



**OVERREACTION ANALYSIS OF WINNER AND LOSSER SHARE ON
THE INDONESIA STOCK EXCHANGE (CASE STUDY OF LQ-45
INDEX 2016-2019 PERIOD)**

Aulia Putri Febriani¹

¹Faculty of Economics and Business, Riau University Pekanbaru, Indonesia

aulia.putri3314@student.unri.ac.id

ARTICLE INFO	ABSTRACT
Accepted: Completed by the IJEBA team. Revised: Completed by the IJEBA team. Approved: Completed by the IJEBA team.	This study, conducted with a robust and transparent methodology, aims to determine the occurrence of market overreaction on the Indonesian stock exchange. We analyze two distinct periods, semiannual and annual, from 2016 to 2019, focusing on the LQ-45 index. Our methodology involves classifying stocks into two portfolios based on the Cumulative Abnormal Return (CAR) value. The winner portfolio represents one-third of the stocks with the highest CAR value, while the loser portfolio represents one-third with the lowest CAR value. The presence of overreaction is indicated when the loser's portfolio outperforms the winner's. Our findings from this rigorous methodology, which we detail in the paper, reveal a clear and novel phenomenon of market overreaction on the Indonesian Stock Exchange, particularly on stocks included in the LQ-45 index, but notably, only in the semi-annual period. There is no evidence of market overreaction for the annual period, suggesting a nuanced market behavior that warrants further investigation.
Keywords: Overreaction, Winner, Losser, Anomaly, Cumulative Abnormal Return	

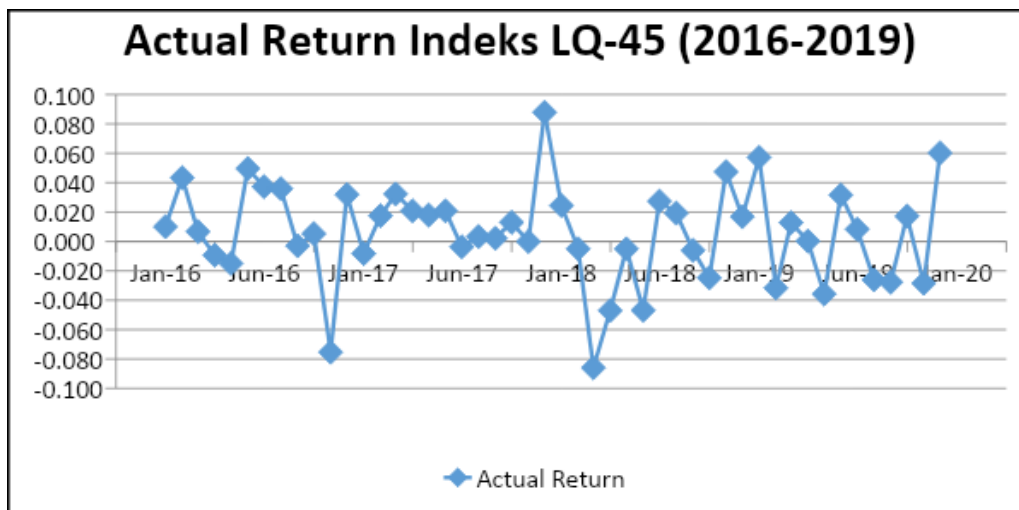
INTRODUCTION

The LQ45 index is a group of 45 best stocks with high liquidity and stocks that are always active in IDX trading, which were selected through several selection criteria. These stocks have a high rating compared to other stock members on the IDX trading, so the LQ45 index is composed of stocks always sought after and in demand by capital market players, especially investors. The share price that is formed on the capital market is a reflection of market behavior in responding to various information that is considered to have an impact on the sustainability of investments in companies listed on the capital market and the motivation of investors to invest in the capital market, namely to obtain a return. In general, the greater the risk, the greater the expected rate of return (Tandelilin, 2010). Therefore, investors need relevant information to make investment decisions. Investors will easily obtain relevant information regarding market conditions and directions if the market is efficient.

According to Fama (1997), the concept of an efficient market means that stock prices now reflect all available information. Investors can react to information that will be or is being received, and this reaction can arise from

within the investor himself. The market anomaly is a technique that contradicts the efficient market hypothesis. One anomaly that contradicts the efficient market is an anomaly price reversal, or anomaly *-Loser. Anomaly Winner—Loser* was first put forward by De Bondt and Thaler (1985), who stated that the cause of the anomaly *winner-loser* is an *overreaction*. *Overreaction* based on information asymmetry. The intended information asymmetry is the information gap between investors. This information gap impacts investor behavior regarding their investment decisions and causes the market to overreact to information.

