An Analytical study on Effects of Bonus Issue on Share Price & Liquidity of the Stocks Listed on National Stock Exchange: With Special Reference to NSE 200

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Abstract

The primary objective of companies, under the modem financial management concept, is to focus on wealth maximization for the shareholders. The corporate announcements such as dividend declaration, bonus share, split or right share have effect on the books of the accounts of the firm. But the market and the common investor finds such announcements attractive and take certain decisions based on it. The current research has been carried out for studying the effect of Bonus Announcements on different stocks. The bonus announcement is the conversion of profit into share capital or capitalization of profits that is, converting reserve or profits into paid up capital. A bonus issue is also a signal that the company can service its larger equity. It is a sign of good health of a company.

The present study focuses on the impact of Bonus announcement on share price and volume nearby the bonus announcement made by the firm. The present research consists of the bonus announcements made between January 2008 to December 2020 & the companies which are the part of NSE 200 index on 19th July 2019 as Nifty 200 index. The study investigates 90 bonus announcements made by 62 firms.

The current study aimed to measure the impact of bonus announcement on share price for the shorter time frame. Majority of the events had positive significant impact on share price. It was also found that the share prices have significantly increase in shorter time frame. The study also focuses on the effect on share volume, the announcement day and its previous day witnessed the significant change in the volume which shows the speculation on announcement day, and it was found that the bonus declaration has been seen as increased volumes near the announcement window but were not found significant for most of the events. The study also focuses on volatility in share prices nearby announcement window and it was found that volatility was seen significant in nearly half of the events.

The study also measured the cumulative return, and the positive cumulative return was recorded on all the days. The cumulative abnormal return was more increasing in the preannouncement window. The firms declaring bonus ratio of 1:1 reacted more positively and provided more returns. The automobile industry provided the highest cumulative return followed by the financial services industry. The energy sector reacted the least among all six industries studied.

The study attempted to measure the information efficiency with respect to Efficient Market Hypothesis in Indian stock exchange related to Bonus announcement. It was found that the only Automobile Industry provided significant positive abnormal return on the announcement day. The bonus ratio had no impact on abnormal return of the stocks.

Further this study also analysed the cumulative abnormal returns for the stocks. The financial services industry was reacting most positively followed by automobile industry. The Financial and Automobile industry provided the average cumulative abnormal return on continuous basis showing investor take bonus announcement as positive signal for the financial health of company. Information Technology reacted less compared to other industries and negative cumulative returns were also found in the initial period of the preannouncement window. IT, Pharma & Consumer goods does not provide any time window for significant return on continuous basis which shows that the investors of such firm do not react, and price are not affected by bonus declaration. The study also revealed that the bonus ratio has impact on share price on 4^{th} day & 7^{th} day price after the announcement but had no impact after it. The study supports that the Indian Markets are forming the semi strong market efficiency with respect to bonus announcement and majority of the value has been factored in the share price before the announcement in the share price which can be seen from the abnormal average return.

1. Introduction to Research Topic

Modern Financial management deals with Wealth maximization for the shareholders. For listed companies shareholders are the major stakeholders apart from employees, customers, suppliers and creditors. The implication of the focus on stakeholders is that a company should avoid actions detrimental to them.

Declaration of dividend is the prerogative of the management. Still the management must take in to account the shareholder (investor) expectation. The direct fallout of dividend decision is the cash out flow from the firm. This brings down the quantum of resources available with the firm, which may have a bearing on the level of future earnings. The retained earnings belong to the shareholders. Companies following pragmatic dividend policies build up sizeable amount as retained earnings. This is reflected under the headings 'Reserves and Surplus' in the company balance sheet.

There is no legal obligation for the company management to declare bonus shares. This is so even when the company has lopsided 'Paid up Share Capital' and 'Reserves and Surplus' equation. The financial position of listed companies is considered as public information as the companies have to announce their annual results in the newspaper. Hence existing shareholders as well as prospective investors are aware of the 'Paid Up Share Capital', 'Reserve and Surplus', earnings available to the shareholders, dividend record of the company and a guess about the possible future earnings of the company. That makes the existing and future investors to assess the potential of company to declare a bonus issue. In a way the market which consists of existing and future investors anticipates the bonus announcement on the basis of the financial information available.

Bonus issues are basically distributions of additional stocks to existing stockholders without an alteration in the financial position of the firm or its shareholders. Accordingly, they result in each shareholder holding a greater number of shares, but their relative claim on the assets of the company stays the same. A company can distribute bonus shares by using retained profit or accumulated capital reserves. Listed firms usually prefer to issue bonus shares from the accumulated capital reserves, or from a combination of capital reserves and retained earnings. Bonus share issues are equivalent to stock dividends in the United States and scrip issues in the United Kingdom. Based on the charter of the firm, only certain categories of

shares may be entitled to stock dividend, or may be allowed to bonus issues prior to other classes.

Issuing bonus shares can also be described as conversion of profit into share capital or capitalization of profits that is, converting reserve or profits into paid up capital. A firm may capitalize its profits or reserves, which otherwise can be distributed as dividends among shareholders, by: (1) Converting partially paid stocks into wholly paid by announcing stock dividend without asking shareholders to pay for the same; and (2) Issue of entirely paid stocks as bonus shares to the existing shareholders.

When the bonus shares are issued in a ratio of 1: 1, it means that one share would be allotted for every share already held in the company. Similarly, when a ratio of 2:1 is allocated, it means that two shares are allotted for one existing share in the company. As the date is announced then the investors wait for the required date to get the useful benefits. This date is important because the holders of the shares on this particular day will be entitled to the bonus shares. There is another date which should be known by the investors, which is the date when the shares go 'ex-bonus". On this day, the share prices adjust in the bonus ratio so that it reflects the actual situation on the ground.

