ANALYSIS OF THE INFLUENCE OF THE ANNOUNCEMENT OF STOCK SPLITS ON INSIDER TRADING INDICATORS IN THE INDONESIAN STOCK EXCHANGE ENVIRONMENT FOR THE 2013-2023 PERIOD

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Abstract
The phenomenon of stock split is a corporate action to increase the number of shares outstanding in the market with the aim of making the stock price more affordable for investors. This practice is often carried out by company management to enhance stock liquidity and attract investor interest without necessarily increasing net income. However, although Stock Splits are generally considered a positive policy, some studies indicate that in some cases, Stock Splits can be exploited for insider trading activities, especially in markets with weak regulations or emerging markets. The aim of this research is to find out whether there are indicators of insider trading from stock split policies based on similar behavior in capital markets where capital market regulations are still not well regulated (*emerging markets*). By using the event study method, this research did not find any indication of insider trading because there was no *cumulative abnormal return* in the positive direction before the stock split was executed. By using multiple regression analysis, this research confirms that there is no indication of insider trading which is influenced by the level of state ownership, small company asset size and the tendency to split shares with a high split ratio as has been tested by previous research .

Keywords: Announcement of stock split, Abnormal Return, Cumulative Abnormal Return

INTRODUCTION

Stock Split or stock split is a corporate action which aims to increase the number of shares outstanding, so that share prices become cheaper from previously (Byun & Rozeff, 2003). Frequent stock splits done by management to attract investors' attention by increasing the quantity of shares sold on the market without having to increase net profit so that share value increases (Beladi et al., 2016). Stock split generally aims to achieve several things, such as spreading out ownership shares by reaching investors with low capital (Lamoreux et al., 1987), raising mark equity company without must incur a high *cost of equity* (Su et al., 2014) and pay dividends to shareholders with new shares when the company does not have enough liquidation to make payments dividend in a way cash (Cheng et al., 2007).

Ascension price share from issuer Which do stock splits do not always signifies a good thing, in several cases in capital markets where regulation is still poor or *emerging markets* it has been found that stock split policies are used as a means to carry out insider trading (Starks et al., 2006). Insider trading This general done with manipulation between investors And management For create fictitious transaction intensity from stock exchange trading, methodThis is called " *pump to dump* " where insider trading or *insiders* will buy massive shares that have been split and resold when prices are low so that it looks as if the shares are in demand, this causes the difference in returns to increase towards a positive value (extra returns occur beyond the norm). In the long term, the share price will fall again following the stock's performance after the split

Nguyen et al., (2017) in their research on the capital market in Vietnam found that the opportunity to carry out insider trading influenced by level concentration ownership country as a measure of whether good governance occurs in a company, this assumption is based on the dense political connections between state officials and the board of directors (*Board of Directors*) in Vietnam, so that the influence of state officials can encourage company management to implement split policies. shares (Francis et al., 2009; Bushman et al., 2004; Wang et al., 2008). The small size of company assets also influences the stock split policy, this was found by (Nguyen et al., 2017) based on the fact that small companies definitely have a small number of investors and in the long term this will have an impact on information asymmetry between a group of controlling small investors and outsiders, besides that small companies are also controlled by few people, making it easier to make company decisions. .

Weak enforcement of regulations and the trading system in Vietnam's capital market means that issuers with small assets are more likely to generate greater returns before the split execution than issuers with large assets (Foucault et al., 2013; Kovsted et al., 2003; Tian, 2018). In the context of capital markets in China, Li & Ji, (Li & Ji, 2021a) found something different from the findings of (Nguyen et al., 2017) in Vietnam, even though both (Vietnam and China) are still *emerging markets.* Li and Ji (2021) found that the existence of institutional investor ownership can hinder the profitability obtained from insider trading activities by playing an active role in monitoring company decision making. This is based on the empirical fact that investors who are gathered in organizations or institutional investors are able to monitor opportunistic behavioral tendencies. insiders who can reduce company value (Boone & White, 2015) .

In every release of information about company policies published by management to the market, there is *a signaling effect* at work and in some cases, the release of information is able to determine investor reactions in trading activities which is often the topic of *event study research* . The influence of company policy which is the focus of *the event study* looks at the movement of the difference between stock returns formed in the market or *actual return* and the normal return which has been predicted by investors or *expected return* which is then commonly used as the term *abnormal return* (Ivani, 2019;

Putra & Widyaningsih, 2016). Abnormal return is a measurement tool that is commonly used to measure the impact of economies of scale around the date of the focal event (in this context, the day of the stock split execution). Based on several previous *event studies* conducted by (Aggarwal et al., 2015; Copeland, 1979; Su et al., 2014) and (Nguyen et al., 2017) show that the movement of abnormal returns as measured by *Cumulative Abnormal Return* (CAR) has a significant average difference in the positive direction before the stock execution date and again experiences an insignificant average difference in the long term after the execution date, this finding is in accordance with the description of the insider trading scenario explained by (Nazário et al., 2017) .

