Dividend Announcements-Impact on Average Cumulative Abnormal Returns on Announcement Day

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Abstract:
Dividend policy has been an issue of interest in financial literature since Joint Stock Companies came into existence. The question of the ratio of retained earnings to be distributed as earnings is referred to as dividend decision or policy. The present study focuses on the impact of dividend announcements on the share prices around the announcement day. Announcement day is the day on which the divided announcement news first came in the market. In the present analysis which used event study ACAR values with significant Z- values are observed in the announcement window.

Keywords: *Dividend policy, Dividend, Joint Stock Companies. Abnormal returns*

1. Introduction

Dividends are defined as the distribution of earnings (past or present) in real assets among the shareholders of the firm in proportion to their ownership. Dividends are usually defined as the distribution of earnings (past or present) in real assets among the shareholders of the company in proportion to their ownership. In case of stock dividend equity capital of company increases and there is no actual cash outflow. Only reserves are reduced with an equivalent increase in share capital. A company declaring one-to-one stock dividend means that a person holding 100 shares of Rs.10 each will receive another 100 shares of Rs.10 each free.

Fama et al. (1969) in their research used market model on monthly return to study the impact of corporate announcements using stock splits. An average abnormal return (AAR) of 34.07% was found before ex-split day but no abnormal returns (ARs) were observed after ex- split date. They observed significant positive ARs around announcement day in month of announcement of split (due to increase in potential earnings and dividends) which vanished gradually. The cumulative abnormal returns (CARs) came down to zero after 30th month of splits. They also documented that month immediately after splits reflect market anticipation of a substantial increase in dividend. They supported signalling hypothesis but using it could not explain why ARs were observed around ex-split day.

Although studies are examining the relationship between dividend announcements and stock returns, most of them are based on the data of developed countries. The existing literature does not address some of the issues that are entirely different from the emerging market economies from their advanced counterpart. The rate of growth of the corporate sector is much higher in the emerging market economies than in the developed countries. The business sector in many emerging market economies, such as in India, is characterized by high concentration, opaque structure, often arising out of dominance of family-based business group and imperfect capital market. The role of the imperfect capital market in the context of dividend announcement is an interesting issue. So far as the Indian stock market is concerned, Saravanakumar (2011) and Maitra and Dey (2012) have examined the stock price behavior around dividend announcements in India.

Saravanakumar (2011) uses event study methodology to examine the impact of dividend announcements on Indian firms. The author finds that despite the fact that investors do not gain significant value in the period preceding as well as surrounding the announcement day, yet they can give value in the post-announcement period.The study reports that dividend announcement conveys information to market traders. Using both CAPM and market model, Maitra and Dey (2012) observe that there are significant abnormal returns (positive or negative or both) upon dividend announcement which is more evident under the CAPM model compared to the market model.

However, the study by Saravanakumar (2011) is based on only ten dividend paying stocks, and it considers only one year Period (January 2009 to December 2009) for the analysis. Maitra and Dey (2012) have examined 24 firms for one year period (April 2009 to March 2010). The limitations of both these studies are, they have considered dividend announcements of a very small period.

Several studies claim that dividend announcement is accompanied by positive abnormal stock returns. Miller and Rock (1985), Allen et al. (2000), Guay and Harford (2000), etc. find active stock price response to cash dividend announcements. Frank and Jagannathan (1998) conducted their study on Hong Kong stock market, where both dividend and capital gain are tax free. Interestingly, they observe positive abnormal returns on ex-dividend dates, even though theoretically, this should not be the case. Yilmaz and Gulay (2006) in their study on Istanbul Stock Exchange, observe increasing trend in stock prices before and after the ex-dividend dates due to the payment of cash dividends. The results of the study conducted by Xingzhi Kang (2013) based on New York stock exchange and NASDAQ stock exchange show that, the average abnormal returns and cumulative abnormal returns surrounding the dividend announcement date are significantly different from zero.

Yang and Wu (2014) examine the announcement effect of the cash dividend on stock prices based on a sample of all listed firms in Taiwan. The study reports the existence of abnormal returns before and after the ex- dividend dates only one year) and their sample sizes are also relatively small. The present paper attempts to fill up this.

2. Research Methodology

Event study methodology is used in the analysis which uses security prices. The expected effects of event are reflected immediately in security prices. We have used the event-study methodology in this study so as to examine the reaction of investors to positive and negative news/events. An event study methodology assumes that capital markets are sufficiently efficient to evaluate the impact of new events on the firms' expected future profits.

The event date is the date on which the effect of an event is presumed to take place, or the date around which a diffused effect is presumed to be distributed. The event date is assigned event time t=0. Researchers generally use the date on which the first public announcement of an event took place. However, it is not always possible to know with certainty the exact date on which a piece of information first reached the market. The information may become known to a wide segment of the market prior to the first public announcement through a news leak or it may be released in a form which effectively communicates the information but which is not considered to be a public announcement of the event itself. For example, Foster (1973) reported that announcement of an "earnings estimate" by a company official effectively usurped the information content of the subsequent earnings announcement.

