BUYBACK ANNOUNCEMENTS AND UNDERVALUATION SIGNALLING IN INDIAN STOCK MARKET: A STUDY OF S&P CNX 500 INDEX COMPANIES

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ABSTRACT

Buyback of equity shares is normally recommended when a firm's financial structure is overcapitalised and it is a widely accepted practice in the United States and United Kingdom. In the Indian context, the companies are allowed to make buybacks only from 1999. The main aim of this paper is to study the stock returns around buyback announcement made during a 10 years period between 2000-01 and 2009-10 by taking the S&P CNX 500 index companies through the standard event study methodology to analyse the buyback information impact on stock returns and to comment on market efficiency in assimilating the information quickly. By having observed average abnormal return (AAR) of 1.32% on the announcement day and cumulative average abnormal return (CAAR) of 4.34% in the -10 to +10 event frame for the 43 companies considered, this study documented support for the undervaluation signalling in the Indian stock market. Having recorded positive average abnormal returns only in two days in the -10 to -1 frame, the post event abnormal returns get turned into negative for two days in +1 to +10 frame, thereby evidencing mixing nature of abnormal return booking. In spite of experiencing an early response to the announcement of buybacks by way of increased returns, the market had not given any scope for earning abnormal returns on a sustained basis by getting the information adjusted into prices, to favour the semi-strong form efficiency in the Indian stock market.

Key Words*: Buy back, Event study, Average Abnormal Return (AAR), Cumulative Average Abnormal Return (CAAR), Undervaluation signalling and Market efficiency.*

INTRODUCTION

Equity share capital – an important source of finance, which has been providing considerable scope for upward adjustment in the form of increase in authorized capital and capitalization of profits (bonus issues) in India, but provided no flexibility up to 1999, for the downward adjustment except the capital reduction scheme. Earlier section 100 of the companies Act covered the reduction of issued share capital which had been eroded as a result of poor financial performance of companies and resulted in reduction of their net worth. But on account of the adjustment required downwards in the issued capital even in case of companies with good and consistent financial performance, buyback of shares is allowed to have the balance in capital structure in case of over capitalization of companies. By introducing the buyback provisions in the Companies Act, a landmark legislative adjustment has been made to infuse flexibility in capital structure of companies in India.

Referred to as share re-purchase programmes in western literature, buy back of shares, an exercise through which companies getting back their shares which had already been issued to the public and traded in exchanges was allowed in India only on the promulgation of the Companies (Amendment) Ordinance, 1998, and which came into effect from the year 1999-2000. As a result, companies in India are allowed to buy back its own shares up to twenty five per cent of their net worth out of the free reserves or securities premium account or proceeds of an earlier issue other than a fresh issue made specifically for buy back purposes. The companies going for buyback may have their own reason(s). But the interesting factor to look at is how the stock market reacts to such share repurchase programmes in incorporating the information into prices.

Fama (1970) in his classical testimony of stock market efficiency categorized three forms of efficiency - Weak, Semi-strong and Strong. Weak form of efficiency represents a situation wherein all historical information is being taken care of by the market and the price of a given security is the fair representation of it's value considering all available information. When any new information is made known to the public, the arrival of which is always random, the impact of such information is expected to be incorporated into the prices as quickly as it can. This means there is no profitable trading opportunity to the investors in an enduring way. In other words the market is said to be in it's semi-strong form. When, even with some insider information, that is information not yet known publicly, it does not provide abnormal profit opportunities for a long period of time, the market is said to be efficient in the strong form. The literature on buyback of shares is presented in the next section.

REVIEW OF LITERATURE

In spite of the general view that the buy-backs are allowed to rationalize the capital structure of companies (Bagwell and Shoven 1987; Opler and Titman, 1996; Dittmar, 2000; and Lie, 2002), researchers in the developed world have found various other reasons to go in for buybacks. They were excess cash distributing (Li and McNally, 1999; Jagannathan et al., 2000; Grullon and Michaely, 2002; and Brown, 2007), substitution for cash dividends (Grullon and Michaely, 2002), signalling undervaluation of shares (Dann 1981; Vermaelen, 1981; and Ikenberry, 1995), takeover defence (Davidson and Garrison, 1989) and providing liquidity to shares and wealth expropriation to bond holders (Kahle, 2002 and Chan et al., 2004). The dominant among them has been the decision by the management, when it feels that the companies' share prices are undervalued (signalling).

In the Indian context, because of the restriction imposed by the law of the land up to 1999, empirical studies on buybacks are a few.

