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Impact of Quarterly Earnings and Dividend Announcements on Stock Prices in India

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Abstract:
This study tries to look into the impact of quarterly earnings and dividends announcements on the stock prices in India and the abnormal returns before and after the announcements. The sample consists of 59 quarterly earnings and dividends announcements from April 2004 to March 2008, of companies belonging to the Nifty Fifty. We use the event study methodology to find out the market reaction of the announcements before and after the event. There is an indication of abnormal and cumulative abnormal returns around certain announcements which show that markets are inefficient in the semi-strong form but the other cases of joint announcements indicate that markets are efficient in the semi-strong form because we can earn only normal returns as per the market model. The study is not able to separate the effect of dividends and earnings announcements on the stock prices. The study contributes to the ongoing debate on efficient market hypothesis and specifically to the semi strong form of efficiency.

Keywords: Earnings, dividends, stock prices, abnormal returns, efficient market hypothesis (EMH), semi-strong form of EMH

1. Introduction

Fama (1970) advocated three levels of efficient market hypothesis, viz., the weak, the semi strong, and the strong form. The semi-strong form theorizes that all the public information, such as announcement of bonus, stock splits, dividends etc., are quickly and efficiently reflected in the market prices. If the markets are not efficient in the semi-strong form, then the investors can make abnormal returns by acting on new public information. Testing the markets for this form of efficiency is typically known as event study.

This paper investigates and tests the share price behaviour to announcements of quarterly earnings and dividends and the abnormal returns across various dividend and earnings levels.

2. Literature Review

There have been numerous studies on the effect of dividends announcements on stock prices, and the effect of earnings on stock prices. The results have been contradictory. One of the seminal studies in the field of event study by Ball and Brown (1968) found a positive relationship between earnings and stock prices. Ball and Kothari (1991) found significant abnormal returns around earnings announcements. In India, the studies by Obaidullah (1990), Das et al (2007), and Saravanakumar et al (2012) found that earnings announcements did not have significant effect on stock returns, thus making the markets semi-strong efficient. On the other hand, semi strong inefficiency was indicated by Chaturvedi (2000), Mallikarjunappa (2004), and Gupta (2006).

The effect of dividends' announcements has been studied by various authors. Of them, semi-strong efficiency has been supported by Pettit (1972) and Aharony and Swary (1980). But a host of other studies have indicated the contrary, namely, Asquith and Mullins (1983), Michaely et al (1995), Agarwal (1991), Selvam et al. (2010) and Maitra and Dey (2012).

The studies on the joint announcements of dividends and earnings by Brown, Finn and Hancock (1977), Patell and Wolfson (1984), How, Teo and Izan (1992), and Lonie et al (1996) have indicated excess abnormal returns to stockholders.

Very few studies have been conducted on the impact of joint announcements of dividends and earnings simultaneously on stock prices in India. This is the motivation for this study to find the effect of the joint announcements on the stock prices on the National Stock Exchange.

3. Data and Methodology

3.1. Data Selection

The study uses data of 15randomly chosen (using MS Excel) firms in the CNX 500 index (also included in the Nifty Fifty), which has announced dividends and quarterly earnings during the period April 2004 to March 2008. The data were drawn from Prowess database of CMIE, Business Beacon database of CMIE, financial statements from websites of the companies, and the websites of the National Stock Exchange and the Bombay Stock Exchange. Announcement dates for dividend and earnings were obtained from the CMIE

database. The dates and information were checked against the individual companies' websites and verified from the announcements made on the websites of the National Stock Exchange and Bombay Stock Exchange. The values of the CNX 500 were taken from Business Beacon database of CMIE. Observations with confounding events like issue of shares, issue of bonds, mergers and acquisitions etc., in the 21-day period surrounding the dividend and earnings announcements were excluded. Our final sample is composed of 59 announcements. To test the joint effect of dividend and earnings announcements on share prices, we have categorized the announcements as increase in dividends and increase in earnings per share; decrease in dividends and decrease in earnings per share; decrease in dividends and increase in earnings per share; increase in dividends and decrease in earnings per share; no change in dividends and increase in earnings per share; and no change in dividends and decrease in earnings per share.

3.2. Methodology
This study has used the Event Study methodology suggested by Fama et al (1969). An event study tries to find out if there are abnormal returns around the announcement of an event. Significant abnormal returns will indicate semi-strong inefficiency. Our event in this paper is the joint announcement of quarterly earnings and dividends. The market model has been used to measure normal returns. The market model theorizes a linear relationship between the return on the individual stock and the return on the market. The market model can be expressed as:

$E(R_{it}) = \alpha_i + \beta_i R_{mt} + e_{it}$ (1)
where
$E(R_{it})$ *is the* expected return on stock *i* during time period *t*
α_i is the intercept of a straight line or alpha coefficient of stock *i*
β_i is the slope of a straight line or beta coefficient of stock *i*
R_{mt} is the expected return on the market proxied by an index (CNX 500 here) during period t
e_{it} is the error term for security i at period t
We will estimate the values of α_i and β_i with the help of the above equation.
The abnormal return (AR_{it}) in period *t* is given by
$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$ (2)

The control period would be for180 days, which will help us to compute the normal returns. The event window is of 21 days, i.e. 10 days before and 10 days after the announcement day, denoted as day 0. The day 0 is day of dividend and earnings announcement. The naive 'no change' expectations model of Aharony and Swary (1980) has been used for dividends and earnings. The earnings per share data for a quarter have been compared with the same quarter of the previous years. The same has been done in the case of dividends.

