

Market Reaction to Dividend Announcement: An Empirical Study Using Event Study Technique

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ABSTRACT

The event study methodology is considered to investigate the impact of an event on a specific dependent variable. A generally used dependent variable in event studies is the stock price of the company. The definition of such an event study will be a study of the changes in stock price beyond expectation i.e., abnormal returns during the event window period. While employing event studies to measure the event impact, we may find the techniques to out perform the market. The event study methodology seeks to determine whether there is an abnormal stock price effect associated with an event. From this, the researcher can infer the significance of the event. The basic and indispensable assumption followed in the event study methodology is that the market is always efficient. In the efficient market, the impact of an event will be reflected immediately in the stock prices.

Key Words: Dividend Announcements, Semi-Strong Form of Efficient Market Hypothesis, Event Studies, Abnormal Returns, Pre and Post Announcement Periods, Chart Analysis

INTRODUCTION

The event study is an important research tool in economics and finance. This tool is widely followed in capital market arena to assess the effect of an event on stock prices. Hence an event study is a statistical method to measure the impact of a specific event on the value of a firm. For example, the announcement of an amalgamation between two business entities can be analyzed to see whether investors believe the amalgamation will create or destroy value. 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. Event studies have been used in a large variety of studies, including mergers and acquisitions, earnings announcements, dividend announcements, bonus share declaration, stock split, debt or equity issues, corporate reorganizations, investment decisions and corporate social responsibility. Event study methods exploit the fact that, given rationality in the marketplace, the effects of an event will be reflected immediately in security prices. Thus the impact can be measured by examining security prices surrounding the event.

In this paper event study methods are described including some of the potential complications. An example is included to illustrate the approach.

METHODOLOGY OF EVENT STUDIES

The methodology of event studies is fairly standard and proceeds as follows:

Collect a sample of firms that had a surprise announcement (the event).

What causes prices to change in an announcement that is a surprise to investors? For many studies, such as an announcement of a merger, announcement of bonus shares, announcement of earnings or dividends, and any announcement can be treated as a surprise. For other studies, such as the impact of dividend announcements, it is more complicated. For those studies, it is necessary to define a surprise. This is normally done by comparing announcements to what was expected as reflected in the average estimate of professional analysts. A number of services provide these data. To form a sample of surprises one first separates out a group of firms where the announcement is significantly different from what is being forecast. Since positive and negative surprises would affect price differently, this group is further separated into two groups, one for positive and one for negative earnings surprises.

Determine the precise day of the announcement and designate this day as zero

Most current studies use daily data, but in early days monthly data adopted. The use of monthly data made measurement much more difficult because there are many surprises in a month besides the announcement effect being studied. Thus, for measuring market efficiency, it is important to measure the impact of the announcement using the smallest feasible intervals. A number of recent studies have used intraday data.

Define the period to be studied.

The present study, we studied 9 days around the event, the we would designate -4, -3, -1 as the 4 days prior to the event, 0 as the event day, and +1, +2, ..., +4 as the 4 days after the event.

Computation of the return on each of the days being studied for all stock

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In this study 9 days (4 days before the event plus the event day, plus 4 days after the event) returns are calculated from 10 days prices along with the benchmark index values are also collected.

Computation of abnormal return for each of the days being studied

Abnormal return is actual return less the expected return/ market return. Different authors use different models for expected return. In this study we used the return on the benchmark index as the expected return.

Examination and discussion of the results

Having performed the analysis the abnormal returns are examined and conclusions drawn.

LIMITATIONS OF EVENT STUDY METHODOLOGY

Although there are many benefits to using event studies in our research, there are still some limitations to the model. Firstly, event study analysis employed in stock market assuming that the market is efficient. This supposition is not legally binding in many situations. The length of time required for individual investors to respond to event signals is random and therefore, the implication is that markets could exhibit market inefficiencies because prices do not instantly or fully reflect all available information. Individual stock prices usually increase in series of steps as investors normally respond in waves (as in the Elliot wave theory). Sometimes the abnormal returns might be spread out over such a long period of time that we are unable to see any significant 'spike' in the AR graph. We can only use the CAR graph in that case.

Secondly, the methodology provide estimates of the short-run impact on shareholders only and fail to consider many other effects of the event. Even if we assume away the problems of inefficient markets, we might have further problems if the companies under study are contaminated by ensuing events. Concurrent events in different stocks might weaken or reinforce one another, resulting in abnormal returns that are not caused by the specific event of interest. This will make the results of our event study.

