

TESTING INFORMATIONAL EFFICIENCY OF INDIAN
CAPITAL MARKET WITH RESPECT TO BUYBACK
ANNOUNCEMENT: A STUDY ON INFORMATION
TECHNOLOGY INDUSTRY

M. Raja*, J. Clement Sudhahar** & M. Selvam***

Abstract: An efficient market as a market in which price fully reflect all information. This means that no possibility exists of making sustainable excess returns and the prices follow a random walk. An efficient and integrated capital market is an important infrastructure that facilitates capital formation. The efficiency with which the capital formation is carried out depends on the efficiency of the capital markets and financial institutions. A capital market is said to be efficient with respect to corporate event announcement (stock split, buyback, right issue, bonus announcement, merger & acquisition, dividend etc) contained information's and its disseminations. How quickly and correctly the security prices reflect these event contained information's show the efficiency of stock markets. Present study is an attempt to test the efficiency of Indian stock market with respect to buyback announcement by IT companies.

Key words: Market Reaction/Stock Price Reaction, Abnormal Returns, Announcement Period, Efficient Market, Buyback announcement.

INTRODUCTION

The economic development of any country depends upon the existence of a well organized financial system. An efficient functioning of the financial system facilitates the free flow of funds to more productive activities and thus promotes investment. It would not be an exaggeration to say that of all the segments of the financial system, the capital markets have the most crucial role to play in the process of capital formation. The efficiency with which the process of capital formation is carried out depends on the efficiency of capital markets and financial institutions (Keane, 1983). Beaver (1968), Peter Walton (2000), Michad, Hitt A., S. Harrison Jeffrey and R. Ireland Duane (2001), Ball and Brown (1968) are some of the studies which find significant reaction in the security prices to the release of corporate events announcement information. Another finding of these studies is that during the announcement period, there are abnormal returns. On the Indian capital market, M. Obaidullah (1992), S.Srinivasan, and A. K. Dutta (2000), Kakati (2001), Jijo Lukose and Narayan Rao (2002) are some of the studies which have tested the efficiency of the

* Assist. Professor CSG, Finance Area, School of Management, Karunya University, Coimbatore, India, E-mail: rajacommerce@yahoo.co.in

** Associate Professor, School of Management, Karunya University, Coimbatore, India, E-mail: clemts@rediffmail.com

*** Reader & Head, Department of Commerce & Financial Studies, Bharathidasan University, Tiruchirappalli, India.

TESTING INFORMATIONAL EFFICIENCY OF INDIAN
CAPITAL MARKET WITH RESPECT TO BUYBACK
ANNOUNCEMENT: A STUDY ON INFORMATION
TECHNOLOGY INDUSTRY

M. Raja*, J. Clement Sudhahar** & M. Selvam***

Abstract: An efficient market as a market in which price fully reflect all information. This means that no possibility exists of making sustainable excess returns and the prices follow a random walk. An efficient and integrated capital market is an important infrastructure that facilitates capital formation. The efficiency with which the capital formation is carried out depends on the efficiency of the capital markets and financial institutions. A capital market is said to be efficient with respect to corporate event announcement (stock split, buyback, right issue, bonus announcement, merger & acquisition, dividend etc) contained information's and its disseminations. How quickly and correctly the security prices reflect these event contained information's show the efficiency of stock markets. Present study is an attempt to test the efficiency of Indian stock market with respect to buyback announcement by IT companies.

Key words: Market Reaction/Stock Price Reaction, Abnormal Returns, Announcement Period, Efficient Market, Buyback announcement.

