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# Share price sensitivity in Insurance sector: An Event Day study

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**Abstract**

The concept of stock market efficiency has been widely explored in financial literature, with researchers and analysts examining three distinct forms of the efficient market hypothesis (EMH). This study focuses on stock price reaction to dividend announcements, which constitute publicly available information. The research is considering dividend declarations made in 2023 by five insurance companies listed in the BSE-200 Index. The daily returns of these companies are regressed against the market index from January 2023 until the relevant dividend announcement dates to predict expected returns and assess stock price reactions. Abnormal Returns, Average Abnormal Returns (AAR), and Cumulative Average Abnormal Returns (CAAR) are calculated for the 29-day period pre and post the event day i.e., dividend announcement. The data shows that days with negative returns are more common than those with positive returns. Furthermore, t-test results show that both positive and negative CAARs can be obtained by investing in stocks after dividend announcements, as there is no enough statistical evidence that dividend information is fully reflected in security prices.

**Keywords**: Dividend announcements, Event study, Abnormal Return AAR, CAAR,

## 1.INTRODUCTION

Modern portfolio theory suggests that financial markets have the ability to incorporate value-altering information into security prices. However, it also acknowledges that markets are not always perfectly efficient. Researchers have identified three levels of market efficiency: weak, semi-strong, and strong. Fuller and Farrell (1987) further divided the strong form into two subcategories: extremely strong form and near-strong form. In financial theory, the examination of market efficiency is known as the efficient market hypothesis (EMH). The weak form of the efficient market hypothesis (EMH) suggests that stock prices incorporate all historical value-changing information. The semi-strong form argues that security prices reflect all publicly available value-changing information, while the strong form asserts that all value-changing information, both public and private, is embedded in security prices. The super-strong form extends this idea further, proposing that even insider and exchange specialist information is factored into prices, whereas the near-strong form claims that all private estimates derived from public data are incorporated. If market efficiency holds true, it implies that no investor can consistently outperform the market.

Even if a lot of research indicates that market efficiency exists, real-world behavior often contradicts this claim. It is well known that a vast number of investors regularly track stock prices and trade on a global scale. Even corporations participate through activities such as buybacks, takeovers, stake sales, private placements, and large acquisitions at substantial premiums. Such actions seem to directly challenge the notion of efficient markets. If these financial market activities were rare occurrences, they could be dismissed as exceptions, allowing continued reliance on the widely accepted efficient market hypothesis.

Value and volume of transactions in international financial markets are so large that it is hard to write off these investors as irrational. Ironically, there wouldn't be much to no trading or investment activity if markets were indeed efficient. For

markets to work effectively, a lot of people needs to be engaged in buying and selling all the time. Even though the conceptualization of market efficiency has been backed by a large number of studies, analysts and researchers are now doubting whether totally efficient markets actually exist due to the dynamics of market activity.

Consequently, a great deal of research has questioned the efficiency of the market hypothesis (EMH). Numerous kinds of information that do not instantly appear in stock prices have been uncovered by these investigations. Key findings include the price-to-earnings (P/E) effect, the small firm effect, time-based anomalies such as month, week, and day effects, and delays in incorporating new information into prices.

