

PRICE FRACTION CHANGES IMPACT ON STOCK TRADING INDICATORS: AN EVENTS STUDY ON INDONESIA STOCK EXCHANGE

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ABSTRACT

This research presented differences of stock price fraction system to stock trading indicator variables such as volume, value, and frequency of stock trading transactions on companies listed in Indonesia Stock Exchange. The purpose of this research was to measure and analyze the difference of stock price fraction system to stock trading indicator variables. Sample determination based on the sampling method was saturated, i.e., the technique of determining the sample by using all members of the population as a sample. The sample in this research used JCI data as it represents the 115 issuers listed on the Indonesia Stock Exchange during the research period. This research used Mann-Whitney U Test to find out whether there were differences between two groups of data that were not related (independent) with the classification; group 1 was the volume data, the value and frequency of stock trading before the new price fraction that was applied 02 May 2016. While the second group data volume, value and frequency of stock trading after applying the new price fraction 02 May 2016. This research finds that the stock trading indicators reflected by the trading volume of stocks, the value of the stock, and the frequency of stock trading has a significant difference before and after the implementation of the new stock price fraction.

Keywords: stock price fraction, stock trading volume, trading value of stock, frequency of trading of shares, Indonesia Stock Exchange

INTRODUCTION

As one of the emerging stock exchanges, transactions in the Indonesian stock exchange are growing very rapidly and can be reduced from growth rates such as stock trading volume, sales volume, and frequency. In order to remain fair and effective, rules are needed to support stock trading. One of the rules of implementation is the highest price (management measure). The stock market in Indonesia uses the price used in the new price list, namely the price category. When shares are traded in the capital market, minimum steps are needed to determine the stock price. Quotation rules are determined by the stock exchange so that the exchange can be changed. The main objective of the Indonesian stock exchange to cut share price is to attract investors to buy shares and increase liquidity.

Indonesia Stock Exchange (IDX) makes changes to the fraction of stock price effective dated May 2nd, 2016. IDX reviews stock price groups and price fractions that are considered more appropriate to the needs of both retail and institutional investors so that it is expected to have an impact in increasing the value and volume of transactions. In a competitive market, a reduction in tick size will lead to a fall in bid-ask spreads, as investors are able to place orders with tighter spreads. The reduction of the font size is particularly important for stocks whose spread is limited in advance by the mark and where the relative size is too large. Even shares that are not restricted by the brand, however, can also experience a reduction in the spread when investors place orders at prices that are previously unavailable. The

reduction in tick size provides a natural environment for experimentation. In most research, the impact on liquidity is measured by the bid-ask spreads and the depth of the quote. Tick size affects the market quality because it limits the prices that traders can offer and reduces price competition.

The price fraction known as tick size is the minimum unit size in a stock transaction. Previously the price fraction consists of three price groups, i.e. < 500, then 500 to < 5000, and \geq 5000. It is now revised to five price groups, i.e. < 200, then 200 to < 500, then 500 to < 2000, then 2000 to < 5000 and last \geq 5000. Detailed information of price fraction changes along with their maximum changes that can be seen in Table 1. As an illustration, when using a fraction of the old price, then the stock price group is below 500, the stock price is 400 for example. When the stock price rises 1 point or Rp 1,- then the profit earned trader by 0,25%. Meanwhile, when using the new price fraction, the price increase of 1 point shares becomes Rp 2,- so the profit earned by trader doubled to 0,50%. The adjustment of the new price element, which is based on a specific price range, is directed at several stocks in order to take into account the different price ranges.

Table 1 Changes in Stock Price Fraction

Before		
Price Group	Price Fraction	Max Changes
< IDR500	IDR 1	IDR 20
IDR500 < IDR 5000	IDR 5	IDR 100
\geq IDR 5000	IDR 25	IDR 500
After		
Price Group	Price Fraction	Max Changes
< IDR200	IDR 1	IDR 20
IDR200 < IDR 500	IDR 2	IDR 20
IDR500 < IDR 2000	IDR 5	IDR 50
IDR2000 < IDR 5000	IDR 5 10	IDR 100
\geq IDR 5000	IDR 25	IDR 250

Source: Indonesia Stock Exchange

This research aims to determine the impact of changes in price fraction or tick size set by the IDX on May 2nd, 2016, against stock trading indicators, namely volume, value, and frequency of stock trading transactions. Reducing the tick size can lead to lower transaction costs and increased market liquidity. Information is a fundamental requirement for investors to make decisions. This decision indicates the choice of the most profitable investment portfolio with a particular risk. However, overestimation of tick size is irrational and expensive. It is not suitable for all stocks. On the other hand, stocks with relative graduation marks and different trading volumes are affected by a decrease in tick size. Does the change in price fraction that has been set resulted in a significant change in the volume, value, and frequency of stock trading transactions on the Indonesia Stock Exchange?

