ANALYSIS THE EFFECT OF TICK SIZE SIMPLIFICATION TO TRADE AND STOCK RETURN IN INDONESIA STOCK EXCHANGE

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ABSTRACT

On January 6, 2014 Indonesia Stock Exchange simplifying tick size. The purpose of these changes is to improve liquidity and lower volatility. But the fact in 2014 the total volume of transactions fell by 1.16% and the value of transactions fell by 4.52%. Reaction pros and cons, decreased trading volumes and still diverse results obtained from previous studies to make research on the effect of changes in the tick size becomes attractive.

Tick size is one of the components of the market microstructure. Market microstructure theory is the study of how information is summarized in the price of securities markets through trading activity and how regulations affect the efficiency of market institutions on security prices.

Results of this study indicate a significant influence on the change in tick size to variable bid ask spread, depth and volume. Tick size change does not affect the stock price volatility. Market microstructure between variables also showed a relationship of mutual influence. GARCH analysis results showed issuer in LQ45 quickly absorb information.

Found positive results due to changes in the fraction of the stock price on the sample LQ45. Changes in the tick size increase liquidity and does not affect volaitlitas. While the liquidity and volatility affect stock returns. It can be deduced changes in the tick size indirectly affect the stock return.

Keywords: *market microstructure, tick size, bid ask spread, depth, volume, volatility, stock return, t-test, granger, panel data, GARCH, LQ45*

INTRODUCTION

Indonesia Stock Exchange issued regulations on 8 November 2013 by the Decree of Directors of the Indonesia Stock Exchange Number: Kep-00071/BEI/11-2013 Subject: Amendment of Lot Size and Tick Size. Indonesia Stock Exchange itself has repeatedly make changes of tick size. Here is a summary table of the changes made by Indonesia Stock Exchange.

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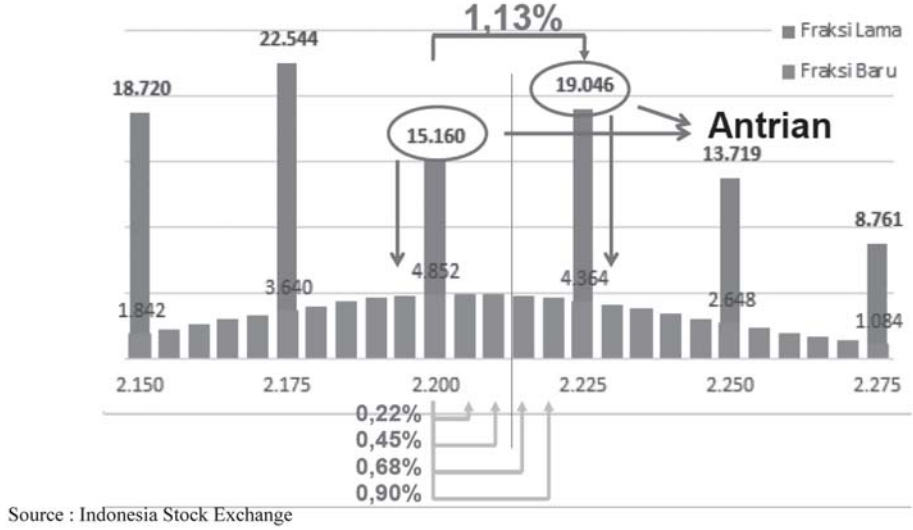
Table 1 Summary of tick size change

Stock Price	3 July 2000	3 July - 19 Oct 2000	20 October 2000	3 January 2005	2 January 2007	6 January 2014
< Rp 200	Rp 25	Rp 5	Rp 5	Rp 5	Rp 1	Rp1
Rp 200 - s/d < Rp 500					Rp 5	
Rp 500 s/d < Rp 2000			Rp 25	Rp 10	Rp 10	Rp 5
Rp 2000 s/d < Rp 5000				Rp 25	Rp 25	
≥ Rp 5000			Rp 50	Rp 50	Rp 50	Rp 25

Despite of the good purpose and the good intention of the Indonesia Stock Exchange, there are pros and cons among capital market participants. This is due to changes in the tick size which is not in line with the changes that happened before. According to the table above, any changes in the tick size tends to add to the group fraction of the price. Therefore, some market participants worry about the potential decrease in trading value if the tick size change. This is because traders need to have a new trade patterns due to the change of tick size. With a small tick size, the increase of 1 tick size will not make gain because the transaction costs is greater than the increase in the tick size.

