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Analysis of Market Reaction Around the Bonus Issues in Indian Market

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Abstract
When the companies accumulated huge profits and reserves, and it desires to capitalize these profits the companies will go for issuing bonus shares. The present study is an attempt to study the stock price reaction to bonus share announcements and ex-bonus date of listed Indian companies during the period 2015. Fifty seven companies which have come up with the bonus issue were considered for this study. Event study methodology was adopted in order to understand the volatility of stock returns. The abnormal returns and cumulative abnormal returns was calculated to understand the effect of these events on the share price. It was found that the stock prices do not react to bonus share announcements and ex- bonus dates.
Keywords: Bonus Share, Event Study, Stock Volatility

1. Introduction

Bonus issue is a manner in which firms convert cash reserves into share capital. Shareholders do not have to pay for these shares because the cash which has been converted into share capital already belongs to shareholders. To give bonus shares to investors, a company builds a reserve by retaining a part of its profit over the years (the part that is not paid as dividend). When these free reserves increase, the company transfers a part of the money into the capital account, from which it issues bonus shares. The objectives of issuing bonus shares is to bring the amount of issued and paid up capital in line with the capital employed so as to depict more realistic earning capacity of the company and to bring down the abnormally high rate of dividend on its capital. The firm may also go for bonus issue when the company cannot have sufficient cash balance to declare dividends. The net effect of that will be an increase the number of shares which can get reflected as lower share price.

The relationship between bonus issues and their impact on share prices has been a constant source of discussion among researchers for the past few years. A Bonus issue refers to the issuance of free additional shares to the existing shareholders based upon the number of shares that the shareholders already own. Bonus issue though increase the number of equity shares outstanding but they don't have any effect on shareholders proportional ownership of shares. This is because, if accumulated reserves of a company are distributed through a bonus issue, effectively it is just a transfer of retained earnings into paid up share capital of the company. Thus, relative claim on the assets of a company by the existing shareholders remain the same even though they now hold an increased number of equity shares.

But though the bonus issue dates are well known in advance and as such shouldn't contain any new information, empirical studies on the topic have affirmed a significant market price reaction on the bonus issue announcement. This is against the theoretical prediction that any such significant market price reaction shouldn't be expected. Thus, it is important for the company issuing bonus shares, existing shareholders of the company as well as all the other stakeholders of the company, to know, if the announcement of a bonus issue will impact the share price of a company and if yes, how? This research paper is an attempt to deal with the above problem.

Though a number of studies have documented the evidences on the impact of bonus issue on stock returns in India, the results remain inconclusive. A lot of differences do exist in the results of such studies which had taken place at different time frames. There are mixed results for volatility changes around bonus share announcements made by the firms at different time periods in Indian market. The present study is an attempt to study the very recent market reactions around bonus issue announcements made by the Indian firms during 2015, by studying the volatility of stock prices with event study method.

2. Literature Review

The review of existing literature shows that event announcements bring about changes in stock price volatility. Event announcements are of many types, the most prominent ones being earnings announcements, dividend announcements, listing announcements, bond issue announcements, stock split announcements and bonus share announcements. Many researchers in the past had tried to comprehend the impact of various corporate announcements on the firm valuation and stock market reactions. The findings were mixed in nature and it varied at different time periods across different markets for different events.

To understand the impact of corporate announcements on stock price volatility, various researchers have adopted different approaches. The most prominent methodologies adopted by most of the researchers were event study and econometric tools for time series data analysis. Lee and Chang (2011) used the financial econometric models like asymmetric generalized autoregressive conditional heteroskedasticity (GARCH) model

and the smooth transition auto regression with GARCH model to examine the asymmetric volatility of equity returns in response to monetary policy announcements in the Taiwanese stock market. They acknowledged the presence of asymmetric volatility in their returns series and the leverage effect of stock price changes for most of the equity returns in Taiwan.

Many authors have tried to estimate the volatility of stock returns in Indian market as a result of corporate announcements during the past few years. (Roy and Kamakar, 1995; Marisetty and Alayur, 2002). It was reported that after the announcements regarding the introduction of futures, there is a decline in stock price volatility (Thenmozhi, 2002) and time varying volatility (Thenmozhi and Thomas, 2004). With regard to the rights issue, volatility has been examined around the rights issue announcement (Masulis, 1983; Dierkens, 1991; Kothare, 1997; Marsden, 2000; and Tan et al., 2002), using variance of daily stock returns.