INTRODUCTION

The economic development of any country depends upon the existence of a well organized financial system. An efficient functioning of the financial system facilitates the free flow of funds to more productive activities and thus promotes investment. It would not be an exaggeration to say that of all the segments of the financial system, the capital markets have the most crucial role to play in the process of capital formation. The efficiency with which the process of capital formation is carried out depends on the efficiency of capital markets and financial institutions (Keane, 1983). Beaver (1968), Peter Walton (2000), Michad, Hiit A., S. Harrison Jeffrey and R. Ireland Duane (2001), Ball and Brown (1968) are some of the studies which find significant reaction in the security prices to the release of corporate events announcement information. Another finding of these studies is that during the announcement period, there are abnormal returns. On the Indian capital market, M. Obaidullah (1992), S.Srinivasan, and A. K. Dutta (2000), Kakati (2001), Jijo Lukose and Narayan Rao (2002) are some of the studies which have tested the efficiency of the

* Assist. Professor CSG, Finance Area, School of Management, Karunya University, Coimbatore, India, E-mail: rajacommerce@yahoo.co.in

** Associate Professor, School of Management, Karunya University, Coimbatore, India, E-mail: clemts@rediffmail.com

*** Reader & Head, Department of Commerce & Financial Studies, Bharathidasan University, Tiruchirappalli, India.

an average, a unit change in dividend per share, other things being constant, resulted approximately in a 8.5% unit change in the market price per share compared to the retained earnings where one unit change caused a 2.7 unit change in the market price. Samson Ekanayaka (2004) in his study entitled "Information Signaling of Common Stock Repurchase Announcement: Australian Evidence", investigated the information signaling effects on market as a result of buy-back announcements. The results strongly support the information – signaling hypothesis of share buy-backs. An attempt was made by Mishra A. K. (2005) to investigate the market reaction around the bonus issue. The result of this study shows that 18 companies, the abnormal returns (39.13) were positive on an average. The sample firms experienced negative abnormal returns on the announcement day ($t_0 = -0.19\%$) as well as following day ($t + 1 = -0.16\%$). Jeffred. Jarrett and Eric Kyper (2006) examined the weak form of the efficient markets hypothesis with respect to daily closing prices. Furthermore, this study of individual securities prices of traded securities on organized markets corroborates previous findings of studies of stock market indices, both in the United States and in other nation's bourses of stock exchanges. A study entitled "An empirical analysis of share buybacks in India" by Mishra A. K. (2005) examined empirically the announcement period reaction. The study finds that for the Indian corporate, the long-term advantages of share buybacks are not clear. The author points out that, buyback norms should be made more stringent for the Indian context, if the companies are to have a long term view. The paper entitled "Share price behaviour around buybacks in India" by Thirumalvalavan and Sunitha (2006) investigated and tested the signaling effect of share buy-back announcements. The author found that there are no significant differences in abnormal returns as the result of various repurchase levels. These results imply the strong signaling power of stock repurchase announcements and positive market reactions to stock repurchase programs.

In India, studies on testing the semi-strong efficiency of capital market are few. These studies use CAR (Cumulative Abnormal Returns) Model. Only very few studies have used the SRV (Security Returns Variability) model. Most of the studies observed that the reaction by security prices took place prior to announcement of events. In some cases, reaction took place after announcement of events. An attempt is made in this study to test efficiency of Indian stock market with respect to information content of buyback announcement by the IT Companies.

CAPITAL MARKET EFFICIENCY

The concept of efficient capital market has been continuously developed, studied and tested by French mathematician, Bachelier (1900) who recognized that "past, present and even discounted future events are reflected in market price, but often show no apparent relations to price changes. A capital market in which stock prices fully reflect all available information can be termed as efficient. Eugene Fama (1960) classified the market efficiency into the following three categories depending on the information set that is fully reflected in the security prices.

- (a) **Weak – Form of Efficiency**, popularly known as Random Walk Theory states that the current stock prices reflect all the information that is contained in the historical sequence of prices.
- (b) **Semi – Strong Form of Efficiency**, which states that current market prices not only reflect all information content of historical prices but also reflect all the information, which are publicly available about the companies being studied.

- (c) **Strong – Form of Efficiency**, which states that current market prices reflect all information whether it is publicly available or private information (insiders information).