Gambar 1 Simulation effects of changes tick size on stock TLKM



Source : Indonesia Stock Exchange

The concern was proven. In 2014 the total volume and value of transactions were going down. Based on Indonesia Stock Exchange Statistics, the volume in 2014 was about 1,327,016 million shares which is down 1.16% from the total volume in 2013 which is about 1,342,657. Meanwhile the value of transactions in 2014 was also decreased. The value of transactions in 2014 was 1,453,392 billion which is down 4.52% from the year 2013 with the amount of 1,522,122 billion.

Despite the cons of some of the capital market, it cannot be denied if the trend in the capital markets is reducing the tick size. American Stock Exchange was reducing the tick size of $ 1/8 to $ 1/16 for stocks under $ 5 in August 1992 and under $ 10 in February 1995, and these changes applies to all stocks in March of 1997. Hongkong Stock Exchange was reducing the tick size by 50% in June 1994. Singapore Stock Exchange was also reducing tick size from 50 cents to 10 cents for shares worth more than 25 dollars in July 1994. On April 15, 1996, Toronto Stock Exchange was reducing the tick size from C $ 0.125 to C $ 0.05 for the stock above C $ 5 and from C $ 0.05 to C $ 0.01 for stock less than 50 cents and more than $10 on December 4, 1996. After over 205 years using the tick size of $ 1/8, New York Stock Exchange was also reducing tick size into a $ 1/16 in June 1997. On September 25, 2006 Stockholm Stock Exchange was also reducing the tick size for all shares and a special tick size for stocks with high liquidity. The latest change of tick size was in the Tokyo Stock Exchange on January 14, 2014. Shares that are on the Topix 100 index will decline the tick size. Reducing the tick size is divided into two phases. The first phase on 14 January 2014 and the second phase on July 22, 2014

As various studies around the world have discussed about the policy changes that occurred in the tick size of the world's capital markets. A research did by Bennemark and Chen (2007) showed that the decrease in the tick size have a positive effect on market liquidity. Similarly, Gerace et al (2012) also found the same thing when they examined the change in tick size in Hong Kong Stock Exchange. Then Ronen and Weaver (1998) shows the change in tick can improve market quality (liquidity and volatility).

However, the results of research by Broughelle and Declerk (2002) on the French Stock Market showed a decrease in tick size can cause a decrease in depth quote. These results are contrast to research on Wall Street. Hameed and Terry (1998) suggested that the reduction of tick size tend to exacerbate price grouping. They argue that the benefit of the reduction in the tick size is not too significant for trader's transaction.

Pros and consreaction, decreased trading volumes and still diverse results obtained from previous studies make changes in the tick size becomes interesting to study. Based on market microstructure theory, changes in the tick size will affect the liquidity and volatility. Researchers also connect these changes with the interests of investors which is stock returns.

LITERATURE

Market Microstructure Theory

Market microstructure theory is the study that explains how information is summarized in the price of securities markets through trading activity and how regulations affect the market efficiency institutions in securities prices (Megginson, 1997). This field is a relatively new field in economic research. Therefore, there has been no division into formal categories. But in essence, the market microstructure research conducted to understand the following six topics.

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a. Price formation models, about the relevance of non-public information is summarized in the price of the securities market and how the market makers (dealers who sell and buy securities) to protect themselves from losses caused by transactions with traders who have more information.
b. Price-volume models, these models seek to explain the empirical phenomena between trading volume and price volatility are systematically higher shortly after the market opened, and shortly before the market ends. In addition, some models also trying to predict when or how informed traders will decide to trade to get as much value from its inside information.
c. Bid-ask spread models, this model seeks to predict great and composition of the bid-ask spread (the difference between the price you want to buy and sell) to determine the benefit of asymmetric information and to predict how different spreads on the market in a different regulatory institutions.
d. Market structure models, these studies seek to explain how specialists and dealers can co-exist and predict when a market types have a competitive advantage compared with other markets.
e. Microstructure non-stock market models and applications, several studies conducted separately to explain other types of financial markets.
f. Optimal security market regulation models, aspects of microstructural research offers an objective tool to analyze the effectiveness and the costs incurred by market regulation.

Previous Research

There have been many studies conducted to examine the changes in the tick size performed in various world markets. Lawrence E. Harris is a pioneer in conducting research on changes in the fraction of the stock price. Harris (1994) did a research about the effect of tick size to spread, depth, and volume. The observations result was if the tick size is lowered by half then the spread will drop as much as 38 percent, quote size fell 16 percent and the volume will increase by 34%. Similar results were also obtained from Hamdeen and Terry (1998). Hamdeen consider the difference between them is the increase in volume will only happen if the stock has a good liquidity before changes in tick size. He also believes that the benefits of the reduction of tick size for traders are not too much.