De Bondt and Thaler (1985) divide the portfolio into winner and loser through their research using the New York Stock Exchange (NYSE) stock data. Portfolio winners are stocks with good performance, while portfolio losers usually perform less well. De Bondt and Thaler conclude that the portfolio losers will outperform the winners when the market suffers an overreaction. If there is a market overreaction, the portfolio winner, which usually has a good performance, becomes the portfolio loser, and vice versa, the portfolio loser, which usually has a less good performance, becomes the portfolio winner.



Source: Investing.com

Picture 1: Return Index LQ-45 2016-2019

The picture above shows that the direction reverses several times and is extreme. This extreme reversal of direction indicates an overreaction that is causing it to arise. The picture also shows that the negative return reverses to a positive one and vice versa. The positive return reverses to a negative one.

The phenomenon of trading on the Indonesia Stock Exchange (IDX) in November 2016 experienced a very extreme decline. The Composite Stock Price Index (IHSG) fell 215.93 points (3.55%). The LQ45 stock, a stock index consisting of stocks with the largest and most liquid market capitalization, also experienced a decline of 39.85 points (-4.14%). According to Capital Markets analyst Ikhsan Burhanuddin, the JCI fell due to the United States (US) policy sentiment when led by Donald Trump, which caused fluctuations in US bonds, thus impacting the weakening of the rupiah. It means return stocks changed due to the igniting of public sentiment over some information, where the LQ-45 stock index in the

previous month, namely October 2016, was positive but in November 2016, the return stock index was negative.

The next phenomenon concerns plans for the Indonesia Stock Exchange (IDX) to add indicators for assessing the weighting of shares by calculating the ratio of the minimum limit for shares circulating in the public, commonly called *free float*, in October 2018. This has eroded the shares of issuers with large caps (*big capitalization/big cap*). Shares of issuers PT Hanjaya Mandala Sampoerna Tbk (HMSP), PT Unilever Indonesia Tbk (UNVR), and PT Gudang Garam Tbk (GGRM) decreased by more than 3% in just one day. The weakening occurs because of the *free float*, and all three stocks are still low. As a result, after IDX announced plans to add indicators for the *free float* to measure the weight of a share sticking out to the public, market players immediately released shares of HM Sampoerna, Gudang Garam, and Unilever Indonesia. This is because market participants are worried that the weight of the shares, with float basis, will drop or even cause them to exit the LQ45 and IDX30 indices. This phenomenon means that the market reacts to information that is considered negative so that the resulting LQ-45 stock index has decreased.

The phenomenon of market overreaction implies that investors are neither rational nor emotional. Suppose some investors in the market react excessively to information. In that case, investors will emotionally undervalue stocks with bad information, so the price will tend to fall further than it should be underpriced. Likewise, with stocks with good information, market participants will value them too highly, so a price increase is more than it should be overpriced. When investors realized the true extent of the information, they corrected their errors in judgment. When they re-correct the trade they made, a price reversal occurs in related stocks.

Several studies, both abroad and in Indonesia, show various opinions regarding the factors that influence price reversal and indicate that this phenomenon also occurs in Indonesia. Based on this, this study will analyze market overreaction on the Indonesian Stock Exchange, especially the LQ-45 Index for the 2016-2019 period, by using monthly stock data to see the significance of changes or movements in share prices

LITERATURE REVIEW

Efficient Market Hypothesis

Theory of Efficiency Market Hypotheses, or the efficient market hypothesis developed by Fama (1970), said that the concept of an efficient market means current stock prices reflect all available information. In a market with efficient information, stock prices will be influenced by all available information, whether about a company's products, profits, management, or any other information important to investors. Prices will change rapidly as a result of this information.

In an efficient capital market, stock prices reflect all information and facts in the company. Market efficiency is inversely proportional to abnormal returns. In other words, the more efficient a market is, the less likely investors will earn a return greater than the market's (an abnormal return).

Behavioral Finance

Nofsinger (2001) defined financial behavior as studying how humans behave in a financial setting. In particular, study how psychology influences financial decisions, companies, and financial markets. This concept clearly states that behavioral finance is an approach that explains how humans make decisions about investing or dealing with finances influenced by psychological factors.