Mishra (2005) conducted a research to examine the stock price reaction to the information content of bonus issues with a view of examining the Indian stock market is semi strong efficient or not. The period of the study is June 1998 to August 2004. Sample of 46 bonus issues were used to study the announcement effect by using the event study methodology. Event window was taken from +20 to -20, with 0 being the date of announcement of the issue. It was found that on an average, the stock starts showing positive abnormal returns nine to eight days before the announcement date which might be due to leakage of information. In general, the behaviour of AAR's and CAAR's was found to be in accordance with the expectation, thereby lending support that the Indian Stock Market was semi strong efficient.

Gunasekara conducted a research to investigate share price reaction to bonus issue announcements in Sri Lankan Stock market for the period of 1993 to 2004 (including both years). Study sample consisted of 76 bonus announcement issues, which represented 28 listed companies that belong to 11 business sectors in Sri Lankan Stock market. For deeper understanding the effect of bonus announcements, the study sample was further divided into two sub-groups which represented entire study sample. One study sample consisted of bonus announcement issues having large bonus ratio (bonus ratio was greater than or equal to 50%) and other sample consisted of bonus announcements issues having small bonus ratio (bonus ratio was lower than 50%). An Event Study was conducted to determine Average Abnormal Return (AAR) on event date (bonus announcement date) and around the event date at portfolio level (during the investigating window of -60 to +60 days). AAR was estimated using Abnormal Return (AR) data of each individual stock. The results showed that, there was positive AAR on event date for both large size bonus announcement issues as well as small size bonus announcement issues. Overall there were positive market reactions from investors to both sizes of bonus announcements. However, Investor's responses towards large size of bonus announcements were more positive than that of small size of bonus announcements. In addition, results of this research also implied that Sri Lankan stock market does not exhibit semi-strong form of market efficiency.

Gupta (2006) investigated the stock market reaction associated with earnings announcements in Indian market, and verified whether these announcements possessed any informational value. Fifty companies, comprising the CNX Nifty Index, which made earnings announcements in March 2004, were selected for the purpose of the study. An event study was conducted for these companies. The sample was divided into two sub-samples of `good' and `bad' news announcements respectively. In the case of full sample, the study found an insignificant Average Abnormal Return (AAR) on the announcement day. In contrast, the AARs for `good' news sub-sample was greater than zero on the announcement day. There was also a clear run-up in prices before the announcement of earnings. The AAR was less than zero on the announcement day in the case of sub-sample of `bad' news. It was observed that the price reaction in the case of `bad' news was much larger than in the case of `good' news. The results for the sub-sample indicate that the market reacts sharply to a decline in earnings on the announcement day. Thus, the results of the study indicate that earnings announcements contain important information which causes stock prices to change.

Malhotra, Thenmozhi and Kumar (2007) conducted a study on stock market reaction and liquidity changes around bonus issue announcement. This study examined share price reaction to the announcement of bonus issue for a sample of Indian companies. Event study methodology was used for the purpose of studying the bonus issue announcement reaction. Bonus issue announcement yielded negative abnormal returns around the announcement date. There was a negative reaction after the bonus issue announcement conveying that the market under reacts after the announcement. It was also observed that there was no information leakage prior to the announcement. Reduction in the liquidity ratio after the announcement was found but it was insignificant. All the three liquidity measures seemed to be inconsistent with the enhanced trading liquidity expectation. Further it was being evidenced that the size of the firm issuing bonus shares did not affect the abnormal returns of the company. The study supported signaling hypothesis and cash substitution hypothesis.

Dhar and Chhaochharia (2008) examined the effects of stock splits and bonus issues for the Indian stock market. The abnormal returns were calculated using the Capital Asset Pricing Model and then t-tests were conducted to test the significance. Consistent with the findings of the previous studies, the two events were associated with significantly positive announcement effect. For bonus issues, the abnormal returns were about

1.8% and for stock splits, it was about 0.8%. On a whole, the paper found evidence of semi-strong form efficiency in the Indian stock market.