Ronen and Weaver (1998) conducted research on market quality, trade behavior and profit as a result of changes in tick size. The result is a quality market increased after the change of tick size, then the bid-ask spread decreases while the depth unchanged. They also found no significant difference in profit. While Goldstein and Kavajecz (1999) found no relationship between the market structure of the market characteristics in this case is the tick size, bid-ask spread, quote clustering and market depth.

Chung et al (2005) with a research entitled Liquidity And Quote Clustering In A Market With Multiple Tick Sizes in Kuala Lumpur Stock Exchange (KLSE). This study analyzes liquidity as measured with a variable spread, depth, volume, return volatility, turnover rate, and stock prices. The method used is to test different models. Results of this study are spread, depth significantly decreased, and the trade volume has increased, while the return volatility, returns over rate, and significant stock price increase.

Sirodom et al (2004) did a research on Thailand Stock Exchange. Their research shows that the tick size is the biggest obstacle in the queue bid-ask spread. More

than 90% of investors lined up in a single tick spreads, which show the tick size is too large. The decrease in tick size will add the liquidity by increasing market depth and keeping transaction costs low can also be found. Reduction of tick size at high prices pose a minimal effect on the depth and volume of trading, but significant to the queue bid-ask spread.

Pisedtasalasai and Gunasekarage (2007) did research to determine the relationship between stock returns, volatility in the trading volume. They use methods of analysis GARCH and VAR. The sample used was stock from emerging markets in Southeast Asia. They found strong evidence that there is an asymmetrical relationship between stock returns and the trading volume. Return become an important indicator in determining movements and volatility in the future. Trading volume had limited impact in determining the dynamics of stock returns. However, trading volume of some markets has useful information in predicting the dynamics and return volatility.

Bennemark and Chen (2007) did a research on the Stockholm Stock Exchange in 2005 which is decreasing tick size and applying a special size for stocks that have good liquidity. Results of the study showed the effect of a decrease in tick size affects the quality market as liquidity and volatility components.

Ekaputra and Asikin (2012) conducted a research on a new price group in Indonesia Stock Exchange. After the new policy tick Rp. 1, they found some improvement in the Indonesia Stock Exchange in terms of trading. The statistical results showed the efficiency of the price tends to rise and the cost of execution decreases. In addition to the share price and trading volume tends to increase while the daily volatility of stock returns declined.

METHODOLOGY

Data

The data used in this research is using secondary data available and derived from various relevant institutions in Indonesia. The data is correct and have been published. The following table shows the types and sources of data used.

Table 2 Type and source data

No	Type Data	Source Data
1	Bid Ask Spread	Bursa Efek Indonesia
2	Depth	Bursa Efek Indonesia
3	Volume	Bursa Efek Indonesia
4	Volatilitas	Bursa Efek Indonesia
5	Return Saham	Bursa Efek Indonesia

T-test

The period of observation was performed on variable movement in bid-ask spread, depth, trading volume and price volatility of the stocks included in the index LQ45 in the study period ie December 2013 to January 2014. Data analysis techniques used in hypothesis testing are two different test average sample pairs (paired sample t-test) which means that the same study treatment was given twice.

Granger casuality test

Granger casuality test was used to see two-way relationship of two variables. It does have a direct relationship or no relationship at all.

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Data Panel

This study used regression data panel. Data panel is a data that has a number of cross section and the number of time series. Data were collected in a time span of many individuals. The technique used to estimate parameters of the model with panel data is 1.Pooling Least Square (PLS), 2.Fixed Effect Approach (FEM), 3.Random Effect Approach (REM). Selected panel data regression model with the following tests: (i) Chow Test. Chow test (F Statistics) is a test that is performed to determine whether the model used is PLS or FEM. This testing is done by a statistical test F or chi square. (ii) Hausman Test. Hausman test conducted to determine which is better or tests of significance between the FEM and REM.

Model ARCH / GARCH

In this study the volatility model is expressed by ARCH / GARCH. Parameter ARCH / GARCH may be suspected by the method of possibilities (maximum likelihood). Bollerslev in 1986 introduced the model Generalized Autoregressive Conditional Heteroskedasticity (GARCH). In addition to the model GARCH variance change is influenced by some random data and also influenced by a number of variances from previous random data. Form equation GARCH (p, q) is as follows:

With, is return in time t, is average return in time t, is random distribution, identical and independence (iid) with average zero and variance 1, >0 dan e”0, e”0 and .

RESULTS AND DISCUSSIONS

T-test

Differences in bid ask spread, depth, volume and volatility between before and after the change in stock prices overall fraction can be determined through testing by using statistical test of paired samples t-test. Different test results can be seen in Table 3.

Table 3 T test bid ask spread, depth, volume and volatility before and after the change in the fraction of the price of the 10-day event window.