Draft behavioral finance seeks to explain the what, why, and how of financial and investment theory from the point of view of human behavior. For example, behavioral finance involves studying financial markets and explaining why anomalies occur in them.

Market Overreaction Hypothesis

Market overreaction hypothesis: the occurrence of overreaction to new information and extraordinary events in the market. This event makes market participants set a stock price that is too high on good news or information and a stock price that is too low on bad information. The overreaction hypothesis refers to the findings of applied psychology research, which show that humans tend to overreact to dramatic news or events. Psychologically, market participants tend to react dramatically to bad news and investors overreact to information about events, both unexpected financial and non-financial events. This affects the entire existing economy and share prices significantly, be it appreciation or depreciation of shares. Overreaction provides principal behavior toward market participants, which will affect many contexts.

Market overreaction is characterized by symptoms in attitude toward existing information, namely shares with a return are less desirable, and stocks with low value will be sought by the market. So when stocks that were previously high become low or vice versa, return What was previously low will become high. Stocks that previously performed poorly will improve, and vice versa; stocks that previously performed well will worsen.

Price Reversal

A price reversal is defined as a sudden change in the direction of the price of a stock, index, commodity, or orderly security. This reversal occurs due to excess demand or supply, resulting in a change in the trend formed so far. Price reversal is the average reversal effect return, which is another name for anomaly winner-loser, namely the tendency of stocks that have poor performance (loser) to turn into stocks that have good performance (winner) in the next period and vice versa (DeBondt & Thaler, 1985).

In an anomaly, stocks on the market experience unreasonable price ratings from investors, so when investors receive bad information, stock prices are assessed too low, which results in abnormal returns. Return a negative value (called a stock loser). Vice versa, when investors receive good information, stock prices are overvalued, resulting in abnormal returns—returns with a positive value (referred to as a share winner).

Anomaly Winner-Losser

Anomaly-winner-loser is a capital market anomaly that contradicts the efficient market hypothesis concept. Anomaly winner-loser was first proposed by De Bont and Thaler (1985). In his research on market overreaction using stock capital market data from the American Stock Exchange (NYSE), they researched market overreaction by forming two portfolios: a winner and a loser. A portfolio winner is a group of stocks with a positive trend return, whereas a portfolio loser is a group with a negative trend return.

De Bondt & Thaler count abnormal returns and sort from lowest to highest to form a portfolio. The top thirty-five stocks (top fifty stocks or top deciles) are grouped as portfolio winners; the bottom thirty-five stocks (bottom fifty or bottom deciles) are grouped as portfolio losers. The stocks that have been formed are referred to as the formation period to see a reversal in the test or observation period.

Abnormal Return

Abnormal return is the advantage of returning what happened over returning normal or the difference between returning what happened and returning what was expected. Return to normal is the return expectation (what investors expect). Abnormal return is used in overreaction research to determine how rational investors are in a country. When there are significant abnormal returns, investors act irrationally in making stock investment decisions.

Contrarian Strategy

According to Darusman (2012), investors can use two investment strategies to get returns: contrarian and momentum. A contrarian strategy is against the flow, where investors buy decreased shares (losers) and sell them when they become winners or experience increases. The momentum strategy is to buy shares when stock prices or indexes move up with the hope of selling these shares when the stock price is higher than the purchase price during a certain period.

Detection Market overreaction in LQ-45 index shares in the semi-annual period

Overreaction that occurred in the market was initially observed by J. M. Keynes (Bondt & Thaler, 1985). J. M. Keynes stated that, in general, events that occur momentarily and unexpectedly will affect the market significantly, as indicated by the stock fluctuations from day to day. Market overreaction events occur because there is an overreaction of information carried out by investors, which can be seen by forming a winner and loser portfolio. The overreaction hypothesis can be seen if $t > 0$, $ACARW,t < 0$, and $ACARL,t > 0$. So it can be concluded that $[ACARL,t t] > 0$, or that the ACAR difference between losers and winners is greater than zero (Bondt & Thaler, 1985).

Maharani and Witiastuti (2015), in a study entitled Market Overreaction Phenomenon on the Indonesia Stock Exchange, found market overreaction on the Indonesia Stock Exchange both in quarterly periods, semester periods, and annual periods. In addition, it is also shown that the portfolio loser outperforms the

portfolio winner by looking at the value of the difference between the ACAR portfolio loser and the ACAR portfolio winner, which has a positive value. Murtini and Widyatmadja (2011), in a study entitled "Effect of Overreaction on Stock Prices," using a sample of 80 manufacturing companies in 2004–2008, concluded that there were indications of overreaction from the portfolio losers and winners.

