Differences between before and after stock split in companies listed on the Indonesia Stock Exchange

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INTRODUCTION

Continued development of capital market activities has a huge impact on major changes in increasing the availability of information (Bhuwaneshwari & Ramya, 2014). When new relevant information emerges, the market will examine and interpret it in order to establish a new price balance (Putra & Badjra, 2019). If the available information has the ability to shape or affect investor confidence in making decisions, then the information is considered to be informative. The capital market can be said to be efficient when prices continue to move according to published information (Aisyah et al., 2021). In addition to being obliged to submit periodic reports, issuers and public companies are also required to submit reports on incidental events, such as corporate actions. Stock split is a corporate action that carried out by the company by reducing the number of shares which is commonly called Reverse Split (split down), or increasing the number of shares which is commonly known as Stock split (split up). Stock splits are typically driven by a desire to fulfill a number of purposes, including sending a positive signal about the company's prospects, seeking optimal share prices, and increasing stock liquidity.

The main concept of a stock split is to make the stock price at a level that is much more affordable and accessible to as many investors as possible (Tobing & Pratomo, 2014). The impact of this stock split can give a good impression to investors where the company that carries out the stock split is considered a company that has good performance. However, investor interest has the potential to decline when the stock price level is overvalued. By doing a stock split, the company can rearrange the ideal stock price and maintain its shares to be in optimal trading conditions (Fauzi et al., 2016). Investors can buy at a lower price after the stock split due to the company's improved performance in the future. However, this theory contradicts the findings of Sadikin (2016), who reported that there was no significant difference in the average share price before and after the stock split announcement.

According to data from the finance.yahoo website for the 2016-2020 period, 34 percent of companies, or as many as 20 companies, had their average share price drop after a stock split, while 66 percent, or 39 companies, found their stock prices rise. Theoretically,
a stock split will merely increase the number of shares outstanding and will have no direct influence on the company's cash flow (Sadikin, 2016). In practice, however, it is often seen that the market reacts to these events as well. Companies that undergo stock splits are thought to have outstanding performance, as evidenced by their high share prices when compared to other similar companies (Burnwal & Rakshit, 2019).

Investors might compare the actual return to the previously expected return to determine the state of the company's performance. The difference between the actual return and the expected return will result in an abnormal return. When a corporation has a high abnormal return, it is regarded positive. The market's positive reaction to the announcement of this stock split can be seen as a sign of the success of the corporate action strategy that was implemented, followed by the expectation of an increase in the return on the stock price. However, this is not always the case in practice, as evidenced by the fact that stock splits are not always beneficial. According to the findings of research by Fauzi, Suhandak, Hidayat (2016) and Untar and Yasa (2020), there is no substantial difference in abnormal returns before and after the announcement.

The market reaction to an event can be seen from changes in the volume of stock trading (Sinurat M & Ilham R., 2021). When a company does a stock split, it will indirectly have an impact on increasing investor interest in shares due to a decrease in share prices, allowing investors to purchase these shares at a lower price. The increase in share trading volume can also be a sign that the shares are being actively traded (Indrayani et al., 2020). Therefore, stock splits can be considered to have an impact on increasing stock trading volume. However, this is different from the results of research conducted by Ijak (2018), which shows that there is no significant difference between the volume of stock trading before and after the company’s stock split.

The focus of this research is to see whether there are any differences between stock prices, abnormal returns, and stock trading volumes before and after the stock split in companies listed on the Indonesia Stock Exchange between 2016 and 2020. The results of this study are expected to provide scientific contributions to further research by adding references to stock split corporate actions, and can be used as consideration for companies in determining stock split policies to improve company performance in the future as well as being an alternative for investors before investing or investing.

Literature Review

Theoretical Background and Hypothesis Development

The capital market that is considered efficient can be seen from the price of its securities which reflect relevant information (Sujana, 2017). To reduce the tendency of information asymmetry, it is necessary to have a signal in the form of financial information to external parties in order to reduce risk in decision making (Spence, 1973). Signal is an action taken by the company's management to communicate to shareholders about how the company's management views its prospects (Brigham & Houston, 2019). Stock split is carried out as a mechanism by managers to give a signal to the market regarding the expected profitability that the company will have in the future (Banerjee & Banerjee, 2012). The impact of this stock split might leave a positive impression on investors with the assumption that the company that performs this stock split has outstanding performance, as indicated by a higher share price compared to other similar companies (Burnwal & Rakshit, 2019). Therefore, for information that is considered a positive signal, investors will interpret the information regarding the prospect of a substantial increase in future returns, deeming it capable of increasing abnormal returns (Sarafina, 2020). Thus, the signal theory explains the reasons why companies have an incentive to provide financial information to external parties. This is because external parties want precise, thorough, and relevant information in order to make investment assessments and decisions.