Once the price reflects the situation on the ground then the investors will be ineligible for the actual bonus shares. Due to this the ex-bonus date has to be noted carefully.

A bonus issue is also a signal that the company is in a position to service its larger equity. It is a sign of good health of a company. The management would not have given these shares if it was not confident of being able to increase its profits and distribute dividends on all these shares in the future Another variation of this argument attaches more importance to 'the implied promise of higher dividends, as managers are reluctant to cut dividend per share (Nayak and Prabhala, 2001)[1].

Any dividend, interim or final, that is received from an Indian company is not taxable in the hands of the shareholder. However, Indian companies paying such dividends have to pay a dividend distribution tax (DDT) 15% plus surcharge and education cess. Further, dividend and DDT are not tax deductible in the company's hands leading to double taxation of earnings.

[1] Nayak, S., & Prabhala, N. R. (2001). Disentagling the Dividends Information in Splits: A Decomposition using Conditional Event Study Methods. The Review of Financial Studies , 14 (4), 1083-1116.

But in case Bonus issue there is no tax implication when bonus shares are awarded. But when they are sold, they may be taxable, depending on the time for which they are held. The tax man considers the cost of these bonus shares nil.

The SEBI has issued guidelines for Bonus issue which are contained in Chapter XV of SEBI (Disclosure & Investor Protection) Guidelines, 2000. A company issuing Bonus Shares should ensure that the issue is in conformity with the guidelines for bonus issue laid down by SEBI (Disclosure & Investor Protection) Guidelines, 2000.

Miller and Modigliani (1961)[2] reported that bonus offerings, along with other types of dividends, do not change shareholders' wealth. If a firm decides to realize a bonus issue from retained earnings, it creates a book entry to adjust retained earnings into paid-up capital in the shareholders' equity section of the company balance sheet. Alternatively, a company that intends to finance a bonus issue by using accumulated capital reserves allocates the accumulated capital reserves into paid-up capital. In both ways, bonus issuing firm does not receive any cash and its financial position remains unchanged. The adjustment caused by the bonus offerings is that the number of outstanding shares is modified by the bonus issue ratio, consequently, the price of the shares drops in relation to the same bonus issue proportion. The total market value of the firm or the values of the stocks that are held by each investor remain constant. Following the above rationale, Sloan (1987)[3] provided evidence from Australian market that bonus issues do not affect shareholders' wealth.

However, in practice there may be an increase in stock price following the declaration of stock dividend. This price hike can happen because the declaration of a bonus issue may have beneficial information content (Peterson, 1971)[4]. After the bonus issue, it has been noticed that, firms usually raise dividends per share above the extent to maintain the same total dividend payout which indicates positive confidence of management about the firm's future. As a result, the stock price may soar in reaction to this information. The informational connection between dividends and earnings is also empirically established in Healy and

[2] Miller, M., & Modigliani, F. (1961). Dividend policy, growth and the valuation of shares. *Journal of Business, 34*(4), 411–433. http://dx.doi.org/10.1086/294442

[3] Sloan, R. G. (1987). Bonus issues, share splits and ex-day share price behaviour: Australian evidence. *Australian Journal of Management, 12*(2), 277–291. http://dx.doi.org/10.1177/031289628701200208

[4] Peterson, R. (1971). Bonus issues, share issues, share splits and rights issues. *The Chartered Secretary*, 198–207.

Palepu (1988)[5] work. They reported that companies that start stock dividends experience significant growth in earnings for at least one year after the declaration.

Thus, the whole idea behind the issue of Bonus shares is to bring the Nominal share Capital in line with the true excess of assets over liabilities Companies issue shares in lieu of consideration. The consideration may be either in the form of cash or kind. Bonus shares are issued by conversion of the reserves and surplus of the company into shares. Bonus shares can be issued only by companies which have accumulated large free reserves i.e., reserves not set apart for any specific purpose and which can be distributed as dividend. However, bonus shares can be issued out of balance in the share premium account

2. Research Problem

The regulators and market driving forces have affected information release of corporate actions like Dividend Announcement, Merger & Acquisition, Bonus Announcement & Share Split. The statutory body like Securities Exchange Board of India (SEBI) has come up with a few reforms to make stock market at par with the developed stock markets of the world. The mechanism has been developed to provide the important corporate information when the firms initiate such decisions mentioned above. It makes the corporate actions more transparent to the public & retail investors. Indian capital markets react according to the corporate information released by the firm from time to time. It impacts the price of the stock along with the trading volume.

The researchers across the globe have focused on various corporate announcement and its impact on share price and volume of stock. The corporate announcements are Quarterly Earnings, Bonus Announcement, Right issue, Stock Split, Buy back of shares, Delisting of shares, Merger & Acquisition of any firm.

The present study focuses on only one corporate announcement i.e., Bonus Announcement made Indian Firm which are listed at National Stock Exchange. The present study focuses on the capital market reaction to share price, return, volume & volatility on the share effect arising as a consequent of Bonus Announcements made. The current study about the effect of bonus announcement on share price and volume also reveals about the type of efficiency of the Indian Market also.

[5] Healy, P. M., & Palepu, K. G. (1988). Earnings information conveyed by dividend initiations and omissions. *Journal of Financial Economics*, *21*(2), 149–175. http://dx.doi.org/10.1016/0304-405X(88)90059-1

3. Research Gap

The studied researchers have attempted to assess the effect of the bonus share declaration on share prices during a specified window near the announcement day and only Alex (2017) attempted to analyze the effect nearby the ex-bonus day.

Madhuri, Thenmozhi & Arun(2007) have attempted to assess the effect of bonus announcements on liquidity, volume, and the volatility of prices in the chemical industry. The research is being limited to one single industry and to analyze the empirical evidence for the same, there is further scope to assess the overreaction or under reaction across industries that might give more new insights about the announcement effect, liquidity & volatility changes around bonus issues.

