to July 2018):

1.   The daily share prices at market close, of five selected IT companies (TCS, INFY, HCLTECH, TECHM and WIPRO).
2.   The daily index (NSE NIFTY 50) at market close.

Data Analysis

Mackinlay developed a framework for analysing abnormal returns. Let T_0 be the date on which dividend announcement occurs. It is now required to define an event window, i.e. no. of days prior to event and no. of days post the event. For the purpose of this study, T_0-7 and T_0+7 is considered as event window. It can be denoted as T_1 and T_2 respectively. Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) is calculated for this event window.

Next we need to define an estimation window, which is considered as T_1-42 days for this study. Daily returns of this estimation window is used to calculate alpha (α) and beta (β) parameters. These are later used as market model parameters to calculate expected returns.

Below diagram depicts the timeline for the event study:
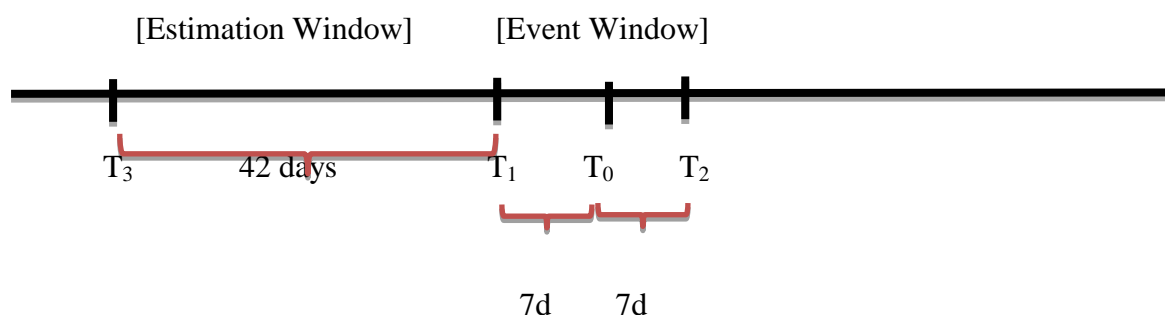
The choice of number of days for estimation window and event window is completely dependent on kind of study performed. However, there are certain considerations, based on which choice has to be made.

• The regression coefficients (α and β) are calculated based on daily returns in estimation window. These are used in calculation of expected returns during the event window. Hence, the estimation window should not have any announcement corporate action and should be free from any effects of any prior announcement.

• During the event window, daily abnormal returns are calculated and is summed up over the entire window, to arrive at cumulative abnormal returns (CAR). Hence, the window should be chosen such that the price reflects the dividend information being absorbed by the market. This is to make sure, CAR thus calculated contains entire effect of dividend on share price, which is purpose of this study.

Based on above considerations, choice of 42 days for estimation and 7 days for event window has been made. Many companies give out quarterly dividends. Hence, choice of estimation window needs to ensure that it does overlap with event window of prior dividend. It has been observed, based on data collected, 42 days is reasonable number of observations to be considered for estimation window. In case difference between two dividend event windows is less than 42, lower number days can be taken as estimation window. However, if there are more number of days between two dividend event window, still 42 days is considered for estimation window, so that price to possible extent is free from any other information, which may affect the calculation of AR and CAR.

There is no agreement among various studies, on how much should be the event window. It depends on what exactly is to be studied. The general guideline is; it should start when market price is seen to factor-in the occurrence of the event and it should end when market fully absorbed it. This study is about dividend / bonus / share split announcements. Since companies are required for prior inform exchanges about upcoming AGM and its agenda, market will try to factor-in the information closer to AGM date. Also, it takes time for market

to fully understand the announcements and accordingly plan out trading strategies. Hence, choice of 7 trading days seems appropriate for this study.

The daily returns of individual security and market index is calculated using below formula. ---------------------------- (5)

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

where,

Rit – actual return on share or index i on day t,

Pit – price of share or index i on day t,

Pit–1 – price of share or index i on day t − 1

The next section provides more details on how exactly AR and CAR were calculated out, as it could be better explained with an example.

4.1 Tata Consultancy Services Limited (TCS)

TCS is a multinational information technology (IT) service and consulting company headquartered in Mumbai, Maharashtra. It is part of the Tata Group and operates in about 45+ countries. Recently, TCS's market cap recently surged past the ☐ 8 trillion mark for the first time, making it only the second Indian company after Reliance Industries Ltd (RIL) to achieve this milestone.

