Market Reaction to Bonus Issue in India: An Empirical Study

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Abstract: This study belongs to event study methodology. The focus was on what happened to the stock price prior and after the bonus issue announcements. For analyzing the reaction during bonus issue announcement 34 companies from 11 sectors have been considered in the sample period from 2006 to 2012. The present study test the semi strong form of market efficiency by investigating the reaction of stock prices to bonus issue announcements of stocks related to NSE 100. The results indicate that there are significant positive abnormal returns for a eight-day period prior to bonus issue announcement in line with evidence from developed stock market. On the announcement day there is negative AAR of -0.01% which is very low and significant at 1% level (z value = 3.84). The results provide stronger evidence of semi-strong efficiency of the Indian stock market.

Key words: AAR, CAAR, Bonus Issue, Semi-strong Form

I. INTRODUCTION

Bonus issues are simply distribution of additional stocks made to existing share holders in proportion to their current investments. A company can distribute bonus stocks out of retained earnings or accumulated capital reserves. In both the cases the company doesn't receive any cash. A bonus issue can be seen as an alternative to dividends. Unlike a right issue, a bonus issue does not risk diluting your investments. Modigliani and Miller (1961) demonstrated theoretically that bonus issue along with other types of dividends doesn't alter shareholders wealth. Bonus issue increases the number of equity stocks outstanding but has no effect on stockholder's proportional ownership of stocks. There is no effect on stockholder's proportional ownership of stocks, capital structure and financial position of company. Since bonus issues don't enhance earning power, change the firms' capital structure, or result in expense reductions, the total market value of the firm in absence of information asymmetries should remain the same. Only modification triggered by the bonus issue is that the number of outstanding stocks is adjusted by the bonus issue ratio, therefore, the price of the stocks declines according to the same bonus issue ratio. The bonus issue date is known well in advance and therefore should contain no new information. As such, one wouldn't expect any significant price reaction on bonus issue announcements. Contrary to this theoretical prediction, however empirical studies of bonus issue and stock dividends have documented a statistically significant market price reaction. It is therefore a matter of concern that firms announcing bonus issue experience rise in their stock prices on an average supporting semi-strong form Efficient Market Hypothesis (EMH).

The aim of this paper is to examine the stock price reaction to bonus issue announcement with a view of examining whether the Indian stock market is semi-strong efficient or not. The Event Study Methodology (Dolley 1933; Fama et al. 1969; and Brown and Warner 1980, 1985) has been used to contribute further evidence on the efficiency characteristics of the Indian stock market.

1.1 SEBI Guidelines

Issuing bonus shares should ensure that the issue is in conformity with the guidelines for bonus issue laid down by SEBI guidelines, 2000:

The bonus issue that has to be made out free reserves; the reserves by revaluation should not be capitalized. Bonus issue shouldn't be made in lieu of dividend. These should be no default in respect to fixed deposits. Bonus issue should be made within 6 months from the date of approval etc.

II. LITERATURE REVIEW

However, empirical researches have shown that the market generally reacts positively to the announcement of a bonus issue/stock dividend. (see for example, Fama, Jensen, and Roll (1969); Peterson (1971); foster and vickrey

(1978); Woolridge (1983); eades, Hess and Kim (1984); Grinblatt, masulis and titman (1984); Asquith, healy and Palepu (1988); Ball, Brown and Finn (1977); McNichlos & Dravid (1990); Masse et al. (1997); Anderson et al. (2001); Lijleblom (1989); Ramachandran J. (1985); Obaidullah (1992) and Rao (1994). These findings raise the question that what causes the market to react positively to bonus issue announcements. Several hypotheses have been advanced to answer this question. The hypotheses that has received strongest support in explaining the positive market reaction to bonus issue announcements is the 'signaling hypotheses' (Foster and vickrey (1978); Grinblatt, Masulis and Titman (1984); Woolridge (1983); Lijleblom (1989); McNichlos & Dravid (1990); Masse et al. (1997)) which suggests that ' the announcement of a bonus issue conveys new information to the market in instances where managers have asymmetric information'. This hypotheses has received almost unequivocal support with few exceptions (Papaioannou, Travlos and Tsangarakis (2000[1])).