The announcement period is the total period of time over which all statistically significant effects of the event on the stock price are presumed to take place. The announcement period may

contain only the event date, or it may contain additional days. The additional days may be arranged either symmetrically or asymmetrically around the event date. The length of the announcement period is an important methodological issue, closely related to event date uncertainty.

The comparison period is the period which is used as the basis for estimating what the values of the observed time series during the announcement period would have been if the announcement had not occurred. The comparison period excludes the announcement period, and can be symmetrical or asymmetrical around the announcement period. Kiger (1972) used a five-day period beginning eight days prior to the earnings announcement. Eades, Hess, and Kim (1984) used 30 days on each side of the announcement period. Zeghal (1983, 1984) used all of those days of the calendar year which did not fall within an announcement period.

The sample comprises of stock splits announced by companies listed on Bombay Stock Exchange (BSE) which became effective during period starting from 1st January 2009 and till 30th June 2014. The closing share prices data for the sample along with values of BSE Sensitive Index[1] is collected from Prowess 19.1, a database of Centre for Monitoring Indian Economy (CMIE)[2]. The stock split announcement dates are not directly published in any of the leading business dailies. The dates of announcement day are taken from Prowess database, Capital line and press reports of Economic Times. Additional information is obtained from bseindia.com (official website of BSE).After applying conditions of event study, we obtain a sample appropriate for use of Event Study Methodology. The sample companies used for analysis are reduced to 54.

The present study first mentions the hypotheses tested and presents findings relating to impact of stock splits on share prices and ACARs on and around event day - announcement day for a period starting from 1999 to June 2013.

The research hypothesis tested in the present study is:
HYP: 1- Stock splits have impact on share prices.

3. Results of Analysis

Cumulative abnormal returns (CARs) is an effective tool to study effect of corporate announcements on share prices in case returns of companies are affected by leakage of information relating to announcement of the event (Mc Kinlay, 1997). In most of the studies AARs and CAARs, are used as measures to detect presence or absence of abnormal returns around stock split announcement day. It is often found that there is leakage of information in the pre-announcement period. Therefore, in the present analysis CARs are calculated.

To study impact of event, not just on event day but also around the event, ARs are accumulated from start of event period t_1 up to t_2 in event window as under:

$$CAR_i = \sum_{t=t1}^{t2} \mathrm{AR_{it}} \quad (1)$$

$$= \mathrm{AR_{i,t1}} + \cdots .. + AR_{i,t2}$$

The null hypothesis tested is that:

$$H_o : E(CAR_i) = 0$$

Just like ARs, CARs for event day i are calculated for each company and then cross-sectional average is calculated as under:

(2)
$$ACAR_{it} = \frac{1}{N}\left(\sum_{i=1}^{N} CAR_{it}\right)$$

Where, CARit is cumulative abnormal return for a company on event day i.N is number of sample companies.

The Z-test is conducted to test significance of CARs using:

$$Z = \left(\frac{ACAR_{it}}{s}\right)\sqrt{N} \approx N(0,1) \quad (3)$$

Where, N is number of sample companies. s is standard deviation on event day i.
CARs are mutually uncorrelated and Z-statistics approximately has standard normal distribution for large N.CAR on each event day is assumed to be normal, independent and identically distributed.

The announcement effect is reflected in **Figure 1** which shows that positive effect of announcement is reflected in ACARs by end of t_{+2} day.

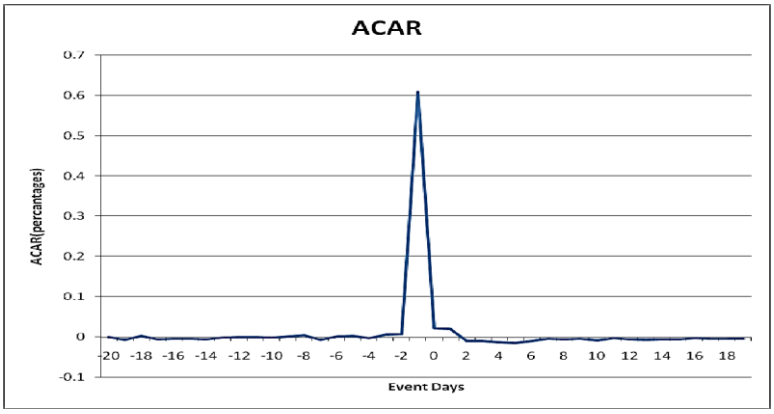

Figure 1: ACARs (announcement day)

Table 1 reports gradual increase in ACARs and presents the cumulative average abnormal returns (CAAR) for each day during the 41-day event window and their corresponding t-statistic values. The results indicate that till day $t_{(-14)}$, CAAR does not illustrate any obvious pattern, but day $t_{(-3)}$ onwards, CAAR starts becoming positive. The CAAR value of day $t_{(-13)}$ starts from 0.60 percent, reaches to a peak of almost 21 percent on day t_1, and settles at 15 percent on day t_{20}. This decline of 5 percent value in CAAR value is due to the fact that AAR values are mostly positive till day t_1 and are, by and large, negative during the post-announcement window.