Mohanty (2002) in the study of 12 buybacks in India found a 3.86 percent return on the announcement day to document the first evidence of positive signalling in Indian context. In a study of 25 buybacks between 1999 and 2001, Mishra (2005) found short term gain for the shareholders.

Gupta (2006) studied 46 buybacks between 1999 and 2005 and documented further evidence for the positive signalling by having observed a significant abnormal return of 1.66 percent.

Hyderabad (2009) found a statistically significant average abnormal return of 2.76 percent on the announcement day for the 70 corporate buyback announcements made during the period 1999 to 2007 to support undervaluation hypothesis and documented non sustainability of abnormal returns in the post event period.

Ishwar (2010) studied 106 BSE listed companies, which announced buybacks during the period from 1999 to 2006 and found an average abnormal return of 2.23 percent, but that was not statistically significant on the event day to signal the under-pricing of securities. The author opined that the market has not found any news in the announcement as revealed by the continuing trend that started before the announcement and the market anticipate the information and incorporated into prices before the announcements.

Dhatt (2010) documented a statistically significant abnormal return of 2.55 percent on the event day for 40 cases listed in BSE for a period between 2004 and 2009, thereby signalling undervaluation. All the above studies were taken up in different time horizon and except one study all the other supported the undervaluation assumption or positive information signalling.

This study is an attempt to cover a longer period of 10 years from 2000-01 to 2009-10 with the intention to test the information signalling of Indian buybacks by framing the following two objectives.

OBJECTIVES

i. To study the returns around buyback announcements made during the study period.

ii. To test the semi-strong form efficiency of the market around the information release of buy-backs by testing the absence of sustained abnormal return booking.

DATA COLLECTION AND METHODOLOGY

For the purpose of studying the returns around buy-back announcements in the Indian stock market, the companies listed in the S&P CNX 500 broad based index and announced buy-backs between the years 2000-01 and 2009-10 have been considered. Prowess and NSE websites were the sources from which the number of companies and their respective dates of announcements based on the board meeting were identified. At the first stage 57 companies came under buy back announcement category for the study period, out of which 3 companies entered the market through their Initial Public Offers (IPOs) just before 6 months from the date of buy-back announcements and due to non-availability of their share prices during the estimation window, those 3 companies were excluded from the sample, thereby making the total as 54 companies. Out of 54 companies, 4 companies announced their buy back with one more information on the event (same) day (one company with annual results another with quarterly results, the other two with stock split announcements) and hence excluded from the buyback data set, since these information by themselves is also expected to signal price changes to make the tally to 50. Out of the 50 companies, 7 companies announced stock split within the duration (either before or after the date of buy-back announcement) of event

window and had not been considered for the buy-back data set and the remaining 43 companies have been taken up for analysis.

Standard Event Study procedure has been adapted to make the analysis. The dates of the meeting of Board of Directors regarding the announcement of buy-back were denoted as 'event day' and days surrounding the event day (30 days before and 30 days after the event) have been denoted as 'event window.' 250 days period prior to the first day of the event window (-280 to -31 days) has been considered as 'estimation window'. The compounded log returns have been taken as the core data for analysis. The S&P CNX 500 index returns were taken as proxy for the market returns of 250 days during the "estimation window" and the respective shares were regressed against the proxy to determine the constant and the regression co-efficient to calculate the expected returns during the event window (CAPM-Market Model). The difference between the actual return and the expected return during the event window is considered as abnormal returns (ARs). Average Abnormal Returns (AARs) were calculated for each day during the event window across securities for analysing the abnormal returns around the event. Cumulative Average Abnormal Returns (CAARs) were also calculated for analysing the price adjustment process.

In order to calculate the expected return during the event window based on the constant and regression co-efficient during the estimation window (250 days) the following regression is used.

$$\overline{R}_{jt} = \propto_j + \beta_j \overline{R}_{mt} + \varepsilon_{jt} \qquad \text{-------- (1)}$$

where,

$\overline{R}_{jt}$ Expected return of security j on day't'

$\propto_j$ Intercept term for security 'j'

β_j Systematic risk component of security j

R_{mt} Return on the market portfolio of S&P CNX 500 on day 't'

ε_{jt} White noise error term of security 'j' on day 't' having zero mean and constant variance

The difference between actual return and expected return is regarded as the abnormal return and is calculated as

$$A\overline{R}_{jt} = R_{jt} - R_{jt} \qquad \text{-------- (2)}$$

where,

AR_{jt} = Abnormal Return of Security 'j' at day 't'

