

Investors' Response to the Announcement of the Ex-Dividend Date on the Indonesia Stock Exchange



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ABSTRACT: This study was conducted to analyze the response of investors to the determination of the ex-dividend date on the Indonesia Stock Exchange. The difference in investor response is measured by the difference in the market price of the stock before and after the ex-dividend date. This study uses a sample of 100 randomly selected corporations. The data used for analysis is the daily closing price. The stock price difference test uses the Wilcoxon Signed Ranks Test because all data is not normally distributed. The results of the analysis show that investors' responses during a certain observation period cause a difference in stock prices between before and after the ex-dividend date, especially in the period of time close to the ex-dividend date. However, in other observation periods, the response did not cause a significant price difference.

KEYWORDS: Investor Response, Dividend Policy, Ex-Dividend Date, Closing Price.

I. INTRODUCTION

Every investor expects to get a return on the funds they invest. Investing in stocks provides returns in the form of dividends and/or capital surplus (Brigham and Houston, 2016). Dividend distribution is a form of corporate action determined by a corporation. The optimal dividend policy is expected to increase corporate value. This corporate value can be shown by the market price of a stock.

Regarding the influence of dividend policy on stock prices, there are two well-known opinions that are opposite to each other. The first opinion was put forward by Merton H. Miller and Franco Modigliani (1961). They argue that dividend policy has no effect on the stock price or the cost of capital of a corporation. The value of dividends distributed by a corporation has no effect on the stock price. This opinion is known as dividend irrelevance theory. Miller and Modigliani found that the value of a corporation is determined by its underlying profitability and business risks. This theory is based on the assumption that there is no tax on dividends, no transaction fees, and everyone has the same information about future corporate profits.

The second opinion was expressed by Myron Gordon in 1963 and John Lintner in 1962. They argue that investors prefer current definite dividends to uncertain future capital gains. The dividends distributed by corporations are certain both in value and in terms of payment time. Meanwhile, capital surplus is not necessarily obtained by investors in line with stock price fluctuations in the market. Investors can get a capital surplus or even suffer a capital loss. This opinion by Modigliani and Miller is known as bird-in-the-hand fallacy.

With regard to the differences between the two theories, this study tests these two theories. As is known, every corporation that will distribute dividends (cash dividends) must announce this corporate action to the public. So, shareholders and other investors know this dividend distribution plan. This announcement contains the value of the cash dividend distributed and the ex-dividend date, in addition to other information. The value of cash dividends is the amount of money distributed to shareholders. The ex-dividend date is the limit of the period of stock transactions without dividend rights.

Investors who trade (buy or sell) stocks around this ex-dividend date should be careful. This action is done to get a return or avoid losses on the transaction. Investors, who want to get cash dividends on a stock, must continue to hold their shares until the ex-dividend date. Alternatively, investors must buy the stock no later than one day before the ex-dividend date. These investor actions can increase stock prices and cause capital surpluses before the ex-dividend date. Instead, investors will release their shares as they lose the opportunity to get cash dividends after the ex-dividend date. These investor actions can lower the stock price. Thus, the stock price can differ between before and after the ex-dividend date.

This study focuses on analyzing the influence of determining the ex-dividend date on the response of investors. Investors' responses can differ between before and after the ex-dividend date as indicated by the difference in stock price.

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II. LITERATURE REVIEW

Stock Price

A stock price is a sum of money spent by an investor to get a certain amount of shares from a corporation that goes public. There are several types of stock prices published by a stock exchange, including open price, closing price, highest price, lowest price, and average price. This study uses the closing price as the data analyzed. Closing price is the price of a stock determined by the stock exchange when the stock exchange enters the final trading session (close).

Stock prices are determined by the response of investors on the stock exchange. The power of supply and demand for a stock determines the market price of the stock. If more investors want to buy shares of a corporation than the number of shares offered for sale, the stock price tends to increase. On the other hand, when the total supply of a stock is more than its total demand, the stock price tends to fall.

There are many factors that influence investors to respond to buying or selling shares of a corporation. One factor among several factors for investors to consider is the distribution of dividends.

Dividend

Dividend is the distribution of net income obtained by a corporation (Undang-undang nomor 40 tahun 2007 tentang Perseroan Terbatas). This net income can be obtained during the current year and several years before. This total net income can be seen in the retained earnings account in the corporate balance sheet. Thus, a corporation that does not receive net income in the current year can still distribute dividends as long as the retained earnings balance is positive. This dividend distribution can be done because this net profit after tax is the right of the shareholders of the corporation (Husnan, 2016: 381).

