An Event Study of Pre and Post Bonus Announcement for Position Investors

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Bonus announcement is often seen as a profitable strategy for intra-day trading; to know how useful it can be for position (long-term) investors this study is conducted. 30 companies were chosen randomly and a two-tail t-test is conducted. Considering the p-value of each company at 5% level of significance we found out the number of companies which have given positive numbers for position investors. A generalization method has also been used to see the overall applicability of the study. Reflecting individual companies fewer number showed positive results after a period of 30 days but using the generalization technique the study proved to be significant. There are certain limitations to the study as well including non-consideration of any other event which might have taken place, bearing in mind only NSE and BSE and also it includes companies which have made an announcement in the past three years.

Keywords: bonus announcement, position investors, stock returns

Introduction

India has two major stock exchanges—Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) while BSE has 5,000 companies listed, and NSE, started in the year 1994, has only 1,600 listed companies. Securities and Exchange Board of India regulates these along with issuing certain rules and regulations which are necessary which are compulsory. It mainly protects investors from malpractices. The two main indices by each NSE and BSE are NIFTY50 and SENSEX respectively. While NIFTY50 shows the performance of Top 50 companies, SENSEX consists of only 30 companies. While demand and supply are major factors impacting the market price of stocks in these exchanges, there are other factors too. Generally, two types of analysis can be done in order to determine appropriate stocks for desired returns—fundamental analysis and technical analysis. Since these are complex for common man, simpler way to invest is on the basis of news.

Everyday news plays a significant role in examining bullish or bearish movement of the market.

News also consists of corporate actions which the company intends to take in order to determine the capital structure of the company. This can not only lead to fluctuations in ownership but also stock price of the company. These actions are approved by the board of directors. Corporate actions are of various types—dividend issue, stock split, rights issue, etc., but here we will be concentrating on bonus issue.

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**Bonus Issue**

A bonus issue is when the company offers additional shares to the existing shareholders. It is an alternative to increasing dividend payout when the company is cash strapped. While keeping the ownership undiluted, bonus issue increases the issued capital of the company making it look bigger than it already is. Bonus issue offers free shares so there is no actual cash inflow for the company which can lead to a decrease in dividends per share in the future thus disappointing the shareholders. If the issue is 1:5, for every five shares the shareholder will receive one additional share.

**Literature Review**

Sir James Steuart, though did not use the terms “Demand & Supply”, reflected his concerns regarding the impact of these forces on laborers back in 1767. While his study for “Inquiry into the Principles of Political Economy” was concerned mainly with merchants and unemployment, Adam Smith—Father of Economics, in his work *Wealth of Nations* explained the concept of “Invisible Hand of Economics” wherein demand and supply forces in the economy help to determine prices of goods and services. Demand refers to the quantity consumers are willing to buy while supply refers to the quantity which the market is willing to offer; these forces are also said to be one of the major determinants of stock prices. Esha Jain (2014) studied the impact of supply-demand disparity on the prices of stocks. She used a Technical Indicator (Relative Strength Index) to prove that if a stock was not at par with the equilibrium point, i.e., 50, there was inconsistency in the demand and supply forces which led to the stock being overbought or oversold. She studied 30 stocks which were actively traded on Bombay Stock Exchange and proved that most of these stocks had RSI of 50-60 which stated alignment of demand and supply forces.

Neetu Mehndiratta and Shuchi Gupta (2010) studied the impact of dividend announcement on stock prices; they took 15 actively traded stocks in the year 2009 and analyzed if the trading in stocks after dividend announcement gave abnormal returns where they proved that post dividend announcements gave abnormal positive returns to investors. Mishra (2005) conducted a study on impact of bonus announcement for 46 stocks, listed on NSE, for a period of 180 days. He found that initially after the announcement there was a negative average abnormal return but later on, after the fourth day, it started showing a positive impact. Khurana and Warne (2016) examined 34 companies from 11 different sectors to analyze the impact of bonus issue of stock prices and returns. He found out that stocks gave positive abnormal returns a week before the announcement date while on and after, showed negative returns.