H1: A phenomenon occurred in the market overreaction of the LQ-45 stock index in the semi-annual period.

Detection of market overreaction in LQ-45 index shares in the annual period

Incidental overreaction caused by overreaction in response to information made by investors can be seen by forming a portfolio winner and loser. The overreaction hypothesis can be seen if $t > 0$, $ACARW,t < 0$, and $ACARL,t > 0$. So it can be concluded that $[ACARL,t t] > 0$ or when the ACAR difference between losers and winners is greater than zero (Bondt & Thaler, 1985).

Pasaribu (2011), in a study entitled "Overreaction Anomaly on the Indonesia Stock Exchange: LQ-45 Stock Research," found that the symptoms of an overreaction do not occur on the Indonesia Stock Exchange in all study periods, namely quarterly, semester, and annually. Based on this statement, the hypothesis proposed is:

H2: No phenomenon of market overreaction occurs in the LQ-45 stock index in the annual period.

METHOD

This research is classified as quantitative research using secondary data that can be obtained indirectly or through an intermediary. The data used is company stock closing price data and closing monthly stock market data obtained by accessing Stock Prices and Investments.

In this study, the population is companies that are members of the LQ-45 stock index on the Indonesia Stock Exchange (IDX) for 2016–2019. Determination of the sample using purposive sampling, namely the technique of determining the sample with certain criteria (Sugiyono, 2015).

The specified criteria are:

1. Company shares were listed on the LQ-45 stock index on the Indonesian Stock Exchange from 2016 to 2019.
2. Companies consistently listed continuously on the LQ-45 index on the Indonesia Stock Exchange during the 2016-2019 period.

Operational Definitions and Variable Indicators

a. Monthly Return Shares

Each stock's return can be calculated weekly using each trade's closing stock price data. Return calculated weekly capital gain or loss weekly with the formula:

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

Information:

$R_{i,t}$ = Return stock i in month t

$P_{i,t}$ = Price of stock i in month t
 $P_{i,t-1}$ = Price of share i in month t-1

b. Monthly Return Market

Market return, which market in this study is the stock in question with a capital gain (loss) using the following method or formula (Jogiyanto, 2010):

$$R_{m,t} = \frac{P_{m,t} - P_{m,t-1}}{P_{m,t-1}}$$

Information:

$R_{m,t}$ = Return market
 $P_{m,t}$ = market index value in month t
 $P_{m,t-1}$ = Market index value in month t-1

c. Abnormal Return

An abnormal return is an advantaged actual return over the expected return. Expected return obtained from the estimate The method used in this research is a market-adjusted model by Bondt & Thaler (1985). In this model, what becomes expected is a return on market expectations, with the following formula:

$$WITH_{i,t} = R_{i,t} - R_{m,t}$$

Information:

$WITH_{i,t}$ = Abnormal Return stock i in month t
 $R_{i,t}$ = Return stock i in month t
 $R_{m,t}$ = Return market in month t

d. Portfolio Formation Process: Winner-Loser

After getting an abnormal return on each share, the next step is calculating CAR. Cumulative Abnormal Return is the amount or cumulative market-adjusted abnormal return for a single period of a stock during a certain period, in this case, the formation period.

$$CAR_{i,t} = \sum_{i=1}^n WITH_{i,t}$$

Information:

$CAR_{i,t}$ = Cumulative Abnormal Return stock i in month t
 $WITH_{i,t}$ = Abnormal Return i in month t

After getting the CAR value, sort the stocks orderly, ascending. After sorting, the upper and lower thirds of all stocks form a portfolio instead of using deciles or quartiles because the number of shares is smaller than studies in other markets. The top third is a portfolio winner, and the lower third is a portfolio loser (Ali et al., 2012).

e. Portfolio Observation Process: Winner-Loser

After the stock portfolio winners and losers are formed, observations are made about the abnormal returns generated by the two portfolios. The formula used in measuring the portfolio's AAR value loser and winner is as follows:

$$YEAR_t = \sum_{i=1}^k \frac{WITH_{it}}{N}$$

Information:

$YEAR_t$ = Average Abnormal Return in Month t
 N = Number of shares in the portfolio
 $WITH_{it}$ = Abnormal Return stock i in month t