3.3. Measurement of Abnormal Stock Returns
The abnormal returns (AR) are calculated for a period of 10 days prior and subsequent to the joint announcement of earnings and dividend. The 21-day event period is in accordance with Aharony and Swary (1980), Divecha and Morse (1983) and Kane, Lee and Marcus (1984). The abnormal return is calculated using the market model as per equation (2) above. Then, for any day *t*, the average abnormal return (AAR) across the chosen companies is calculated for the 10 days before and 10 days after the announcement date.
The null hypothesis states that the event i.e. the joint announcement of earnings and dividends, has no impact on the behavior of returns. This means that AR_{it} are drawn from a distribution with zero mean. The Cumulative average abnormal return (CAAR) for the 21-day period is calculated for each firm by summing the abnormal returns over event time.

4. Statistical Test
The Student's t test is used for find out if the results are statistically significant or not. If the null hypothesis is accepted, then the *t* statistic follows Student's distribution with *(n-1)* degrees of freedom, *n* being the sample size.

5. Results
The sample data are divided into 6 subsets as mentioned above in Data Selection. The joint announcements of earnings and dividends are classified as below:

	Increase in Earnings	Decrease in Earnings	Total
Increase in Dividend	34	5	39
No Change in Dividend	8	2	10
Decrease in Dividend	3	7	10
Total	45	14	**59**

Table 1: Combination of Dividends and Earnings
Source: Author

The daily average abnormal returns (AAR) and the Cumulative Average Abnormal Returns (CAAR) realized by shareholders in the twenty days surrounding the dates of joint announcements of dividends and earnings are presented in Table 2 and 3. The *t* statistics have been used to indicate whether the AARs and CAARs are significantly different from zero. The single asterisk mark indicates

significance at 5% level, and double asterisk indicates significance at 1% level. The Table 2 below indicates the Average Abnormal Returns.

	Increase in dividends and increase in earnings	No change in dividends and increase in earnings	No change in dividends and decrease in earnings	Increase in dividends and decrease in earnings	Decrease in dividends and increase in earnings	Decrease in dividends and decrease in earnings
	n = 34	n = 8	n = 2	n = 5	n = 3	n = 7
Days	**AAR**	**AAR**	**AAR**	**AAR**	**AAR**	**AAR**
-10	-0.0013	0.0023	0.0221	-0.0128	-0.0043	0.0118
-9	0.0008	-0.0035	0.0148	0.0136	-0.0012	-0.0078
-8	0.0015	-0.0029	-0.0099	0.0010	-0.0112	-0.0069
-7	-0.0023	-0.0059	-0.0275	-0.0083	-0.0001	0.0042
-6	0.0009	0.0100	-0.0034	-0.0006	0.0075	0.0051
-5	0.0029	-0.0019	0.0095	0.0102	0.0104	0.0076
-4	0.0017	0.0089	0.0068	-0.0046	-0.0020	0.0032
-3	0.0036	0.0069	0.0068	0.0057	0.0078	-0.0113
-2	-0.0004	0.0128	0.0160	-0.0043	0.0018	0.0144
-1	*0.0081	0.0118	0.0019	*-0.0059	0.0126	0.0023
0	**0.0018**	**-0.0124**	**-0.0094**	**-0.0095**	**-0.0055**	**0.0061**
1	-0.0027	-0.0147	-0.0055	0.0004	0.0350	-0.0004
2	0.0001	-0.0024	-0.0121	0.0102	-0.0020	-0.0081
3	*-0.0068	0.0059	0.0049	-0.0022	0.0141	-0.0152
4	0.0016	-0.0021	0.0079	-0.0043	-0.0119	-0.0021
5	0.0016	0.0085	0.0108	0.0041	-0.0081	0.0006
6	0.0021	-0.0014	-0.0145	-0.0088	-0.0109	0.0037
7	0.0040	0.0027	0.0072	0.0027	0.0062	0.0132
8	-0.0034	-0.0092	-0.0091	-0.0077	-0.0127	0.0056
9	-0.0056	-0.0011	-0.0006	-0.0034	0.0037	-0.0092
10	-0.0011	-0.0036	*0.0219	-0.0018	*0.0112	0.0124

Table 2: Average abnormal returns
*Shows significance at 5 percent levels and **shows significance at 1 percent levels; Source: Author