Thirdly, the results of the event studies are sensitive to changes in research design. A difference in choice of return from the market (R_m) will result in vastly different results for abnormal returns. Similarly a change in estimation window will give different alphas and betas, which will also affect results of the study. The choice of sample size will also result in differences in results. The sensitivity of event studies will result in different conclusions being drawn by researcher studying the same event, thereby making it hard for us to choose which result to believe in.

Lastly, the results of research estimation depend heavily on the data compiled. If the source of data on the dependent variables (stock price) is not trustworthy,

then estimations on abnormal returns will most probably be erroneous as well.

Despite all the limitations in the event study methodology, it is still widely used in many areas of research. This is due to the fact that this research methodology has a powerful and easy design, is able to detect abnormal performance, can be used in less than perfect conditions and the results are easy to interpret and share.

EVENT STUDIES IN SEMI-STRONG FORM

According to the semi-strong form of the market, the security prices reflect all publicly available information within the purview of the efficient market hypothesis. In this state, the market reflects even those forms of information which may be concerning with the announcement of a firm's most recent dividend forecast and adjustments which will have taken place in the prices of security. The investors in the semi-strong form of the market will find it to earn return on the portfolios which is based on the publicly available information in excess of the return which may be said to be commensurate with the risk. Many empirical studies have been made to test the semi-strong form of the Efficient Market Hypothesis. In the semi-strong form market, any new announcement would bring reaction immediately to the company. This reaction could be even prior to the announcement in the market. This reaction prior to or immediately after the announcement would be caused by the additional information which is not anticipated by the stock exchange participants. This information also would not be disclosed to the market participants. But the semi-strong form of the efficient market hypothesis would immediately indicate a change in the price of the securities but the price would be adjusted immediately by the market participants and in this way, the participants remove any possibility for abnormal returns in the future.

LITERATURE REVIEW

Dolley (1933) examines the price effects of stock splits, studying nominal price changes at the time of the split. Using a sample of 95 splits from 1921 to 1931, he finds that the price increased in 57 of the cases and the price declined in only 26 instances. Over the decades from the early 1930s until the late 1960s the level of sophistication of event studies increased.

In the late 1960s seminal studies by Ball and Brown (1968) and Fama (1969) introduced the methodology that is essentially the same as that which is in use today. Ball and Brown considered the information content of earnings, and Fama studied the effects of stock splits after removing the effects of simultaneous dividend increases.

Fama, Fisher, Jensen and Roll (1969) conducted one study by using event study methodology, it describes standard event study methodology determines a security's price reaction by comparing actual returns to estimated expected returns. To find the estimated return, the historic relationship between the security and the market is determined by regressed with the security return

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against the market return. The resulting estimated regression parameters represent the responsiveness of the security to changes in the market return, beta, and the level of abnormal returns for the security, alpha. During the event window these parameters are applied to the market return to determine the expected return for a particular security.

According to Binder (1998) in his comprehensive review of event study methodology, the market model method assumes that the average abnormal return for the sample as measured by the average alpha value should be zero. There may be events, however, where this assumption does not apply. A large body of literature shows that over medium-term horizons groups of securities display positive momentum, a tendency for securities to outperform the market over an extended period.¹ For a sample of momentum securities the average alpha value determined by the market model would be positive. If an event applies predominately to momentum securities, use of the market model to measure the impact of the event will result in biased estimates.

According to Stickel (1985) suggest that professional investment analysts tend to recommend "hot stocks," that is, securities that have recently displayed positive momentum. If Stickel's presumption is correct, market model event studies of the performance of securities recommended by professional analysts will provide biased conclusions. In this paper we propose an alternative estimation procedure for estimating the expected security return. This straightforward procedure is based on standard modeling assumptions but may result in radically different conclusions for securities exhibiting positive price momentum.

OBJECTIVES OF THE STUDY

The main purpose of the study is

- ✚ To examine the behavior of stock prices around the dividend announcement using event study methodology.
- ✚ To check whether the event study methodology helpful to find the strategies found in dividend announcement.
- ✚ To find the correct path of future trends based on the announcement effect using event study techniques.

In this context, the behavior of stock prices has been examined in the prior and post announcement periods in relations to the unexpected dividend announcement.