Then, the AAR results will be used to calculate cumulative Average Abnormal Return (CAAR) with the following formula:

$$MOLD_t = \sum_{i=1}^k YEAR_t$$

Information:

$MOLD_t$ = Cumulative Average Abnormal Return in the t month
 $YEAR_t$ = Average Abnormal Return in the t month
 The observation process is continued by counting the Average Cumulative Abnormal Return (ACAR) on each portfolio for each period with the following formula:

$$OPENS_t = \sum_{i=1}^k \frac{MOLD_t}{k}$$

Information:

$OPENS_t$ = Average Cumulative Abnormal Return in the t month
 $MOLD_t$ = Cumulative Average Abnormal Return in the t month
 k = Total replications

After getting the ACAR results from each portfolio, then calculate the difference in the ACAR portfolio *loser* and portfolio winner. This ACAR difference is used to see if there is an indication of an overreaction. This indication is shown by the ACAR of the portfolio loser that outperforms the portfolio winner (Bondt & Thaler, 1985) with the following formula:

$$\Delta OPENS_t = OPENS_{L,t} - OPENS_{W,t}$$

Information:

$\Delta OPENS_t$ = Difference between $OPENS_{L,t}$ with $OPENS_{W,t}$ in the t month
 $OPENS_{W,t}$ = Average and CAR portfolio winner in the t- month
 $OPENS_{L,t}$ = Average portfolio CAR loser on t-month

Data analysis method

The data analysis method is generally divided into two stages based on the period: the stock portfolio formation stage (winners and losers) and the stock portfolio testing stage (winners and losers). This formation is based on a value-abnormal return that has been sorted. Once the upper and lower thirds of all

stocks are sorted to form a portfolio, the upper third is classified as a portfolio winner, and the lower third is classified as a portfolio loser (R. Ali et al., 2012). Furthermore, the portfolio formation period will be explained as follows:

Table 1. Portfolio Formation in the Semester Period

No	Formation Period	Test Period	
1	January 2016-June 2016	July 2016-December 2016	S1
2		January 2017-June 2017	S2
3		July 2017-December 2017	S3
4		January 2018-June 2018	S4
5		July 2018-December 2018	S5
6		January 2019-June 2019	S6
7		July 2019-December 2019	S7

Table 2. Annual Period

No	Formation Period	Test Period	
1	January 2016 - December 2016	January 2017-December 2017	T1
2		January 2018-December 2018	T2
3		January 2019-December 2019	T2

RESULTS AND DISCUSSION

Test result: Market Overreaction, 6-Month Period (Semester)

Table 2. ACAR Portfolio Winner, Loser, and Loser-Winner

Portfolio	Formati on Period	Test Period						
		S1	S2	S3	S4	S5	S6	S7
WINNER	0.052716	0.007675	-0.00562	-0.01394	0.000552	-0.00974	-0.02794	-0.01435
LOOSE	-0.05883	0.007138	0.009956	0.003819	-0.00222	0.015295	-0.01784	-0.0065
LOSER- WINNER	-0.11154	-0.00054	0.015573	0.017763	-0.00277	0.025032	0.010098	0.007851

Based on the table above, a comparison can be seen between the average cumulative abnormal return in the formation period and the test period, which shows a reversal of direction (reversal) happens to the portfolio winners and losers. In the formation period, portfolio winners own positive returns, while losers own negative ones. During the test period, a reversal of direction occurs, making the portfolio winner's return negative and the loser's return positive. As well as portfolio differences, the loser-winner during the formation period had a negative return. During the test period, a reversal of direction occurred, where the return was positive.

Table 3
ACAR Value Significance Test Results Winner, Loser, and Difference ACAR

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
WINNER	-2.083	6	.082	-.0090515	-.019684	.001581
LOOSE	.326	6	.756	.0013782	-.008967	.011724
LOSER-WINNER	2.771	6	.032	.0104296	.001221	.019638

To see the phenomena of overreaction, a significance test was carried out with *one* sample t-test at a significance level of 5% ($\alpha = 0.05$). The results of the analysis on the portfolio winner show a negative t value (-2.083) with a significance value of more than α ($0.082 > 0.05$), which states that the ACAR winner has a negative value but is not significant. Portfolio loser shows a positive t value (0.326) with a significance value of more than α ($0.756 > 0.05$), which states that ACAR loser has a positive value but is not significant. Moreover, the analysis results on the difference in ACAR portfolio loser and winner shows a positive t value (2,771). This suggests that the difference in ACAR loser and winner has a positive value, indicating that the return portfolio loser can surpass the winner. The significance value is smaller than α , which is $0.032 < 0.05$, indicating that it is a market overreaction and was significant.