Variabel	t	df	prob	Conclusion	Remarks
BidAsk	14,161	898	0,00000	Significant	Before > After
Depth	4,674	898	0,00000	Significant	Before > After
Volu	-3,768	898	0,00018	Significant	Before < After
Vola	-1,329	898	0,18405	Not Significant	Before = After

* Significant in α = 5%

In the overall test difference looks that of the 4 variables tested, there are three variables that are significant. Variable bid ask spread, depth and volume seem to have a significant change after the change fraction of the price. However, variable volatility do not have any significant change.

Variable bid ask spread had the result that bid ask spread after the change in stock price is smaller fraction than before. This is consistent with the objectives of the Indonesia Stock Exchange where changes in the tick size is expected to lower the bid ask spread. These results are consistent with research conducted by Harris (1994), Ronen and Weaver (1998), Goldstein and Kavajecz (1999), Chung et al (2005). This happens due to changes in tick size and generally done by minimizing the fraction of the stock price. With a smaller tick size, the spread

between bid and ask might be smaller. With liquidity high, usually the difference between the bid and ask price is equal to the tick size.

Variable depth has a significant change where depth before changes the tick size is greater than after the change. This is contrary to the purpose of the Indonesia Stock Exchange which expected with change of tick size will increase depth. These results are consistent with research conducted by Harris (1994), Goldstein and Kavajecz (1999), Chung et al (2005). Depth has decreased due to the increasing number of variations to order the bid and ask. With so many variations, the specialist will enter the bid and ask orders at some price level, not at the price level as it did before. This can be seen with the depth distribution on some new price levels arising from a decrease in the fraction of the stock price.

Volume is also undergoing significant change where the volume before the change of tick size is smaller than after. This is consistent with the objectives of the Indonesia Stock Exchange which is expecting an increase in trade volume after the change in the tick size. These results are consistent with research conducted by Harris (1994), Hameed and Terry (1998). With tick size changes, it would appear more variations in price which allow investors to choose the desired price. The number of price variations also allows transactions to occur more quickly, it will increase the volume of transactions.

While the volatility variables did not change significantly. The difference between before and after the change in tick size is not visible. It can be concluded that tick size changes do not affect the stock price volatility. These results are in contrast to studies conducted Bennemark and Chen (2007) where the tick size reduction in effect on the liquidity and volatility.

Causality Test

Granger causality testing is done using a 5% significance level. Based on the results of Granger causality on the model stock returns showed that there is a causal relationship either one-way or two-way, bid ask spread affects the depth and vice versa. In addition there is also a two-way relationship between the depth and volume. Meanwhile there are also some uni-directional relationship. Ie the bid ask spread affect the return. Moreover volatility also affects the depth.

Results of the analysis granger show the close relationship between variable bid ask spread, depth and volume as liquidity variables. A close connection is shown by an influence between these variables. While only variable bid ask spread this has a relationship with the return. This shows liquidity has a relationship with stock returns.

Panel Data

Descriptive statistics

The table below shows the descriptive statistics on the variables that exist in the modeling study data panel.

Table 4 Descriptive statistics

	BIDASK	DEPTH	VOLU	VOLA	*RETURN*
Mean	0.006778	12.42087	15.92245	0.467474	0.003511
Median	0.005450	12.56094	15.98764	0.446323	0.000000
Maximum	0.050505	16.63757	19.67774	1.078822	0.172161
Minimum	0.000588	6.309918	8.294050	0.214784	-0.089552
Std. Dev.	0.005168	1.860958	1.639919	0.128096	0.026829

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Skewness	2.209317	-0.269316	-0.388437	2.028206	0.951768
Kurtosis	12.51897	2.688917	3.473816	9.275912	7.412664
Jarque-Bera	4130.069	14.50860	31.05131	2094.058	866.0644
Probability	0.000000	0.000707	0.000000	0.000000	0.000000
Sum	6.099783	11178.78	14330.21	420.7263	3.159463
Sum Sq. Dev.	0.024009	3113.385	2417.711	14.75139	0.647113
Observations	900	900	900	900	900

By hypothesis H_0: residuals distribution has to be normally distributed and viewed through probability on Jarque-Beta and the 95% significance level (á = 5%) determined that all variables have residual is normally distributed.

Selection of Model

This research uses panel data which has three approaches in the selection of the best model (pooled least square, fixed effect and random effect) so as to select the type of model to be used is necessary to test the model (chow test, and Hausman test). Here is a test chow test results in Table 5 and Hausman test in Table 6.