In a study conducted in Colombo Stock Exchange (Ramesh and Nimalathasan, 2011) it was found that 43% of Abnormal Returns (ARs) were positively and 57% of ARs were negatively on the event day "0"(announcement day). Bharat and Shankar (2012) conducted a study to test the informational efficiency of the Indian Stock Market in the semi strong form of efficient market hypothesis with respect to the information content of the event bonus issue announced by companies listed in BSE 500 during the study period. The AARs and CAARs were analyzed to ascertain whether an opportunity was available to make abnormal returns during the price adjustment period. The study revealed that investors were unable to earn abnormal returns in the sample companies.

3. Research Methodology

The objective of this study is to understand the impact of bonus share announcement on stock return. Fifty seven companies which declared bonus shares during the year 2015 were selected for the study. The following hypothesis were framed for the study

H_{01}: There is no significant difference between the abnormal returns earned before and after the bonus date announcements in the market.

H_{02}: There is no significant difference between the abnormal returns earned before and after the ex-bonus date in the market.

Event Study methodology was adopted for the study. The research design adopted for this research work investigates whether there are abnormal returns around the bonus announcement date and ex-bonus date. The effects exist only if abnormal returns are significant. Event window is the period in which an event occurs; during this period the security prices of the relevant firms are examined. The event window has been chosen as -20, through 0 to +20 for each event. Here, 0 depicts the event date, -20 is the 20 day time period prior to event date, and +20 is the 20 day time period after the event date. An estimation window is the period used for estimating the expected returns. Typically, the estimation window is chosen prior to the event window. The expected returns (also called normal returns) are calculated using a time period other than the event window. The standard and generally accepted period is 120 days before the commencement of event window. The estimation window used for the study is from day -129 to day -9 before the first event. Thus comprising 120 days before the announcement of AGM date. So, here we assume that the normal returns of the company is same the average returns during this period.

With the help of these concepts, for the testing of hypothesis, following variables have to be calculated. These values are then tested for finding out whether the hypotheses we have set are statistically significant or not. A precision of up to 3 decimals has been use for the calculation, so as to get accurate values.

1. Daily returns
2. Normal returns
3. Abnormal returns (AR)
4. Cumulative Abnormal Returns (CAR)
5. Average Abnormal Returns (AAR)
6. Mean Cumulative Abnormal Returns

3.1 Daily Returns

'Daily returns' is the returns a stock yields on a particular day when compared with the previous day. It is calculated in percentage rather than absolute values. It is simply calculated by the formula:

$R_i = [(P_1-p_0)/p_0] *100$

Where,

R_i = Return on security i.

P_1 = Current day's closing price of security.

p_0 = Previous day's closing price of security.

3.2 Normal Returns

'Normal returns' is the expected return, a stock yields on a normal day. Since we are taking this value as the average returns an investor would expect from his investment on a particular share, it is also otherwise known as the 'Expected returns'. It is calculated by finding the average of daily returns from -120th day to – 9th prior to the announcement of first event. i.e., the AGM announcement date.

$NR_i = \sum_{t=-141}^{-21} R_t$

Where,

NR_i = Normal Return for the security i

R_t = Return for the day t.

P_1 = Current day's closing price of security.
p_0 = Previous day's closing price of security.

3.3 Abnormal Returns (AR)

'Abnormal returns' is the return a stock yields over the expected or normal returns on a particular day. It is the difference of Daily returns and Normal Returns. It is calculated by the formula:

$AR_{it} = R_{it} - NR_i$

Where,

AR_{it} = Abnormal Return on security i for the day t.
R_{it} = Return on security i for the day t.
NR_i = Normal Return for the security i.

3.4 Cumulative Abnormal Returns (CAR)

'Cumulative Abnormal returns' is the sum of all abnormal returns of all stocks on a particular day. It is calculated by using the formula:

$CAR_t = \sum AR_t$

Where,

CAR_t = Cumulative abnormal Return for the day t.
AR_t = Abnormal Return for the day t

3.5 Average Abnormal Returns (AAR)

'Average Abnormal returns' is the average of cumulative abnormal returns of all stocks on a particular day. It is calculated by dividing cumulative abnormal return with the sample size, using the formula:

$AAR_t = CAR_t / N$

Where,

AAR_t = Average Abnormal Return for the day t.
CAR_t = Cumulative Abnormal Return for the day t.
N= Number of companies in the sample.

