

Stock Split Analysis on Price and Trading Volume in Indonesian Stock Exchange

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ABSTRACT

Stock split is not a new issue in Indonesia Stock effect. There are many controversies are found in the research results about the impact of the corporation action on the company value and stock trading volume. This study aims to analyze the impact of stock split on stock price and stock trading volume. Four companies incorporated in LQ-45 of Indonesia Stock Exchange become the sample of this research. One sample t-test and paired sample t-test are used as the statistical analysis method. The result shows that corporation action of stock split positively impact on stock price, but negatively impact on stock trading volume. The contribution of this research for knowledge management is to add data base and reference in managerial field which then can be used to make investment decisions, especially in long-term financial assets.

Keywords: Stock Split, Stock Reverse, One Sample T-Test, Paired Sample T-Test.

I INTRODUCTION

Investors consider stock split as signal of the improvement of company performance, while stock reverse is considered as a negative signal of the decrement of company performance. The data of Indonesia Stock Exchange shows that from 66 companies performing corporate action, only 18 % of them perform stock reverse, and the rest perform stock split.

The investor belief that stock split is a positive signal is not fully right, as some research findings support the statement and some of them do not. Mishra (2006), Bechmann and Raaballe (2007), and Cakraborty (2012) state that the policy of stock split is merely to polish and does not impact on the stockholders' wealth. The number of stocks may increase but with lower price. However, how the stock price in the future period after the action will be interesting to study. If the stock price in the future period after the action impacts on the stock price improvement, the action will bring benefit to the stockholders because their wealth will be also increased. Yet, if the stock price decreases, the action will pull down their wealth and result lost.

Kurniawati (2003) conducts a research about stock split and notes that there is abnormality on the announcement of stock split which shows that the stock price decreases after the action. This is different from the study of Waweru and Mwendwa (2012) as it notes that 5 of 10 companies which perform stock split in Nairobi Stock Exchange (NSE) get their stock price increases and 5 of them get the price decreases. The study conducted by Metha, Yadav and Jain

(2011) shows that the majority of respondents do not believe that stock split bring positive signal to the company future prospect. Pooja (2013) states that companies performing stock split in India Stock Exchange do not impact the stock price. Ford, H. Nguyen and T. Nguyen (2012) also emphasize that after stock split, the stock price decreases.

Besides, based on the liquidity after stock split, many study results show significant improvement Mishra (2006), Cakraborty (2012), Kurniawati (2003), Waweru and Mwendwa (2012), Metha, Yadav and Jain (2011), Pooja (2013) as well as Ford, H. Nguyen, and T. Nguyen (2012). Based on the research gap, it will be urgent and interesting to study on how the corporation action of stock split in Indonesia Stock Exchange impact on the stock price and stock trading volume.

Stock split is a form of corporate action performed by go-public companies in Indonesia and many other countries in the world. This research proposes to analyze the condition of stock price and stock trading volume before and after stock split.

II LITERATURE REVIEW

A. Stock Split and Stock Reverse

There are two types of stock split, such as forward split and reverse split (Yan dan Junbo, 2012). Bechmann and Raaballe (2007) explain that forward split is splitting one piece of old stock into a number of new stocks by decreasing the stock nominal value, and the total of stock capital does not change. Jones (2007) states that stock split involve a bigger amount of stocks based on the proportion of outstanding stocks. The existence of stock split makes the value of book and nominal change. For example, each value will be cut if the split ratio 1:2. Hwang et al (2012) describes reverse split as unusual event where company substitutes some stocks with one stock without any changes in the total capitulation of stock capital.

There are some reasons why company performs stock split. As forward split break down one stock into some stocks, it results more stocks than before, but with cheaper price for each. Besides, reverse split merge or combine some stocks into one, hence the price per price increases and the outstanding stock decreases.

B. Stock Price

Stock is a proof of ownership of a company. Those who own stock in a go-public company, whether if it is acquired through stock buying in Stock Exchange or through other way, for example through bonus acquired from the company in a form of stock. Thus, the stock holder roles as stockholder based on the number of stock

that he/she has. The more number of stocks a person has, the bigger percentage of ownership of the company.

Stock has some types of prices, such as nominal price and market price. Go-public companies have nominal price and market price both in primary and secondary markets. Unless for stock price in secondary market, the nominal price and primary market price are static. In the development, nominal price will also change if the company performs corporation action like stock split or stock reverse.

