

# TRADING VOLUME ACTIVITY AND BID-ASK SPREAD BEFORE AND AFTER THE MERGER ANNOUNCEMENT

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## Abstract

*Jakarta stock exchange (JSX) and Surabaya Stock exchange (SSX) were the organizers of capital market in Indonesia. Thus, to strengthen the capital market in Indonesia SSX merged into JSX on November 30<sup>th</sup>, 2007. New information coming into market would influence the trading activities, including trading volume activity (TVA), and bid-ask spread. While, merger also influenced the total issuer of listed companies in Indonesia stock exchange (IDX). This research included an event study with quantitative method about the analysis of total issuer differences, TVA and bid-ask spread before and after the merger announcement of SSX into JSX. It used t-test method and autoregressive distribution lag test. The result of research analysis showed the difference, significance and insignificance. Based on t-test, the total issuer, TVA, and bid-ask spread were not significant before and after the merger announcement of SSX into JSX shown by the higher value of sig.2 tailed than level of significance and value of standard deviation before the merger announcement of SSX into JSX from each variable. Based on autoregressive distribution lag test, it showed significant response by high trading volume of TVA and bid-ask spread and also high volume of buy-offer investor did on several days of windows period before and after the merger announcement of SSX into JSX.*

**Key words:** *merger announcement, trading volume activity, issuer, bid-ask spread*

Information good and bad news of stock market has an important roles to influence different kinds of trade transactions. The investors will analyze the information which goes into stock market or bourse to protect their investments from risk and unpredictable market. Information or announcement which was published by issuers is also notices from investors to make decision on selecting effectively available portofolios.

When new information which is relevant goes into market and has corelated to the values of as-

sets, those will be used to analyze and interpret the value of related assets. Investors of stock market will evaluate every information that is pulished by issuer (company), and it causes some changes in stock trading transaction, for examples change of volume, stock price, bid/ask spread, proportion of ownership, and etc.

Informations which goes into a capital market contains effective information and the investor reacts to it. The information is called effective when it can influence transactions mainly on stock prices.

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## Trading Volume Activity and Bid-ask Spread Before and After the Merger Announcement of SSX Into JSX

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This theory is supported some researches aimed to test the content of information in stock markets. One of them is Istanti (2007), who has done a research on the analysis of differences of abnormal return and stock trading volume activity before and after earthquake in Jogjakarta, 27th May 2006. The result indicates that earthquake was not a significant influence in market shown by average of abnormal return of insurance industries which are constant before and after the disaster. In addition, the higher trading volume activity was achieved before the disaster.

Hitt (2002) found some high acquisition performance, such as Citigroup, merging travelers and Citicorp in 1998. This company has performed 75% higher than Standart and Poor (S&P) 500. Based on this result, merger can be an alternative in business development. George & Longstaff (1993) examine the cross-sectional distribution of bid-ask spreads in the S&P 100 index options market. Abhyankar, et al. (1997) examined the intra-day variation in the inside bid-ask spread, trading volume and volatility for a sample of 8, 235 stocks traded on the London Stock Exchange during the first quarter of 1990. Foster & Viswanathan (1990), Gerety & Mulherin (1992) also observe a u-shaped pattern in the intra-day volume, and Minardi et al. (2006).

Chan, et al. (1993) find that the inside spread, for the NASDAQ stocks, attains its highest level immediately following the opening of the market, declining steadily thereafter and then narrows abruptly during the last hour of trading. They also observe that intraday variations in volume shows string evidence of a U-shape. Finally, they report that volatility is high at the open, declining thereafter with a slight rise at the close. Hamao & Harsbrouck (1993) find, for stocks traded on the Toronto Stock Exchange, that the mean-squared return and the bid-ask spread tend to be higher at the beginning and the end of the trading day. They also observe that intra-day trading volume is higher at the beginning and the end of each of the two trading session during the day. Niemayer &

Sandas (1993) and Aitken, Brown & Walter (1993) provide similar evidence of intra-day regularities on the Stockholm and the Australian SEATS trading system. Another researcher about bid-ask spread and trading volume activity are Ascioğlu, McInishand, & Wood (2002), Wang & Yau (2000), Amarwati (2008), Chung & Kim (2009), Gregoriou, Loannidis, & Skerratt (2005), Hussain (2011), and Nyonna (2009).

