



ISLAMIC STOCK OVERREACTION PHENOMENON ON FINANCIAL STATEMENT: AN EVENT STUDY

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ABSTRACT

The purpose of this study is to examine whether there is an overreaction phenomenon in the announcement of financial statements during the observation period. The sample used in this study are stocks listed on the Indonesia Stock Exchange in the Jakarta Islamic Index (JII) category during the 2016-2018 period. T test results on the winner category stock prior to the announcement of the financial statement event which AAR value tends to be negative then AAR changed to positive on the date of the announcement of financial statements. On the contrary, AAR was seen to remain positive and statistically significant even to the 10th day after the announcement of the financial statements. After the announcement of the financial statements, investors do not appear to correct stock prices as an indication that they have overreacted. It's shows that there was no reversal after the announcement of the financial statements. AAR loser and winner shares did not experience a reversal after the announcement of the financial statements. Results indicate that there is no overreaction phenomenon in the announcement of financial statements on the Indonesia Stock Exchange.

Keywords: Event Study, Overreaction, Market Adjusted Model.

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INTRODUCTION

Investment can be defined as the activity of placing a number of funds at this time with the hope of obtaining profits in the future. In general, investment can be divided into 2, namely investment in real assets and financial assets such as stocks. Investments in the form of shares can be made through the stock market. The purpose of investing is of course to make a profit. However, in an effort to optimize profits, investors are often unable to make abnormal profits exceeding the market average. This is closely related to an important theory in the literature which is often referred to as the efficient market hypothesis. The efficient market hypothesis states that stock prices will always reflect all the information available in the market, both public and private. The implication is that no single investor will be able to obtain an abnormal return by utilizing all available information (Fama, 1970). The market will show changes or react to information to reach a new price balance. The form of market reaction will be related to the efficiency concept in the capital market. The concept of the Efficiency Market Hypothesis (EMH) proposed by Fama (1970) is the basis for an explanation of how the price of an asset is formed due to the entry of new information that is responded to by investors. This market efficiency is called the information efficient market. This theory explains that the price of a security reflects all available information. The information available includes information in the past, current information, and information that is a rational opinion circulating in the market that may affect price changes. (Mackinlay, 2008) argues that in the presence of market rationality, the effect of an event is immediately reflected in the price of security.

Investors are rational beings which is a long-considered market efficiency hypothesis, whereby they can quickly see that information is reflected in prices, so the information cannot be used to obtain consistent abnormal returns. If there are investors who are not rational, then these behaviors will offset each other so that the market as a whole becomes rational. Moreover, regardless of the irrationality of the market, there will be arbitrators using it to their advantage. Arbitrage is an activity to make a profit by taking advantage of price inconsistencies with zero capital and risk. Market efficiency forms have classified them into three hypotheses (Fama, 1970), namely weak market efficiency, semi-strong market efficiency and strong market efficiency. Event studies are included in the semi-strong form of market testing (Fama, 1970). In a study conducted by (Mackinlay, 2008), it was concluded that the Event Study method is most widely used in empirical research in corporate finance and event studies focused on abnormal returns around the announcement date. Basically, an efficient capital market has a random running pattern. A random walking pattern is a stock movement pattern that depends on incoming information. The arrival of information in the capital market cannot be predicted, this results in the reaction that occurs in the capital market experiencing the same pattern because market movements are influenced

by incoming information. Share prices will react to the announcement of financial statements which is one of the implications of an efficient market. The financial report is a collection of financial transactions during a certain period which is then summarized and prepared by management as a form of management's responsibility to the owner of the company and as information to external parties of the company there are five related activities in the financial report, namely business activities, planning activities, funding activities, investment activities, and operating activities. These five activities are then broken down into five components of financial statements. Financial reports can be used by the public as a basis for making relevant and reliable economic decisions (Brown and Warner, 1980). Disclosure of financial statement information plays an important role in correcting uncertainty about investing.