STATEMENT OF THE PROBLEM

Capital market, being a vital institution, facilitates economic development. It is true that so many parties are interested in knowing the efficiency of the capital market. The small and medium investors can be motivated to save and invest in the capital market only if their securities in the market are appropriately priced. The information content of events and its dissemination determine the efficiency of the capital market. That is how quickly and correctly security prices reflect these information show the efficiency of the capital market. In the developed countries, many research studies have been conducted to test the efficiency of the capital market with respect to information content of events. Whereas in India, very few studies have been conducted to test the efficiency of the capital market with respect to buyback announcements, even after these studies have been conducted with different industries with different period. Hence present study is an attempt to test the efficiency of the Indian stock market with respect to buyback announcements by IT (Information Technology) companies for particular period (2000-01-2006-07).

OBJECTIVES OF THE STUDY

1. To examine the information content of Buyback announcement made by the Information Technology (IT) companies.
2. To test the speed with which the Buyback announcement information are impounded in the share prices of IT companies.
3. To test the reaction of securities prices for Buyback announcement contained information.

HYPOTHESIS OF THE STUDY

1. Buyback announcement contained information's are not relevant for the valuation of stocks.
2. Buyback announcement has no significantly influence in the stock prices of IT companies.
3. The Indian stock market is informationally not efficient where the Buyback announcement contained information's are not impounded instantaneously and rightly in the stock prices of IT companies.

SAMPLE SELECTION

The study intends to cover the all the IT companies listed in Bombay Stock Exchange (BSE). Out of all the companies brought under Information Technology listed in the BSE as on 30 December 2007 (as per the PROWESS database), only 43 companies (128 buyback) which satisfy the following criteria were selected.

- (i) The companies, which find a place in the list A and B1 of the Bombay Stock Exchange (BSE) are selected. The reason for selecting the list A and B1 is to ensure active trading,
- (ii) Availability of the dates of announcement of buy back, and
- (iii) Availability of buyback information.

SOURCES OF DATA

The information regarding adjusted share price, buyback information, dates of buyback announcements, and values of BSE 500 were obtained from "PROWESS" published by CMIE. Other relevant informations are also obtained from the BSE website (<http://www.bseindia.com>), books, and journals.

Tools used for the Analysis

(A) Daily Returns

The daily returns were calculated for both individual securities as well as Market Index using the following equation

$$R_{i,t} = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100 \quad (1.0)$$

Where,

$R_{i,t}$ = Returns on Security i on time t .

P_t = Price of the security at time t

P_{t-1} = Price of the security at time $t - 1$

(B) Security Returns Variability

SRV model is used to know the reaction of the market. Symbolically, the model is

$$SRV_{i,t} = \frac{AR_{i,t}^2}{V(AR)} \quad (1.1)$$

Where,

$SRV_{i,t}$ = Security Returns Variability of security i in time t

$AR_{i,t}^2$ = Abnormal returns on security i on day t

$V(AR)$ = Variance of Abnormal Returns during the announcement period

Abnormal Returns (AR) under *market-adjusted abnormal returns* is calculated using by the equation as below;

$$AR_{i,t} = R_{i,t} - R_{im,t} \quad (1.2)$$

Where,

$AR_{i,t}$ = Abnormal returns on security i at time t

$R_{i,t}$ = Actual returns on security i at time t

$R_{i,m}$ = Actual returns on market index, which is proxied by BSE 500, a weighted average index of 500 companies published by BSE, at time t .

Thus daily actual returns over the announcement period (31days) were adjusted against their corresponding market returns.

Average Security Returns Variability (ASRV)

The $SRV_{i,t}$ so calculated for all the buyback announcement are averaged to find the Average Security Returns Variability (ASRV) by using the following equation.

$$ASRV_t = SRV_{i,t} \times (1/n) \quad (1.3)$$

Where,

$ASRV_t$ = Average Security Returns Variability at time t

$SRV_{i,t}$ = Security Returns Variability i security at time t

n = Number of buyback in the sample

(C) Average Abnormal Returns

The Average Abnormal Returns is calculated by the equation given below

$$AAR_t = \frac{1}{n} \sum_{i=1}^n AR_{i,t} \quad (1.5)$$

Where,

AAR_t = Average Abnormal Returns on day t

$AR_{i,t}$ = Abnormal Returns on security i at time t which is calculated by using the equation (1.2)

(D) Cumulative Abnormal Returns (CAR)

The CAR is calculated as

$$CAAR_k = \sum_{t=1}^k AAR_t \quad (1.7)$$

Where,

$CAAR_k$ = Cumulative Average Abnormal Returns for the k^{th} period.