Test result: Market Overreaction 12-Month Period (Annual)

Table 4
ACAR Portfolio Winner, Loser, and Loser-Winner

PORTFOLIO	Formation Period	Testing Period (Annual)		
		T1	T2	T3
WINNER	0.035245	-0.00458	0.000115	-0.0164
LOOSE	-0.03167	-0.00844	-0.00227	-0.01548
LOSER-WINNER	-0.06692	-0.00386	-0.00239	0.000927

Based on the table above, a comparison can be made between the average cumulative abnormal return in the formation period and the test period, which shows a reversal of direction (reversal) on the portfolio winner. For the portfolio formation period, portfolio winners own positive returns, and losers own returns negative ones. During the test period, there was a reversal in the direction of the

portfolio winner, Where a return positive turns into a return negative, and the portfolio loser does not experience direction reversal during the test period because it has returned negative. Also, the difference between Looser-Winner, which has a return, was negative during the formation period, and there was a reversal in the 3rd year. However, a reversal in both portfolios did not accompany this event.

Table 5
ACAR Value Significance Test Results *Winner, Loser, and Difference ACAR*

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
WINNER	-3.958	2	.058	-.0056288	-.011748	.000491
LOOSER	-1.857	2	.204	-.0015138	-.005021	.001993
LOSER-WINNER	-1.833	2	.208	-.0103180	-.034537	.013901

The results of the analysis on the portfolio winner show a negative result (-3,958) and a significance value of more than α ($0.056 > 0.05$), which states that the ACAR portfolio winner has a negative value but is not significant. The results of the analysis on the portfolio loser show a negative result (-1.857) and a significance value of more than α ($0.204 > 0.05$), which states that the ACAR portfolio loser has a negative value but is not significant. The results of the analysis on the difference in ACAR loser and winner shows a negative result (-1,833) and a significance value of more than α ($0.208 > 0.05$), which states that the difference in ACAR loser and winner has a negative value indicating a portfolio loser unable to outperform the portfolio winner and not significant because the significance value is more than 5%. Thus it is not proven that market overreaction on the LQ-45 stock index with an annual test period due to the portfolio loser unable to outperform the portfolio winner but not significant.

H.1: Overreaction Occurs on the LQ-45 stock index semi-annually

Based on the results of the ACAR significance test (winner, loser, and the difference in ACAR presented in Table 3), it can be concluded that there was a market overreaction in the LQ-45 index in the semiannual period. This is evidenced by the reversal of the direction of the two portfolios, namely the winner portfolio, which has a negative value, and the loser portfolio, which has a positive value. The significance value of the difference between the loser and winner ACAR shows a positive value, meaning that the loser portfolio can outperform the winner portfolio and is proven significant. Based on these results, it can be said that there is a phenomenon of market overreaction on the LQ-45

stock index, especially during the semi-annual testing period, which experienced the strongest reversal. The existence of this phenomenon indicates that the Indonesian stock market is not yet efficient and opposes the efficient market concept popularized by Fama (1970) and supports the research results of Bondt & Thaler (1985) in their hypothesis, which states that market overreaction is characterized by a reversal of direction, especially in the portfolio loser that outperforms the portfolio winner.

There is a strong reversal in the portfolio losers mark. Investors tend to overestimate on negative news than on positive news, thus leading to overreactions and portfolio reversal losers. Overreaction is also caused by internal and external factors that occur in stocks that affect market reactions. External factors occur because of information or events regarding the economy or government policies within and outside the country—internal factors are due to information or events contained within the company itself. As a result, the market reacts after receiving positive and negative information. So, overreaction happens because the market tends to react after information or events that affect stock prices; information that makes investors irrational in responding to it causes stock prices to be low. After all, they are considered too bad, while good information causes stock prices to increase. Because investors are too excessive in responding to this information, there is an overreaction because winners turn into losers and vice versa.