RESEARCH METHODOLOGY

The present study covers a period of one calendar year from January 2009 to December 2009 and the results are based on a sample of Nifty stocks, listed in the National Stock Exchange. The data set contains daily data from the different sectors of 10 dividend paying stocks over the 10 window period i.e. -4 day to +4

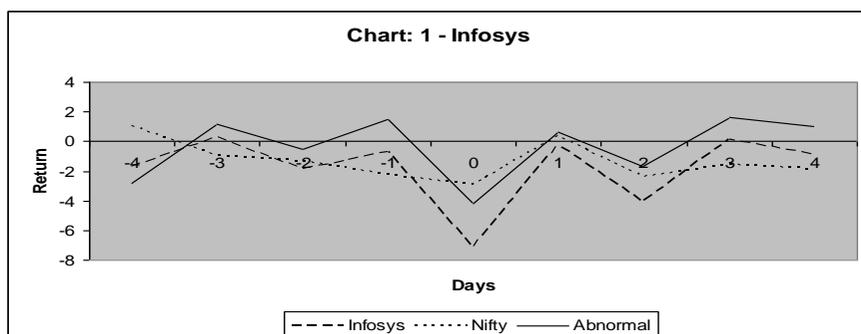
day relative to the dividend announcement, which is listed on the National Stock Exchange for the period of January 2009 to December 2009. Three basic time series data have been employed in this study. These are, dividend announcement dates for the whole sample period, daily closing stock prices for the period [-4, to +4] around each dividend announcement day of every stock, prices of the NSE Nifty Index in the [-4, to +4] time window for each dividend announcement day of every stock and number of shares traded each day for each company in the sample period. The selection of sample has primarily been guided by two factors, availability of dividend announcement for the sample period, and the time to time revision and replacement of stock in the NSE Nifty. Often some existing stocks were replaced by new stocks in the Nifty index. This is also considered in the present study.

ANALYSING OF ABNORMAL RETURNS USING EVENT STUDY

Using capital market data, an event study measures the impact of a specific event on the market. The usefulness of such a study comes from the fact that given rationality in the market place, the effect of an event will be reflected immediately in security prices. Thus a measure of the event's impact can be constructed using security prices observed over a relatively short period. In this study, the problem of calculating and analyzing abnormal return is considered. The abnormal return is calculated using actual return of a stock less the market return on the same day. This facilitates the use of abnormal returns around the event day in the analysis. The fashion of abnormal return for both positive growth and negative growth firms are similar trend. The abnormal return occurs in the pre as well as in post-announcement period. That is, stock price reaction to the firm's dividend is not instantaneous, which contradicts the efficient market hypothesis.

For analysis purpose, the companies are categorized into two type's i.e. positive growth and negative growth companies. This can be concluded with previous year dividend or current year interim dividend. If the current year dividend is higher than the previous dividend announcement is designated as positive growth and if lower than the previous announcement is called as negative growth.

INFOSYS

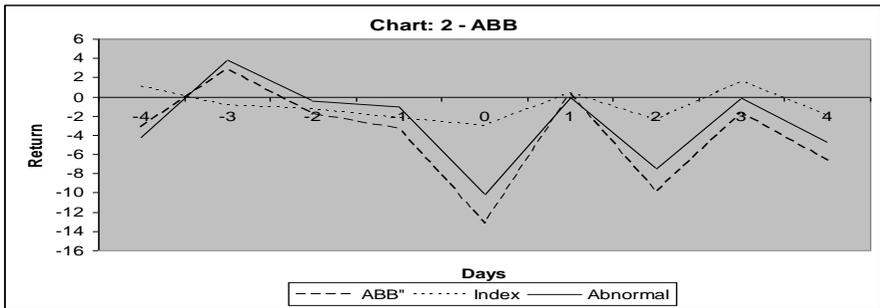


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Source: www.nse-india.com

Almost Infosys return does not differ from the market return. The return behavior of this company prior to the event day and after the event day is consistent with the market index. The price path on the event day also followed with the market movement. The dividend announcement of the company doesn't seem to have any influence in the price. By this news, one can earn little amount of return but it doesn't fulfill the transaction cost.