The market model is used to calculate abnormal returns by most of the authors except Subhendu & Kasilingam (2014) & George & Charles (2007) who have used the Market Adjusted model and Abhay (2012) used the CAPM model. So there is a scope to calculate the abnormal return using other methods to assess the effect of the bonus issue.

There is also a possibility to analyze the effect of the bonus announcement in India by considering factors like bonus ratio, size of the firm, type of industry, and the amount of bonus offered by the company.

4. Objectives of the study

1. To study the impact of bonus issue on stock price.
2. To check abnormality of return before and after announcement.
3. To evaluate the impact of the bonus issue on the return of the stock.
4. To assess the impact of bonus issue on the liquidity of the stock.
5. To assess the impact of bonus issue on the volatility or risk of the stock.
6. To suggest a model which can measure effect of bonus share on stock price.

5. Scope of the study

The present study focuses on the impact of Bonus announcement on share price and volume nearby the bonus announcement made by the firm. The present research consists the bonus announcements made between January 2009 to December 2020 & the companies which are

the part of NSE 200 index on 19th July 2019 as Nifty 200 index represents about 85% of the free-float market capitalization of the stock listed in NSE.

6. Research Methodology

6.1 Research Design

The current research is causal research which is also known as explanatory research design. It is conducted to understand the cause-and-effect relationship among two or more variables i.e "If X, then Y". It measures the impact of specific events which are independent variable on change in dependent variable. Causal research design offers the benefit for replication & internal validity as systematic subject selection.

6.2 Sources of Data

The data used for the current research is secondary which consists of data related to bonus announcement made by different Indian companies and their daily share prices and the relevant index NSE 200 value on the corresponding day. The data has been collected from the official website of National Stock Exchange of India i.e., https://www.nseindia.com

6.3 Sampling unit

The sampling unit includes all firms who are the part of NSE 200 index have declared Bonus Issue over a period of 12 years starting form 1st January 2009 to 31st December 2020. The sample consist of 94 bonus announcements made by different firms 65 firms. However, the study did not include 4 bonus events declared by 3 companies due to unavailability of the data so final sample consist of 90 bonus announcements made by 62 firms. The list for the same is given below

7. Data Analysis method/tools

7.1 Event Study Methodology & application in current research

Event Study Methodology is used to identify the impact of the selected event on return over a period. Event studies have been used over a long period of time. In academics, the economic activities are termed as events which will be helpful to examine the effect of it on share price & volume which will lead to change in the value of the firm. Event study tries to measure the effect of any event and how fast these events are adjusted in share prices and volumes traded in the market.

The major aim of the event study is to identify the information flow and behaviour of the market during the event window i.e., Before and After the event. Event studies were originally used to test the Efficient Market Hypothesis (Fama et al., 1970) and changes in Price and Volume during the event window (Yadav 1992), with the aim that efficiency will be reflected in the immediate and fast with reference to the new information available in the market.

Since 1970, the major objective of the event study was to measure the impact of events on the share price & market value of companies as individual and the group of companies. The Event studies includes the incidents like announcement of dividend, right issue, bonus issue & stock split. This methodology for analysis of stock market has been in routine use for last 50 years. Ball & Brown (1968) and Fisher, Jensen & Roll (1969) are given credit for the popularity of this method.

The important reasons for the application of the event studies are

1. To test the null hypothesis about Market efficiency that the markets are efficient and reflect all available information, it was introduced by Fama (1970).
2. To analyze the impact of a specific event on the wealth of shareholders, Binder (1998), Campbell et al. (1997), Corrado (2010), Cowan (2007) and Kothari and Warner (2007)

Event Study has been applied in the current study. Here even refers to the announcement of Bonus issue by the firm. The effect of Bonus announcement is to be analysed over the share price, return, volume & volatility. For the study, data is divided into different windows. It has been always a question of debate about choosing the right windows length, the different researchers have applied the different time frames to analyse the data.

1. Pre event Window
2. Event Window
3. Post event Window

1. Pre event Window: This window enables the information about the existence of abnormal return in the prior or before Bonus announcement. If any abnormal return is found in the said period, it confirms that there is information asymmetry and insider information available in few private hands which generates the abnormal returns. In this study pre-event windows is taken as -20 days to -1 day of the announcement of Bonus.

2. Event Window: This is the day when announcement is made by the firm about declaration of Bonus Shares to shareholders. If on this day abnormal return is earned, it shows that market reacts positively on announcement.
3. Post event Window: This window enables to researcher to check whether there is change in liquidity and volatility in stocks. It is also helpful to measure the abnormal return which is questioned, due to price adjust accordingly. Here is post event windows is +1 day to +20 day of the announcement of Bonus.

It has been the one of the objectives to analyse the effect on ex-bonus date also so for this event will be considered as ex-bonus date and the effect is measures in three windows as explained above.

1. Pre-event Window: -20 days to -1 day
2. Ex-Bonus date: 0 day
3. Post-event windows: +1 day to +20 days

7.2 Return Calculation Model used

Event studies try to quantify the extra return earned over the expected return during the event period. Abnormal returns are calculated by taking difference of actual return and expected return for the stocks. To calculate the expected returns the different models can be applied which are given below:

1. Market Model
2. Market Adjusted Model
3. CAPM Model

These three are most common models used to calculate the expected return for any stock. The market model is used the most of the time for event study research by different researchers as it correlates the firm's return with the market return. For market model calculation, the first part would be to decide the estimation window for calculating the Slope (β) and intercept (α) which are required to calculate the expected return. The estimation window should be not overlapping with the event window.