As per event study methodology described above, abnormal returns (AR) and cumulative abnormal returns (CAR) were calculated, during each dividend declaration event window. There are two instances (Q4-2009 and Q4-2018) when company has declared bonus issue also along-with dividend declaration. The market price reaction, thus captures effect of both events i.e. dividend and bonus, and it is not possible to separate out just the dividend part or bonus part. Hence, it is required to be excluded from the dividend announcement abnormal returns study. However, bonus issue abnormal returns have been separately discussed.

Hence, for TCS, 38 dividend announcement event windows have been taken into consideration. Calculation is shown below for one event window, as per steps below:

1. On 12th Jan 2018, TCS announced 700% dividend i.e. Rs.7/- per share. This date is taken as T_0.
2. Accordingly, event window is chosen as -7 & +7 trading days. Hence, $T_1 = 3$[rd] Jan 2018 and $T_2 = 23$[rd] Jan 2018.
3. For the event window, daily returns are calculated for security (TCS) and index (NIFTY 50), using equation (5).

Table 4: Daily Stock and Market Returns for sample event window

Timeline	Date	Price	Stock Return	Nifty	Market Return
-7	03-Jan-18	2638.65		10443.20	
-6	04-Jan-18	2657.10	0.70%	10504.80	0.59%
-5	05-Jan-18	2689.20	1.20%	10558.85	0.51%
-4	08-Jan-18	2714.40	0.93%	10623.60	0.61%
-3	09-Jan-18	2709.00	-0.20%	10637.00	0.13%
-2	10-Jan-18	2806.60	3.54%	10632.20	-0.05%
-1	11-Jan-18	2790.50	-0.58%	10651.20	0.18%
0	12-Jan-18	2776.35	-0.51%	10681.25	0.28%
1	15-Jan-18	2746.10	-1.10%	10741.55	0.56%
2	16-Jan-18	2850.85	3.74%	10700.45	-0.38%
3	17-Jan-18	2888.95	1.33%	10788.55	0.82%
4	18-Jan-18	2918.20	1.01%	10817.00	0.26%
5	19-Jan-18	2959.30	1.40%	10894.70	0.72%
6	22-Jan-18	3116.40	5.17%	10966.20	0.65%
7	23-Jan-18	3102.00	-0.46%	11083.70	1.07%

4. In order to calculate α and β, data for prior 42 days need to considered. $T_3 = T_1 - 42 = $ 3rd Nov 2017. Hence the estimation window is 3rd Nov 2017 to 2nd Jan 2018.

5. For the estimation window, daily returns are calculated for security (TCS) and index (NIFTY 50), in similar manner as in event window.

6. Using Microsoft Excel Regression tool, value of α and β is calculated as

	Coefficients
Intercept	0.00010803
X Variable 1	0.204574465

It is interpreted as: *Intercept = α and X Variable 1 = β*.
Therefore, α = 0.00010803, β = 0.204574465.

These values can also be calculated using below formulae:

$$\beta = \frac{n\sum xy - \sum x * \sum y}{n\sum x^2 - (\sum x)^2} \qquad \text{------------------- (6)}$$

where,

x = Independent variable i.e. market returns R_m,

y = Dependent variable i.e. individual security returns R_i

$$\alpha = \bar{y} - \beta\bar{x} \qquad \text{------------------------- (7)}$$

where,

$\bar{y}$ = Mean value of dependent variable i.e. security returns R_i

$\bar{x}$ = Mean value of independent variable i.e. market returns R_m

Values calculated using formulae and Excel Regression tool are exactly the same. Since it is much faster to use the tool, same has been used in this study.

7.   The daily abnormal return (AR) is calculated using equation (2) and (3) in excel. Further, cumulative abnormal returns (CAR) is also calculated using equation (4).