Merger not always has positive impact –but negative impact too, to the performance of company. This theory is supported by CommScan LLC, which showed that big merger is not guarantee of success. CommScan in Hitt (2002), research on the biggest value of stock from 15th acquisition along 1995-1999. The average of the result is the target company which merge has 9% performance lower than Standart and Poor (S&P) 500. Thus, the respon of consolidation (merger) depends on market condition.

The improvement of the performance of stock market were detected several obstacles which stoped the capital market development such as place transaction, -double transactions- due to two places (bourse), for stock transactions. Listing were done in Jakarta stock exchange (JSX) and for bonds transactions were done in Surabaya stock exchange (SSX). This condition causes the investors to think repeatly to do transactions or listings, considering the cost and time. Based on the phenomen above and through approval shareholders from both bourses as result of Extraordinary General Meeting of Shareholders -held on 30th october 2007- management will merge (synonim: consolidate) both JSX and SSX to become IDX. On 30th November 2007, through the approval of shareholders from both bourses, SSX was consolidated into JSX to become IDX. By merging the volume of listed companies increases, undertake the productive capital market activities and active partisipation in the bourse world. The target list companies in bourse are 150 companies in 2008-2009 or from 346 companies (issuer) to be 500 companies by initial pub-

lic offering (IPO). When the volume of issuer increases, the trading volume activity is influenced too.

The aim of this research is to find out the significant differences of total TVA and bid-ask spread before and after the merger announcement of SSX into JSX.

## METHOD

Seen from the nature of the research problems, this research is classified into research with a quantitative and event study approach. Data in this research, secondary data, are obtained or collected from document, report, and other relevant files. Secondary data are also in pictures and statistical data form. This research uses the stock daily prices, stock volume of trading activities, bid-ask spread and total listed companies which go public by IPO before and after the merger announcement with windows period t-10 and t+10.

The main sample of this research is active stock which traded around the merger announcement of Surabaya stock exchange into Jakarta stock exchange on mining sectors. The sample was selected using a purposive sampling with criteria below: (1) Company with active stock trading (not sleep stock); (2) Sufficient data; (3) Company listing around windows period or on November, 16<sup>th</sup>, 2007 until December, 14<sup>th</sup>, 2007 (t-10 and t+10) to know the different of total listed companies/issuer.

Based on characteristics above, the research sample are 11 companies of mining sectors out of 13 companies available at the list.

Researcher used a statistical inferential method as data analysis, because the research objectives are to test the samples and describe the effect of the merger announcement of SSX into JSX to total listed companies, bid-ask spread and TVA before and after the event. Researcher also uses autoregressive distributed lag and t-test (paired samples t-test) to know the effect of merger SSX into JSX before and after the merger announcement to total listed com-

panies, TVA and bid-ask spread. In data analysis process, researcher using statistical tool namely software SPSS. The formula in below:

### Trading Volume Activity Analysis

#### Sum of TVA individual stock in t period

$$TVA_{it} = \frac{\sum SD_t}{\sum SB_t}$$

Note:

TVA = trading volume activity

$SD_t$  = stock trading in period t

$SB_t$  = stock trading in market in period t

#### Sum average of TVA individual stock around windows period

$$TVA_{i,before} = \frac{\sum TVA_{ii,before}}{10}$$

$$TVA_{i,after} = \frac{\sum TVA_{ii,after}}{10}$$

Note:

