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### Stock Market Reaction to Interim Dividend Announcements: Evidence from Indian Information Technology Sector

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**Abstract: Background/Objectives:** In an ideal stock market set up, dividend announcements will not have any impact on shareholder's value. However, in real markets, such announcements bring in a lot of volatility in share prices and trading volumes. The study measures stock returns in terms of change in market value around interim dividend announcement days for IT companies listed on BSE and examines the effect of these announcements on stock prices in terms of returns due to change in market value of the companies listed on BSE IT index. **Methods/Statistical analysis:** Standard event study methodology according to market model is used for the research. Event date is the announcement date of interim dividend by the sample companies. Event window is taken as  $t = -5$  to  $t = +5$  relative to the event day  $t = 0$ . Estimation window is  $t = -60$  to  $t = -5$  relative to the event day  $t = 0$ . **Findings:** The AAR T test analysis shows that there is some statistical evidence to accept the semi-strong form of market efficiency in the BSE IT stocks declaring interim dividends for 2015. CAAR T Stat values show that there were positive and negative abnormal gains on some days which establishes that there were abnormal gains or losses accruing to the investors of these stocks. **Conclusion/Improvements:** There is no consistent pattern of abnormal returns of companies declaring interim dividends for 5 days before the announcement date. The findings indicate that the null hypothesis,  $H_01$ , is rejected and accepted for some days. However, there is no consistency in the results of the study. Not all IT stocks have reacted positively on the interim dividend announcement day. Alternate hypothesis,  $H_02$ , is also rejected as the results prove that there are instances to prove that the stocks absorbed the interim dividend announcements information instantaneously.

**Key Words:** Average Abnormal Returns, Cumulative Average Abnormal Returns, Efficient Market Hypothesis, Event Study, Interim Dividend

**JEL classification:** G14

#### 1. INTRODUCTION

Dividend policy is one of the important focus areas of a firm's financial policy. Whether to distribute profits to shareholders or to preserve it as retained earnings is a common dilemma every firm faces. A

number of factors like the firm's expansion and modernization plans play a decisive role in the dividend policy. A firm's dividend policy has practical inference to the stakeholder and manager of an organization. Dividends are a source of income to investors and a tool to assess a firm's performance. Dividend payments indicate that the company is on a growth track and therefore is earning profits. Dividend policies of companies affecting the stock prices are a widely researched topic.

Interim dividends are declared prior to the determination of the final profit position for a financial year. Such dividends are paid any time between two successive annual general meetings. Firms with good business and growth opt to pay dividends twice—once before finalization of final accounts and the other after the audit of accounts. The relationship between interim dividend announcements and the volatility in stock market is a subject of empirical discussion within the finance literature. The market reaction can be bullish, bearish or neutral, depending on the content and significance of the information.

## **2. EFFICIENT MARKET HYPOTHESIS**

A market is efficient if the security prices fully reflect all relevant information available about the fundamental value of the securities. 'Market efficiency'<sup>1</sup> explains the relationship between information and share prices reaction in capital market literature. A market is efficient with respect to information set if it is impossible to make economic profits by trading on the basis of information set. Economic profits are risk adjusted returns net of all costs. Efficient market<sup>2</sup> is a market in which prices always reflect the recent available information, at any given time, the prices in the market already reflect all known information, and also change fast to reflect new information. He further states that three different levels of efficiency exist based on 'available information' – the weak, semi-strong, and strong forms.

The Semi-Strong Form Efficiency or the Event Study states that all publicly available information about the company, like its product line, final accounts, future earnings, accounting practices and management is considered besides information about its past prices.

Declaration of interim dividends is a reflection of a firm's extraordinary performance. There are many empirical studies associating final dividend announcements and abnormal stock price movements. But not many studies have been conducted to study the impact of interim dividend announcements on the share prices in India. This study will shed some light into this area and will track the stock price movements.

## **3. LITERATURE REVIEW**

Extensive studies have been carried out to understand the stock prices behaviour with respect to major events, like the final dividend announcements by companies. Various studies<sup>3,4,5,6</sup> examined the impact of special and additional dividend announcements on stock prices. Studying<sup>7</sup> the impact of dividend announcements on companies listed on BSE-500 index, it was found statistically significant AR around the announcement date concluding that dividend announcements served as positive signals about a firm's working.

Examining<sup>8</sup> the London Stock Exchange between 2007 and 2008, it was found a significant positive relationship between dividend announcements and stock prices. Further, they concluded that though dividend announcements convey less information during a boom period in the economy, the information content is more during economic adversity. Studying<sup>9</sup> the impact of daily, monthly, quarterly and annual performances

of various companies during the financial year 2008-09, a positive significant dividend effect on stock prices was found. Dividend announcements affected stock prices considerably. Covering<sup>10</sup> 10 dividend paying companies of NSE from Jan 2009 to Dec 2009, studied dividend announcement effects. They found that investors did not receive significant returns but earned good returns post the announcement and that investors were switching their investments after announcement. They also found that only 3 companies earned AR. Studying<sup>11</sup> the impact of dividend announcements on stock volatility, it was reported an increased unpredictability around final and interim dividend announcements. His study also conveyed that dividend payments to shareholders were an important source of conflict resolution between shareholders and firm managers.