Dividend distribution can be in the form of cash dividends or stock dividends (Brigham and Houston, 2016). Cash dividends are dividends distributed to shareholders in the form of cash. This dividend distribution will reduce the retained earnings balance by the amount of cash dividends paid. Meanwhile, stock dividends are dividends in the form of new shares to shareholders. This distribution of stock dividends will not reduce the balance of retained earnings, but it does increase the number of outstanding shares of a company.

Any corporation that will distribute dividends must make an announcement about this policy to the public. This announcement contains the ex-dividend date, recording date, and payment date (Gitman and Zutter, 2015: 619) (Brigham and Ehrhardt, 2017: 568-569). An ex-dividend date is a date that indicates the end of stock trading without dividend rights. Investors who hold or buy a stock before the ex-dividend date will get the dividends distributed. The deadline date for trading stocks with stock rights is known as the cum dividend date. On the Indonesia Stock Exchange, the time interval between cum dividend and ex-dividend date is set as one business day.

Recording date is the date of recording the list of shareholders who are entitled to receive dividends. This date is set the same as the cum dividend date. Meanwhile, the payment date is the date on which the cash dividend distribution is carried out. This payment date is set by the corporation that distributes dividends. The payment date is set for a few business days (about 10 days) after the ex-dividend date.

Research on stock price changes related to ex-dividend dates has been conducted by several researchers. Siaputra and Atmadja (2006) found that there is a significant difference in stock price changes between before and after the ex-dividend date. The results of this study are supported by the findings of Ayu and Gede (2015). Ngoc and Cuong (2016) also found that stock prices move up as long as they are close to the ex-dividend date and decline after that date. Laila et al (2021) also found the same research results. They found that there was a difference in stock prices between before and after the dividend distribution.

Other research found that there was no difference in stock prices between before and after the ex-dividend date. The results of this study were found by Suparno (2013) and Hidayati (2014). Larasati and Nuraya (2018) found that there was no significant difference between abnormal returns before and after the ex-dividend date.

Some of the studies above show that there are differences in the results of the research. The difference in the results of this study opens up an opportunity to conduct another study regarding the influence of determining the ex-dividend date on the response of investors reflected in the stock price.

Dividend Policy

The dividend policy decided by a corporation is taken during the general meeting of shareholders (GMS). This policy is related to the amount and form of dividends distributed to shareholders. This decision was taken by considering the profitable investment opportunities and various other factors discussed in the meeting.

There are several dividend policy models that can be applied in a company. Brigham and Houston (2016) stated that there are two dividend policy models, namely the residual dividend model and the low-regular-dividend-plus-extras.

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The residual dividend model is a dividend distribution model of the remaining net profit after deduction to finance investments. If a company earns a profit, the use of this profit is prioritized to finance profitable investments and if there is a leftover, the profit will be distributed to shareholders as dividends. So that this dividend policy model produces dividend values that are not the same from one year to another. The amount of dividends depends on the value of profits earned and the need for funds for investment.

The low-regular-dividend-plus-extras model is a dividend distribution model that sets the value of the low plus extra regular dividend. The value of this regular dividend is set in fixed but small units of money. This dividend provides certainty for the distribution of minimum dividends. So, investors can expect to always get a minimum dividend that remains fixed every year. Meanwhile, extra dividends are additional dividends whose calculation can follow the residual dividend model.

Research on the influence of dividend policy on stock prices (corporate value) has been conducted by many researchers. However, the results of their research vary. Several studies that have found that dividend policy has no effect on stock prices have been conducted by: Black and Scholes (1974), Chen et al. (2002), Adefila et al. (2004), and Uddin and Chowdhury (2005). This study supports the opinions of Miller and Modigliani.

Another study found that dividend policy has an effect on stock prices. This research was conducted by Bhattacharya (1979), Travlors et al. (2001), Baker et al. (2002), Mayers and Frank (2004), Dong et al. (2005), and Maditinos et al. (2007). The findings of all these studies support the opinions of Gordon and Lintner.

The two research groups showed different results. This difference of opinion is also supported by the results of research conducted by Istiono and Rudy Santoso (2021). This study concludes that dividend policy can have a significant or no significant effect on the stock price (value) of a corporation. The relationship between dividend policy and the company's stock price (value) can be positive or negative.

The results of these different studies open up opportunities to conduct further research. This further research needs to be carried out to add references related to the influence of dividend policy on stock prices. The price change can reflect the response of investors related to the policy dividend and the determination of the ex-dividend date decided by a corporation.