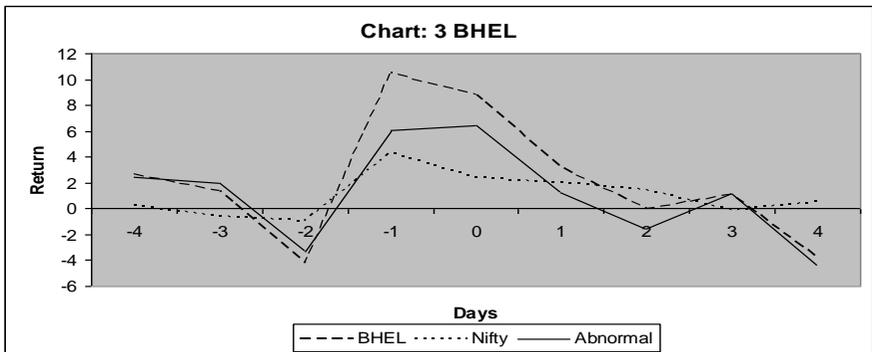
ABB



Source: www.nse-india.com

ABB return curve movement is almost same with the market movement, but at the same time it involved with heavy loss than that of the market index. There is no positive abnormal return found pre as well as post announcement period. The above chart proves the scrip movement is parallel with the market movement.

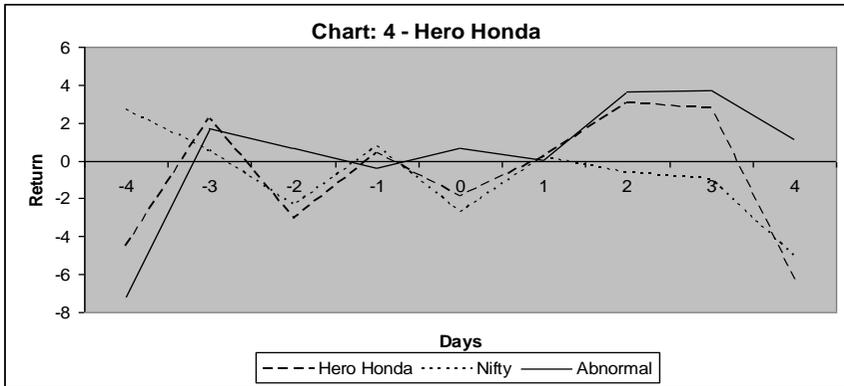
BHEL



Source: www.nse-india.com

A little abnormal return is found in pre-announcement period but from the event day onwards scrip movement correlated with the market. There is no opportunity exists to earn superior return from the market. This announcement cannot yield handsome returns to the market participants.

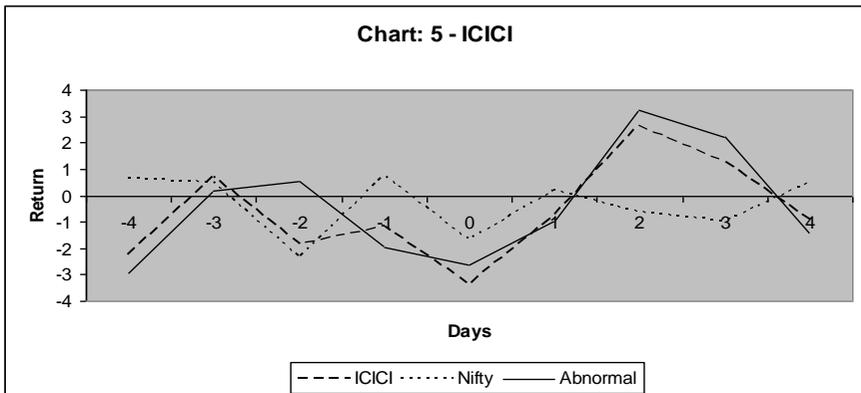
HERO HONDA



Source: www.nse-india.com

Almost the scrip movement is correlated with the market performance. A little abnormal return is found during the first four days after the announcement of dividend results. Thereafter market return is decreased considerably along with scrip return. On the event day, market and the company share price is also ended with red.