The assumption that all CARs are identically distributed with equal variance for all may not be true. Some shares may be more volatile than others lowering power of Z- test which gives more importance to CARs with high variance. To come up this disadvantage of Z-test, weighted ACARs can be calculated. The CARs of each company is standardized to get $SCAR_{it}$ as under:

$$SCAR_{it} = \frac{CAR_{it}}{s_i} \quad (4)$$

Where, s_i is standard deviation of CAR for company i over the estimation period (T_1, T_2) used as weight for times series of CARs.
The cross sectional average of SCARs is calculated as under:

$$ASCAR_{it} = \frac{1}{N}\sum_{i=1}^{N} SCAR_{it} = \frac{1}{N}\sum_{i=1}^{N} \frac{CAR_{it}}{s_i} \quad (5)$$

To test significance of ASCARs, Z_S-statistic is calculated which follows a standard normal distribution. It tests the null hypothesis that on an event day ASCAR is equal to zero. The cross-sectional Z_S-values are calculated as under:

$$Z_S = \left(\sum_{i=1}^{N} SCAR_{it}\right) = \frac{1}{\sqrt{N}}\sqrt{N}\,(ASCAR_{it}) \quad (6)$$

Table 1 reports the Z_S-values for the announcementwindow.

Table 1: ACARs and Z-values (announcement day)

Event day	ACAR (%)	Z-values*	Standard deviation (%)	Zs-values*
-20	-0.69%	-0.78	3.59%	-0.78
-19	0.36%	-0.08	5.63%	0.66
-18	-0.49%	-0.61	7.28%	-0.93
-17	-0.39%	-0.77	8.78%	-0.48
-16	-0.32%	-0.76	9.82%	-0.17
-15	-0.47%	-0.92	10.96%	-0.54
-14	-0.10%	-0.51	11.90%	0.89
-13	0.03%	-0.26	12.96%	0.60
-12	0.10%	0.11	14.12%	1.08
-11	-0.11%	0.41	15.12%	0.95
-10	0.16%	0.89	15.89%	1.68
-9	0.51%	1.34	16.97%	1.68
-8	-0.68%	1.15	17.75%	-0.48
-7	0.16%	1.52	18.35%	1.541
-6	0.40%	**2.05**	19.15%	**2.23**
-5	-0.17%	**2.29**	20.18%	1.23
-4	0.65%	**2.77**	21.27%	**2.29**
-3	0.82%	**3.21**	22.30%	**2.20**
-2	0.61	**3.60**	22.79%	**2.05**
-1	2.23%	**4.26**	22.75%	**3.38**
0	2.10%	**4.89**	23.63%	**3.33**
+1	-0.95%	**4.65**	24.59%	-0.59
+2	-0.96%	**4.35**	24.88%	-0.94
+3	-1.17%	**3.82**	25.56%	**-2.17**
+4	-1.37%	**3.43**	25.69%	-1.54
+5	-0.99%	**3.00**	26.10%	**-1.86**
+6	-0.43%	**2.73**	26.78%	-1.12
+7	-0.49%	**2.62**	27.23%	-0.34
+8	-0.40%	**2.54**	27.98%	-0.18
+9	-0.78%	**2.29**	28.81%	-1.12
+10	-0.21%	**2.30**	28.85%	0.28
+11	-0.46%	**2.15**	29.18%	-0.68
+12	-0.66%	**2.07**	29.10%	-0.27
+13	-0.45%	**2.09**	29.31%	0.33
+14	-0.49%	1.91	29.94%	-0.89
+15	-0.20%	1.85	30.25%	-0.21
+16	-0.42%	1.75	30.94%	-0.46
+17	-0.37%	1.76	31.47%	0.18
+18	-0.39%	1.73	31.72%	-0.03
+19	0.34%	1.89	31.88%	1.14
+20	-0.29%	1.88	32.14%	0.10

* Values in bold are significant at 5% level of significance.

Table 1 reports that null hypothesis is rejected and ASCARs with significant Z_S-values at 5% level of significance are present on all days starting from t_{-13} and till t_{+20} day.

4. Conclusion

In theory, if there is leakage of information before the event than ACARs will increase in pre-announcement window and decrease on announcement day. In the analysis it is noted that ACAR values with significant Z-values are observed in the pre-announcement period. It implies that there is gradual leakage of information in period up to announcement day which results in speculative trading in selected shares resulting in price hike before announcement day. Thus it can be inferred that dividend announcement is treated as positive news, since for majority of companies percentage change in share prices is positive and splits seem to have a positive impact on shareholders wealth. Similar findings were reported by Angel (1997).

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Footnotes

1. BSE Sensitive index is a robust representative of Indian stock market and used as proxy for market portfolio because it is value weighted index which uses free float market capital as value weights and appropriate for such type of analysis same is suggested by Womack et al. (1996) and Fama (1998).
2. CMIE is an independent private sector economic research organization. It has built largest database on Indian economy and companies in form of databases and research reports. It is widely used by academics and industries in India.