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The Impact of Stock Split on the Performance in Indonesian Manufacturing Companies

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ABSTRACT

The purpose of this research was to analyze whether the stock split had an impact on liquidity and return stock in 18 manufacturing companies listed on the Indonesia Stock Exchange (BEI) from 2012 to 2015. The stock performance used in this research was trading volume activity, bid-ask spread, and abnormal return in five days before and five days after the stock split. Data analysis method used was quantitative method by using SPSS 21 with the Kolmogorov-Smirnov normality test, paired sample t-test, and Wilcoxon test. The findings indicate that stock split does not affect the trading volume activity, bid-ask spread, and abnormal return.

Keywords: stock split, trading volume activity, bid-ask spread, abnormal return, manufacture, performance

INTRODUCTION

Stock split is an activity that a public company does to raise the number of outstanding shares. This activity is usually done when stock prices are overvalued, so it will reduce the ability of investors to buy it. The stock split announcement is considered to be quite meaningful information for investors in making decisions. It is because with stock split, the stock prices will go down and it is easier to reach smaller investors. This will lead to increased stock demand so that stocks are more liquid (Riyadi & Andrefa, 2013)

However, Budiardjo and Hapsari (2011) stated only companies that had good financial performance could do stock split. It was because the better the financial performance of the company was, the higher the stock price would be. This is consistent with the signaling theory. The firms must improve their performance before the stock splits to signal investors that the prospects of the company will continue well in the future.

Those facts are also in accordance with the two theories related to stock split. Those are signaling theory and trading theory. First, signaling theory explains that stock split provides information to investors about the prospect of substantial future return improvement. Second, the trading theory states that stock splits can increase stock trading liquidity (Indarti & Purba, 2011).

According to Sutrisno *et al*. (2000), there are many opinions about stock splitting, but basically, it can be divided into two groups. First, stock splits are merely "cosmetic" changes. Second, stock splits can affect shareholder profits, stock risks, and signals given to the market. The company does the stock split, so its stock price is not too high. Then, investors who have small capital can still invest.

Lestari and Sudaryono (2008) mentioned that theoretically, the stock split did not increase shareholder wealth because the number of shares owned by investors would be increased and followed by a decline in stock prices in proportion. By the stock split, stock liquidity was expected to increase as investors could buy stocks at lower prices. This would increase the volume of stock trading.

On the other hand, stock return is an important thing that investors consider before deciding to buy the shares. According to Hernoyo (2013), the stock return is the result obtained from investment activities. It can

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be a realization of the return that has occurred or the expected return in the future. At the beginning of stock split, the stock price will decrease for a moment, and it is expected to increase again. The increase in stock prices will be followed by an increase in stock returns.

Sutrisno *et al*. (2000) agreed that the results of stock splits did not affect the stock return individually or as a portfolio. Moreover, they mentioned that the result of their research relating to stock liquidity was stock split. It caused a decrease in stock liquidity individually or as a portfolio. Then, Setyawan (2010) examined all go public companies listed on the stock exchange. It was shown that stock return declined after the stock split. Meanwhile, stock liquidity had increased.

Furthermore, Patel *et al*. (2016) conducted research that examined the stock market and trading volume reaction of the stock split announcement for 34 companies. The companies announced stock split between January 1st to July 31st 2016. The research showed that no one could get abnormal return from stock split in Indian stock market, but the stock split announcement had negative impact on stock return.

Suresha and Naidu (2013) investigated market reaction to stock split announcement using event research methodology for Nifty stock from 1995 to 2011. The results indicated that stock split announcement affected the stock return and liquidity.

Referring to the various variations of research that has been done, the researcher is interested in conducting further and similar research. The general objective of this research is to analyze the impact of stock split on its performance in the form of stock liquidity. It is measured by trading volume activity and bid-ask spread between the period of five days before and five days after stock split. In addition, stock performance in the form of its return is measured based on abnormal return between before and after stock split. In other words, this research will also examine whether the investor can gain or lose an abnormal return by relying on public information from stock split announcement.