Hereafter, it is referred to as CAR,

AAR_t = Average Abnormal Returns of sample buyback announcement at time t which is calculated by using the equation (1.5)

(E) T-Test

(i) The significance of reaction in security prices (ASRV) is tested by using the T -statistics as follows:

$$t_{stat} = (ASRV - 1) \times \sqrt{n/s} \quad (1.4)$$

Where, n is the number of quarters in the sample and s is the Standard Deviation of abnormal returns.

(ii) The significance of the AAR_t is tested using the t -test as follows;

$$t_{stat} = AAR_t \times \sqrt{n/s} \quad (1.6)$$

Where, AAR_t is the Average Abnormal Returns on time t , n is the number of buyback in sample and s is the Standard Deviation of Average Abnormal Returns.

LIMITATION OF THE STUDY

The following are the limitation of the present study

1. The present study is confined to only one event announcement (Buyback).
2. This study is restricted with only IT industry.
3. All the limitations of the tools used are applicable to this study.

ANALYSIS OF THE STUDY

The analysis has been done in the following way

- (a) Analysis of Average Security Returns Variability (*ASRV* or *SRV*).
- (b) Analysis of Abnormal Returns (*AAR*).
- (c) Analysis of Cumulative Abnormal Returns (*CAR*).

(A) Average Security Returns Variability: (*ASRV*)

One of the important methods used to examine the relevance of events announcement information to valuing the security prices is Security Return Variability (*SRV*). It is important to note that on an average, the *SRV* is expected to be one. It means that if the *SRV* is greater than 1, it may be said that there is variability among the securities price. In other words, if this variability takes place around the announcement day of an event, it may be said that the information content of event announcement is relevant for valuation of securities.

Table 1 shows the result of *ASRV* and *t*-state for Buyback announcement. The value of *ASRV* exceeded more than one many days during pre and post buyback announcement period. In pre announcement period, the *ASRV* were significant at 10 per cent level on day -12, -10, -7 and day -1, while it was significant at 5 per cent and 1 percent level on day -8, -14, -11, and -6. In the case of post announcement period, *ASRV* was significant at 10 per cent level only on day 6. Further, it was significant at 5 per cent and 1 per cent level on day -13, 9 and day 15. During pre announcement period, the value of *ASRV* on day -13, -11, -10, -9, -7 to -4 and -1 was more than one. During the post announcement period, the value of *ASRV* was greater than one on day 2, 3, 4, 6, 8, 10 and 12, with the *ASRV* value at 1.23, 1.03, 1.06, 1.43, 1.24, 1.24 and 1.08 respectively. The result reveals the fact that there was variability among the security returns for buyback announcement on the days surrounding the announcement of buyback. Figure 1 depicts the fact that the market gained a *ASRV* value greater than one during the pre announcement period. Further, there was sharp reaction on days -11, -6 and 2, followed by minor reaction in the post announcement period. The result further proved that the market used the buyback announcement information for valuation of securities immediately. The average value of *ASRV* for buyback announcement is given in Table 2. It is understood from the above analysis that the average value of *ASRV* during the period of 31 days was 1.01. During the period of 15 days prior to day 0 (from day -15 to day -1), the average *ASRV* was 1.14 which was the highest average during the 31 days surrounding the announcement of buyback.

The following are the outcome of foregoing discussion

- The buyback announcement contained information's are not useful for valuing the securities of IT companies because *ASRV* is not above one around the announcement day.