In many financial literatures, it is mentioned that a company is built in order to bring benefit and increase the owners' wealth. If a company is operating with benefit, the period of company will cumulatively longer, and the owners' wealth will be bigger. The amount of the rising wealth can be count from the amount of benefit acquired both in cash and other kinds of assets. Special for go-public companies, the amount of the owners' wealth is analogues to the amount of the stockholders' wealth is relatively countable because go-public companies have stock market price (secondary market). Thus, the wealth can simply counted based on the amount of stocks multiplied to the price per stock in the market. The wealth can increase if the company acquires more benefit as the stock price will also increase.

There are two factors why stock price can increase and decrease, such as internal factor (micro) and external factor (macro). The internal factor is reflected from the company condition, such as how the sales and the sales growth are, how the efficiency of the company operational costs is, and how the level of company profit is. The external factor usually cannot be controlled by the company, including bank interest rate, fuel price, electricity, and social politic and law condition. The company stock price will fluctuate if both internal and external factors experience changes.

C. Stock Trading Volume

Stock trading volume can be one of indicators of the market condition whether it is crowded or not. The bigger trading volume, the more crowded the market will be, which means the amount of stock transacted is bigger. Stock trading volume is well-noted in the amount of stocks or the Rupiah value of the stock. The more investors who sell and buy stocks, the higher value of stock trading will be.

There are some ratios used in measuring stock trading volume, such as TVA (Trade Volume Activity), which is the ratio between the number of stocks traded and the number of outstanding stocks. The higher value of TVA, the more stock volume traded will be. Joshipura (2009) uses volume ratio in his research, where if the value is one (1) or almost one (1), the stock trading volume will be considered as normal. Then, if the ration value is less than one (1), the stock trading volume will be considered as abnormal.

H2: There is significant difference of trading volume activity before and after the corporation action of stock split is accepted.

D. Signaling Hypothesis

The information in the management and investors are different and this is reasonable because the internal party directly run the company and face fundamental situation in the company every day. Thus, if the company performs corporation action of stock split, it can be considered as a signal of a better performance of the company or at least it has potential to improve its future performance. If the company stock price is already expensive, even the performance is improving, the stock price cannot significantly pulled up. This possibly happens because the investors cannot buy the stock as the price is too expensive, especially for investors in low-to-medium level. However, lower price of company stock can be benefit because there will be more investors who are able to buy the stock, hence the stock trading volume will increase.

According to signaling hypothesis, managers in a company can use the stock distribution as positive signal of optimistic expectation for investors in the capital market. As internal party, managers usually have estimation dealing with better company prospect than the external party. Thus, the managers can inform their internal information to investors through financial decisions (Powell, Phillips & Baker, 1995).

H1: Stock split positively impact on Stock Price

III RESEARCH METHOD

This research performs event study method to know the impact of an event on security price. This research analyzes the impact of stock split on the stock price and trading volume. The market reaction can be measured through the return or abnormal return around the stock split announcement.

In general, the research method follows the following procedures: (1) collecting sample from company with similar issue, (2) deciding the right day or the *cum-date* (the final date of stock trading with old nominal value of the announcement and is assigned as Day-0), (3) deciding the research period or *event window* as long as 11 days; 5 days before the announcement of corporate action and 5 days after the *cum-date*, (4) calculating the daily stock return for every sample company, (5) calculating the abnormal return (mean adjusted model) of every period in window period for all sample companies from the return acquired, (6) statistically assessing whether the abnormal return is significant or not.

A. Population and Sample

The population of this research is all companies listed in Jakarta Stock Exchange in Index LQ-45 and has performed stock split from 2010 to 2016. This research uses sample in the period of 2010-2016 because in 2008 there is global financial crisis. It is assumed that 2 years after the crisis, IDX becomes normal again. This research uses purposive sampling to select the sample with the following criteria:

1. The date of stock split announcement and *cum-date* is provided.
2. The company does not perform other company actions except stock split on the *event window* around the announcement date.
3. The stock price data around the announcement can be acquired
4. The data of stock trading volume around the announcement date is provided

From the above criteria, there are 4 companies fulfilling all criteria, such as PT Telkom (TLKM), PT Kalbe Farma (KLBF), PT Astra Internasional Indonesia (ASII) and PT Bank Rakyat Indonesia (BBRI).

This research use secondary data, as the lists of companies which perform stock split around the announcement date or *cum-date* from Harian Bisnis Indonesia (Indonesia Business Daily) and PT Kustodion Sentral Efek Indonesia (PT KSEI), while the daily stock price is acquired from Yahoo Finance.

