



Analysis of Average Stock Prices and Average Liquidity of Shares Before and After a Stock Split on the Indonesian Stock Exchange 2002-2007 Period

Gilang Jatnika Barnas

Management Study Program, Indonesian Banking School of Economics, Jakarta, Indonesia

Article Info

Article history:

Received Sep 02, 2021

Revised Sep 15, 2021

Accepted September 30, 2021

Keywords:

Liquidity;
Stock Prices;
Stock Splits.

ABSTRACT

This paper is going to explain the effect of stock split to stock price and stock liquidity. The objective of stock split is to make the stock in the optimum trading range. By doing a stock split, the demand for stock will increase so that trading volume will become liquid. After the stock split, the stock price will be higher than before if a positive signal about a better condition of management performance has been proven. This research aims to find the effect of stock split to stock price and stock liquidity of companies which did stock split in Indonesian Stock Exchange in the period 2002-2007. Based on paired sample t test, the result is shown that there is a significant difference between the mean of stock price before and after stock split. It is shown by the increasing stock price. Based on the TVA test,

This is an open access article under the CC BY-NC license.



Corresponding author:

gilang jatnika barnas,
management study
program,
High School of Economics
Indonesia Banking School
Jakarta, Email:
gilangbarnas@gmail.com

1. INTRODUCTION

The capital market is seen as one of the most effective means of accelerating the development of a country. This is because the capital market is a means that can raise the movement of long-term funds from the public to be channeled to productive sectors. The capital market is an alternative that companies can use to meet their funding needs. Even though there are banking institutions, due to limited leverage, a company cannot obtain a loan from a bank.

In general, people buy shares in the hope that they will receive dividends that are at least equal to the interest rate on deposits and/or capital gains obtained from the difference between the selling price and the purchase price of shares. For large companies whose shares are sold to the public, the stock market is a monitoring tool for company performance. The market price of a stock reflects the value of the company, the higher the stock price, the higher the company value, and vice versa, the lower the stock price, the lower the company value in the eyes of investors.

The price of a company's stock is also influenced by demand and supply on the stock exchange, if the stock price is considered too high, then the number of requests will decrease because the high stock price will reduce the ability of investors to buy these shares. Conversely, if the

company's stock price is low, the number of requests for its shares will increase. To anticipate this, the company takes steps to be able to maintain its share price within the optimal trading range.

To anticipate this, the company takes steps to be able to maintain its share price within the optimal trading range. This must be done by the company because the price before the split (split) is in the stock trading range which is not optimal because the demand for these shares is low due to the high price level, whereas after the split (split) with a lower price level will make the stock trading optimal because the demand will increase along with the lower the company's stock price.

Stock split is dividing a share into n shares. The price per share is $1/n$ of the previous price. Thus the total equity of the company is fixed or does not change. The stock split action causes an increase in the number of outstanding shares so that it can increase the liquidity of these shares, because the new, more affordable price will increase investor demand for these shares. This causes the shares of a company to become active and liquid again with increasing purchase transactions for these shares. Investors see a stock split event as information that produces good news, so investors interpret a stock split as a positive signal because it describes the company's optimism for future profits.

According to Baker and Gallagher (1993) split returns the price per share at the optimal trading level, companies that do splits in their shares will attract investors with lower stock prices so that it will cause an increase in the number of shareholders after the announcement of the split (post split). Conflicting results come from Copeland's (1979) study which reports that market liquidity actually becomes lower after stock splits. The trading volume is proportionately lower than before splitting, the agent's profit is proportionately higher and the bid-ask spread is higher as a percentage of the bid price.

2. RESEARCH METHOD

Selection of Research Object, The population that will be used in this study are companies that carry out stock splits on the Indonesia Stock Exchange (IDX). The sample used in this study was a company that conducted a stock split from 2002 to 2007. The sampling for this study used a purposive random sampling method. The criteria used in sampling are as follows: (1). The company was listed on the IDX from 2002 to 2007, (2) In this study it will only focus on companies that do stock splits and are not followed by other policies such as warrants, rights issues, stock dividends and other announcements in the same year, so this research is purely just stock split events that occurred in that year. (3).

Based on data obtained from the IDX, there were 64 companies that carried out stock splits from 2002 to 2007. Of the 64 companies, there were 36 companies that were not included in this study because these companies did not refer to predetermined criteria. So the final sample in this study is as many as 28 companies.

Data Collection Methods. This study uses secondary data on public companies listed on the IDX. These data were obtained from the Capital Market Reference Center (PRPM) section on the IDX. The data collected is historical data of issuer companies that carry out stock splits. The data needed in this study include: Daily stock price data 10 days before and 10 days after the stock split date (to), The stock price used is the daily closing price, Company data that carried out the stock split and the stock date split, the company was from 2002 to 2007.

