

Analysis of factors that affect Bid-Ask spread before and after stock split in Indonesia Stock Exchange

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Analysis of factors that affect Bid-Ask spread before and after stock split in Indonesia Stock Exchange

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Abstract

This study aims to analyze whether there is bid ask spread before and after stock split and whether or not there is a significant influence between stock price, stock trading volume, stock return, and Security Return Variability to bid ask spread during stock split. Stock split occurs in the capital market due to the desire of the issuers to keep the stock held in the optimal trading range. This study was an event study, in which the observation window period was five days before the date of announcement and five days after the date of stock split announcement. This study used secondary data obtained from Indonesia Stock Exchange (BEI). Statistical analysis tool in this study was SPSS. The samples were 52 companies chosen using purposive sampling method. The samples were companies that issued stock split announcement during the period of 2013-2016. The statistical methods used to test the hypothesis were Wilcoxon rank-test and multiple regression analysis. The results of data analysis indicate that there is a difference before and after bid ask spread at stock split. As the result of stock price variables, stock prices do not affect bid ask spread when stock splits, unlike the stock trading volume that has a negative and significant effect. Stock return has a positive and significant effect on bid ask spread when stock splits. Meanwhile, the security return variability does not affect the bid ask spread when stock splits.

Keywords: Stock Split, Bid Ask Spread, Stock Return, Stock Trading Volume, Stock Price, Security Return Variability

Introduction

Information is a basic need for investors in taking decision. This activity of taking information is related to choosing the most beneficial investment portfolio with certain risk level. Information can reduce uncertainty that might happen, so that the decision taken could fit the expected goal. One thing that can be done by issuers to maintain their stock to stay in optimal trade range is to perform stock split (Fortuna, 2010). Company announce stock split to inform good personal information regarding value of that company. Stock split is categorized as an event that can affect impact of company or investment decision of capitalist, because it can lead to change of stock nominal value, stock market value, and the amount of distributed stock. Stock split is one form of information that given by emiten to increase the number of distributed stock. Oleh karena itu, maka keputusan pemecahan Therefore, the decision for stock split should be announced to public according to decree of BAPEPAM through announcement in stock exchange on newspaper that issued in Indonesia.

Decision to perform stock split is usually done by issuers when stock value is considered too high so that could reduce the interest of investors or market players to buy stock. Stock split happened in stock market and there is from investors to keep their stock in optimal trade range. Stock split is considered as a phenomena in stock, which means that companies perform stock split to keep their stock value low and to increase stock

trade liquidity. Stock split policy will reduce the stock value so that it is expected to push stock transaction escalation that can anticipate the trade volume declining of the stock. Hamzah (2006) states that stock split is effective to make stock value lower than before and to form stock value more eligible, and to increase liquidity to get traded and turn the odd lot investor to round lot investor.

The study will use bid ask spread and additional variable, which is profit rate variability that generally uses stock value variable, stock trade volume, and stock return in stock split. Based on that problem, the formulation of problems are 1) Is there a difference between bid ask spread before and after stock split? 2) Does stock price affect bid ask spread? 3) Does trading volume affect bid ask spread? 4) Does return of stock affect bid ask spread? Does variability of profit rate affect bid ask spread?

Literature Review

Stock Split

Stock split is an activity performed by manager of companies by doing some changes on the amount of distributed shares and nominal value per shares based on split factor. Stock split according to Halim (2005) is splitting an amount of shares into a number of shares using lower nominal value per its shares proportionally. Stock split process is conducted by exchange shares with old nominal value stock with shares with new nominal value.

There are some theories that explain the motivation of stock split, such as Signaling Theory. This signaling theory assume that management has accurate information about factors that will affect company value. Information asymmetry will be happened if management give partial information it has, about everything that can affect company value in stock market. While Trading Range Theory assume that management rate its stock too high, which can cause the stock less effective to be traded. In trading range theory, there is an assumption that soon before an announcement of stock split, the speculators will try to increase their stock sales massively, because they believe that stock price will decrease after stock split announcer, so that their reaction tend to push the stock price for the day of announcement.

