



Market Overreaction and Price Reversal in Indonesia Stock Market: Disposition Effect Examination

Kris Brantas Abiprayu, Ascariena Rafinda, Bayu Wiratama

Department of Management, Faculty of Economic, Universitas Negeri Semarang, Indonesia

Article Information

Article History:
Received April 2022
Revised April 2022
Accepted June 2022

Keywords:
Efficient Market,
Price Reversal, Mar-
ket Overreaction

Abstract

Capital market is a market that all prices that occur should be caused because the market mechanism that has been in such a way able to respond to all the information that exists automatically. Such a market is a market that conforms to the concept of an efficient market. In an efficient market, market participants or investors, will not be able to gain an edge over other investors in terms of investment decisions based on the information they get. The market efficiently assumes that the information that is in the market can be accessed by all actors. In fact, many anomalies occur in the market that break through all assumptions built by the concept of an efficient market, one is the phenomenon of price reversal. Price reversal is a phenomenon in which the price of a stock instrument that suddenly experiences a price reversal because there is information that enters the market and is responded to excessively (overreaction) by the market. Research uses quantitative paradigms to prove a particular hypothesis built into research. The data used is secondary data obtained using stock transaction data as well as financial statement data of each sample company.

INTRODUCTION

Basically, investors need and will pay attention to various relevant information before deciding to buy or sell stocks. Such information can be both published and unpublished information. In addition, investors also need information about the conditions or direction of market movements so that they can make the right decisions in buying or selling shares. Prompt and correct information is reflected in the price of securities. Based on this, the capital market is said to be informationally effective (Husnan, 2018)

Efficient Market Hypothesis (EMH) is one of the capital market hypotheses that is a reference for investors in making decisions. The theory explains that the information in the market will be reflected by the stock price in that market. Efficient markets are one of the topics that are very hotly discussed in research, especially in the field

of finance, because of the frequent occurrence of events that oppose the theory. Such as research conducted by Kleim & Stambaugh (1985), Cross (1973), French (1980), Gibbons & Hess (1981) and Rogalski (1984) which found day-of-the-week and weekend effects on the return of company shares. Likewise, research conducted by Banz (1981) and Reinganum (1983) found a size effect. This can happen because investors as individuals have different perceptions when they are faced with information, so that in the end investors will have different behaviors in making decisions.

Research on the efficiency of the capital market itself has been carried out a lot and the result obtained is the existence of a weak form of efficiency on the Indonesia Stock Exchange. In an efficient market, the stock price reflects all relevant information. The stock price will respond to new information quickly. No stock is priced

© 2022 Universitas Negeri Semarang

too low or too high. This is because the information is captured by investors precisely, so that no pricing errors occur. The market's efficient weak form says that investors are unlikely to be able to make a profit in the future using current information (Haugen, 1995) Which means that future stock prices cannot be predicted using past data.

However, recent studies have shown a systematic price reversal pattern in the capital market. Some studies report that stocks that underperform in one time period will tend to improve in the next, and stocks that perform well are likely to deteriorate in the next period (Zarowin, 1990). If this is true, then these conditions should be used as a basis for the preparation of a simple trading strategy that is applied, namely buying new stocks that are underperforming and selling stocks that are performing well (contrarian). This reversal phenomenon is contrary to the character of the efficient market, since the efficient market assumes that the price of the security is already exactly reflecting the information obtained by the investor.

This price reversal phenomenon is a phenomenon that often occurs in all capital markets around the world, especially in emerging markets such as the Indonesia Stock Exchange. The phenomenon, which can be caused by high price volatility and liquidity problems, will eventually cause the market to respond excessively due to the high uncertainty they face, and the high uncertainty causes a higher probability of price reversal which will cause trading risks which is high due to the price of securities that can change abruptly (Santosa, 2011). These conditions can create opportunities for profit or can also cause losses at once, because they cannot be predicted.

The initial determination of the increase and decrease in stock prices is determined based on the figures of the composite stock price index (JCI) by looking at the difference in the opening and closing prices on a certain trading day. The trading days shown in the table have been selected and consist only of trading days that undergo a massive price change on one given day followed by a price change in the opposite direction on the next day.

