

Dividend Announcement and Share Price Behaviour: A Study of selected Companies in India

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ABSTRACT

Dividend policies of companies and their impact on market share prices have been important topic for debate worldwide. The announcements of dividend amount and time of payment by Indian companies is done at different dates by different companies. The opinions and views of financial experts and researchers regarding the effect of dividend announcements on the market share prices vary from each other. According to some studies, dividend announcements by companies do lead to fluctuation in their share prices, while others are of view that dividend payout policy does not affect market share price and company value, leading to hypothesis that dividend policy is irrelevant. This study makes an attempt to understand the impact of dividend announcements on the share prices, number of trades, number of shares, and total turnover of the top BSE index companies by highest market capitalization. The findings of the study based on t-test showed a mixed result, measuring the changes of share prices before and after the dividend declaration of the selected companies. The findings of the study with the help of event study methodology reveals that the dividend announcements by the sample companies have significance influence on the market Share Prices, Number of Shares, Number of Trades and Total Turnover; which can give valuable information to the investing community and the organizations.

Keywords: Dividend, Share Prices, Number of Shares, Number of Trades, Total Turnover.

INTRODUCTION:

Dividend policy of a company involves a major financial decision with regard to the distribution of a part of the earnings of the company to its shareholders and the amount to retain from the earnings for further investments. Different companies adopt their own dividend policies and these decisions may be influenced by many determinants like the earnings level, development and investment portfolios, economic and taxation policies of the country, the life cycles of the organizations, etc. Whenever companies announce their next dividend, the share prices generally might be affected depending on the amount of the announcement. To some extent, the overall demand for share has influence on the market price of the shares. There are numerous opinions and debate on the core issue of dividend policy influencing other variables like Miller and Modigliani (1961), who say that in perfect world, the value of the firm is not affected by its dividend policy decisions, so there should not be any wealth effect as a result of dividend announcements by the firms. However, the studies of Walter (1963) and Gordon (1963), are in contradiction to this hypothesis, which say that dividend decisions do affect the value of the firm and hence the share holders wealth.

In any economy, capital market is considered as an important platform for investment. However, before investing in any security the investors consider several things like past returns from such investments, dividend records of companies, dividend-share price relations, share price movements, etc. Dividend policy is important for investors, managers, lenders and other stakeholders. Dividend is important for the investors not only as a source of income but as a way to access to the company and be a part it. For companies, selecting a suitable dividend policy is an important decision because the flexibility of investment in future projects significantly

depends on the amount of dividends that they pay to their shareholders. Often lenders are also interested in the amount of dividend that a company announces; as more amounts is paid as dividend means less amount would be available with the companies for servicing and redemption of their claims. Finally it is important for other stakeholders especially for claim holders to help them in reducing agency cost. The main objective of dividend policy is to maximize shareholders wealth by maximizing their purchasing power. Maximizing shareholders wealth depends on the dividend policy of the company as the shareholders would satisfy their purchasing and consumption patterns (Anmol, 2008). In the long term perspective, the important decisions regarding investment, financing and dividends are expected to create value to the company and its stakeholders. Market capitalization is one of the measures of company value which is influenced by share price value attached to the market. The overall performance of the company, growth prospects, strategic direction and potential for long term sustainable results have significant impact on its market share price.

Indian is emerging as in prominent investment platform with a highest number of transactions among all the stock exchanges of the world (World Federation of Exchanges, 2013). Equity Market is a lucrative field for investors, with stocks profitable not only for long and medium-term investors but for the position traders, short-term swing traders and for very short-term intra-day traders and speculators too. A landmark achievement was made by the Indian stock market by crossing Rs. 100 lakh crore at US\$ 1.66 trillion in market capitalization as on 28th of November, 2014. As per the financial experts, debt market in Indian developing economy is very important and it constitutes as the largest debt market in whole of Asia.

REVIEW OF LITERATURE:

The study of Shukla, (2011), "An Investigation to review the impact of Dividend on share prices of Indian Companies", concluded that the dividend declaration by the sample companies has neither significant increase nor significant decrease in share average prices, high prices and low prices of the selected sample companies. According to the study of Singh and Sapna, (2011), on the stock price behaviour around dividend announcements made by BSE-'A' group listed companies and the changes occurred in liquidity on account of these announcements, found that there are significant differences in average number of transactions before and after the dividend announcements; and also their study showed a mixed result regarding the turnover and average traded quantity. Abidin et al., (2009), examined the effect of dividend announcements on the stock prices of companies listed in Kuala Lumpur Stock Exchange. The result of their study showed that increase in dividend amount declared by the companies is greeted positively by the investors.

Dividend per share has been considered as an important variable that influenced the share prices. Sharif et al., (2015), examined various factors affecting share price in Bahrain Stock Exchange and found that dividend per share along with other factors to have positive impact on share price of the companies. The study of Botchewy, (2014) on the impact of dividend payments on share price of some companies that are listed in Ghana Stock Exchange, concluded that as dividend per share amount increases, the market share prices of those companies rise due to pressure on the shares. A study on the effect of dividend policy on share prices of companies in Nairobi Securities Exchange by Waithaka et al., (2012), found that dividend payments affected the share prices and stock trading volume of the companies. Their study also recommended that companies should always strive to pay dividend consistently for their shares to perform well at the stock exchanges.

In recent times, some studies have found Dividend Yield to be an important determinant that influences the stock prices of companies. The studies of Nazir et al., (2010) on the effect of dividend policy on stock prices have found a positive relationship between dividend yield and stock price behaviour. It signifies how much a company pays dividend in relation to its stock price. The studies of Ammihud and Li, (2002); Rashid and Rahman, (2009); and Suleman, (2011) on the effect of dividend policy on stock prices have found a positive relationship between dividend yield and stock price behaviour. As per the study of Asghar, (2011), the share price volatility has a strong positive correlation with dividend yield. Asghar considered different sectors in Pakistan for four years for the study. Likewise, Zulkifli et al., (2012) in their study on construction companies of Malaysia, taking share price volatility as dependent variable and dividend yield, dividend payout ratio, leverage, growth, size, and earnings volatility as independent variables, found that dividend yield have positive effect on share prices of the sample companies. The study of Maharishi and Malik, (2015) on 30 BSE companies concluded that the price volatility and dividend yield have strong positive correlation but price volatility is negatively correlated with growth in assets.