R_{jt} = Actual return of security 'j' at day 't'

The Average Abnormal Return (AARs) of various securities on a particular event day 't' is calculated as

$$AAR_t = \frac{1}{N}\sum_{j=1}^{N} AR_{jt} = (AR_{j1} + AR_{j2} + AR_{j3} + AR_{jN})/N \qquad \text{-------- (3)}$$

Where N denotes number of securities considered for day 't'

Cumulate Average Abnormal Returns (CARRs) are the sums of daily Average Abnormal returns (AARs) during the event window.

$$CAAR_t = \sum_{t-k}^{+k} AAR_t \qquad \text{-------- (4)}$$

Where, –k to +k denotes -30 to +30 days during the event window.

While the Average Abnormal Returns (AARs) are used to analyse the information content of buy-backs and Cumulative Average Abnormal Returns (CAARs) are used to analyse the adjustments of prices to new information, in order to check the efficiency of market student't test' has been applied to know whether the abnormal returns and the cumulative abnormal returns did not differ significantly from zero by framing the following null hypotheses

H_o1: $AAR_t = 0$

The test statistics is

$$t = \sqrt{N}\frac{AAR_t}{S_t} \sim t_{N-1}$$

$H_0 2$: $CAAR_t = 0$

The test statistics is

$$t = \sqrt{N}\frac{CAAR_t}{S_t} \approx N(0,1)$$

ANALYSIS AND DISCUSSION

The AARs and CAARs with their respective' values along with their significance at 1%, 5% and 10% levels are analysed for the 43 buy backs considered for the study during the event window and is presented in Table 1.

It is observed that the event day generated average abnormal returns (AAR) of 1.32 per cent which was significant at 5 per cent level, supporting the undervaluation assumption of securities among companies which announced buy-backs. Out of 61 days considered (including the event day) in the window, the abnormal returns of 11 days showed statistical significance either at 1 per cent or at 5 per cent or at 10 per cent, which means statistically they differ from zero. The post event window period of 30 days (+1 to +30) had significance in abnormal returns only for 4 days and the pre-event window period (-30 to -1) had 6 days having significant abnormal returns and both the periods had mixed abnormal returns. The post event AARs in four days were characterized by a negative 1.47 per cent on day +2, negative 1.45 per cent on day +5 and positive 0.78 per cent on day +12 and again negative 0.78 per cent on day +13. Similarly in the pre event window period significant abnormal returns in 6 days showed a negative 1.08 per cent on day -24, a positive 0.80 per cent on day -16, negative 0.74 per cent on day -15, negative 1.08 per cent on day -12, a whooping positive 1.92 per cent on day -4 and had positive 0.84 per cent on day -1, the pre event day. The AARs of buybacks are presented graphically in Fig.1.

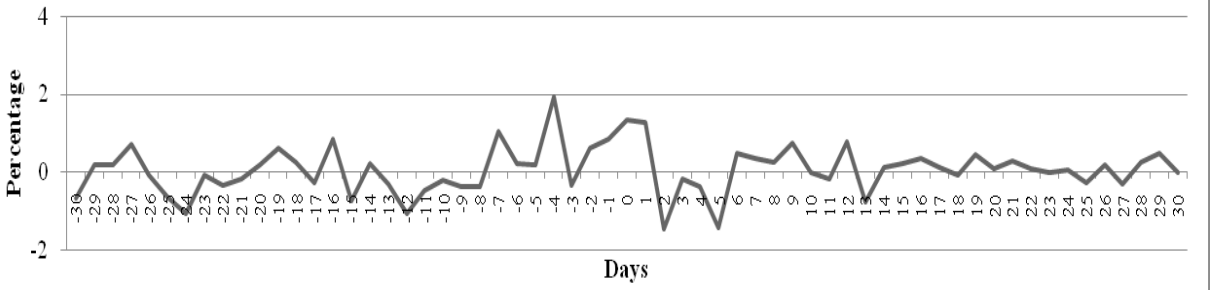
TABLE 1
AARs and CAARs OF BUY BACK ANNOUNCEMENTS