The object research is limited to manufacturing companies that perform stock splits and are listed on the BEI. There are many go public companies with different core business in Indonesia. Based on data from sahamok.com (2015), go public companies listed on the Bursa Efek Indonesia (BEI - Indonesia Stock Exchange) are about 507 companies with nine core businesses. Among these companies, companies in the field of manufacturing are well developed, so it is often used as research objects related to its business activities such as stock splits.

Stock trading activity is measured using Trading Volume Activity (TVA). According to Husnan and Pudjiastuti (2017), TVA is used to know how individual investors judge certain information which is capable of making trading decisions above normal trading decisions. These measures do not separate purchase decisions with sales decisions.

Previously, Indarti and Purba (2011) revealed the increasing volume of stock trading that the stock was more desirable to the public so that there was the effect on rising price or stock returns. The company performed stock split aimed at facilitating the shareholders in reaching the shares. With the stock split, there would be difference of stock trading volume between before and after doing stock split.

In bid-ask spread, Sutrisno *et al*. (2000) argued that spread was the difference between the selling price and the purchase price by reflecting the strength of demand and supply of a particular stock. The purchase price was also called the bid or demand price. It was the price that the market is willing to buy the stock. Meanwhile, the selling price was the ask or bid price. The offer price was the price that the market is willing to sell the stock (Salim, 2010). The stock split by the firm had varying influence on the bid-ask spread. Sutrisno *et al*., (2000) investigated that stock split influenced bid-ask spread significantly.

Moreover, Damayanti *et al*. (2014) defined abnormal return as the difference between the actual return and the expected return. There are several underlying factors that cause abnormal return. One of which is the event of stock split. In addition, the other factors that cause abnormal returns occurred are the political state of the country, the prime offer, and the other unexpected events.

In addition, Lindrianasari (2011) agreed that the abnormal return was the rate of return received by shareholders at a certain time. In general, abnormal return can produce positive and negative values. Abnormal return is said to be positive if the actual return is greater than the expected return. Conversely, the abnormal return is said to be negative if the received rate of return is less than the expected rate of return.

This research is a development of previous research conducted by Sutrisno *et al*. (2000) and Hernoyo (2013). In addition, Sutrisno *et al*. (2000) used an abnormal return t-test analysis and a Mann Whitney test. Meanwhile, Hernoyo (2013) used two different mean tests. The object of their research is the companies in BEI that perform stock split in July 1995 - July 1997 and 2005-2011. The difference of this research with their research is that their research generalizes all companies that do stock split without classifying it into a particular industry. Thus, it represents the industry proportionately less. The absence of research that discusses the effect of stock split by classifying the company into a more specific industry leads the researcher to choose a manufacturing company in BEI with stock split as a research object. The period of this research is during 2012 - 2015.

This researcher intends to analyze whether the trading volume of stock changes after the company does stock split. In addition, the researcher also observes the differences of bid-ask spreads before and

after stock splits. Furthermore, an analysis of stock returns using abnormal return as a benchmark to find out the effect caused on stock split in the company is also conducted. Companies that are subjected to research are manufacturing companies that do stock split during January 2012 - December 2015.

Referring to the previous researches, the hypotheses that will be developed in this research are as follows.

H_1: Stock splits have an effect on the stock trading volume in manufacturing companies listed on the BEI allegedly.

H_2: Stock splits have an effect on the bid-ask spreads in manufacturing companies listed on the BEI allegedly.

H_3: Stock splits have an effect on the abnormal return in manufacturing companies listed on the BEI allegedly.

METHODS

Data analysis tool used in this research is Kolmogorov-Smirnov normality test and Wilcoxon statistical test. Furthermore, this research uses the same event window period for ten days. Thus, it will be five days before stock split announcement and five days after stock split announcement. This is the same with Hernoyo (2013). Then, the independent variables used in this research are trade volume, bid-ask spread, abnormal share returns. These are the same as Sutrisno *et al*. (2000).

The population in this research is companies listed on the Indonesia Stock Exchange and stock split in the period of 2012-2015. The technique of collecting samples uses purposive sampling. Purposive sampling is to select the sample with certain criteria to be in accordance with the research designed (Sugiyono, 2013).