$TVA_{ii}$  = trading volume activity on time

$TVA_i$  = average of trading volume activity

#### Sum average of all stocks in mining sectors on windows period

$$TVA_{i,before} = \frac{\sum TVA_{ii,before}}{n}$$

$$TVA_{i,after} = \frac{\sum TVA_{ii,after}}{n}$$

#### Sum of standard deviation of TVA before and after windows period

$$\sigma_{before} = \sqrt{\frac{\sum (TVA_{i,before} - TVA_{i,after})^2}{n-1}}$$

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$$\sigma_{after} = \sqrt{\frac{\sum (TVA_{i,after} - \overline{TVA_{before}})^2}{n-1}}$$

### Bid-ask Spread Analysis

#### Sum of spread of individual stock in t period

$$Spread = \frac{(askprice - bidprice)}{(askprice + bidprice) / 2} \times 100$$

#### Sum average of spread of individual stock along windows period

$$S_{i,before} = \frac{\sum S_{i,before}}{n}$$

$$S_{i,after} = \frac{\sum S_{i,after}}{n}$$

#### Sum spread average of all stocks mining sector around windows period

$$E_{i,before} = \frac{\sum E_{i,before}}{t}$$

$$E_{i,after} = \frac{\sum E_{i,after}}{t}$$

### Listed Companies (Issuer) Analysis

#### Sum average of total listed companies around windows period

$$E_{i,before} = \frac{\sum E_{i,before}}{t}$$

$$E_{i,after} = \frac{\sum E_{i,after}}{t}$$

Note:  $E_i$  = Issuer

#### Sum average of changes of listed companies (issuer) around windows period

$$\sum E_{i,after} = \frac{\sum E_{i,before} + E_{i,after}}{n}$$

### T-test (Paired Sample test)

Partial test or t-test shows how far the influence of one clarifier variable clarifies the dependent variable.

### The Analysis of Autoregressive Distributed Lag

Autoregressive distributed lag method include independent variables of regression to lag of variables on a certain time. Lag means time needed to know the influence a same variable in the past (t-1) or t period, and lag in this research is 10 days.

Autoregressive distributed lag analysis is used to know the specific effect on windows period of Trading volume activity (TVA) and bid-ask spread before and after the merger announcement of Surabaya stock exchange (SSX) into Jakarta stock exchange (JSX), shown from past time (lag) or reach high intensity on which day from windows period.

General pattern of Auto Regressive distributed lag

$$Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + u_t$$

The autoregressive pattern for each variabel, is shown below:

### Autoregressive pattern for trading volume activity before the merger announcement of SSX into JSX:

$$TVA_{t0} = \alpha + \beta_1 TVA_{t-1} + \beta_2 TVA_{t-2} + \beta_3 TVA_{t-3} + \beta_4 TVA_{t-4} + \beta_5 TVA_{t-5} + \beta_6 TVA_{t-6} + \beta_7 TVA_{t-7} + \beta_8 TVA_{t-8} + \beta_9 TVA_{t-9} + \beta_{10} TVA_{t-10}$$

Notes:

TVA = Trading volume activity

TVA<sub>t-1</sub> = TVA on t-1, and also for TVA t-2 etc, shown the 10 day's of TVA before the merger announcement of SSX into JSX.

**Autoregressive pattern of Trading Volume Activity after the merger announcement of SSX into JSX**

$$TVA_{t0} = \alpha + \beta_1 TVA_{t+1} + \beta_2 TVA_{t+2} + \beta_3 TVA_{t+3} + \beta_4 TVA_{t+4} + \beta_5 TVA_{t+5} + \beta_6 TVA_{t+6} + \beta_7 TVA_{t+7} + \beta_8 TVA_{t+8} + \beta_9 TVA_{t+9} + \beta_{10} TVA_{t+10}$$

Notes:

$TVA_{t+1}$  = TVA on t+1, while  $TVA_{t+2}$  etc, shown the 10 days of TVA after the merger announcement of SSX into JSX.