Studies<sup>12,13,14,15</sup> examined the impact of special and additional dividend announcements on stock prices. An investigation<sup>16</sup> into the impact of interim dividend reductions and final reductions on stock prices of UK firms. The firms chosen were those who had not reduced their dividends in the previous three years. He conducted a sensitivity analysis and found that the magnitude of price reactions to dividend reductions was significantly related to the size of the dividend reduction, post and pre announcement effect, gearing ratio and the dummy variable interim versus final dividend reduction. He concluded that interim dividend reductions conveyed a stronger signal to the market than the final dividend reductions did, resulting in a stronger negative reaction as opposed to the final dividend reductions.

#### 4. HYPOTHESIS

H<sub>0</sub>1: There are no significant Average Abnormal Returns (AAR) around the interim dividend announcement dates i.e.  $(1/n) \cdot \sum AR = 0$  where n is the number of sample companies.

H<sub>0</sub>2: The Indian stock market is informationally not efficient to interim dividend announcements; the stocks do not impound the information instantaneously.

H<sub>a</sub>1: If  $AAR_t$  and  $CAAR_{t1,t2} > 0$  and statistically significant, it indicates that the stock prices on an average have reacted positively to interim dividend, increasing the wealth of shareholders.

H<sub>a</sub>2: The Indian stock market is informationally efficient to interim dividend announcements; the stocks impound the information instantaneously.

##### 4.1. Scope of the Study

The study is based on the daily prices of IT stocks listed in BSE/NSE index for the year 2015.

##### 4.2. Data

Interim dividends declared by IT firms in the year 2015 are considered for the study. A sample of 40 top performing companies in the IT sector is chosen for the study. Some firms declared interim dividends multiple times. Data pertaining to firms are taken from BSE except for 63 Moon Technologies for which NSE data is considered. Secondary data is collected from annual reports, published research reports and from websites like, [www.bseindia.com](http://www.bseindia.com), [www.moneycontrol.com](http://www.moneycontrol.com), [www.rediff.com](http://www.rediff.com), [www.sebi.gov.in](http://www.sebi.gov.in) and [www.yahoofinance.com](http://www.yahoofinance.com).

- Announcement dates for interim dividend declarations are taken from the website <http://economictimes.indiatimes.com>.
- Daily traded BSE and NSE prices are extracted from the website <http://finance.yahoo.com>

### 4.3. Estimation Procedure

1. Return on security  $j$  and returns of the index for period  $t$  is calculated as
  - a) Current Daily Return =  $\text{LN}^{\#\#} (\text{current day close price} - \text{previous day close price}) / \text{previous day close price}$ .

*Note: \#\#Log normal prices are considered to create a continuous time measure of returns for both the estimation period and the event window.*
2. Alpha and Beta are calculated using the OLS regression equation.
3. Expected return for each firm and S&P 500 is calculated as  $[(\text{Alpha} + \text{Beta}) * \text{S\&P actual return}]$
4. Excess Return is calculated as  $[\text{Actual Return} - \text{Expected Return}]$
5. AARs are computed by averaging the abnormal returns of the sample companies for each day of event period.

$$AAR_t = 1/N * \sum_{j=1}^N AR_{j,t}$$

6. CAARs are the sum of daily AARs during the event window.
7. AARs on all trading days in the event window and CAAR during the event window are analysed by using the 't' test to identify whether they significantly differ from zero.

## 5. DATA ANALYSIS AND RESULTS

**Table 1**  
**Impact of Interim Dividend Announcements on Share Prices**

<i>Co Name</i>	<i>Event Date</i>	<i>Alpha</i>	<i>Beta</i>	<i>R<sup>2</sup></i>	<i>Std error</i>
Cyient	1/27/2015	-0.0003	0.1279	1%	0.0191
HV	4/24/2015	0.0075	0.1604	0%	0.0261
Infosys	9/15/2015	0.0003	1.3845	84%	0.0086
Mastek	1/22/2015	0.0077	-0.0276	0%	0.0409
Polaris	3/19/2015	-0.0049	0.4340	2%	0.0351
SQS	11/5/2015	-0.0026	1.2008	25%	0.0262
Tata	4/28/2015	0.0075	1.3762	8%	0.0462
Wipro	1/7/2015	0.0016	0.1019	0%	0.1272
Zensar	1/19/2015	-0.0005	0.4644	10%	0.0183
TCS Jan	1/15/2015	-0.0011	1.0936	67%	0.0102
TCS July	7/8/2015	0.0011	0.7331	45%	0.0093
TCS Oct	10/13/2015	-0.0004	0.5814	40%	0.0098
HCL Jan	1/9/2015	-0.0011	1.2917	65%	0.0125

*contd. table 1*

<i>Co Name</i>	<i>Event Date</i>	<i>Alpha</i>	<i>Beta</i>	<i>R<sup>2</sup></i>	<i>Std error</i>
HCL Apr	4/1/2015	0.0004	1.9757	2%	0.1281
HCL July	7/21/2015	0.0020	1.1900	48%	0.0142
HCL Oct	10/1/2015	-0.0009	0.9451	46%	0.0139
MT July	7/2/2015	0.0012	1.0277	21%	0.0224
MT Sep	9/29/2015	0.0008	0.8812	34%	0.0170
MT Dec	12/31/2015	0.0009	0.6084	12%	0.0166
Hex Feb	2/10/2015	0.0010	1.0196	30%	0.0175
Hex Apr	4/17/2015	0.0077	0.4828	5%	0.0224
Hex Aug	8/4/2015	-0.0006	0.5399	9%	0.0211
Hex Nov	11/3/2015	-0.0021	1.1963	24%	0.0273
Persistent Jan	1/8/2015	0.0007	-1.4796	1%	0.1265
Persistent Dec	12/22/2015	-0.0007	0.0306	0%	0.0139
HG Feb	2/6/2015	-0.0012	-0.0246	0%	0.0150
HG Aug	8/13/2015	-0.0015	0.2381	9%	0.0088
HG Nov	11/9/2015	-0.0007	0.3915	4%	0.0258
Sasken Jan	1/13/2015	-0.0024	0.7313	17%	0.0209
Sasken Oct	10/8/2015	-0.0007	0.4762	13%	0.0171
63 Jan	1/27/2015	-0.0002	-0.0850	0%	0.0449
63 May	7/31/2015	-0.0014	0.3406	2%	0.0276
63 July	5/25/2015	0.0000	0.6416	3%	0.0393

Table 1 shows that the alpha intercept, Beta, Co-efficient of Determination and Standard error of the interim dividend declaring IT companies calculated according to the market model.