H.2: Not happening Overreaction on the stock index LQ-45 for the annual period

Based on the results of the ACAR significance test (winner than loser) presented in Table 5, it can be concluded that there was no market overreaction in the LQ-45 index in the annual period. This is because the portfolio loser is unable to outperform the portfolio winner. This is demonstrated by the fact that both the portfolio winner and the loser have a negative value, indicating that the loser did not experience a reversal during the test period. As well as the significance value of the difference between ACAR losers and winners, which has a positive but insignificant value, indicates that overreaction did not occur in this period. The results of this study reject the Market Overreaction Hypothesis popularized by Bondt Thaler (1985) and support the efficient market theory popularized by Fama (1970). If market overreaction is not found, investors can implement passive management in investing, namely buying stocks that have been analyzed and holding them for the long term to produce a return equal to the size of the market index by reducing the risks and investment costs

CONCLUSIONS

Market overreaction in the LQ-45 index only occurs in the semiannual period, where the portfolio winners and losers and the difference in the ACAR losers and winners experienced a reversal of direction during the test period. This means the portfolio loser outperformed the portfolio winner and proved significant. In the annual period, market overreaction does not occur because the

portfolio loser cannot outperform the portfolio winner, which is characterized by no reversal of direction in the portfolio loser.

Suggestions for investors include deepening their knowledge of stock analysis, such as fundamental and technical analysis, and collecting relevant information per the investment plans made. If more information is received about the market and investment science, investors' rationality will increase, and a more efficient market will be formed. Future research might consider using research objects for all companies that are members of the Indonesia Stock Exchange so that a valid generalization of the theory can be seen and adding other variables that can influence overreaction.

REFERENCES

- (1) Amelia, R., & Wijayanto, A. (2018). The winner-loser anomaly in Indonesia. *Management Analysis Journal*.
- (2) 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.
- (3) Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*. [https://doi.org/10.1016/0304-405X\(81\)90018-0](https://doi.org/10.1016/0304-405X(81)90018-0)
- (4) Barbee, W. C., Mukherjee, S & Raines, G. A. (1996). *Do sales-price and debt-equity explain stock returns better than book-market and firm size?* *Financial Analysts Journal* 52 (2): 56–60. <https://doi.org/10.2469/faj.v52.n2.1980>.
- (5) Chaouachi, O., & Douagi, F. W. B. M. (2014). Overreaction effect in the Tunisian stock market. *Journal of Asian Business Strategy*, 4(11), 134.
- (6) Cox, D. R. & Peterson, D. (1994). Stock returns following large one-day declines evidence on short-term reversals and longer-term performance. *The Journal of Finance*, March, Vol. XLIV, No. 1, 255-267
- (7) Darusman, D. (2012). Analysis of the influence of firm size, book-to-market ratio, price-earnings ratio, and momentum on stock portfolio returns. *Diponegoro Journal of Management*.
- (8) DeBondt, W., and R.H. Thaler. (1985). Does the stock market overreact? *Journal of Finance*, 40, 739-805
- (9) Fama, E.F. (1970). Session topic: stock market price behavior. *The Journal of Finance*, 25(2), 383-417.
- (10) Hadimas, H. (2019). Overreaction anomaly in the Indonesian capital market (Study on LQ-45 Stocks 2014-2018). *Journal of Business Economics*, 24 (1): 88–99. <https://doi.org/10.35760/eb.2019.v24i1.1857>.
- (11) Haryana, T. (2017). Analysis of stock price reversal in Indonesia based on overreaction hypothesis, company size, stock liquidity, and bid-ask spread. *Journal of Accounting and Finance Research*, 4(3): 1211–28. <https://doi.org/10.17509/jrak.v4i3.4674>.
- (12) Irawan, R., & Murhadi, W. R. (2012). Three-factor model and foreign ownership of the rate of return. *Ubaya FBE Journal of Management & Business*, 11(2), 213-226.
- (13) Jogiyanto. (2010). *Portfolio theory and investment analysis* (seventh ed.). Yogyakarta: BPFE.
- (14) Latjuba, R.P., & Pasaribu, R.B.F. (2013). Bid-ask effects, firm size, and liquidity in the price reversal phenomenon of winner and loser stock entity group LQ-45 Index period 2009-2011 on the Indonesia Stock Exchange. *PESAT Proceedings*