**Autoregressive pattern for Bid-ask Spread before the merger announcement of SSX into JSX:**

$$BAS_{t0} = \alpha + \beta_1 BAS_{t-1} + \beta_2 BAS_{t-2} + \beta_3 BAS_{t-3} + \beta_4 BAS_{t-4} + \beta_5 BAS_{t-5} + \beta_6 BAS_{t-6} + \beta_7 BAS_{t-7} + \beta_8 BAS_{t-8} + \beta_9 BAS_{t-9} + \beta_{10} BAS_{t-10}$$

Notes:

BAS = Bid-ask spread

$BAS_{t-1}$  = Bid-ask spread on t-1, and also for  $BAS_{t-2}$  etc, is shown within the 10 days of bid-ask spread activity before the merger announcement of SSX into JSX.

**Autoregressive pattern for Bid-ask spread after the merger announcement of SSX into JSX**

$$BAS_{t0} = \alpha + \beta_1 BAS_{t+1} + \beta_2 BAS_{t+2} + \beta_3 BAS_{t+3} + \beta_4 BAS_{t+4} + \beta_5 BAS_{t+5} + \beta_6 BAS_{t+6} + \beta_7 BAS_{t+7} + \beta_8 BAS_{t+8} + \beta_9 BAS_{t+9} + \beta_{10} BAS_{t+10}$$

Notes:

$BAS_{t+1}$  = Bid-ask spread on t+1, while  $BAS_{t+2}$  etc, shown the 10 days of bid-ask spread activity after the merger announcement of SSX into JSX.

In autoregressive method, the classic assumptions of regression such as heterocedasticity test, normality test, multicollinearity test, and autocorrelation test is not obtained, because data have correlation each other or time series data. To know the influence of the merger announcement of SSX into JSX to total issuer, descriptive analysis is employed.

**Relevant Theories**  
**Information**

For investors and market players, information provides all kinds of news, notes, predicts or illustrations of economics condition either past, present, now or future for the survive of their companies and their market share. Information has an important meaning for receiver, especially for making decision, therefore, the complete, relevant, accurate, and on time inform is of important need of investor.

Information is managed into another form which has functions to make decisions for investor now or in the future. Some important information on stock market are: information qualities, kinds of information, information velocities, and information volume.

There are three kinds of information which is needed to know the condition and behavior of company offering in bourse. Those are, (1) fundamental information related to the condition of company, public information on a similar scale, other relevant factors and governments rule etc; (2) technical information reflected on equity trade transaction, fluctuated rate of exchange, trade volume, etc; (3) environment information which is covered on economics, politics, and nation safety.

**Market Efficiency**

Efficiency is defined as relatives between equity prices and information. A security market is efficient if security prices fully reflect the available information. An efficient market is one in

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which the price of all securities quickly reflects all available information about sense.

Differentiates market efficiency both internal and external efficiency. External efficiency shows the balance of market. So the stock transaction is done based on the available information in market which gives high return. Whereas, the internal efficiency shows the imitate price, and cheap cost for various types of services which are needed by buyers and sellers. An efficient market has three forms, those are: Weak form efficient market, semi strong form efficient market, and Strong form efficient market

### **Merger**

Merger is fusions of two or more banks which one corporation survives and the others bank disappear with or not liquidation. Merger refers to the absorption of one firm by another. The acquiring firm retains its name and its identity and it acquires all of the assets and liabilities of the acquired firm. After merger the acquired firm ceases to exits as a separate business entity (Ross, 2005). Financial analysts typically classify acquisition (synonym: merger; consolidation) into three types, those are: horizontal acquisition, vertical acquisition, and conglomerate acquisition (Ross, 2005).

In this research, consolidation of SSX into JSX is included in horizontal acquisition (merger) because both of them are similar companies which produce similar products and services, namely trading equities or valuable letters.

### **Trading Volume Activity (TVA)**

Trading volume activity as a part of technical analysis. Trade transaction in the highest volume in bourse predicts as bullish market condition. Increasing the trading volume activity, simultaneously, both prices and trading volume activity predict as bullish market condition too.