The phenomenon of differences in the average CAR in a positive direction as the stock split execution date approaches also invites an increase in transaction volume for shares concerned, so that believed also increase liquidity trading mediated by addition number of buyers (investors) And rising request share (Li & Ji, 2021b). (Dennis & Strickland, 2003) in their findings also found that new investors who entered after a stock split often caused the composition of shareholders to change, so this also caused changes in trading volume and liquidity. Changes in trading liquidity also trigger changes in returns because high levels of stock trading due to an increase in the quantity of shares traded can create expected returns shares moved further from the pre-split period.

This research aims to analyze several factors that are thought to influence the level of ease of insider trading based on the findings of (Nguyen et al., 2017) and Li and Ji (2021) in *emerging markets* as follows;

a. state ownership (STATE) ;
b. level of share ownership by institutions (IO) ;
c. size of company assets (SIZE) ;
d. stock split ratio (SPLIT) .

Meanwhile, the indicators for measuring indications of insider trading carried out by *insiders* are the dependent variable in this research referring to research conducted by (Nguyen et al., 2017) are:

a. The daily amount between the difference between the actual return and the expected return or abnormal return (CAR) ;
b. The difference in CAR before and after the stock split execution (DIFF) ;
c. Changes in liquidity between before and after the execution of the split (ΔLIQUIDITY) ;
d. Realization of company revenue growth (REALIZED)

A good traditional goal of stock splits, apart from expediting trading, is to convey good prospects for company revenue growth to investors, so that management adopts a stock split policy, therefore the author will not immediately conclude that there are indications of insider trading activity if the insider trading indicators are influenced in a positive direction. by the percentage of state ownership and the stock split ratio, but will also analyze whether there is a possibility that management is informing the company's

growth prospects as *signaling theory* works by representing realized (REALIZED) income growth into the research.

RESEARCH METHODS

This research uses data from companies registered in Indonesia stock exchange. Researchers used company annual data for 10 years (Ten) year from 2013 to 2023. The research period in this study will be further divided into periodization as follows;

Estimation period   : 180 days before *the event window* to estimate the expected return

Event windows : 5 days before and after *the event date* to see abnormal returns

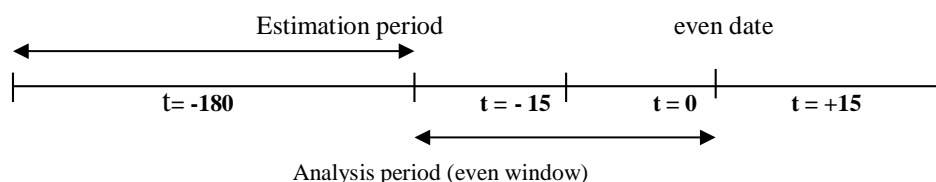Event dates   : When the event occurs (share split execution date)

Figure 1. Observation period in event study research

The sample used is a public company, namely a company listed on the Indonesian Stock Exchange from 2013 to 2023 . Population on study This is company Which do solution share in BEI. Furthermore sample chosen with use technique *purposive sampling* , the criteria for determining the sample in this research are as follows following :

a. Issuer Which the shares on period study very seldom traded are not included in the sample. This is because The stock has not experienced any trading activity for at least one consecutive week (five trading days) that influences accuracy study;

b. Sample No include company Which take actioncorporation other Which capable influence price share in around announcement action *stock splits*. Range time Which considered affecting share prices is when corporate actions are carried out on range research is carried out;

c. Data for each sample must be available for 6 (six) consecutive years period time two year before and after did it *stock split;*

d. Samples that carry out *stock splits* more than once must have period time between incident most No during three year.

Analysis TechniquesI

If the abnormal return T-test has significance, the author will reject H_0 and accept H_1 to carry out an analysis of the relationship between variables. Based on the flow description above, the author will test the effects with the following multivariate regression equation;

CAR : $\alpha_0 + \beta_1 STATE_i + \beta_2 IO_i + \beta_3 SIZE_i + \beta_4 S PLIT_i + \beta_5 FOREIGN_i + \beta_6 \text{Split Characteristic}_i + \gamma k + \varepsilon_i$

$DIFF$: $\alpha_0 + \beta_1 STATE_i + \beta_2 IO_i + \beta_3 SIZE_i + \beta_4 S PLIT_i + \beta_5 FOREIGN_i + \beta_6 \text{Split Characteristic}_i + \gamma k + \varepsilon_i$