The Table 3 below indicates the Cumulative Average Abnormal Returns

	Increase in dividends and increase in earnings	No change in dividends and increase in earnings	No change in dividends and decrease in earnings	Increase in dividends and decrease in earnings	Decrease in dividends and increase in earnings	Decrease in dividends and decrease in earnings
	n = 34	n = 8	n = 2	n = 5	n = 3	n = 7
Days	**CAAR**	**CAAR**	**CAAR**	**CAAR**	**CAAR**	**CAAR**
-10	-0.0013	0.0023	0.0221	-0.0128	-0.0043	0.0118
-9	-0.0005	-0.0012	0.0369	0.0008	-0.0055	0.0039
-8	0.0009	-0.0041	0.0269	0.0018	-0.0167	-0.0030
-7	-0.0014	-0.0100	-0.0006	-0.0065	-0.0168	0.0012
-6	-0.0005	0.0000	-0.0039	-0.0071	-0.0094	0.0063
-5	0.0025	-0.0020	0.0055	0.0032	0.0010	0.0140
-4	0.0041	0.0069	0.0123	-0.0015	-0.0010	0.0172
-3	0.0077	0.0138	0.0191	0.0042	0.0068	0.0059
-2	0.0073	0.0266	0.0351	-0.0001	0.0086	0.0202
-1	0.0154	**0.0384	0.0370	-0.0060	0.0212	0.0226
0	**0.0172**	***0.026**	**0.0276**	**-0.0155**	**0.0157**	**0.0287**
1	0.0145	0.0113	**0.02200	-0.0151	0.0506	0.0283
2	0.0146	0.0088	0.0100	-0.0050	0.0486	0.0202
3	0.0078	0.0147	0.0149	-0.0072	0.0627	0.0049
4	0.0095	0.0126	0.0228*	-0.0115	0.0509	0.0028
5	0.0111	0.0211	0.0336*	-0.0074	0.0428	0.0034
6	0.0132	0.0197	0.0190	-0.0161	0.0318	0.0072
7	0.0172	0.0224	0.0262	-0.0135	0.0380	0.0204
8	0.0138	0.0131	0.0171	-0.0212	0.0253	0.0260
9	0.0082	0.0121	**0.0165	-0.0246	0.0289	0.0168
10	0.0070	0.0085	*0.0385	-0.0265	0.0401	0.0292

Table 3: CAARs
*Shows significance at 5 percent levels and **shows significance at 1 percent levels; Source: Author

When we look at the tables2 and 3 shown we see that the shareholders of companies that announced an increase in dividends and increase in earnings earned positive abnormal returns on a day preceding the announcements and earned negative abnormal returns three days following the announcements. The positive abnormal returns before announcement shows that there are possibilities of information leakages via other sources but are nullified by abnormal negative returns just three days after announcements. The table of cumulative average abnormal returns (CAAR) shows that there are no abnormal returns during the event window.

When the companies announced an increase in earnings and no change in dividends, shareholders earned normal returns as predicted from the market model. The table of CAAR shows that there are abnormal positive returns a day before the announcements and on the day of announcements.

When the companies announced a decrease in earnings and no change in dividends, the shareholders earned normal returns except on the tenth day after the announcements. On that day the shareholders earned a positive abnormal return of 2.19 percent which could be attributable to some other event. One must also note that the sample size in this category is very small which might not give us the right picture. The CAAR table indicates positive abnormal returns after announcements but one has to take a larger sample size to conclude anything.

When the companies announced a decrease in earnings and increase in dividends, the shareholders could earn negative abnormal returns before the announcement indicating some information leakage from other sources which give more importance to the fall in earnings rather to an increase in dividends. The CAAR table shows that normal returns are earned by shareholders.

When the companies announced a decrease in dividends and an increase in earnings, the shareholders could not earn abnormal returns except for the tenth day after the announcements but on a cumulative basis there are no abnormal returns at all.

When there is a decrease in both the earnings and dividends there are no abnormal returns either on an absolute or on a cumulative basis.

6. Conclusion

The aim of this study is to find out the impact of the joint quarterly earnings and dividend announcements on the market prices for a sample of the firms from the CNX 500 which are a part of the Nifty Fifty. The study makes use of six subsets on the basis of the combinations of earnings and dividends with either an increase or decrease in earnings and either an increase, decrease or no change in dividends. The results show that for joint announcement of an increase in both earnings and dividends there seems to be an indication of abnormal returns for shareholders before the announcements which are negated immediately after the announcements. There are some negative abnormal returns before the announcement of increase in dividends and decrease in earnings. Both the cases indicate leakage of information from some other reliable sources of information. There is also an indication of cumulative abnormal positive returns around the announcement dates for an increase in earnings and no change in dividends which could show that more importance is being given to earnings rather to dividends. These cases show that markets are inefficient in the semi-strong form but the other cases of joint announcements indicate that markets are efficient in the semi-strong form because we can earn only normal returns as per the market model. Thus the null hypothesis can neither be accepted nor rejected.

This study may be extended using a higher number of announcements of all the companies in the Nifty Fifty for better results.

Overall the debate about efficiency in the semi strong form continues though it can be said that there are possibilities of making abnormal profits only if we can spot the inefficiencies.

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