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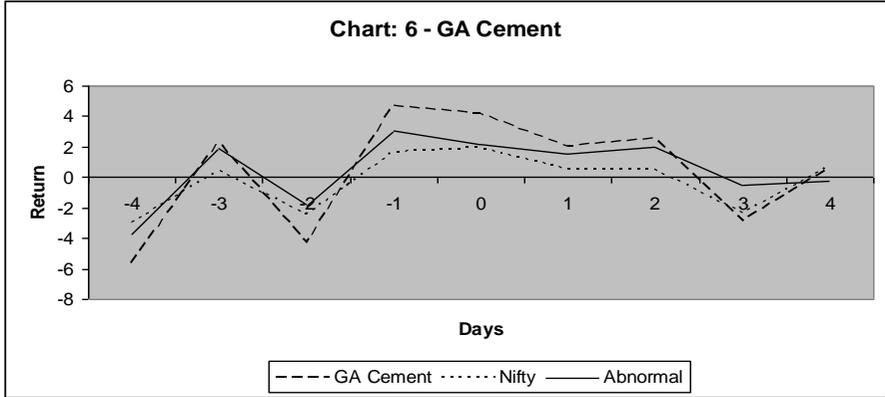


Source: www.nse-india.com

It is clear from the above chart, scrip and market movement were almost same prior to the announcement of dividends. After the result announcement, scrip generated a little return to the market traders. But at the same time there was no return found during the day of dividend announcement. It is hard to believe that abnormal return found because of announcement or any other surprise news of the company.

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GA Cement

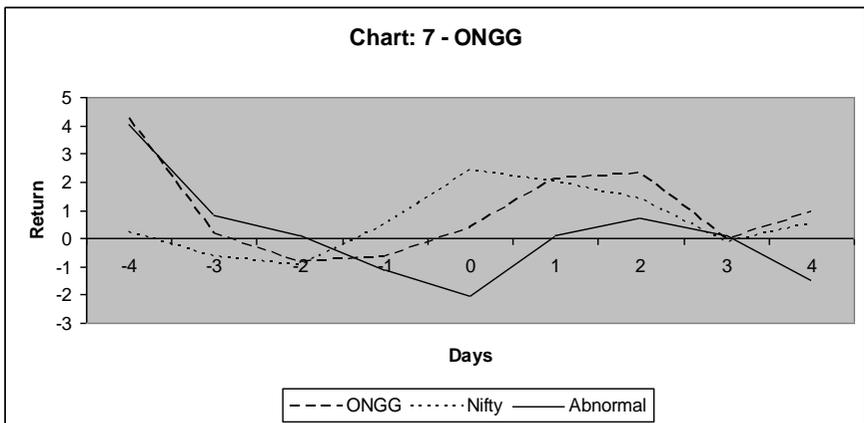


Source: www.nse-india.com

It is evident from the above chart; the scrip started giving abnormal return prior one day to the dividend announcement to two days after the announcement. Based on this dividend announcement, one could not earn superior returns from the market. Almost all the curve movements are same pattern.

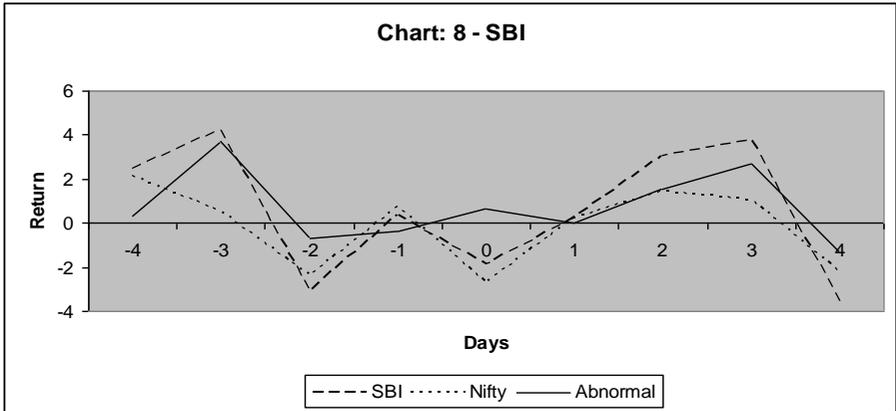
ONGG

The return behavior of this company is correlated with the index return in pre-event period and also in the post event period. There is no chance to earn abnormal return, by taking this announcement. Hence the announcement of dividends doesn't have any impact on the price of the scrip.