Table 5 Result chow test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.18232	-44,851	0.0000

* Significant in α = 5%

Note in Table 4, p-value (0.0000) <α) α = 5%), then reject H0 means the best model is the fixed effect. Chow test results, we concluded that the fixed effect models to follow, but not necessarily this model is the best model, therefore, needs to be done the next step is to perform such Hausman test in Table 6.

Table 6 Result hausman test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	95.492107	4	0.0000

* Significant in α = 5%

Based Hausman test in Table 5, known p-value (0.0000) <α (α = 5%) then reject H0 means that the model chosen is a fixed effect. From the results of the testing that has been done, the model chosen is a fixed effect model.

Model Testing

Regression model in this study using a fixed effect model. The results of the regression can be seen in Table 7.

Table 7 Regression result

Variable	Coefficient	Std. Error	t-Statistic	Prob.	VIF
BIDASK	-0.031205	0.163983	-0.190292	0.8491	1,089
DEPTH	0.000843	0.000694	1.214284	0.2250	1,295
VOLA	0.065118	0.027744	2.347112	0.0191	1,297
VOLU	0.010646	0.001062	10.02915	0.0000	1,117
C	-0.206701	0.019996	-10.33688	0.0000	
R-squared	0.158686		F-statistic		3.34402

* Significant in $\alpha = 5\%$

Regression results indicate that volatility and volume have a significant impact on stock returns, while the bid ask spread and depth does not give effect to stock return. Total cross section (i) and time series (t) respectively are 45 issuers and 20 days. The regression model equation is as follows.

$$R_{it} = -0.206701 - 0.031205\ \text{BIDASK}_{it} + 0.000843\ \text{DEPTH}_{it} + 0.065118\ \textit{VOLATILITAS}_{it} + 0.010646\ \textit{VOLUME}_{it}$$

Interpretation Model

This study uses a fixed effect model which has a value of R square of 15.86 per cent which the independent variables are able to explain the dependent variable amounted to 15.86 percent and the remaining 84.14% is explained by other factors outside the model. Also based on the results of the test simultaneously, the probability of F-statistic value is smaller than the value of á by 5 percent. This shows that overall the independent variable on the dependent variable has pegaruh, but based on t-test, there are 2 independent variables that significantly affect stock returns are volume and volatility. While the variable bid ask spread and depth no effect on stock returns.

Variable bid ask spread has a probability of 0.8491 to 5 percent á and coefficient -0.031205. These results indicate that the bid ask spread no effect on stock returns. Signs negative coefficient indicates that the inverse relationship between stock returns with the bid ask spread.

These results contrast with research conducted Ammihud and Mendelson (1986) where the bid ask spread is significantly positive effect on stock returns. bid ask spread is even greater, allowing the increase in the stock price is greater. This gives rise to a potential increase in stock returns higher.

Variable depth has a probability of 0.2250 to 5 percent á and coefficient of 0.000843. These results show that the depth had no significant effect on stock returns ,. Signs positive coefficient indicates that the positive relationship between depth with stock return.

These results are consistent with studies conducted Wen et al (2004) which states market depth does not affect the volatility of stock returns. This is due although the depth of the stock is high, if many transactions that match, then the price will move. And the reverse also applies, despite the low depth, if there is no match, the transaction price will not move.

The variable volume has a probability of 0.0191 to 5 percent á and coefficient of 0.065118. These results indicate that a

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significant volume effect on stock returns. Signs positive coefficient indicates that the positive relationship between volume and stock returns.

Pisedtasalasai and Gunasekarage (2007) also obtain similar results, namely the existence of a significant positive relationship between trading volume and stock return. In addition Naka and Oral (2013) also suggests that exhibited significantly relationship between trading volume with stock return volatility.

Volume itself is also a benchmark in technical analysis of a stock. Stock movements are supported by a high volume will confirm trends. Results of this study demonstrate that the significant increase in volume influence the movement of the stock price.

Volatility variable has a probability of 0.0000 to 5 percent á and coefficient of 0.010646. These results indicate that the volatility significant effect on stock returns. Signs positive coefficient indicates that the positive relationship between the volatility of the stock return.

These results are consistent with the results obtained by Adesina (2013) in which volatility affects the return of Nigeria Stock Exchange. High volatility will bring benefits to traders in the capital markets. High volatility generally will make the stock return is also higher. However, high volatility reflects a high risk when experiencing a correction.

GARCH

Volatilities analysis of stock returns listed in LQ45 takes time series data long enough. Time series data used in this calculation is the time series data from the closing share price on January 2, 2013 to December 30, 2014 in order to get 486 data.