The main purpose of stock split performed by issuers is to increase stock liquidity so that stock distribution become wider. Besides, stock split aims to put stock in optimal trading range. This stock split policy is performed as a strategy to gain stock transaction in exchange, where the beginning price which is predicted too high can give an expensive image for investor so that not all investors is dare to buy that shares. By performing stock split, it will decrease the stock price and can push transaction rate that is happened with final intention stock price exalation means profit escalation for shareholders.

Distribution of profit and earning usually performed by company for shareholders is in form of cashdividen, besides could be in form of stock dividen or stock split where shareholders do not need to spend money to gain addition stock. According to Akmila (2003), the form of stock distribution can not affect the company cashflow in the future.

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Bid Ask Spread Before and After Stock Split

Bid ask spread is a factor should be considered by investor in taking decision, whether to hold or to sell the stock. Generally, bid price is lower that the actual price and the amount of spread which is a differencebetween sell price and buy price more that 1%. Discussing spread includes activity performed by certain party that cn affect the amount of security

transaction in exchange floor. Bid ask spread is based on price anticipation which is will be borne by dealer as uninformed trader. Research by Prakoso (2012) prove that there is differences between bid ask spread, stated that bid ask spread is a function from three price component which is come from inventory holding, information assimetry dan order processing. By performing stock split, stock price becomes lower so that it increase the interest of investor which cause the trading to be more active. Based on that, this condition allow the market players to not need to hold stock in a long period which can decrease owning price, which means narrow the bid asksread. Then, stock split event is considered as a positive signal because company manager will inform good future prospect of company to uninformed public. This can cause information spread evenly among market participants and decrease the information assimetry so that bid-sksread also decreased. Based on the above study result, hypothesis can be formulated as following:

H1: There is a difference between bid ask spread before and after stock split.

The effect of Stock Price on Bid Ask Spread at the Time of Stock Split

Basic price of a new stock is its beginning price. This basic price will be changed according to action of issuers like stock split, warrant, and others, so that the new basic price should be calculated based on the change of theoretical price as the action calculation result of the the issuer. Indicator of company management success is stock price, which in capital market, market power is shown by occurrence of trading transaction (Nurul, 2009). Nany (2004) did a research on effect of stock price, stock return, stock return varian, earning and stock trading volume on bid ask spread. Thus, based on the above explanation, liquidity of a stock is influenced by the decreasing of a stock price. If a stock price decrease, investors will be interested in adding the amount of stock they had and many investors can sell and buy their stock. The results is the amount of stock holder becomes bigger after stock split and effective capitalmarket is defined as market with security prices that reflected all the relevant information. Analysis result shows that stock price and stock return varian consistently have a significant effect on bid ask spread, both before and after. Based on that explanation, hypothesis can be drawn as following:

H2: Stock price has a possitive effect on bid ask spread during stock split.

The effect of Stock Trading Volume on Bid Ask Spread at the Time of Stock Split

Activity of stock trading volume is the amount of active shares transacted by investors in stock trading. The more and the bigger investors invest their capital on stock, the more liquid traded stock are (Satiari, 2009). In its relation with market reaction regarding stock split announcement on abnormal return and Trading Volume Acitivity (TVA) in certain company, there are some factors that can cause stock split possitive impact on stock profit rate dan stock liquidity rate in company that stock split deliver a positive signal about future performance of the company, such as research by Joshipura (2009) and Ray (2011). Stock trading volume activity is the amount of shares which are actively transacted by investors in stock trading. Therefore, the lower the stock price owning is, which will narrow bid-asksread, the more active a stock trading is, or the bigger the stock trading volume is. Shobriati (2012) showed that stock trading volume has a significant negative effect on bid-ask spread. Based on the above explanation, following hypothesis is gained:

H3: Stock trading volume has a negative effect on bid ask spread at the time of stock split.

The effect of Stock Return on Bid Ask Spread at the Time of Stock Split

According to Jogiyanto (2000), stock return is a result earned from an investment. Research by Dananjoyo (2011) on companies in ISE about the effect of stock return, trading volume, and stock return variance on bid-ask spread states that stock return, trading volume and stock return variance have a significant positive effect on bid-ask spread. This indicates that showing the possibility of stock split information had been absorbed before the announcement. In its relation with market reaction on abnormal return and TVA in certain company, there are some factors that can cause stock split positive impact on stock profit rate and stock liquidity rate on company that stock split give a positive signal regarding company future performance, as studied by Joshipura (2009) dan Ray (2011), and the study indicates that stock split activity performed by go public company affect the decision taking and stock split contains information to market. That stock demand change is indeed the one that cause stock fluctuation before stock split announcement. Thus, based on the above study result, hypothesis can be formulated as below:

H4: Stock return has a positive effect on bid-ask spread at the time of stock split.