Massive changes in stock prices as shown in the table, both price increases and decreases are generally followed by a change in price return in the opposite direction the next day or what is known as the phenomenon of price reversal. This price reversal phenomenon is in accordance with the results of research conducted by Brown & Harlow (1988), where they found the phenomenon of price reversal using daily data. From the

above phenomenon, there is an interesting problem to study about what factors affect the price reversal.

The next question is, what causes a price reversal to occur in the buying and selling activity of securities? To explain the phenomenon of price reversals, many researchers who refer to the overreaction hypothesis state that basically investors overreact to information. By the time investors get information that is considered positive, they will then tend to set a high price on a stock. Conversely, if investors get information that is negatively assessed, then the tendency is that the price of a stock will be overvalued. In the end, investors will realize that the stock price has become overpriced, and there is a price reversal indicated by a fall in the price (negative abnormal return) after an extreme increase.

Pioneers in research on market overreaction were DeBondt and Thaler (1985), who in their research using American data from 1926-1982 said that securities that usually have high returns that fall into the category of winners will have a low abnormal return. Meanwhile, securities that usually have low returns that fall into the loser category, will get abnormally high returns. Or in other words, loser stocks will beat or outperform winner's shares

There are two explanations for the results of the research conducted by DeBondt and Thaler (1985), the first is that overreaction is caused by the size effect, where loser shares tend to be owned by companies with small sizes, while winner shares tend to be owned by large companies, and loser stocks will outperform winner shares. Zarowin (1990) and Chopra et al. (1992) tested the effect of company size on hypothesis overreaction using American data and found that the size of the company would have an impact on the returns provided by stocks, especially loser category stocks. Zarowin (1990) believed that the phenomenon of overreaction could occur due to the influence of company size, but these results were still refuted by DeBondt & Thaler (1985), they did not believe that overreaction was caused by a size effect, although they also did not control the variable size of the company at the time of conducting their research.

The second explanation of market overreaction is that there is a systematic difference in beta or risk from loser and winner category stocks. Chan (1998), Ball & Kothari (1989) and Chopra et al. (1992) found similar results. Ball & Kothari (1992) found that the beta of the loser's stock was greater than the beta of the winner's stock by 0.76 in the period after the portfolio

was formed. Beta differences are considered to explain why loser stocks can outperform winning stocks.

According to Santosa (2011) prices in the capital market, especially on the Indonesia Stock Exchange are often mispriced, both undervalued and overvalued because they are caused by several factors, the delivery of market overreaction as explained earlier. Uncertainty over prices causes investors to tend to overreact when receiving information that is then used to assess an asset. This condition causes the price of an asset to be unfair or in accordance with its intrinsic value. Mispriced stocks, both undervalued and overvalued, will be followed by a process of self-correction in the opposite direction or close to equilibrium. This price correction will cause what is referred to as a price reversal.

Zarowin (1990) said that the overreact of investors has a different effect when the overreaction is long-term than if the overreaction is short-term. Zarowin (1990) found that loser stocks significantly outperformed winning stocks. Short-term overreactions should be developed by including anomalies such as size, January effect and E/P ratio discovered by DeBondt & Thaler (1985) arose due to the influence of firm size and not because of the phenomenon of overreaction. While the results of Cox & Pedersen (1994) show that bid-ask spread and market liquidity explain price reversals in the short term. They found no evidence consistent with the overreaction hypothesis.

One of the phenomena of short-term price reversals is also indicated by research conducted by Khatua & Pradhan (2014). They found that stocks that had previously experienced a large drop in price or daily rate of return were negative and large (loser) tended to be followed by a positive abnormal return over the next two days. These findings led them to be identified as inconsistencies to market price characteristics that quickly reflect relevant information. Several other studies (Atkins & Dyl, 1990; Park, 1995; Akhigbe et al., 1998) also show the phenomenon of short-term reversals in stocks that previously experienced a large increase in price, or the daily rate of return was positive and large (winner). These findings generally lead to the conclusion that the market is overreacting.

HYPOTHESES DEVELOPMENT

The information obtained by investors is random and continuous, resulting in continuous changes in the demand and supply of securities.

Forecasts about the company's future performance are another factor that may affect or change the stock price. How quickly this information is absorbed by investors as participants in the capital market is determined by the level of efficiency of the capital market.

In a competitive market, the equilibrium price of an asset is determined by the market based on the demand and supply that occurs, to create an equilibrium price. This equilibrium price is a joint consensus between all market participants about the value of assets based on the available information. If the investor obtains relevant information, then the information will be used to analyze and interpret the value of the asset in question. The result is a possible shift to the price of the new equilibrium. This equilibrium price will persist as well as another new information changes it back to another new equilibrium price.