ARCH Effects Test

One of the requirements to undertake an analysis of models of the family of ARCH / GARCH to the data is a violation of classical assumptions OLS, which requires a series of data is BLUE (Best Linear Unbiased Estimator). One way to detect such violations is to detect the presence of the ARCH effect on the data series is BLUE (Best Linear Unbiased Estimator). One such violation is detected by detecting the presence of ARCH effects in the series of data used. If there are ARCH effects, then serial data can be analyzed using a model of family ARCH / GARCH.

In Annex 2, it can be seen that not all listed on the stock return LQ45 have observed value of R-Square <5% significance level so that the null hypothesis which states that the remnant is homoskedastisitas cannot be denied. It is concluded that there are no ARCH effect on all stock returns observed that not all return can be observed using GARCH models.

Selection of the Best Model

After ensuring that the data used was stationary and had ARCH effect, then performed simulations formation GARCH models with the best combination order (p, q) the most appropriate. Order simulation in this study combines the value of p = 1,2,3 and the value q = 1,2,3, forming nine GARCH (p, q) for each stock index were observed. After the simulation is done by selecting the best model refers to a model with a value swarchz information criterion (SIC) smallest, obtained models as shown in Appendix 3.

Results of selection models to best describe the 28 issuers volatility observed. On the table shows that there are two patterns of order on issuers were observed. The Order (1.0) shows the current volatility is influenced by residual earlier. The Order (1.1) shows the current volatility is influenced by previous residual and volatility in the

previous period. This shows that the volatility of listed companies in LQ45 respond quickly to any shocks that occur in the market. The cause is listed in LQ45 have higher transaction volumes than the average listed in the Indonesia Stock Exchange. So that any information that volatility will immediately absorbed.

Analyze Simplifying Tick Size Against Trading and Stock Return

Market microstructure is the study of how the rules of the capital market affect outcomes such as return, volatility, liquidity, efficiency, and transaction costs, Frensidy (2011). Research on the microstructure can be grouped into two streams. First, spread models, is a study of how differences in values of two different market structures, and examine the determinants of the size of the bid-ask spread. Second, price formation models, is a study of how the relationship between trade size, trading volume and price level.

On the theory, Indonesia Stock Exchange evaluating the trading system by issuing new regulations to improve liquidity and lower volatility. Indonesia Stock Exchange's decision to change the tick size in the beginning of 2014 has brought changes to the stock trading at the Indonesian Stock Exchange. This was shown by the significant change in some variable micro-structure of the market. Variable bid ask spread, depth and volume underwent significant changes. These three variables represent liquidity in stock trading. It can be concluded that the fractional change affecting trading liquidity. These results are consistent with the theory of price formation on the market microstructure models. In the theory explained if the regulatory changes can have an impact on liquidity. As for the volatility variable, did not experience significant changes. The results showed changes in tick size has no influence on volatility.

The research results obtained variable volume interesting findings. At the beginning of writing, the author revealed the fact that the volume of transactions on the Stock Exchange Indonesia during 2014 fell by 1.17 percent. However, the results of this study, the average volume of issuers listed in LQ45 increased after a change faction. These results are consistent with the expectations of the Indonesia Stock Exchange where simplification tick size will make the match happen faster order so that trade becomes more liquid. This phenomenon is similar to the findings of Hameed and Terry (1998). They found a reduction of tick size will increase if the trading volume of the shares traded. In this case the issuer are included in the LQ45 an issuer whose shares are frequently traded.

Effect of changes in tick size for trading has continued effect on investors. The changes in market microstructure are causing changes in stock returns. This is indicated by the results of this study which of the four variables micro market structure, there are two variables that have a significant effect. Regression models were used did have an R-square of 15.84%. However, it is reasonable, because the issuer's fundamentals and macroeconomic factors are usually dominant into effect for stock returns. However, the result is significant by F test This suggests that there are at least one micro variables affect market structure is also to stock returns.

Based on the value of the t test, significant variable is volume and volatility. This shows that stock returns are affected volume and volatilities significantly. These results suggest the theory of market microstructure where volume and volatility as part of a component of market microstructure has an influence on price movements in this case is the stock return. These findings reinforce the notion that

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regulatory changes made will have an impact to investors. In this case the interest of investors that affects stock returns.

In addition, researchers also conducted research with GARCH modeling to look at the risk of the issuer's shares is listed in LQ45. Seen from the processing of all listed companies have no ARCH effect. This means that most of issuers are not affected to the residual volatility in the previous period. In addition to issuers who have ARCH effect. Order of the best models also remained in period t-1. This indicates issuers in LQ45 have the ability to absorb information quickly. Based on research Ajireswara (2014) index of developed countries has a small order so visible in the market's ability to interpret information faster. These results can be used as the assumption of simplification tick size information can be directly absorbed and have an effect to stock return. There is a difference of risk between issuers who have effect with non-ARCH. GARCH modeling is able to eliminate the residuals from the previous period that had an average lower risk.