Foster and Vickrey(1978) were among the earliest to examine the signaling hypotheses using daily return data and in their examination of the information content of 82 stock dividend announcements, they found significant positive abnormal returns around announcement dates. According to the market efficiency hypotheses, any market values effect caused by stock dividend must be fully discounted by the ex-dividend day. Hence, the stock price should adjust on the ex-dividend day only to the level justified by the stock dividend percentage. Woolridge (1983) tests this theoretical prediction and finds that the price adjustment is less than what is consistent with the stock dividend percentage.

A few studies have been carried out in recent years to test the semi-strong efficiency of the Indian stock market. Ramachandran (1985) examined the impact of announcement of bonus issues on equity stock prices and found mixed evidence for semi strong form efficiency of Indian stock market. Obaidullah (1992) docuoments positive stock market reaction to equity bonus announcement. He found evidence to support the semi-strong form EMH. Rao (1994) estimated cumulative abnormal return of 6.31% around the three days of bonus announcement. He reported the Indian stock market responds in an expected direction to corporate announcements and it supported the semi-strong form of EMH. Rao and Geetha (1996) analyzed bonus announcements and concluded that one could not make excess money in the stock market by studying that patterns of abnormal returns of announcements made earlier. Srinivasan (2002) found extremely large positive abnormal returns on ex-bonus and ex-rights dates for equity stocks. Similar study by Budhraja I., Prekh P. and Singh T. (2004) on BSE suggests that abnormal returns in stock prices around the bonus announcements date over a three day trading period starting one day before the announcement date is significant at 95% confidence limit.

III. DATA AND METHODOLOGY

3.1 Data and Sample
The sample consisted of 34 companies of bonus issue announcements (from 11 sectors) listed on the NSE 100 during the period from 2006 to 2012. The information regarding bonus issue i.e. announcement dates, daily price of companies as well as of NSE 100 are obtained from CMIE Prowess Database and from NSE websites. First media announcements date is defined as the event date. This approach was taken on the assumption that the information was first known to the market on the event date only (by ignoring the chances of insider trading).

3.2 Announcement Effects of Bonus Issue
The study used the event study methodology to examine the market reaction to bonus issue on stock prices by using daily adjusted prices for sample stocks for 115 days prior and 15 days after the event date. The respective media announcement dates of bonus issue are obtained from CMIE Prowess Database, along with the necessary share price data and the value of the NSE 100. The procedure adopted in using the Event Study Methodology[2] is also discussed.

3.3 Estimation procedure
The purpose of our study is to determine whether there is any abnormal return around the event window and how fast the information is absorbed in the security prices. For the purpose of the study, we constructed null hypotheses (H_0) as follows:

(H_0) There are no significant average abnormal returns (AAR) around the dividend announcements date i.e. $1/n \sum AR = 0$ Where n is the number of sample companies.

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[2] For details, see Elton and Gruber, (1996); Ball and Brown, (1968).

NSE 100 index is used as a proxy for the market portfolio. In order to carry out an event study, we determine the event window as t = -15 to t = +15 relative to the event day t = 0 (date of dividend announcement). An estimation period of -115 to -16 days is used for computing expected returns using market model given in equation 3.
The daily returns for each sample company have been computed for the estimation window period and also for the event window period as:

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1} \qquad \qquad \text{...(1)}$$

Where, P_{it} and P_{it-1} are respective daily prices for company i at time t and t-1 . Analogously, the actual returns for the market are also computed as:

$$R_{mt} = (I_t - I_{t-1}) / I_{t-1} \qquad \qquad \text{...(2)}$$

Where, I_t and I_{t-1} are daily index values at time t and t-1 respectively.