In general, companies with strong performance can be identified by higher stock prices when compared to similar ones. However, a stock price that is too high (overprice) reduces stock trading, making the stock illiquid; this is due to the differing abilities of each investor. As a result, the company took corporate action in the form of a stock split. The company carried out the stock split as an effort to direct stock prices at certain intervals that were not too expensive (Munthe, 2016). By doing a stock split, the company can rearrange the stock price such that it is not overly expensive. This is because the shares will be split by considering the optimal price limit, which can later increase the purchasing power of investors (Ijak, 2018). As a result, it is expected that the number of investors who transact will increase, as will stock liquidity. This is also in line with research conducted by McNichols and Dravid (1990), which supports the Trading Range Theory, where stock splits are used to overcome situations where overpriced stock prices can be realigned within the ideal price range to increase stock trading liquidity.

Stock prices are determined by the interaction of share sellers and buyers fueled by their expectations for company profits. Therefore, investors need information related to the formation of the share price in making decisions to sell or buy shares (Sari, 2018). Stock prices that are excessively low are often interpreted by investors as a company that has not performed well. However, if the stock price is excessively high, it will also reduce the level of investors' ability to buy shares (Utami & Asandimitra, 2017). Following the stock split, investors will be able to buy at a lower price and are expected to cover a larger market share. The market price (market value) is the current stock price; if the stock exchange is closed, the market price is the closing price. In this research, the closing price will be used to express changes in stock prices.
Stock Prices

Table 1: Stock Prices Formula

The calculation of the stock price before the stock split can be done with the formula:

\[ HR = \frac{P}{(N_t/N_{t+1})} \]

Description:
- \( HR \): Relative stock market price before stock split
- \( P \): Stock price before the stock split
- \( N_t \): Nominal value of shares before stock split
- \( N_{t+1} \): Nominal value of shares after stock split

The calculation of the relative share price after the stock split can be done with the formula:

\[ HR_s = \frac{P_s}{P_{s-1}} \]

Description:
- \( HR_s \): Relative stock market price after stock split
- \( P_s \): Stock price after stock split

Although a stock split does not raise the company's value, it is a fairly effective approach to increase the issuer's stock liquidity. This is because the stock price will be lower after the stock split than before the stock split, and a stock price that is not excessively high is expected to increase investor interest in trading shares (Susianti, 2020). Therefore, the stock split has an effect on stock price fluctuations.

H1: There is a difference between the stock price before the stock split and the stock price after the stock split.

Abnormal Return

Investors typically compare the actual return to the predicted return when evaluating a company's performance. An abnormal return is the outcome of the difference between the actual return and the expected return. Investors will receive above-normal profits if there is a positive abnormal return. If investors earn below normal profits, it is interpreted as negative abnormal returns (Satria & Adnan, 2018; Pangesti, Titisari, & Nurfaela, 2020). The abnormal return can be interpreted as the impact of stock price fluctuations after the stock split event (Puspita & Yuliari, 2019).

Table 2: Abnormal Returns Formula

The calculation of abnormal returns can be done with the following formula:

\[ AR_{it} = R_{it} - ER \]

Description:
- \( AR_{it} \): Abnormal return of stock (i) in the event (t) period
- \( R_{it} \): Actual return that occurs for stock (i) in the event (t) period
- \( ER \): Expected return on stock (i) for event (t) period

The calculation of actual returns can be done by the formula:

\[ R_{it} = \left( \frac{P_{it} - P_{it-1}}{P_{it-1}} \right) \]

Description:
- \( R_{it} \): Actual return that occurs for stock (i) in the event (t) period
- \( P_{it} \): Share price (i) in event (t) period
- \( P_{it-1} \): Share price (i) in the event (t-1) period

The calculation of expected returns can be done by the formula:

\[ ER = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} \]

Description:
- \( ER \): Expected return on stock (i) for event (t) period
- \( IHSG_t \): Composite Stock Price Index in the event of (t) period
- \( IHSG_{t-1} \): Composite Stock Price Index in the event of (t-1) period

The purpose of calculating abnormal returns is to determine the impact of an event with abnormal stock returns in certain situations and periods (Saputra et al., 2021). In addition to bringing the stock price back into its optimal trading range, a stock split also serves as a positive signal to the market regarding higher future returns. However, if there is no information content in the announcement, the absence of abnormal returns on the announcement day cannot be interpreted directly. This can be influenced by the ongoing price changes towards a new balance (Untari & Yasa, 2020). As a result, the stock split has an impact on abnormal stock returns.