QVariable Operational Techniques Variables are factors tested in research. The variables of this study consist of: (1). Stock price, (2). Trading Volume Activity (TVA),(3). stock splits. Operational Definition of Research Variables. Operational definitions in this study are stock prices, TVA and stock splits. These three variables will be examined to see whether there is an effect of the stock split on prices and TVA. The definitions of each of these variables are as follows: (1). Stock price; After a stock split, the share price per share is the market value of a share of an issuer's company at a certain time.

The market price in this study is the daily closing price for 10 days before and 10 days after the stock split. stock splits; A stock split is a go public company (issuer) policy that changes the

number of outstanding shares and the nominal value per share according to the split factor. The stock split announcement date (t_0) is the dividing period between before and after the stock split, for price data and stock trading volume.

The use of theoretical prices is used to see an equal comparison between prices before and after a stock split, because of course the stock market price before will have a big difference from the stock price after the stock split.

The formula for calculating the theoretical price is:

$$\text{Theoretical Price} = \frac{\text{The market price of the stock}}{r}$$

- Theoretical price : Theoretical price of stock i in period t
- Stock market price t : The market price of stock i with the old nominal in period t
- r : Split ratio

Trading Volume Activity (TVA); Trading Volume Activity (TVA) is an instrument that can be used to see market reaction to information through the trading volume activity parameter in the capital market. The value of TVA is directly proportional to the liquidity of the shares, the higher the TVA means the liquidity of the shares is high so that they are easily converted into cash. TVA calculation is done by comparing the number of shares traded in a certain period with the total number of shares outstanding in the same period.

The formula for calculating TVA is:

$$\text{TVA}_{it} = \frac{\text{The number of shares } i \text{ traded in period } t}{\text{Number of shares } i \text{ outstanding in period } t} \dots\dots\dots(2)$$

Data analysis method; (1) Data processing techniques. The data that has been obtained is of the type of ratio data, which is not yet known whether the data is normally distributed or not. Then a normality test was carried out to find out whether the data was normally distributed or not. The data normality test is important because if the data is normally distributed then a parametric-test can be carried out, otherwise if the data is not normally distributed then the analysis is carried out using a non-parametric-test. The data that has been obtained is in the type of ratio data which is unknown whether the data is normally distributed or not. Then a normality test was carried out to find out whether the data was normally distributed or not. The data normality test is important because if the data is normally distributed, a parametric-test can be carried out,

Hypothesis Testing Techniques; Testing this hypothesis aims to determine the significant effect of stock splits on stock prices and liquidity. Steps in hypothesis testing. (a). Objective Hypothesis (H_0) and Alternative Hypothesis (H_a) are used to determine whether a stock split affects stock price and liquidity. (b). Conduct different tests for related samples, where this test is to test situations where people, objects, or events are measured twice (Cooper 2006). For normally distributed data, a parametric test was used, namely the paired sample t test with a significance level of 5%. Meanwhile, if the data is not normally distributed, a non-parametric test is used, namely the Wilcoxon sign rank test with a significance level of 5%.

3. RESULTS AND DISCUSSIONS

The capital market is an activity concerned with public offerings and securities trading, public companies related to the securities they issue, and professional institutions related to securities. The current capital market or stock exchange in Indonesia is the Indonesia Stock Exchange (IDX), where IDX is a combination of the Jakarta Stock Exchange (BEJ) and the Surabaya Stock Exchange (BES).

The population that will be used in this study are companies that carry out stock splits on the Indonesia Stock Exchange. The sample used in this study was a company that conducted a stock split from 2002 to 2007. The sampling for this study used a purposive random sampling method. The population that will be used in this study are companies that carry out stock splits on the Indonesia Stock Exchange. The sample used in this study was a company that conducted a stock split from 2002 to 2007. The sampling for this study used a purposive random sampling method. The criteria used in sampling are as follows;

Table 1. Sample Selection Criteria

No	Criteria	Number of Companies
1	Carrying out a stock split policy during the observation period. Only carrying out a stock split policy without carrying out other policies in the	64 companies
2	year the company conducted a stock split	39 companies
3	Complete issuer data is available	28 companies
	Final sample quantity	28 companies

Source: Processed research data, 2009

Based on the table above, it is known that from 2002 to 2007 the number of companies that conducted stock splits was 64 companies, where in 2002 there were 12 companies, in 2003 there were 10 companies, in 2004 there were 14 companies, in 2005 there were 6 companies, in 2006 there were 10 companies and in 2007 there are 12 companies. Based on the second criterion, there were only 39 companies that met these criteria, as many as 25 companies did not meet the second criterion because they carried out policies other than stock splits such as warrants, rights issues, stock dividends and other announcements in the same year. Based on the third criterion, only 28 companies have complete data needed for research needs.