Earnings information in financial statements can contain information if necessary to change the actions and beliefs of investors that can help with price changes due to the publication of income information (Irwin, Sanders and Merrin, 2009). To meet investor expectations, the issuer must provide complete accounting information about the issuer's issuance during a period. This makes the accounting information needed by investors as a basis for consideration in making investment decisions. Investors in making investment-related decisions require various considerations, calculations and analysis of the right information to determine the prospects for companies that will sell their shares. Information must be relevant, which means that information can influence the actions of investors in investing in the capital market which can be seen through changes in the price of each security. Investment decisions can be obtained from private or public information or published information. Personal information is closed information, which is only known by internal parties. Whereas public information is information that is widely available in the capital market. One example of public information is company financial reports, which are published quarterly, semiannually, and annually.

In the publication of financial reports, according to (Grey, Stathopoulos and Walker, 2013), issuers, especially balance sheets and income statements, are information awaited by investors in the stock market. This is because with the information in the financial statements, investors can find out information about the issuer's development which will be useful as a consideration in investing in securities on the stock exchange. Meanwhile, (Guru and Yadav, 2019) states that the consequences of financial reports for investors are that the accounting information presented in financial reporting can affect the distribution of wealth among investors, the level of risk accepted by the company, and the level of risk capital formation in the economy. According to the conclusion of the research by (Payne, 2008) when the financial statements are published, all incidents of either

an increase or decrease in prices that occur in the capital market will adjust for any information received by the market.

According to (De Bondt and Thaler, 1985), the overreaction hypothesis will lead to a winner-loser anomaly. The market overreaction hypothesis states that stocks that have a low abnormal return (losing stocks) in the next time period will experience a return reversal, and stocks that have high abnormal returns (stock winners) tend to get worse in the next period. Investors will make unrealistic decisions by taking previous decisions. In this case, the market will agree that the stock price is too high for good news, and overvalue the stock price for bad news reactions. This phenomenon will reverse the market. Reversal (reversal) is announced by the winner who previously won the winner and the share price increase that previously lost. The research objective is to test whether there is a phenomenon of Islamic stock overreaction on the Jakarta Islamic Index (JII) on the announcement of financial statements during the observation period. So that it provides benefits for investors to be considered and recommendations in making decisions in trading Islamic stocks on the Jakarta Islamic Index (JII) on the Indonesia Stock Exchange.

LITERATURE REVIEW

Capital Market

The capital market is a meeting place for sellers and buyers to conduct capital commodity trading transactions. (Angelovska, 2017) states that the capital market can be defined as a market for the sharing of long-term tradable financial instruments (or securities), both in the form of debt and equity, whether issued by the government, public authorities, or private companies. These capital commodities are divided into two groups, namely debt capital and equity capital. Own capital is securities that are investment in nature or equity such as stocks and warrants, while debt capital is securities that are debt in nature or fixed income securities such as bonds. Meanwhile, based on the Capital Market Law No. 8 of 1995 concerning Article 1 paragraph 13, the capital market is an activity concerned with public offering and trading in securities, public companies related to the issued Securities, as well as institutions and professions related to Securities. The capital market serves as a means of mobilizing funds sourced from the public to various business sectors. The capital market is expected to play an active role in upholding the success of mobilizing funds to meet the needs of the business world.

The capital market is a company means to increase long-term funding needs by selling shares or issuing bonds. To attract buyers and sellers to participate, the capital market must be liquid and efficient. The capital market is said to be liquid if market players can buy securities quickly. In addition, the capital market is said

to be efficient if the price of traded securities reflects the value of the company accurately. According to (Grohmann, 2018), stock prices are a barometer of the company's business performance. Shareholders who are not satisfied with the company's performance can sell the shares they own. Stock price fluctuations are determined by supply and demand on the exchange. If the number of offers is higher than the number of requests, then the stock price tends to fall. Conversely, the more investors who want to buy a share, the share price will increase. However, based on the random walk theory, stock price patterns are unpredictable, stock prices move randomly (random walk) (Kendall and Hill, 1953). Stock price fluctuations are also influenced by new information, where the information is not known when it will be received. Although the share price estimate is still carried out, this does not guarantee its accuracy, due to the unpredictable nature of the new information.

To find out the movement of stock prices, investors can monitor it through the stock price index. Stock price index is an indicator or reflection of stock price movements. The index is one of the guidelines for investors to invest in the capital market, especially stocks. The Composite Stock Price Index (IHSG), also known as the market index, is a type of stock price index on the Indonesia Stock Exchange (IDX). In Indonesia, IHSG can be used as a picture of the national economy. If the JCI has increased, it can be said that the national economy is in good condition, and vice versa. This is because IHSG reflects the average financial condition of issuers on the Indonesia Stock Exchange (IDX), the JCI which has increased is a positive sign of the average financial condition of issuers, and vice versa.