Bearish market illustrates as more un-enthusiastic market, low and dominated by seller. It

causes stock prices to decrease. While bullish market illustrated the enthusiastic market, speed movement, and generally market is dominated by buyer or purchase, so the price is moving up. So the trading volume is an indicator to determine when "buy" and "sell" stock with takes benefit from technical and graphical analyst. Fluctuation of trading activity indicates current price trend which suggests change. There are some basic rules about TVA: blow offs and selling climaxes, on balance volume and volume reversal

According to Suryawijaya & Setiawan in Istanti (2007) TVA is measured by notation:

$$TVA = \frac{\text{Total stock trading } i \text{ in period } t}{\text{Total stock in market } i \text{ in period } t}$$

Measurement of trading volume activity shows the capital market reaction to an information with trading volume activity parameter. In other words, trading volume activity illustrates the fluctuation of stocks prices beside market sentiment.

### **Bid-ask Spread**

According to Susanto & Sabardi (2002), bid-ask spread is the difference of bid prices that buyer guess and ask price that seller wants. Bid-ask spread is difference of "buy" and "sell" price in several time.

Spread definition is the difference of pip for open position in "buy" and "sell" price. Lower spread, benefits investors because they do not need big price movement to reach break event point (BEP). Bid-ask spread also indicate the market liquidity. This means, when spread decreases the market liquidity increases, when spread increases, the market liquidity decreases at that time.

Venkatesh & Chiang (1986) show bid-ask spread as asymmetric information measurement for dealer and investor. Bid-ask spread measurement according to Venkatesh & Chiang in Jogiyanto (2005) is as below:

**Table 1. The Result of Paired Two Sample Test (t-test) of TVA Mining Industries Before and After The Merger Announcement of SSX into JSX**

Item	Paired Differences				t	df	Sig.(2tailed)	
	Mean	Std.Dev.	Std Error Mean	95% Confidence Interval of The Difference				
				Lower				Upper
Before_Event After-Event	.2000	.6713	.2024	-.2509	.6510	.988	10	.446

$$\text{Spread} = \frac{(\text{askprice} - \text{bidprice})}{\frac{(\text{askprice} + \text{bidprice})}{2}} \times 100$$

**RESULT**

The change volume of trading activities of mining industries in stock market shows the trading volume activity and investment’s decision of investors. According to Karpoff (1986) in Hastuti & Sudibyo (1998), trade transaction happens when investors have different expectation about public information which goes into market.

The average of TVA around windows periods was concluded in the Table 2.

**Table 2. Average of TVA Mining Industries**

Event Study	Mean
Before the <i>event date</i>	0,2379
After the <i>event date</i>	0,0378

Based on the result of hypothesis, it shows there is no significant difference of trading volume activity before and after the merger announcement of SSX into JSX. It is showed by value of sig.2 tailed and average of trading volume activity, that is lower than the value of significance ( $\alpha = 0.05$ ) and the stagnant average of trading volume activity. So H0 is accepted. No significant influence of merger announcement of SSX into JSX on trading volume activities of mining industries stock indicates that investors interpreted this information as bad information which has not greatly influenced their investment, especially in trading movement. It causes the trading volume activity decrease so the trading

volume activity before the event is higher than after the event. It is showed by the value of average of trading volume activity before the event, 0.2379, and after the event, 0.0378.

Beside as bad information, it is also indicated that investors inclined carefully in transaction, especially buying and offering the stock. Husnan (2005) states, when trading volume activities in high position, it indicates bullish condition. It is further explained that condition on windows periods is called bearish, the investors used wait and see strategy when they do transaction, by waiting new information which goes into capital market to make positive movement in price chart. This strategy was done to save their investment.

While the result of autoregressive test shows that the average of trading volume activity is significantly different before and after the event. The significant movement of trading volume activity just happened several days of windows periods. This result indicates that the investors took positive reaction to this event because they hope to get excess return or abnormal return. Increasing of trading volume activity happened on t-1, t-2, t-3, t-5, t-6 and t-10 with value of sig.2 tailed as 0.000, 0.003, 0.024, 0.026, 0.026 and 0.016. After the event, increasing trading volume activity happened on t+1, t+2, t+4, t+7, and t+10 with value of sig.2 tailed of 0.045, 0.007, 0.031, 0.013 and 0.001. These show that the value of sig.2 tailed test is greater than the value of significance ( $\alpha=0,05$ ).