The expected returns on a stock have been estimated using the market model given in the following equation:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad \qquad \text{...(3)}$$

Where R_{it} is the observed daily return for the share of a company i at time t, R_{mt} is the observed daily return for the market index at time t,

α_i is the estimate of the intercept for share of company i,

β_i is the estimate for beta of share of company i, and

ε_{it} is the independently and identically distributed residual error term.

In the next step we compute the "abnormal" returns for each of the sample company for the window period. Abnormal return is defined as the actual return minus the expected return. The abnormal return for company i on day t calculated as:

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt} \qquad \qquad \text{...(4)}$$

In order to eliminate the effect of any one or group of securities on the abnormal returns, the ARs are averaged over the number of companies. The ARs of individual companies are averaged for each day surrounding the event-day (i.e., -15 to +15 days) using the following model:

$$(AAR_t) = \sum_{i=1}^{N} AR_{it} / N \qquad \qquad \text{... (5)}$$

With a view to know the cumulative effect of AARs on days surrounding the event the Cumulative Average Abnormal Return (CAAR) are calculated for event days t_1 through t_2 by summing the average abnormal returns for these days, that is:

$$(CAAR_d) = \sum_{t=t_1}^{t_2} AAR_t \qquad \qquad \text{... (6)}$$

3.5 Significant Test

Standard deviation of abnormal returns for the estimation period -115 days to -16 days is computed first. Then the Standardized Abnormal Returns (SAR) for each company is obtained, by dividing abnormal returns of the event period (i.e., -15 to +15) by the standard deviation obtained. For event day t, the z-statistics for the Average Abnormal Returns (AARs) on N securities will be calculated as:

$$Z_t = \sum_{i=1}^{N} SAR_{it} / \sqrt{N}$$

For testing cumulative excess returns for N securities over T days (event days t_1 through t_2) the Z-statistic is:

$$Z_T = \sum_{i=t_{1i}}^{t_{2i}} SAR_{it} / \sqrt{T * N}$$

Table 1: Sample Descriptive Characteristics			
Sr. No.	Industry Classification	No. of Sample Companies	% of Co.s
1	IT	4	11.765
2	INDUSTRY	6	17.647
3	AUTO	2	5.8824
4	BANKING	2	5.8824
5	CEMENT	1	2.9412
6	FMCG	3	8.8235
7	OIL & GAS	4	11.765
8	PHARMA	6	17.647
9	FIN SERVICES	3	8.8235
10	MEDIA & ELECTRONICS	3	8.8235
Total	10	34	100
Source: Information extracted from CMIE Prowess Database			

IV. RESULTS

In an efficient market, if there is some information content associated with bonus issue, then the same should be incorporated in the stock price on the announcement day. The result of the event study concerning the announcement dates of bonus issue are presented in Annexure 2. On the announcement day there is negative AAR of -0.01% which is very low and significant at 1% level (z value = 3.84). On the days $t_{+1}, t_{+5}, t_{+8}, t_{+10}$ market earn a significant negative AAR as observed z values have exceeded the critical value whereas on the day t_{+6}, t_{+9}, t_{+11} the market earn a significant positive AAR. Surprisingly there are significant positive excess returns before run up to the bonus issue announcement date on the day $t_{-12}, t_{-9}, t_{-8}, t_{-7}, t_{-6}, t_{-5}, t_{-4}, t_{-3}$ whereas, on the day $t_{-1}, t_0, t_{+1}, t_{+2}$ AAR are insignificant negative returns can be observed, which depicts that there was substantial leakage of information before the event.