In this section, it is explained the results of research and at the same time is given the comprehensive discussion. Results can be presented in figures, graphs, tables and others that make the reader understand easily (Bayraksan & Love, 2015) (Jiang & Guan, 2016). The discussion can be made in several sub-chapters.

Statistical Descriptive Analysis; Descriptive analysis is used to analyze data by describing the data that has been collected as it is without intending to make generally accepted conclusions earlier before the hypothesis testing step. This descriptive analysis was carried out by analyzing the maximum, minimum, mean and standard deviation values of the data.

(a). Stock price

Table 2. Descriptive Statistics of Stock Prices Before and After

	N	Minimum	Maximum	Means	Standard Deviation
Price before	28	104.00	4137.50	809.4946	921.86574
Price after	28	115.50	4270.00	853.2679	983.39629

Source: Processed research data, 2009

Based on the table, it can be seen that the price variable before the stock split has an average or mean value of 809.4946 and the magnitude of the deviation or standard deviation is 921.86574. The lowest value of the data is 104, while the highest value is 4137.5.

The price variable after the stock split has an average or mean value of 853.2679 and the magnitude of the deviation or standard deviation is; of 983.39629. The lowest value of the data is 115.5, while the highest value is 4270.

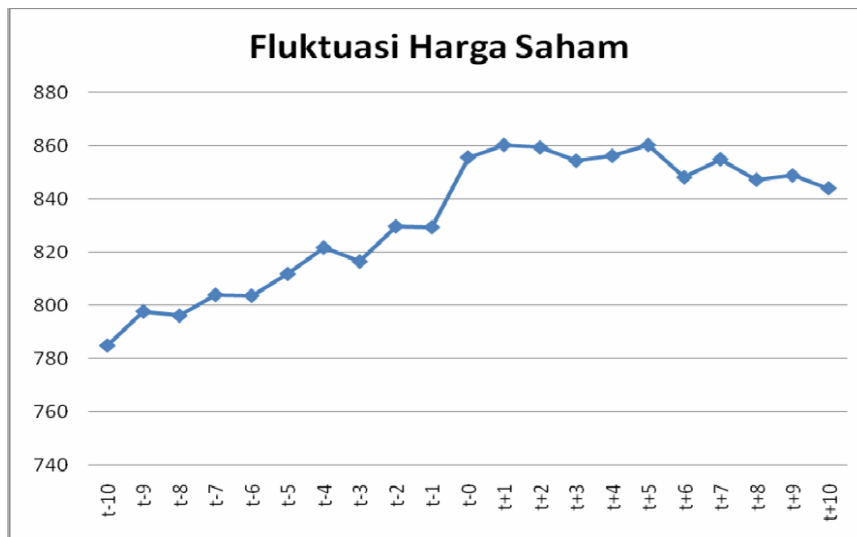


Figure 1. Stock Price Fluctuations

Based on the stock price fluctuation graph from t-10 to t+10 it can be concluded that overall the average stock price has increased. This increase is quite high, where the chart after the stock split event has a price chart that is higher than the price chart before the stock split event

Trading Volume Activity;

	N	Minimum	Maximum	Means	StandardDeviation
TVA Before	28	0.0000000889	0.008750761	0.001914827242857	0.002389077026772
TVA After	28	0.0000068589	0.025426467	0.003603717932143	0.005479654638041

Source: Processed research data, 2009

Table 2. TVA Descriptive Statistics Before and After

	N	Minimum	Maximum	Means	StandardDeviation
TVA Before	28	0.0000000889	0.008750761	0.001914827242857	0.002389077026772
TVA After	28	0.0000068589	0.025426467	0.003603717932143	0.005479654638041

Source: Processed research data, 2009

Based on the table, it can be seen that the TVA variable before the stock split has an average or mean value of 0.001914827242857 and the magnitude of the deviation or standard deviation is 0.002389077026772. The lowest value of the data is 0.0000000889, while the highest value is 0.008750761 which is higher than before the stock split event, which is 809.4946.