According to Susanto & Sabardi (2002), bid-ask spread is the difference of bid prices that buyer guess and ask price that seller wants. Change of

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**Table 3. The Result of Paired Two Sample Test (t-test) of Bid-ask Spread Mining Industries Before and After The Merger Announcement**

Item	Paired Differences				t	df	Sig.(2tailed)	
	Mean	Std.Dev.	Std Error Mean	95% Confidence Interval of The Difference				
				Lower				Upper
Before_Event After-Event	2198.00	5309.82	1600.97	-1369.18	5765.18	1.373	10	.200

spread in capital market indicates buy and offer decision of investors.

The average of bid-ask spread around windows periods was concluded in the Table 4.

**Table 4. Average of Bid-ask Spread**

Event Study	Means
Before the event date	6395,64
After the event date	4197,64

Based on the analysis of the result of t-test in bid-ask spread, it shows no significant difference of average bid-ask spread before and after the merger announcement of SSX into JSX. It proved by the value of the average of bid-ask spread before the event greater than after the event as 6395.64 and 4197.64. No significant the difference of the average of bid-ask spread before and after the event was showed by the value of sig.2 tailed of t-test 0.093 and 0.061. These values are greater than value of level significance ( $\alpha=0,05$ ). Thus the average of bid-ask spread both before and after the event was stable.

While the result of autoregressive test of bid-ask spread shows the significant average of bid-ask spread changing before and after the event on several days of windows periods, the high movement price of mining industries before the merger announcement happened on t-4, t-9, and t-10 with the value of sig.2 tailed of 0.009, 0.039 and 0.009. After the event, increasing the average of bid-ask spread happened on t+4, t+9, and t+10 with value of sig.2 tailed of 0.009, 0.039 and 0.009. These value

are smaller than value of significance ( $\alpha=0.05$ ) and it means that  $H_a$  is accepted and  $H_o$  is rejected. It indicates that investors intensively did transaction (buy and offer stock) and it caused the price of mining industries stock to reach the high price in closing price section.

Issuer is one of market players in capital market beside underwriter, broker, intermediary agency, custodian bank, BAPEPAM, and etc. Issuer creates and offers stock to investors to get funding from out source by initial public offering (IPO). Adding or reducing of listed companies in IDX will influence trading activities such trading volume activity, bid-ask spread, return, etc.

Descriptive statistic analysis of issuer shows after the merger announcement of SSX into JSX on 30th, November, 2007, there was 3 listed companies on t+1, t+2, and t+8. Those are from different industries, CSAP from retail industries listed on 12th Desember 2007, JASS from transportation industries listed on 3rd December 2007, and JKON from building construction listed on 4th December 2007. Although in the period after the event, it was found the listed companies but these companies were not from mining industries so it could be concluded that there was no significant difference of issuer before and after the merger announcement of Surabaya Stock Exchange (SSX) into Jakarta Stock exchange (JSX). No significant difference of issuer in windows period was caused by lack of information and socialization from IDX to investors about the advantages of listing and investation in capital market.



## DISCUSSION

In capital market, demand and supply of stock is influenced by the expectation of investors, whether optimistic or pessimistic. When the investors interpret the new information as a good information, purchasing and the trading volume activity of mining industries stock will increase than the supply. In contrast it is, if interpreted as a bad information, purchasing will decrease or move down than the supply and this condition predicts that trading volume activity decreases too.

Based on the result of hypothesis, it shows there is no significant difference of trading volume activity before and after the merger announcement of SSX into JSX. In other words, the trading volume activity is stagnant. It is showed by value of sig.2 tailed and average of trading volume activity, that is lower than the value of significance ( $\pm = 0.05$ ) and the stagnant average of trading volume activity. So  $H_0$  is accepted.