Dividend is by far a single important determinant affecting stock prices, (Sen and Ray, 2003). In their study on BSE index companies in India over a period of 1988-2000, they have found that dividend payout ratio has high impact on the stock prices of the selected companies. Mokaya and James (2013), in their study explained about

how dividend policy affects the share prices in banking industry in Kenya. Their study showed that an increase in dividend payout ratio leads to increase in share prices. Lashgari and Ahmadi (2014) studied the impact of dividend policy on stock price volatility in Tehran Stock Exchange. They found that dividend payout ratio, leverage, earning volatility, and company size have negative effect on stock price volatility. Ponsian et al., (2015), examined the relationship between dividend policy and share price of 13 companies listed in Dar Es Salaam Stock Exchange (DSE) for the period of five years. The independent variables considered for the study were dividend yield, dividend payout ratio, earnings per share and price-earnings ratio. The findings of the study showed that the dividend yield or price-earnings ratio has the most significant relation with the share price. The further empirical findings also stated that dividend payout ratio and earnings per share have positive effect on share price while dividend yield is negatively associated to share price.

STATEMENT OF THE PROBLEM:

Dividend payout policy has to undergo crucial decisions about 'when' and 'how much' per cent of the company's profits should be declared as dividend. The dividend decision of a company has to be approved by its shareholders. The shareholders may have diverse opinion on and expectation of the amount and time of dividend payments, which makes it difficult for the company Board of Directors to decide. Some shareholders may prefer regular dividends while others may prefer future capital gains due to tax related problems, insecurities and fear of loss, etc.

Speculation is a common practice in Indian Stock Market which is dominated by Foreign Institutional Investors (FIIs). Over-speculation in stock markets leads to constant fluctuation in the stock prices. In fact the investment experts say that Indian Stock Market is one of the most volatile stock markets in the world. This highly volatile nature of Indian Stock Market affects the investment decision making of the common investors. Investors are confused whether to go by the rising share prices or base their investments on the past dividend records of companies. Some National and Foreign Institutional Investors purchase maximum amount of share of few companies, making an artificial share price rigged to gain in the short-run. They do not pay attention to the company's wealth maximization motives. When the share price of a company rises due to speculation or due to higher dividend announcements, the common investors also purchase the shares with the hope of getting short-term income from trading. Often very small portion of shares will be available for the individual investors. The bad effect of excessive speculation is that it creates surplus liquidity for few companies and little or no liquidity for other companies. Whenever there is liquidity problem, the companies have shortage of working capital and the profit earnings as well as dividend decisions are affected. As a result of low dividend payouts the share prices of those companies will be low.

In secondary market, insider trading is a common unfair practice in which traders who are insiders to an organization manipulate and misuse the unpublished sensitive information. This unfair practice is quite common in India in which share prices are artificially rigged so as to benefit the insider. Also the insiders to the companies know about the profits and the future dividend amount to be declared much before the general public. If higher dividend is expected from their companies, these insiders purchase maximum amount of shares through various accounts, through their relatives and friends. This leads to loss to the common investors. There is no clear cut idea that an investor can have about the right company to invest. Some investors reflect on the company's net profit or on its dividend history before investing. But the fact is that no single determinant review can lead the investor to good dividends earnings. The question is whether dividend declarations significantly affect the share prices of companies, and to what extent?

SIGNIFICANCE OF THE STUDY:

Dividend payout policy influences the growth of the company and the price of its equity shares in the market. It has both micro and macro level of significance in companies. At the micro level, it is crucial for investment and financial decision making. At macro level, corporate dividend payout policy helps in formulating appropriate policies for achieving the national aggregate savings and sector-wise distribution of those savings in keeping with priorities of National Credit Plan (Bhole, 1980). It also plays an important role in creating a healthy investment climate and influences the saving pattern in an economy for rapid economic growth of a country. Distribution of dividend has a great impact on savings of household sector too. All these savings thus generated, helps in the process of capital formation and is of great importance to economic planners in the long run. Dividend declaration of companies serves as a signal to shareholders and investment community about their future expectations, and helps the companies to attract and hold the type of buyers that will result in a stable

shareholder base and the share price. There are significant differences between dividend policies in developed, developing and underdeveloped countries. Glen et al., (1995) in their studies showed that dividend payout rates in developing countries are approximately two-thirds of those in developed countries. Moreover, in emerging market like India with certain competitive natures, corporations may not be able to follow a stable dividend policy and different variables may affect and influence the same. Many companies try to retain their profits, which minimizes the borrowing of the capital from outside sources that bear high interest rates. But the investors expect current earnings rather than future earnings which is uncertain both in amount and time. Dividend payout policy is a crucial financial decision making process and is affected by many factors and such decisions affect market share prices. Thus, the main focus of the proposed study is to examine the effect of dividend payout policy on market share price, volume of shares, total trades and total stock turnover in selected companies in India. This study has considered the top BSE-500 index companies by market capitalization, whose shares are mostly traded in the stock market. These companies represent more than twenty major sectors in India that have significant contributions to the GDP growth of the economy. Thus, the findings of this study could provide reliable information to investors and to the company policy makers in making important decisions. Also, this study will examine whether and to what extent the results of previous researchers are relevant particularly to companies in India.

OBJECTIVE OF THE STUDY:

The study has been undertaken to fulfil the objective given below:

- 1) To examine the impact of dividend announcements on the share price, number of shares, number of trades and total turnover of the selected companies.

Hypothesis (Ho):

There is no significant impact of dividend announcement on share price, number of shares, number of trades, and total turnover of the selected companies.