The effect of Stock Profit Rate Variability on Bid Ask Spread at the Time of Stock Split

According to et al (1996), testing of stock reaction and profit rate can be known from the security return variability (SRV). SRV is used to know whether market aggregately examines dividen announcement as an informative thing, in sense of whether the information cause some changes on stock return distribution during dividen announcement. Study by Utami et al. (2009), who analyzed the impact of stock split announcement on return, profit rate variability, stock trading volume activity. The result shows that there is a significant effect on stock return, abnormal stock return. But, there is no significant effect on (CAAR), SRV, dan (TVA). Study on SRV does not shows a significant effect, which means that stock split announcement do not contain enough information to influence preference of investor in investment. Thus, based on the above explanation, hypothesis can be formulated as below:

H5: Stok profit rate variability has a negative effect on bid ask spread at the time of stock split.

Research Method

Population in this study are companies listed in IDX during the year of 2013-2016. Samples are taken by using purposive sampling method, which are 25 companies that did stock split at the years. Observation period are five days before and after stock split. Variable used in this study is bid ask spread. Bid ask spread is calculated using formula by Rubin (2006), which is the lowest bid price of stock i on day t minus the highest demand price of stock i on day t , divided by the lowest selling bid price of stock i on day t plus highest buying demand price of stock i on day t , then divided by two. So the formula for spread is after-bid ask spread minus before-bid ask spread. Besides, use the stock price. The stock price used in this study is the closing price. This study uses the average price for five days after the stock split. Then, stock trading volume is calculated based on the average of daily stock trading volume for five days before stock split. Trading volume activity as a measure of stock trading activities in the capital market, is formulated as the number of shares of companies traded in the period t divided by the number of outstanding shares at time t . Then, for the stock return variable, the return used is the average of five days before the stock split. The stock return is calculated by using the formula the closing price of stock on day t divided by the stock price

on day $t-1$. The last variable, variability of profit rate, the formula used is abnormal return of stock i at time t divided by variance of abnormal return in period outside announcement.

Data Analysis and Discussion

The Descriptive Statistic of Research Variable

The result of the descriptive statistic is presented in Table 1

Table 1: Data Description Before and After Stock Split

	N	Minimum	Maximum	Mean	Std. Deviation
Before_BAS	52	-.7076	.5772	-.024133	.1677070
After_BAS	52	-.5528	.1378	-.003126	.1079667
Difference_BAS	52	-.5551	.7894	-.021008	.1817239
HS	52	139	11640	1309.65	2245.578
VPS	52	.00000	.00524	.0001678	.00074994
RS	52	-.1451	.6194	.002528	.0974555
VTK	52	-15.8843	8.5539	-.068174	2.5373211
Valid N (listwise)	52				

The above results show the maximum, minimum, average, and standard deviation values before the bid ask spread, after the bid ask spread, the difference between after and before bid ask spread, stock price, stock trading volume, stock return, and profitability variability. In the multicollinearity test, the output shows that the tolerance value is greater than 0.10 and the VIF value is less than 10.00. Tolerance values are 0.988, 0.309, 0.288, and 0.792, respectively. While the tolerance values of 1.012, 3.240, 3.472 and 1.263. Based on the above values, it can be concluded that there is no multicollinearity in the regression model. Besides, it can be concluded from the result of heteroskedasticity test that all variables do not encounter heteroskedasticity problem because the value of the significance is greater than 0.05. This is indicated by the significance of the stock price of 0.385, the trading volume of shares of 0.836, the stock return of 0.505 and the profitability variability of 0.922. While, from the results of normality test using One-Sample Kolmogorov-Smirnov Test, it can be concluded that the data is abnormally distributed because all variables are significant of $0.000 < 0.05$ ranging from bid ask spread difference to profit rate variability. Based on the output of the autocorrelation test results, it can be seen that the DW value is 2.334. Then this value will be compared with the value of Durbin Watson table with 5% significance with the number of samples $N = 52$ and the number of independent variables is 4. (See Durbin Watson table), d_U is 1.676, while the value of d_L is 1.433. Value of DW is $2.334 > d_U$ which is 1.676 and less than $(4 - d_U) = 4 - 1.676 = 2.324$. So it can be concluded that there is no autocorrelation occurred in the regression model generated in this study.