The Efficient Market Hypothesis

Efficient Market Hypothesis was discovered by Eugene F. Fama from the University of Chicago Graduate School of Business (1970). The efficient market hypothesis states that no market participant can get an abnormal return. (Beigi, Hosseini and Qodsi, 2016) states that the efficient market hypothesis is a condition in which the prices of securities fully reflect all available information. According to (Nugraha and Setiawan, 2020), the price of a share shows two types of information, namely information that is already known and information that is presumptive. There are two kinds of information that are already known, namely past information and current information. Market efficiency theory assumes that investors are rational creatures, so that their decision making is based on rational expectations. Based on the availability of information (Fama, 1970) classifies the efficient market form in three concepts of Efficient Market Hypothesis (EMH). According to the EMH theory there are three forms of market, namely:

Weak form efficiency is that the market with its share price reflects all the information that can be obtained by analyzing trading data such as historical data,

trading volume and interest rates. The market is said to be efficient in a weak form if all information in the past will be fully reflected in the price that is formed now. Therefore, past information cannot be used to predict future prices. This means that investors cannot use past information to gain an abnormal profit.

Semi-strong market, namely all information available to the public regarding the company's future prospects must be reflected in the stock price. The information referred to includes information contained in the issuer's financial statements, historical prices, fundamental data about the company's products, management quality, balance sheet composition, patent rights, estimated earnings and accounting practices.

Strong market, namely that the stock price reflects information that is relevant to the company, including information that is only available to a limited group within the company. Testing of this form is carried out with the same procedure as testing the second form of the market, namely by means of an event study which is basically used to test the significance of the market reaction to an event which is reflected in the abnormal returns that can be produced

All three forms of the market efficiency is cumulative, which means that the form of strong efficiency market is also semi-strong form efficient market and weak. However, this does not apply otherwise. Weak form efficiency markets are not semi-strong and strong markets.

Behavioral Finance Theory

Behavioral Finance is a branch of finance whose function is to study how the behavior of agents in financial markets is influenced by psychological factors and the resulting influence on decisions made when buying or selling shares in the market, thereby affecting prices. This theory is important to explain logical reasons to believe why markets are efficient and inefficient (Muñoz-Murillo, Álvarez-Franco and Restrepo-Tobón, 2020). Law and Ibrahim (2014) prefer to call Behavioral Finance 'behavioral economics' and argue that behavioral economics combines the disciplines of psychology and economics to explain why and how people make seemingly irrational or illogical decisions when they buy, invest, save, and borrow money. What is even more interesting is that Behavioral Finance relaxes the traditional assumptions of financial economics that incorporate this observable, systematic and highly human basis of rationality into the standard model of financial markets. The human tendency to be overconfident causes bias in investors, and the human desire to avoid regret in the end. (Schellhorn and Sharma, 2013). Arin et al. (2006) describe behavioral finance as a financial market model that emphasizes the potential implications of psychological factors that influence investor behavior. In investing, market participants' considerations are not only based on estimates of investment instruments, but also involve psychological factors. The existence of these

psychological factors affects the investment process and results. Behavioral finance is a study that studies how psychological phenomena affect financial behavior (Baghestani and AbuAl-Foul, 2010). Tversky and Kahneman (1974) proposed a theory based on behavioral finance which explains the winner-loser anomaly. They state the theory of cognitive bias, namely the illusion of validity in which investors often predict a decline in stock prices in the future due to a decline in current prices, so that they will sell these shares and the price will decrease. Most investment decisions are influenced by irrational things such as sentiment and belief, causing sudden price changes (DeBondt and Thaler, 1985).

Overreaction Phenomenon

The market overreaction hypothesis was first stated by DeBondt and Thaler in 1985. They state that basically the market has overreacted to some information. Investors tend to overreact to extraordinary events and new information, and ignore older information (Jones, 2014). The overreaction hypothesis states that when investors react to news that they do not anticipate will benefit a company's stock, the price increase will be greater than it should have been given the information which in turn will result in a decline in the share price. Conversely, an overreaction to unexpected news that is thought to have a detrimental impact on the company's economic existence, will force prices to fall too far, followed by corrections that will further raise prices.