Trading Volume Activity;

N	Minimum	Maximum	Means	StandardDeviation
---	---------	---------	-------	-------------------

TVA Before	28	0.0000000889	0.008750761	0.001914827242857	0.002389077026772
TVA After	28	0.0000068589	0.025426467	0.003603717932143	0.005479654638041

Source: Processed research data, 2009

Based on the table, it can be seen that the TVA variable before the stock split has an average or mean value of 0.001914827242857 and the magnitude of the deviation or standard deviation is 0.002389077026772. The lowest value of the data is 0.0000000889, while the highest value is 0.008750761.

The TVA variable after the stock split has an average or mean value of 0.003603717932143 and the magnitude of the deviation or standard deviation is 0.005479654638041. The lowest value of the data is 0.0000068589, while the highest value is 0.025426467.

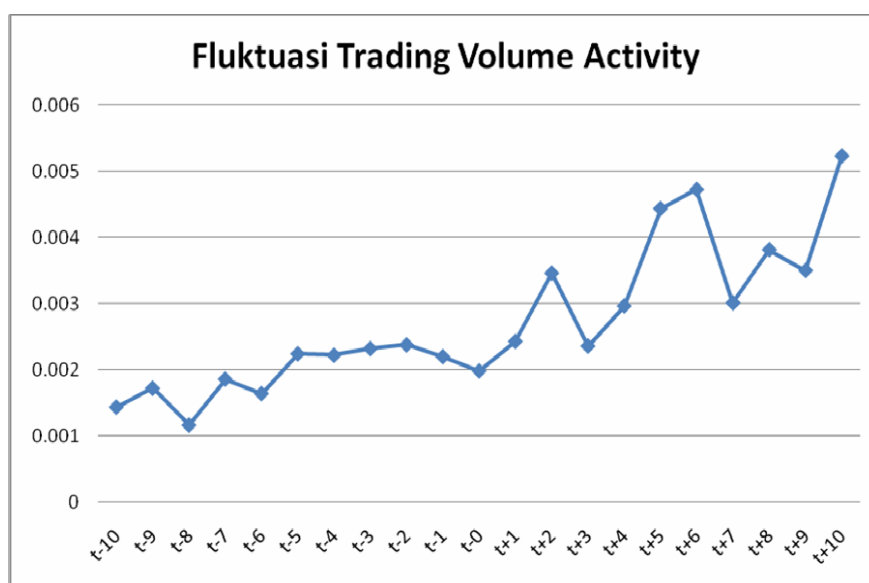


Figure 2. Fluctuations in Trading Volume Activity

Based on the chart of stock TVA fluctuations from t-10 to t+10, it can be concluded that overall the average TVA stock experienced a high increase. This high increase occurs where the graph after the stock split event has a higher value than the chart before the stock split event.

Stock price hypothesis testing; (a). Testing the Stock Price Hypothesis. The first hypothesis of this study is that there is a significant difference in the average stock price before and after the stock split. The formulation of the hypothesis is as follows:

Ho: There is no significant difference in the average stock price before and after the stock split

Ha: There is a significant difference in the average stock price before and after the stock split

Following are the results of the paired sample t test for stock prices;

Period	Mean In Prices	Share	Differences	t statistics	Sig. (2-tailed)
Before	6.2084		-0.08653	-2,213	0.036
After	6.2949				

Source: Processed research data, 2009

Based on table 4.8 it is known that the Ln value of the previous stock price is 6.2084 and the Ln value of the after stock price is 6.2949. The Ln value of the stock price before is smaller than the Ln value of the stock after which has a difference in the Ln value between before and after of -0.08653. The results of the paired sample t test on Ln stock prices before and after it turns out that the tcount value is -2.213 with a sig. (2-tailed) which is equal to 0.036.

TVA Hypothesis Testing; The second hypothesis of this study is that there is a significant difference in the average TVA shares before and TVA shares after the stock split. The formulation of the hypothesis is as follows:

Ho : There is no significant difference in the average TVA stock before and after the stock split event

Ha : There is a significant difference in the average TVA stock before and after the stock split

Based on the results of testing the hypothesis above, it shows that there is a significant difference in both stock prices and stock volume between before and after the stock split. These results are of course in accordance with the literature which states that stock trading prices and volume will increase after a stock split.

The results of this study support the theory of stock split motivation, namely the Signaling Theory which states that companies that will carry out a stock split policy have information asymmetry, because management has more information about the company's prospects than investors.

According to the signaling theory, stock prices after a stock split will increase due to positive signals from issuers such as increased performance, future profits and so on. Because if the stock split plan coincides with a decline in the issuer's financial performance, the stock will not increase, so this positive signal is not proven. Stock split events provide a good signal from issuers to investors. Companies that do stock splits are considered to have better performance than companies that do not do stock splits, so that investors will respond to these signals as positive signals.