3.6 Mean Cumulative Abnormal Returns

'Mean Cumulative Abnormal returns' is the mean value of cumulative abnormal returns of all stocks for a particular period. It is calculated by using the formula:

Mean CAR = CAR/T

Where,

CAR = Cumulative abnormal Return for period
T = Number of days in the period
Paired sample - T test has been used for testing statistical significance of hypotheses.

4. Analysis

The analysis of the study is divided into: a) Statistical analysis of Average Abnormal Returns (AAR) for different events b) Analysis of Cumulative Average Returns (CAR) for different events.

4.1 Statistical analysis of Average Abnormal Returns (AAR) for different events common to all companies.

The analysis of average abnormal returns of sample companies during Pre and Post Bonus Share Announcement are illustrated Table 1. In particular, it contains the mean abnormal return for each single day around the bonus share announcement date and the corresponding t-statistic.

The sample companies enjoyed positive abnormal returns on 16 days in the entire event window. The highest average abnormal returns of 5.508% on the fifth day of event date, i.e., the fifth day of bonus share announcement date. On the bonus share announcement date, companies enjoyed a positive abnormal return of 2.630 %. The paired sample t value is 0.720, which means that the relation of these returns to the event is not statistically significant.

Thus, the ***Null Hypothesis, H_{01}***: There is no significant difference between the abnormal returns earned before and after the bonus share date announcements in the market, is accepted.

4.2 Statistical Analysis of Average Abnormal Returns (AAR) of Ex-Bonus Date of all Companies

The analysis of average abnormal returns of sample companies during Pre and Post ex- bonus date are illustrated Table 2. In particular, it contains the mean abnormal return for each single day around the ex-bonus date and the corresponding t-statistic.

The sample companies enjoyed the highest average abnormal returns of 99.610% on the day of event

date, i.e., the day of ex-bonus date. But, since the paired sample t value is 0.109, the relation of these returns to the event is not statistically significant.

Thus, the ***Null Hypothesis, H_{02}***: There is no significant difference between the abnormal returns earned before and after the ex-bonus date in the market, is accepted.

4.3 Analysis of Cumulative Average Returns (CAR) For Different Events

The theory developed by Fama, Fisher, Jensen and Roll to study the semi-strong market efficiency, suggests that if markets are efficient, then Mean Cumulative Abnormal returns should be close to zero. In the analysis(depicted in Table 3), Mean Cumulative Abnormal Returns showed a trend of moving near to 0, when the event window was widened, which means that stock market is efficient over that time.

5. Findings and Conclusion

The analysis of average abnormal returns of sample companies during Pre and Post Bonus Share Announcement window revealed that companies taken as sample enjoyed the highest average abnormal returns of 5.508 % on the fifth day of event date, i.e., the fifth day of bonus share announcement date. But this was not statistically significant. On the analysis of average abnormal returns of sample companies during Ex-Bonus Date Announcement window, it was found that the sample companies enjoyed positive abnormal returns on 9 days in the entire event window. The highest average abnormal returns were seen on the day of bonus share announcement. But this was also not statistically significant. When the mean cumulative abnormal returns were analysed, it is found that Indian market is efficient.

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Table 1. Statistical Analysis of Average Abnormal Returns (AAR) of bonus share announcement date of all companies

DAY	CAR	AAR	CAAR	T VALUE	PAIRED SAMPLE T VALUE	TABLE VALUE @ 95%
-20	21.720%	0.381%	0.381%			
-19	-21.804%	-0.383%	-0.001%			
-18	-30.170%	-0.529%	-0.531%			
-17	-25.160%	-0.441%	-0.972%			
-16	26.519%	0.465%	-0.507%			
-15	-1.939%	-0.034%	-0.541%			
-14	-35.070%	-0.615%	-1.156%			
-13	11.095%	0.195%	-0.962%			
-12	-0.230%	-0.004%	-0.966%			
-11	-31.799%	-0.558%	-1.523%			
-10	-34.063%	-0.598%	-2.121%			
-9	25.193%	0.442%	-1.679%			
-8	6.472%	0.114%	-1.566%			
-7	-4.841%	-0.085%	-1.650%			
-6	-4.401%	-0.077%	-1.728%			
-5	29.846%	0.524%	-1.204%			
-4	37.605%	0.660%	-0.544%			
-3	68.904%	1.209%	0.664%			
-2	43.179%	0.758%	1.422%			
-1	-84.510%	-1.483%	-0.061%	-0.364	0.720	0.05
0	149.909%	2.630%	2.569%			
1	25.381%	0.445%	3.015%			
2	-45.810%	-0.804%	2.211%			
3	-8.699%	-0.153%	2.058%			
4	16.935%	0.297%	2.355%			
5	313.937%	5.508%	7.863%			
6	-38.274%	-0.671%	7.192%			
7	-37.069%	-0.650%	6.541%			
8	-52.906%	-0.928%	5.613%			
9	-2.245%	-0.039%	5.574%			
10	40.723%	0.714%	6.288%			
11	-19.551%	-0.343%	5.945%			
12	61.572%	1.080%	7.025%			
13	-2.021%	-0.035%	6.990%			
14	-20.238%	-0.355%	6.635%			
15	-3.294%	-0.058%	6.577%			
16	-28.781%	-0.505%	6.072%			
17	-18.692%	-0.328%	5.744%			
18	-30.779%	-0.540%	5.204%			
19	-28.002%	-0.491%	4.713%			
20	7.669%	0.135	4.848%			