How a market reacts to information to achieve a new equilibrium price is important. If the market reacts quickly and accurately to achieve a new equilibrium price that fully reflects the available information, then the market is said to be or informationally efficient market.

In an efficient market, the price behavior of a security will fluctuate randomly around its actual value. This is because the information can be captured by investors clearly, so that mispricing does not occur. In an efficient market, the price of a security is the result of an investor's response to the information he obtains. Since it is assumed that the response from the investor is correct, so that the actual value or price of the security is reached, it will not be the process of correcting the price in the next period. This condition causes investors to be unable to obtain profits above normal (abnormal return)

The market will show an overreaction to an event or news (let alone) a dramatic one (Asri & Fatmawati, 1999). The situation is categorized as an anomaly in the capital market and is commonly referred to as the overreaction hypothesis. The theory assumes that in responding to new information, investors will tend to give excessive weight to the latest data (Asri & Warninda, 1998).

DeBondt & Thaler (1985), say that, because the market overreacts to information, market participants tend to set the stock price too high in reaction to well-judged news. On the contrary, they will give too low a price in reaction to the bad news. Then this phenomenon will reverse when the market realizes it has overreacted. This reversal is indicated by the decline (up) of the stock price which was previously a winner (loser).

Atkin & Dyl (1990) and Park (1995) argue that evidence of the existence of overreactions is not enough to be used as a reference in disputing the theory of efficient markets. The market efficiency test should be carried out by further testing whether investors can make a profit during periods of price reversal. If investors are unable to take advantage of reversals to make a profit, then the market is efficient in its weak form.

Furthermore, it can be concluded that an excessive reaction from investors in assessing information causes the stock to be overvalued or too low, and furthermore, when the investor realizes the error, there will be a movement of the stock price in the opposite direction as a correction action. This condition describes a stock price reversal. So, it can be concluded that the overreaction of investors will cause a price reversal.

H1 : Market overreaction has a positive effect on the occurrence of price reversal

METHOD

The population in this study is all shares of companies that went public and were listed on the Indonesia Stock Exchange during the research period, namely 2018-2020. The samples in this study are all companies that fall within the predetermined criteria.

The data used in this research is secondary data in the form of:

Data from Indonesia Stock Exchange in 2018-2020, consisting of: the stocks that experience the most daily price increases on the day of the day are likely to have a massive increase in stock prices followed by a change in price direction (price reversal) to be classified as winner stocks; The stocks that experience the most daily price declines on days are likely to see a large drop in stock prices followed by price reversals to be classified as loser stocks; Composite stock price index (JCI); Closing price; that is, the transaction price that occurs at the latest before the IDX closes on a trading day; Closing bid price, which is the highest closing price that potential buyers are willing to pay; Closing ask price, which is the lowest closing price that a prospective seller can accept; Stock trading volume; The market value of the company's equity (Number of shares outstanding x share price)

Variable Measurement

The main variables can be defined operationally as follows: Price Reversal, is a dependent variable that is a phenomenon of changing the direction of the stock price after a major change in the stock price in a certain trading day in the form of both an increase and a decrease in the stock price. In this research model, because it uses a multiple logistic regression model, the

price reversal measurement is to use the value of the logarithm of the probability of a price reversal event.

Overreaction, defined as an overreaction of investors to the stock price due to the presence of information (good or bad). This condition is opposite to normal conditions. The excessive reaction of investors to the stock price can be recognized through the magnitude of the price reversal direction to the price change that occurred earlier on a given trading day. The correlation between abnormal returns on the day of price reversal and abnormal returns on the day of massive price increases or decreases on one trading day will indicate the relationship between the existence of excessive investor reactions with price reversal events.

Abnormal Return calculated using the Market Adjusted Model, which is the difference between the return of an individual stock and a market return.

$$AR_{i,t} = R_{i,t} - RM_{t}$$

$AR_{i,t}$ = The difference between the actual return and the expected return of the stock i in the period t.