No significant influence of merger announcement of SSX into JSX on trading volume activities of mining industries stock indicates that investors interpreted this information as bad information which has not greatly influenced their investment, especially in trading movement. If the investors interpret it as bad information, it causes the trading volume activity decrease so the trading volume activity before the event is higher than after the event. It is showed by the value of average of trading volume activity before the event, 0.2378857, and after the event, 0.0378229. This finding is consistent with results obtained in other studies; Ascioğlu, McInish, & Wood (2002), Niemayer & Sandas (1993) and Aitken, Brown, & Walter (1993), Istanti (2007), Hamao & Harsbrouck (1993), George & Longstaff (1993), Abhyankar, et al. (1997).

Beside as bad information, it is also indicated that investors inclined carefully in transaction, especially buying and offering the stock. Husnan (2005) states, when trading volume activities in high position, it indicates bullish condition. It is further

explained that condition on windows periods is called bearish, the investors used wait and see strategy when they do transaction, by waiting new information which goes into capital market to make positive movement in price chart. This strategy was done to save their investment.

While the result of autoregressive test shows that the average of trading volume activity is significantly different before and after the event. This movement of trading volume activity shows investor's reaction to new information which goes into capital market. New information here is the merger announcement of SSX into JSX. The significant movement of trading volume activity according to the autoregressive distributed lag test just happened several days of windows periods. This result indicates that the investors took positive reaction to this event because they hope to get excess return or abnormal return.

Increasing of trading volume activity happened on t-1, t-2, t-3, t-5, t-6 and t-10 with value of sig.2 tailed as 0.000, 0.003, 0.024, 0.026, 0.026 and 0.016. After the event, increasing trading volume activity happened on t+1, t+2, t+4, t+7, and t+10 with value of sig.2 tailed of 0.045, 0.007, 0.031, 0.013 and 0.001. These show that the value of sig.2 tailed test is greater than the value of significance ( $\alpha = 0,05$ ).

According to the result of autoregressive test,  $H_a$  is accepted. It means, the merger announcement of SSX into JSX influenced the trading activities (trading volume activity and bid-ask spread) in Indonesia Stock Exchange (IDX) especially mining industries stock in period 2007. Positive responses from the investors are showed by a good performance of mining industries and capital market, now and in the future, to grow more and more. If the capital market has a good performance, directly the economic condition of our nations, without ignoring other reasons, will increase too because of increasing fund the capital market gives to these nations.

Based on the analysis of the result of t-test in bid-ask spread, it shows no significant differ-

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ence of average bid-ask spread before and after the merger announcement of SSX into JSX. It proved by the value of the average of bid-ask spread before the event greater than after the event as 6395.64 and 4197.64.

No significant the difference of the average of bid-ask spread before and after the event was showed by the value of sig.2 tailed of t-test 0.093 and 0.061. These values are greater than value of level significance ( $\alpha=0,05$ ). Thus the average of bid-ask spread both before and after the event was stable.

While the result of autoregressive test of bid-ask spread show s the significant average of bid-ask spread changing before and after the event on several days of windows periods, the high movement price of mining industries before the merger announcement happened on t-4, t-9, and t-10 with the value of sig.2 tailed of 0.009, 0.039 and 0.009. After the event, increasing the average of bid-ask spread happened on t+4, t+9, and t+10 with value of sig.2 tailed of 0.009, 0.039 and 0.009. These value are smaller than value of significance ( $\alpha:0.05$ ) and it means that  $H_a$  is accepted and  $H_0$  is rejected. This finding support obtained by George & Longstaff (1993), Nyonna (2009), and Hussain (2011). This finding does not support obtained by Hamao & Harsbrouck (1993), Chan, et al. (1993), McNish & Ord (1985), Abhyankar, et al. (1997), Minardi, et al. (2006).