The estimation window here used is -141 days to -21 days prior to announcement of Bonus issue containing 120 days. There is no thumb rule for estimation window size.

Armitage (1995) in his research titled "Event Study Methods and evidence on their performance" suggested that estimation windows size can be any time from 100 to 300 if daily returns are to be used while 24 to 60 months when analysis is done on monthly returns. Campbell, J.Y., Lo, A. W. & MacKinlay in their book titled, "The econometrics of financial markets" published in 1997 (page no. 152) stated that the estimation window should be at least 120 days prior to the event.

The returns are calculated first for the estimation window i.e. -141 days to -21 days prior to announcement of Bonus. The daily returns for each stock is calculated as follows:

$$R(a,t) = \frac{P(a,t)-P(a,t-1)}{P(a,t-1)}\ x\ 100$$

Where R(a,t) = Daily return of stock a on day t

P(a,t) = Price of stock a on day t

P(a,t-1) = Price of stock a on previous day i.e. t-1

The respective value of index is also calculated for the same time frame.

$$R(i,t) = \frac{P(i,t) - P(i,t-1)}{P(i,t-1)}\ x\ 100$$

Where R(i,t) = Daily return of Index NSE200 a on day t

P(i,t) = Closing value of Index NSE 200 a on day t

P(i,t-1) = Closing price of Index NSE 200 a on previous day i.e. t-1

The returns calculated for each individual security for -141 days to -21 days along with index NSE 200 returns are used to compute the parameters like α & β. The parameters are used to calculate the abnormal return. The abnormal returns are calculated as follow:

$$E(a,t) = \alpha + \beta \times R(i,t)$$

The actual returns are computed for the actual windows period i.e., -20 days to +20 days with the help of formula mentioned above. The abnormal returns are calculated by taking difference between the actual return R (a, t) for stock a on day t and expected return E (a, t).

$$AR(a,t) = R(a,t) – E(a,t)$$

Where AR(a,t) = Abnormal daily return for stock a on day t

R(a,t) = Actual return of stock a on day t

E(a,t) = Expected return of stock a on day t

In order to remove any stock specific effect, the average abnormal returns are calculated by taking the average of Abnormal return of different individual stocks.

$$AAR(t) = \frac{\sum_{a=1}^{n} AR(a,t)}{n}$$

Where AAR (t) = Average Abnormal Return on day t

∑ AR(a,t) = Total of Abnormal Returns of group of stocks on day t

N = No of stocks

With a view to find the effect on the wealth of shareholders cumulative returns are also required

The cumulative abnormal returns are calculated for the entire event window i.e. -20 days to +20 days.

$$CAR(a,t) = \sum_{1}^{t} AR(a,t)$$

Where CAR (a,t) = Cumulative Abnormal Return for stock a up to day t

∑ AR(a,t) = Total returns of individual stock a up to t days.

The cumulative abnormal average returns are calculated for eliminating the stock specific effect on day t

$$CAAR(t) = \frac{\sum_{a=1}^{n} CAR(a,t)}{n}$$

Where CAAR(t) = Cumulative Average Abnormal Return on day t of the event windows

∑ CAR(a,t) = Total of Cumulative abnormal Return of group of stocks on day t

n = No of stocks

7.3 Hypothesis Test

7.3.1 t-test

t-test has been applied to analyse the test statistics for return on time t of single firm and the cumulative returns of individual stock on day t. The formula used for the same are as follows:

$$t\ test = \frac{AR(a,t)}{SE}$$

Where AR (a,t) = Abnormal Return of Stock a on day t

SE = Standard Error of abnormal return of stock in the estimation windows

7.3.2 Cross section t-test

Cross section t-test is used to test the statistical significance of the abnormal return and cumulative abnormal return in event study methodology. It has been used to analyse the effect on the number of events or group of stocks. Here cross section t-test has been used to check find significant abnormal return with the following formula.

$$t\ (AAR) = \frac{AAR(t)}{SD\ (t)} * \sqrt{n}$$

Where AAR(t) = Average Abnormal Return across all the stocks on day t

SD(t) = Standard deviation of Average Abnormal Return across all the stock on day t

n = No. of stocks

$$t\ (CAAR) = \frac{CAAR(t)}{SD\ (t)} * \sqrt{n}$$

Where CAAR(t) = Cumulative Average Abnormal Return across all the stocks on day t in event.

SD(t) = Standard deviation of Cumulative Average Abnormal Return across all the stock on day t

n = No. of stocks

7.3.4 Paired t-test

Paired t-test is used to measure the effect of any event on selected variable by comparing the value of variable before the event and after the event. It is used when there is only one sample, and it has to be tested twice. So here two samples are matched or paired. Here in this research Paired t-test has been applied to measure statistical impact on share price, volume & daily return of the selected stocks.

$$t = \frac{d - D}{\frac{s}{\sqrt{n}}}$$

Where d = Difference of the selected variable by comparing before and after values

D = Difference of the selected variable in the population

S = Standard deviation of the difference d

n = No. of events or variables.

7.3.5 F test

F test is used to compare the standard deviation of two groups. Here in this research to compare the risk before and after announcement of bonus issue F test is used. It is used to measure the statistical significance event where there is change in the risk or volatility of the selected individual event.

$$F = \frac{s_1^2}{s_2^2}$$

Where $(S_1)^2$ = Variance of the selected variable before announcement period

$(S_2)^2$ = Variance of the selected variable after announcement period

8. Major Findings & Outcomes

The study was conducted on the stock that declared bonus announcement during the period starting from January 2008 to December 2020 and are the part of NSE 200 index dated on 19th July 2019. The study included the 90 such events across 14 industries. Majorly bonus announcements are made by Energy Industry which accounted 18 times followed by

Information Technology which declared 13 such announcements. The bonus announcement was made by more than 10 times in the automobile, consumer goods, financial services & pharma. The bonus ratio preferred by majority of the firm was 1:1 which accounted for 56 firms out of 90 firms. The second preferred bonus ratio was 1:2 which accounted for 17 events of such ratio.