H2: There is a difference between abnormal stock returns before stock split and stock abnormal returns after stock split.

Stock Trading Volume

The ratio of the number of shares traded to the number of shares outstanding at a given time is known as stock trading volume (Indrayani et al., 2020). When the stock market reacts positively, it is directly proportionate to the growth in demand and supply of a stock. Big companies will be unaffected by stock splits, however some companies that perform stock splits actually experience a decrease in demand for their stock shares (Priatno & Freddy, 2021). Therefore, the stock trading volume can be used as an indicator
of the stock exchange's status, such as whether it is busy or slow. The Trading Volume Activity (TVA) can be used to measure the amount of stock trading volume activity (Ijak, 2018).

**Table 3: Trading Volume Activity Formula**

| TVA = Company Shares traded at time (t) / Company’s shares outstanding at time (t) |

TVA is an indicator that is used to observe and measure how the capital market reacts to information or events that occur in the market (Suganda, 2018). The number of shares exchanged increases as the TVA value rises. In general, an increase in trading volume will be accompanied by an increase in prices and affect the rate of return received by investors (Aisyah et al., 2021).

**H3:** There is a difference between the stock trading volume before the stock split and the trading volume after the stock split.

**Research and Methodology**

This type of research is event study research which aims to find out how the market reacts due to an announcement. The announcement used in this research is the issuer's announcement of a stock split. The research population is companies listed on the Indonesia Stock Exchange (IDX) during 2016-2020 period. The data used is secondary data obtained from the websites www.idx.co.id and finance.yahoo.com. Purposive sampling technique was used in this research, using the following criteria: (1) Companies that have a stock split policy between 2016 and 2020; (2) Companies that do not take any corporate actions other than the stock split announcement, specifically 5 days before and 5 days after the stock split announcement. From the 713 companies listed on the IDX, 58 were deemed to meet the criteria and were chosen as the research sample.

In this study, there are some assumption test that used as data analysis approaches:

**Descriptive Statistical Data Analysis**

A descriptive statistical analysis was conducted to determine the highest, lowest, and average values of stock price variables, as well as abnormal returns and stock trading volume.

**Normality Testing**

Normality test was utilized to see whether the sample used in this study was normally distributed or not. From the results of the normality test, it can be used to determine the appropriate hypothesis test to use.

**Hypothesis Testing**

If the results of the normality test show that the data is normally distributed, the paired sample t-test will be used. Conversely, if the results show that the data is not normally distributed, the Wilcoxon signed rank test will be used.

**Results and Discussion**

**Descriptive statistics**

Descriptive statistics are used to determine the highest, lowest, mean, and standard deviation of stock price, the abnormal return, and stock trading volume variables before and after the stock split announcement.

**Table 4: Descriptive Statistics Test Results**

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS_SBLM</td>
<td>58</td>
<td>131.20</td>
<td>8747.50</td>
<td>1156.4376</td>
<td>1921.85189</td>
</tr>
<tr>
<td>HS_SSDH</td>
<td>58</td>
<td>123.20</td>
<td>8795.00</td>
<td>1187.8540</td>
<td>1925.23654</td>
</tr>
<tr>
<td>AR_SBLM</td>
<td>58</td>
<td>-0.03271</td>
<td>0.15611</td>
<td>0.0103939</td>
<td>0.02679589</td>
</tr>
<tr>
<td>AR_SSDH</td>
<td>58</td>
<td>-0.03335</td>
<td>0.09604</td>
<td>0.0011466</td>
<td>0.02280617</td>
</tr>
<tr>
<td>TVA_SBLM</td>
<td>58</td>
<td>0.00000211</td>
<td>0.06387083</td>
<td>0.0072475838</td>
<td>0.0127244217</td>
</tr>
<tr>
<td>TVA_SSDH</td>
<td>58</td>
<td>0.00000167</td>
<td>0.01141416</td>
<td>0.0011423354</td>
<td>0.00201696586</td>
</tr>
</tbody>
</table>

**Source:** SPSS 28

The results of the descriptive statistical test in table 4 show that the average value of the stock price before doing the stock split was 1156.4376 with a standard deviation of 1921.85189. Because the standard deviation appears to be higher than the average stock price, it can be inferred that there is a very high variation in the stock price data prior to the stock split. The average stock price after the stock split is 1187.8540, with a standard deviation of 1925.23654. The existence of a standard deviation value that is greater than the average indicates that the data variance on stock prices after the stock split tends to have different data from one another.
Before the stock split, the average value for the abnormal return variable was 0.0103939, with a standard deviation of 0.02679589. The fact that the standard deviation is higher than the average indicates that the deviation of the data on the abnormal return before the stock split is likely to be different from one another. After the stock split, the average value of the abnormal return variable was 0.011466, with a standard deviation of 0.02280617. Because the standard deviation appears to be bigger than the average value of the abnormal return, it can be interpreted that the data on the abnormal return data following the stock split is subject to high levels of variation.