CONCLUSION

Tick size simplification significantly influences the trading liquidity as indicated by the variable bid ask spread, depth and volume. Tick size simplification significantly negative to variable bid ask spread and significantly positive to variable depth and volume. Tick size simplification did not affect to variable volatility.

Simultaneously testing is known that bid ask spread, depth, volume and volatility have a significant impact on stock returns. Partial test of the four independent variables in this research are known that there are two variables that have a significant influence on stock returns, which are variable volume and volatility. While the variable bid ask spread and depth no effect on stock returns.

Volatility of stock returns issuers listed in LQ45 portion has ARCH effect. This shows that the volatility of stock returns is still influenced by residual earlier period. However, the order on the best model tends to be small so that it demonstrates the ability of the issuer's shares LQ45 are quick in absorbing information.

Because of the limitations in this study, the suggestions for future development that could be recommended as a method of analysis may use different analytical tools such as Wilcoxon test. In addition samples that are used can be separated based on specified sector. Moreover, it can also use the stocks with low liquidity in order to see the effects in detail to all the components of the capital market.

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APPENDIX

Appendix 1 Stationary test data return

No	Company	ADF t-stat	Critical Values (5%)	Conclusion
1	AALI.JK	-18.95696	-2.867279	Stationary at level
2	ADRO.JK	-21.53526	-2.867279	Stationary at level
3	AKRA.JK	-13.31885	-2.867329	Stationary at level
4	ASII.JK	-22.15714	-2.867279	Stationary at level
5	ASRI.JK	-21.23012	-2.867279	Stationary at level
6	BBCA.JK	-22.81369	-2.867279	Stationary at level
7	BBNI.JK	-20.97254	-2.867279	Stationary at level
8	BBRI.JK	-16.69504	-2.867292	Stationary at level
9	BBTN.JK	-21.42356	-2.867279	Stationary at level
10	BDMN.JK	-23.72102	-2.867279	Stationary at level
11	BHIT.JK	-21.09731	-2.867279	Stationary at level
12	BKSL.JK	-19.91157	-2.867279	Stationary at level
13	BMRI.JK	-21.19341	-2.867279	Stationary at level
14	BMTR.JK	-19.33077	-2.867279	Stationary at level
15	BSDE.JK	-22.18221	-2.867279	Stationary at level
16	BUMI.JK	-21.92242	-2.867279	Stationary at level
17	BWPT.JK	-16.22136	-2.867279	Stationary at level
18	CPIN.JK	-22.06689	-2.867279	Stationary at level
19	EXCL.JK	-24.78248	-2.867279	Stationary at level
20	GGRM.JK	-18.36211	-2.867279	Stationary at level
21	HRUM.JK	-21.79789	-2.867279	Stationary at level
22	ICBP.JK	-22.89412	-2.867279	Stationary at level
23	IMAS.JK	-23.74863	-2.867279	Stationary at level
24	INCO.JK	-20.31946	-2.867279	Stationary at level
25	INDF.JK	-21.74224	-2.867279	Stationary at level
26	INTP.JK	-17.97269	-2.867292	Stationary at level
27	ITMG.JK	-13.07531	-2.867292	Stationary at level
28	JSMR.JK	-22.75972	-2.867279	Stationary at level
29	KLBF.JK	-22.97017	-2.867279	Stationary at level
30	LPKR.JK	-18.71655	-2.867279	Stationary at level
31	LSIP.JK	-20.58542	-2.867279	Stationary at level
32	MAIN.JK	-20.33046	-2.867279	Stationary at level
33	MAPI.JK	-21.64357	-2.867279	Stationary at level
34	MLPL.JK	-19.74067	-2.867279	Stationary at level
35	MNCN.JK	-22.58702	-2.867279	Stationary at level
36	PGAS.JK	-15.89191	-2.867304	Stationary at level
37	PTBA.JK	-21.32252	-2.867279	Stationary at level
38	PWON.JK	-22.84041	-2.867279	Stationary at level
39	SMCB.JK	-21.67753	-2.867279	Stationary at level
40	SMGR.JK	-20.96541	-2.867279	Stationary at level

41	SSIA.JK	-21.03193	-2.867279	Stationary at level
42	TLKM.JK	-17.91205	-2.867292	Stationary at level
43	UNTR.JK	-23.52029	-2.867279	Stationary at level
44	UNVR.JK	-18.037	-2.867292	Stationary at level
45	WIKA.JK	-22.64338	-2.867279	Stationary at level