Conceptual Framework

The conceptual framework that shows the relationship between variables in this study is made as shown in Figure 1 as follows:

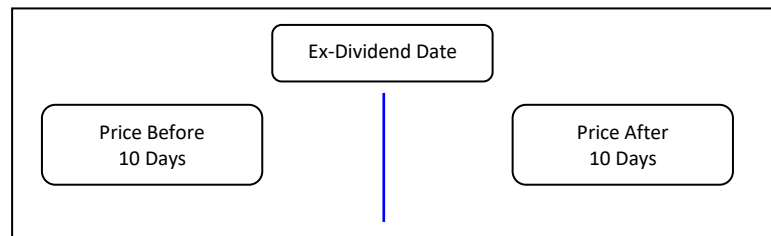


Figure 1: Conceptual Framework of the Research

Figure 1 shows that stock prices during the observation period are divided into two groups, namely price before and price after. The separator between these two stock prices is the ex-dividend date. This study analyzes the response of investors on the Indonesia Stock Exchange related to the announcement of the ex-dividend date. The response made by these investors can cause a price difference before and after the ex-dividend date. The observation period is carried out for 10 business days both before and after the ex-dividend date.

The hypothesis proposed in this study is presented in the sub-chapter of result and discussion.

III. RESEARCH METHODS

This study is an event study, namely to analyze the difference in stock prices related to the determination of the ex-dividend date. This difference in stock price can occur as a result of investors' actions in responding to the ex-dividend date.

This research was conducted at the Indonesia Stock Exchange. Stock price data is collected from corporations that announced cash dividend distributions from January 2024 to November 2024.

The data used in the analysis is in the form of daily closing prices. This data is data with a ratio measurement scale. All data is taken from secondary data sources, which are collected from the Yahoo Finance website.

There are 941 companies listed on the Indonesia Stock Exchange in 2024. A number of these companies became the population in this study. Related to the title of this study, there are 326 companies that distribute cash dividends from January

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2024 to November 2024. This study randomly sampled 100 companies from 326 companies. All analyses in this study are based on data collected from the 100 companies.

This study uses a quantitative data analysis method, namely data processing through statistical methods. The quantitative data analysis methods used are descriptive analysis and comparative analysis. The first step of the analysis is to conduct a normality test to determine the form of distribution of the collected data. Data can be normally or abnormally distributed. This form of data distribution is to determine the statistical test used in hypothesis testing. The statistical test used in the normality test is the Kolmogorov-Smirnov Test, because the number of data collected is 100 corporations (n more than 30).

After the normality test, the next step is to test the hypothesis. There are two statistical test options, namely the Paired Samples T-Test or the Wilcoxon Signed Rank Test. The Paired Samples T-Test is used when the data is normally distributed. However, if the data is abnormally distributed, then the Wilcoxon Signed Rank Test should be used for hypothesis testing. The criteria used for the normality test and hypothesis test are discussed in the following result and discussion sub-chapter.

IV. RESULT AND DISCUSSION

Description of Research Results

This study randomly sampled 100 corporations from 326 corporations that distributed cash dividends from January 2024 to November 2024. This data shows that there are many companies that do not or have not yet distributed cash dividends in 2024. There are various reasons that encourage the corporation do not to distribute cash dividends to shareholders. This study does not discuss these various reasons.

The closing prices of the 100 corporations selected as the research sample varied. This price difference is due to the different conditions and performance of each corporation and the different responses of investors. Price recording is carried out for 20 business days, namely 10 days before the ex-dividend date and 10 days after the ex-dividend date.

Table 1 shows the average price of 100 corporations over the 10 days before and after the ex-dividend date. Day before is the observation period for 10 days before the ex-dividend date. This day before starts from 10 days before the ex-dividend date to 1 day before the ex-dividend. The lowest price occurred on day 10 before the ex-dividend date, which was IDR 2,054 and the highest price occurred on day 5 before the ex-dividend date, which was IDR 2,288.

Table 1: Average Price during Observation

Day Before									
10	9	8	7	6	5	4	3	2	1
2054	2070	2095	2127	2164	2288	2160	2158	2085	2120
Day After									
1	2	3	4	5	6	7	8	9	10
2108	2099	2103	2116	2126	2116	2066	2121	2117	2117

Source: Data processed

Day after is an observation period for 10 business days after the ex-dividend date, starting from one day after the ex-dividend date to ten days after the ex-dividend date. The highest price occurred on day 5 after the ex-dividend date, which was IDR 2,126. Meanwhile, the lowest price occurred on day 7 after the ex-dividend date, which was IDR 2,066.

The average stock price data in Table 1 can be depicted in a single graph showing the price trend over the observation period, as in Figure 1. This figure shows that the price increased from day 10 to day 5 before the ex-dividend date. After that, the stock price tends to decline towards the ex-dividend date. Meanwhile, stock prices tend to be stable during the period after the ex-dividend date. Nonetheless, the stock price fell on the 7th day after the ex-dividend date. The price rose again on day 8.