This research is an event study to see market reactions measured by stock trading volume, number of transactions, and frequency of stock trading to announce changes in the stock price fraction. This survey describes the events of empirical research methods that enable financial analysts to assess the impact of certain events on the company's stock price. Rising equity prices are a reflection of stock price fluctuations that change every second. Equity prices tend to rise and will create capital gains. However, stock prices are influenced not only by internal but also external factors. There are three forms of capital markets and weak situations, where efficiency is expensive; prices reflect all information available at the time of the last record price. Semi-strong efficiency of the model where there are prices; prices not only on past prices but all information published. An efficiency is a strong form, not a situation where prices reflect the information display, but information can be obtained from the analysis and economic basis of the company.

Several previous researches have shown that the minimum tick size has an important role in market quality. The decline in the price fraction has resulted in declining trading volume (Goldstein & Kavajecz, 1998); (Ascioglu, Comerton-Forde, & McNish, 2010). Then Wu, Krehbiel, and Brorsen (2011) have examined the decrease of tick size on the New York Stock Exchange against the trading volume and transaction costs. Using models derived from high and low partial price changes, large volumes of low levels, low 1997 and 2001 have been reported on the New York Stock Exchange. Because the stock prices were high and low in 1997 the amount varied from the eighth dollar to sixteenth dollar. Improved differentiation is the most ineffective for transactions, even for the size of transactions, but in 2001 it was the most ineffective. The effects of partial sub-prices were generally positive because of high volume, low volume but not a statistically significant part. Research by Chang (2014) on the New Zealand Stock Exchange has shown that the minimum tick size is positively correlated with trading volume. Research by Chien (2014) uses the Taiwan Stock Exchange data (TWSE) that shows the influence of the price reduction on the content of the command line is checked. The empirical results show that the marginal order book is informative. It shows a reduction in the price fraction impacted by reducing information from the order book. O'Hara, Saar, & Zhong (2013) have suggested that raising the minimum tick size can result in high trading frequency.

Empirical research by Ekaputra and Asikin (2012) on the Indonesia Stock Exchange shows an increase in the volume of trade transactions after the introduction of new price fraction rules. While the research by Satriari (2009) on the Indonesia Stock Exchange shows a significant difference between the new stock price fraction system against bid-ask spread and depth and the trading volume for ten days from the introduction of new price fraction policy. However, there is also research that is showing there is no significant change in trading volume on the reduction of tick size, by Pavabutr and Prangwattananon (2009) at the Thailand Stock Exchange (SET). This is supported by the results of the research Andriyani (2014) which shows that there is no evidence of average trading volume difference around the lot quotas change period.

The Indonesia Stock Exchange Regulation Number II-A concerning Equity Securities Trading (Bursa Efek Indonesia, 2013) provides the definition of price fraction is the unit of price change used in conducting a selling offer or a purchase request. The impact of price fraction changes has attracted the attention of many practitioners, researchers, and policymakers. The research of the effects of tick sizes is generally concerned with changes in measures of market liquidity such as bid-ask spreads, depth, and trading volume. The previous literature focuses more on the impact of the decline in price fractions on market quality. The results show the smaller the price fraction, the narrower the spread or the depth and the depth the more shallow.

According to Porter and Weaver (1997), the decrease in the price fraction can theoretically have a positive or negative impact. Volatility can then increase, the depth decreases, many transactions are null, and trade volume decreases and this will increase the price variation. While the maximum change is the maximum multiplier of price changes, not the maximum daily price range limits. Benefits that can be obtained by the market from price fraction changes are more alternatives to price options, lower order queues, increase the potential for transactions, facilitate investors to manage risk, share price movements become smoother, increase market depth and minimize market impact.

Some of the previous empirical evidence of change in price share in terms of price, bid, depth, and volume differences show different results. Several previous pieces of research have shown a change in price fraction and trading unit able to increase stock liquidity. Satriari (2009) proves that there is a negative effect between the price fraction and the trading volume, where the lower the stock price fraction, the higher the trade volume. The research by Susanto (2014) has said that there is an increase in the average trading volume after the regulatory changes in price fractions and trading units. This proves that the new price fraction can increase stock liquidity. Chandra (2015) has tested the level of liquidity of shares on the Indonesia Stock Exchange. The results show that turnover has increased,

indicating the market is getting more liquid. The conclusion all of the previous researches that have been explained can be seen in Table 2.