$\Delta LIQUIDITY$: $\alpha_0 + \beta_1 STATE_i + \beta_2 IO_i + \beta_3 SIZE_i + \beta_4 S PLIT_i + \beta_5 FOREIGN_i + \beta_6 \text{Split Characteristic}_i + \gamma k + \varepsilon_i$

$REALIZED$: $\alpha_0 + \beta_1 STATE_i + \beta_2 IO_i + \beta_3 SIZE_i + \beta_4 S PLIT_i + \beta_5 FOREIGN_i + \beta_6 \text{Split Characteristic}_i + \gamma k + \varepsilon_i$

Detection of insider trading indications that are attempted to be captured in this research method assumes insider trading proxies as follows:

a. There is a difference in the average abnormal return between before and after the stock split execution;

b. There are more CARs that are positively significant before the event date in the significance test;

c. The DIFF variable has a positive and significant relationship to the STATE and SPLIT variables and a negative and significant relationship to the IO and SIZE variables;

d. The ΔLIQUIDITY variable is positively and significantly related to the STATE and SPLIT variables and negatively and significantly related to the IO and SIZE variables;

In order not to clearly conclude that there are indications of insider trading if the above indicators are statistically proven, a regression analysis needs to be carried out to ensure that the REALIZED variable has a negative and significant relationship to the STATE and SPLIT variables and a positive relationship to the IO and SIZE variables, this is the antithesis of the indication insider trading, which means that management is sending a good signal about the company's revenue growth, so it is carrying out a stock split and not just taking opportunistic actions to split shares (Nguyen et al., 2017).

Based on the insider trading proxy assumptions above, the author builds a hypothesis using the following statistical method;

$H1_0$: There is no significant difference in average returns between before and after the announcement of the stock split

$H2_0$: There is more negative significance in CAR before the event date

$H2_1$: There is more positive significance in CAR before the event date

$H3_0$: There is a negative relationship between CAR and the STATE and SPLIT variables and a positive relationship with the IO and SIZE variables

$H3_1$: There is a positive relationship between CAR and the STATE and SPLIT variables and a negative relationship with the IO and SIZE variables

$H4_0$: There is a negative relationship between DIFF and the STATE and SPLIT variables and a positive relationship with the IO and SIZE variables

$H4_1$: There is a positive relationship between DIFF and the STATE and SPLIT variables and negative with the IO and SIZE variables

$H5_0$: There is a negative relationship between ΔLIQUIDITY and the STATE and SPLIT variables and a positive relationship with the IO and SIZE variables

$H5_1$: There is a positive relationship between ΔLIQUIDITY and the STATE and SPLIT variables and negative with the IO and SIZE variables

$H6_0$: There is a negative relationship between REALIZED and the STATE and SPLIT variables and a positive relationship between the IO and SIZE variables

$H6_1$: There is a positive relationship between REALIZED and the STATE and SPLIT variables and negative with the IO and SIZE variables

Event Study Techniques

T-Paired Sample Test

The T-Paired sample test is a type of *t-test* to test whether there is a difference in the average between one population and another population. In this research, the author uses the T-Paired sample test to analyze whether there are differences in abnormal returns before and after the stock split execution date event.

One Sample T-test

Test one sample T-test is a type of *t-test* as with the previous type of *t-test* . In this research, One Sample T-test is used to test the significance of daily abnormal returns in the event window period.

Classical Assumption Testing Techniques

Normality test

The normality test is a test to determine the state of data distribution. This test looks at whether or not there is a distribution of error values, where if the error values are well distributed, then the regression model is considered good.

Autocorrelation Test

Auto correlation tests whether in a regression model there is a correlation between the error variance between the independent variables (Gujarati and Porter, 2012). The Autocorrelation Test is carried out using the Durbin-Watson Test with the following test criteria:

a. DW value = upper limit (DU) with (4DU) if the autocorrelation coefficient is equal to 0 it means there is no autocorrelation
b. The DW value is < than the lower limit (DL) if the autocorrelation coefficient is more than 0, meaning the autocorrelation is positive.
c. DW value > (4DL), if the autocorrelation coefficient is smaller than 0, it means the autocorrelation is negative
d. The DW value is between the two upper limits (DU) and the lower limit (DL) or DW is located between (4DU) and (DL), if the results cannot be concluded

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Multicollinearity Test

The multicollinearity test is used to ensure that the independent variables in the research are not perfectly correlated. This test requires that the correlation value between independent variables must not be more than 0.80 or must be smaller than 0.80. Testing is carried out by conducting correlation analysis between independent variables.

Heteroscedasticity Test

Heteroscale edasticity is the variance of the regression model error which is not constant or the variance of one error is different from another (Gujarati & Porter, 2012). This test is carried out using the White Test to determine whether the pattern of error variables contains heteroscedasticity between one another.