The implication is that investors are trying to buy shares of companies that carry out stock splits, which in turn will increase trading volume and the issuer's share price. This theory states that a stock price that is too expensive will cause a reduction in the stock trading activity on the stock exchange, so management seeks to rearrange stock prices at a certain price range that is lower than before, the stock price limit that is too high must be lowered so that it will be in a profitable range in the hope of increasing the liquidity of its share trading on the stock exchange. For issuers, stock liquidity is very important because illiquid shares will result in delisting of these shares on the capital market.

The results of this study are also in line with the theory which states that stock liquidity is inversely proportional to the company's stock price. The more expensive the stock price of a company, the less attractive it will be for investors, especially small investors and in the end the shares will become illiquid. Low stock prices will make stock trading transactions high which will ultimately increase investor interest in a stock because it is considered easier to transact so that opportunities are opened to get capital gains.

4. CONCLUSION

This study aims to examine the effect of a stock split on the price and liquidity of shares in the Indonesia Stock Exchange during the 2002-2007 period. Based on the results of the research and discussion in chapter IV, several conclusions can be drawn, including: (a). There is no significant difference in the average stock price before and after the stock split, then H_0 is rejected or H_a is accepted. This means that there are significant differences in stock prices before and after the stock split event in companies that did stock splits during 2002-2007. The results of this study indicate that stock prices have increased significantly after the stock split. (b). There is no significant difference in

the average volume of shares before and after the stock split, then H_0 is rejected or H_a is accepted. This means that there is a significant difference in stock trading volume before and after the stock split event in the companies that did the stock split during 2002-2007. These results indicate that stock trading volume has increased significantly after the stock split.

REFERENCES

- Basir, Saleh and Hendy M. Fakrudin, (2005), *Corporate Actions, Strategies to Increase Share Value Through Corporate Actions*, first edition, Jakarta: Salemba Empat Publishers.
- Cooper, Donald and Pamela S. Schindler, (2006), *Business Research Methods*, Jakarta: PT. MediaGlobal Education.
- Ewijaya and Nur Indriantoro, (1999), *Analysis of the Effect of Stock Split on Changes in Stock Prices*, *Journal of Indonesian Accounting Research*, Vol. 2, No. 1 : 53-65.
- Fatmawati, Sri and Marwan Asri, (1999), *The Effect of Stock Split on Stock Liquidity As Measured by the Large Bid-Ask Spread on the Jakarta Stock Exchange*, *Indonesian Journal of Economics and Business*, Vol. 14, No. 4 : 93-110.
- Husnan, Suad, (2005), *Fundamentals of Portfolio Theory and Securities Analysis*, fourth edition, Yogyakarta: AMP YKPN Publishing and Printing Unit.
- Jogianto. (2007), *Business Research Methodology*, first edition, Yogyakarta : BPFE-Yogyakarta.
- Kurniawati, Indah, (2003), *Analysis of Stock Split Information Content and Stock Liquidity: An Empirical Study on Non-synchronous Trading*, *Indonesian Journal of Accounting Research*, Vol. 6, No. 3 : 264-275
- Muazaroh and Rr. Iramani, (2006), *Financial Performance Analysis, Stock Expensive and Liquidity in Stock Split, Venture*, Vol. 9, No. 1 : 45-60
- Sutrisno, Wang et al, (2000), *The Effect of Stock Split on Liquidity and Stock Return on the Jakarta Stock Exchange*, *Journal of Management and Entrepreneurship*, Vol. 2, No. 2 : 1-13
- Tanjung, Abdul Hafiz, (2007), *Stock Split: Testing of Signaling and Trading Range on the Jakarta Stock Exchange*, *Indonesian Journal of Accounting and Finance*, Vol. 4, No. 1:115- 136
- Wetson, Fred and Thomas Copeland, (1996), *Financial Management*, Eighth edition, Jakarta: PT.Gelora Aksara Pratama.
- Wibowo, Purwo Adi, (2005), *Analysis of Differences in Stock Gain Variability, Stock Trading Activity and Bid-Ask Spread Before and After Stock Split*, *Journal of Economic and Business Dynamics*, Vol. 2, No. 1 : 1-21
- Widiastuti, Haryanti and Usmara, (2005), *Analysis of Factors Affecting Stock Split and Their Effect on Firm Value*, *Journal of Accounting and Investment*, Vol. 6, No. 2 : 225-242
- Wirman, Ade, (2005), *Analysis of the Effect of Stock Split on Stock Liquidity in the Capital Market (JSE Case Study)*, *Economac*, Vol. 1, No. 1 : 35-51