Table 1
Result of ASRV and t - Value for Buyback Announcement

Day	ASRV	t-value
-15	0.97	-0.10
-14	0.72	-1.26*
-13	1.24	0.83
-12	0.68	-1.47*
-11	1.54	1.22*
-10	1.76	1.36*
-9	1.20	0.64
-8	0.66	-1.76**
-7	1.18	1.29*
-6	2.27	2.09*
-5	1.18	0.64
-4	1.00	0.89
-3	0.76	0.78
-2	0.82	0.67
-1	1.15	1.28*
0	0.59	-2.55*
1	0.83	-0.69
2	1.23	0.73
3	1.03	0.11
4	1.06	0.19
5	0.73	-1.21
6	1.43	1.27*
7	0.80	0.61
8	1.24	0.45
9	0.40	-5.25*
10	1.24	0.60
11	0.75	-0.91
12	1.08	0.24
13	0.68	-1.85**
14	0.85	-0.48
15	0.26	-6.32*

Source: Computed from PROWESS corporate data base.

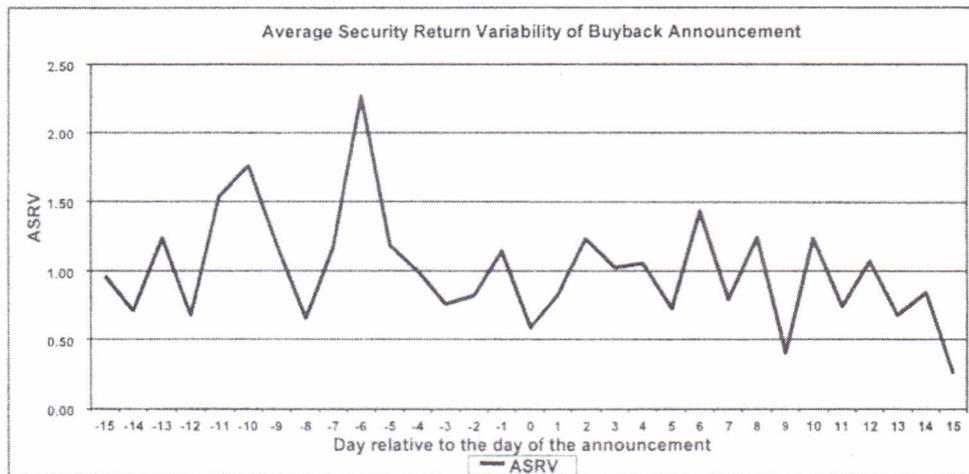
*-1% **-.5% @-10%

Table 2
Average Value of ASRV for Buyback Announcement

Period	ASRV
From Day - 15 To Day + 15	1.01
From Day - 15 To Day - 1	1.14
From Day 0 To Day + 15	0.89
From Day - 3 To Day + 3	0.92
From Day - 7 To Day + 7	1.07

Source: Computed from Table 1

Figure 1
Average Security Return Variability of Buyback Announcement



- Apart from the sharp reaction on day 6, 9 and 13 there have been reaction during the pre announcement period and post announcement period. The pre announcement reactions show that the market is able to capture the buyback announcement information before its announcement. However, the post announcement reaction shows that the market is not able to capture the buyback information fully immediately.
- As the market reacts to the buyback announcement, the Indian stock market may be said to be informationally inefficient in the semi-strong form. However, it is not perfectly efficient of course; no market can be expected to be perfectly efficient.

(B) Analysis of Average Abnormal Returns for Buyback Announcement

The result of abnormal returns for buyback announcement is shown in Table 3. In the pre announcement period, the AAR were significant at 10 per cent level on days -9, -8, -5 and -3. Further, it was significant at 5 per cent and 1 per cent level on day -14 and day -15 respectively. During the post announcement period, AAR was significant at 10 percentage level on day 10 and day 11. The abnormal returns during these periods (pre announcement) ranged from -2.12 to 1.95. The highest abnormal returns was recorded on day -5, followed by days -1, -3, -9 and -4, with ARR value of 1.95, 1.68, 1.52, 1.38, and 1.06 respectively. During the post announcement period, the highest ARR was recorded on day 3, followed by days 5, 6, 7 and 4 with AAR value of 1.33, 1.25, 1.13, 0.45 and 0.32 respectively. It is clearly understood from the above analysis that the buyback announcement contained information that has significantly influenced the security prices of IT companies on majority of the days. Hence the hypothesis 2 entitled, "Buyback announcement has no reaction in the security prices of IT companies", is rejected.