RESEARCH METHODOLOGY:

Population:

For fulfilling the objective of the study, the researcher considered the top BSE index companies by market capitalization. Top BSE-500 index companies by market capitalization represent nearly 93% of the total market capitalization on BSE. BSE-500 index companies cover more than twenty major sectors of the economy. (Source: www.wikinvest.com).

Sample frame:

The study considered top 10 BSE companies by highest market capitalization as on 28th of June, 2016. Judgment sampling method is used to select the sample size. Here, the companies with top market capitalization having a consistent flow of profits, continuous dividend payout records, and with continuous trading and operations throughout the study period (2009-2017) are considered for the study. The sample companies selected for the study include Tata Consultancy Services Ltd. (BSE-532540), Hindustan Unilever Ltd. (BSE-500696), State Bank of India (BSE-500112), Maruti Suzuki (BSE-532500), Infosys (BSE-500209), Oil and Natural Gas Corporation of India (BSE-500312), Indian Oil Corporation (BSE-530965), ICICI BANK (BSE-532174), Kotak Mahindra Bank (BSE-500247), and National Thermal Power Corporation Ltd. (BSE-532555).

Period of coverage:

The data for this study is collected from Bombay Stock Exchange Official Directory and through websites- www.capitaline.com; www.bseindia.org; www.moneycontrol.com; www.shine.com; www.yahoo!finance.com and www.wikinvest.com; covering a period of 9 years from 2009-2017. This study period has been chosen in order to identify the impact of dividend announcement on share price, number of shares, number of trades, and total turnover during the recovery period after the World Economic Crisis in the years 2007-2008.

Data collection:

The study is based on secondary data. The major source of secondary data is the annual reports of selected BSE-500 index companies in India which are listed in Bombay Stock Exchange (BSE). The researcher has considered the published and unpublished research papers, dissertations, books, articles and journals for collecting secondary data for the study.

Event Study Methodology:

In order to analyze the impact of dividend announcement on share's price, number of shares, number of trade,

total turnover and return in the selected top 10 BSE companies by top market capitalization, event study method have been applied. An event study is an attempt to measure the valuation effects of a corporate event, such as earnings or dividend declaration, by examining the response of the stock price around the announcement of the event (dividend). The following steps will be considered to perform even study, in relevant to the studies of Kapoor, (2009); Singh and Sapna,(2011).

- ✓ Find out different dividend declaration dates in each of the company respectively from 2009 to 2017.
- ✓ The event window of 10 days before the event day zero and 10 days after the event day has been taken.
- ✓ As per Market Model (Mackinlay, 1997), daily closing prices of 10 day before the event day zero and 10 days after the event day zero were considered for calculating returns, expected returns, abnormal returns with the help of Microsoft excel.
- ✓ Cumulative abnormal returns has been calculated with the help of average abnormal returns to examine the reaction of share price on dividend announcements over a period of time for the selected 10 companies.

To examine the effect of dividend declaration on share price, Returns (R_{it}), where the time 't' on security 'i' will be calculated as:- $R_{it} = (P_{it} - P_{it-1}) / P_{it-1}$; where P_{it} is the daily closing price of the stock 'i' on the day 't'. P_{it-1} is the closing price of the stock 'i' on the day 't-1'. The expected return is estimated by employing the market model parameters prior to the event window- $E(R_{it}) = \alpha + \beta \times R_{mt} + E$. Where, E is the expected return of stock 'i' on time 't'; while α and β are the parameters of the regression equation. R_{mt} is the daily return on stock market index (top 10 BSE index companies by market capitalization) at time 't'; $R_{mt} = (I_t - I_{t-1}) / I_{t-1}$, where I_t is the value for the market index at time 't'; I_{t-1} is the value of the market index at time 't-1'.

The abnormal return is defined as the difference between actual return and expected normal return on a stock 'i' at time 't'. The abnormal return (AR_{it}), will be calculated for 10 days before the event and 10 days after the event in the event window according to the equation as follows:- $AR_{it} = R_{it} - E(R_{it})$.

The average abnormal return (AAR_{it}), will be calculated across the sample companies from different sectors by using the formula:- $AAR_{it} = (1/N) AR_{it}$; where N is the number of observation. Thus, the abnormal returns will be divided by the number of days to find out average abnormal returns.

Then, cumulative average abnormal return for the sample companies will be calculated as under:- $CAAR = \sum AAR_t$; where 't' is the total time period i.e., 9 years in this study.

Finally, the 't-test' will be computed to examine the statistical significance of AARs and CAARs related to dividend announcement, are standardized as under: $t = AAR / \sigma(AARs)$; where AAR is the average abnormal return for each event window; σ is the Standard error of the Average Abnormal Returns; $t = CAAR / \sigma(CAARs)$; where CAAR is the Cumulative Average Abnormal Returns.

ANALYSIS AND INTERPRETATION OF DATA:

In order to identify the effect of dividend announcements on the market share prices of the selected top companies by market capitalization, listed in Bombay Stock Exchange, different dividend announcement dates were obtained from www.moneycontrol.com. Against each dividend announcement date by the companies, the market share prices of the companies were obtained from the official website of Bombay Stock Exchange for 9 years (2009-2017). For each company, the average close share prices were calculated for the study period. By applying event study methodology in Microsoft excel, the abnormal returns of the selected 10 companies were analyzed. In order to know the reactions of share prices on dividend announcement (event day), the researcher considered 10 days prior to the event day and 10 days after the event day.

Result based on t-test:

The t-test analysis can be used when the samples of the study are dependent i.e., when there is only one sample which has been tested twice (repeated measures) or whenever there are two samples that have been paired. Researchers like Sukhla (2011), and others considered the t-test analysis to measure the effect of before and after the event date such as dividend announcements. In this study, various data before ten days and after ten days of dividend announcements have been collected and tabulated in such a manner so that proper calculations can be made with the help of t-test to know if there is any significant change is observed before and after announcement of dividend by the selected companies. Following is the equation of paired t-test (Sukhla, 2011):
Test Statistics:

$$t = \frac{D - \bar{0}}{(S.D) / \sqrt{n}}$$

Where, D= Mean of Difference; S.D. = Standard Deviation of Differences; n= Number of matched pairs.

$$\text{In which, } S.D. = \sqrt{\frac{\sum \bar{D}^2 - (D)^2 \cdot n}{n - 1}}$$

Significance level: 5% Level of Significance

Degree of Freedom: n-1

Decision rule: In case the calculated value of ‘t’ is less than the tabulated value, the H₀ is said to be significant and accepted.