Sujith Kumar (2011) studied the impact of bonus and rights issue announcement on stock market for the period of 15 years; it resulted positive abnormal returns in the shorter run. Venkatesan and Rakesh (2018) studied corporate actions of 188 companies listed on NSE for a three-year period and stated that most of the companies react randomly to rights issue, split, and announcements. Shakila, Pinto, and Hawaldar (2017) examined the impact of rights issue and stock splits for a period of four years wherein they found that even though the returns were not statistically significant at 5% significant level, a positive average abnormal return was found for both the announcement which stated that investors can earn more return from rights issue announcement over stock split announcement. Raja and Sudhahar (2010), in their work explored the data content of bonus issue management, also to advise the speculation strategies for shareholders, fund managers, forecasters.
Research Methodology

30 companies have been selected at random, which had declared corporate actions in any form in the past three financial years. All the companies are listed on either National Stock Exchange or Bombay Stock Exchange and “t-test: paired two samples for means” has been used where the alpha value (level of significance) is 0.05. Hypothesis has been created which intends to prove the profitability of corporate actions for position investors. Major announcements have proven to be profitable for short term or intraday trading. Considering a period of 62 days, 31 days before, and 31 days after the record date, changes in stock prices were noted along with any increase or decrease in returns. For a significance level of 5%, p-value (one tail) is compared as according to hypothesis we want the returns to move only in one direction, i.e., positively.

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\text{Return (\%) } = \frac{(\text{Current Price} - \text{Previous Price})}{\text{Previous Price}}
\]

Returns are calculated for each day which showed the percentage returns generated by a particular stock before and after the corporate announcement. After the returns, we checked the normalcy of returns by creating a histogram using bins to identify outliers. After checking the normalcy, t-test was conducted on individual stocks which gave a p-value, and that when compared to 0.05 (level of significance) showed whether the announcement created a positive impact or not on stock returns for long term investing. Another method we used was to generalize if announcement of corporate actions should be used as a source of profit generation by position investors. Since we cannot check for each and every company listed on the exchange, we use a generalizing technique wherein we take average of returns before the announcement for each company and average of returns after the announcement for each. This gives us 30 data points for both before and after.

Taking these 30 averaged returns as data points, two variables, i.e., before and after the announcement, are considered. After running a t-test, p-value is obtained. Using the one tail value of p as even though returns can move in either direction, our study aims at giving positive returns to the investors in the long run. After this, one tail value is compared with 0.05 which is the level of significance in order to determine whether the data are statistically significant or not.

In order to carry on this research, Hypothesis: H0 and H1 are formed. Null Hypothesis: H0 = There is no relationship between the bonus announcement and stock returns. Alternate Hypothesis: H1 = There is a positive relationship between the bonus announcement and stock returns. Two variables have been used: Variable 1: stock returns before the announcement & Variable 2: stock returns after the announcement.

In terms of dependency, announcement of any corporate action (bonus issue) is the independent variable whereas the changes in returns can be constituted as the dependent variable.

Data Analysis and Interpretation

The data were collected for 30 companies listed on NSE and/or BSE. The data consisted of 30 days prior to the announcement of bonus and after 30 days of announcement of bonus considered for further analysis. After selecting the sample size at random, the prices of these stocks pre-announcement and post- announcement were noted. Since the study is mainly done for position investors, the investment period is taken as 30 days. 31 days on either side is considered for the observations, i.e., the returns before and after, which should be 30 for each. Below is the table for pre announcement 30 days’ average and post announcement 30 days’ average.
### Table 1