Table 3
Result of Average Abnormal Return and t-Value of Stock Prices for
Buyback Announcement of IT Companies

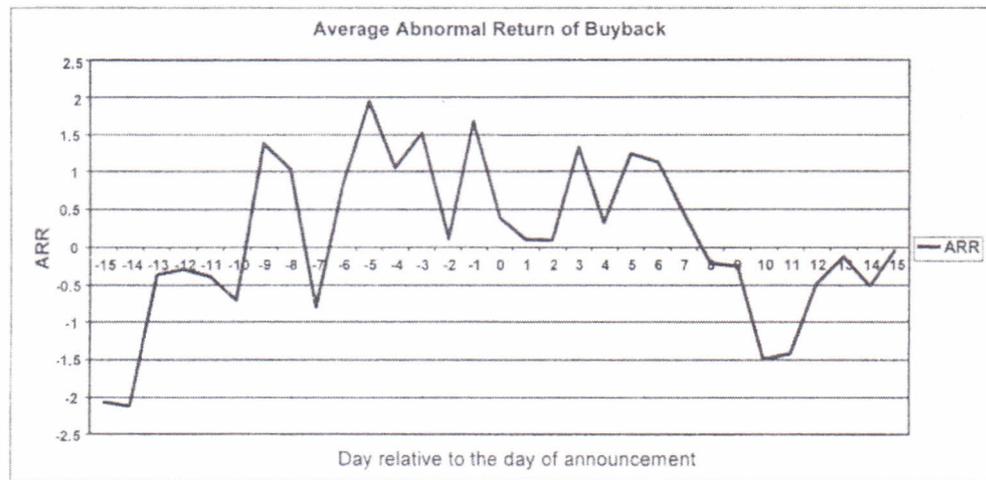
Day	ASRV	t-value
-15	-2.07	2.47*
-14	-2.12	2.01**
-13	-0.37	0.20
-12	-0.29	0.24
-11	-0.39	0.27
-10	-0.70	0.46
-9	1.38	1.28*
-8	1.04	1.02*
-7	-0.80	0.27
-6	0.85	0.20
-5	1.95	1.57*
-4	1.06	1.05
-3	1.52	1.37*
-2	0.11	0.93
-1	1.68	1.52**
0	0.39	0.31*
1	0.10	0.05
2	0.09	0.07
3	1.33	1.10
4	0.32	0.25
5	1.25	1.16
6	1.13	1.06
7	0.45	0.39
8	-0.21	0.14
9	-0.25	0.16
10	-1.49	1.38*
11	-1.42	1.35*
12	-0.48	0.33
13	-0.13	0.09
14	-0.52	0.45
15	-0.03	0.01

Source: Computed from "PROWES" a corporate database.

*-1% **-.5% @-10%.

It is clearly understood from Figure 2 that there has been reaction in the security prices during pre and post announcement periods. But significant reactions took place only on day -5. During the post announcement period, the highest reaction took place only on day 5. Compared with pre announcement period, the buyback announcement generated significant reaction in the security prices of IT companies during the post announcement period on majority of the days.

Figure 2
Average Abnormal Return of Buyback Announcement



The averages of abnormal returns for buyback announcement are shown in Table 4. The average value of AAR during 31 days (from day -15 to day +15) surrounding the announcement of buyback event was 0.11 while the average of AAR during the pre announcement period (from day -1 to day -15) was 0.19. The average of AAR during the pre announcement period (from day -15 to day -1) was 0.19. While comparing the average values of pre and post announcement, the pre announcement average (0.19) was higher than that of post announcement (0.03). It is clear from the above analysis that on majority of the days, the buyback announcement information was absorbed by the market during the announcement period.