The market in general shows an overreaction to new information, especially bad information. This means that investors should buy stocks that have pessimistic information and which are experiencing a decline in price. But of course, investors must be careful in predicting their reactions. The measurement used to determine the occurrence of overreaction is to look at the abnormal return in the observation period, if there is a reversal in the abnormal return on the winner - loser portfolio, overreaction occurs.

Several theories in general state that the behavior of investors overreacts to event information, both financial events and non-unexpected financial events. This affects the entire existing economy and share prices significantly, be it stock appreciation or depreciation. Overreaction provides principal behavior towards market participants which will influence many contexts.

Abnormal Return

Abnormal return is the advantage of realized return on normal return. When there is a certain event, an abnormal return will be obtained, which is the difference between the actual return and the expected return (DeBondt and Thaler, 1985).

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

- AR_{i,t} : The abnormal return of the i-th security in the t-event period
 R_{i,t} : The actual return that occurs for the i-th security in the event period t
 ER_{i,t} : The expected return of the i-th security for the event period t

Real return (realized return) is the return that actually occurs. Realized return is used as a measure of the company's performance as well as the basis for determining the expected return and risk in the future. The real return is the difference between the current price and the previous price or it can be calculated using a formula. Return is the result obtained from investment, which can be divided into two, namely realized return and expected return. The explanation is as follows:

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

- R_{i,t} : Stock return it-i in period t
 P_{i,t} : The closing price of the i shares in the t period
 P_{i,t-1} : The closing price of the i shares in the t-1 period

The expected return is the expected return on a stock in the future, which corresponds to the risk level of the stock. (Brown and Warner, 1985) estimate expected returns using the mean-adjusted model estimation model, market model, and market-adjusted model.

Mean-adjusted Model, This average adjusted model assumes that the expected return is constant, which is the same as the average previously realized return during the estimation period.

$$\frac{\sum_{j=t_1}^{t_2} R_{i,j}}{T}$$

- E (R_{i,t}) : The security's expected return in event period t
 R_{i,j} : Realized return in period I in period of estimation j
 T : The length of the estimation period, from t1 to t2

Market model, the calculation of expected return using this market model is carried out in two stages. First, form an expectation model using realization data during the estimation period. Second, using the expectation model to estimate the expected return for the window period. The expectation model can be formed using the OLS (Ordinary Least Square) regression technique with equations

$$E R_{i,j} = \alpha_i + \beta_i \cdot R_{m,j} + \varepsilon_{i,j}$$

- E R_{i,j} : The expected return of the i-th security in the jth estimate period
 α_i : Intercept for the ith security
 β_i : The slope coefficient, which is the beta of the ith security

$R_{m,j}$: The market return index in the jth estimation period
 $\varepsilon_{i,j}$: The residual error of the i-th security in the jth estimate period

Market-adjusted models assume that the best predictor for estimating the return of a security is the current market index return. By using this model, it is not necessary to use the estimation period to form an estimation model, because the estimated security return is the same as the market index return.

$$E R_{i,j} = R_{m,j}$$

In this market-adjusted model, market return is an expected return. Market return with the following formula:

$$R_{m,j} = \frac{IHSG_j - IHSG_{j-1}}{IHSG_{j-1}}$$

$IHSG_j$: IHSG (composite index) shares in period j
 $IHSG_{j-1}$: IHSG (composite index) shares in period j-1