Table 5: Daily Abnormal Returns and Cumulative Abnormal Returns for sample event window

Timeline	Date	Abnormal Return	Cumulative AR
-7	03-Jan-18		
-6	04-Jan-18	0.57%	0.57%
-5	05-Jan-18	1.09%	1.65%
-4	08-Jan-18	0.80%	2.45%
-3	09-Jan-18	-0.24%	2.21%
-2	10-Jan-18	3.54%	5.75%
-1	11-Jan-18	-0.62%	5.13%
0	12-Jan-18	-0.58%	4.55%
1	15-Jan-18	-1.22%	3.33%
2	16-Jan-18	3.81%	7.14%
3	17-Jan-18	1.15%	8.29%
4	18-Jan-18	0.94%	9.23%
5	19-Jan-18	1.24%	10.47%
6	22-Jan-18	5.03%	15.50%

Timeline	Date	Abnormal Return	Cumulative AR
7	23-Jan-18	-0.69%	**14.81%**

8.   As it can be seen from above table, the CAR for this dividend window is 14.81%.

Some interpretations can be drawn from above sample, which to some extent are also applicable for other samples as well.

- 2 days prior to actual announcement, on 10-Jan, price jumped significantly, giving AR of 3.54%. It may be due to leakages of information or general anticipation of better news.
- It took almost 6 days for information to be fully absorbed by the market.
- Hence, calculating CAR over event window, which includes pre-announcement days and post-announcement days, gives better sense of CAR obtained by shareholders of the company.

Similarly, abnormal returns and cumulative abnormal returns have been calculated for all dividend announcement event windows. Below graph shows the trend.
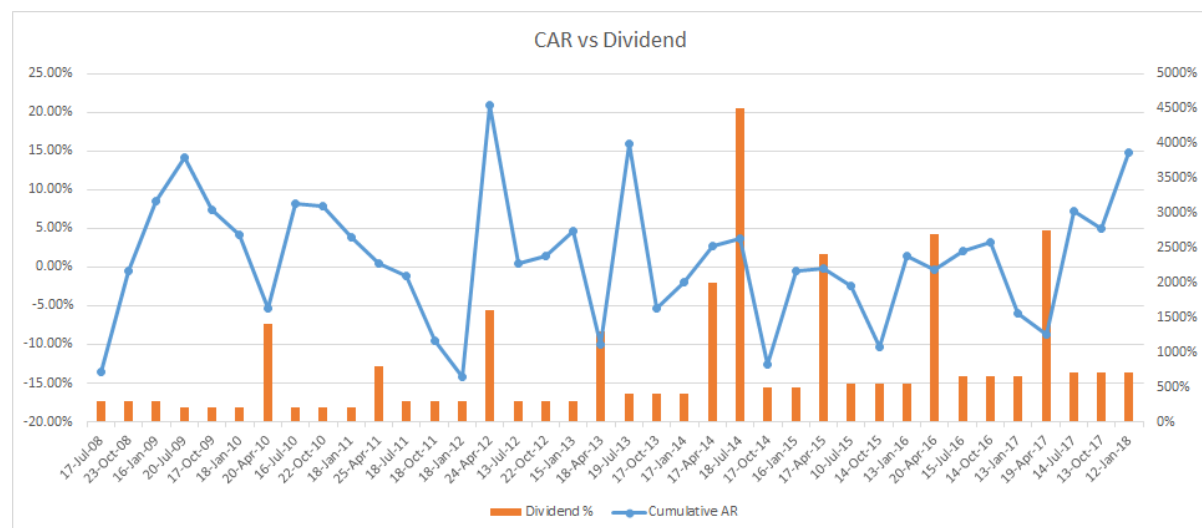

Figure 1: CAR vs Dividend for TCS for last 10 years dividend announcements

The Mean CAR over above period is: **0.92%**.

It can be seen from above chart, that there are more number of lower peaks, than higher peaks in the chart, implying that that many times, the dividend announcement is likely to give negative return than positive one. Since the mean of last 10 years' data is less than 1%, the returns average out over period time. The overall trend line is also flat and close to 0%.

It can also be seen from above chart, that large dividend% does not mean higher abnormal return. In fact, sometimes the market moves opposite to abnormal return. E.g.

1. In April-2010, 1400% dividend was given, which included special dividend of 1000%. However, TCS stock gave negative abnormal return of -5.30%.

2. In April-2012, 1600% dividend was given, which included special dividend of 800%. At this time, TCS stock gave positive abnormal return of whopping 20.84%, which highest in 10 years' data analysed.

Hence for TCS, there does not seem to be any correlation between direction of dividend and abnormal return. There may be other factors, more important than just dividend amount, which decide direction of the stock price.

4.2 Infosys Limited (INFY)

Infosys Limited (NSE: INFY) is a leading provider of consulting, technology, outsourcing, next-generation services and software. It is the second-largest Indian IT company (after TCS) by revenues and has operations spread over 45 countries.