Result of Hypothesis Test

Result of difference test

Wilcoxon Rank Test is performed to know the difference of bid ask spread before and after stock split event as the alternative of paired difference test because of the data that is abnormally distributed.

Table 2: Result of *Wilcoxon test*

Test Statistics ^b	
	after_BAS - before_BAS
Z	-1.828 ^a
Asymp. Sig. (2-tailed)	.068

a. Based on positive ranks.

b. Wilcoxon Signed Ranks

Table 2 illustrates the different t test for bid ask spread of stock activity before and after stock split event. The test yields a Z value of -1.828 with p value of Asymp. Sig. (2-tailed) of 0.068. Since the significance value is less than 0.10 (10%), it can be said that there is a significant difference between the bid ask spread before and after the stock split.

Results of multiple regression analysis

This analysis is performed to find influence of stock price (HS), stock trading volume (VPS) and stock return (RS), and variability of profit rate (VTK) to bid ask spread before and after stock split. The result of the calculation is shown in following table:

Table 3: Multiple Regression Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.006	.031		-.190	.850
	HS	1.298E-6	.000	.016	.114	.910
	VPS	-110.589	61.168	-.456	-1.808	.077
	RS	.917	.487	.492	1.881	.066
	VTK	.008	.011	.106	.672	.505

a. Dependent Variable: Selisih_BAS

Based on that multiple regression equation, it can be concluded that stock price has no effect on bid ask spread before and after stock split at the level of significance test of 0.05 which is equal to $0,910 > 0,05$. While trading volume of stock shows the significance of $(0,077) < \alpha = 0,10$. It can be concluded that stock trading volume has a significant and negative effect on bid ask spread before and after stock split at significance test level of 0,10. While stock return results in $(0,066) < \alpha = 0,10$, hence can be concluded that stock return have a significant and positive effect on bid ask spread before and after stock split at significance test level of 0,10. Variability of profit results shows the significance of $(0,505) > \alpha = 0,05$, so it is concluded that profitability variability did not affect the bid ask spread before and after stock split at the test level of significance of 0,05. The result of Simultaneous Test calculation (Test F) shows a sign of $(0,437) > \alpha = 0,05$. Then it can be concluded that there is no significant effect between stock price, stock trading volume, return & variability of profit

rate on **bid ask spread at the** time of **stock split** at **the test** level of significance of 0,05. While, coefficient of determination of R square value obtained from the result of multiple regression estimation is 0.076, which means that the amount of contribution given by stock price variables, stock trading volume, stock return, and variability of profit rate, together affect the bid ask spread of 7.6%, while the rest is explained by other factors outside the model.

Discussion

Bid ask spread before and after stock split

Based on the result of Wilcoxon Signed Rank Test caused by abnormally distributed data, it is known that the significance value is below 0,10 which is equal to 0,068 which means that there is difference on bid ask spread before and after stock split. This result is in line with the research conducted by Prakoso (2012) which states that there is difference on bid ask spread. Bid ask spread is a function of three cost components derived from stock ownership (inventory holding), information asymmetry, and order processing. With the stock split events, stock prices become cheaper, increasing investor attractiveness that makes trading becomes more active. Based on the above explanation, this condition allows market participants to not have to hold shares for too long thus lowering the cost of ownership, which means narrowing bid ask spread. Stock split events that contain a signal about increasing returns that investors will get, lead to more active stock trading. Knowing that shareholders will not keep their shares in the long term because of their desire to get capital gains so that the cost of ownership of shares will also decrease which will affect on the smaller bid ask spread. This result is in line with research conducted by Rutiati and Farida (2010), who successfully figured out the differences of bid spread between before and after stock split.