B. Variable Operational Definition

To know the impact of right issue announcement on the stockholders' wealth, the following variables are used:

1. The date when *cum-date* is designated as period zero ($t=0$) in the window period, that is the final date of the stock trading with old nominal value.
2. 5 days after the event, that is 5 days after the period of $t=0$ (*cum-date*).
3. 5 days before the event, that is 5 days before the announcement date.
4. Stock return is the closing price on certain days, reduced by the previous day closing price, divided to the previous day closing price.
5. Abnormal return is the difference between the real return in the window period, reduced by the expected return (mean-adjusted model).

C. Statistical Analysis

In this research, the data analysis model uses *paired sample t-test* and *one sample t-test* to know the impact of stock split on stock price and stock trading volume and the existence of trade volume activity and abnormal return before and after the stock split.

IV RESULTS AND DISCUSSION

A. Variable Description

The main variables in this research are stock price and stock trading volume before and after the corporate action of stock split. The impact of stock split can be seen from the change of stock price and trading volume in the company. The indicator of change in stock price is from whether or not the abnormal return exists and the change in stock trading volume can be seen from whether or not the Trade Volume Activity (TVA) exists.

A.1. Abnormal return

Abnormal Return is surplus of return above or below the expected return. This research identifies it in window

period (i.e. 5 days before the corporation action announcement and 5 days after *cum-date*). The data used to compute abnormal return is taken from Yahoo Finance (2016) and The Indonesian Stock Exchange (IDX-2016). The abnormal return of the sample companies is compiled in Table 1 and Figure 1.

Table 1: Abnormal Return around the Stock Split Announcement

No	-5	-4	-3	-2	-1	0	1	2	3	4	5
BBRI	-0.016	-0.006	0.028	-0.025	-0.055	0.031	0.040	0.019	0.008	-0.021	-0.011
TLKM	-0.014	0.016	0.003	-0.052	-0.067	-0.053	0.063	0.034	-0.013	-0.034	0.022
KLBF	0.005	-0.003	0.005	0.082	-0.033	0.021	-0.011	0.010	0.020	-0.001	-0.011
ASII	-0.015	-0.012	-0.007	-0.003	-0.001	-0.015	0.057	0.053	-0.022	-0.022	-0.008

Source: analysed data

Based on the data acquired, the abnormal return of every sample changes in every period in the *window period*. This shows that the corporation action of stock split impact on the stock price.

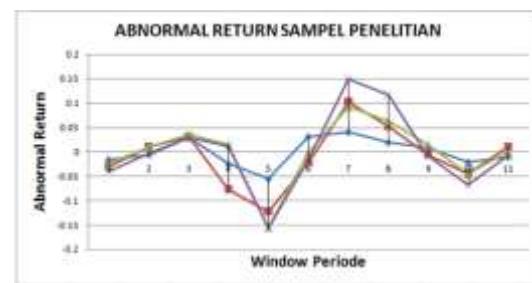


Figure 1: Visual Graphic of Abnormal Return

A.2. Trade Volume Activity (TVA)

Trade Volume Activity is a measurement to see the change in stock trading volume before and after the corporation action of stock split. The data used to compute TVA is taken from Yahoo Finance (2016) and The Indonesian Stock Exchange (IDX-2016). TVA of the sample companies is compiled in Table 2 and Figure 2.

Table 2: Trade Volume Activity (TVA) around the Stock Split Announcement

No	-5	-4	-3	-2	-1	0	1	2	3	4	5
BBRI	0.001	0.002	0.002	0.002	0.005	0.002	0.001	0.001	0.001	0.001	0.001
TLKM	0.005	0.003	0.003	0.007	0.006	0.006	0.001	0.001	0.001	0.001	0.000
KLBF	0.004	0.004	0.005	0.007	0.011	0.005	0.001	0.001	0.001	0.001	0.001
ASII	0.008	0.008	0.011	0.012	0.013	0.011	0.001	0.001	0.001	0.000	0.001

Source: analysed data

Trade Volume Activity (TVA) of the sample in this research experience change in every period in the *window period* before $t=0$ which means that corporation action of stock split impact on the stock trade volume. Besides, TVA in the period after $t=0$ relatively stable.

