STOCK PRICE REACTION TO ANNUAL EARNINGS ANNOUNCEMENT IN BOMBAY STOCK EXCHANGE

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ABSTRACT

Semi strong capital market efficiency with reference to the annual earnings announcement has been studied in this paper. This study is based on the secondary market price data of the Bombay Stock Exchange, India. The data for the calendar years 2009 to 2013 was analysed and searched for the 30 companies included in the Sensex to identify the stock price reaction to annual results announcements. The sample size was 150 annual results announcements of the companies in BSE Sensex. Event study methodology was followed for the data analysis. For event study methodology, announcement window (AD-15 to AD+15) was used. Non parametric theta test was applied to the test the significance of the companies showing positive abnormal price changes in the market. Also, the data collected was analysed sector wise to understand the market efficiency of the concerned sectors. The analysis has shown that the BSE and the sectors analysed have reflected semi strong efficiency.

KEYWORDS: Event Study Methodology, Bombay Stock Exchange, Annual Earnings Announcement, Semi Strong Capital Market Efficiency

INTRODUCTION

In finance, the efficient-market hypothesis (EMH) states that it is not possible for an investor to outperform the market because all available information is already built into all stock prices. Investors who agree with this statement tend to buy index funds that track the overall market performance. There are three major versions of the hypothesis, namely, "weak", "semi-strong", and "strong". The semi-strong form of the EMH claims both that prices reflect all publicly available information and that prices instantly change to reflect new public information.

The value-relevance of income reviews has been an important subject in financial statement over the last four decades. Financial reviews act as tools of interaction on a firms' efficiency especially during the period under review. Publicly listed companies are required to post their audited economical declaration at the end of every financial year. A Company's efficiency is important to traders since it has a direct effect on profits to investment. It is therefore expected that upon launch of fiscal reviews, an efficient industry should instantly process the details and modify the inventory values accordingly. A number of scientific studies have been performed on the effect of bookkeeping details on share prices. Some have desired to set up the value of the details in predicting future economical efficiency while others have tried to measure its effect on share prices.

Although very crucial the large of these studies have been performed in developed markets such as the United States of America and the UK. The present study examined the response of Bombay stock exchange to yearly income declaration.

This study helps to understand the stock price fluctuation in Bombay Stock Exchange during the pre and post annual results announcement period and tests the semi strong efficient market hypothesis in the Indian stock market.

LITERATURE REVIEW

Ball (1968) recorded that the irregular market efficiency happened prior to the discharge of the annual earnings announcement. *Patell et al. (1984)* examined the effects of annual announcement releases of earnings and dividend announcements on mean, variance and serial correlation in consecutive price changes. *Kane et al. (1985)* assessed abnormal stock returns nearby earnings and dividend announcements so as to decide whether investors estimate the two announcements with regard to each other. *Mabhunu (2004)* has identified that the primary idea behind the EMH is that stock values should fully indicate all new and available details in an impartial manner to the industry members. Such marketplaces provides precise alerts for source apportionment as industry costs signify each security's basic worth, although diversions can happen.

Bamber et al. (2000), interpreted of the evidence that annual earnings announcements initiate a strong share market response has been questioned. *Simons et al.(2006)* indicates market performance, by using the latest information; it will be able to catch some of the styles that may impact on the performance of investment marketplaces in Africa nations. Learning the stock price motions around statement schedules increases the evaluation of the market's respond to cross-listing *(Liu, 2007)*. A research by *Ahmed et al. (2010)* provides proof that the impact of dividend reports is much more powerful than for income reports. Traditionally most of the benefits earned in the stock exchange have maintained to occur over relatively short time period periods *(Jordan et al., 2012)*.

One effects of an efficient industry is that no irregular profits can be made from this details because current prices already reflect the details *(Adelegan, 2009)*. An previously study on the South africa inventory exchange was by *Maina (2009)*, which examined the inventory profits around the income reports for estimated companies on the NSE investments exchange. A latest research performed on this subject by *Mlonzi et al. (2011)* used a example period of one year (January, 2009 to Dec, 2009) and only examined the example companies detailed on the different return (ALtX), whereas their study assessments all example companies detailed on the JSE investments return regardless of return record. A powerful form of the effective market speculation keeps that share costs already integrate all appropriate information, whether public or non-public *(Cheol et al., 2012)*.