RESULTS AND DISCUSSION

Event Study Results

The event study results in this research were carried out using 2 (two) types of *t-test*, namely *T-Paired Sample Test* and *One Sample T-test* . T-Paired Test This was carried out first to find out whether there was a significant average difference between the average abnormal return (Average Abnormal Return) 15 days before and 15 days after the stock split execution. The following are the results of the T-Paired test that have been compiled;

Table 1. T-paired Sample Test results

	Pre-split	Post-split
Mean	-0.001	-0.006
Variance	0,000	0,000
Observations	15	15
Pearson Correlation	0.367	
Hypothesized Mean Difference	0	
Df	14	
t Stat	**2,389**	
P(T<=t) two-tailed	**0.03**	
t Critical two-tail	**2,145**	

In the results of the attached table it can be seen that the t- calculated value is 2.389 which is greater than the t -table of 2.145 and also the significance value of the probability is 0.03 (smaller than 0.05). From this it can be concluded that there was a significant change between 15 days before and 15 days after the stock split, so *H1 0* rejected and accepted *H1 1* which indicates that there is a significant difference in returns between before and after the announcement of the stock split.

To observe indications of insider trading in accordance with the research hypothesis, observations were made of CAR movements. The author conducted the same *t-test* as the previous abnormal return with the following test results attached;

Table 2. CAR daily One Sample T-test results in event windows

Event days	CAR (Average)	Df	t-values	t-crit values (n = 40)
-15	-0.00250	39	-0.763	1,697
-14	-0.00554	39	-0.686	1,697
-13	-0.00585	39	-0.512	1,697
-12	-0.00767	39	0.507	1,697
-11	-0.00999	39	-0.593	1,697
-10	-0.01096	39	-0.577	1,697
-9	-0.00698	39	-0.311	1,697
-8	-0.00761	39	-0.366	1,697
-7	-0.00371	39	-0.133	1,697
-6	-0.00534	39	-0.182	1,697
-5	-0.00946	39	-0.303	1,697
-4	-0.00933	39	-0.285	1,697
-3	-0.00373	39	-0.103	1,697
-2	0.03868	39	0.100	1,697
-1	0.11785	39	0.292	1,697
0	0.02173	39	0.500	1,697
1	0.028825	39	0.636	1,697
2	**0.034711**	**39**	**1,698***	**1,697**
3	0.030212	39	0.594	1,697
4	0.023836	39	0.444	1,697
5	0.013677	39	0.242	1,697
6	0.003443	39	0.588	1,697
7	-0.01290	39	-0.209	1,697
8	-0.00952	39	-0.146	1,697
9	-0.02396	39	-0.352	1,697
10	-0.03429	39	-0.488	1,697
11	-0.03194	39	-0.437	1,697
12	-0.0273	39	-0.364	1,697
13	-0.02674	39	-0.348	1,697
14	**-0.03537**	**39**	**-1,697***	**1,697**
15	**-0.04554**	**39**	**-1,702***	**1,697**

*) Significant at 10% level

Based on table 2, it can be seen that the average CAR on H-15 and H+15 respectively is -0.002496 and - 0.045541 , while on the event date or H0 it is 0.021730 . There are three significances in this CAR observation, namely at H+2, H+14 and H+15 and no other significance was found. This significance value is inversely proportional to

the findings found by (Aggarwal et al., 2015; Copeland, 1979; Su et al., 2014) and (Nguyen et al., 2017) where before the split execution date a positive CAR significance was found and the significance value became greater as the execution date approached. This insignificant CAR movement also helps explain the non-occurrence of the insider trading scenario in accordance with the findings of Nazario et al., (2017). For this reason, $H2_0$ is accepted and $H2_{1\ is\ rejected}$ because there is no positive significance before the event date.

Classic Assumption Test Results

Normality test

Table 3. *Kolmogorov-Smirnov* test results for normality

Variable	Asymp.Sig. (2-tailed)
CAR-15.0	0.87
CAR-15, +15	0.65
DIFF-15, +15	0.53
FOREIGN	0.11
LIQUIDITY_15	0.07
LIQUIDITY_GROWTH	0.29
LIQUIDITY TURNOVER	0.29
REALIZED	0.19
RETVOLATILITY	0.15
SIZE	0.72
SPLIT	0.07
STATE	**0.00***
IO	0.21
TRAILING	0.20

Based on the data from table 3, it is known that all variables for research are normally distributed (Asymp.Sig 2 tailed > 0.05) apart from the distribution of the dummy variable " STATE", this is because all variables have a value of Asymp.Sig. (2-tailed) is greater than 0.05. The distribution of the dummy variable does not need to be ignored because the data is of the nominal type .