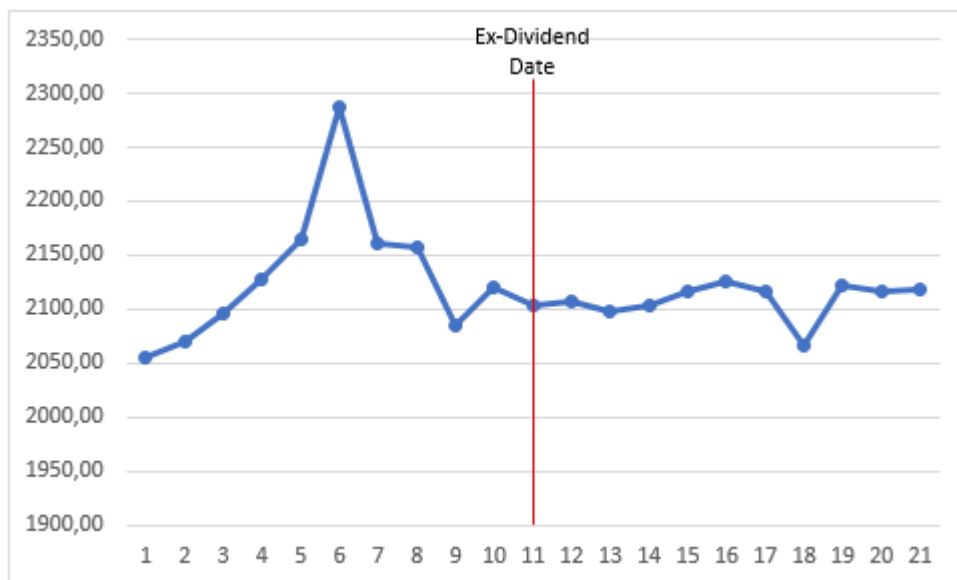


Figure 2: Stock Price Trend

Figure 2 shows the trend of stock prices differing between the days before the ex-dividend and after the ex-dividend date. Visually, Figure 2 shows the difference in stock prices between the period before the ex-dividend date and after the ex-dividend date. This implies there is a difference in the average price before and after the ex-dividend date. Figure 2 also implies the response of investors regarding the determination of the ex-dividend date. Investors tend to give a positive response to stocks before the ex-dividend date. During this period of time, investors buy more stocks or hold stocks that will distribute dividends. This is done so that they get dividends. Meanwhile, during the period of time after the ex-dividend date, the stock price is relatively stable. This condition implies that the response of investors is also relatively calm. This happens because the opportunity to get dividends has also disappeared. Investors returned to transacting stocks as usual before the ex-dividend date. This research aims to test the difference between the average price before and after the ex-dividend date.

The analysis of the difference in stock prices in this study is not carried out on a daily basis. However, stock price data is divided into 6 groups. The six groups consist of 3 groups before the ex-dividend date (DB; DB_1; and DB_2) and 3 groups after the ex-dividend date (DA; DA_1; and DA_2). DB is the average price for the 10 days before the ex-dividend date. DB_1 is the average price from Day 5 to Day 1 before the ex-dividend date. DB_2 is the average price from Day 10 to Day 6 before the ex-dividend date. DA is the average price for 10 days after the ex-dividend date. DA_1 is the average price from Day 1 to Day 5 after the ex-dividend date. DA_2 is the average price from Day 6 to Day 10 after the ex-dividend date. Based on this grouping, the average price of the 100 shares of the selected companies as a research sample is compared.

Normality Analysis

The first step to the analysis of the mean difference test is the normality analysis. This analysis was carried out to determine the form of distribution of the collected data. The collected data can be normally distributed or not normally distributed. The form of data distribution will determine the differential test analysis used. If the data is normally distributed, the differential test analysis used is the paired sample T test. However, if the data is not normally distributed, the analysis test used is the Wilcoxon Signed Ranks Test.

The normality test can use the statistics of the Kolmogorov-Smirnov test or the Shapiro-Wilk test. In the normality test, two hypotheses must be made, namely the null hypothesis and the alternative hypothesis. The statement for the null hypothesis (H_0) is normally distributed data. Meanwhile, the alternative hypothesis statement (H_a) is that the data is not normally distributed. In the statistical test, the null hypothesis is tested.

The criterion for null hypothesis to be accepted or rejected is to compare the Sig value (p-value) with the level of significance (α) determined by the researcher. In this study, a significance level (α) of 0.050 or 5 percent was used. A null hypothesis is accepted if it has a Sig (p-value) greater than 0.050 ($Sig > 0.050$). This indicates that the data is distributed normally. However, if the Sig (p-value) is less than or equal to 0.050 ($Sig \leq 0.050$) then the null hypothesis is rejected and the alternative hypothesis is accepted. This means that the data is not distributed normally. A summary of the normality test results with SPSS for all observation time groups is shown in Table 2.