The sample in this research includes several criteria. First, companies are listed on BEI until 2015. Second, the company announces stock split decision in the period January 2012 - December 2015. Third, the company is engaged in manufacturing. Fourth, the company does not perform any other strategic policies that may affect liquidity and stock returns directly in the time adjacent to the stock split. Last, the company has complete data to be analyzed. Based on the sample selection criteria, the company that becomes the object of research is summarized in Table 1.

The analysis tools used are financial analysis and statistical analysis. The financial analysis calculates the volume of stock trading using the TVA formula. It divides the number of shares of the traded company by the number of shares of the company listed on the exchange as seen in Table 2. Statistical analysis is conducted to analyze the effect of stock split on stock trading volume, bid-ask spread, and abnormal return of stock before and after stock split. The program used for statistical analysis is IBM SPSS Statistics Version 21. Then, the statistical analysis used in this research is hypothesis testing.

Table 1 List of Company Sample

No	Company Name	Stock Code	Date of Stock Split
1	PT Astra International Tbk	ASII	05/06/2012
2	PT Indomobil Sukses Internasional Tbk.	IMAS	07/06/2012
3	PT Surya Toto Indonesia Tbk	TOTO	09/08/2012
4	PT Kalbe Farma Tbk	KLBF	08/10/2012
5	PT Berlina Tbk	BRNA	06/11/2012
6	PT Japfa Comfeed Indonesia Tbk	JPFA	19/04/2013
7	PT Arwana Citramulia Tbk	ARNA	08/07/2013
8	PT Sepatu Bata Tbk	BATA	04/09/2013
9	PT Nipress Tbk	NIPS	25/11/2013
10	PT Nippon Indosari Corpindo	ROTI	29/11/2013
11	PT Indal Aluminium Industry Tbk	INAI	12/02/2014
12	PT Alumindo Light Metal Industry Tbk	ALMI	12/02/2014
13	PT Multi Bintang Indonesia	MLBI	06/11/2014
14	PT Goodyear Indonesia Tbk	GDYR	14/07/2015
15	PT Lionmesh Prima Tbk	LMSH	02/09/2015
16	PT Lion Metal Works Tbk	LION	02/09/2015
17	PT Delta Djakarta Tbk	DLTA	03/11/2015
18	PT Merck Tbk	MERK	21/12/2015

(Source: Icamel.id, 2016; Sahamok.com, 2015)

The hypothesis test is done after normality test. If in the normality test, the data are normally distributed (probability > 0,05), the hypothesis test uses paired sample of t-test. However, if the normality test obtains the data that are not normally distributed (probability < 0,05), the hypothesis test uses Wilcoxon statistical test. The variables used in this research are described in Table 2.

RESULTS AND DISCUSSIONS

Before performing the hypothesis test, a normality test is performed to determine data distribution. Normality test used in this research is Kolmogorov-Smirnov test shown in Table 3.

Based on the Kolmogorov-Smirnov normality test in Table 3, the significance value of the stock trading as dependent variable is greater than 0,05. Thus, the statistical test uses paired sample t-test. The significance value of bid-ask spread of stock and abnormal return of stock is smaller than alpha of 0,05. This means the statistic test that will be used is Wilcoxon signed ranks test. According to Santoso (2010), Wilcoxon signed ranks test is used if the data type is interval or ratio, but it is not normally distributed.

Table 4 shows the result of data about the effect of stock split on the volume of stock trading in manufacturing companies listed on the stock exchange. It is known that the significance value (asymp. sig.) is 0,411 or greater than alpha of 0,05. Thus, it can be concluded that H_1 is rejected so that stock splits do not affect stock trading volume in manufacturing companies listed on BEI.

Based on the data in Table 5, it can be seen that there is no TVA in manufacturing company. It remains the same after the stock split. The majority of companies experience an increase in trading volume after stock split. There are eleven companies whose TVA is larger after stock splits. The company is PT Indomobil Sukses Internasional Tbk, PT Surya Toto Indonesia Tbk, PT Japfa Comfeed Indonesia Tbk, PT Arwana Citramulia Tbk, PT Sepatu Bata Tbk, PT Nipress Tbk, PT Nippon Indosari Corpindo, PT Indal Aluminum Industry Tbk, PT Goodyear Indonesia Tbk, PT Lionmesh Prima Tbk, and PT Delta Djakarta Tbk. Meanwhile, seven other manufacturing companies have lower TVA after the stock split.