Table 4
Average Value of Average Abnormal Returns for Buyback Announcement

Period	AAR
From Day -15 To Day +15	0.11
From Day -15 To Day -1	0.19
From Day 0 To Day +15	0.03
From Day -3 To Day +3	0.75
From Day -7 To Day +7	0.76

Source: Computed from Table 3.

(C) Analysis of Cumulative Average Abnormal Return for Buyback Announcement

Table 5 depicts the cumulative average abnormal returns for buyback announcement of sample IT companies. It is observed that the market yielded mixed reaction to the buyback announcement. The value of CAAR during the pre announcement period ranged from -5.94 to 2.85. The highest value of CAAR during the pre announcement period was recorded on day -1 with CAAR value of 2.85. Low values during the pre announcement period were recorded on -10, with value of

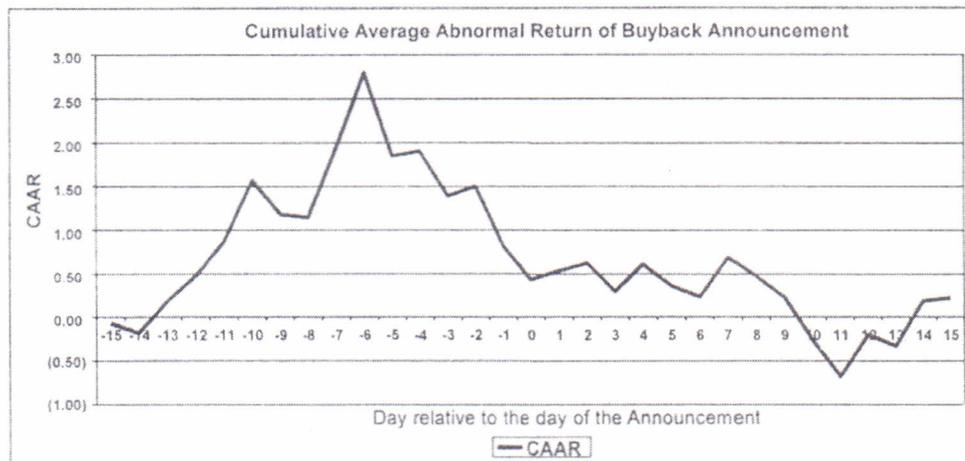
- 5.94. The highest value of CAAR during the post announcement period was registered on day 7 with CAAR value of 7.91. Low values of CAAR in this period were on day 1 with values of 3.34. It is clear that the market responded well to the buyback announcement contained information during the post announcement period. It is important to note that the post announcement reaction gives scope for adopting strategies that will help the investors to earn superior returns. The same result is graphically represented in Figure 3. It is clear from the above figure that the degree of market reaction to buyback announcement during the post announcement period was high, when compared to the pre announcement period. This result reveals the fact that though the Indian stock market was able to analyse the buyback announcement information and use it for revision of security prices, there was delay in their reaction.

Table 5
Result of Cumulative Average Abnormal Returns for Buyback Announcement

Day	CAAR
-15	-2.07
-14	-4.19
-13	-4.56
-12	-4.85
-11	-5.24
-10	-5.94
-9	-4.56
-8	-3.52
-7	-4.32
-6	-3.47
-5	-1.52
-4	-0.46
-3	1.06
-2	1.17
-1	2.85
0	3.24
1	3.34
2	3.43
3	4.76
4	5.08
5	6.33
6	7.46
7	7.91
8	7.7
9	7.45
10	5.96
11	4.54
12	4.06
13	3.93
14	3.41
15	3.38

Source: Computed from "PROWESS" ϕ corporate database.

Figure 3
Cumulative Average Abnormal Return of Buyback Announcement



The analysis of average of cumulative average abnormal returns for buyback announcement is given in Table 6. It is interesting to state that the highest average of abnormal returns of 5.12 during buyback announcement was recorded on 16 days period (from day 0 to day +15). The lowest average of CAAR (-2.64) during the announcement period was recorded on 15 days period (from day -15 to day -1). The average value of CAAR during the 31 days surrounding the announcement period (from day -15 to day +15) was 1.37. During the 7 days period (from day -3 to day +3), the average value of CAAR was 2.84 while the average of CAAR for 15 days period (from day -7 to day +7) was 2.46. It is clear from the above analysis that market failed to receive the buyback announcement information before its announcement.