Appendix 2 ARCH effect test

No	Company	obs R-Square	Conclusion
1	AALI.JK	0.0099	ARCH effect
2	ADRO.JK	0.7145	No ARCH effect
3	AKRA.JK	0.0008	ARCH effect
4	ASII.JK	0.3066	No ARCH effect
5	ASRI.JK	0.0107	ARCH effect
6	BBCA.JK	0.0012	ARCH effect
7	BBNI.JK	0.0007	ARCH effect
8	BBRI.JK	0.0005	ARCH effect
9	BBTN.JK	0.4383	No ARCH effect
10	BDMN.JK	0.0002	ARCH effect
11	BHIT.JK	0.2383	No ARCH effect
12	BKSL.JK	0.2069	No ARCH effect
13	BMRI.JK	0.1176	No ARCH effect
14	BMTR.JK	0.2556	No ARCH effect
15	BSDE.JK	0.0007	ARCH effect
16	BUMI.JK	0.6390	No ARCH effect
17	BWPT.JK	0.0000	ARCH effect
18	CPIN.JK	0.0000	ARCH effect
19	EXCL.JK	0.1120	No ARCH effect
20	GGRM.JK	0.0183	ARCH effect
21	HRUM.JK	0.4690	No ARCH effect
22	ICBP.JK	0.0012	ARCH effect
23	IMAS.JK	0.0000	ARCH effect
24	INCO.JK	0.2697	No ARCH effect
25	INDF.JK	0.0004	ARCH effect
26	INTP.JK	0.0001	ARCH effect
27	ITMG.JK	0.6005	No ARCH effect
28	JSMR.JK	0.0030	ARCH effect
29	KLBF.JK	0.0000	ARCH effect
30	LPKR.JK	0.2839	No ARCH effect
31	LSIP.JK	0.9004	No ARCH effect
32	MAIN.JK	0.0534	No ARCH effect
33	MAPI.JK	0.0001	ARCH effect
34	MLPL.JK	0.0393	ARCH effect
35	MNCN.JK	0.0011	ARCH effect
36	PGAS.JK	0.0000	ARCH effect

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37	PTBA.JK	0.6022	No ARCH effect
38	PWON.JK	0.0050	ARCH effect
39	SMCB.JK	0.0001	ARCH effect
40	SMGR.JK	0.0061	ARCH effect
41	SSIA.JK	0.0005	ARCH effect
42	TLKM.JK	0.0000	ARCH effect
43	UNTR.JK	0.0000	ARCH effect
44	UNVR.JK	0.0818	No ARCH effect
45	WIKA.JK	0.0210	ARCH effect

Appendix 3 Selection of the best model

No	Company	Ordo	obs R-Square	Conclusion
1	AALI.JK	(1,1)	0.0926	No ARCH effect
2	AKRA.JK	(1,1)	0.9489	No ARCH effect
3	ASRI.JK	(1,1)	0.7127	No ARCH effect
4	BBCA.JK	(1,1)	0.1814	No ARCH effect
5	BBNI.JK	(1,1)	0.5773	No ARCH effect
6	BBRI.JK	(1,1)	0.1494	No ARCH effect
7	BDMN.JK	(1,1)	0.7981	No ARCH effect
8	BSDE.JK	(1,1)	0.4249	No ARCH effect
9	BWPT.JK	(1,1)	0.2389	No ARCH effect
10	CPIN.JK	(1,1)	0.9652	No ARCH effect
11	GGRM.JK	(1,0)	0.7208	No ARCH effect
12	ICBP.JK	(1,1)	0.6153	No ARCH effect
13	IMAS.JK	(1,1)	0.4536	No ARCH effect
14	INDF.JK	(1,0)	0.5777	No ARCH effect
15	INTP.JK	(1,0)	0.9301	No ARCH effect
16	JSMR.JK	(1,1)	0.3783	No ARCH effect
17	KLBF.JK	(1,1)	0.7338	No ARCH effect
18	MAPI.JK	(1,1)	0.1139	No ARCH effect
19	MLPL.JK	(1,1)	0.6489	No ARCH effect
20	MNCN.JK	(1,0)	0.4609	No ARCH effect
21	PGAS.JK	(1,1)	0.9857	No ARCH effect
22	PWON.JK	(1,1)	0.637	No ARCH effect
23	SMCB.JK	(1,1)	0.9176	No ARCH effect
24	SMGR.JK	(1,1)	0.6943	No ARCH effect
25	SSIA.JK	(1,1)	0.8001	No ARCH effect
26	TLKM.JK	(1,1)	0.064	No ARCH effect
27	UNTR.JK	(1,1)	0.9172	No ARCH effect
28	WIKA.JK	(1,1)	0.9416	No ARCH effect