Table 2 State of The Art

No	Year	Researchers	Research Problems	Findings	Publisher	Related Variables
1	2009	Satiari	Measuring and analyzing the difference of stock price fraction system to bid-ask spread, depth, and trading volume	Showing a significant difference against bid-ask spreads, depths and trading volumes since the recent facton fraction	Thesis at Diponegoro University	Price fraction and trading volume
2	2010	Ascioglu, Comerton-Forde, & McInish	Examining the trade-off between transaction costs and provision by examining the proportion of time that the quoted spread equals the minimum tick size	Finding that trade size, the number of trades, and price are the most important determinants of whether the minimum tick size is a binding constraint	Japan and the World Economy	Tick size
3	2011	Wu, Krehbiel, & Brorsen	Investigating the impact of changes in tick size on transaction costs of different size trades	Tick size reduction does reduce liquidity costs for most stocks, it does not do so for all stocks	International Journal of Economics and Finance	Tick size and trading volume
4	2012	Ekaputra & Asikin	Investigating the impact of tick size reduction on stock price efficiency and execution cost	Finding the new tick policy significantly improves small caps price efficiency and partially reduces execution cost	Asian Academy of Management Journal of Accounting and Finance	Tick size
5	2013	O'Hara, Saar, & Zhong	Examining how the relative tick size influences market liquidity and the biodiversity of trader interactions	Finding that a larger relative tick size benefits High-Frequency Trading (HFT) firms that make markets on the NYSE: they leave orders in the book longer, trade more aggressively, and have higher profit margins	Working Papers	Tick size and liquidity
6	2014	Chang	New Zealand stock market is less liquid than other markets, buying and selling stocks is costly in New Zealand stock market	Strong evidence shows that there is a relation between the market liquidity and company size	Dissertation submitted to Auckland University of Technology	Tick size and liquidity
7	2014	Chien	Examining the impact of a reduction in tick size on the information content of the order book by using data from the Taiwan Stock Exchange	Results indicate that a reduction in tick size will decrease the information content of the order book and the decrease in the information content of the order book is positively related to the thinner order book.	Managerial Finance	Tick size
8	2015	Chandra	To know the effect of price fraction and trading unit changes on the liquidity of Indonesia Stock Exchange.	Showing a significant difference from all liquidity indicators used. This indicates the market is getting more liquid.	Finesta	Price Fraction

Information is a factor that gives meaning to recipients, especially from a decision point of view. Information is needed to determine the state of the company that sells security and behavior of the company's securities on the exchange. It is fundamentally about other factors that can affect the circumstances and prospects of the company in the future, such as the company, the same general industry situation, and changes in government regulations. Information about technical factors; this information reflects the status of securities trading, exchange rate fluctuations, transaction volume, and so on. This information is very important to determine when investors need to buy, sell, or exchange shares to get maximum profit. Information about environmental factors such as economics, politics, security is also important because this information can affect the company's prospects and the development of fundamental securities and technology trade, it is necessary to notify investors and securities brokers.

The problem in this research is whether the change in the fraction of the predetermined price produces a significant change in the volume, value, and frequency of the stock trading on the Indonesian Stock Exchange. Based on that description, to obtain the empirical results from this research, the hypothesis proposed in the research are:

- H1: There is a significant influence of price fraction changes on stock trading volume in Indonesia Stock Exchange.
- H2: There is a significant influence of price fraction changes on the value of stock trading in Indonesia Stock Exchange.
- H3: There is a significant influence of price fraction changes on the frequency of stock trading on the Indonesia Stock Exchange.

In testing the hypothesis, it uses SPSS program version 21, done by using numbers of significance. Decisions obtain using criteria if the significance of the results of research $< 0,05$ then H1, H2, and H3 accepted.

METHODS

This research is conducted on all shares of companies listed in Indonesia Stock Exchange. The type of data used is quantitative data. The population in this research is data on the volume, value, and frequency of trading of shares in the Indonesia Stock Exchange, with a sample of 15 trading days before and 15 trading days after the implementation of the new price fraction starting from April 11, 2016, to May 25, 2016. The date of entry into force of the new price fraction is May 2, 2016. The data sources used are secondary data obtained from the Indonesia Stock Exchange website; www.idx.co.id.