8.1 Findings based on Share prices of Individual firms

1. In Automobile Industry, there were 10 bonus announcements were made during the study windows and 8 out of them were found positive while 2 found negative. Out of 8 positive reactions all were found significant. While 2 negative were also found significant. It indicates that automobile reacts significantly to bonus announcement and majorly positive.
2. Consumer Good Industry had 12 such events and 10 out them reacted positively while 2 out of them reacted negatively. 9 events out of 10 positive events were found significant ad both negative events were also found significant. So consumer goods industry also majorly reacts the significantly and majorly positive.
3. Energy industry declared maximum 18 events and 11 out of them were positive while 7 were negative effect on share prices. Out of 18 events 11 were found significant and 7 were insignificant. Out of 11 significant events, 10 were showing positive and 1 was negative. Here also majority events showed significant effect on share price after announcement.
4. Financial Services industry including banks, NBFC and insurance firms declared 11 such events and 9 out of them were positive. 8 events were found significantly positive impact on share prices.
5. Information Technology industry declared 13 bonus events and 10 of them were found significant change in share prices after announcement while 8 of significant reacted positively and remaining 2 reacted negatively.
6. Pharma industry declared 10 such events and 7 of them reacted positively. Out of 7 positively reacted stocks 4 had significant change in share price and rest were not found significant.
7. Overall looking at the reaction on the share prices due to Bonus announcement, 74 were found significant change in share price. It indicates that majorly firms share

prices are affected due to bonus announcement and 55 of them reacted positively and 19 reacted negatively. It can be concluded that majority of the time share prices reacts significantly in short term time frame of 20 days near announcement day.

8.2 Findings based on Share volumes of Individual firms

1. Automobile Industry showed 8 events where volume was increased after the bonus declaration and 4 of them were found significant only 2 events were found showing decreasing volume after the announcement and they were not found significant.
2. Consumer Goods industry showed a mixed response showing 7 events were volume increased and 5 events were volumes decreased. Only 4 events were showing significant change in volume and 2 were suggesting increased volume.
3. Energy Sector showed more decreased volume i.e., 11 events and only 2 of them were found significant. Out of 7 events where volumes have increased after the declaration only 3 of the were found significant.
4. Financial Industry witnessed 7 events were volume were increasing and 4 events were volumes are decreasing and 4 events out of 7 showed positive and significant change in the volume while no significant event found for decreasing volume after the announcement.
5. IT industry showed mixed response on the volume due to bonus declaration and 7 were showing positive change and 6 were showing negative or decreased volume in after announcement. Out of positive and negative events only 1 for each were found significant.
6. Pharma industry showed 12 events where the volume was increased after bonus announcement and only 4 events showed decreased volume. But out 16 events only 2 events which showed positive or increased volume were found significant and rest 14 events were not found significant.
7. Overall, 54 events showed positive change in the volume and remaining 36 showed decreased or negative change in volume after the bonus declaration. Only 20 of positive change stock were found significant. Only 26 events showed impact on the volume significantly which shows that the bonus announcements do have major impact on share volumes in the short term.

8.3 Findings based on Share Price Variance of Individual firms

1. Automobile Industry witnessed 9 events were positive or increased variance in share price and only 1 witnessed negative or decreased variance. Out of increased variance 5 events were found significant and only 1 event was noticed were variance was significantly decreasing after the declaration of bonus share.
2. Consumer goods industry witnessed 7 positive and 5 negative change in variance after the event. Out of 7 positive events 4 were significant and out negative 3 were significant. It indicates that majority event are showing change in variance.
3. Energy industry showed more negative change in variance and 13 out of 18 showed decreased variance or volatility. 8 events out of all events of energy industry were showing significant change in the variance.
4. Financial Services sector also witnessed the more negative change in variance and 6 out of 11 events were such. 6 events out of 11 witnessed the significant change in the variance and it was bifurcated 3 positive and 3 negative significant change.
5. IT sector showed mixed response and 7 were found positive change and 6 showed negative change. But 4 out of 6 negative events were found significant which shows that bonus announcement has negative impact on variance of share price.
6. Pharma sector showed 7 postive change in variance and 3 events showed negative change in variance. Only 4 events were found significant out of total 10 such events. Out of significant 3 were found positive change in the variance.
7. From variance perspective the effect of bonus declaration was mix and only 46 significant results were found out of 90 events. Out of the significant change noticed events, 24 events showed positive or rise in volatility and rest showed negative or fall in volatility of the share price. It can be concluded that only 50% of the events have witnessed the significant change in volatility or variance of the share price.

8.4 Findings based on Share prices of different stocks collectively

1. The share prices for all the time frame starting from (-20,+20) to (-1,+1) events were showing average positive change in share price. This shows the share prices reacts positively for collectively for bonus declaration.
2. By analyzing the share prices collectively for all the bonus events for the study period of -20 days to +20 days, it was found that the significance difference was found for the

time period of (-20,+20) to (-6, +6) days and was not found significant different for the period of (-5, +5) to (-1, +1).

3. There was also not significant difference in share price 1 day prior to bonus announcement and announcement day. The announcement day and the next day also showed no significant difference in the share price. It shows the no effect of bonus announcement on share price nearby announcement window of 5 days.