Source: www.nse-india.com

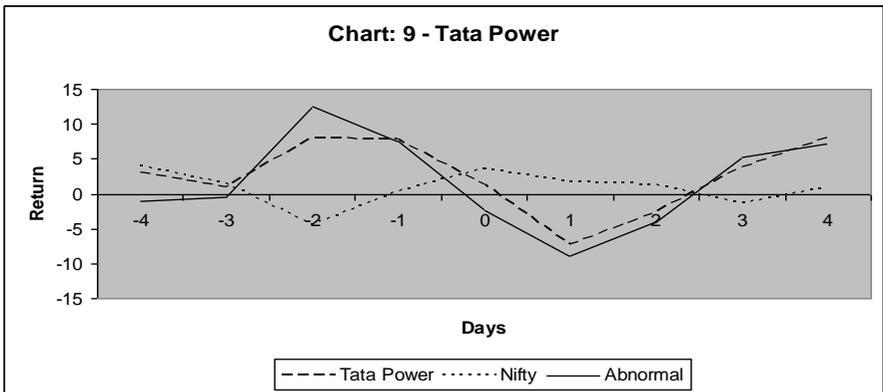
SBI



Source: www.nse-india.com

This company's return does not differ from that of the market return. The return behavior of the company, prior to the event day and after the event day is consistent with the market return. The big dividend announcement of the company does not have any influence on the price of the share.

TATA POWER

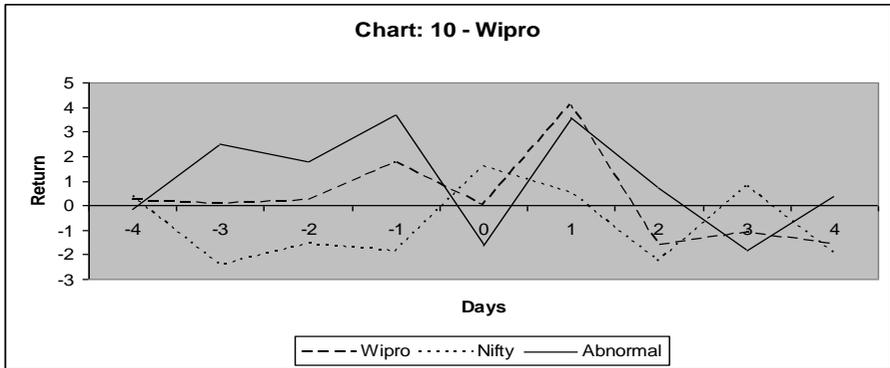


Source: www.nse-india.com

The above chart reveals, there is no correlation between the scrip movement and index movement. But during the event day market and scrip movement coincides diminutive. Based on this news drift, it is difficult to earn abnormal return, which is also clear from the above chart.

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WIPRO



Source: www.nse-india.com

From the above chart, prior to the event day company return is correlated with the market return. The same trend continued even after the event day. Opportunity exists in both the periods to earn abnormal return. Hence the announcement of result does not have any impact in the market.

SUMMARY AND CONCLUSION

The findings of the present study basically highlight as to how the market evaluates equity returns. It is simply not true, that dividend announcement data can provide a profitable guide to investment timing or improve a portfolio's rate of return. Information is reflected in stock prices so rapidly that published data tells the investor virtually nothing about the future change in stock prices. Not only do stock returns reflect the firm's dividend data when published but they also anticipate future dividend growth to some extent. The growth factor is taken in terms of percentage which increase profit over the previous year performance, was supposed to be an important performance indicator that is likely to affect the stock returns.

The study was undertaken to find out whether the announcement of dividend result is having any influence on the stock return. There are variety of factors that influence the movement of share price and hence the return. The performance of the company as disclosed by the dividend result is one among them. In this study it was tested whether the announcement of result is having any influence in the company return. Normally a higher dividend than the previous year dividend should be welcomed by the market. This should be associated with greater return after the result is announced. All higher return after the announcement cannot say to be due to the dividend results. To find out the impact of results on returns, the impact of other factors in returns is to be segregated. The impact of other factors in return is taken from the index which is nothing but the market return. The announcement of dividend is unique and specific to a company. To study its

impact on the market place, the impact of other factors is removed, that is why the period is limited to 10 days and the return is calculated for 9 days.

From the stock return behavior of 10 companies studied, the return behavior of only one company does not move with the market return. At the same time, the chance to earn abnormal return is found only in 3 companies. The announcement of results is said to have an impact only when there is an abnormal return after the announcement of dividend results. Then only an investor can formulate a trading strategy to outperform the market. In the absence of abnormal return caused by the dividend announcement, no trading strategy will help an investor to outperform the market. Hence it can be concluded that the announcement of corporate dividend result does not have any impact on the stock return behavior of companies. By taking this announcement of dividend results, no one can outperform and there is no strategy exists in the market. Also it is clear from the above analysis; it seems very difficult to find future path based on the announcement effects.

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