As part of this study, abnormal returns (AR) and cumulative abnormal returns (CAR) were calculated, during 18 dividend announcement event windows. There are two instances (Oct-2014 and Apr-2015) when company has declared bonus issue also along-with dividend declaration. These have been excluded from the dividend announcement abnormal returns study. The below graph shows the trend.
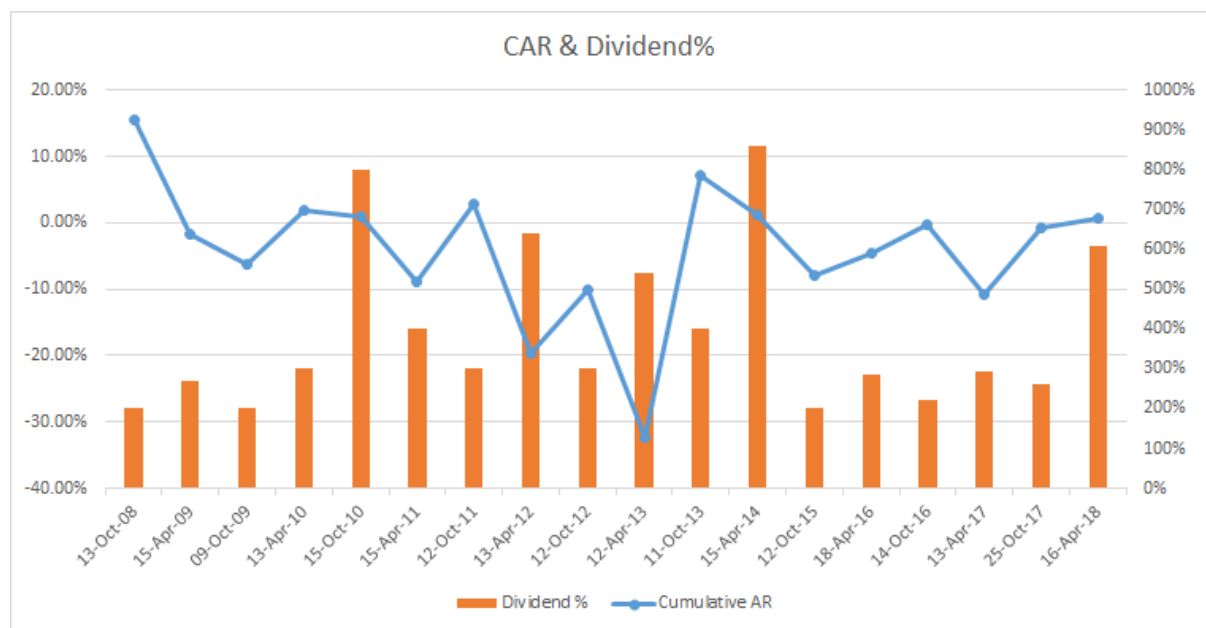

Figure 2: CAR vs Dividend for Infosys for last 10 years dividend announcements

The Mean CAR over above period is: **-4.03%**.

During initial period, the Infosys stock has given positive abnormal returns. However, later the CAR has been negative or close to zero. In April-2013, the INFY stock recorded biggest single day fall of almost 22%. This was primarily due to weak revenue guidance given by company for FY14. The CAR on that announcement date was -32.31%. There seems some

recovery later in 2013, but after that, the CAR has been in negative territory. The above mean CAR mentioned seems an indication that there more probability of getting negative or zero returns, rather than large positive CAR, during the dividend announcement window.

The company provides dividend twice during the year, interim dividend in October and final dividend in April. Except for Oct 2010, final dividend given in April is of greater amount. However, in many cases, it is seen that CAR is down even if the dividend is more. In certain cases, it seems moving in same direction as dividend. Hence, the results are mixed and hence it cannot be said that for Infosys, direction of dividend is same as abnormal returns during the announcement event window.

4.3 HCL Technologies Limited (HCLTECH)

HCL Technologies (HCL) is a leading global technology company, that is primarily engaged in providing a range of software development services, business process outsourcing services and IT infrastructure services.