8.5 Findings based on Share volumes of different stocks collectively

1. The average share volumes for different time frames were compared and it was found that majority of event window were showing not significant change in the volumes of the stocks during the study window.
2. The significant change in the average volume was noticed for (-9, +9), (-5, +5), (-4, +4), (-1, +1) & (-1, 0) window only. The announcement day and one day prior day the average volume increased noticed was 155% and was found significant. By comparing one day prior and one day after the announcement of bonus, the average volume change noticed was 200% and was also significant. This shows that bonus announcement day shows higher volume due to event declaration in shorter time window

8.6 Findings based on average return for different time frames.

1. Except 7 days prior to bonus announcement all other prior days from -20 days to -1 days were providing average positive return across all the firms and the event announcement day and next day of it were also showing average positive return but not significant. It was found that significant average returns were found on -19, -18, -15, -09, -06, -02, & -01 days prior to bonus announcement. There was no significant average return was not found on the any day after the announcement day. It shows that any trader will not be able to earn average significant return after the bonus announcement.
2. By analyzing the bonus events which had ratio for 1:1, it was found that the announcement day had 0.42% return but not significant while one day prior and one day after to it provided 0.66% & 0.96% average daily return and were also found significant. It was found that significant average returns were found on -20, -18, -15, -09, -06, -02, & -01 days prior to bonus announcement. There was only one day i.e. +1

(next day of announcement) significant average return was found after the announcement day.

3. For bonus ratio 1:2, announcement day return was 0.84% but not significant and significant average returns were found significant on 10th day after the bonus announcement while there was no other significant average return recorded any other day.
4. By analyzing Automobile Industry, the announcement day provided positive significant return of 2.39%. Apart from announcement day 10 days after announcement day also provided significant return of 1.40% but other days were not found significant.
5. In Consumer Goods industry, the announcement day had positive 0.91% average return but not significantly recorded. The event windows only 12th day after announcement provided significant return. All other days provided not significant returns.
6. In Energy Sector, the announcement day recorded 0.87% positive return but not significant. One day prior provided 0.72% significant and positive return for energy sector firms. 2 days after the announcement of bonus also provided significant positive return.
7. In Financial Service Sector, announcement day had positive 1.50% daily average return but was not found significant. The significant return was found on 2 days prior to bonus announcement which was 1.32%.
8. In information Technology Industry, the announcement day witnessed negative return of -0.07% but not significant. The IT firms did not provide significant return on the any given day of 41 day study window.
9. In Pharma industry, there was no significant return recorded for the Pharmaceutical Industry on any day of event window which shows that the market does not show a good reaction to Pharma industry in terms of Bonus issue.

8.7 Findings based on average cumulative return for different time frames.

1. The average cumulative return was calculated for all the firms for 41-day study window. The announcement day provided average significant cumulative return of 7.19%. The positive cumulative return was recorded on all the days staring form 20

days prior to bonus declaration. All days except the 20th day prior to announcement provided the significant cumulative return. The average cumulative return was in increasing trend up to 4th day of the event windows and afterwards was found almost stable but significant.

2. By analyzing the event having bonus ration 1:1, the announcement day has 8.67% average return and was significant. The significant return was recorded for all the days of the study window and majorly the average cumulative return was increasing up to announcement of bonus share and after that it was positive but was seen as sideways and stable.
3. By analyzing the event having bonus ration 1:2, the announcement day cumulative return was 4.81% and was significant. It was also found that significant cumulative return was found for continuous basis from event day to 7th day after the event which shows the investors will be able to earn during the said period.
4. Automobile Industry witnessed positive cumulative return for all the days but was significant for -18 days to -12 days prior to announcement and after the announcement it was significant for all the days. 8.13% significant average return upto the announcement day and 13.68% return up to 20 days starting from 20 days prior to announcement.
5. Consumer Goods industry showed positive cumulative return for all the days and was significant from 18 days prior to last day of the event window. Maximum cumulative return was recorded on 20th day after the declaration i.e., 10.35%. Up to announcement day 7.79% cumulative return was noted and was significant.
6. Energy Sector or industry showed -13 days to +9 days significant positive return on continuous basis, and it was seen that the average cumulative return was increasing up to 4 days after the announcement and after that it started declining.
7. Financial Services industry witnessed positive cumulative return from -12 days to till last day of the study window. It was noted that there was steep rise in cumulative return from 6 days prior to announcement day. The maximum cumulative return recorded was 13.82% which was significant.
8. Information Technology Industry witnessed negative cumulative return in the initial period of the study window and then positive cumulative return up to last day of the study window. The 13th,14th 16th & 17th day showed significant commutive returns but

the cumulative average returns were not found significant up to 12th day of announcement on continuous basis which shows that investor can not earn a significant cumulative return from IT stocks in case of bonus announcements.

9. Pharmaceutical industry witnessed positive cumulative average return but not significant on the continuous basis. It was found significant on continuous basis from 11th day prior to event till 4th day after the event. The maximum cumulative return was recorded on 2 days after the bonus declaration which was 11.65% and after that it started falling on the cumulative basis.
10. Overall, during the event window all the industries were providing positive return up to 20 days after the event, staring from 20 days prior to event which indicates that investors can gain return due to bonus announcements for a short period of time. The highest cumulative returns at the end of the 20 days were recorded for Auto Industry followed by Financial Industry & Consumer Goods industry. The lowest recorded among 6 industries was for Energy sector which showed less response compared to bonus announcement made by others.

8.8 Findings based on average abnormal return for different time frames.

1. From analyzing the average abnormal return using market model, the highest average abnormal return was recorded on 2 days prior of event which was 0.64% and it was found significant. There was positive abnormal return recorded from 2 days prior to 1 day after the bonus announcement but were not significant. Only 2 days prior and 18 days prior had significant abnormal return from all 41 days event window.
2. For the firms making bonus announcement in the ratio of 1:1, positive abnormal return was recorded from 5 days prior to 1 day after announcement. The announcement day return was recorded as 0.49% but not significant while 1 day prior and 1 day after abnormal returns were 0.60% & 0.93% respectively and were significant. The significant returns were recorded for only 3 days and rest days abnormal return were not significant.
3. For the firms making bonus announcement in the ratio of 1:2, positive abnormal return was recorded on the announcement day which was 0.65% and it was not significant. It was noted that no significant abnormal return was recorded for any day of the event window.
4. For automobile industry, the announcement day average abnormal return was 2.20% and was found significant while other days provided non-significant abnormal returns. On announcement day 8 firms provided positive abnormal return while remaining 2 were providing negative abnormal returns.