Alpha is a measure of the “abnormal return” one receives over and above what is expected based on the volatility of the stock. A positive  $\pm$  represents a sort of bonus return and is a highly desirable aspect of a security while a negative  $\pm$  represents a penalty to the investor. Stocks of HV, Infosys, Mastek, Tata, Wipro have positive  $\pm$ . Some of the multiple interim dividend announcements by IT firms like TCS July, HCL April, HCL July, Mindtree July, Sep and Dec, Hexaware Feb and April, Persistent Jan also have positive  $\pm$ . The alpha intercept of Mastek was highest followed by HV and Tata amongst the interim dividend declaring IT firms in 2015.

Beta is a measure of the stock’s volatility, or systematic risk, of a security relative to the market as a whole. Beta measures the degree to which a stock’s price fluctuates in relation to the overall market. It describes how the return on a stock can be predicted by a benchmark. Stocks of Infosys, SQS, Tata Elxsi, TCS Jan, HCL Jan, April and July, Mindtree July, Hexaware Feb and Hexaware Nov have betas of more than 1.

HCL was the most aggressive stock in April 2015 with the highest beta at 1.98 followed by Infosys and Tata at 1.38. A beta less than 1 means the stock is less volatile and has fewer price swings than the aggregate market. They are safer investments, though the returns are low. Persistent Technologies had a

negative beta of -1.48 indicating that investment in this stock is very secure. 63 Moon, Mastek, HG in Feb and in Jan also had negative betas at -0.09, -0.03 and -0.02.

R<sup>2</sup> indicates the fraction of the variance of the dependent variable (the stock return) that is explained by the movements in the independent variable (index return). It shows the regression of daily stock returns on the daily indices returns. Infosys has a RSQ of 84% suggesting a high correlation between the portfolio's returns and the benchmark's returns. TCS Jan and HCL Jan have a RSQ in the range of 40% to 70% indicating average correlation. All other stocks have RSQ of less than 40% signifying that risk is an important determinant of company's return.

Standard error measures the accuracy with which a sample represents a population. The  $\delta$  of TCS in Jan was minimum at 0.0102 indicating that this stock had appropriate representation of the sample trades. HCL in April and Wipro had the maximum standard error values at 0.1281 and 0.1272 suggesting that these stocks did not have suitable representations of the sample trades.

**Table 2**  
**AAR results**

Day	<i>Cyient</i>	<i>Mastek</i>	<i>Polaris</i>	<i>SQS</i>	<i>Tata</i>	<i>Wipro</i>	<i>Zensar</i>	<i>Infy</i>	<i>HV</i>	<i>TCS Jan</i>	<i>TCS July</i>
-5	1.2%	-2.3%	3.4%	2.0%	-2.3%	0.0%	-0.5%	-0.6%	-3.4%	0.2%	0.3%
-4	4.1%	-0.8%	1.1%	-0.3%	2.0%	0.1%	1.2%	0.8%	-1.8%	-0.9%	-0.2%
-3	-0.1%	-0.6%	-1.4%	1.3%	-3.4%	1.6%	2.6%	0.2%	-4.5%	-1.3%	0.6%
-2	0.4%	-1.0%	3.5%	1.4%	-2.8%	-0.9%	2.0%	0.3%	-0.6%	0.1%	0.9%
-1	-0.1%	-0.8%	-0.8%	0.4%	-5.5%	-1.9%	0.7%	-0.3%	6.0%	-0.3%	-0.4%
0	6.5%	3.1%	3.3%	9.3%	8.8%	0.3%	-0.4%	0.0%	-4.7%	0.6%	0.0%
1	-12.6%	-4.0%	-1.2%	-0.6%	1.9%	0.2%	1.8%	-0.4%	-2.3%	-0.1%	-1.5%
2	-1.6%	-1.1%	-2.4%	5.6%	-1.8%	4.4%	3.0%	-0.7%	-2.6%	-0.8%	-1.8%
3	0.2%	-2.7%	0.7%	1.5%	0.3%	1.7%	-0.4%	-0.1%	-6.8%	-0.7%	0.1%
4	-1.0%	-2.0%	1.0%	-0.2%	2.8%	-1.4%	-0.2%	0.3%	0.2%	-0.5%	-1.1%
5	-0.4%	-2.6%	0.7%	3.2%	-4.5%	1.7%	-0.3%	0.5%	2.6%	-0.3%	0.9%
	<i>TCS Oct</i>	<i>HCL Jan</i>	<i>HCL Apr</i>	<i>HCL July</i>	<i>HCL Oct</i>	<i>MT July</i>	<i>MT Sep</i>	<i>MT Dec</i>	<i>Hex Feb</i>	<i>Hex Apr</i>	<i>Hex Aug</i>
-5	0.1%	-1.3%	2.8%	-1.8%	-0.8%	-4.3%	1.0%	-0.2%	-1.8%	-1.0%	0.0%
-4	-0.5%	-0.1%	3.4%	-2.3%	0.9%	-0.7%	3.9%	-0.8%	0.0%	0.5%	1.2%
-3	-0.8%	0.5%	-3.4%	0.3%	0.6%	-1.6%	1.5%	0.3%	-2.5%	-0.2%	1.2%
-2	-0.8%	-1.5%	-0.6%	-1.4%	0.5%	1.2%	2.3%	-0.8%	-2.3%	-2.5%	2.3%
-1	-0.2%	1.0%	0.6%	-1.4%	1.4%	0.2%	-2.3%	-1.0%	3.0%	-0.3%	-1.5%
0	0.8%	-3.5%	-2.0%	-2.7%	-13.2%	-1.6%	0.1%	-0.7%	1.8%	-3.3%	3.6%
1	-3.7%	0.3%	-1.2%	1.1%	-0.9%	0.3%	-1.8%	0.4%	2.4%	3.2%	-3.4%
2	-0.5%	1.2%	-0.5%	-0.5%	0.4%	-1.0%	-1.2%	1.1%	2.6%	-0.3%	-2.9%
3	0.3%	-1.5%	-1.4%	-1.3%	-2.7%	0.6%	1.0%	1.8%	-0.6%	-3.2%	1.4%
4	-0.2%	0.4%	-0.5%	-0.7%	1.4%	-1.4%	0.8%	-1.1%	-1.6%	0.2%	0.9%
5	1.0%	3.1%	-0.1%	-1.4%	1.4%	-0.1%	0.8%	-1.8%	4.8%	-1.8%	-1.2%