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Table 2 shows the Sig. (p) values of the Kolmogorov-Smirnov test and the Shapiro-Wilk test for all observation groups. The Sig value of the two tests for all data groups has a value of 0.000. This Sig value (0.000) is smaller than the specified significance level value (0.050). This indicates that the null hypothesis is rejected and the alternative hypothesis is accepted. Thus it can be concluded that all data is not normally distributed. In connection with the data not distributed normally, the statistics of the different tests used were the Wilcoxon signed rank test.

Table 2: Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Day Before	.321	100	.000	.466	100	.000
Day Before_1	.329	100	.000	.482	100	.000
Day Before_2	.326	100	.000	.462	100	.000
Day After	.337	100	.000	.483	100	.000
Day After_1	.333	100	.000	.469	100	.000
Day After_2	.331	100	.000	.464	100	.000

a. Lilliefors Significance Correction

Source: Output of SPSS

Test of the Difference

Differential tests are used to compare two different data sets. The two data sets being compared can come from two paired or independent data. In this study, the two data sets that were compared came from two paired data. These two data are paired because they come from the same hundred corporations, but are grouped in different observation time periods. As discussed earlier, the observation period is distinguished by the ex-dividend date, which is before and after the ex-dividend date.

The results of the normality test above show that all data are not normally distributed. Thus, the differential test statistics used are the Wilcoxon Signed Ranks Test and all statistical calculations are carried out using SPSS software. The differential test in this study was divided into nine hypothesis tests based on the grouping of observation time periods. The differential test for all data groups is discussed as below.

1. Test the Difference Between Day Before and Day After

Day before (DB) is an observation period for 10 days of stock trading before the ex-dividend date on 100 corporate samples. Each corporation is calculated at an average price for 10 days. From the one hundred average share prices, the average share price was obtained of IDR 2,132.20.

Day after (DA) is an observation period for 10 days of stock trading after the ex-dividend date of 100 corporate samples. Each corporation is calculated at an average price for 10 days. From the one hundred average share prices, the average share price was obtained of IDR 2,109.04. The two average prices look different with a difference of IDR 23.16. But the value of this difference must be tested for its level of significance. This test uses the Wilcoxon Signed Rank Test.

There are two hypotheses for this test, namely null hypothesis and alternative hypothesis. The null hypothesis (H_0) states that the DB share price is no different from the DA share price. Meanwhile, the alternative hypothesis (H_a) states that the DB share price is different from the DA share price. This hypothesis test uses a significance level (α) of 0.050 or 5 percent.

The printout results of the SPSS output for this test are shown in Table 3 and Table 4.

Table 3: Ranks for the DB to DA Difference Test

		N	Mean Rank	Sum of Ranks
Day After - Day Before	Negative Ranks	60 ^a	48.58	2915.00
	Positive Ranks	40 ^b	53.38	2135.00
	Ties	0 ^c		
	Total	100		

a. Day After < Day Before

b. Day After > Day Before

c. Day After = Day Before

Source: Output of SPSS

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Table 3 shows that there are 60 Day Before (DB) share prices greater than Day After (DA) share prices with a Mean Rank of 48.58. Meanwhile, the other forty DB share prices are smaller than the DA share price with a Mean Rank of 53.38.

Table 4: Test Statistics of DB to DA

	Day After - Day Before
Z	-1.341 ^b
Asymp. Sig. (2-tailed)	.180
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

Table 4 shows the results of the statistical test with the Wilcoxon Signed Ranks Test. The table shows that the value of Asymp. Sig. (2-tailed) is 0.180 or 18 percent. This value is greater than 0.050 or 5 percent which is the significance level (α) used in this study. Thus, the null hypothesis that the DB share price is no different from the DA share price is accepted. This result also means rejecting the alternative hypothesis. This concludes that the average share price for the 10 days before the ex-dividend date is not significantly different from the average share price for the 10 days after the ex-dividend date. Although the absolute value of the two average share prices is different, namely IDR 2,132.20 compared to IDR 2,109.04. The price difference of IDR 23.16 is not significantly different compared to all stock price data analyzed.

This condition concludes that the response of investors on the Indonesia Stock Exchange during the 20 days of observation is relatively unaffected by the ex-dividend date restrictions. Stock price fluctuations over the 10 days before and after the ex-dividend date result in a relatively large average stock price. The response to buying or selling shares by investors during the two observation periods caused the share prices of DB and DA to be relatively equal.