Before testing hypotheses, the first normality test to guarantee data is done; the amount of data, the value, and frequency of transactions in the period before and after the application of a new part of the price that is usually distributed. The normality test serves to ascertain whether the data has been normally distributed or not. Testing of data normality by using the Kolmogorov - Smirnov test method. The basis of decision making uses a value of significance if the value of significance (Sig.) Or the probability value $< 0,05$, then the distribution is not normal. Conversely, if the value of significance (Sig.) Or probability value $> 0,05$, then the distribution is normal. Mann-Whitney U test is conducted to find out whether there are differences between two groups of data that are not related (independent) with the classification. Group 1 is the volume data, the value, and frequency of stock trading before the application of new price fraction 02 May 2016; while group 2 is volume data, the value and frequency of stock trading after the application of the new price fraction of 02 May 2016. The basis of decision-making uses the value of significance, If probability $> 0,05$, H0 is accepted, ie the two groups do not differ significantly, and if the probability $< 0,05$, H0 is rejected both groups differed significantly.

RESULTS AND DISCUSSIONS

To perform data analysis, it is performed data processing using SPSS software version 21. The results of processing output become the material analysis to formulate results and recommendations from the research. Before performing the hypothesis test, a normality test is performed to ensure the data - volume, value, and frequency of trading, in the period before and after the implementation of the newly distributed price fraction. The result of the normality test using the Kolmogorov-Smirnov method is shown in Table 3. Trading volume data, transaction value, and frequency of normal distributed trade, where the three values of significance are above 0,05 that is 0,181, value 0,200, and frequency 0,074.

Table 3 Normality Test Results

Kolmogorov-Smirnov ^a			
	Statistic	df	Sig
Volume	0,134	30	0,181
Vakue	0,131	30	0,200*
Frequency	0,152	30	0,074

*. This is a lower bound of the true significance
a. Lilliefors Significance Correction

Table 4 Mann - Whitney U Test Results

Ranks				
	Information	N	Mean Rank	Sum of Ranks
Volume	Before	15	19,53	293,00
	After	15	11,47	172,00
	Total	30		
Value	Before	15	19,60	294,00
	After	15	11,40	171,00
	Total	30		
Frequency	Before	15	20,93	314,00
	After	15	10,07	151,00
	Total	30		

Test Statistics ^a			
	Volume	Value	Frequency
Mann-Whitney U	52.000	51.000	31.000
Wilcoxon W	172.000	171.000	151.000
Z	-2,509	-2,551	-3,380
Asymp. Sig. (2-tailed)	0,012	0,011	0,001
Exact Sig. [2*(1-tailed Sig)]	0,011 ^b	0,010 ^b	0,000 ^b

a. Grouping Variable: Remarks

b. Not corrected for ties

The hypothesis test is then conducted to determine whether there are differences between the three indicators between before and after the new stock price fraction is applied. The results of the data using the Mann - Whitney U test in Table 4 indicates significance value or Asymp. Sig. (2 - tailed) for stock trading volume is $0,012 < 0,05$. Thus, stock trading indicators reflected by the trading volume of stocks have significant differences before and after the implementation of the new stock price fraction. The value of significance or Asymp. Sig. (2 - tailed) for the value of stock trading is $0,011 < 0,05$ thus the stock trading indicator which is reflected by the value of stock trading has a significant difference

before and after the implementation of the new stock price fraction. The value of significance or Asymp. Sig. (2 - tailed) for the trading frequency of the stock is $0,001 < 0,05$. Thus the stock trading indicator which is reflected by the frequency of stock trading has a significant difference before and after the implementation of the new stock price fraction.

CONCLUSIONS

Based on the results of data analysis and discussion conducted in the previous section, it can be concluded that the application of new price fraction on May 2, 2016, has a significant effect on the volume of stock trading. This gives an idea of the application of the new price fraction affects the number of shares transacted. Stock trading indicators reflected by the trading volume of stocks have significant differences before and after the implementation of the new stock price fraction. The application of the stock price fraction also significantly influences the stock trading value, reflecting the change in the number of funds transacted due to changes in the stock price fraction.

Implementation of stock price fraction also significantly influences the frequency of stock trading. This reflects the change in the number of transactions made by investors in the capital market in relation to the change of stock price fraction. The stock trading indicator which is reflected by the value of stock trading has a significant difference before and after the implementation of the new stock price fraction. Stock markets decide to reduce the tick size based on the price even the trading activity. The stock trading indicator which is reflected by the frequency of stock trading has a significant difference before and after the implementation of the new stock price fraction. This change suggests that the stock market managements believe that there is merit in the reduction. It can make the market more competitive.

Suggestions for further research may use a variable volume, value, and frequency of trades are calculated based on the activity of foreign investors, but it can also examine other variables such as the Composite Stock Price Index. Further research may also add another research variable to cover the wider liquidity aspect, and it is suggested to examine the variables that give a more dominant effect to the change of price fraction and trading unit.

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