Table 2. Statistical Analysis of Average Abnormal Returns (AAR) of Ex-Bonus Date of all Companies

DAY	CAR	AAR	CAAR	T VALUE	PAIRED SAMPLE T VALUE	TABLE VALUE @95%
-20	-10.785%	-0.189%	-0.189%			
-19	20.605%	0.361%	0.172%			
-18	-61.847%	-1.085%	-0.913%			
-17	-6.712%	0.118%	-1.031%			
-16	-17.208%	-0.302%	-1.332%			
-15	-66.403%	-1.165%	-2.497%			
-14	-4.118%	-0.072%	-2.570%			
-13	7.961%	0.140%	-2.430%			
-12	-24.325%	-0.427%	-2.857%			
-11	-25.670%	-0.450%	-3.307%			
-10	26.792%	0.470%	-2.837%			
-9	-95.669%	-1.678%	-4.515%			
-8	36.221%	0.635%	-3.880%			
-7	15.960%	0.280%	-3.600%			
-6	-178.864%	-3.138%	-6.738%			
-5	-374.336%	-6.567%	-13.305%			
-4	-750.412%	-13.165%	-26.470%			
-3	-201.213%	-3.530%	-30.000%			
-2	-177.109%	-3.107%	-33.108%			
-1	-26.129%	-0.458%	-33.566%			
0	5677.762%	99.610%	66.044%	-1.681	.109	0.05
1	65.158	1.143%	67.187%			
2	-108.878%	-1.910%	65.277%			
3	-31.127%	-0.546%	64.731%			
4	-3.708%	-0.065%	64.666%			
5	-5.545%	-0.097%	64.568%			
6	-55.911%	-0.981%	63.588%			
7	-62.204%	-1.091%	62.496%			
8	-51.947%	-0.911%	61.585%			
9	-50.210%	-0.881%	60.704%			
10	-82.223%	-1.443%	59.262%			
11	-50.760%	-0.891%	58.371%			
12	-11.604%	-0.204%	58.167%			
13	-41.445%	-0.727%	57.440%			
14	-30.413%	-0.534%	56.907%			
15	-26.185%	-0.459%	56.447%			
16	-32.713%	-0.574%	55.873%			
17	-62.455%	-1.096%	54.778%			
18	9.414%	0.165%	54.943%			
19	-53.551%	-0.939%	54.003%			
20	-5.691%	-0.100%	53.904%			

Table 3. Analysis of Cumulative Average Returns (CAR) For Different Events

PERIOD	DAYS	MEAN CAR
1	-1 TO 1	967.93%
2	-2 TO 2	551.90%
3	-3 TO 3	381.92%
4	-4 TO 4	258.18%
5	-5 TO 5	209.60%
6	-6 TO 6	166.68%
7	-7 TO 7	141.52%
8	-8 TO 8	123.04%
9	-9 TO 9	106.85%
10	-10 TO 10	95.52%
11	-11 TO 11	84.43%
12	-12 TO 12	78.19%
13	-13 TO 13	71.94%
14	-14 TO 14	65.43%
15	-15 TO 15	59.63%
16	-16 TO 16	55.23%
17	-17 TO 17	50.46%
18	-18 TO 18	46.20%
19	-19 TO 19	42.77%
20	-20 TO 20	40.84%