As part of this study, abnormal returns (AR) and cumulative abnormal returns (CAR) were calculated, during 39 dividend announcement event windows. There is one instance (Jan-2015) when company has declared bonus issue also along-with dividend declaration. This has been excluded from the dividend announcement abnormal returns study.
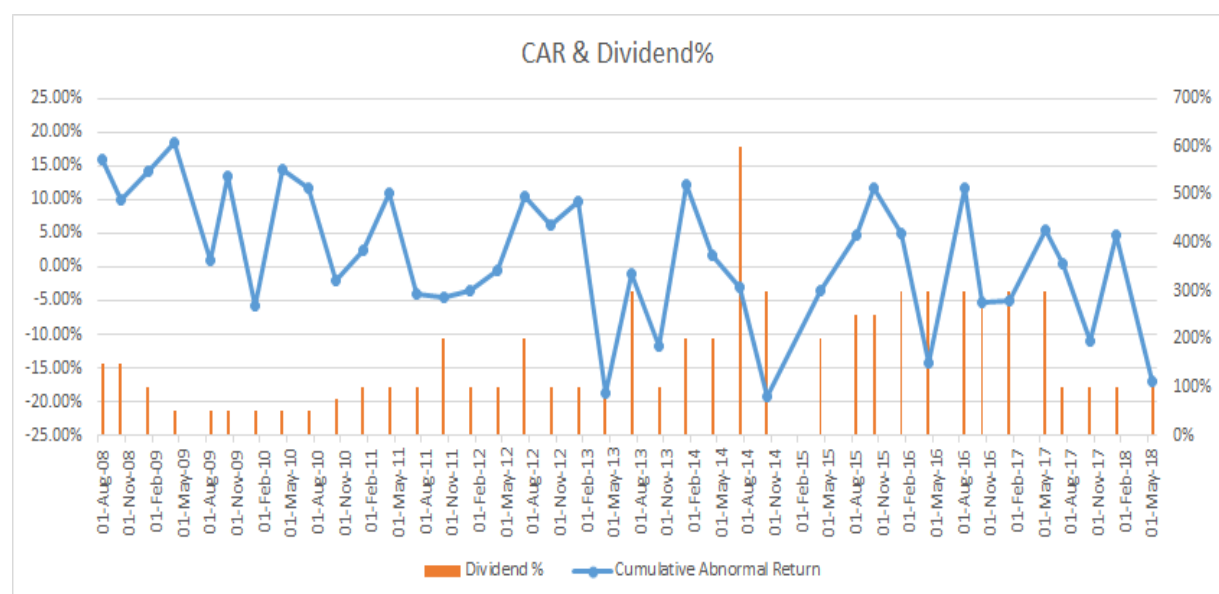

Figure 3: CAR vs Dividend for HCL for last 10 years dividend announcements

The Mean CAR over above period is: **1.69%**.

4.4 Tech Mahindra Limited (TECHM)

Tech Mahindra Limited (NSE: TECHM) is a leading provider of solutions and services in the Information, Communications & Technology industry.

As part of this study, abnormal returns (AR) and cumulative abnormal returns (CAR) were calculated, during each dividend declaration event window. For TECHM, 10 dividend announcement event windows have been taken into consideration. The below graph shows the trends.
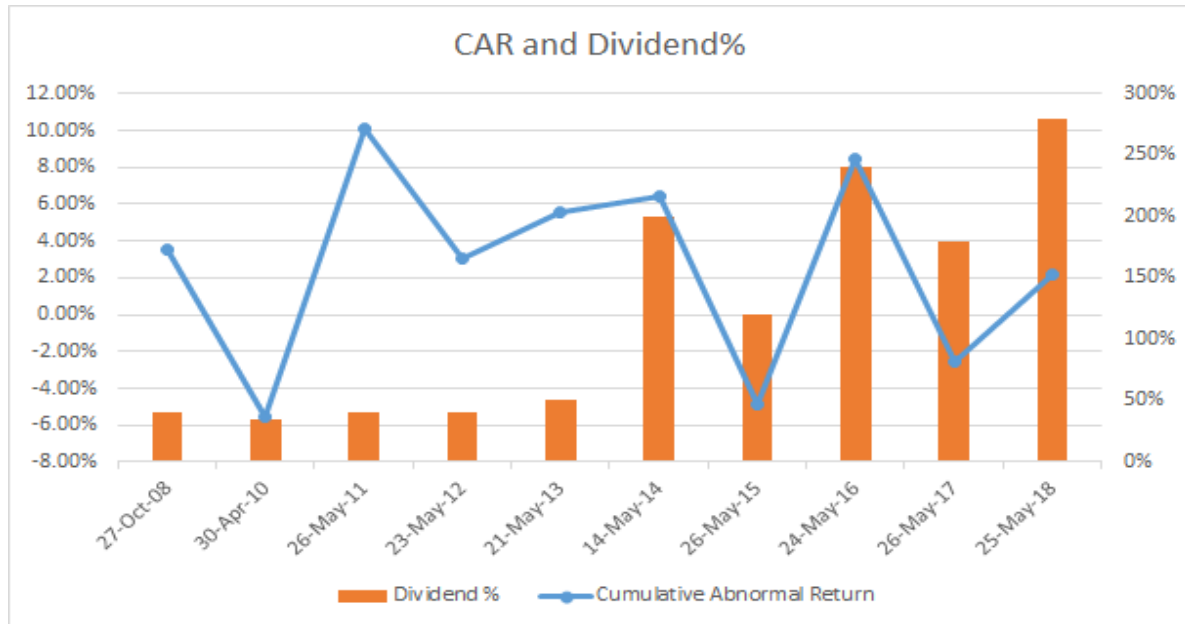