	Hex Nov	Per Jan	Per Dec	HG Feb	HG Aug	HG Nov	Sas Jan	Sas Oct	63 Jan	63 May	63 July
-5	0.9%	-0.3%	-0.4%	0.3%	10.4%	0.3%	1.6%	-0.7%	0.9%	0.4%	0.1%
-4	-0.1%	-0.2%	-0.1%	1.2%	3.2%	-0.1%	-0.2%	0.1%	1.0%	-1.8%	-0.9%
-3	-0.5%	-1.5%	0.9%	0.6%	-0.6%	0.5%	-0.1%	2.6%	-1.6%	-0.6%	-0.8%
-2	-3.0%	-2.1%	0.0%	0.8%	-2.6%	-0.2%	10.2%	3.4%	-0.5%	0.0%	-0.4%
-1	-2.3%	-2.0%	0.0%	-0.2%	-2.5%	0.0%	-1.4%	3.8%	-2.2%	0.8%	-1.7%
0	-0.3%	2.1%	-0.6%	-2.2%	-11.3%	-0.5%	2.4%	0.1%	-1.2%	-0.9%	1.0%
1	5.0%	3.2%	-0.3%	-1.8%	-4.9%	-0.2%	2.7%	3.7%	0.3%	2.7%	-1.3%
2	1.6%	1.0%	-1.1%	-1.4%	3.2%	0.7%	-3.5%	3.4%	0.4%	-0.5%	-0.3%
3	4.5%	-0.4%	-0.3%	-0.7%	-0.7%	-0.6%	0.2%	1.2%	2.9%	4.6%	-0.8%
4	2.5%	4.7%	-0.2%	0.6%	0.1%	1.2%	-0.3%	0.8%	0.4%	4.1%	-0.2%
5	2.2%	0.3%	0.4%	0.4%	1.0%	0.4%	-5.2%	-1.0%	-1.6%	-3.1%	-0.7%

### AAR analysis

The share prices from day -5 to -1 are indicators of the outlook of investors to the impending dividend announcement news. The expectations of the shareholders are displayed by way increased trading activities which in turn leads to higher trading prices. From the data in table 2, it can be seen that in the run-up days to the actual announcement day, of the 33 interim dividend announcements, 18 stocks were upbeat on day -5, 16 stocks reacted positively on day -4, prices of 15 stocks were up on day -3, 15 firms had affirmative prices on day -2, and 12 IT company shares were positively trading on day -1.

Share prices of Hexaware following dividend announcements in Nov were positive on all the 5 days following the dividend announcement. However, the prices of Mastek, TCS in Jan, HCL in April and July were negative on all the days after the dividend announcement.

Positive reaction or increased trading prices indicate that the investors' expectations and interim dividend announcements by firms matched, while negative reaction in the share market can be related to the actual dividends being lesser than what they looked forward to. On the day of interim dividend announcement, stock prices of 14 companies traded positively, the highest being SQS at 9.3% and Tata at 8.8%. 2 stocks, Infosys and TCS in July did not react to the announcement and the average abnormal returns were nil.

In the 5 days following the announcement, while the stock prices of some firms were up, others reacted negatively. Prices of 15 stocks were positive on day 1, 15 stock prices were buoyant on day 2, 16 share prices were up on day 3, 17 shares had affirmative prices on day 4, and 17 stocks were positively trading on day 5. HCL's dividend announcement in Oct and HG's in Aug were not greeted by investors and these 2 stocks traded least at -13.2% and -11.3%.