Meanwhile, before the stock split, the average trading volume activity was 0.0072475838, with a standard deviation of 0.01272442117. Since the standard deviation appears to be higher than the average value of trading volume activity, it can be assumed that there is a fairly high variation in the data on trading volume activity before the stock split.

Normality test

Before carrying out the normality test, the data outlier test was first carried out with the aim of eliminating extreme data or data that appeared to be very different when compared to other observational data and were considered to be the cause of the abnormality of the available data. Outlier data removal is done by looking at the reference on the boxplot graph. After eliminating the numbers that lie outside the boxplot, the number of samples used was reduced to 34 samples. Therefore, a normality test was carried out using the Shapiro-Wilk method, which produces the following results:

<table>
<thead>
<tr>
<th>Test of Normality</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS_SBLM</td>
<td>0.863</td>
<td>34</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HS_SSDH</td>
<td>0.873</td>
<td>34</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>AR_SBLM</td>
<td>0.953</td>
<td>34</td>
<td>0.153</td>
</tr>
<tr>
<td>AR_SSDH</td>
<td>0.948</td>
<td>34</td>
<td>0.103</td>
</tr>
<tr>
<td>TVA_SBLM</td>
<td>0.633</td>
<td>34</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>TVA_SSDH</td>
<td>0.807</td>
<td>34</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Source: SPSS 28

Table 5 shows the results of the normality test on the stock price variable before and after the stock split, with a significant value < 0.001 when the value is less than 0.05. This confirms that the stock price data before and after the stock split are not normally distributed. Therefore, the Wilcoxon Signed Rank Test may be used to test the hypothesis for the stock price variable.

In the abnormal return variable before the stock split, a significant value of 0.153 was obtained which was greater than 0.05 (0.153 > 0.05), and for the abnormal return variable after the stock split, a value of 0.103 was acquired which was also greater than 0.05 (0.103 > 0.05). This demonstrates that the abnormal return data before to the stock split and the abnormal return data after the stock split are normally distributed. As a result, the Paired Sample T-Evaluate can be used to test the hypothesis for the abnormal return variable.

In the trading volume activity variable before the stock split and after the stock split, a significant value < 0.001 was obtained where the value was smaller than 0.05. This shows that the trading volume activity data before the stock split and the trading volume activity after the stock split are not normally distributed. Hence, the Paired Sample T-Evaluate can be used to test the hypothesis for the abnormal return variable.

Hypothesis Test

**The Difference between the Stock Price Before the Stock Split and After the Stock Split**

According to the findings, there was no difference in stock prices before and after the stock split. This is driven by the fact that the number of companies experiencing increases and decreases in stock prices is not significantly different. During the 2016 -2020 timeframe, 38% of companies that carried out stock splits saw their average closing price drop after the stock split. The lowest decline was -10%, which was found in the company Sumi Indo Kabel Tbk (IKBI). The average stock price for 5 days before the stock split was 434.50, and the average stock price for 5 days after the stock split was 392.80. Meanwhile, 62% of other companies experienced an increase in closing price after the stock split. The highest increase was found in Eratex Djaia Tbk (ERTX) which reached 38%. The average stock price for 5 days before the stock split was 166.25 and the average stock price for 5 days after the stock split was 229.60.

The findings of this study corroborate previous research findings which state that stock splits have no effect on the company's stock price (Ijak, Satria, Adnan, 2018). (Hosen, Askandar, Amin, 2019). Although there is no significant difference, the results of this
research reveal an increase in the average stock price before the stock split, which was 511.78, and the average stock price after the stock split, which was 523.29, indicating a 2% gain in the average share price after the stock split. The results of this research are in accordance with previous research conducted by Puspita and Yuliari (2018), which stated that stocks became easier to trade in the capital market and through market mechanisms, causing stock prices to increase. From the analysis that has been carried out on companies listed on the Indonesia Stock Exchange from 2016 to 2020, it can be concluded that there is no difference in stock prices before and after the stock split.