| Sr. No. | Particulars          | Pre announcement 30 days’ average | Post announcement 30 days’ average |
|---------|----------------------|-----------------------------------|-----------------------------------|
| 1       | HCL                  | 0.15%                             | 0.22%                             |
| 2       | Aarti Drugs          | 1%                                | -0.61%                            |
| 3       | Bhageria Ind         | -0.13%                            | -0.66%                            |
| 4       | UPL                  | -0.05%                            | -0.69%                            |
| 5       | Bajaj Healthcare     | 0.62%                             | -1.03%                            |
| 6       | Biocon               | -0.46%                            | -0.24%                            |
| 7       | Relaxo               | 0.04%                             | -0.06%                            |
| 8       | GAIL                 | -0.38%                            | -0.65%                            |
| 9       | ZOTA                 | -0.12%                            | -0.20%                            |
| 10      | Aarti Ind            | -0.22%                            | -0.04%                            |
| 11      | Bhakti Gems          | 0.79%                             | 0.91%                             |
| 12      | Astral               | 0.28%                             | 0.01%                             |
| 13      | Swelect              | -1.17%                            | -0.29%                            |
| 14      | Shradha Infra        | 1.34%                             | 0.17%                             |
| 15      | Anuh Pharma          | -0.49%                            | -0.71%                            |
| 16      | Aaron Ind            | -1.03%                            | -0.27%                            |
| 17      | Macpower CNC         | 1.87%                             | -1.00%                            |
| 18      | Karnataka Bank       | -1.43%                            | -0.60%                            |
| 19      | SSPN                 | 0.61%                             | -0.34%                            |
| 20      | WIPRO                | 0.27%                             | 0.29%                             |
| 21      | CCI                  | -0.03%                            | -0.02%                            |
| 22      | Sirca                | 0.50%                             | -0.48%                            |
| 23      | Airan                | 0.71%                             | 0.74%                             |
| 24      | Oceanic              | -0.21%                            | 0.23%                             |
| 25      | Avadh                | 1.08%                             | -1.37%                            |
| 26      | Akash Infra          | 0.70%                             | 0.73%                             |
| 27      | Vishal Bearings      | 0.54%                             | 0.20%                             |
| 28      | NTPC                 | 0.47%                             | -0.09%                            |
| 29      | Meera Ind            | 1.33%                             | -1.08%                            |
| 30      | Varun Beverages      | 0.04%                             | 0.05%                             |

If we check individually, taking into consideration “p-value” of individual companies and the level of significance at 0.05, we see the following results:

### Table 2

| Sr. No. | Particulars   | P-value     |
|---------|---------------|-------------|
| 1       | HCL           | 0.39877975  |
| 2       | Aarti Drugs   | 0.35146701  |
| 3       | Bhageria Ind  | 0.16267923  |
| 4       | UPL           | 0.18638153  |
| 5       | Bajaj Healthcare | 0.021647679 |
Table 2 to be continued

| No | Company                  | Mean         |
|----|--------------------------|--------------|
| 10 | Aarti Ind                | 0.35146701   |
| 11 | Bhakti Gems              | 0.43884623   |
| 12 | Astral                   | 0.25448026   |
| 13 | Swelect                  | 0.15174649   |
| 14 | Shradha Infra            | 0.03416189   |
| 15 | Anuh Pharma              | 0.45456886   |
| 16 | Aaron Ind                | 0.33087981   |
| 17 | Macpower CNC             | 0.00578275   |
| 18 | Karnataka Bank           | 0.19249753   |
| 19 | SSPN                     | 0.16728544   |
| 20 | WIPRO                    | 0.49927157   |
| 21 | CCI                      | 0.4866828    |
| 22 | Sirca Paints             | 0.06246259   |
| 23 | Airan Industries         | 0.48309399   |
| 24 | Oceanic Foods Ltd        | 0.28479098   |
| 25 | Avadh Sugar and Energy   | 0.03389814   |
| 26 | Akash Infra              | 0.47956583   |
| 27 | Vishal Bearings          | 0.3868939    |
| 28 | NTPC                     | 0.14012345   |
| 29 | Meera Ind                | 0.03086694   |
| 30 | Varun Beverages          | 0.4679504    |

In order to consider average of returns of each company a t-test is conducted to generalize the result.