1. Evaluation of Average SHARE'S PRICE Before and After Announcing Dividend (for 9 Years)

Table 1: t – Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	1086.116989	1101.138371
Variance	674691.6045	687798.7684
Observations	10	10
Pearson Correlation	0.999344861	
Hypothesized Mean Difference	0	
Df	9	
t Stat	-1.536617644	
P(T<=t) one-tail	0.079381711	
t Critical one-tail	1.833112923	
P(T<=t) two-tail	0.158763422	
t Critical two-tail	2.262157158	

\bar{D}	N	S.D	t _c	t _T
-15.02	10	30.9	-1.54	±2.262

Statistical Decision:

Since the tabulated value of ‘t’ in the table at 5% level of significance and with degree of freedom n-1=9, is more than the calculated value in case of Average Share Prices before and after dividend announcements of selected companies, hence the H₀ is significant and accepted.

Conclusion:

From the above calculations, it is clear that dividend announcements do not affect the Average Share Prices of the sample companies. In other words, there is no significant change in the Average Share Prices before and after announcement of dividend in the selected companies.

2. Evaluation of Average NUMBER of SHARES Before and After Announcing Dividend (for 9 Years)

Table 1.1: t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	392076.1226	452026.9298
Variance	1.47151E+11	1.62414E+11
Observations	10	10
Pearson Correlation	0.996607378	
Hypothesized Mean Difference	0	
Df	9	
t Stat	-5.021334818	
P(T<=t) one-tail	0.000358892	
t Critical one-tail	1.833112923	
P(T<=t) two-tail	0.000717783	
t Critical two-tail	2.262157158	

\bar{D}	n	S.D	t_c	t_T
-59950.81	10	37,755.11	-5.02	±2.262

Statistical Decision:

Since the tabulated value of ‘t’ in the table at 5% level of significance and with degree of freedom n-1=9, is less than the calculated value in case of Average Number of Shares before and after dividend announcements of selected companies, hence the H_0 is insignificant and rejected.

Conclusion:

From the above calculations, it is clear that dividend announcements do affect the Average Number of Shares of the sample companies. In other words, there are significant changes in the Average Number of Shares before and after announcement of dividend in the selected companies.

3. Evaluation of Average NUMBER of TRADES Before and After Announcing Dividend (for 9 Years)

Table 1.2: t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	7545.784887	9814.237662
Variance	39622020.7	70945974.51
Observations	10	10
Pearson Correlation	0.975512127	
Hypothesized Mean Difference	0	
Df	9	
t Stat	-2.687151146	
P(T<=t) one-tail	0.012456251	
t Critical one-tail	1.833112923	
P(T<=t) two-tail	0.024912502	
t Critical two-tail	2.262157158	

\bar{D}	n	S.D	t_c	t_T
-2268.45	10	3503.19	-2.687	±2.262

Statistical Decision:

Since the tabulated value of ‘t’ in the table at 5% level of significance and with degree of freedom n-1=9, is less than the calculated value in case of Average Number of Trades before and after dividend announcements of selected companies, hence the H_0 is insignificant and rejected.

Conclusion:

From the above calculations, it is clear that dividend announcements do affect the Average Number of Trades of the sample companies. In other words, there are significant changes in the Average Number of Trades before and after announcement of dividend in the selected companies.

4. Evaluation of Average TOTAL TURNOVER Before and After Announcing Dividend (for 9 Years)

Table 1.3: t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	249741495.3	329477049.3
Variance	6.41336E+16	1.13723E+17
Observations	10	10
Pearson Correlation	0.989971594	
Hypothesized Mean Difference	0	
Df	9	
t Stat	-2.69310653	
P(T<=t) one-tail	0.01233533	
t Critical one-tail	1.83311292	
P(T<=t) two-tail	0.02467066	
t Critical two-tail	2.26215715	

\bar{D}	n	S.D	t_c	t_r
-79735553.9	10	93626433.9	-2.69	±2.262

Statistical Decision:

Since the tabulated value of ‘t’ in the table at 5% level of significance and with degree of freedom n-1=9, is less than the calculated value in case of Total Turnover before and after dividend announcements of selected companies, hence the H_0 is insignificant and rejected.

Conclusion:

From the above calculations, it is clear that dividend announcements do affect the Total Turnover of the sample companies. In other words, there are significant changes in the Total Turnover before and after announcement of dividend in the selected companies.

Analysis of Data with the help of ‘ANOVA’:

For the present study, the researcher has considered 10 companies from Bombay Stock Exchange which has highest market capitalization as on 28th of June, 2016. In order to ensure if there exists any significant variations among the sample companies and also variation during the study periods (2009-2017) of the study, the researcher has applied ‘Anova’ technique and tested the significance of the differences at 5% level of significance with the help of Microsoft Excel. For the purpose, the researcher has taken the data for (10 days before the dividend announcements and 10 days after the dividend announcements) of the variables such as daily average Share Prices, Number of Shares, Number of Trades and Total Turnover of the randomly selected 10 BSE companies.

Calculation of Average Share Prices with the help of ANOVA:

Hypothesis: H_0 :-

There would not be any significant difference in Average Share Prices among the selected companies and over the study periods.