Days	AAR	t-statistics	p-value	CAAR	t-statistics	p-value	Days	AAR	t-statistics	p-value	CAAR	t-statistics	p-value
-30	-0.698	-1.398	0.170	-0.698	-1.398	0.170	1	1.272	1.560	0.126	3.112	1.064	0.294
-29	0.190	0.405	0.687	-0.508	-0.776	0.442	2	**-1.472**	**-3.792[a]**	**0.000**	1.640	0.573	0.569
-28	0.159	0.327	0.745	-0.349	-0.400	0.691	3	-0.189	-0.628	0.533	1.451	0.510	0.613
-27	0.701	1.458	0.152	0.352	0.365	0.717	4	-0.392	-1.277	0.208	1.059	0.379	0.707
-26	-0.075	-0.157	0.876	0.277	0.262	0.795	5	**-1.447**	**-3.643[a]**	**0.001**	-0.388	-0.137	0.891
-25	-0.647	-1.636	0.109	-0.370	-0.337	0.737	6	0.460	0.946	0.350	0.072	0.025	0.980
-24	**-1.084**	**-2.223[b]**	**0.032**	-1.454	-1.252	0.218	7	0.354	0.710	0.482	0.426	0.147	0.883
-23	-0.079	-0.155	0.878	-1.533	-1.298	0.201	8	0.233	0.603	0.550	0.659	0.231	0.818
-22	-0.368	-0.654	0.517	-1.901	-1.417	0.164	9	0.728	1.893	0.065	1.387	0.471	0.640
-21	-0.196	-0.406	0.686	-2.097	-1.517	0.137	10	-0.025	-0.057	0.955	1.362	0.438	0.664
-20	0.164	0.429	0.670	-1.933	-1.397	0.170	11	-0.182	-0.583	0.563	1.180	0.380	0.706
-19	0.591	1.274	0.210	-1.342	-0.958	0.344	12	**0.779**	**1.842[c]**	**0.072**	1.959	0.596	0.555
-18	0.233	0.482	0.632	-1.109	-0.753	0.455	13	**-0.788**	**-1.842[c]**	**0.073**	1.172	0.354	0.725
-17	-0.298	-0.561	0.578	-1.407	-0.861	0.394	14	0.095	0.327	0.746	1.267	0.377	0.708
-16	**0.826**	**1.880[c]**	**0.067**	-0.581	-0.366	0.716	15	0.223	0.740	0.463	1.489	0.438	0.664
-15	**-0.737**	**-1.856[c]**	**0.070**	-1.318	-0.791	0.433	16	0.342	1.193	0.239	1.832	0.541	0.591
-14	0.218	0.372	0.712	-1.100	-0.605	0.548	17	0.124	0.247	0.806	1.956	0.543	0.590
-13	-0.306	-0.800	0.428	-1.406	-0.757	0.453	18	-0.094	-0.260	0.796	1.862	0.508	0.614
-12	**-1.084**	**-1.688[c]**	**0.099**	-2.489	-1.330	0.191	19	0.428	1.032	0.308	2.290	0.625	0.535
-11	-0.489	-0.940	0.352	-2.979	-1.616	0.114	20	0.071	0.182	0.857	2.361	0.652	0.518
-10	-0.215	-0.395	0.695	-3.194	-1.660	0.104	21	0.257	0.802	0.427	2.618	0.719	0.476
-9	-0.384	-1.196	0.239	**-3.578**	**-1.853[c]**	**0.071**	22	0.081	0.199	0.844	2.699	0.732	0.468
-8	-0.375	-0.707	0.483	**-3.952**	**-1.833[c]**	**0.074**	23	-0.029	-0.076	0.940	2.670	0.712	0.481
-7	1.037	1.623	0.112	-2.915	-1.357	0.182	24	0.054	0.148	0.883	2.724	0.735	0.467
-6	0.220	0.545	0.589	-2.696	-1.242	0.221	25	-0.293	-0.764	0.449	2.431	0.643	0.524
-5	0.181	0.334	0.740	-2.515	-1.128	0.266	26	0.190	0.358	0.722	2.621	0.645	0.523
-4	**1.920**	**2.101[b]**	**0.042**	-0.595	-0.259	0.797	27	-0.331	-1.276	0.209	2.290	0.558	0.580
-3	-0.337	-0.919	0.363	-0.932	-0.396	0.694	28	0.253	0.540	0.592	2.543	0.607	0.547
-2	0.618	1.416	0.164	-0.313	-0.131	0.896	29	0.460	0.959	0.343	3.003	0.711	0.481
-1	**0.837**	**1.770[c]**	**0.084**	0.523	0.212	0.833	30	-0.020	-0.066	0.948	2.982	0.693	0.492
0	**1.317**	**2.032[b]**	**0.048**	1.840	0.707	0.484							

a- Significant at 1% level, b- Significant at 5% level and c- Significant at 10% level