## 2.REVIEW OF LITERATURE

Jordan (1973), May (1971), and Brown and Kennely (1972) used quarterly earnings releases as events to investigate the behavior of asset prices. Their results were consistent with the Efficient Market Hypothesis (EMH) in its semi-strong form. In support of the presence of efficient markets, Easton and Zmijewski (1989) presented data indicating that stock prices reflect cross-sectional disparities in the time-series pattern of earnings. Koch & Sun, (2004) shows that dividend announcement information gives a favorable signal to the investors in the market and generates positive abnormal returns. Obaidullah (1991), Barua and Raghunathan (1990), and Sundaram (1991) questioned whether observed price-earnings ratios aligned with fundamental criteria such as dividend and payout ratios. Bajaj and Vijh (1995) explained that the dividend announcements were associated with positive average excess returns when no ex-post selection criteria were used. They also noted that smaller companies and lower stock prices had more pronounced positive average surplus returns. Iqbal and Mallikarjunappa (2007, 2008), who discovered that the market offers chances to generate anomalous returns cumulatively after quarterly earnings releases. Research on the semi-strong type of market efficiency has produced a variety of findings, as was previously indicated. Markets are inefficient in incorporating information that changes value, according to some research, but other studies have affirmed the presence of the efficient market hypothesis (EMH) in its semi-strong version. Maitra and Dey (2012) used the CAPM and Market Model, and observed that significant abnormal returns, whether positive or negative or both, are more applicable under the CAPM model upon dividend announcement Kumar and Raju (2013) found that dividend announcements act as a signalling mechanism, leading to an immediate upward swing in the share price movement. Thakur and Kannadhasan (2018) investigated the determinants of dividend policy of firms belonging to different quartiles. They found that the size of a firm is consistently significant in all quartiles. However, leverage and profitability are significant only in few quartiles. Koo and Chae (2020) examined the dividend month premium in the Korean stock market using the capital asset pricing model, Fama–French three-factor model and the Fama–French–Carhart four-factor model. They found positive abnormal returns in predicted dividend months and the stock price remained the same in other months

## 3.OBJECTIVES

This study aims to identify any differences in stock returns before and after the dividend announcement event day. In addition, to investigate if announcements of dividends produce any abnormal returns.

## 4.METHODOLOGY

**4.1 Sample**: Among the 200 firms listed on the Bombay Stock Exchange (BSE), the selected companies are included in the BSE-200 index. Examining how rapidly value-changing information—specifically, dividend-related information—is reflected in asset prices is the study's goal. Thus, the selection process was limited to firms that announced interim and final dividends in 2023. Five insurance firms were included after the BSE and NSE official websites provided the dividend declaration dates. Information enters the market on the day of the board meeting where the dividend is announced, which is considered the event day.

The BSE website was used to gather the daily closing prices of the chosen firms as well as the BSE-200 index, which represents the market. Market model alpha and beta values were computed using data from January 1, 2023, to December 31, 2023. These insurance firms' daily closing prices and data on dividend announcements served as event days for the research.

**Table 1: Insurance companies and their Dividend Announcement Data.**

| S.No. | Insurance Company | Event Day |
|---|---|---|
| 1 | Life Insurance Corporation of India | 21st July |
| 2 | SBI Life Insurance Company Ltd | 16th March |
| 3 | HDFC Life Insurance Company Ltd | 16th June |
| 4 | ICICI Prudential Life Insurance Company Ltd | 13th July |
| 5 | General Insurance Corporation of India | 8th September |

Source: Collected and compiled by author

**4.2 Event Study Methodology:** Utilizing the event study approach, the Average Returns (AR), Average Abnormal Returns (AAR), and Cumulative Average Abnormal Returns (CAAR) are evaluated on the day of the dividend announcement (event day). To calculate the average anomalous returns and CAARs, 29 days before to and following the event day are employed. Days -29 to -1 are shown for the 29 days leading up to the event day, and days 1 to 29 are indicated for the 29 days following the event day. Day zero is designated as the actual day of the event. To analyze the impact of dividends on stock prices, ARs, AARs, and CAARs are calculated.

Since transaction costs are not included in this study as they don't have a substantial influence on the findings, they. The market model that is employed is as follows:

$$\mathbf{ER_t = \alpha + \beta \cdot R_{m,t}}$$

Where:

$\mathbf{ER_t}$ is the expected return for the stock on day **t**
**α** is the stock's intercept (regression constant)
**β** is the stock's sensitivity to market movements (regression slope)
$\mathbf{R_{m,t}}$ is the return of the market index on day **t**.

The **Abnormal Returns** are calculated using the following model:

$$\textbf{Abnormal Return (AR)} = \textbf{Actual Return } (R_{actual}) - \textbf{Expected Return } (R_{expected})$$

Where:

$\mathbf{R_{actual}}$: Actual Return of the security on specific day.
$\mathbf{R_{expected}}$: Expected Return of the security on a specific day.