Where:

$AR_{i,t}$ = Abnormal return of shares i in period t

$R_{i,t}$ = Return of shares i in period t

RM_{t} = Market return on period t

Cumulative Abnormal Return is the summation or accumulation of abnormal returns during the observation period.

$$CAR_{i,t} = \sum AR_{i,t}$$

Where :

$CAR_{i,t}$ = Cumulative abnormal return of stock i on day t

$AR_{i,t}$ = Abnormal return of stock i on day t

Hypotheses Testing

The model from this study is estimated to use multiple logistic regression, to test the probability of price reversal due to the influence of independent variables. The model is as follows:

$$\ln [P_i/(1-P_i)] = \beta_0 + \beta_1 AR_{i,t} + \beta_2 X_{i,t} + \epsilon_{i,t}$$

Where,

$AR_{i,t}$ = Abnormal return of shares of company i in the period t

$X_{i,t}$ = Control variable i in the period t

To get the value of the probability of a price reversal, first find the probability of occurrence of a price reversal event from each sample with the formula:

$$\text{Probability} = 1/(1+e^{(-Z_i)}) = e^{Z_i}/(1+e^{Z_i})$$

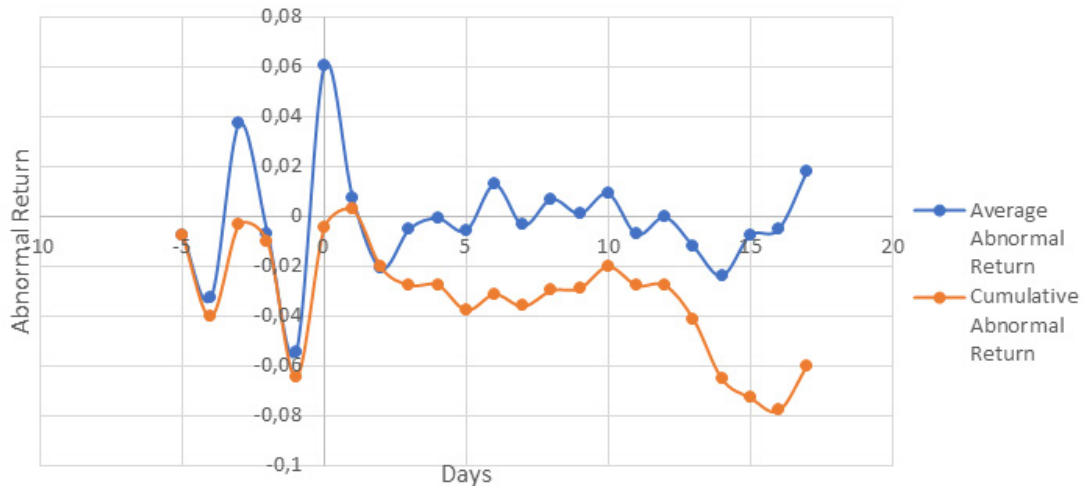
Where the results of the probability estimate will be entered into the equation,

$$Y_i = L_i = \ln [P_i/(1-P_i)] = Z_i = \beta_0 + \beta_1 X_i$$

RESULTS AND DISCUSSION

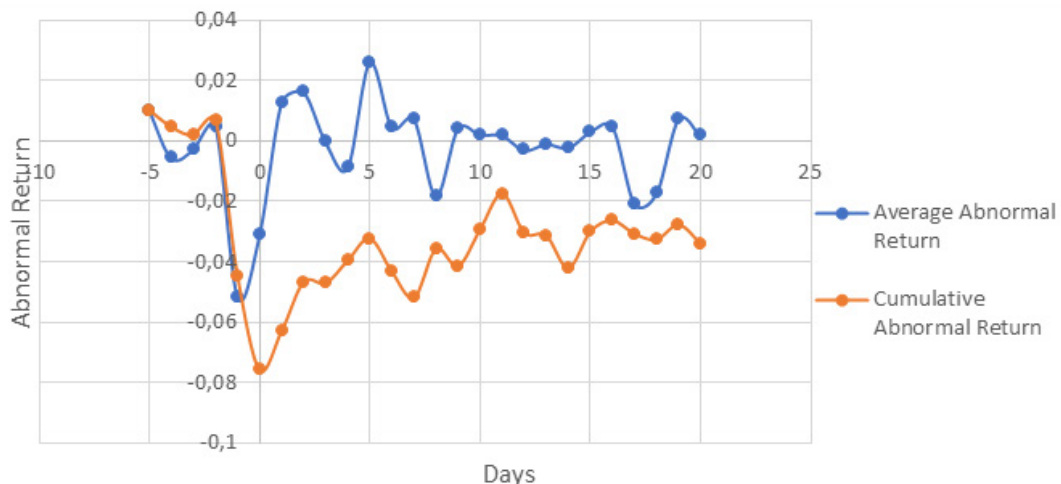
The price reversal on the stock winner happened if average abnormal return after $t = 0$ significantly different with zero and experience decrease. As for the results of the analysis, it can be seen in the following chart