Source: Computed from Prowess data base

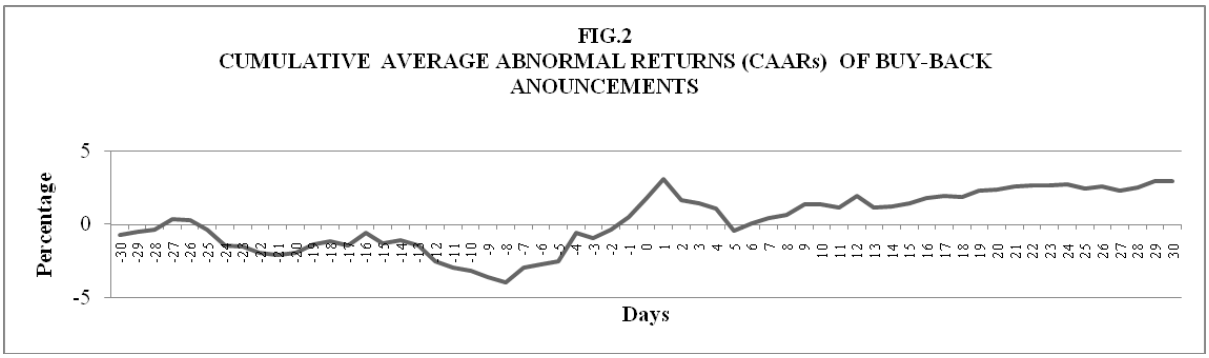
FIG.1
AVERAGE ABNORMAL RETURNS (AARs) OF BUY-BACK ANOUNCEMENTS



The Average Abnormal Return for only 11 days in a 61 days window and that too spread in both the pre-event and post-event window periods, with negative as well as positives in the abnormal returns, did not support the view that abnormal profit booking opportunities existed and even if it existed it cannot be sustained for longer period of time and is supported by the following discussion.

An observation of the CAAR during the event window revealed that the CARRs were statistically significant only for 2 days that too having negative of 3.56 per cent and 3.95 per cent during the pre event window period on day -9 and day -8 respectively. The negative values observed in CAARs during the pre-event window got adjusted to the buyback information on day -1 to be transformed into positive 0.52 per cent thereby denoting the beginning of price adjustment process. Thereafter the CAAR never went negative except on day +5 (-0.39 per cent) to record a 2.98% for the 61 days event window. The transformation of CAARs into positive in the post event window from a majority negatives in the pre event window has been a strong empirical evidence for the under valuation signalling. The CAARs of the buy-back Announcements are presented graphically in Fig.2.

FIG.2
CUMULATIVE AVERAGE ABNORMAL RETURNS (CAARs) OF BUY-BACK ANOUNCEMENTS



The CAARs were calculated throughout the event window by taking the first day in the pre-event window -30 to last day +30 in the post event window. In order to understand the price adjustment process better, the CAARs are calculated for shorter frame immediately surrounding the event day consisting of 3 days -1 to +1 (pre-event day, event day and post-event day. The CAAR frame around the event day is gradually extended by having 5 days (-2 to +2), 7 days (-3 to +3) and so on to finish with 61 days (-30 to +30) and presented in Table 2 with respective CAAR and its significance at 1%, 5% or10% levels.

It is observed that of the 30 different CAARs frames tested the CAARs were significant statistically only in 8 frames that too closer to the event day i.e. only in the shorter frames, which means that the buyback announcement had information content to effect a change in prices but within a shorter period of time and the prices got adjusted to the new information thereby offering no opportunity to book abnormal profits on a sustained basis. In

the buy-back considered, the CAAR of 4.34% was significant only up to -10 to +10 frame, but leaving the third frame -3 to +3 and fifth frame -5 to +5 in which the CAARs were not significant. In spite of the insignificant CAARs in those frames, the next frame, which had insignificance, was -11 to +11 and thereafter no frames had significant CARRs. It can be inferred that on a very liberal estimate of 10 per cent significance level, the price adjustments took place in 11 days (including the event day).