5. For Consumer Goods industry, the positive abnormal return was recorded on 8th day after the announcement which was 0.99% and on that day 7 firms provided positive return while remaining 5 firms provide the negative return. The announcement day also recorded 1.01% abnormal return and was not significant. The other days also provided insignificant abnormal returns.
6. For Energy Industry, 20 days and 18 days prior to bonus announcement recorded positive significant abnormal return while other days it was not found significant abnormal return. The announcement day also provided 0.65% but was not significant.
7. For Financial Services Industry, the average abnormal return recorded on 2 days prior to event day was 1.26% which was significant. Out of 11 firms 10 firms were providing positive return on the that day. The remaining days returns were not found significant.
8. For IT Industry, the information technology industry does not witness any significant return on any day the study windows. The announcement day return was also negative and 7 firms out 13 provided positive return while only 6 provided negative returns.
9. For Pharma Industry, there was not a single day found for significant average abnormal return. The event day provided negative return and 8 out of 10 firms reacted negatively on the announcement day. The announcement day provided -0.90% abnormal return and was not significant.
10. Overall, it can be concluded that only Automobile industry provided significant positive abnormal return on the event day while other 5 industries were not providing the significant return. IT & Pharma were providing negative abnormal return on the announcement day but was not significant.

8.9 Findings based on average cumulative abnormal return for different time frames.

1. Analyzing the average cumulative abnormal return calculated starting from 20 days prior to 20 days after the announcement, the highest return recorded was on 4th day after the event which was found as 4.77% and was also found significant. The 20 days, 19 days and 16 days prior to event provided not significant cumulative abnormal returns and all other days provided the significant return. The average cumulative abnormal return was increasing upto 1 day after the announcement and after that it started to decrease but was significant and positive till the last day of the event study window.
2. For the firms declaring the bonus ratio 1:1, the significant average cumulative abnormal returns were starting from 15 days prior to announcement to last day of the event window. The highest cumulative return recorded on announcement day was 27.72% & lowest or negative return on the same recorded for the firm was -12.48%. On the day of the event 44

firms were providing positive cumulative return while remaining 16 were providing negative cumulative return.

3. For the firms declaring the bonus ratio 1:2, the announcement day average cumulative return recorded was 0.74% and 10 firms out 17 were providing the positive cumulative return. But the return was not significant. The whole event window did not provided the significant returns on any day of the event window.
4. For Automobile Industry, the significant return was not recorded for any pre-announcement day along with the announcement day. The significant returns were recorded from 2nd day after the announcement day. The average cumulative abnormal returns started increasing from -3 days to +7 days.
5. For Consumer goods industry, the positive cumulative abnormal returns were found for all days of the study window but was noted significant only on 18 days prior and 1 day prior to bonus declaration. The maximum return was recorded on event day and that was 4.31%. Post announcement window showed decreased cumulative abnormal return up to 7th day after the announcement and it was recorded as 1.94%.
6. For Energy Industry, the announcement day provided positive average abnormal return 5.15% and was significant. 2 days prior to 6 days after the announcement provided the significant positive cumulative return on the continuous basis. The cumulative abnormal returns also started decreasing after the bonus announcement.
7. For Financial Services, the cumulative significant positive return was recorded from 12 days prior to bonus announcement to last day of event window. The announcement day provided the 9.21% and 10 out of 11 firms provided positive cumulative abnormal return. The highest return was recorded on 4th day after the announcement of bonus.
8. For IT industry, the negative cumulative abnormal return form 20 days prior to 7 days prior to event was recorded. The announcement day provided -0.45% return was not significant. The whole study window did not provide the significant return. The highest cumulative abnormal return was recorded on 1.53% after 8 days of the event.
9. For Pharma Industry, the announcement day provided 2.89% which was insignificant but 7 out of 10 firm were providing positive cumulative return. The average cumulative abnormal returns were observed positive from -13 days till the event window end but no significant average cumulative abnormal return was recorded during the event window.
10. Overall, the financial services industry recorded the maximum number of days in terms of significant return starting from -12 days to +20 days. The Automobile industry returns were found significant from 2nd day of the event till the end of the event. The Energy industry has

significant return on continuous basis from -2 days to +6 days in the event window. IT, Pharma & Consumer goods does not provide any time window for significant return on continuous basis.

8.10 Findings based Model developed for predicting share price.

1. The first model was created to predict the share prices after 4 days after the announcement of bonus share and the independent factor was closing price of stock after 4 days and dependent factors were announcement day price of the stock, presence of Consumer Goods industry, Bonus Factor or Bonus Ratio of the company and Return of the stock 4 days prior to announcement. 99% of the change in the dependent variable was explained by these 4 independent variables.
2. The second model was developed to predict the share price of individual stock after 7 days of bonus announcement. The independent factors identified were Announcement Day price of the stock and bonus factor or bonus ratio declared by the company. The adjusted R square was 0.995.
3. The third model was developed to predict the share price of individual stock after 10 days of bonus announcement. The adjusted R square is 0.996 shows that dependent variable is explained by 99.6% by the independent factors. The dependent variable considered are announcement day price, presence of Automobile Industry and Announcement Day return of the return.