Autocorrelation Test

The Autocorrelation Test in this research uses the *Breusch-Godfrey Serial Correlation LM test* to see the probability of errors from variants between variables that are not correlated with each other on the basis of decision making as follows;

$$H_0 \quad : \alpha > 0.05$$
$$H_1 \quad : \alpha <$$

0.05

The following is an attachment to the test results from *the Breusch-Godfrey Serial Correlation LM test* ;

Table 4. Results of *the Breusch-Godfrey Serial Correlation LM test* .

Model	F-statistics	Obs*R-squared	Prob. F	Prob. Chi-Square
CAR-15.0	2.615259	5.472611	0.0882	0.0648
CAR-15, +15*	2.488547	5.249376	0.0990	0.0725
ΔLIQUIDITY	2.193297	4.693226	0.1275	0.0957
REALIZED	0.752886	1.745532	0.4789	0.4178

After carrying out the *Breusch-Godfrey Serial Correlation LM test,* it is known that all regression estimation models can be used because the Prob.F value is > 0.05 **Multicollinearity Test**

Table 5. Test Results Multicollinearity .

	STATE	IO	SIZE	SPLIT
STATE	1,000000	-0.013111	0.448561	0.250979
IO	-0.013111	1,000000	0.115755	-0.167775
SIZE	0.448561	0.115755	1,000000	-0.040645
SPLIT	0.250979	-0.167775	-0.040645	1,000000

Based on the results of the multicollinearity test above, no correlation value was found that exceeded 0.80 between all independent variables, so it can be stated that the independent variables in this study were not hampered by multicollinearity. **Heteroscedasticity Test**

Table 6. White Test Results

Model	F-statistics	Prob. F	Chi-Square Prob
CAR -15.0	0.316595	**0.9832**	0.9634
CAR-15, +15	0.753807	**0.6974**	0.6151
DIFF -15, +15	0.360903	**0.9711**	0.9419
ΔLIQUIDITY	0.615864	**0.8191**	0.7407
REALIZED	0.639983	**0.7989**	0.7185

Based on White's test results, it is known that all regression estimation equations have a Prob.F value of more than 0.05, so it can be concluded that all regression estimation models do not experience symptoms of heteroscedasticity .

Regression Results And Hypothesis Testing

CAR window -15, 0

Table 7. Results of CAR-15.0 window regression analysis

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	0.737281	0.644113	1.144646	0.2608
STATE	0.219840	0.166221	1.322581	0.1953
IO	0.445646	1.983859	1.724636	0.0823
SIZE	0.021346	0.021544	0.990837	0.3292
SPLIT	-0.527093	0.324440	-1.624622	0.1141
FOREIGN	-0.683412	3.028913	-0.225630	0.8229
LIQUIDITY_15	6.935787	6.926771	1.001302	0.3242
TRAILING	-4.99E-05	0.002026	-0.024620	0.9805

Ordinary least squares (OLS) estimation method , it is known that the state ownership *dummy variable* (STATE) in the event window CAR-15, 0 has a prob value. of 0.1953; the institutional ownership (IO) variable has a value of prob. 0.0823; The company asset size variable 15 days before the split (SIZE) has a prob value. amounting to 0.3292 and the stock split ratio variable (SPLIT) shows the prob value. at 0.1141.

CAR-15,+15 window

Table 8. Results of CAR-15,+15 window regression analysis

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	0.016969	0.073509	0.230847	0.8190
D(STATE)	0.483604	0.224966	0.949677	0.4195
D(IO)	2.093333	2.581706	1.810833	0.0743
D(SIZE)	0.069028	0.030712	2.247609	0.0319
D(SPLIT)	-0.353063	0.393742	-0.896686	0.3768
D(FOREIGN)	-3.386525	3.812053	-0.888373	0.3812
D(LIQUIDITY_15)	27.85891	9.922892	2.807539	0.0086
D(TRAILING)	-0.004340	0.002402	-1.807219	0.0804

Based on the results of the regression estimation that has been carried out using the *Ordinary least squares* (OLS) estimator method, it is known that the state ownership variable (STATE) in the event window CAR -15, +15 has a prob. of 0.4195; the institutional ownership (IO) variable has a value of prob. 0.0743; The company asset size

variable 15 days before the split (SIZE) has a prob value. of 0.0319. The stock split ratio variable (SPLIT) shows the prob value. at 0.3768.