Table 2: Anova Table (Average Share Prices)

Source of Variation	SS	Df	MS	F_C	F_T
Among the Companies	16699.972	22	759.089	2.078	1.596
Over the Years	141109742.7	9	15678860.3	42929.622	1.927
Error	72314.038	198	365.222		
Total	141198756.8	229			

Conclusion:

From the above calculations of Average Share Prices, it can be seen that the Calculated Value of ‘F’ is higher than the Tabulated Value of ‘F’ in both the cases, i.e., among the companies and over the years. Hence, the hypothesis stands rejected, which means there exists significant differences in the average share prices among the selected companies and over the study periods (2009-2017).

Calculation of Number of Shares with the help of ANOVA:

Hypothesis: H_0 :-

There would not be any significant difference in Number of Shares among the selected companies and over the study periods.

Table 2.1: Anova (Number of Shares)

Source of Variation	SS	df	MS	F_C	F_T
Among the Companies	2.88E+12	24	1.2E+11	6.497031	1.567906
Over the Years	3.68E+13	9	4.09E+12	221.6857	1.923412
Error	3.99E+12	216	1.84E+10		
Total	4.37E+13	249			

Conclusion:

From the above calculations of Number of Shares, it is observed that the Calculated Value of ‘F’ is higher than the Tabulated Value of ‘F’ in both the cases, i.e., among the companies and over the years. Hence, the hypothesis stands rejected, which means there exists significant differences in the Number of Shares among the selected companies and over the study periods (2009-2017).

Calculation of Number of Trades with the help of ANOVA:

Hypothesis: H₀-

There would not be any significant difference in Number of Trades among the selected companies and over the study periods.

Table 1.2: Anova (Number of Trades)

Source of Variation	SS	Df	MS	F	F crit
Among the Companies	1.65E+09	24	68829268	8.28881	1.567906
Over the Years	1.22E+10	9	1.35E+09	162.5901	1.923412
Error	1.79E+09	216	8303879		
Total	1.56E+10	249			

Conclusion:

From the above calculations of Number of Trades, it can be seen that the Calculated Value of ‘F’ is higher than the Tabulated Value of ‘F’ in both the cases, i.e., among the companies and over the years. Hence, the hypothesis stands rejected, which means there exists significant differences in the Number of Trades among the selected companies and over the study periods (2009-2017).

Calculation of Total Turnover with the help of ANOVA:

Hypothesis: H₀-

There would not be any significant differences in Total Turnover among the selected companies and over the study periods.

Table 2.3: Anova (Total Turnover)

Source of Variation	SS	df	MS	F _C	F _T
Among the Companies	1.86E+18	24	7.77E+16	4.820749	1.567906
Over the Years	1.95E+19	9	2.17E+18	134.4974	1.923412
Error	3.48E+18	216	1.61E+16		
Total	2.48E+19	249			

Conclusion:

From the above calculations of Total Turnover, it can be seen that the Calculated Value of ‘F’ is higher than the Tabulated Value of ‘F’ in both the cases, i.e., among the companies and over the years. Hence, the hypothesis stands rejected, which means there exists significant difference in the Total Turnover among the selected companies and over the study periods (2009-2017).

Findings based on Event Study Method:

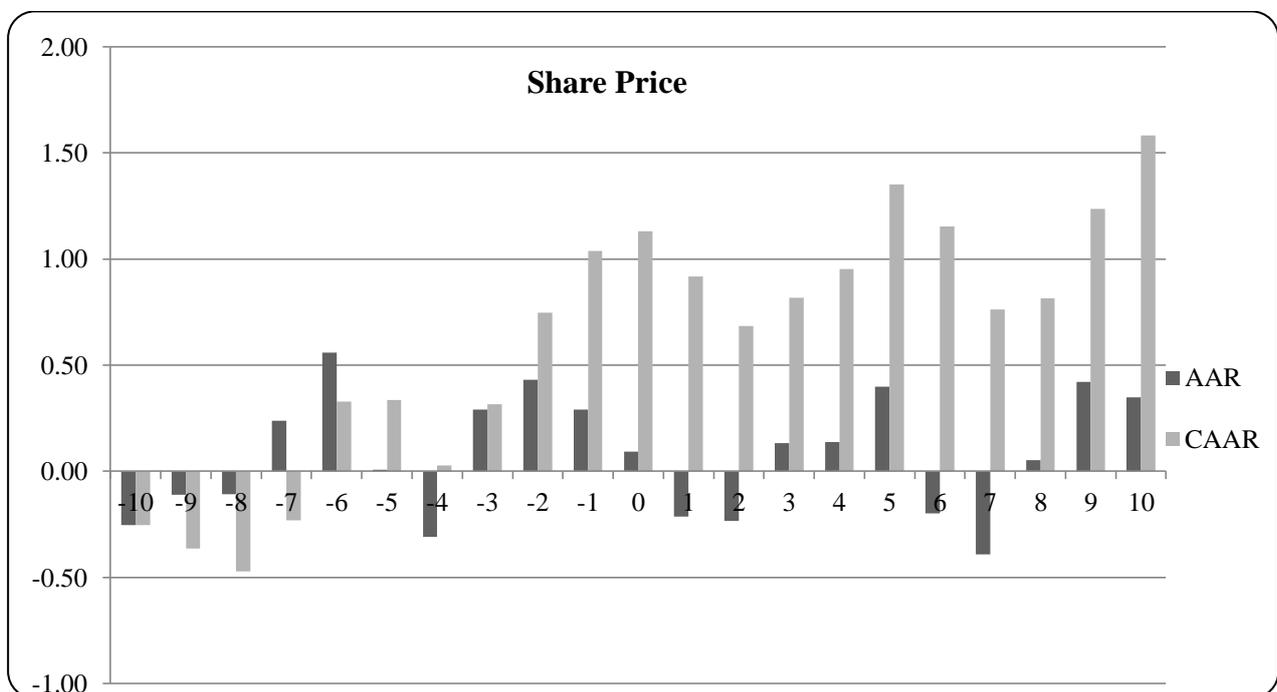
The table (below) shows the Average Abnormal Return (AAR) and Cumulative Average Abnormal Returns (CAAR) of Share price, Number of Shares, Number of Trades and Total Turnover, in percentage (%), with the event day as zero, ten days before the event day and ten days after the event day.