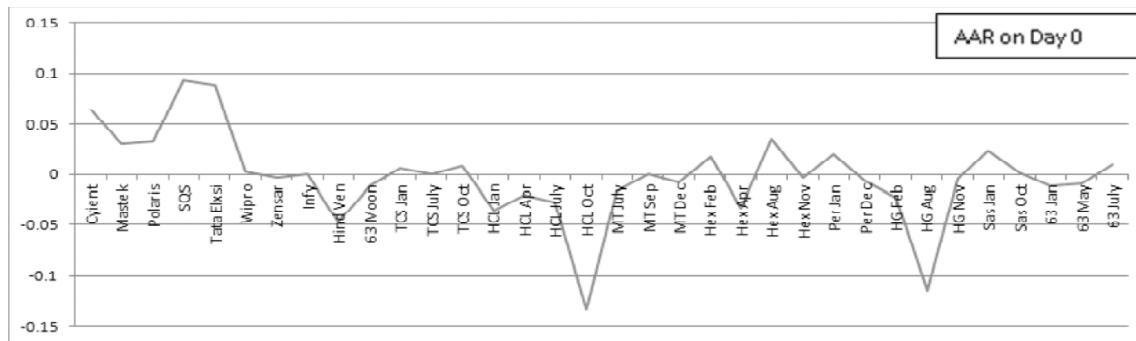


Figure 1: AAR on day 0

The AAR graph clearly indicates that 14 stocks had positive returns on the dividend announcement day. SQS followed by Tata had the highest returns and stocks of HCL in Oct suffered the most followed by HG in Aug.

**CAAR Findings**

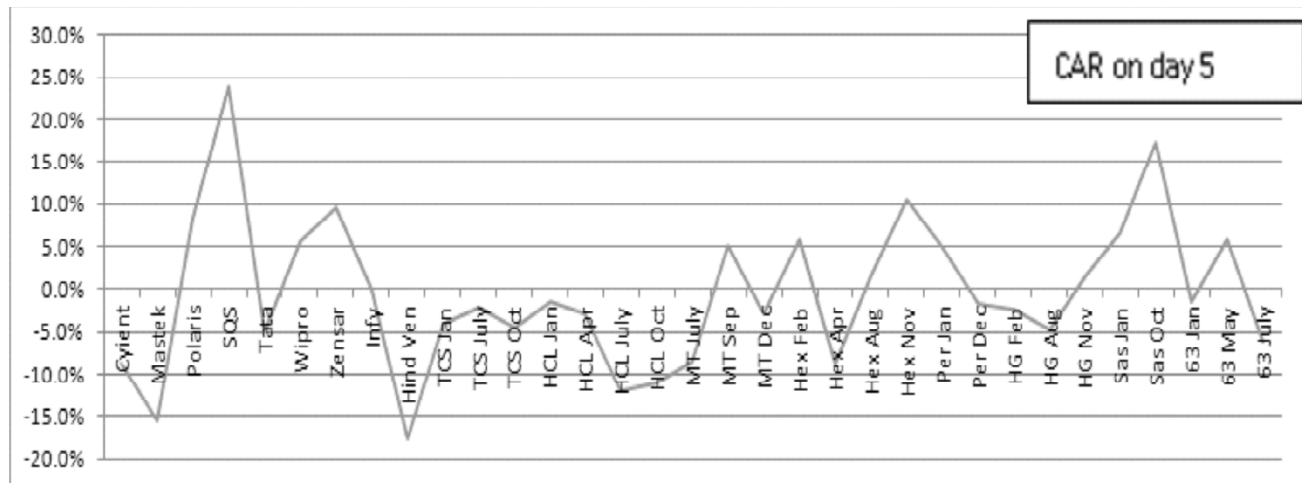
**Table 3  
CAAR results**

Day	Cyient	Mastek	Polaris	SQS	Tata	Wipro	Zensar	Infy	HV	TCS Jan	TCS July
5	-8.8%	-15.6%	8.3%	23.9%	-5.1%	5.6%	9.5%	0.1%	-17.7%	-4.0%	-2.2%
	TCS Oct	HCL Jan	HCL Apr	HCL July	HCL Oct	MT July	MT Sep	MT Dec	Hex Feb	Hex Apr	Hex Aug
5	-4.4%	-1.4%	-3.0%	-12.1%	-11.1%	-8.6%	5.0%	-2.9%	5.9%	-8.7%	1.6%
	Hex Nov	Per Jan	Per Dec	HG Feb	HG Aug	HG Nov	Sas Jan	Sas Oct	63 Jan	63 May	63 July
5	10.4%	4.8%	-1.7%	-2.4%	-4.7%	1.5%	6.5%	17.3%	-1.4%	5.7%	-6.0%

**CAAR analysis**

The cumulative abnormal returns of the dividend announcement for 5 days prior to and after the dividend announcement are analyzed in table 3. The shareholders of IT companies of Polaris and SQS gained on all the days in the pre and post event window period of 5 days. Cumulatively, shareholders of SQS (23.9%) followed by Sasken in Oct (17.3%) and Hexaware in Nov (10.4%) gained the maximum by day 5.

Shareholders of Cyient, Mastek, Tata, HV, TCS Jan, July and Oct, HCL Jan, April, July and Oct, MT July and Dec, Hex April, Per Dec, HG Feb and Aug, 63 Moon Jan and July lost at the end of the event window. The maximum loss was incurred by the shareholders of HV (-17.7%), Mastek (-15.6%), HCL in July (-12.1%) and Oct (-11.1%) lost heavily at the end of day 5. The graph below will give a better picture about the CAAR data analysis.