Return difference (DIFF-15,+15)

Table 9. Results of DIFF-15,+15 regression analysis

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	0.715870	0.413979	1.729244	0.0940
STATE	0.023466	0.102353	0.229269	0.8202
IO	0.221340	1.346780	2.164347	0.0706
SIZE	0.010310	0.013383	0.770401	0.4471
SPLIT	-0.202306	0.213663	-0.946846	0.3513
FOREIGN	-4.987977	1.950873	-2.556792	0.0159
TRAILING	0.000490	0.001230	0.398347	0.6932
REALIZED	0.015600	0.019977	0.780883	0.4410
LIQUIDITY_GRO				
WTH	-0.007518	0.048273	-0.155738	0.8773
RETVOLATILITY	-0.159125	0.069934	-2.275343	0.0302

Based on the results of the regression estimation on the difference in cumulative abnormal returns (DIFF-15,+15) which has been carried out using the *Ordinary least squares* (OLS) estimation method, it can be seen that the state ownership *dummy variable* (STATE) has a prob value. of 0.8202; the institutional ownership (IO) variable has a value of prob. 0.0706; The company asset size variable 15 days before the split (SIZE) has a prob value. amounting to 0.4471 and the stock split ratio variable (SPLIT) shows the prob value. at 0.3513.

Changes in liquidity (Δliquidity)

Table 10. Results of regression analysis of changes in liquidity

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-2.180214	1.492929	-1.460360	0.1546
STATE	-0.567319	0.367686	-1.542945	0.1333
IO	3.308616	4.993733	0.662554	0.5127
SIZE	0.046449	0.049550	0.937424	0.3560
SPLIT	-1.123556	0.782006	-1.436763	0.1611
FOREIGN	8.982322	7.158165	1.254836	0.2192
LIQUIDITY_15	-13.99435	15.55884	-0.899447	0.3756
TRAILING	-0.005182	0.004535	-1.142864	0.2621
REALIZED	-0.025061	0.074562	-0.336115	0.7391
RETVOLATILITY	0.055881	0.264454	0.211309	0.8341

Based on the results of regression estimates on changes in liquidity which have been carried out using the *Ordinary least squares* (OLS) estimation method, it can be seen that prob. the state ownership *dummy* variable (STATE) on the liquidity change variable (ΔLIQUIDITY) is 0.1333; the institutional ownership (IO) variable has a value of prob. 0.5127; The variable company asset size (SIZE) has a value of prob. of 0.3560. **Changes in realized revenue growth (REALIZED)**

Table 11. Results of regression analysis of realized income growth (REALIZED)

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-6.067858	3.516185	-1.725694	0.0947
STATE	-0.232365	0.932647	-0.249146	0.8049
IO	3.549387	12.27673	1.989115	0.0645
SIZE	0.175651	0.118603	2.081001	0.0490
SPLIT	-2.095515	1.938516	-1.080989	0.2883
FOREIGN	26.95644	17.26009	1.561779	0.1288
LIQUIDITY_15	-13.21518	38.46002	-0.343608	0.7335
TRAILING	-0.002270	0.011314	-0.200675	0.8423
LIQUIDITY_TURN				
OVER	-0.149699	0.445380	-0.336115	0.7391
RETVOLATILITY	-0.311752	0.644305	-0.483858	0.6320

Based on the results of the regression estimation of realized income growth (REALIZED) which has been carried out using the *Ordinary least squares* (OLS) estimator method, it can be seen that the value of prob. the state ownership *dummy* variable (STATE) on the variable realization of changes in income (REALIZED) is 0.8049; the institutional ownership (IO) variable has a value of prob. 0.0645; The variable company asset size (SIZE) has a value of prob. of 0.0490 and the stock split ratio variable (SPLIT) shows the prob value. of 0.2883.

To simplify the results of *cross section hypothesis testing, table 12 is attached below as a summary of the eviews 10* output results above;

***Table 12. Cross section* regression hypothesis test results**

Dependent Variable	Adj R-Squared	Prob(F-Statistic)	T-stat coefficient (t-count) with Independent variables				Hypothesis test results
			STATE	IO	SIZE	SPLIT	
CAR -15, 0	0.097835	0.040016	1.322581	**1.724636***	0.990837	-1.624622	Accept H3 $_0$
CAR -15, +15	0.185990	0.001689	0.949677	**1.810833***	**2.247609**	-0.896686	Accept H3 $_0$

					**		
DIFF -15, +15	0.102541	0.044923	0.229269	**2.164347***	0.770401	-0.946846	Accept H4 $_0$
ΔLIQUIDITY	0.139687	0.590441	-1.542945	0.662554	0.937424	-1.436763	Accept H5 $_0$
REALIZED	0.094813	0.057431	-0.249146	**1.989115***	**2.081001****	-1.080989	Accept H6 $_0$