Table 3: Event Time	Share Price		No. Of Shares		No. Of Trades		Total Turnover	
	AAR	CAAR	AAR	CAAR	AAR	CAAR	AAR	CAAR
-10	-0.253	-0.253	23.042	25.155	4.970	4.970	14.420	14.420
-9	-0.110	-0.363	-19.054	6.101	-4.418	0.552	-9.234	5.186
-8	-0.108	-0.471	13.940	20.041	3.144	3.696	11.540	16.726
-7	0.239	-0.232	-4.152	15.889	1.649	5.345	-2.975	13.751
-6	0.560	0.327	19.242	35.131	2.509	7.854	10.985	24.736
-5	0.008	0.335	-12.381	22.750	-4.762	3.092	5.046	29.782
-4	-0.308	0.027	-8.922	13.828	2.424	5.516	-9.528	20.254
-3	0.290	0.316	13.534	27.362	5.001	10.517	1.707	21.960
-2	0.431	0.748	-2.256	25.106	0.780	11.297	-7.182	14.779
-1	0.290	1.038	-1.895	23.211	2.225	13.522	9.293	24.072

Event Time	Share Price		No. Of Shares		No. Of Trades		Total Turnover	
	AAR	CAAR	AAR	CAAR	AAR	CAAR	AAR	CAAR
0	0.093	1.131	115.749	138.961	141.007	154.528	147.630	171.702
1	-0.213	0.918	-34.909	104.052	-32.438	122.090	-33.000	138.702
2	-0.234	0.684	-22.495	81.557	-22.047	100.043	-24.253	114.449
3	0.132	0.816	-1.608	79.948	-5.241	94.802	-2.286	112.164
4	0.137	0.954	-1.348	78.600	-3.640	91.162	16.374	128.538
5	0.399	1.352	-6.109	72.491	1.990	93.153	-10.881	117.657
6	-0.198	1.154	-4.646	67.845	-4.799	88.354	-3.864	113.793
7	-0.392	0.762	1.200	69.045	10.367	98.721	3.478	117.272
8	0.052	0.814	-5.369	63.676	-14.978	83.742	-13.921	103.351
9	0.421	1.235	-3.316	60.360	0.923	84.665	0.187	103.538
10	0.347	1.582	8.470	68.830	-0.511	84.155	8.421	111.958

It has also been depicted with the help of a bar diagram as shown below.

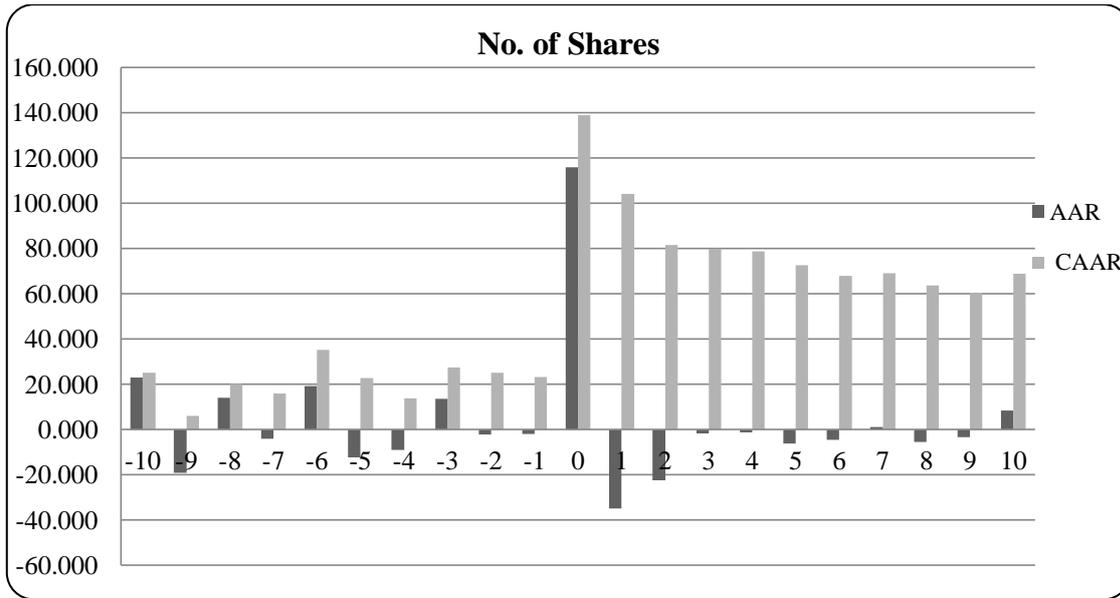
Figure 1: Bar diagram showing Share Price Average Abnormal Return and Cumulative Average Abnormal Return in percent for the 10 companies (2009-2017)



It can be seen from the table that both the AAR and CAAR of the ten companies showed a significant increase on the event date (0) when the dividend announcements were made by these ten companies (AAR=0.6% increase from the day -1 and CAAR=1.4% increase from the day -1). Further increase on the percentage of CAAR can be observed after the announcement of dividend by these top companies of Bombay Stock Exchange. From -1.6% on the day -10, the CAAR has significantly increased to 12% on the day +10 of the event window.