TVA in majority manufacturing companies becomes higher after they do stock splitting. However, it does not mean that stock splits affect stock trading volume. This result is in contrast to the trading theory that stock split can improve stock liquidity. However, this is similar to the result of Lestari and Sudaryono (2008), and Hernoyo (2013).

TVA in manufacturing companies sampled in this research tends to experience an increase caused by something other than the stock split. Things that can cause increase in TVA include stock dividends, bonus share distribution, company listings, and many more.

Table 6 is the result regarding the effect of stock split on the bid-ask spread in manufacturing companies listed on the BEI. The value of significance (asymp sig.) of bid-ask spread before and after stock splitting is 0,064. This means H_2 is rejected because the value of significance is greater than alpha. The results of this research contradict with the results of Sutrisno *et al*. (2000). They stated that stock split had a significant influence on the percentage of spread.

Table 2 Operationalization of Variables

Variable	Abbreviation	Concept Variable	Indicator	Size	Scale
Stock Split	SS	The strategy used by companies to lower stock prices and increase the number of shares traded	- Number of Shares Outstanding - Split factor	$\frac{Outstanding\ shares}{Split\ factor}$	Ratio
Trading Volume	TVA	Number of shares traded in a certain period	- Number of shares traded - Number of shares Oustanding	$\frac{Number\ of\ shares\ traded}{Number\ of\ shares\ outstanding}$	Ratio
Bid-ask Spread	- Bid-ask - Spread Percentage	Difference selling price (Ask) and purchase price (Bid) shares	- Ask price - Bid price	$\frac{(Ask - Bid)}{\frac{[Ask+Bid]}{2}}$	Ratio
Abnormal Return	AR	Returns earned by shareholders from stock investing activities	- The rate of return received - The expected rate of Return	$R_{it} - E(R_{it})$	Ratio

(Source: Researcher, 2017)

Table 3 Test of Kolmogorov –Smirnov Normality
(One-Sample Kolmogorov-Smirnov Test)

		TVA	TVA	Return	Return	Spread	Spread
		Before Split	After Split	Before Split	After Split	Before Split	After Split
N		18	18	18	18	18	18
Normal Parameters[a,b]	Mean	0,00056206	0,00069817	-0,00238572	0,04604294	0,00417717	-0,04658128
	Std. Deviation	0,000828696	0,000934746	0,026751696	0,215963067	0,234468596	0,293335158
Most Extreme Differences	Absolute	0,249	0,232	0,327	0,473	0,364	0,417
	Positive	0,208	0,232	0,159	0,473	0,313	0,225
	Negative	-0,249	-0,228	-0,327	-0,359	-0,364	-0,417
Kolmogorov-Smirnov Z		1,056	0,985	1,389	2,008	1,546	1,770
Asymp. Sig. (2-tailed)		0,215	0,286	0,042	0,001	0,017	0,004

a.Test distribution is Normal
b.Calculated from data

(Source: SPSS Data Results, 2017)

Table 4 Statistical of Stock Trading Volume with Paired Samples Test

		Paired Differences					*T*	*df*	*Sig. (2-tailed)*
		Mean	*Std. Deviation*	*Std. Error Mean*	*95% Confidence Interval of the Difference*				
					Lower	*Upper*			
Pair 1	*TVA Before Split – TVA After Split*	-0,000136111	0,000684386	0,000161311	-0,000476448	0,000204226	-0,844	17	0,411

(Source: SPSS Data Results, 2017)

Table 5 Average of Trading Volume Activity

No	Stock Code	Average of TVA	Average oF TVA
		Before Split	After Split
1	ASII	0,001063	0,000805
2	IMAS	0,000959	0,000982
3	TOTO	0,000046	0,000076
4	KLBF	0,001139	0,000668
5	BRNA	0,003455	0,002567
6	JPFA	0,000465	0,000575
7	ARNA	0,000513	0,000764
8	BATA	0,000000	0,000571
9	NIPS	0,000848	0,003337
10	ROTI	0,000872	0,001562
11	INAI	0,000140	0,000353
12	ALMI	0,000156	0,000000
13	MLBI	0,000083	0,000043
14	GDYR	0,000001	0,000005
15	LMSH	0,000013	0,000162
16	LION	0,000075	0,000006
17	DLTA	0,000051	0,000069
18	MERK	0,000238	0,000022