Based on result of autoregressive test of bid-ask spread, it shows that bid-ask spread increased on several days of windows periods so it indicates that investors intensively did transaction (buy and offer stock) and it caused the price of mining industries stock to reach the high price in closing price section.

Descriptive statistic analysis of issuer shows after the merger announcement of SSX into JSX on 30th, November, 2007, there was 3 listed companies on t+1, t+2, and t+8. Those are from different industries, CSAP from retail industries listed on

12th Desember 2007, JASS from transportation industries listed on 3nd December 2007, and JKON from building construction listed on 4th December 2007.

Although in the period after the event it was found the listed companies but these companies were not from mining industries so it could be concluded that there was no significant difference of issuer before and after the merger announcement of SSX into JSX. No significant difference of issuer in windows period was caused by lack of information and socialization from IDX to investors about the advantages of listing and investation in capital market.

According to this verse, conclude if new information comes to market or anywhere, verify it before you take action about it otherwise you will be regretfull. In capital market, when new information comes to the market, it will influence the trading volume activities, bid-ask spread, stock price, return, and etc.

The right information in capital market has related with investor's decision and decision is related to return. Besides, right information also influences the strategy to buy and offer stock (bid-ask spread). In trading, the right information is important to make strategy on choosing prospective stock to survival long-term investment.

Based on the Law of capital market (UUPM) about prerequisite of initial public offering or go public, asymetry information was done to avoid obtaining excess return by some investors in trading activities.

## CONCLUSION AND SUGGESTIONS

### Conclusion

The aim of this research is to find out the significant differences of total TVA and bid-ask spread before and after the merger announcement of SSX into JSX. Based on t-test (paired sample test) to TVA and *bid-ask spread* of mining industries, there

was no significant difference of TVA and bid-ask spread before and after the merger announcement of SSX into JSX. The total issuer, both before and after the merger announcement of SSX into JSX was also not significantly different. No significant difference of TVA of mining industries before and after the merger announcement of SSX, was caused by anticipating action of investor. No significant bid-ask spread was caused by applying strategy of wait and see in trading. Thus the capitalization of fund was not different although the price of each industry increase. No significant difference of TVA and *bid-ask spread*. While the reason of no significant difference of total issuer before and after the merger announcement of SSX was shown in the percentage of listed companies that was not significantly different before the merger announcement of SSX into JSX, 0,75% from 395 issuer listed in IDX on 2008. This result was shown that there was unspread information of listing benefits to society so negative affect appeared when the information of the merger announcement of SSX into JSX was released. This research supports Istanti's research was done in 2006 that showed no significant difference of trading volume activity, was founded the average of TVA after the event lower than 10 days before event.

The autoregressive distributed lag test to trading volume activity is shown significantly different before and after the merger announcement of SSX into JSX. TVA was significant on t-1, t-2, t-3, t-5, t-6, and t-10, and after the event happen on t+1, t+2, t+4, t+7, and t+10.

Autoregressive distributed lag result of Bid-ask Spread showed significance, as the merger announcement of SSX into JSX in statistic influenced bid-ask spread shown by the high value of buy and offer stock on several days of windows period. Bid-ask spread autoregressive distributed lag was significant on t-4, t-9 and t-10 that reached the high intensity of bid-ask spread. After the merger announcement of SSX into JSX happened on t+4, t+9 and t+10, spread mining industries stock reached the high volume of bid-ask spread.

## Suggestions

For investor when new information comes to market, do not hurry up to take buy and sell action of some stock because it probably just a speculation action of some investors to get excess return or to spoil price. Besides, the investors always updates price knowledge as a reflection of private information to take technical analysis in trading.

IDX should take intensive socialization to our society or investor about the benefit of listing in IDX to increase fund and surviving company.

This research used autoregressive distributed lag to know the effect of information to TVA or bid-ask spread, it is highly recommendation next research using other test so the result can be compared.

The sample in this research just on mining industries staff, so for next research hoped use all sectors in IDX to complete same research and to build new theory about the capital market, especially TVA.

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