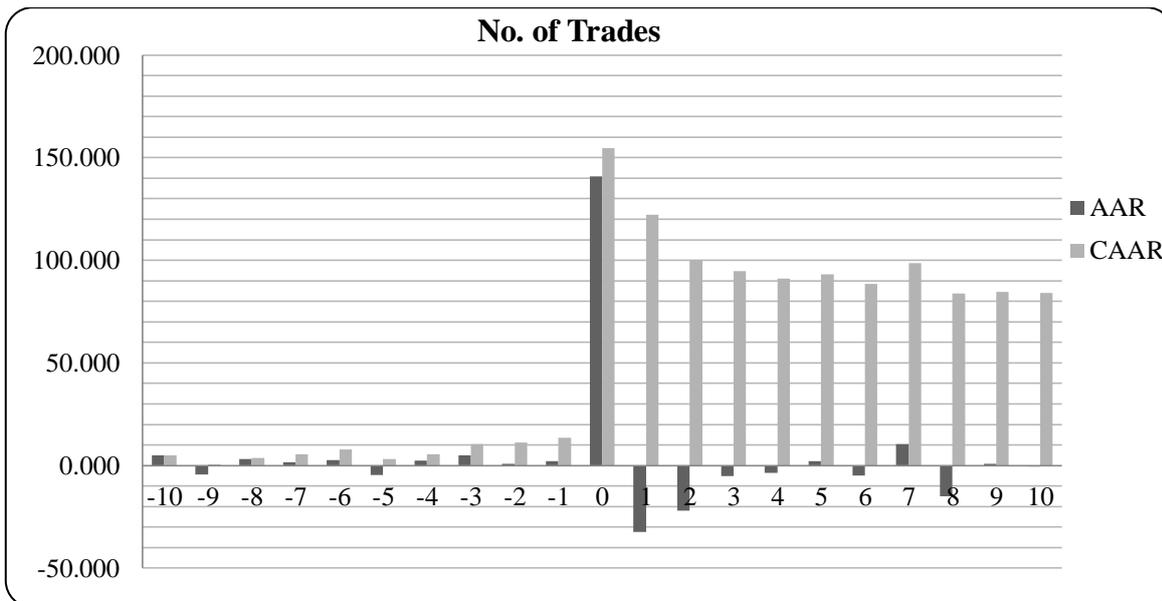
From the above bar diagram it can also be seen that from the day -3, -2, -1 and on the day '0' of the event window, both the Average Abnormal Returns and Cumulative Abnormal Returns are significantly high. This reveals that there is possibility of asymmetry information of the companies' policies among the insiders of the companies. While on the day +1 and day +2, the average Abnormal Return showed negative.

Figure 2: Bar diagram showing Number of Shares Average Abnormal Return and Cumulative Average Abnormal Return in percent for the 10 companies (2009-2017)



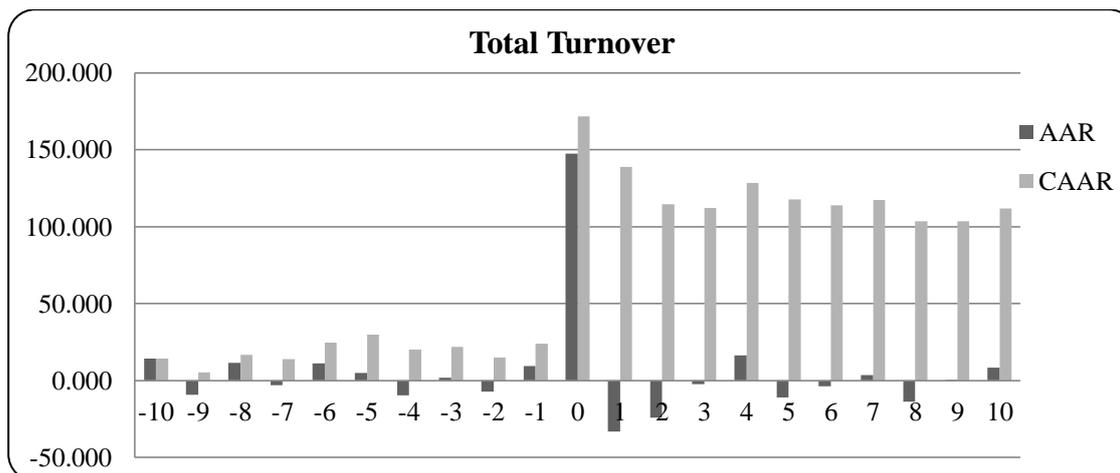
From the above bar diagram of number of shares, it can be observed that both Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) are high on the event window day ‘zero’, which reveal that the investors purchased most number of shares on the event day i.e., on the day of dividend announcement. On day +1 and day +2, the AAR showed negative.

Figure 3: Bar diagram showing Number of Trades Average Abnormal Return and Cumulative Average Abnormal Return in percent for the 10 companies (2009-2017)



From the above bar diagram of Number of Trades, it can be observed that both Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) are high on the event window day ‘zero’, which reveal that the investors purchased or sold the shares of the sample companies highest on the event day i.e., on the day of dividend announcement. On day +1 and day +2, the AAR showed negative. Likewise the above bar diagram of Total Turnover showed AAR to be high on the event day ‘zero’ and negative on the day +1 and day +2. Thus, the maximum numbers of investors do the stock trading on the day of dividend announcement.

Figure 4: Bar diagram showing Total turnover Average Abnormal Return and Cumulative Average Abnormal Return in percent for the 10 companies (2009-2017)



CONCLUSION:

There are few researches that have been conducted on the impact of dividend announcements on share prices of different companies from Bombay Stock Exchange and have come out with different results in their study areas. Companies with high profits level can distribute more amount of dividend to their shareholders. Depending on their earnings and other financial considerations, the companies announce the dividend amounts. Several literatures of the similar studies reveal that higher the dividend announcements by companies, higher will be the demand for their shares and hence increase the share prices. This in turn can have positive influence on the general investors. This particular study was conducted to investigate the effect of dividend announcements on the market share prices of 10 BSE companies with highest market capitalization as on 28.06.2017. The t-test result shows that there is no significant difference between the share prices before and after the dividend announcements by the selected companies. But significant differences before and after the dividend announcements were observed in case of Number of Shares, Number of Trades and Total Turnover. Based on event study methods, among the selected companies, the average abnormal return (AAR) and the cumulative average abnormal return (CAAR) showed high on the zero day (event date) and the CAAR showed high increase from the day -10 to the day +10 of the event window. There is significant increase in AAR and CAAR from the day -3 to the day '0' which reveals about the possibility of asymmetry information among the insiders of the sample companies. Also there is sudden negative turn with respect to average abnormal returns on the +1 and +2 days of the window. This reveals that the investors wait for the companies to announce their dividend and purchase or sell the stocks mostly on the day of dividend announcement, event day 'zero'. The amount of dividend announcements made by these companies provide favourable signal for the investors in making important decisions about the purchase and sale of shares.