*) Significant at 10% level

**) Significant at 5% level

Source: Prepared by yourself

From the results of hypothesis testing with *cross section regression* above, several things can be seen as follows;

a. In the output of the second variable in the CAR window , the *dummy variable* state ownership (STATE), level of institutional ownership (IO) and company asset size (SIZE) shows a positive relationship, while the stock split ratio (SPLIT) shows a negative relationship. The absence of a positive relationship with the stock split ratio (SPLIT) and a positive relationship between the level of institutional ownership (IO) and the size of company assets (SIZE) indicates that there are no indications of insider trading in accordance with the initial hypothesis, so the hypothesis *H3 $_0$* must be accepted and hypothesis *H3 must be rejected.*

b. In the output variable DIFF , the *dummy variable* state ownership (STATE), level of institutional ownership (IO) and company asset size (SIZE) shows a positive relationship, while the stock split ratio (SPLIT) shows a negative relationship. The failure to fulfill a positive relationship with the stock split ratio (SPLIT) and a positive relationship between the level of institutional ownership (IO) and the size of company assets (SIZE) indicates that there are no indications of insider trading in accordance with the initial hypothesis, so the hypothesis *H4 $_0$* must be accepted and hypothesis *H4 must be rejected. $_1$*

c. In the output variable ΔLIQUIDITY there is no significance in the regression estimation equation to explain the dependent variable because the Prob(F-Square) test value is greater than 0.05 and there is also no significance between variables partially in the t-count, so this finding does not occur indications of insider trading and the hypothesis *H5 $_0$* must be accepted and *H5 $_{1\ must\ be\ rejected}$* .

d. The emergence of a negative correlation between the state ownership *dummy variable* (STATE) and the stock split ratio variable (SPLIT) on the realization of growth and on the other hand there is a positive correlation between institutional ownership (IO) and the size of company assets (SIZE) indicating that the majority of companies in Indonesia do stock split because the share price is already high and not based on an opportunistic decision to carry out the stock split decision, for this reason the hypothesis *H6 $_0$* must be accepted and reject *H6*

Results Analysis

Of the 40 (forty) sample companies that carried out a stock split or *stocksplit* in the period 2013 to 2023, it is known that there is a significant difference in average abnormal returns between before and after the split. The news or announcement of a stock

split is a good thing that gets a positive response from the market so that the abnormal return on the event date or execution date experiences positive significance but after that the market returns to normal and prices remain determined by the financial performance of each sample company.

Based on the results of statistical tests and cross section regression estimates, it is known that there is no indication of insider trading even though there is a significant difference in the average abnormal return before and after the split execution date. The lack of findings to determine insider trading is known from the results of the *One Sample T-test* which did not find CAR significance in a positive direction before the stock split execution date (event date). The results of the regression estimation show a relationship that complicates insider trading because there is a positive relationship between the dependent variables CAR , DIFF and REALIZED which are indicators of insider trading with the IO and SIZE variables . This finding is in line with the hypothesis of Li and Ji (2021) that institutional ownership can helps inhibit the opportunistic behavior of *insiders* to take advantage of every company policy, as well as the hypothesis of Nguyen et al., (2017) itself that the greater the assets of a company, the more difficult it will be for insider trading to be carried out.

In the context of this research, there are two relevant examples that can help explain the difficulty of insider trading in the Indonesian capital market, namely as follows;

a. The positive relationship between the dependent variable realized income growth (REALIZED) with institutional ownership (IO) and company asset size (SIZE), this helps convince the author that the stock split policy is based on *Signaling Theory* and *Optimal Trading Range Theory* . The management is trying to carry out a stock split so that share prices become more actively traded and affordable, as is happening in the Indonesian capital market, companies with high capitalization are also trying to reach lower middle class investors (Financial Services Authority, 2021)

b. The existence of POJK regulation Number 58/POJK.04/2017 concerning the obligation of public companies to publish all corporate actions to the public via electronics accelerates market efficiency as per the efficient market hypothesis (Efficient Market Hypothesis) in forming prices on the Indonesian Stock Exchange, furthermore the JATS system (Jakarta Automated Trade System) also helps make market information more dynamic and is followed by the widespread development of fintech applications which help ordinary investors in Indonesia to become investment literate, making all stock prices appearing on the Indonesian Stock Exchange able to reflect all existing information, both public information. as well as personal information in the secondary market so that the Indonesian Stock Exchange is classified as a strong efficiency market. These facts have an impact on the company asset size variable (SIZE), the majority of which is positively related to all dependent variables because information asymmetry between management and the market is very minimal due to good governance.

The positive relationship that occurs between the dependent variable and state ownership (STATE) is commonplace in Indonesia considering that the share performance of companies whose shares are controlled by up to 51% (BUMN) has implemented good governance and its shares have received positive sentiment from investors.