Figure 4: CAR vs Dividend for Tech Mahindra for last 10 years dividend announcements

The Mean CAR over above period is: **2.62%**.

Tech Mahindra has been giving once in a year dividend. Hence, it has only 10 observations in last 10 years. While the mean CAR shows a positive number, it cannot be conclusively said that dividend announcement for Tech Mahindra is more likely to give positive abnormal returns. The overall trend line is flat, though it seems like going slightly lower. It quite likely, that it will average out to zero in next few years.

In Jan-2015, company announced bonus issue of 1:1. Further, company also announced shares split of equity share of ☐ 10 face value, into two equity shares of ☐ 5 each. Both these corporate actions had record date of March 20th 2015. Hence dividend% suddenly seems higher from May-2014 onwards. In this case, there seems like positive correlation between abnormal returns and dividend%. Increase in dividend is giving more abnormal returns, while reduction in dividend gives lower abnormal returns. However, as mentioned earlier, this stock has only 10 observations, hence H1 hypothesis can be considered rejected. Abnormal Return (AR) and CAR was calculated for this bonus and share split event window separately. Below graphs shows the trend.
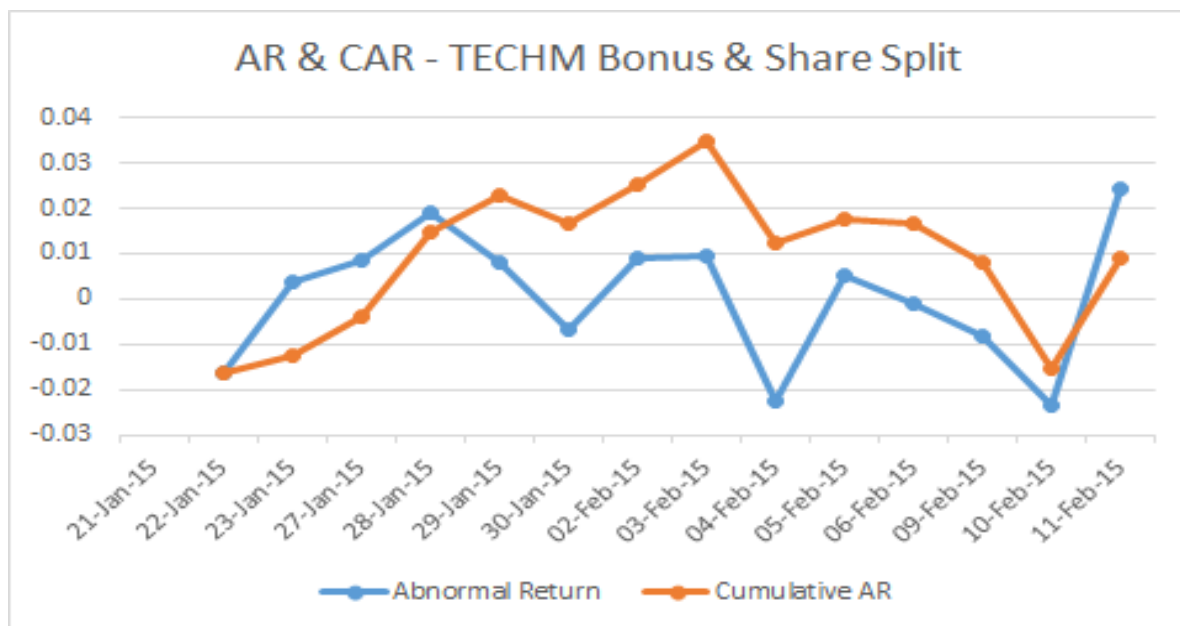
Figure 5: Abnormal Returns & Cumulative Abnormal Returns for Tech Mahindra Bonus Issue and Stock Split