Figure 1. Average dan Cumulative Abnormal Return Winner Stock



Identification of a stock price reversal in loser stocks can be known if the average abnormal return of the days after the event of a large decline in the stock price $t = 0$ which shown in the chart below:

Figure 2. Average dan Cumulative Abnormal Return Loser Stock



To examine the hypothesis, firstly we the coefficient of correlation between abnormal return stock category winner and loser at $t = 0$ with CAR winner and loser stock after $t = 0$ within reversal period. After that, another test was held

to find out whether the coefficient of correlation between abnormal return of the winner and loser stocks at $t = 0$ with CAR of the winner's stock and loser after $t = 0$ significantly different with zero or not. The hypothesis is accepted when the coefficient of correlation negatively significant. It means the hypothesis that state there is overreaction by investor in price reversal phenomenon is correct. This test was carried out on both winner

and loser stocks because the existence of price reversal on both types of stocks. This test was carried out by calculating the coefficient of correlation between abnormal return winner stock with CAR of winner stock within price reversal period (i.e., $t=13$). The result shows that there is a negative correlation between $AR = 0$ and $CAR = 13$

(within price reversal at $t=13$) -0.286. The p-value of coefficient of correlation is 0.049 which means that overreaction is the cause of occurrence of price reversal in the Indonesian Stock Exchange.

Table 1. Winner Stock Correlation

		AR	CAR 13
AR	Pearson Correlation	1	-,286*
	Sig. (2-tailed) N	-	.049
		48	48
CAR 13	Pearson Correlation	-,286*	1
	Sig. (2-tailed) N	.049	-
		48	48

*. Correlation is significant at the 0.05 level (2-tailed).

This test was carried out by calculating the coefficient of correlation between abnormal return winner stock with CAR of winner stock within price reversal period (i.e., $t=13$). The result shows that there is a negative correlation between $AR = 0$ and $CAR = 13$ (within price reversal at $t=13$) -0.346. The p-value of coefficient of correlation is 0.048 which means that overreaction is the cause of occurrence of price reversal in the Indonesian Stock Exchange.

Table 2. Loser Stock Correlation

		AR	CAR 13
AR	Pearson Correlation	1	-,286*
	Sig. (2-tailed) N	-	.049
		48	48
CAR 13	Pearson Correlation	-,286*	1
	Sig. (2-tailed) N	.049	-
		48	48

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Winner Stock Examination Results

Variable	Event Window												
	t=1	t=2	t=3	t=4	t=5	t=6	t=7	t=8	t=9	t=10	t=11	t=12	t=13
Intercept	0,03 (0,54)	0,07 (0,62)	0,08 (0,61)	0,01 (0,92)	0,11 (0,40)	-0,04 (0,72)	-0,13 (0,40)	-0,23 (0,29)	0,03 (0,89)	0,04 (0,69)	0,02 (0,85)	-0,03 (0,86)	-0,28 (0,25)
Size	-0,01 (0,22)	-0,03 (0,07)	-0,02 (0,14)	-0,02 (0,22)	-0,02 (0,25)	-0,01 (0,54)	-0,01 (0,73)	-0,01 (0,66)	0,02 (0,26)	-0,03 (0,07)	0,01 (0,44)	-0,02 (0,31)	-0,10 (0,00)*
Lq	0,01 (0,46)	0,03 (0,14)	0,02 (0,12)	0,02 (0,10)	0,01 (0,55)	0,02 (0,32)	0,02 (0,13)	0,04 (0,08)	-0,05 (0,07)	0,04 (0,02)	-0,03 (0,07)	0,03 (0,25)	0,12 (0,00)*
Bid-Ask	0,07 (0,63)	0,32 (0,38)	0,06 (0,86)	-0,30 (0,45)	0,44 (0,37)	0,01 (0,95)	-0,80 (0,31)	-0,66 (0,50)	-0,49 (0,51)	0,07 (0,43)	-0,05 (0,07)	0,28 (0,60)	1,16 (0,04)
R2	0,04	0,09	0,07	0,09	0,04	0,02	0,07	0,07	0,08	0,15	0,13	0,04	0,23