Table 3

Summary of the Test

| Company       | Before corporate action | After corporate action | Before corporate action | After corporate action | P(T ≤ t) one-tail | Hypothesis testing |
|---------------|-------------------------|------------------------|-------------------------|------------------------|-------------------|-------------------|
| Comp-1        | 0.001                   | 0.002                  | 0.000                   | 0.000                  | 0.399             | Supported H0      |
| Comp-2        | 0.009                   | -0.004                 | 0.003                   | 0.002                  | 0.351             | Supported H0      |
| Comp-3        | -0.001                  | -0.007                 | 0.000                   | 0.001                  | 0.163             | Supported H0      |
| Comp-4        | 0.000                   | -0.007                 | 0.001                   | 0.001                  | 0.186             | Supported H0      |
| Comp-5        | 0.006                   | -0.010                 | 0.001                   | 0.001                  | 0.022             | Reject H0        |
| Comp-6        | -0.005                  | -0.002                 | 0.000                   | 0.001                  | 0.354             | Supported H0      |
| Comp-7        | 0.000                   | -0.001                 | 0.000                   | 0.000                  | 0.403             | Supported H0      |
| Comp-8        | -0.004                  | -0.006                 | 0.001                   | 0.000                  | 0.277             | Supported H0      |
| Comp-9        | -0.001                  | -0.002                 | 0.000                   | 0.000                  | 0.384             | Supported H0      |
| Comp-10       | -0.002                  | 0.000                  | 0.001                   | 0.000                  | 0.351             | Supported H0      |
| Comp-11       | 0.008                   | 0.009                  | 0.001                   | 0.001                  | 0.439             | Supported H0      |
| Comp-12       | 0.003                   | 0.000                  | 0.000                   | 0.000                  | 0.254             | Supported H0      |
| Comp-13       | -0.012                  | -0.003                 | 0.001                   | 0.001                  | 0.152             | Supported H0      |
| Comp-14       | 0.013                   | 0.002                  | 0.001                   | 0.000                  | 0.034             | Reject H0        |
| Comp-15       | -0.005                  | -0.007                 | 0.010                   | 0.001                  | 0.455             | Supported H0      |
| Comp-16       | -0.010                  | -0.003                 | 0.008                   | 0.001                  | 0.331             | Supported H0      |
| Comp-17       | 0.019                   | -0.010                 | 0.002                   | 0.001                  | 0.006             | Reject H0        |
| Comp-18       | -0.014                  | -0.006                 | 0.002                   | 0.001                  | 0.192             | Supported H0      |
| Comp-19       | 0.006                   | -0.003                 | 0.001                   | 0.002                  | 0.167             | Supported H0      |
| Comp-20       | 0.002                   | 0.002                  | 0.000                   | 0.000                  | 0.499             | Supported H0      |
| Comp-21       | 0.000                   | 0.000                  | 0.000                   | 0.000                  | 0.487             | Supported H0      |
Table 3 to be continued

| Comp  | Delta 1 | Delta 2 | Delta 3 | Delta 4 | P-value |
|-------|---------|---------|---------|---------|---------|
| Comp-22 | 0.007   | -0.006  | 0.001   | 0.001   | 0.062   |
|       |         |         |         |         | Supported H0 |
| Comp-23 | 0.007   | 0.007   | 0.001   | 0.001   | 0.483   |
|       |         |         |         |         | Supported H0 |
| Comp-24 | -0.002  | 0.002   | 0.001   | 0.000   | 0.285   |
|       |         |         |         |         | Supported H0 |
| Comp-25 | 0.011   | -0.014  | 0.004   | 0.001   | 0.034   |
|       |         |         |         |         | Reject H0  |
| Comp-26 | 0.007   | 0.007   | 0.000   | 0.000   | 0.480   |
|       |         |         |         |         | Supported H0 |
| Comp-27 | 0.005   | 0.002   | 0.004   | 0.000   | 0.387   |
|       |         |         |         |         | Supported H0 |
| Comp-28 | 0.005   | -0.001  | 0.000   | 0.000   | 0.140   |
|       |         |         |         |         | Supported H0 |
| Comp-29 | 0.013   | -0.011  | 0.002   | 0.004   | 0.031   |
|       |         |         |         |         | Reject H0  |
| Comp-30 | -0.002  | -0.001  | 0.001   | 0.000   | 0.468   |
|       |         |         |         |         | Supported H0 |

After checking for normalcy in the data, a t-test was run to compare the p-value to the alpha for a final implication regarding profitability. It was noticed that out of 30, 25 companies failed to reject the null hypothesis stating that the result is statistically insignificant taking into account level of significance at 5%. In order to generalize we need 30 data points of respective companies; therefore, we consider an average of returns on both sides (before and after), before running a t-test. This result proved to be statistically significant with a p-value of 0.007. P-value one-tail, after running the t-test, is 0.007 which states that the result is statistically significant and therefore we reject H0. Limitations include consideration of companies taking corporate actions in FY2018-2019, FY2019-2020, FY2020-2021, study of only bonus issue; companies taken are traded on NSE and BSE and the total period considered is of 62 days, which includes 31 days’ pre-announcement and 31 days’ post-announcement. When average of returns is taken in order to come up with 30 data points, we see that in general, bonus announcement shows a positive impact on the returns even for position investors. Although the study says that announcement of corporate action has proven to be a profitable strategy in the long run, it is on the investors vigilance and due diligence to select companies which will give a positive return in the long run. Impact of any other event which might have taken place in those 30 days might also be the reason but it is ignored which can be a limitation to this study. In a study by Karmakar and Chakraborty (2000) it found that mean returns in the first half of the month were considerably greater as compared to the earlier figures.