The total Cumulative Abnormal Return for this event window is 0.89%. As earlier mentioned in Introduction section, share split or bonus shares do not actually change the firm value. Hence, it is expected that share price do not have any impact of this. While there is volatility in stock price due to announcement, overall there is no significant abnormal return due to this announcement for Tech Mahindra.

4.5 WIPRO Limited (WIPRO)

Wipro Limited (NSE: WIPRO) is a leading global information technology, consulting and business process services company.

As part of this study, abnormal returns (AR) and cumulative abnormal returns (CAR) were calculated, during 15 dividend announcement event windows. The below graph shows the trends. The underlying data of the below charts is given in Appendix.
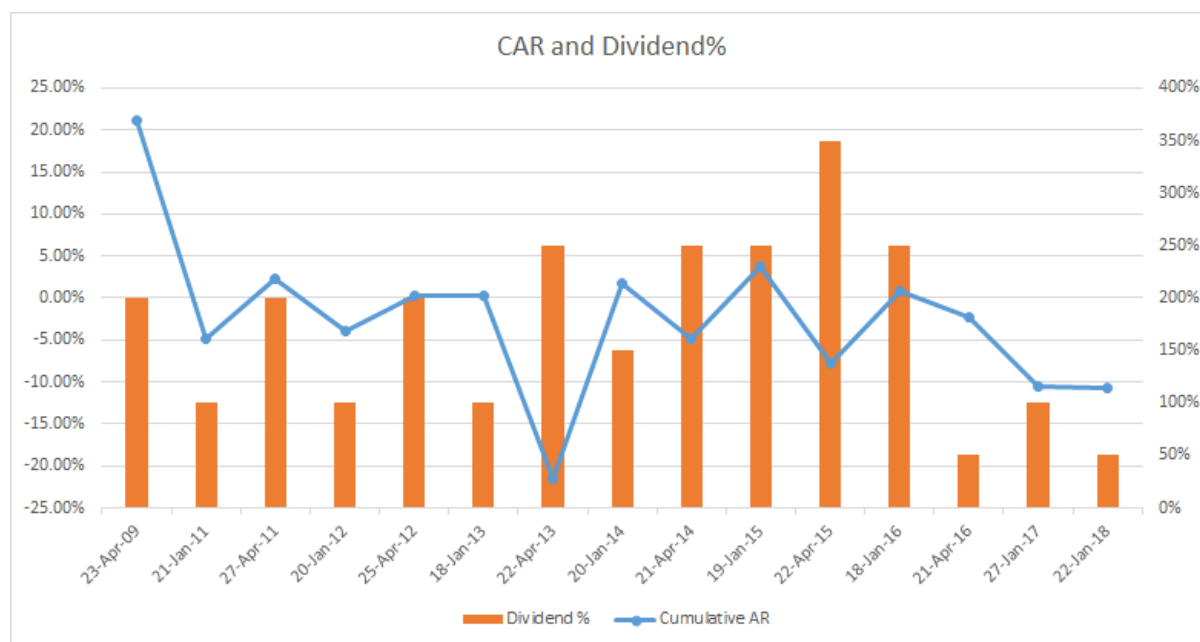
Figure 6: CAR vs Dividend for Wipro for last 10 years dividend announcements

The Mean CAR over above period is: **-2.41%**.

The graph shows two peaks in opposite direction. In April-2009, the dividend announcement gave abnormal return of 21.16%. However, in April-2013, the announcement gave -21.44% return. In general, the abnormal returns have been negative, which reflects in the mean as well.

It can be seen from above chart, that good dividend does not mean good abnormal returns. For e.g. WIPRO gave highest dividend in April 2015, however that dividend announcement window gave negative cumulative abnormal return (CAR) of -7.86%. In some cases, however, there seems like positive correlation between dividend and CAR. As the results are mixed, hypothesis H1 can be considered rejected in case of WIPRO.