Table 4. Loser Stock Examination Results

Variable	Event Window				
	t=1	t=2	t=3	t=4	t=5
Intercept	0,03 (0,54)	0,07 (0,62)	0,08 (0,61)	0,01 (0,92)	0,11 (0,40)
Size	-0,01 (0,22)	-0,03 (0,07)	-0,02 (0,14)	-0,02 (0,22)	-0,02 (0,25)
Lq	0,01 (0,46)	0,03 (0,14)	0,02 (0,12)	0,02 (0,10)	0,01 (0,55)
Bid-Ask	0,07 (0,63)	0,32 (0,38)	0,06 (0,86)	-0,30 (0,45)	0,44 (0,37)
R2	0,04	0,09	0,07	0,09	0,04

Based on table 3 , it can be seen that by using the Market Adjusted Model to calculate the abnormal return, the result is obtained that the average abnormal return is significantly different from zero and decreases on days 13 and 19 after the day of the big increase in the stock price. The average abnormal return after $t = 0$ is significantly different from zero and experiencing this decline is likely an overreaction of investors in assessing stocks.

The results obtained show that on the day of a large increase in stock prices where almost all stocks traded on the IDX experience a price increase, the next day stocks will experience a price reversal where almost all stocks will experience price increases. This is not only caused by the overreaction of investors in assessing positive information, but also by the behavior of investors who use bid-ask spreads to make a profit in stock trading and consider the company's size factor in taking an action on the information it receives. The liquidity factor also has a role to play in the degree of reversal of the winner's stock price. If there is positive information about the issuer company, then to this information the investor responds excessively, then the investor will take the action of buying the shares and selling the old shares that have been held previously.

If the stock has a high level of liquidity, in the sense that it is easy to trade, then this will accelerate the occurrence of a price reversal. In other words, the more liquid a stock will accelerate the degree of reversal of the stock price. These results are in accordance with research conducted by Zarowin (1990) and Cox & Peterson (1994) which each examined the influence of company size and liquidity in stock price reversals

Based on table 4, based on the calculation of abnormal returns using the Market Adjusted Model, the results were obtained that the average abnormal return was significantly different from zero and experienced an increase on days 5,8,14,17, and 18 after the event of a major decline in stock prices. This means that a major change in the stock price that occurs at $t = 0$ is likely an overreaction of investors in assessing stocks. From the results of the regression above, the magnitude of R^2 is less than 40%. means that the 40% variation in CAR can be explained by variations of the variables of company size, liquidity and bid-ask spreads. While the remaining 60% is explained by other factors beyond the size of the company, liquidity and bid-ask spread. Just like winner stocks, in loser stocks, other factors that may affect stock reversals come from macro factors such as exchange rates and market conditions, because information about macro conditions can directly or indirectly influence investors in making decisions to sell or buy stocks or not trade at all (Kusumawardhani, 2001). The three independent variables, based on the test results showed that on the day ($t = 5$) the significance level (p -value) was 0.002 for the size variable, 0.001 for the liquidity variable and 0.027 for the bid-ask spread variable. Based on the level of significance used in this study, which is 0.05, it can be concluded that the variable size (company size), liquidity and bid-ask spread have a real influence on stock price reversal.

CONCLUSION AND RECOMMENDATION

Based on the analysis and discussion of the Analysis of Overreaction Hypothesis and the influence of company size, liquidity & bid-ask spread on the phenomenon of stock price reversal on the IDX. The price reversal occurs in both winner and loser stocks. The stock price reversal that occurs is a form of adjustment to the event of a massive increase or decrease in stock prices. Regression testing between CAR at $t = 13$ and $t = 5$ with company size, liquidity and bid-ask spread obtained the following results: Regression

testing of winning stocks partially showed the result that the company size regression coefficient had an influence in the phenomenon of stock price reversal. Likewise, liquidity factors and bid-ask spreads each have a significant effect on the phenomenon of stock price reversals