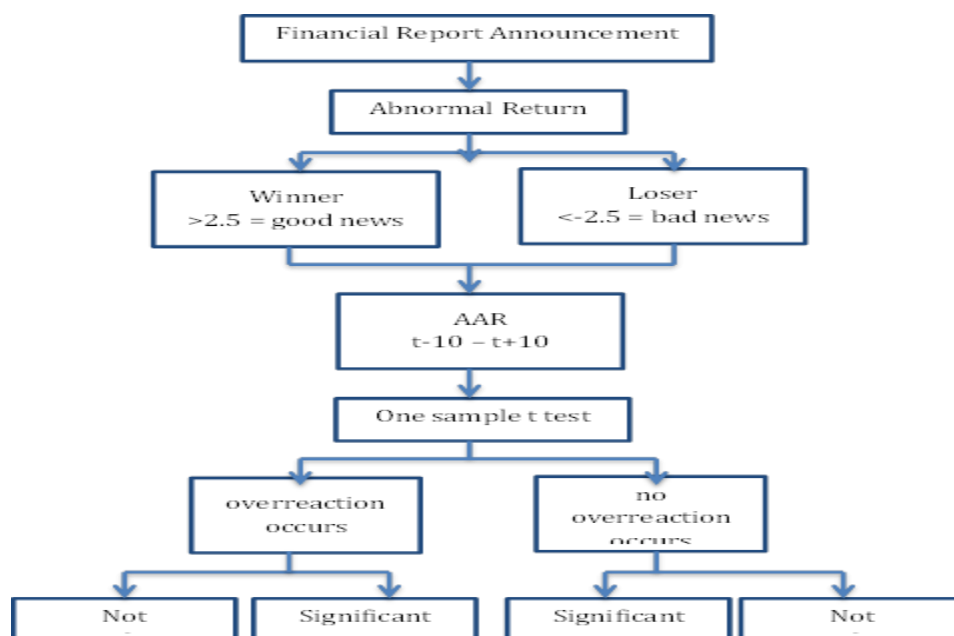
Model Development

Brown and Warner (1980) estimate expected returns using the mean-adjusted model estimation model, market model and market adjusted model. In 1980, a simulation used monthly return data to evaluate aspects of the methodology used in the event study, while in 1985 it used daily return data. So it can be concluded that daily returns produce a stronger power of the test, which is more capable of detecting abnormal returns than monthly returns. Meanwhile, the estimation model does not differ much in detecting abnormal returns, but for clustered event dates, the market model or market-adjusted model can detect abnormal returns better than the mean-adjusted model. Alwathnani, Dubofsky and Al-Zoubi (2017) examined whether the post-earnings-announcement drift of well-documented announcements is a manifestation of overreaction or underreaction to very good or bad earnings news. This test is carried out using the date of the announcement of quarterly earnings during the period 1975-2012. The findings are inconsistent with the initial view that investors underreact to earnings news. In contrast, the results of this study indicate an overreaction to extreme earnings surprises.

Boubaker, Farag and Nguyen (2015) conducted research from 2003 to 2010 regarding short-term overreaction to specific events and in this study found that there was a short-term overreaction occurred in the Egyptian stock exchange (EGX). Losers' shares significantly outperform winners and investors can benefit from it. Meanwhile, Khatua and Pradhan (2014) conducted a study with a testing period from October 2005 to November 2010 with data obtained from the Indian Economy Center for Monitoring. His research found that the overreaction

continued for about two days after the event date. Stocks with good news show that there is a statistically significant difference between the specified and unspecified events. Unspecified events have more overreaction than stocks specified. Meanwhile, stocks with bad news experience overreaction due to information leakage and diffusion of information asymmetry for unspecified events, but for the specified events underreaction. Larson and Madura, (2003) attempted to determine whether the level of overreaction or underreaction of extreme stock price changes was due to public information. The sample of events consisted of notified events along with the explanation of the Wall Street Journal Index and uninformed events with the study period from January 1988 to December 1995. The results of the study found that overreactions occurred on uninformed events, while events that were informed did not experience overreactions.

Research by De Bondt and Thaler (1985) introduced the market overreaction hypothesis. This study uses a sample of monthly data on the American stock market New York Stock Exchange (NYSE) from 1933 to 1980 with an observation period of 36 months. The results of his research show that stocks that were originally loser stocks outperformed the winner's portfolio by 19.6% in the testing period, while winner stocks were 5% below the average market return. The phenomenon of overreaction has been widely researched, but the results of the research conducted resulted in different findings. This can be caused by various factors, including the location of the samples taken and the year of the sampling.



Source: Data processed, (2020)

Figure 1
Research Framework

METHODOLOGY

This research is an event study, which is to test whether there is an overreaction phenomenon to the announcement of financial statements. The population used in this study is 30 issuers on the Jakarta Islamic Index (JII) for the 2016-2018 period, so that the sample size is 183. This sample was chosen because this category is a category of Islamic stocks that have the highest liquidity of stock price movements among them. Other sharia stocks listed on the Indonesia Stock Exchange, apart from that in this category, are stocks that have good fundamentals and performance, as well as large market capitalization, so that they can influence market conditions. Therefore, this stock is suitable for analyzing the overreaction phenomenon. The sample taken in this study was selected by purposive sampling method. The criteria are for stocks that are consistently included in the Jakarta Islamic Index (JII) category for the period January 2016 to December 2018, and stocks are free from confounding effects, the sample used must be free from similar announcements such as right offerings, bonus shares, stock dividend, and stock split. From the selected stocks, they are sorted back into winner and loser stocks.