4.6 Bonus Issue Analysis

As given in Objective section, 7 bonus issues have been studied together, of the 5 selected top IT companies. The methodology to study abnormal returns is bit different, when multiple stocks are taken together. Below are the steps:

1. As usual, calculate daily abnormal returns (AR) for each stock for each day in bonus issue announcement window.
2. Now, calculate daily average abnormal returns (AAR) using formula

$$AAR_i = \frac{\sum AR_i}{N}$$ ----------------------------- (8)

where,
AR_i – Abnormal Return of individual security

N – Number of securities

AAR – Average Abnormal Return

3.   Next, calculate Cumulative Average Abnormal Return by

$$CAAR_{it} = \sum AAR_i$$
------------------------------ (9)

Data after step (1) above is given in Appendix B. After steps (2) and (3) mentioned above, below is how AAR and CAAR looks like –

Table 6: Average Abnormal Returns & Cumulative Average Abnormal Returns for Bonus Issue event windows

Timeline	Average Abnormal Returns	Cumulative Average Abnormal Returns
-6	0.96%	0.96%
-5	-0.46%	0.50%
-4	-1.16%	-0.66%
-3	-0.23%	-0.89%
-2	-0.47%	-1.36%
-1	-0.54%	-1.90%
0	1.80%	-0.10%
1	1.31%	1.21%
2	-0.13%	1.07%
3	0.23%	1.31%
4	1.14%	2.44%
5	-0.26%	2.19%
6	0.15%	2.34%
7	-0.28%	**2.06%**

It can be seen from above table that prior to announcement the returns are negative. On the announcement date, there is immediate positive gains. Over next few days, gains are accumulated and it stays around 2%. Hence, hypothesis H3 can be rejected, as there are abnormal gains evidenced, even though bonus issue itself makes no difference in firm value.

Conclusion

Companies undertake corporate actions like dividend declarations, bonus issue, share splits, etc. Traders, Fund Managers and other short term speculators typically like to time the market so as to get more abnormal returns. This study tries to find out if there are such gains possible during corporate action announcement windows.

Using event study methodology, analysis of 120 dividend announcements across top 5 IT companies was conducted, as described in previous section. An attempt is made to understand if direction of dividend payout (i.e. increase in dividend) is same as direction of stock price (i.e. increase in price), as mentioned as Hypothesis 1 (H1).

Based on results of various observations, it can be stated that there appears no evidence that stock prices increase or decrease just on basis on dividend information. There have been instances of prices moving in same direction as dividend, while in many cases it moves opposite. In certain cases, they show no effect on stock price as well. Hence, hypothesis H1 can be rejected, as results do not indicate such behaviour of stock prices, in relation to dividends.

Next, further attempt was made to understand, what is the average abnormal returns given by these stocks over last 10 years. This is primarily to understand that if any investor uses the announcement windows to enter and exit position, by just taking out abnormal returns, whether he/she can make any gains. Based on the analysis carried out in prior section, below is the **Mean Cumulative Abnormal Returns** for selected top 5 IT companies.

Table 7: Mean Cumulative Abnormal Returns for selected IT companies over period of last 10 years

Company	Mean CAR
HCL Technologies Ltd.	1.69%
Infosys Ltd.	-4.03%
Tata Consultancy Services Ltd.	0.92%
Tech Mahindra Ltd.	2.62%
Wipro Ltd.	-2.41%

If this data is seen in relation to hypothesis H2 for this study, it can be seen that only TCS has mean CAR of less than 1%, but it is still close to 1%. Hence ideally hypothesis H2 should be rejected. However, it can also be seen from above data that all values are still less than +- 5%. From an investment or trading standpoint, the mean returns are still low to generate any interest. Hence, if hypothesis H2 tolerance limits can be expanded to +-5%, then this hypothesis can be accepted.

Bonus Issue and Share Split announcements do not actually affect the firm value. It is just change in various accounting entries. Companies use these techniques to increase shareholders interest in its shares, which may increase market capitalization of the company.

Using event study methodology, 7 bonus issues were analysed together as described in previous section. It would be fascinating to note that such events have given mean CAR of more than 2%. This means that there are abnormal returns in such announcements. Significance of this value varies from person to person, however from company perspective, they seem to meet their objective behind such actions, i.e. generate interest of its shares and thereby increase market cap.

To finally conclude, most of the reported results show that stock prices do adjust rapidly to announcements of corporate action and that investors are typically unable to utilise this information to earn consistently above average returns.

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