Graph 1: % AARs of Sample Events

Graph 2: % CAARs of Sample Events
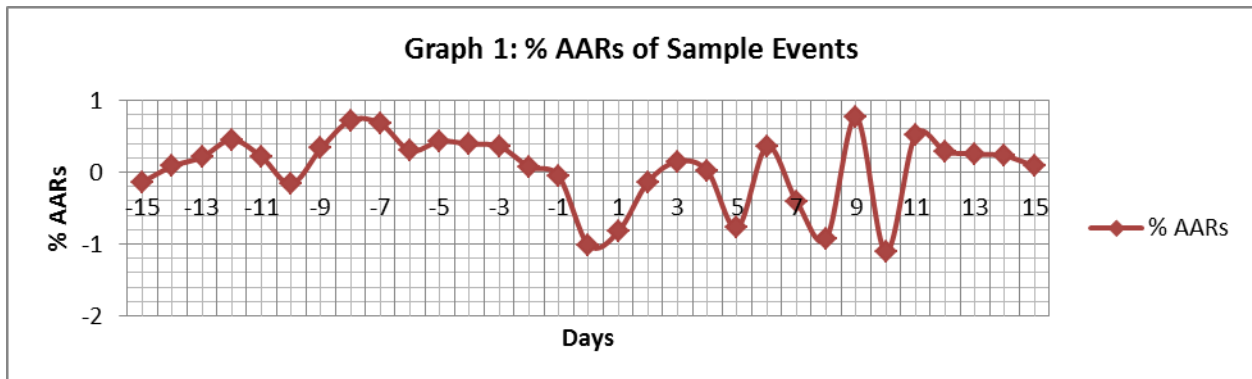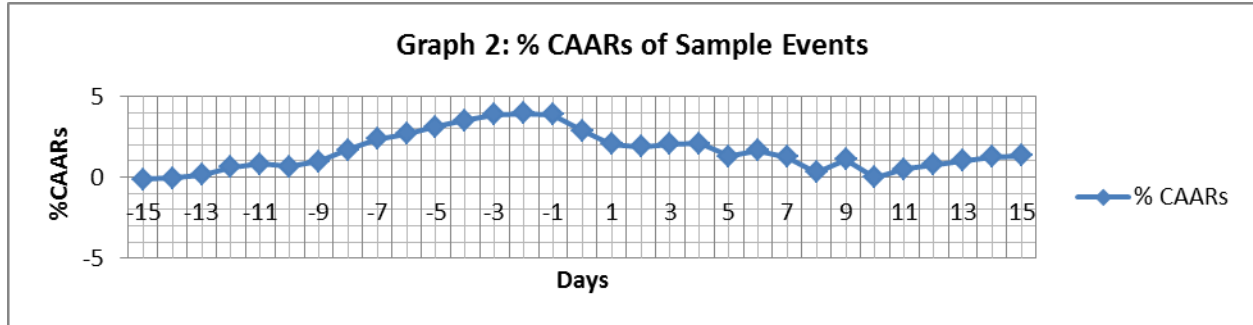
The CAAR figure shows that to some extent the market gradually learns about the forthcoming announcement. The mean CAAR of the sample firms' gradually drift up in between t_{-15} to t_{-1} days. The buildup of abnormal returns prior to announcement is consistent with the semi strong form of Efficient Market Hypotheses i.e. if the information related to the event leaks at prior to the announcement the CAAR will gradually increase in the days prior to announcement and then decreases on the day of the announcement reflecting the response of those stocks for which information didn't leak out. The CAAR starts picking up in the day t_{-9}. During the period covering t_{-9} to t_{-2} CAAR increases from 0.98% to 3.94%. However, during the period under consideration investors initially appear to respond positively to announcement of bonus offerings, but the CAAR shows a declining trend shortly thereafter. After announcement slight decline to 2.87% can be observed on the day t_0. The CAAR of 2.04% on the day t_{+3} declines to 0.31 and % by t_{+8} indicating that the market actually corrects the prices downward after an initial period of trading around the event days (between t_{+1} and t_{+15} negative CAAR of -1.79% is observed) Similar to Liu, Smith and Syed (1990), beneish (1991), Kiymaz (1999) and Mishra A.K. (2005) one cannot exclude the possibility of the insider trading during the short time period between the period prior and after the bonus issue announcement. However this paper is not in a position to make such a claim either.