TABLE 2

CAARS FOR BUY BACK EVENT FRAMES

Sl. No	Event Frames	CAAR (%)	Standard Deviation	t-statistics	p-value
1.	-1 to +1	**3.43**	**0.079**	**2.828[a]**	**0.007**
2.	-2 to +2	**2.57**	**0.082**	**2.058[b]**	**0.046**
3.	-3to +3	2.05	0.083	1.624	0.112
4.	-4 to +4	**3.57**	**0.105**	**2.230[b]**	**0.031**
5.	-5 to +5	2.31	0.100	1.516	0.137
6.	-6 to +6	**2.99**	**0.101**	**1.945[c]**	**0.059**
7.	-7 to +7	**4.38**	**0.116**	**2.470[b]**	**0.018**
8.	-8 to +8	**4.24**	**0.125**	**2.231[b]**	**0.031**
9.	-9 to +9	**4.58**	**0.133**	**2.255[b]**	**0.029**
10.	-10 to +10	**4.34**	**0.150**	**1.898[c]**	**0.065**
11.	-11 to +11	3.67	0.158	1.525	0.135
12.	-12 to +12	3.36	0.152	1.452	0.154

13.					
14.	-13 to +13	2.27	0.158	0.942	0.352
15.	-14 to +14	2.58	0.179	0.949	0.348
16.	-15 to +15	2.07	0.190	0.716	0.478
17.	-16 to +16	3.24	0.196	1.084	0.284
18.	-17 to +17	3.06	0.220	0.915	0.366
19.	-18 to +18	3.20	0.227	0.926	0.360
20.	-19 to +19	4.22	0.233	1.190	0.241
21.	-20 to +20	4.46	0.230	1.272	0.210
22.	-21 to +21	4.52	0.231	1.281	0.207
23.	-22 to +22	4.23	0.236	1.175	0.247
24.	-23 to +23	4.12	0.240	1.128	0.266
25	-24 to +24 -25 to +25	3.09 2.15	0.240 0.250	0.846 0.564	0.403 0.576

26.	-26 to +26	2.27	0.265	0.561	0.578
27.	-27 to +27	2.64	0.271	0.638	0.527
28.	-28 to +28	3.05	0.274	0.730	0.470
29.	-29 to +29	3.70	0.284	0.855	0.398
30.	-30 to +30	2.98	0.282	0.693	0.492

a- Significant at 1% level, b- Significant at 5% level and c- Significant at 10% level
Source: Computed from Prowess data base

Even after having the speed in adjustment of prices in shorter event frames, it includes pre-event period also. In order to summarise the results of Table 1, the number of occurrence having abnormal returns with their nature (positive and negative) during pre-event and post event window is presented in Table 3.

TABLE 3

NATURE OF ABNORMAL RETURNS IN BUYBACKS

Event Frames	Positive	Negative	Total
Pre-event (A)			
-30 to -21	-	1	1
-20 to -11	1	2	3
-10 to -6	-	-	-
-5 to -1	2	-	2
Sub- total (A)	3	3	6
Event day (B)	1	-	1
Post Event (C)			
1 to 5	-	2	2
6 to 10	-	-	-
11 to 20	1	1	2
21 to 30	-	-	-
Sub-total (C)	1	3	4
Total (A) + (B) + (C)	**5**	**6**	**11**

Source: Deduced from Table 1

Of the 11 days which recorded significant abnormal returns, the post event period accounted for 4 days and out of which 3 days showed negative abnormal returns and only one day had positive and the possibility of booking abnormal returns did not arise in the post event period. Looking at the pre-event number of days, out of 6 days, positive and negative abnormal returns were observed in 3 days each. It is surprising to observe that of the abnormal return of days which showed positive ones (3), 2 days comes under the immediate pre-event days -5 to -1 which leads to have the shadow of doubt in information leakage hypothesis. The study considered the date of Board meeting in which the buy-back announcement have been made as the event day. But, there are possibilities to have the information before the official date, because of the information leakages. This positive price behaviour in the pre event days might have been attributable to the listing norms. In spite of having the doubt of information leakage, after looking at the price adjustment process (CAARs in shorter frames) it is opined that the abnormal profit making opportunities based on buy-back announcement could not be sustained.

CONCLUSION

The Indian stock market reaction to the buyback announcements was no different from the western studies as it signalled the undervaluation of shares. The statistically significant average abnormal return of 1.32 percent of S&P CNX 500 buyback announcements on the event day and CAAR of 2.98% for a 61 days event window documented the signalling hypothesis. However the positive abnormal returns in the immediate pre event frame (-5 to -1) cause some doubt in information leakage. In spite of the ability of the market to capture the information before the official announcement day (evidenced by Hyderabad, 2009 and Ishwar, 2010 also), the possibilities of booking abnormal returns based on the information on a sustained basis was ruled out and the study documented semi-strong efficiency in the market. It is concluded that the buybacks had information content to signal undervaluation of shares by effecting a positive change and has been incorporated into prices by making abnormal return booking based on buyback information, a non sustainable affair.

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