(Source: Data Processed, 2017)

Table 6 Statistical Test of Bid-Ask Spread

	Spread After Split - Spread Before Split
Z	-1,851b
Asymp. Sig. (2-tailed)	0,064

a.Wilcoxon Signed Ranks Test
b.Based on positive ranks
(Source: SPSS Data Results, 2017)

Based on the Wilcoxon signed ranks test in Table 7, it can be seen that bid-ask spread of manufacturing companies declines after the split of shares. There are about twelve companies. Meanwhile, the remaining six companies experience an increase in bid-ask spread. In Table 8, after the stock split, the companies with higher bid-ask spread are PT Surya Toto Indonesia Tbk, PT Arwana Citramulia Tbk, PT Sepatu Bata Tbk, PT Nippon Indosari Corpindo, PT Indal Aluminum Industry Tbk, and PT Alumindo Light Metal Industry Tbk. No company has constant bid-ask spread before and after the stock split.

Table 7 Test Rating Bid-Ask Spread Ranks

		N	*Mean Rank*	*Sum of Ranks*
Spread After Split - Spread Before Split	*Negative Ranks*	12a	10,67	128,00
	Positive Ranks	6b	7,17	43,00
	Ties	0c		
	Total	18		

a. Spread After Split < Spread Before Split
b. Spread After Split > Spread Before Split
c. Spread After Split = Spread Before Split
(Source: SPSS Data Results, 2017)

Bid-ask spread is a variable used to measure the liquidity of a company's stock in addition to the volume of stock trading. Table 7 shows that there are more manufacturing companies whose bid-ask spread is lower after stock splits. If bid-ask spreads reduce that, it means the highest purchase price rises so that stock trading transactions are more likely to occur. Thus, it results in increased stock liquidity. However, in this research, stock split does not affect the bid-ask spread which will affect the stock liquidity. The reason is that there are many other factors that influence bid-ask spreads in addition to unexpected stock splits. It can be corporate issues and economic circumstances as the research progresses.

Table 8 Average of Spread

No	Stock Code	Average of TVA	Average oF TVA
		Before Split	**After Split**
1	ASII	-0,003413	-0,007437
2	IMAS	-0,003869	-0,007813
3	TOTO	-0,046491	-0,025717
4	KLBF	-0,007443	-0,014444
5	BRNA	-0,010214	-0,015317
6	JPFA	0,006683	0,005153
7	ARNA	0,010754	0,012857
8	BATA	-0,800000	-0,795221
9	NIPS	0,021020	0,013541
10	ROTI	0,008416	0,008858
11	INAI	0,040547	0,041802
12	ALMI	0,042593	0,137253
13	MLBI	0,030329	0,006834
14	GDYR	0,049232	-0,789126
15	LMSH	0,511695	0,466123
16	LION	0,139883	0,077684
17	DLTA	0,000051	0,000069
18	MERK	0,000238	0,000022

(Source: Data Processed, 2017)

Table 9 is the result of testing the effect of stock split on the abnormal return of stock in manufacturing companies listed on the BEI. It can be seen that the significance value (asymp. sig.) is 0,372 or it is greater than alpha 0,05. Thus, it can be concluded that H_3 is rejected. Stock splits do not affect the abnormal return of shares in manufacturing companies.

Table 9 Statistic Test Abnormal Return of Stocks

	Return After Split - Return Before Split
Z	-0,893b
Asymp. Sig. (2-tailed)	0,372

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks
(Source: SPSS Data Results, 2017)

Through Wilcoxon signed ranks test in Table 10, it can be seen that no manufacturing company whose abnormal return remains the same after the stock splits. The majority of companies experience a decrease in abnormal stock returns after the stock split. There are twelve companies whose abnormal returns are lower after stock splits. Based on Table 11, those companies are PT Astra International Tbk, PT Surya Toto Indonesia Tbk, PT Berlina Tbk, PT Japfa Comfeed Indonesia Tbk, PT Arwana Citramulia Tbk, PT Nipress Tbk, PT Indal Aluminum

Industry Tbk, PT Alumindo Light Metal Industry Tbk, PT Multi Bintang Indonesia, PT Lionmesh Prima Tbk, PT Delta Djakarta Tbk, and PT Merck Tbk. Meanwhile, six other manufacturing companies have higher abnormal return after stock split.