Table 2: Average Abnormal Returns (AARs) and Cumulative Average Abnormal (CAARs) Returns Around Dividend Announcement Dates				
Pre-Announcement Period	%AAR	Z value	%CAAR	Z value
-15	-0.136857201	-1.161144568	-0.136857201	-1.161144568
-14	0.082411149	0.466446661	-0.054446052	-0.491225601
-13	0.209019943	1.687497243	0.154573891	0.573192964
-12	0.45074468	2.8498083**	0.605318571	1.921303819
-11	0.213079467	1.170280232	0.818398038	2.24183160*
-10	-0.165608074	-1.372094787	0.652789963	1.486347552
-9	0.328684099	2.21826488*	0.981474062	2.21451575*
-8	0.719572063	3.7166221**	1.701046125	3.3855141**
-7	0.675750062	2.46476891*	2.376796187	4.0134830**
-6	0.300118908	2.53555120*	2.676915095	4.6093359**
-5	0.431273672	2.12317383*	3.108188767	5.0349904**
-4	0.390392536	2.08626541*	3.498581303	5.4228892**
-3	0.36089905	3.0521698**	3.859480354	6.0566630**
-2	0.077060253	0.5077358**	3.936540606	5.9720446**
-1	-0.056175888	-0.43246935	3.880364718	5.6578801**
Announcement day	%AAR	Z value	%CAAR	Z value
0	-1.01420156	-3.8414561**	2.866163158	4.5178548**
Post-Announcement	%AAR	Z value	%CAAR	Z value

Period				
1	-0.830356288	-4.0680191**	2.03580687	3.3963234**
2	-0.137294592	-0.80635167	1.898512278	3.1105742**
3	0.149290514	1.265136596	2.047802792	3.3178528**
4	0.014018655	0.08849881	2.061821447	3.2536318**
5	-0.776815372	-4.7852162**	1.285006075	2.13099982*
6	0.355758072	2.34107612*	1.640764147	2.5811238*
7	-0.40481303	-1.921430819	1.235951117	2.12374293*
8	-0.922946874	-4.8882184**	0.313004243	1.081224125
9	0.764412238	6.3510468**	1.077416481	2.32958832*
10	-1.112522964	-9.2336167**	-0.035106483	0.473488063
11	0.518488422	3.4850263**	0.483381939	1.135330667
12	0.289363972	1.740490598	0.772745911	1.443794389
13	0.253612092	1.547651925	1.026358003	1.706074753
14	0.227377249	1.827962054	1.253735251	2.01113786*
15	0.08423443	0.624561821	1.337969681	2.09060887*

Note: *Significant at 5% level , **Significant at 1% level of significance

Based on these finding the null hypotheses of zero abnormal return cannot be accepted. Thus, it can be concluded that the event bonus issue has a positive and significant effect on returns around the announcement date. The study finds that there is a gradual leakage in information in the periods up to the public announcement date, with slow increase in CAR. It could then be said that gradual leakage in information in the market resulted in speculative trading in selected scripts leading to their hike up in prices before the official announcement date. The gain in the script prices at the announcement dates was thus lower. One major result is that the post event (t_{+2} to t_{+15}) drift of Mean CAAR 0.0005 is not statistically significant a result in conformity to efficient market condition.

Table 3: CAAR across the event window		
Column1	Column2	Column3
Days	Mean CAAR	Variance
t-15 to t-2	0.00281181	6.81111E-06
t-1 to t0	-0.0053519	4.58907E-05
t0 to t+1	-0.0092228	1.68995E-06
t+2 to t+15	-0.0004985	3.11536E-05

Source: Information extracted from CMIE Prowess Database

V. CONCLUSIONS

This study documents the market behavior around the bonus announcement date for 34 stocks listed on the NSE 100 over the period 2006 to 2012. An event study was conducted using a 30 days event window. It was found that on an average the stocks start showing positive abnormal returns from the day t_{-9th} day. On the announcement day there is negative AAR of -0.01% which is very low and significant at 1% level (z value = 3.84). The AAR for the day t_{-1}, t_0, t_{+1}, t_{+2} shows insignificant negative returns. In general the behavior of AARs and CAARs is found to in accordance with expectation, thereby lending support to the hypotheses that the Indian Stock market is Semi Strong Efficient.

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