The event window in this study is 21 days, namely 10 days before the event (pre-event) and 10 days after the event (post-event). The determination of the 10 day window is based on the trading day for 5 days in 1 week. An event-day is the date of the announcement of the financial statements on an exchange day. The reason for using this ten-day observation period is to minimize the confounding effect, because if the observation period is too long it is likely that there will be more events affecting stock returns. The method chosen by researchers to estimate security returns is to use a market-adjusted model. According to Brown and Warner (1980) using daily data will provide a greater power of test than using monthly data. This is because daily data will show a more accurate time of events than monthly data.

Hypothesis testing uses the One-Sample T-Test statistical test tool to determine whether there is a difference in return on the event date of an extreme change in stock prices in winner and loser category stocks with the day after the extreme stock price change event. This can be helpful in identifying whether or not there are instances of investor overreaction to good and bad news. The one-sample t test was performed using AAR data. The phenomenon of overreaction was identified by the reversal of AAR winner to loser, and vice versa. This causes the AAR loser to outperform the AAR winner after a significant event day of less than 5%. All tests carried out were applied using the SPSS version 23.00 application.

RESULT

The initial step taken by the author was to determine the companies in the winner and loser categories. This categorization is carried out to initiate the analysis of the occurrence of overreaction in winner and loser companies. To determine winner and loser formations, using the assumption is said to be winner company if the AR value is $> 2.5\%$, while it is said to be a loser company if the AR value is $< -2.5\%$. This categorization is in accordance with previous research conducted by Mc Kinlay (1997).

Based on these categories, there were 4 winner category companies in 2016, 4 companies in the 2016 category of loser, 10 companies in the 2017 winner category, 5 companies in the 2017 winner category, 7 companies in the 2018 winner category, and 6 companies in the loser category in 2018. So that if you add up, there are 21 winner category companies and 15 loser category companies during the 2016-2018 observation period. The normality test is used to test whether the data is normally distributed or not. The normality test used in this study was Kolmogorov-Smirnov. This study uses a significance level of 5% by looking at the significance (Asymp. Sig. In the Statistical Package for Social Science output) of the Kolmogorov-Smirnov value $> 5\%$, then the data used is normally distributed.

The normality test can be strengthened using the Kolmogorov-Smirnov test. Kolmogorov Smirnov test is that if the significance is below 0.05, it means that the data to be tested has a significant difference with standard normal data, it means that the data is not normal. Conversely, if the significance is above 0.05, it means that there is no significant difference between the data to be tested and the standard normal data, meaning that the data tested is normal. Based on the test results above, it can be seen the Asymp value. Sig. in the observation period $t-10$ to $t+10$ is greater than the 5% level. Significance above 0.05 means that there is no significant difference between the data to be tested and the standard normal data, meaning that the data tested is normally distributed in the sample of winner companies. The following are the results of the normality test for winner and loser samples.

Based on the test results, it can be seen that the Asymp.Sig. in the observation period $t-10$ to $t+10$ is greater than the 5% level. Significance above 0.05 means that there is no significant difference between the data to be tested and the standard normal data, meaning that the data tested is normally distributed in the sample loser companies. The identification of the price reversal phenomenon in the Jakarta Islamic Index (JII) is carried out by using the One-Sample T-Test statistical test to determine the degree of significance of AAR on each stock trading day during the event window $t = -10$ to $t = +10$. One-Sample T-Test is done by comparing AAR on trading days for ten days before the announcement of financial statements and trading days for ten days after the announcement of the

financial statements with AAR at the time of the announcement of the financial statements ($t = 0$). The price reversal phenomenon is identified if the AAR after the day of the significant event is less than 5% and experiences a return reversal. In addition, a chart of stock price movements is made using the cumulative abnormal return (CAAR) value during the event window to observe the cumulative trend of price changes and can also show whether a stock price reversal occurs.