CONCLUSION

In accordance with the research methodology that has been carried out previously, the following are the conclusions that can be drawn in this research: (1) There is a significant difference in abnormal returns between before and after the stock split execution date, this is in accordance with the results of the *T-Paired Sample Test* with a calculated t-value of 2.389 which is greater than the t-table of 2.145 . The probability value (Sig.two-tail) shows a value of 0.03 which shows significance at the 5% level. The difference in average returns is due to the daily significance of abnormal returns that occur on the execution date (H0) in the positive direction and H+5, H+6, H+7, H+9, H+10, H+14 and H +15 which are all significant in the negative direction. (2) There is no significant CAR in the positive direction before the execution date (H0), it is known that there is a negative relationship from H-15 to H-1 which is not significant. (3) All independent variables are not influenced by state ownership (STATE) and the stock split ratio (SPLIT) , but are influenced by institutional ownership (IO) and company asset size (SIZE) in the positive direction. The results of hypothesis testing using *cross section* regression show that the influence of institutional ownership (IO) and company asset size (SIZE) occur at the 5% and 10% levels;

The results of hypothesis testing on the dependent variable income growth realization (REALIZED) show a significant positive relationship at the 10% and 5% levels respectively to institutional ownership (IO) and company asset size (SIZE), whereas on the other hand, it shows a negative and insignificant relationship with state ownership (STATE) and stock split ratio (SPLIT) , this indicates that most of the sample companies implemented a stock split policy to convey the prospect of share price growth.

BIBLIOGRAPHY

Aggarwal, R., Saffi, P. A. C., & Sturgess, J. (2015). The role of institutional investors in voting: Evidence from the securities lending market. *The Journal of Finance*, *70*(5), 2309–2346.

Beladi, H., Chao, C. C., & Hu, M. (2016). Another January effect—Evidence from stock split announcements. *International Review of Financial Analysis*, *44*, 123–138.

Boone, A. L., & White, J. T. (2015). The effect of institutional ownership on firm transparency and information production. *Journal of Financial Economics*, *117*(3), 508–533.

Byun, J., & Rozeff, M. S. (2003). Long-run performance after stock splits: 1927 to 1996. *The Journal of Finance*, *58*(3), 1063–1085.

Cheng, S., Nagar, V., & Rajan, M. V. (2007). Insider trades and private information: the special case of delayed-disclosure trades. *The Review of Financial Studies*, *20*(6), 1833–1864.

Copeland, T. E. (1979). Liquidity changes following stock splits. *The Journal of Finance*, *34*(1), 115–141.

Dennis, P., & Strickland, D. (2003). The effect of stock splits on liquidity and excess returns: Evidence from shareholder ownership composition. *Journal of Financial Research*, *26*(3), 355–370.

Foucault, T., Pagano, M., & Röell, A. (2013). *Market liquidity: theory, evidence, and policy*. Oxford University Press, USA.

Ivani, N. S. (2019). Pengaruh Pemilu Presiden Indonesia Tahun 2019 Terhadap Abnormal Return Dan Trading Volume Activity Studi Pada Saham LQ45. *Jurnal Al-Qardh*, *4*(1), 1–14.

Kovsted, J., Rand, J., Tarp, F., Nguyen, D. T., Nguyen, V. H., & Thao, T. M. (2003). *Financial sector reforms in Vietnam: Selected issues and problems*.

Li, T., & Ji, Y. (2021a). Institutional ownership and insider trading profitability: Evidence from an emerging market. *Pacific-Basin Finance Journal*, *70*, 101668.

Nazário, R. T. F., e Silva, J. L., Sobreiro, V. A., & Kimura, H. (2017). A literature review of technical analysis on stock markets. *The Quarterly Review of Economics and Finance*, *66*, 115–126.

Nguyen, V., Tran, A., & Zeckhauser, R. (2017). Stock splits to profit insider trading: Lessons from an emerging market. *Journal of International Money and Finance*, *74*, 69–87.

Putra, Y. R., & Widyaningsih, M. (2016). Pengaruh laba akuntansi, komponen arus kas, dan dividend yield terhadap return saham (Studi pada perusahaan sektor pertambangan di Bursa Efek Indonesia periode 2012-2014). *Jurnal Riset Akuntansi Dan Keuangan*, *4*(2), 1047–1058.

Starks, L. T., Yong, L., & Zheng, L. (2006). Tax-loss selling and the January effect: evidence from municipal bond closed-end funds. *The Journal of Finance*, *61*(6), 3049–3067.

Su, Z., Fung, H.-G., Huang, D., & Shen, C.-H. (2014). Cash dividends, expropriation, and political connections: Evidence from China. *International Review of Economics & Finance*, *29*, 260–272.

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Tian, H. (2018). Role of capital market to accelerate the transition to low-carbon energy system. *Financing for Low-Carbon Energy Transition: Unlocking the Potential of Private Capital*, 211–238.