To exclude the impact of any one stock or group of stocks on the Average Returns (ARs), the average returns (ARs) are averaged over all dividend announcements. In order to assess their cumulative impact, the CAARs are computed by aggregating the average abnormal returns (AARs) over the days before to the event. For CAAR, the model is $CAAR_t = K \Sigma AAR_{it}$,
where t ranges from -29 to +29. With the help of t-test, deviation in CAAR from zero is checked in a meaningful way. Table 2show the output of the t-statistics, AARs, and CAARs.

## 5.ANALYSIS AND DISCUSSION ON MARKET EFFICIENCY

**Table 2: AAR, CAAR and t value surrounding the event day.**

| Days | ARR | CAAR | t value CAAR |
|---|---|---|---|
| -29 | 0.0007 | 0.0007 | 0.133615 |
| -28 | 0.0002 | 0.0009 | 0.171791 |
| -27 | -0.00085 | 0.00005 | 0.009544 |
| -26 | 0.00058 | 0.00063 | 0.120253 |
| -25 | -0.00038 | 0.00025 | 0.04772 |
| -24 | 0.0003 | 0.00055 | 0.104983 |
| -23 | 0.00047 | 0.00102 | 0.194696 |
| -22 | -0.00053 | 0.00049 | 0.09353 |
| -21 | 0.00037 | 0.00086 | 0.164156 |
| -20 | -0.00074 | 0.00012 | 0.022905 |
| -19 | 0.00132 | 0.00144 | 0.274865 |
| -18 | -0.00154 | -0.0001 | -0.01909 |
| -17 | 0.00047 | 0.00037 | 0.070625 |
| -16 | 0.00024 | 0.00061 | 0.116436 |
| -15 | -0.0007 | -0.00009 | -1.62819 |
| -14 | -0.00016 | -0.00025 | -0.04772 |
| -13 | 0.00062 | 0.00037 | 0.070625 |
| -12 | -0.00058 | -0.00021 | -0.04008 |
| -11 | 0.0001 | -0.00011 | -0.021 |
| -10 | -0.00041 | -0.00052 | -0.09926 |
| -9 | -0.00029 | -0.00081 | -0.15461 |
| -8 | 0.00067 | -0.00014 | -0.02672 |
| -7 | -0.00224 | -0.00238 | -0.45429 |
| -6 | -0.00051 | -0.00289 | -0.55164 |
| -5 | -0.00057 | -0.00346 | -0.66044 |
| -4 | 0.00003 | -0.00343 | -0.65471 |
| -3 | -0.0001 | -0.00353 | -0.6738 |
| -2 | 0.00107 | -0.00246 | -0.46956 |
| -1 | 0.00024 | -0.00222 | -0.42375 |
| 0 | -0.00111 | -0.00111 | -0.21188 |
| 1 | -0.00043 | -0.00154 | -0.29395 |
| 2 | -0.00014 | -0.00168 | -0.32068 |
| 3 | -0.00147 | -0.00315 | -0.60127 |
| 4 | -0.00078 | -0.00393 | -0.75015 |
| 5 | -0.00071 | -0.00464 | -0.88568 |
| 6 | 0.00003 | -0.00461 | -0.87995 |
| 7 | -0.00017 | -0.00478 | -0.9124 |
| 8 | -0.00022 | -0.005 | -0.95439 |
| 9 | -0.00037 | -0.00537 | -1.02502 |
| 10 | 0.00052 | -0.00485 | -0.92576 |
| 11 | -0.00069 | -0.00554 | -1.05747 |
| 12 | -0.00045 | -0.00599 | -1.14336 |
| 13 | -0.00129 | -0.00728 | -1.3896 |

| | | | |
|---|---|---|---|
| 14 | -0.00017 | -0.00745 | -1.42204 |
| 15 | -0.00108 | -0.00853 | -1.62819 |
| 16 | -0.00152 | -0.01005 | -1.91833 |
| 17 | -0.00073 | -0.01078 | -2.05767 |
| 18 | -0.00051 | -0.01129 | -2.15502 |
| 19 | 0.00037 | -0.01092 | -2.08439 |
| 20 | -0.00031 | -0.01123 | -2.14357 |
| 21 | -0.00081 | -0.01204 | -2.29818 |
| 22 | -0.00058 | -0.01262 | -2.40889 |
| 23 | 0.00005 | -0.01257 | -2.39934 |
| 24 | -0.00034 | -0.01291 | -2.46424 |
| 25 | 0.00013 | -0.01278 | -2.43943 |
| 26 | -0.0004 | -0.01318 | -2.51578 |
| 27 | -0.00148 | -0.01466 | -2.79828 |
| 28 | 0.00008 | -0.01458 | -2.78301 |
| 29 | -0.00065 | -0.01523 | -2.90708 |