**Figure 2: CAAR on day 5**



**AAR T test analysis**

**Table 4**  
**AAR T Test values**

<i>Day</i>	<i>Cyient</i>	<i>Mastek</i>	<i>Polaris</i>	<i>SQS</i>	<i>Tata</i>	<i>Wipro</i>	<i>Zensar</i>	<i>Infy</i>	<i>HV</i>	<i>TCS Jan</i>	<i>TCS July</i>
-5	0.6354	-0.5560	0.9567	0.7517	-0.4876	0.0029	-0.2778	-0.7517	-1.2938	0.2260	0.3735
-4	2.1328	-0.2028	0.3020	-0.1175	0.4380	0.0052	0.6375	0.9023	-0.6955	-0.8841	-0.2503
-3	-0.0589	-0.1352	-0.4087	0.4923	-0.7352	0.1264	1.3987	0.2813	-1.7331	-1.2945	0.6489
-2	0.2214	-0.2375	1.0050	0.5330	-0.6071	-0.0702	1.0684	0.3667	-0.2371	0.0766	0.9979
-1	-0.0779	-0.2068	-0.2235	0.1420	-1.1862	-0.1499	0.3691	-0.3072	2.3138	-0.2619	-0.3889
0	3.4147	0.7477	0.9491	3.5499	1.9163	0.0235	-0.1994	-0.0204	-1.8081	0.5821	0.0153
1	-6.5866	-0.9708	-0.3516	-0.2143	0.4012	0.0193	0.9969	-0.4375	-0.8704	-0.1347	-1.6544
2	-0.8381	-0.2784	-0.6765	2.1266	-0.3875	0.3448	1.6341	-0.8150	-0.9843	-0.7368	-1.9157
3	0.0879	-0.6525	0.2036	0.5551	0.0658	0.1317	-0.2109	-0.0626	-2.5918	-0.7296	0.1230
4	-0.5085	-0.4848	0.2734	-0.0634	0.6104	-0.1116	-0.0895	0.3957	0.0906	-0.4542	-1.2059
5	-0.2345	-0.6477	0.1864	1.2358	-0.9640	0.1341	-0.1510	0.5467	1.0138	-0.3099	0.9313
<i>TCS Oct</i>	<i>HCL Jan</i>	<i>HCL Apr</i>	<i>HCL July</i>	<i>HCL Oct</i>	<i>MT July</i>	<i>MT Sep</i>	<i>MT Dec</i>	<i>Hex Feb</i>	<i>Hex Apr</i>	<i>Hex Aug</i>	
-5	0.0730	-1.0685	0.2202	-1.2648	-0.5905	-1.9177	0.6058	-0.1391	-1.0310	-0.4599	-0.0169
-4	-0.5367	-0.0491	0.2619	-1.6417	0.6594	-0.3287	2.2711	-0.4966	0.0106	0.2362	0.5802
-3	-0.8152	0.4024	-0.2660	0.1780	0.4041	-0.6992	0.8514	0.1998	-1.4092	-0.0946	0.5765
-2	-0.8600	-1.1828	-0.0499	-0.9708	0.3348	0.5304	1.3703	-0.4956	-1.2990	-1.0943	1.0999
-1	-0.1797	0.7653	0.0501	-0.9978	0.9916	0.0883	-1.3619	-0.6027	1.6961	-0.1336	-0.7037
0	0.8460	-2.8309	-0.1572	-1.8656	-9.5379	-0.7077	0.0407	-0.4480	1.0161	-1.4541	1.6896
1	-3.7549	0.2802	-0.0939	0.7692	-0.6395	0.1345	-1.0736	0.2662	1.3689	1.4047	-1.5963
2	-0.4908	0.9810	-0.0418	-0.3297	0.3091	-0.4379	-0.6830	0.6767	1.4706	-0.1264	-1.3903
3	0.3297	-1.2401	-0.1129	-0.9130	-1.9460	0.2583	0.6080	1.0840	-0.3216	-1.4207	0.6541
4	-0.1678	0.3536	-0.0355	-0.4591	0.9935	-0.6421	0.4501	-0.6787	-0.9032	0.0772	0.4133
5	1.0691	2.4823	-0.0075	-1.0089	0.9957	-0.0620	0.4601	-1.0969	2.7517	-0.8096	-0.5682
<i>Hex Nov</i>	<i>Per Jan</i>	<i>Per Dec</i>	<i>HG Feb</i>	<i>HG Aug</i>	<i>HG Nov</i>	<i>Sas Jan</i>	<i>Sas Oct</i>	<i>63 Jan</i>	<i>63 May</i>	<i>63 July</i>	
-5	0.3395	-0.0271	-0.2883	0.1822	11.8406	0.1143	0.7554	-0.3855	0.2013	0.1614	0.0157
-4	-0.0220	-0.0176	-0.0404	0.8231	3.6185	-0.0293	-0.0852	0.0526	0.2184	-0.6556	-0.2259
-3	-0.1900	-0.1213	0.6388	0.3854	-0.6280	0.1791	-0.0660	1.5362	-0.3590	-0.2216	-0.2054
-2	-1.1118	-0.1635	0.0016	0.5019	-2.9664	-0.0748	4.8928	1.9958	-0.1036	0.0033	-0.0962
-1	-0.8469	-0.1580	0.0278	-0.1534	-2.8264	-0.0029	-0.6812	2.2186	-0.4973	0.2818	-0.4439
0	-0.1199	0.1647	-0.4577	-1.4861	-12.8569	-0.1783	1.1356	0.0689	-0.2660	-0.3296	0.2491
1	1.8196	0.2519	-0.2165	-1.1856	-5.6159	-0.0845	1.2862	2.1355	0.0575	0.9872	-0.3339
2	0.5692	0.0800	-0.7644	-0.9543	3.6178	0.2670	-1.6927	1.9921	0.0797	-0.1980	-0.0791
3	1.6496	-0.0288	-0.2414	-0.4780	-0.8230	-0.2367	0.0789	0.6889	0.6409	1.6664	-0.2047
4	0.9311	0.3747	-0.1220	0.4289	0.1428	0.4715	-0.1434	0.4510	0.0783	1.4879	-0.0451
5	0.7995	0.0218	0.2636	0.2503	1.1269	0.1448	-2.4737	-0.6116	-0.3658	-1.1159	-0.1690