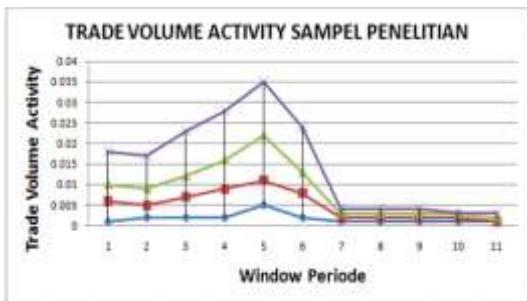


Figure 2: Visual Graphic of Trade Volume Activity (TVA)

B. The impact Stock Split on Stock Price

The impact of stock split on stock price can be seen from the existence of positive or negative abnormal return in the *window period*. Based on the statistical analysis using one sample t-test to analyze the existence of abnormal return in the *window period*, the result is explained as Table3.

Table 3: Statistical Result of One Sample T-Test

	N	Mean	Std. Deviation	Std. Error Mean
ali	4	-.00209	.016101	.008051
aem	4	-.01704	.010934	.005467
ati	4	-.00153	.019187	.009594
adu	4	.02863	.018764	.009382
asa	4	.03735	.033771	.016885
c1	4	-.00425	.038025	.019012
bsa	4	-.03893	.029010	.014505
bdu	4	.00328	.062601	.031301
bti	4	.00707	.014775	.007388
bem	4	-.00068	.011834	.005917
bli	4	-.00999	.010112	.005056

Source: print-out SPSS

Empirically, Table 3 shows that there are both positive and negative abnormal returns in the *window period*. For example, on the *cum-date* there is a negative abnormal return 0,425%, and there is also a negative abnormal return 3,89% on one day before stock split announcement. Then finally, on one day after *cum-date* is there a positive abnormal return 3,74%.

Table 4: Testing Result One Sample T-Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference		
				Mean Difference	Lower	Upper
ali	-2.59	3	.812	-.002088	-.02771	.0253
aem	-3.118	3	.053	-.017038	.03444	.0036
ati	-1.59	3	.884	-.001527	-.03206	.0280
adu	3.051	3	.055	.028628	.00123	.05949
asa	2.212	3	.114	.037350	-.01639	.09109
c1	-2.24	3	.837	-.004252	-.08476	.09625
bsa	-2.684	3	.075	-.038932	-.08509	.00723
bdu	.105	3	.923	.003283	-.08633	.10289
bti	.957	3	.409	.007070	-.01644	.00358
bem	-.118	3	.915	-.000685	-.01952	.01815
bli	-1.976	3	.143	-.009993	-.02609	.00610

Source: print-out SPSS

Based on the testing result using one sample t-test as Table4, it is known that there are abnormal returns both before the corporation action announcement and after the *cum-date* of corporation action. One day before the announcement, the stock price decreases, shown by the

existence of negative abnormal return 3,89%, and the significance level 7,5% < alpha 10%. Then, two days after the *cum-date* the stock price increases, proven by the existence of positive abnormal return 2,86% with significance level 5,5% < alpha 10%. Four days after *cum-date*, the stock price also decreases, known from the existence of negative abnormal return 1,70% with significance level 5,3% < alpha 10%. Therefore, the statement that there is significant abnormal return in the window period is accepted.

Negative abnormal return found before the announcement indicates that the investors do not know about the corporation action, the investors' decision then is not to include the information about stock split. Their decision is predicted based on general information in the market, from fundamental and technical factors. The corporation action can be considered kept as secret before being announced to public. This is proven by the absence of the positive abnormal return before the period, yet the negative abnormal return exists, and this empiric result fit with Kurniawati (2013).

Different from the market reaction on corporation action (there is positive abnormal return), the stock price significantly increases after the stock split and the investors react positively. There are at least two reasons why stock split can increase the stock price. First, the investors interpret the performance of company which perform corporation action increases, or there is improvement potential of the company performance in the future. Companies with expensive stock price remain perform stock split because even though the performance is good, but the stock price cannot increase. The expensive stock price makes the investors reluctant to buy the stock, even though the company has better performance time to time. This possibly happens because Indonesia has many investors from low-to-middle level, hence to buy expensive stock they have to spend a big amount of money. Thus, the stock price of a company relatively stagnant and it needs to be improved, in this case, by performing stock split.

The second reason is because the cheaper stock price from the investors' perspective. By the implementation of stock split, the investors are initially unable to buy the stock then become able to buy it, so the numbers of investors who are interested in buying the stock get increased. According to the law of supply and demand, if the demand increases, the price will also increase. This is similar with companies performing corporation action, the demand will be predicted to increase which will trigger the improvement of stock price and significant positive abnormal return. Therefore, the hypothesis that stock split positively impact on stock price is accepted and finally also fit with the signaling hypothesis. This empiric result is consistent with Rabroty (2012), but contrary with Fama, Fisher, Jensen, and Roll (1969), Mishra (2006) and Pooja (2013).