Regression testing of loser stocks partially shows the result which identical with the winner stock, namely that the regression coefficient of the company size, liquidity and bid-ask spread are significantly different from zero at a significance level of 5%. Based on the significance for the regression coefficient size dan liquidity means that the size of the company, liquidity and bid-ask spread partially affecting the price reversal

REFERENCE

- Akhigbe, A., Gosnell, T., & Harikumar, T. (1998). Winners and losers on NYSE: A re-examination using daily closing bid-ask spreads. *Journal of Financial Research*, 21(1), 53-64.
- Asri, M., & Fatmawati, S. (1999). Pengaruh Stock Split Terhadap Likuiditas Saham Yang Diukur Dengan Besarnya Bid-Ask Spread di Bursa Efek Jakarta, *Jurnal Ekonomi dan Bisnis Indonesia (JEBI)*, 14 (4), 93-110.
- Asri, M., & Warninda. T. D. (1998). (1998). Dapatkah Strategi Kontrarian Diterapkan Dipasar Modal Indonesia? (Pengujian Anomali Winner-Loser Di Bursa Efek Jakarta). *Journal of Indonesian Economy and Business (JIEB)*, 13(2), 71-77.
- Atkins, A. B., & Dyl, E. A. (1990). Price reversals, bid-ask spreads, and market efficiency. *Journal of Financial and Quantitative Analysis*, 25(4), 535-547.
- Ball, R., & Kothari, S. P. (1989). Nonstationary expected returns: Implications for tests of market efficiency and serial correlation in returns. *Journal of Financial Economics*, 25(1), 51-74.
- Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of financial economics*, 9(1), 3-18.
- Brown, K. C., & Harlow, W. V. (1988). Market overreaction: Magnitude and intensity. *Journal of Portfolio Management*, 14(2), 6-13.
- Chan, K. C. (1988). On the contrarian investment strategy. *Journal of business*, 147-163.
- Cox, D. R., & Peterson, D. R. (1994). Stock returns following large one-day declines: Evidence on short-term reversals and longer-term performance. *The Journal of Finance*, 49(1), 255-267.
- Cross, F. (1973). Price movements on Fridays and Mondays. *Financial analysts journal*, 29(6), 67-79.

- De Bondt, W. F., & Thaler, R. (1985). Does the stock market overreact?. *The Journal of finance*, 40(3), 793-805.
- French, K. R. (1980). Stock returns and the weekend effect. *Journal of financial economics*, 8(1), 55-69.
- Gibbons, M. R., & Hess, P. (1981). Day of the week effects and asset returns. *Journal of business*, 579-596.
- Husnan, S. (2018). Dasar-dasar teori portofolio & Analisis Sekuritas.
- Keim, D. B., & Stambaugh, R. F. (1984). A further investigation of the weekend effect in stock returns. *The journal of finance*, 39(3), 819-835.
- Khatua, S., & Pradhan, H. K. (2014). Indication of Overreaction with or without Stock Specific Public Announcements in Indian Stock market. *Vikalpa*, 39(3), 35-50.
- Kofman, P., & Moser, J. T. (1994). *Stock margins and the conditional probability of price reversals* (No. 2012-2018-595).
- Park, J. (1995). A market microstructure explanation for predictable variations in stock returns following large price changes. *Journal of Financial and quantitative Analysis*, 30(2), 241-256.
- Reinganum, M. R. (1983). The anomalous stock market behavior of small firms in January: Empirical tests for tax-loss selling effects. *Journal of financial economics*, 12(1), 89-104.
- Rogalski, R. J. (1984). New findings regarding day-of-the-week returns over trading and non-trading periods: a note. *The Journal of Finance*, 39(5), 1603-1614.
- Santoso, P. W. Probability of Price Reversal and Intraday Trading Activity on Tick Size-25 at Indonesia Stock Exchange. *Journal of Technology Management*, 10(3).
- Stoll, H. R. (1989). Inferring the components of the bid-ask spread: Theory and empirical tests. *the Journal of Finance*, 44(1), 115-134.
- Summers, L. H. (1986). Does the stock market rationally reflect fundamental values?. *The Journal of Finance*, 41(3), 591-601.
- Zarowin, P. (1989). Short-run market overreaction: Size and seasonality effects. *Journal of Portfolio Management*, 15(3), 26-29.
- Zarowin, P. (1990). Size, seasonality, and stock market overreaction. *Journal of Financial and Quantitative analysis*, 25(1), 113-125