The AAR T test analysis shows that there is some statistical evidence to accept the semi-strong form of market efficiency in the BSE IT stocks declaring interim dividends for 2015. On some days of the study period (highlighted in the table), the T stat values of some stocks are significant at 5% level of significance. The values are significant for Cyient on days -4, 0 and 1, SQS on days 0 and 2, HV on days -1 and 3, TCS Oct on day 1, HCL Jan on 0 and 5 days, HCL Oct on day 0, MT Sep on day -4, Hex Feb on day 5, HG Aug on days -5, -4, -2, -1, 0, 1 and 2, Sasken Jan on -2 and 5 and Sasken Oct days -2, -1, 1 and 2. The hypothesis,  $H_0$ , there are no significant AAR around the interim dividend announcement dates is rejected for these days.

On all other days of the study period and for other stocks, the AAR T stat values are not significant. This proves the hypothesis,  $H_0$ , there are no significant AAR around the interim dividend announcement dates, is accepted.

### CAAR T test analysis

**Table 5**  
**CAAR T test results**

Day	Cyient	Mastek	Polaris	SQS	Tata	Wipro	Zensar	Infy	HV	TCS Jan	TCS July
-5	-2.1391	-0.7452	1.0977	0.8495	-0.6507	-0.0095	-0.2508	-0.7915	-1.2938	0.2260	0.3735
-4	-0.0063	-0.9480	1.3997	0.7320	-0.2128	-0.0043	0.3867	0.1107	-1.9893	-0.6581	0.1232
-3	-0.0652	-1.0832	0.9910	1.2243	-0.9480	0.1222	1.7854	0.3920	-3.7223	-1.9526	0.7721
-2	0.1562	-1.3207	1.9961	1.7573	-1.5551	0.0520	2.8538	0.7587	-3.9595	-1.8760	1.7700
-1	0.0782	-1.5276	1.7726	1.8993	-2.7412	-0.0980	3.2229	0.4515	-1.6456	-2.1378	1.3812
0	3.4929	-0.7799	2.7216	5.4492	-0.8249	-0.0745	3.0234	0.4311	-3.4538	-1.5557	1.3965
1	-3.0937	-1.7507	2.3700	5.2349	-0.4237	-0.0553	4.0204	-0.0064	-4.3242	-1.6904	-0.2579
2	-3.9318	-2.0291	1.6935	7.3615	-0.8112	0.2896	5.6545	-0.8214	-5.3085	-2.4272	-2.1736
3	-3.8439	-2.6816	1.8971	7.9166	-0.7454	0.4213	5.4436	-0.8840	-7.9003	-3.1568	-2.0505
4	-4.3524	-3.1664	2.1705	7.8532	-0.1349	0.3097	5.3541	-0.4882	-7.8097	-3.6110	-3.2564
5	-4.5869	-3.8141	2.3569	9.0891	-1.0990	0.4438	5.2031	0.0585	-6.7959	-3.9210	-2.3251
	TCS Oct	HCL Jan	HCL Apr	HCL July	HCL Oct	MT July	MT Sep	MT Dec	Hex Feb	Hex Apr	Hex Aug
-5	0.0730	-1.0685	0.2202	-1.2648	-0.5905	-1.9711	0.0000	-0.1391	-1.0310	-0.4599	-0.0169
-4	-0.5367	-1.1176	0.4821	-2.9065	0.0688	-2.2998	2.2711	-0.6357	-1.0204	-0.2237	0.5634
-3	-0.8152	-0.7151	0.2160	-2.7285	0.4729	-2.9989	3.1225	-0.4360	-2.4297	-0.3183	1.1399
-2	-0.8600	-1.8979	0.1661	-3.6993	0.8077	-2.4685	4.4928	-0.9316	-3.7286	-1.4126	2.2398
-1	-0.1797	-1.1326	0.2162	-4.6971	1.7992	-2.3802	3.1309	-1.5343	-2.0326	-1.5462	1.5361
0	0.8460	-3.9635	0.0589	-6.5627	-7.7387	-3.0879	3.1715	-1.9823	-1.0165	-3.0003	3.2257
1	-3.7549	-3.6833	-0.0350	-5.7935	-8.3782	-2.9534	2.0979	-1.7161	0.3524	-1.5956	1.6295
2	-0.4908	-2.7022	-0.0768	-6.1232	-8.0691	-3.3914	1.4149	-1.0394	1.8230	-1.7220	0.2391
3	0.3297	-3.9424	-0.1897	-7.0362	-10.0152	-3.1331	2.0229	0.0446	1.5014	-3.1427	0.8933
4	-0.1678	-3.5887	-0.2252	-7.4953	-9.0217	-3.7752	2.4729	-0.6341	0.5982	-3.0655	1.3066
5	1.0691	-1.1064	-0.2326	-8.5041	-8.0260	-3.8372	2.9331	-1.7311	3.3499	-3.8751	0.7384