2. Test the Difference between Day Before and Day After_1

Day After_1 (DA_1) is the average stock price observed for 5 days after the ex-dividend date, namely from Day 1 to Day 5 after the ex-dividend date. The average share price during DB was IDR 2,132.20 and the average share price during DA_1 was IDR 2,110.42. The difference between these two share prices is IDR 21.78. In absolute terms, these two stock prices are different. However, the difference in stock price must be tested for its significance.

The hypothesis proposed in this differential test is as follows. The null hypothesis (H_0) states that the DB share price is no different from the DA_1 share price. Meanwhile, the alternative hypothesis (H_a) states that the share price of DB is different from the share price of DA_1.

The difference between the two stock prices uses the Wilcoxon Signed Ranks Test. The printout results of the SPSS output for this test are shown in Table 5.

Table 5: Test Statistics of DB to DA_1

	Day After_1 - Day Before
Z	-2.383 ^b
Asymp. Sig. (2-tailed)	.017
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

Table 5 shows that the value of Asymp. Sig. (p-value) is 0.017. This value is smaller than 0.050 (or $0.017 < 0.050$), so the decision is to reject the null hypothesis (H_0) and accept the alternative hypothesis (H_a). This decision shows that DB's average share price is different (significant) from the average share price DA_1. The share price of IDR 2,132.20 (DB) is indeed greater than IDR 2,110.42 (price of DA_1).

This condition implies that investors have different responses regarding the difference in stock transresponse time before and after the ex-dividend date. They tend to hold the shares they own or buy shares for 10 days before the ex-dividend date. This response is carried out so that they get cash dividends. In addition, investors (shareholders) may sell their shares at a high price for 10 days before the ex-dividend date. The determination of the high selling price of shares is to close the opportunity to get lost cash dividends.

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However, for 5 days (Day 1 to Day 5) after the ex-dividend date, the average stock price decreased. This decline occurred in line with the loss of the opportunity to earn cash dividends. Investors tend to sell their shares, so the stock price decreases. Moreover, they are only willing to buy shares at a cheaper price.

3. Test the Difference between Day before and Day After_2

The third difference test is to compare the average stock price for 10 days before the ex-dividend date (DB) with the average stock price from Day 6 to Day 10 (for 5 days) after the ex-dividend date (DA_2). DB's share price is IDR 2,132.20 and DA_2's share price is IDR 2,107.66. The difference between these two prices is IDR 24.54. The difference between these two prices must be tested for their significance.

There are two hypotheses proposed in this differential test, namely the null hypothesis and the alternative hypothesis. The null hypothesis (H_0) states that the DB share price is no different from the DA_2 share price. Meanwhile, the alternative hypothesis (H_a) states that DB's share price is different from DA_2's share price. The statistical test used is the Wilcoxon Signed Ranks Test. The criteria for accepting or rejecting the null hypothesis are the same as in the previous differential test.

The SPSS output for this test is shown in Table 6. The value of Asymp. Sig. (2-tailed) or p-value is 0.189. This value is greater than the significance value of 0.050 (or $0.189 \geq 0.050$). So, the decision is not to reject the null hypothesis and reject the alternative hypothesis. This shows that DB's share price is not different (significantly) from DA_2's share price.

Table 6: Test Statistics of DB to DA_2

	Day After_2 - Day Before
Z	-1.314 ^b
Asymp. Sig. (2-tailed)	.189
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

The difference between these two prices is indeed greater than the price difference in the second hypothesis test above. However, the results of the differential test statistically show that the price difference in this third hypothesis test is insignificant or can be considered equal to zero. This can happen due to variations in the two data.

This conclusion implies that the response of investors on the stock exchange during the two time periods resulted in the average stock price being relatively the same. This means that the response made by investors for 5 days (Day 6 to Day 10) after the ex-dividend date causes the stock price (DA_2) to return to the stock price for 10 days before the ex-dividend date (DB).

4. Test the Difference between Day Before_1 and Day After

In the first, second and third hypothesis tests, it is to compare the average stock price for 10 days before the ex-dividend date with other price groups after the ex-dividend date. Furthermore, the stock price observation before the ex-dividend date is divided into two parts, each for 5 days, namely from Day 5 to Day 1 before the ex-dividend date (DB_1) and from Day 10 to Day 6 before the ex-dividend date (DB_2).

The fourth hypothesis test is to compare the stock price for 5 days of observation, namely from Day 5 to Day 1 before the ex-dividend date (DB_1) with the stock price for 10 days after the ex-dividend date (DA). DB_1's share price is IDR 2,162.15 and DA's share price is IDR 2,109.04. The DB_1 share price is greater than the DA share price. The difference between these two prices is IDR 53.11.