Source: Collected and compiled by author

Table 2 show the results of analysis. By taking market index as base, the average deviation of a stock's returns from its expected returns is known which is termed as the average abnormal return, or AAR. Over the time periods leading up to the event day i.e., Dividend Announcement (day -29 to day +29), CAAR which is basically the sum total of deviations of the securities' returns taken as deviation from expected return in connection with the market. This encompasses the cumulative impact of each stock's residuals. Because value-changing information that is readily available to the public is instantly included into security prices, it is difficult to continuously generate higher returns in an efficient market. AARs should thus not be consistently positive or terrible over extended periods before or after the event day. Before the event, chances of positive AAR increases with anticipation favorable news from the dividend announcement; Contrarily with anticipation of unfavorable news, AARs may be negative.

The Market being efficient, AAR should be close to zero after the event day, hence the CAAR should level out following the event. If this does not occur, the market cannot be considered efficient. AAR values around the event day exhibit - positive and negative returns, as seen in Table 2. 14 days (48%) prior and 23 days (79%) post the incident, there are positive returns, but negative returns happen 15 days (52%) before and 6 days (21%). For 21 days (36%) and 37 days (64%), respectively, AARs are positive for the 59 days chosen for the research.

In other words, negative returns are more frequent than positive returns in both cases i.e., before and after the event day. As a result of this tendency, it is not possible every time to generate positive returns on the most of the days following the event day. CAARs are computed in two different series. Table 2's CAAR section states that the AAR values for the days (0) - (29) and (-29)- (-1) in the first series are totaled separately. For 15 days (52%) before to the event day, CAARs are negative, and they remain negative for the whole 29 days post the event day. There are no positive CAARs following the event day, however these CAARs are positive for 14 days (48%) before to the event. The returns are considerably higher than zero on 14 of the 59 days (24%), according to the t-test performed on the CAARs. Since negative returns substantially less than zero are more common on the days around the dividend announcements, this research shows that although positive returns much more than zero can be obtained, the chance of doing so is lower. Strong evidence that dividend information is not instantly integrated into asset prices may be seen in the t-test findings as well as in the examination of AAR and CAAR movements. According to this study, the Indian market is sluggish to adopt dividend announcements into securities pricing, despite the fact that they are among the most significant and often occurring publicly available information.

## 6.CONCLUSION

Research focusing on market efficiency has garnered significant attention in Western economies but has been relatively less explored in India. While several academic studies have shown that financial markets efficiently reflect and incorporate value-changing information quickly, real market activities raise questions about the existence of truly efficient markets.

The ongoing interest in securities markets worldwide has led researchers and analysts to examine the market mechanisms and the extent to which these markets exhibit efficiency. Three different types of market efficiency—weak, semi-strong, and strong—have been distinguished by this body of research. The semi-strong version of market efficiency is the main emphasis of this article, which looks at how stock prices react to recurrent and publicly available information such as dividend announcements. Companies that issued dividends in 2023 and were included in the BSE-200 index form the basis of the analysis.

This study employs the event-study approach to explore the stock price sensitivity to dividend announcements for five listed insurance firms. As per Table 2, positive Abnormal Returns persist only for few days post the dividend announcements. Negative returns are more common than positive returns both before and after the incident, according to the research. Up to 29 trading days following the dividend announcement, favorable returns are still being shown, making the trend of good returns more apparent after the event day.

According to the results of the t-test, CAARs are negative for 15 days (52%) prior to and 29 days following the incident. Conversely, CAARs exhibit positive values for 14 days (48%) prior to the event, but no positive values following the event day. In addition, the t-test analysis indicates that returns are substantially higher than zero on 14 of the 59 days (24%). This suggests that while if returns that are much higher than zero might be obtained, they are less common than negative returns, which are more common on the days that precede dividend announcements.

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