- (*Psychology, Economics, Literature, Architecture, and Civil Engineering*) 5: 308–15.
- (15) Lisa, C., & Rahmawati, S. (2018). Testing market overreaction in go-public companies on the Indonesia Stock Exchange. *Scientific Journal of Management Economics Students*, 3(1), 71-82.
 - (16) Maharani, S., & Witiastuti, R. S. (2015). Market overreaction phenomenon on the Indonesia stock exchange. *Management Analysis Journal*, 4(1).
 - (17) Murtini, U., & Widyatmadja, Y. K. (2011). Effect of overreaction on stock prices. *Journal of Accounting and Finance Research*, 7(1), 31-37.
 - (18) Nofsinger, J.R. (2001). Investment madness: How psychology affects investing and what to do about it. *The Journal of Chemical Information*
 - (19) Octavius, D. Q. & Lantara, I. W. N. (2012). Market overreaction, size effect, or liquidity effect? studies on the Indonesian stock exchange. *Journal of Business Strategy Management and Entrepreneurship* 8 (1): 11–17.
 - (20) Pandey, A., & Sehgal, S. (2016). Explaining size effect for the Indian stock market. *Asia-Pacific Financial Markets*, 23(1), 45-68.
 - (21) Pasaribu, R. B. (2011). Overreaction anomaly in Indonesia Stock Exchange: Case study of LQ-45 Stocks. *Journal of Economics and Business*. 5 (2): 57–115. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1891011.
 - (22) Pratama, I. G. S., Purbawangsa, I. A., & Artini, L. G. S. (2016). Market overreaction analysis on winner and loser stocks on the Indonesian Stock Exchange. *Udayana University Economics and Business E-Journal*. 5.12: 4387-4414 12: 4387–4414.
 - (23) Primary, L. A. (2019). Analysis of optimal stock portfolio formation using the single index model method (Empirical Study on LQ 45 Index Stocks on the Indonesian Stock Exchange). *Bachelor Thesis*, Yogyakarta State University.
 - (24) Prihanantyo, A. P. (2015). Analysis of the influence of book to market, size, and profitability on return defensive stocks. *Diponegoro Journal of Management* 4 (2014): 1–12. <http://eprints.undip.ac.id/45728/>.
 - (25) Rahman, P.A. (2016). Analysis of the influence of systematic risk, firm size, book-to-market, and stock liquidity on market overreaction on the Indonesia stock exchange. *Doctoral dissertation*, UII, Yogyakarta.
 - (26) Safitri, D., Kamaliah, K., & Pamela, L. (2015). The influence of firm size, bid-ask securities, liquidity, and the overreaction hypothesis on the phenomenon of stock price reversal in issuers of the Kompas 100 Index on the Indonesia Stock Exchange period 2009-2013. *Doctoral dissertation*, Riau University.
 - (27) Soomro, R.H., Ahmed, S.F., & Husain, H. (2016). Contrarian strategy after testing overreaction hypothesis in cement sector companies listed in Karachi Stock Exchange. *Journal of Advanced Management Science*, 4(3).
 - (28) Sukmawati & Hermawan D. (2003). Overreact hypothesis and price-earnings ratio anomaly of manufacturing sector shares on the Jakarta Stock Exchange. *Journal of Economics and Management Research*, Vol. 3.
 - (29) Stoll. (1989). Inferring the components of the bid-ask spread: theory and empirical tests. *Journal of Finance*, pp. 44, 115–134.
 - (30) Tanady, M., & Sukamulja, S. (2020). Market overreaction on the Indonesian Stock Exchange. *Journal of Business Economics and Entrepreneurship (JEBIK)*. 9 (3): 206–17.
 - (31) Tandellin, E. (2010). *Fundamentals of Investment Management*. <http://repository.ut.ac.id/3823/1/EKMA5312-M1>. Pdf.

- (32) Valentina, E., Rikumahu, B., & Khairunnisa. (2017). Price reversal analysis on the Indonesia Stock Exchange: A case study of the 27th business index from January 2015 – December 2016. *4*(1), 135–145.
- (33) Wibowo, A., & Sukarno, A. (2004). Market overreaction and the influence of company size on share price reversal on the Jakarta Stock Exchange. *Vehicle*. *7*(1), 57-73.
- (34) Wiksuana, I. G. B. 2009. Stock portfolio performance based on a momentum investment strategy in the Indonesian Capital Market. *Journal of Management and Entrepreneurship*, *11*(1), pp-73.
- (35) Wiranata, J. W., & Mendari, A. S. (2021). Analysis of winner-loser portfolio returns abnormal in companies listed in the Kompas 100 Index. *Management: Journal of Economics*, *3*(1), 88-97.
- (36) Zarowin, P. (1989). *Short-run market overreaction*. *The Journal of Portfolio Management*. *15* (3): 26–29. <https://doi.org/10.3905/jpm.1989.409209>.