Table 6
Average Value of Cumulative Average Abnormal Returns for Buyback Announcement

Period	CAAR
From Day -15 To Day +15	6.61
From Day -15 To Day -1	1.97
From Day 0 To Day +15	10.97
From Day -3 To Day +3	13.11
From Day -7 To Day +7	10.74

Source: Computed from Table 5.

It is clearly understood from the above analysis that the cumulative average abnormal returns yielded highest value during post announcement period. The possibility of earning excess returns during the post announcement period shows that the Indian stock market was not able to capture fully the information contained in the sample events announcements before their announcement. It is concluded from the above analysis that the results of cumulative average

abnormal returns show that the Indian stock market uses the buyback announcement contained information for valuation of securities and the market was efficient in impounding the buyback announcement information. Hence the hypothesis 3, "the Indian stock market is informationally not efficient where the buyback announcement contained information's are not impounded instantaneously and rightly in the stock prices of IT companies" is rejected.

From the above discussion of abnormal returns and cumulative abnormal returns the following notable points are derived

- The buyback announcement contained information made by the sample IT companies are useful for valuing the securities
- For buyback announcement the market was react quickly during post split announcement
- The reaction was extended to up to +15 days for buyback announcement by IT companies information of stock split announcement can be used by the investors for making abnormal returns at any point of the announcement period, through the strategy of short selling.

References

- Ajay Pandey, (2001), "Take Over Announcements, Open Offers, and Shareholders Return in Target Firms", *Vikalpa*, Vol. 26, No. 3.
- Bachelier Louis, (1900), Trans. James Boness. "Theory of Speculation", In Cootner, pp. 17-78.
- Ball Ray, and Philip Brown, (1968), "An Empirical Evaluation of Accounting Income Numbers", *Journal of Accounting Research*, p. 160.
- Beaver W. H. (1968), "The Information Content of Annual Earnings Announcements", *Journal of Accounting Research*, Supplement, Vol. 6, pp. 67-97.
- Dillip Kumar Sen, Sujan C. Jain, and Swapan Kumar Bala, (2002), "The Impact of Dividends and Retained Earnings on the Market Prices of Shares: A Study of Selected Enterprises of the Pharmaceutical Industry in India", *The Journal of Accounting & Finance*, Vol. 16, No. 2, pp. 43-49.
- Dutta Abhijit, (2001), "Investors Reaction to the Good and Bad News in Secondary Market: A Study Relating to Investors Behaviour", *Finance India*, pp. 567-576.
- Elroy Dimson, and Massoud Mussavian, (1998), "A Brief History of Market Efficiency", *European Financial Management*, Vol. 4, pp. 91-103.
- Fischer Black, (1971), "Implications of the Random Walk Hypothesis for Portfolio Management", *Financial Analysts Journal*, March-April, pp. 16-22.
- John C. Handley, (1995), "The Pricing of Underwriting Risk in Relation to Australian Rights Issues," *Australian Journal of Management*, Vol. 1, pp. 43-75.
- Jeffrey E. Jarrett, and Eric Kyper, (2006), "Capital Market Efficiency and the Predictability of Daily Return", *Applied Economics*, Vol. 38, pp. 631-636.
- Julie Walf, (2001), "Trumps for Mergers & Acquisition CEOs Serve Themselves First in Mergers of Equals", *Effective Executive*, Vol. 3, No. 10, pp. 24-26.
- Kakati M., (2001), "Price Performance of Bonus Issue", *Finance India*, Vol. XV, pp. 1183-1190.
- Kathleen M. Kahle, (2002), "When a Buyback is Not a Buyback: Open Market Repurchases and Employee Options", *Journal of Financial Economics*, Vol. 15, No. 1, pp. 112- 127.