Level of significance was determined individually. When we checked the returns provided by individual companies and compared it to the level of significance of 5%, while 25 companies showed that bonus announcement does not make any difference in the long run, five companies from the sample showed that a significant relationship existed between the announcements and returns which states that a positive relationship might exist between the announcement and profitability of position investors.

**Findings and Analysis**

Information and signaling theory have proven to be significant in semi strong markets (market prices adjust to any information prevailing in the market). Markets are said to portray a positive or a negative reaction to news. E.g., buyback of shares might show growing interest of promoters in the company depicting that the worth of the company should be more than its current market price thus increasing the share price of the company in the near future. The motive of this study was to see if the same holds true in case of corporate actions in general. It shows how rapidly prices of the stocks react to announcement of any corporate action. In the past, corporate action has proven to be beneficial in short term but this helped us verify its use over a longer period of time.
Generally, law of demand and supply is said to be a major factor which initiates the changes in market price of the stock and even though that holds true, bonus announcement can also be considered as a factor which majorly impacts the stock prices.

Conclusion

Multiple factors affect the demand of a various stocks, including interest rates prevailing in the economy, risk free rate of return, earnings, profits, sales, etc., whereas for supply factors like Buyback, IPO can be considered. These factors are said to have an indirect impact on the prices of stocks which in turn affects returns for individual investors. A lot of studies have proven the importance of demand and supply forces on prices and returns, while corporate actions are generally said to generate returns for only short-term investors.

Considering “position investors” to be the people investing in a particular stock for 30 days, difference in returns before and after the announcement of various actions which are wholly controlled by the company are taken into consideration. Efficient Market Hypothesis by Eugene Fama in 1991 states that stock prices react, positively or negatively, to new market information. Observing reaction of returns to announcements of bonus issue, dividend declaration, and rights issue of 12 companies selected at random from NSE, this study tries to find if these declarations can be used as a profitable strategy for position investors.

References

Chavali, K. (2013). Impact of dividends on share price performance of companies in Indian context. *SDMIMD Journal of Management*, 4(1), 4-9.

Gordon, M. J. (1959). Dividends, earnings, and stock prices. *The Review of Economics and Statistics*, 41(2), 99-105.

Jain, K. (2014). Technical analysis of Oriental Bank of commerce. *SAARJ Journal on Banking & Insurance Research*, 3(2), 76-90.

John, K., & Williams, J. (1985). Dividends, dilution, and taxes: A signaling equilibrium. *The Journal of Finance*, 40(4), 1053-1070.

Karmakar, M., & Chakraborty, M. (2000). A trading strategy for the Indian stock market: Analysis and implications. *Vikalpa*, 25(4), 27-38.

Khurana, R., & Warne, D. P. (2016). Market reaction to bonus issue in India: An empirical study. *International Journal of Innovations in Engineering and Technology (JIET)*, 7(4), 253-259.

Kumar, S. S., & Halageri, S. (2011). Impact of stock split announcement on stock price. *Review of Management*, 1(1), 15.

Mehndiratta, N., & Gupta, S. (2010). Impact of dividend announcement on stock prices. *International Journal of Information Technology and Knowledge Management*, 2(2), 405-410.

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), 411-433.

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of Finance*, 40(4), 1031-1051.

Mishra, A. (2005). An empirical analysis of market reaction around the bonus issues in India. *Indian Institute of Management Working Paper (2005-10)*.

Pettit, R. R. (1972). Dividend announcements, security performance, and capital market efficiency. *The Journal of Finance*, 27(5), 993-1007.

Raja, M., & Sudhahar, J. C. (2010). An empirical test of Indian stock market efficiency in respect of bonus announcement. *Asia Pacific Journal of Finance and Banking Research*, 4(4), 1-14.

Sharma, R. (2011). Stock price behavior around dividend announcements: An event study methodology. *Vilakshan: The XIMB Journal of Management*, 8(2), 23-32.

Shakila, B., Pinto, P., & Hawaldar, I. T. (2017). Semi-monthly effect in stock returns: New evidence from Bombay Stock Exchange. *Investment Management and Financial Innovations*, 14(3), 160-172.

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355-374.

Venkatesan, T., & Rakesh, N. (2018). Analysis of corporate actions and market efficiency in India. *SJCC Management Research Review*, 8(1), 75-89.