The effect of stock price on bid ask spread at the time of stock split

It can be concluded that stock price has no effect on bid ask spread at the time of stock split. Theoretically, the stock price after the stock split must be calculated, because this price must make adjustments in connection with the addition of new shares. The addition of new shares is what causes dilution of share ownership, so the price will automatically adjust (Ang, 1997). The results of this study indicate that stock split companies, theoretically and empirically have caused stock prices to react and this is an event caused by systematic risk. Systematic risk is an event that can affect all companies without exception and inevitable. This study is in line with Purwanto (2004) but the result of this study does not support the result of research conducted by Mubarak (2002). If the price of a stock falls, the investor will be interested in increasing the number of shares owned and the many investors who can sell and buy the shares. Consequently, the number of shareholders becomes multiplied after the Stock Split. Formally, an efficient capital market is defined as a market whose security prices have reflected all relevant information (Ang, 1997). The sooner the new information is reflected in the price of securities, the more efficient the capital market is.

The effect of stock trading volume on bid ask spread at the time of stock split

Trading volume has a negative and significant effect on bid ask spread at the time of stock split. The company's stock split has the objective of improving transactions that occur when

linked to trading volumes because it will decrease the stock price so as to give a positive signal for investors regarding the future prospects of the company. This can increase the attractiveness of investors in stock trading in the hope of increased Trading Volume Activity (TVA). The result of this study is in line with Shobriati (2013) study which shows that the stock trading volume has a significant negative effect on the bid ask spread which means that the more volume of transactions is, the less bid ask spread is. The volume of transactions can measure the level of activity and competition of market participants. The higher the volume of transactions is, the more liquid the stock is the less the spread is. Harris (2003) states that a high volume market is filled with many traders, the market that deals actively usually has a narrow spread. But the results of this study contradict with research of Chadijah (2010) which gives an illustration that the volume of stock trading does not significantly affect the bid ask spread.

The effect of stock return on bid ask spread at the time of stock split

The stock return has a positive and significant effect on bid ask spread at the time of stock split. This indicates that the market is likely has been able to get adjusted to the circulated asymmetry information. This positive influence occurred because of the movement of stocks tends to always rise in each transaction which means generate a high stock return. This indicates that the stock is actively traded, and this circumstance indicates that the stock is favored by investors. This situation also keeps the dealer to not directly release the stock but hold it instead in advance until a certain time, so the longer the shares are in the hands of the dealer, the larger the bid ask spread is, because it will absorb more cost of ownership of shares borne by the dealer. This happens because the dealer embraces long-term motive in investing with the intention of to cover the cost of transactions that occur to buy the stock. Therefore, this study does not show any negative effect of stock return on bid ask spread. This result is in line with Dananjoyo Research (2011).

The effect of profitability variability on bid ask spread at the time of stock split

Profitability variability does not affect bid ask spread at the time of stock splits. From the test results, the variability of the profit rate strengthens the possibility that stock split announcement does not contain enough information to influence investor preference in investing, so there is a difference in the distribution of return obtained around the announcement of the stock split, although it is not significant. It can be interpreted that the market aggregately assess that the announcement of stock split is less informative, as known from the absence of difference of distribution to return around the announcement. The market will react only slightly after the stock split announcement event. This result is in line with research conducted by Utami et al. (2009), who analyzed the effect of stock split announcement to return, profitability variability, stock trading volume activity, which the result is there is a significant influence to stock return, stock return abnormal. However, no significant effect on Cumulative Average Abnormal Return (CAAR), Security Return Variability (SRV), and Trading Volume Activity (TVA).

Conclusion

Based on the results of data analysis and discussion, some conclusions can be drawn as follows 1) There are differences before and after bid ask spread at the time of stock split. 2)

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Stock price does not affect bid ask spread at the time of stock split. 3) The stock trading volume has a negative and significant effect on bid ask spread at the time of stock split. 4) Return of stock has positive and significant influence to bid ask spread at the time of stock split. 5) Variability of share gain rate does not affect bid ask spread at the time of stock split.

For investors, stock split announcement information can be taken into consideration in making investment decisions. As for the new issuers who will perform stock split, one thing to be considered is whether the stock split can bring a positive impact for the company because by performing stock split, the company's shares will be more liquid. As for the next researcher, it is better to use bigger sample so that the result will be better and accurate. As well as test the variables that affect stock split by adding observation periods and using different methods and also include control variables.

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