The null hypothesis (H_0) proposed states that the stock price of DB_1 is no different from the DA stock price. Meanwhile, the alternative hypothesis (H_a) states that the DB_1 share price is different from the DA share price. The printout output of SPSS for the Wilcoxon Signed Ranks Test is shown in Table 7.

The value of Asymp. Sig. (2-tailed) is 0.041. This value is less than the significance level used (α) or $0.041 < 0.050$. Thus, the decision taken is to reject the null hypothesis and accept the alternative hypothesis. This means that the stock prices of DB_1 and DA are different.

Table 7: Test Statistics of DB_1 to DA

	Day After - Day Before_1
Z	-2.046 ^b
Asymp. Sig. (2-tailed)	.041
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

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This decision concludes that, statistically, the DB_1 share price is higher than the DA share price. DB_1's share price of IDR 2,162.15 is indeed higher than DA's share price of IDR 2,109.04. The difference between the two prices (Rp53.11) is material or significant.

This conclusion implies that the response of investors on the Indonesia Stock Exchange during the 5 days leading up to the ex-dividend date and for 10 days after the ex-dividend date results in different stock prices. Investors' response during the 5 days leading up to the ex-dividend date causes the stock price (DB_1) to be higher than the stock price after the ex-dividend date (DA).

5. Test the Difference between Day Before_1 and Day After_1

The fifth hypothesis test is to compare the DB_1 share price with the DA_1 share price. DB_1's share price is IDR 2,162.15 and DA_1's share price is IDR 2,110.42. The price of DB_1 is higher than the price of DA_1 with a difference of IDR 51.73.

The null hypothesis states that the price of DB_1 is no different from the price of DA_1 and the alternative hypothesis states that the price of DB_1 and the price of DA_1 are different. The printout results of the SPSS output for the Wilcoxon Signed Ranks Test are shown in Table 8.

Table 8: Test Statistics of DB_1 to DA_1

	Day After_1 - Day Before_1
Z	-3.094 ^b
Asymp. Sig. (2-tailed)	.002
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

Table 8 shows that the value of Asymp. Sig. (2-tailed) is 0.002. This value is less than 0.050. Thus, the null hypothesis is rejected and the alternative hypothesis is accepted. This decision shows that the price of DB_1 is indeed higher than the price of DA_1. The price difference of IDR 51.73 is material or significant.

This implies that the behavior of investors is indeed influenced by the ex-dividend date in their transactions on the stock exchange. The investor's response during the 5 days before the ex-dividend date resulted in the stock price (DB_1) being higher than the stock price due to the investor's response for 5 days after the ex-dividend date (DA_1).

6. Test the Difference between Day Before_1 and Day After_2

The sixth hypothesis test is to compare the stock price of DB_1 with the stock price of DA_2. The price of DB_1 is IDR 2,162.24 and the price of DA_2 is IDR 2,107.66. The price of DB_1 is higher than the price of DA_2 with a difference of IDR 54.58.

This differential test proposes a null hypothesis that states that the price of DB_1 and the price of DA_2 are not different. Meanwhile, the alternative hypothesis states that the price of DB_1 and the price of DA_2 are different.

The printout results of the SPSS output for this differential test are shown in Table 9. The value of Asymp. Sig. (2-tailed) over the Wilcoxon Signed Ranks Test is 0.049. This value is less than 0.050 (or $0.049 < 0.050$), so the null hypothesis is rejected and the alternative hypothesis is accepted.

Table 9: Test Statistics of DB_1 to DA_2

	Day After_2 - Day Before_1
Z	-1.972 ^b
Asymp. Sig. (2-tailed)	.049
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

The acceptance of the alternative hypothesis (Ha) means that the price of DB_1 is indeed higher than the price of DA_2. The price difference of IDR 54.58 is meaningful or significant. This conclusion implies that the response of investors over the two time periods of the observation resulted in different stock prices. The response made by investors during the DB_1 period resulted in a higher share price than the stock price generated from the investor response during the DA_2 period.

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7. Test the Difference between Day Before_2 and Day After

The seventh difference test is to compare the price of DB_2 with the DA. The share price during the DB_2 was IDR 2,102.24 and the share price during the DA was IDR 2,109.04. The price of DB_2 is smaller than the price of DA with a price difference of IDR 6.80. This shows that there has been an increase in the stock price for 10 days after the ex-dividend date compared to the stock price from Day 10 to Day 5 before the ex-dividend date.

The null hypothesis (H_0) proposed for this differential test states that the stock price during the DB_2 is no different from the stock price during the DA. Meanwhile, the alternative hypothesis (H_a) states that the stock price during the DB_2 is different from the stock price during the DA. The SPSS output printout for this test is shown in Table 10.