Another factor of market respond to information reports is the response to stock divides. Stock divided represents where all current investors get new stocks in exchange for each old share that they own *(Jordan et al., 2012)*. *White et al., (2012)*This indicates that although income are significant actions of a company's financial efficiency, by the time they are released and have little or no effect available on the industry.

Hence, the present research concentrates on the market respond to income statement types the reasons for main purpose of the research and places out the overall tone for the rest of the sections of the study; methodology, presentation of the data and analysis and the conclusions of the study.

OBJECTIVES OF THE STUDY

- To understand the stock price fluctuation in Bombay Stock Exchange during the pre and post result period.

- To study the effect on shareholder wealth accumulation due to result announcements.

- To find out the relationship between Sensex movements and share price movements.

- To test the efficient market hypothesis in Indian stock market.

METHODOLOGY

Time Window for Analysis

It has always been always a debatable issue when it comes to choosing window length and different lengths are used by different researchers for the study. In order to draw overall inferences for the event of interest, the abnormal return observations are aggregated along two dimensions – through time and across securities.

For this study the following time window has taken.

ANNOUNCEMENT WINDOW (ANNOUNCEMENT DAY-15 TO ANNOUNCEMENT DAY+15)

This window is selected to test Neglected firm hypothesis and any information content associated with split announcement or leakage of split information before the formal announcement has been made. In case any information content is associated with split announcement as suggested by neglected firm hypothesis, an abnormal return should be present on announcement day but should not be present on effective day. If any significant abnormal return is found in this window prior to announcement date there is a case of insider information or leakage of sensitive information in the market place before the announcement.

SAMPLE SIZE

During the time period between 2009 and 2013, totally 30 companies in the BSE Sensex index

EVENT STUDY METHODOLOGY

In this study event study methodology is followed. Secondary data on annual earnings announcements of different companies during the period of 2009-2013 were collected from the website of Bombay Stock Exchange (BSE).

The normal model most widely used in the event-studies is the market model which can be expressed as

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \xi_{i,t} \tag{1}$$

$$Return = \left(\frac{\text{(Current day market price of the security-Previous day market price of the security)}}{\text{Previous day market price of the security}} \right) * 100$$

Where

R_{it} is the return on security i on day t

R_{mt} is the return on a market index on day t

Abnormal return for each security on day t is estimated as

$$AR_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t} \tag{2}$$

- **Mean Abnormal Return (MAR)**

An average of abnormal returns across the N firms on a day t.

$$MAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{i,t}$$

(3)

- **Mean Cumulative Abnormal Return (MCAR)**

Average of the cumulative abnormal returns across observations (firms); it is a measure of the abnormal performance over the event period,

$$MCAR_t = \frac{1}{N} \sum_{i=1}^{N} CAR_{i,t}$$

(4)

Event study methodology is followed to analyse the Indian capital market, as well as individual sectors.

- **Significance Test-Theta(ϕ)**

$$\theta = [\frac{N^+}{N} - 0.5] \frac{\sqrt{N}}{0.5} \sim N(0,1)$$

(5)

Where N is the sample size and N+ is the number of cases where the abnormal return is positive.

FINDINGS

Announcement Day (-15 to +15)

Table 1: Announcement Day Window for Sensex 30 Companies

Reference Day	MAR	MCAR	Theta
-15	0.019569	0.019569	-1.1431
-14	-0.03296	-0.01339	0.163299
-13	0.089106	0.075715	0.163299
-12	0.156673	0.232387	-0.3266
-11	-0.02359	0.208793	-1.1431
-10	0.085103	0.293895	-0.6532
-9	0.022177	0.316072	0.163299
-8	0.089982	0.406054	0.816497
-7	-0.01548	0.390578	-1.1431
-6	0.147673	0.538251	-2.28619
-5	0.043851	0.582102	-0.6532
-4	-0.13802	0.444077	-1.63299
-3	0.018072	0.462149	0.653197
-2	0.067482	0.529631	-0.1633
-1	0.250103	0.779734	0.653197
0	-0.52371	0.256021	-1.63299
1	0.1336	0.389621	0.163299
2	-0.22799	0.16163	-2.12289
3	0.163018	0.324648	1.632993
4	-0.02779	0.296863	-1.79629
5	0.341191	0.638054	1.632993
6	0.335555	0.973609	-0.1633
7	0.168191	1.141799	0