Table 10 Test Rank Abnormal Return Ranks

		N	*Mean Rank*	*Sum of Ranks*
Return After Split - Return Before Split	*Negative Ranks*	12[a]	8,83	106,00
	Positive Ranks	6[b]	10,83	65,00
	Ties	0[c]		
	Total	18		

a. Return After Split < Return Before Split
b. Return After Split > Return Before Split
c. Return After Split = Return Before Split
(Source: SPSS Data Results, 2017)

Table 11 Average of Abnormal Return

No	Stock Code	Average of Abnormal Return	Average of Abnormal Return
		Before Split	After Split
1	ASII	0,002674	-0,005351
2	IMAS	-0,101567	-0,006075
3	TOTO	0,020738	-0,009658
4	KLBF	0,002144	0,004177
5	BRNA	0,002793	-0,003499
6	JPFA	0,005648	0,000912
7	ARNA	0,015538	-0,031927
8	BATA	-0,009832	0,030450
9	NIPS	0,000570	-0,010600
10	ROTI	-0,002019	0,909607
11	INAI	-0,010354	-0,023569
12	ALMI	-0,006803	-0,016849
13	MLBI	0,000587	-0,004843
14	GDYR	-0,008913	0,004739
15	LMSH	0,005694	-0,015591
16	LION	0,014742	0,015276
17	DLTA	0,025410	-0,006401
18	MERK	0,000007	-0,002025

(Source: Data Processed, 2017)

Although in Table 10, it is stated that the abnormal return of majority manufacturing companies becomes lower after they split the stock and the rest becomes higher. It does not mean stock splits affect the abnormal return of stock. This research contradicts with the signaling theory. It assumes that stock split can show an optimistic signal that management can increase stock prices in the future (Tandelilin, 2010). This research is similar to the research conducted by Sutrisno *et al*. (2000).

Abnormal return of stock is from the reduction between stock return and market return. Both returns are influenced by several things other than stock splitting. For example, it can be issues related to the company, the size of the company, the category of company stock in the stock exchange, and the condition of the economy at that time. In addition, stock return changes cannot be obtained in a short time. It takes quite a long time to see the changes from stock returns.

Findings on stock trading volume variables support the result of Sutrisno *et al*. (2000), Lestari and Sudaryono (2008), and Hernoyo (2013). The stock splits do not affect stock trading volume. The second finding of bid-ask spread has a different result of Sutrisno *et al.* (2000) who argue that stock split has a significant influence on the percentage of spreads. The latest findings regarding abnormal returns support the research of Sutrisno *et al*. (2000), but it is in contrast to Hernoyo (2013).

CONCLUSIONS

The purpose of this research is to analyze the impact of stock splits on liquidity and stock returns in manufacturing companies listed on BEI in January 2012-December 2015. Based on the results of testing and analysis, stock split does not affect the volume of stock trading. Then, the stock split also does not affect the bid-ask spread of stock. In addition, stock split does not have any effect on the stock in abnormal return too.

Based on these conclusions, it is suggested for further subsequent research to extend the observation time so that the sample can represent the real market situation. For example, it can be ten days before stock split and ten days after stock split. The future researcher should also add the sectors studied so that the company used as the object of research does not only come from one type of business. In addition, researchers can classify stocks not only based on the business, but pay attention also to other factors such as market capitalization rates, and liquidity levels of these shares.

It is also recommended for other researchers to add the dependent variable that can generate factors that may affect the company's motivation in stock split so that the results are more varied. The variables that can be added include earning per share, and dividend per share or financial performance. Finally, it is recommended to use stock return method which has been adjusted to stock market conditions in the country where the research is conducted. The method of calculating return other than the market adjusted model that can be used is mean adjusted model and market model.

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