9. Major Contribution of the study

9.1 Recommendation to Share holders

The study has suggested that the corporate action like Bonus Share has impact on share prices of stock near announcement window. The share prices are increasing most of the cases so the bonus declaration is a good sign for the investors, and they should hold the stock by looking a signalling hypothesis about the future of the company. The study has found that the cumulative average abnormal returns were found in Automobile & Financial Services industry while investors of Information of Technology sector have seen negative cumulative return in the initial stage. The accumulation or cumulation of return is maximum seen before the announcement of the stocks and was found positive for across all industries studied here.

9.2 Recommendation to Short term traders/Speculators

The study has suggested the major accumulation of returns are in preannouncement window but still a short-term trader or speculator can also use and earn profit after the announcement of the bonus share except the energy industry. The energy industry has witnessed the decreasing cumulative returns after the announcement which will result into loss for short term traders. The maximum cumulative returns were recorded for Automobile & Financial services so the short-term investor can earn profit by investing in these stocks. Apart from it, the bonus ratio of 1:1 is also favouring the returns and short-term trader can earn return by investing in stocks awarding bonus in 1:1.

9.3 Recommendations to Industry or Companies

The bonus share declaration creates wealth for the investors. The abnormal cumulative returns were high for Financial Services, Automobile & Consumer Goods were high. So the companies in this industry can reward their shareholder with bonus but the other industries like Energy sector and Information Technology should consider the other factors such as sentiments about the stock and overall sentiment of the market. Such firms bonus declaration is treated as negative sign for the firm.

9.4 Recommendation to Policy makers

Indian Share market shows semi strong form of efficiency which shows majority of effect of news are adjusted to share price and no additional gain can be earned through this news.

The policy maker should analyse the speculative activity done by some of large investors like Domestic Investors or Foreign Institutional Investors who have insider information about the Bonus announcement which can be identified in Financial Services industry. The bonus announcement is made after the board of directors meet and the notice of such event is sent to members 21 days ahead of it so this information are publicly available on the NSE and BSE websites so these large investors seeing agenda of the meeting might use the information as speculative purpose and will damage the wealth of the retail investors. The large invetors like mutual fund houses also have some insider information from the management regarding the same which will result into speculation. So, policy makers should keep an eye on these

activities and take strict action if any large investor or mutual fund house are caught in such activities.

10. Conclusion

Corporate actions such as dividend declaration, share split, bonus share & right share have significant impact on shareholders' wealth. The current study was focusing the impact of bonus announcement on share price for the shorter time frame. The study reveals that majority of the firms have significant impact on share prices. The bonus announcement has positive impact on the share prices. It was also found that the share prices have significantly increase in shorter time frame compared to those of the preannouncement period.

The study also focuses on the effect on share volume, the announcement day and its previous day witnessed the significant change in the volume which shows the speculation on announcement day, and it was found that the bonus declaration has been seen as increased volumes near the announcement window but were not found significant for most of the events. Thus, it shows that the current holders of the stocks are planning to hold and gain from the corporate announcement. The existing share holders see it as positive sign for wealth creation in longer time frame. The response to the volatility in share prices has been seen as mixed approach as nearly half of the events had significant change in volatility. So, it is difficult to conclude that the volatility of share prices changes in the event declaration window.

The study has also aim of measuring the returns starting from 20 days prior to bonus announcement. It was observed from the average cumulative return for all the firms that the positive cumulative return was recorded on all the days and announcement day has 7.19% of the return for 21 days including the announcement day. The returns after the announcement started to stabilise and not seen upward movement like the preannouncement window. It was also concluded that the bonus share ratio of 1:1 has more positive impact on share cumulative return compared to the other ratios. The highest cumulative returns at the end of the 20 days after the announcement, were recorded for Auto Industry followed by Financial Industry & Consumer Goods industry. The lowest recorded among 6 industries was for Energy

sector which showed less response compared and cumulative return was noticed to start decreasing after the announcement of the bonus.

The current research uses the event study methodology used Brown & Warner (1985) for assessing the abnormal returns. The abnormal returns were calculated using market model, it was noted that only Automobile Industry provided the significant positive abnormal return event while other industries did not provide significant abnormal return on the event day. The highest average significance abnormal return for all the firms was seen before 2 days of the declaration or event. The bonus ratio had no impact on abnormal return of the stocks. The average abnormal returns are high in the pre-announcement window compared to those of post announcement window.

Further this study also analysed the cumulative abnormal returns for the stocks and Information Technology reacted less compared to other industries and negative cumulative returns were also found in the initial period of the preannouncement window. The financial services industry was reacting most positively followed by automobile industry. The Financial and Automobile industry provided the average cumulative abnormal return on continuous basis showing investor take bonus announcement as positive signal for the financial health of company. IT, Pharma & Consumer goods does not provide any time window for significant return on continuous basis which shows that the investors of such firm do not react, and price are not affected by bonus declaration. The study also revealed that the bonus ratio has impact on share price on 4^{th} day & 7^{th} day price after the announcement but had no impact after it.

With information efficiency of the market with respect to Efficient Market Hypothesis, the study suggests that the Indian Markets are forming the semi strong market efficiency with respect to bonus announcement and majority of the value has been factored in the share price before the announcement in the share price which can be seen from the abnormal average return.

11. Paper Publication

1. Tokariya B. & Bhatt K.(2020), "**A Study on Analyzing Bonus Announcement Effect on Share Price and Volume of Stocks in India",** Studies in Indian Place Names, Volume-40, Special Issue-08, Feb 2020, ISSN: 2394-3114
2. Tokariya B. & Bhatt K.(2020), **"A Study on Effects of Bonus Announcement on Liquidity of The Stocks Listed at NSE",** *SodhSanchar Bulletin*, Volume 10, Issue 39, July-Sep 2020, ISSN: 2229-3620

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