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APPENDIX:

Table showing average share price, average number of shares, average number of trades and total turnover of the sample companies with event day 'zero'.

Event Time	SP	NS	NT	TT
-10	1083.536	402227.20	7387.39	243270878.2
-9	1083.092	330228.89	7071.51	220762358.7
-8	1080.924	380073.96	7303.91	246198329.5
-7	1081.315	368680.91	7434.77	238827406.1
-6	1085.729	443876.90	7631.91	265018237.3
-5	1087.244	394042.13	7279.32	278341737.1
-4	1084.791	363431.77	7466.15	251769905.3
-3	1088.272	416812.78	7850.16	256019876.6

Event Time	SP	NS	NT	TT
-2	1092.242	412219.61	7922.59	237585554.3
-1	1095.386	409167.07	8110.14	259620670.4
0	1100.674	887497.20	19557.52	642851240.4
1	1095.489	587923.70	13241.33	430593946.5
2	1095.170	462453.16	10340.91	326081772.5
3	1098.124	460351.78	9813.63	318568729
4	1098.370	459457.69	9470.43	370672298
5	1103.319	436693.10	9672.41	330271830.9
6	1103.886	421442.65	9222.05	317450624.7
7	1100.636	431362.77	10191.22	328433698.5
8	1099.392	413181.79	8679.25	282652980.7
9	1103.834	404249.30	8771.72	283127985.1
10	1105.911	443153.35	8739.42	306916627.1

Evaluation of Average Share's Price Before and after Announcing Dividend (for 9 Years)				
Company Name	Before Average	After Average	D	D2
Tata Consultancy limited	1631.57	1644.49	-12.92	166.99
Hindustan Unilever Limited	556.54	562.38	-5.84	34.15
State Bank of India	1557.70	1573.92	-16.22	263.00
Maruti Suzuki	2410.44	2499.02	-88.58	7847.01
Infosys	2292.68	2255.69	36.99	1368.45
Oil and Natural Gas Corporation	441.40	449.94	-8.54	72.92
Indian Oil Corporation	354.75	363.09	-8.33	69.47
ICICI Bank	717.42	735.19	-17.77	315.94
Kotak Mahindra Bank	736.33	763.05	-26.72	713.97
National Thermal Power Corporation Limited	162.33	164.60	-2.27	5.15
Σ D			-150.21	10857.06
Σ D/n : \bar{D}			-15.02	Σ D2

Evaluation of Average No. of Shares Before and after Announcing Dividend				
Company Name	Before Average	After Average	D	D2
Tata Consultancy limited	171781.21	235388.86	-63607.65	4045933716.77
Hindustan Unilever Limited	155743.01	266169.64	-110426.62	12194039184.11
State Bank of India	877128.22	1012750.07	-135621.86	18393287676.93
Maruti Suzuki	70280.56	95041.52	-24760.97	613105470.27
Infosys	168413.57	193599.29	-25185.72	634320669.70
Oil and Natural Gas Corporation	402925.29	451613.80	-48688.51	2370571360.12
Indian Oil Corporation	137638.74	188165.73	-50526.99	2552976606.18
ICICI Bank	1227293.94	1298521.14	-71227.20	5073314019.84
Kotak Mahindra Bank	173262.29	192502.22	-19239.93	370175034.67
National Thermal Power Corporation Limited	536294.40	586517.01	-50222.61	2522310732.47
Σ D			-599508.07	48770034471.06
Σ D/n : \bar{D}			-59950.81	Σ D2

Evaluation of Average No. of Trades Before and after Announcing Dividend (for 9 Years)				
Company Name	Before Average	After Average	D	D2
Tata Consultancy limited	6539.48	8777.49	-2238.02	5008725.38
Hindustan Unilever Limited	2947.24	4285.66	-1338.43	1791393.29
State Bank of India	20217.29	29426.19	-9208.90	84803839.21
Maruti Suzuki	3934.90	4853	-918.10	842907.61
Infosys	5989.84	10097.65	-4107.81	16874069.17
Oil and Natural Gas Corporation	6924.22	7397.56	-473.34	224047.31
Indian Oil Corporation	2762.70	3236.88	-474.18	224844.56
ICICI Bank	18059.99	19954.23	-1894.24	3588162.02
Kotak Mahindra Bank	3910.80	4630.23	-719.43	517584.32
National Thermal Power Corporation Limited	4171.39	5483.48	-1312.08	1721560.10
ΣD			-22684.53	115597132.97
$\Sigma D/n = \bar{D}$			-2268.45	$\Sigma D2$

Evaluation of Average Total Turnover before and after Announcing Dividend (for 9 Years)				
Company Name	Before Average	After Average	D	D2
Tata Consultancy limited	199016250.3	279122316.6	-80106066.3	6.41698E+15
Hindustan Unilever Limited	72207484.5	123738690.6	-51531206.1	2.65547E+15
State Bank of India	828673901.7	1160308684.3	-331634782.7	1.09982E+17
Maruti Suzuki	131540456.2	202125397.1	-70584940.9	4.98223E+15
Infosys	297822589.4	407246981.8	-109424392.4	1.19737E+16
Oil and Natural Gas Corporation	143876783.9	171002892.6	-27126108.7	7.35826E+14
Indian Oil Corporation	50141342.1	76112167.5	-25970825.3	6.74484E+14
ICICI Bank	563263048.8	630077208.9	-66814160.1	4.46413E+15
Kotak Mahindra Bank	123789968.5	142046525.4	-18256556.9	3.33302E+14
National Thermal Power Corporation Limited	87083128.3	102989628.3	-15906500.0	2.53017E+14
ΣD			-797355539.5	1.42471E+17
$\Sigma D/n = \bar{D}$			-79735553.95	$\Sigma D2$