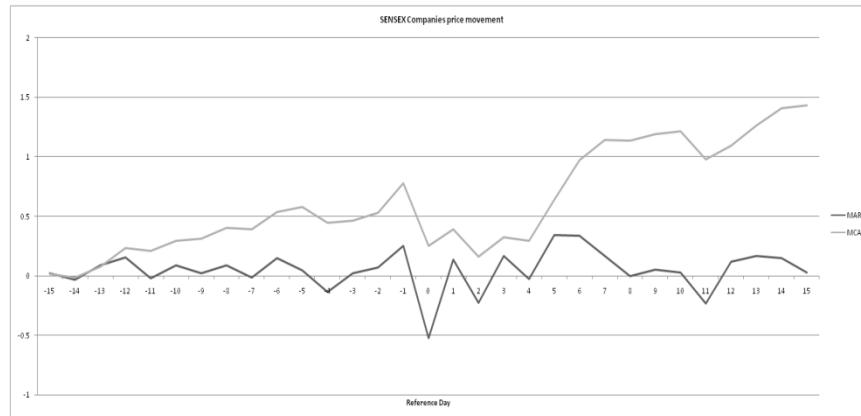| Table 1: Contd.,			
8	-0.00313	1.138672	-0.4899
9	0.050048	1.18872	0.326599
10	0.026305	1.215024	0.326599
11	-0.23433	0.980695	-0.3266
12	0.115083	1.095778	0.489898
13	0.167366	1.263144	0.816497
14	0.14512	1.408264	-0.9798
15	0.025606	1.433869	-0.3266

Figure 1: Price Movement for Sensex Companies

The Stock market has not acted favorably for the announcement of annual results. The abnormal return shows the highest negative return on the results announcement day when seen during the 15 days prior to the day of announcement. Theta also is nearly significant on the date of announcement of results.

The analysis of abnormal market return during the 15 days prior to the date of announcement has not shown any significant change. This table shows that the information regarding the performance of the companies was new to the market only on the announcement date. And there was no information leak in to the market prior to the announcement of results. However, the study of the theta for 15 days prior to the announcement date have shown negative significant value 6 days prior to the results announcement day. And also 4 days prior to the announcement date, the theta value was closer to the negative significant value. So the values of Theta suggest that some information leak was possible in the Indian stock market prior to the announcement of annual results.

The data relating to the abnormal return during 15 days after the result announcement day has not shown any significant values. However, Theta values show significant negative values on the 2nd day and 4th day and significant positive values on 3rd and 5th day only. It shows that Theta also does not show significant change during 15 days after the announcement date.

The Bombay Stock Exchange has reacted unfavorable on the announcement day of annual results. There was no significant change in the prices either before the announcement of annual results or after the announcement of annual results, barring a few days where Theta (non parametric method for the number of stocks showing higher abnormal positive returns versus number of stock showing abnormal negative returns) has shown significant changes. As there were the biggest falling in the abnormal returns on the day of result announcement. These findings suggest that the BSE has showed semi-strong market efficiency.

The price movement in the various sectors of Sensex was also computed. The Automobile, Banking, Oil and gas have not shown the higher return on the results announcement day. In Automobile sector the highest return was achieved on the 8th day prior to the date of announcement of results. This suggests that there was no semi-strong efficiency in this sector in BSE. Other industries such as Pharmaceuticals, IT, Steel has shown semi-strong market efficiency.

CONCLUSIONS

The abnormal returns of the Sensex companies was studied for 5 years to test whether the Bombay Stock Exchange reflects semi strong efficiency, as studied with reference to the annual results announcement. The 30 Sensex companies studied where also analyzed for the different industry sectors, in which they are categorized by the Bombay Stock Exchange. The Automobile, Banking, Oil and gas sectors have not shown semi strong market efficiency. The Pharmaceuticals, IT, Steel have shown semi strong market efficiency.

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