	<i>Hex Nov</i>	<i>Per Jan</i>	<i>Per Dec</i>	<i>HG Feb</i>	<i>HG Aug</i>	<i>HG Nov</i>	<i>Sas Jan</i>	<i>Sas Oct</i>	<i>63 Jan</i>	<i>63 May</i>	<i>63 July</i>
-5	0.3395	-0.0271	-0.2883	12.1052	11.8406	0.1143	0.8686	-0.3855	0.2013	0.1614	0.0157
-4	0.3175	-0.0446	-0.3288	54.6934	15.4591	0.0850	0.7833	-0.3329	0.4198	-0.4942	-0.2102
-3	0.1275	-0.1660	0.3100	25.6098	14.8311	0.2640	0.7173	1.2033	0.0608	-0.7158	-0.4156
-2	-0.9843	-0.3295	0.3116	33.3522	11.8647	0.1892	5.6101	3.1991	-0.0428	-0.7125	-0.5118
-1	-1.8312	-0.4875	0.3395	-10.1922	9.0384	0.1864	4.9290	5.4177	-0.5401	-0.4308	-0.9556
0	-1.9512	-0.3228	-0.1182	-98.7547	-3.8186	0.0081	6.0645	5.4866	-0.8061	-0.7603	-0.7065
1	-0.1316	-0.0709	-0.3347	-78.7864	-9.4344	-0.0764	7.3507	7.6220	-0.7486	0.2269	-1.0404
2	0.4376	0.0091	-1.0991	-63.4127	-5.8166	0.1906	5.6580	9.6141	-0.6690	0.0289	-1.1195
3	2.0872	-0.0197	-1.3405	-31.7623	-6.6396	-0.0461	5.7369	10.3030	-0.0280	1.6953	-1.3242
4	3.0183	0.3549	-1.4625	28.5018	-6.4968	0.4254	5.5935	10.7540	0.0503	3.1832	-1.3693
5	3.8178	0.3768	-1.1989	16.6345	-5.3699	0.5702	3.1198	10.1424	-0.3155	2.0673	-1.5382

The table CAAR T Stat values show that there were positive and negative abnormal gains on some days which establishes that there were abnormal gains or losses accruing to the investors of these stocks. The CAAR T stat values of Polaris, SQS, Zensar, MT Sep, Hex in Feb (day 5), Aug and Nov, Sasken in Jan and Oct, HG Feb (days -5, -to -2, 4 and 5), HG Aug (days -5 to -1) showed positive CAAR T stat values. The investors of these companies benefitted due to interim dividend announcements on these days as there were positive abnormal gains.

The CAAR T stat values of Cyient (days -5, 0 to 5), Mastek(1 to 5), Polaris (-2, 0 to 2, 4 and 5), Tata (-1), HV (-3 to 5), TCS Jan (-1, 2 to 5), TCS July (2 to 5) TCS Oct (1), HCL Jan (0 to 4), HCL July (-4 to 5), HCL Oct (0 to 5), MT July (all days), MT Dec (0), Hexa Feb (-3 to -1 and 5), Hexa April (0, 3 to 5), Hexa Aug (-2 and 0), HG Feb (-1 to 3), HG Aug (0 to 5) are much lower than the table values. Interim dividend announcements were not greeted positively by these investors. Negative abnormal gains accrued to shareholders. The stockholders of these companies lost due to interim dividend announcements.

## 6. CONCLUSION

In a symmetrically informed market, all participants of the stock market such as the managers, shareholders, brokers and prospective investors have similar information about a firm—its current situation and future prospects. If any one group possesses some additional information about the firm, informational asymmetry exists. Understanding stock market behaviour around corporate events helps investors beat the market and earn abnormal returns.

This study investigated whether investors of BSE IT stocks gained significantly on account of interim dividend announcements made by IT companies in 2015. The results indicate that there were some significant positive abnormal returns prior to interim dividend announcements. On the announcement day, the average abnormal returns are positive for 14 IT stocks of the 33 interim dividend announcements under study.

However, there is no consistent pattern of abnormal returns of companies declaring interim dividends for 5 days before the announcement date. This may be due to insider trade in the market, so, the information has adjusted with the stock prices before announcement and consequently interim dividends announcement

did not carry any new information to the market. Insider trading causes asymmetry of information in the market. The AAR is positive on some days in the pre event window which may be due to information leak from the companies' board.

The findings indicate that the null hypothesis,  $H_01$ , there is no significant AAR around the interim dividend announcement dates, is rejected and accepted for some days. However, there is no consistency in the results of the study. Not all IT stocks have reacted positively on the interim dividend announcement day.

The findings suggest that the alternate hypothesis,  $H_02$ , that the Indian IT stock market is not informationally efficient to interim dividend announcements is also rejected as the results prove that there are instances to prove that the stocks absorbed the interim dividend announcements information instantaneously.

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**Annexure 1**  
**IT company names and their abbreviations**

<i>IT Company names</i>	<i>Abbreviation</i>
Tata Consultancy Services Ltd	TCS
HCL Technologies Ltd	HCL
Mindtree Ltd	MT
Hexaware Technologies Ltd	Hex
Persistent Systems Ltd	Per
Hinduja Global Solutions Ltd	HG
Sasken Communication Technologies Ltd	Sas
63 Moon Technologies Ltd formerly, Financial Technologies India Ltd	63
Infosys Ltd	Infy
SQSBFSI	SQS
Hinduja Ventures Ltd	HV
Cyient Ltd	Cyient
Zensar Technologies Ltd	Zensar
Polaris Consulting & Services Ltd	Polaris
Tata Elxsi Ltd	Tata