The Difference Between the Abnormal Return Before the Stock Split and the Abnormal Return After the Stock Split

The visible difference between the average abnormal return in the period before and after the stock split event is influenced by conditions where there is a large difference in the number of companies experiencing an increase and the number of companies experiencing a decrease in the average abnormal return. 71% of companies that carried out a stock split between 2016 and 2020 experienced a decrease in their average abnormal return as a result of the stock split. Inter Delta Tbk (INTD) had the lowest fall, with a -2,248.368% drop. An increase in expected return followed by a decrease in actual return after the stock split event resulted in a negative abnormal return in INTD, leading in a decrease in abnormal returns. On the other hand, 29% of other companies saw an increase in the average abnormal return after the stock split. Intermedia Capital Tbk (MDIA) saw the most growth, with a 987% increase, with the average abnormal return before the stock split of -0.002583 and the average abnormal return after the stock split of -0.028077.

The results also showed a decrease in the average abnormal return before and after the stock split reaching -203%, where the average abnormal return before the stock split reached 0.0044950, and the average abnormal return after the stock split reached -0.0046149. The results of this research are in line with research conducted by Puspita, Yuliari, Putra, and Badjra (2019), Putri and Sihombing (2020), in which the occurrence of this decline indicates the existence of information asymmetry between managers and investors, where managers expect to use events stock splits as a way to send a positive signal to the market that relates to the company's expectations for the future. abnormal returns in the long term.

The Difference between the Trading Volume Activity Before the Stock Split and After the Stock Split

The visible difference between the average trading volume activity in the period before and after the stock split event is influenced by conditions where there is a large difference in the number of companies experiencing an increase and the number of companies experiencing a decrease in average trading volume activity 74% of companies who carried out a stock split between 2016 and 2020 experienced a decline in their average trading volume activity as a result of the stock split. PT Samudera Indonesia Tbk (SMDR) had the smallest decline of -0.972636461. Meanwhile, 26% of other companies saw an increase in average trading volume activity after the stock split. The highest increase was seen in Minna Padi Investama Sekuritas Tbk (PADI), which was 18.811442565.

The average trading volume activity before the stock split reached 0.003065666, while the average trading volume activity after the stock split reached 0.000505668. From these findings, it can be seen that there is a decrease in the average trading volume activity before and after the stock split of -85%. This result is in direct opposition to the stock split's stated goal of increasing volume and trade transactions by splitting the shares into a comparative ratio (Amin, 2020). The findings of this research also contradict the trading range theory, which argues that the occurrence of stock splits will increase stock trading liquidity. This happens because of the unequal distribution of information, so the market, the market is unable to capture information to its full potential.

Meanwhile, investors also tend to prefer companies that can provide profits in the near term, such as dividends, compared to companies that have the potential to only provide profits in the future. Several previous studies also support these results by stating that there are differences in trading volume activity before and after the stock split (Ijak, 2018; Indrayani, Murhaban, Syatriani, 2020; Priatno and Fredy, 2021). From the analysis that has been carried out on companies listed on the Indonesia Stock Exchange from 2016 to 2020, it can be concluded that there are differences in trading volume activity before and after the stock split.

Conclusion

Based on the results of the study, there is no difference in stock prices before and after the stock split in companies listed on the Indonesia Stock Exchange between 2016 and 2020, but on the contrary, there are differences in abnormal stock returns and stock trading volume before and after the stock split in companies listed on the Indonesian Stock Exchange Securities between 2016 and 2020.

The findings of this study can provide information about the impact of the stock split corporate action carried out by companies on the Indonesia Stock Exchange to the public, investors and companies. For the company, it can be taken into consideration in determining the stock split policy to improve the company's performance in the future. The stock split policy can affect the increase in stock prices in accordance with the purpose of this corporate action. Other factors, such as political and economic situations, or other events that affect market conditions, could also have an impact on stock price changes. Furthermore, the stock split policy is ineffective in increasing abnormal returns or stock trading volume. To improve the quality of the company's performance, it is proposed that the company not only conduct corporate actions in the form of stock splits to raise the liquidity of its stock trading, but also implement other policies and pay attention to other issues. These findings may be valuable to investors prior to making a purchase.
or investment. Investors are advised to do an analysis first and consider carefully before investing their funds in the capital market. Investors should also consider external issues, such as political and market conditions, that can affect the stock’s performance.

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Author Contributions: Conceptualization, SH., FP.; Methodology, SH., FP.; Data Collection, SH., FP.; Formal Analysis, SH., FP.; Writing—Original Draft Preparation, SH., FP.; Writing—Review And Editing, SH., FP.; All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

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References


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