C. The Impact Stock Split on Stock Trading Volume

The impact of stock split on stock trading volume can be seen from the existence or the absence of difference on Trade Volume Activity (TVA) before and after the corporation action of stock split. Based on the statistical

analysis using paired sample t-test, the result is compiled as follow:

Table 5: Statistical Result Paired Sample T-Test

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1				
After	.00086	25	.000310	.000062
Before	.00606	25	.003326	.000665

Source: print-out SPSS

Based on the result acquired, it can be interpreted that TVA after the corporation action is decreasing from 0,6% before the corporation action become 0,1% after the corporation action. This means that the number of stock traded after the corporation action is also decreasing. The next analysis is to know whether the decreased stock trading volume is significant or not.

Table 6: Testing Result Paired Sample T-Test

		Pair 1
		After - Before
Paired Differences	Mean	-005204
	Std. Deviation	003444
	Std. Error Mean	000609
	95% Confidence Interval of the Difference	
	Lower	-006625
	Upper	003792
t		-7.554
df		74
Sig. (2-tailed)		.000

Source: print-out SPSS

Based on Table 6, the difference of TVA before and after the corporation action is significant. This is proven by the result of paired sample t-test which shows that the significance level is 0,000 (lower from the significance level of 5%). Thus, the statement that there is significant difference of trading volume activity before and after the corporation action of stock split is accepted.

It is empirically proven that stock trading volume is significantly decreasing after the corporation action of stock split. There is some positive logical thinking from investors which strengthen the first empirical finding that the stock price increases after the corporation action. The investors believe that the company performing corporation action has better performance or at least potential of better performance. Thus, there are many purchasing activity after the action which also indicate the increasing demand that impact on the improvement of stock price. However, the trading activity decreases, so the TVA also decreases in accordance with the second finding. The decreasing trading activity as a result of investors who are reluctant to sell their stocks and aim to hold the stocks in longer period in order to gain more benefit or dividend because they believe that the company performance will get better.

This analysis is also an imperfect variable of TVA, where it only measures the number of trading volume which actually includes stock selling and buying. Thus, if the TVA is decreasing (as happening in this research), it is unobvious whether the stock purchasing or buying is decreasing. The up and down of these two aspects bring substantial implication on the companies performing the action.

The other analysis why the trading volume activity decreases is the analysis period (the *window period*) which is too short (only 11 days; 5 days before ad 5 days after the

action). Therefore, many investors have done the purchasing activity and only some of them have done trading activity, so the overall trading volume activity decreases. Thus, stock split negatively impact on stock trading volume. After all this empiric results is contra with the result research before like as Chakrabroty (2012), Fama, Fisher, Jensen, and Roll (1969), Mishra (2006) and Pooja (2013).

D. The Research Contribution to The Knowledge of Management

Koontz and Wehrich (1990) state that management is process of designing and maintaining environment where individuals are working together in groups, efficiently accomplishing selected aims.

The main aim of business organization is to maximize stockholders' wealth or increase the firm value. There are many ways to achieve that, one of them is by investment in long-term financial assets, for example to buy stock in the capital market. The result of this research can be used as reference or data base to make decision related to investment decisions.

V. CONCLUSION

The information about the corporation action of companies involved in LQ-45 does not leak to public before the announcement which empirically proves that there is no positive abnormal return before the announcement of corporation action of stock split. The stock price increases after the corporation action of stock split, which is empirically proven from the positive and significant abnormal return. The investors believe that the performance of companies which perform stock split is improving or at least the companies have potential to improve their performance. This makes them do trading activity, so the stock price increases. The Trading Volume Activity (TVA) after the corporation action significantly decreases because the purchasing activity increases while the period is too short to know about the trading activity (there are only a few of investors do trading activity). Thus, in order to get comprehensive result, the *window period* needs to be longer (for example, 61 days) so the investors have longer period to do trading activity. This is meant to know further about the impact of corporation action. On the other side, as trading volume activity includes both purchasing and trading activities, the future research should specify on which activity is increasing or decreasing.

The research contribution for knowledge management is as reference or data base for managerial to make investment decision in long-term financial asset in the capital market.

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