Table 10: Test Statistics of DB_2 to DA

	Day After - Day Before_2
Z	-1.841 ^b
Asymp. Sig. (2-tailed)	.066
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

Table 10 shows that the value of Asymp. Sig. (2-tailed) is 0.066. This value is greater than 0.050, so the result is that the null hypothesis is accepted and the alternative hypothesis is rejected. This decision shows that the DB_2 price and the DA price are no different. This means that the price difference between the two time periods (IDR 6.80) is meaningless or insignificant.

This conclusion implies that the responses made by investors during the two observation periods resulted in relatively similar stock prices. In other words, the response of investors is not affected by the time of the ex-dividend date.

8. Test the Difference between Day Before_2 and Day After_1

The eighth hypothesis test is to compare the stock price of DB_2 with the stock price of DA_1. DB_2's share price is IDR 2,102.24 and DA_1's share price is IDR 2,110.42. DB_2 share price is smaller than DA_1 share price with a price difference of IDR 8.18.

The null hypothesis for this test states that the stock price of DB_2 is no different from the stock price of DA_1. Meanwhile, the alternative hypothesis states that the share price of DB_2 is different from the share price of DA_1. Asymp Value. Sig. (2-tailed) for the Wilcoxon Signed Ranks Test for this test is 0.019 as shown in Table 11.

Table 11: Test Statistics of DB_2 to DA_1

	Day After_1 - Day Before_2
Z	-2.346 ^b
Asymp. Sig. (2-tailed)	.019
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

The value of Asymp sig (2-tailed) of 0.019 is smaller than 0.050 ($0.019 < 0.050$). Thus, the decision taken is to reject the null hypothesis and accept the alternative hypothesis. This decision shows that the DB_2 share price is different from DA_1 share price. This means that DB_2 share price is indeed smaller than the DA_1 share price or the difference in share price of IDR 8.18 is material or significant.

This conclusion implies that the response made by investors during DA_1 period was able to increase the stock price higher than the response of investors during the DB_2 period.

9. Test the Difference between Day Before_2 and Day After_2

The ninth hypothesis test is to compare the average stock price of DB_2 with the average stock price of DA_2. The share price of DB_2 is IDR 2,102.24 and the share price of DA_2 is IDR 2,107.66. DB_2 share price is smaller than DA_2 share price with a difference of IDR 5.42. This difference in average price must be tested statistically to determine its significance.

The null hypothesis for this test states that there is no difference between the price of DB_2 and the price of DA_2. Meanwhile, the alternative hypothesis states that the stock price of DB_2 is different from the price of DA_2. The results of statistical analysis with the Wilcoxon Signed Ranks Test show that the Asymp value. Sig. (2-tailed) is 0.090 as seen in Table 12.

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Table 12: Test Statistics of DB_2 to DA_2

	Day After_2 - Day Before_2
Z	-1.695 ^b
Asymp. Sig. (2-tailed)	.090
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Source: Output of SPSS

The value of Asymp Sig. (0.090) this is greater than 0.050 ($0.090 > 0.050$). So the decision taken is that the null hypothesis is accepted and the alternative hypothesis is rejected. This indicates that there is no significant difference between the DB_2 share price and the DA_2 share price or that the two prices are relatively equal.

This conclusion implies that there is no influence on the response of investors during Day 10 to Day 6 before the ex-dividend date and during Day 6 to Day 10 after the ex-dividend date on the stock price. This response of investors causes the price before the ex-dividend date (DB_2) and the price after the ex-dividend date (DA_2) to be relatively the same.

V. CONCLUSIAONS AND SUGGESTIONS

Conclusion

Cash dividend distribution is a form of corporate action. This action caused investors to decide to sell or buy the company's shares. The decisions of these investors shape the stock price. The determination of the ex-dividend date by the corporation that distributes cash dividends determines the investors who will get or not get the cash dividend. Investors who want to get dividends must buy shares before the ex-dividend date.

The study found different influences on stock prices on investors' responses. This difference in influence is related to the division of different observation time periods. Investors' response for 10 days before the ex-dividend date only causes a difference in the stock price for the first 5 days after the ex-dividend date. Investors' response during the 5 days leading up to the ex-dividend date affects the price difference in all observation periods after the ex-dividend date. Meanwhile, the response made by investors during Day 10 to Day 6 before the ex-dividend date only causes a difference in stock prices for the first 5 days after the ex-dividend date.

Suggestion

This study took a sample of 100 corporations that announced cash dividend distribution for 10 months. This study focuses on the effect of ex-dividend date on investor response reflected in stock prices during the observation period. The suggestion for further researchers is to increase the number of corporations used as research samples taken from several different years.

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