Table 1
Normality sample with the One-Sample Kolmogorov-Smirnov Test

Winner		Loser	
	Asymp. Sig.		Asymp. Sig.
t -10	0,112	t -10	0,121
t -9	0,191	t -9	0,099
t -8	0,200	t -8	0,154
t -7	0,160	t -7	0,112
t -6	0,200	t -6	0,200
t -5	0,162	t -5	0,097
t -4	0,090	t -4	0,091
t -3	0,115	t -3	0,172
t -2	0,097	t -2	0,093
t -1	0,133	t -1	0,200
t 0	0,090	t 0	0,200
t 1	0,200	t 1	0,200
t 2	0,100	t 2	0,200
t 3	0,102	t 3	0,200
t 4	0,200	t 4	0,200
t 5	0,200	t 5	0,119
t 6	0,154	t 6	0,181
t 7	0,099	t 7	0,192
t 8	0,096	t 8	0,160
t 9	0,156	t 9	0,127
t 10	0,101	t 10	0,200

Source: Output processed, 2020

Winner Sample Price Reversal Analysis

Winner category stocks are said to have reversed the stock price when the average abnormal return (AAR) after the day of the event is negative or less than 0 (zero) and statistically significant. Table 3 shows the results of the t test on winner category stocks before the announcement of the financial statements, where the AAR value tends to be negative, then the AAR changes to a positive amount of 0.0465 at the date of the financial statement announcement ($t = 0$).

After the announcement of the financial statements, investors did not appear to be correcting share prices as an indication that they had overreacted. From the tests conducted, it can be seen that there is no reversal after the announcement of the financial statements. On the other hand, AAR is seen to remain positive and statistically significant even until the 10th day after the announcement of the financial statements. The highest AAR after the announcement of the financial statements was on day 1, amounting to 0.0677 with a t-statistic value of 3.342 and statistically significant. The results of data processing to identify price reversals for winner category stocks can be seen in the table below:

Table 2
AAR dan CAAR Sampel Winner from t = -10 to t = 10

	AAR	CAAR	T-Stat	Significant
-10	-0,0042	- 0,0054	-0,765	.0,420
-9	0,0034	- 0,0066	0,768	0,463
-8	-0,0065	- 0,0136	-0,632	0,559
-7	0,0003	- 0,0176	0,000	1,000
-6	0,0060	- 0,0128	0,563	0,528
-5	0,0117	- 0,0048	1,212	0,263
-4	0,0016	- 0,0054	0,168	0,864
-3	-0,0012	- 0,0172	-0,286	0,902
-2	-0,0034	- 0,0148	-0,221	0,843
-1	-0,0068	- 0,0281	-0,565	0,576
0	0,0465	0,0167	3,365	0,000
1	0,0677	0,0648	3,342	0,000
2	0,0523	0,1187	3,544	0,000
3	0,0505	0,1655	2,004	0,001
4	0,0643	0,2137	2,322	0,011
5	0,0570	0,2620	2,565	0,018
6	0,0453	0,3065	3,365	0,025
7	0,0532	0,3476	3,423	0,023
8	0,0465	0,3887	3,022	0,027
9	0,0413	0,4252	2,750	0,058
10	0,0597	0,4722	2,497	0,031

Source: Output processed, 2020

Analysis of Reversal of Loser Sample Prices

Loser category stocks are said to have reversed the stock price when the average abnormal return (AAR) after the day of the event is positive or greater than 0 (zero) and statistically significant. The results of data processing to identify price reversals for loser category stocks can be seen in the table below. Table 4 shows the results of the t test on loser category stocks prior to the announcement of the financial statements, where the AAR value tended to fluctuate then the AAR turned negative by -0.0274 on the date of the financial statement announcement (t = 0). After the announcement of the financial statements,

investors did not appear to be correcting share prices as an indication that they had overreacted. From the tests conducted, it can be seen that there is no reversal after the announcement of the financial statements. On the other hand, AAR is seen to remain negative until the 10th day after the announcement of the financial statements. The lowest AAR after the announcement of the financial statements is on the 1st day, which is -0.0622 with a t-statistical value of -2.701 and statistically significant.

Table 3
AAR and CAAR Loser Samples from t = -10 to t = 10

	AAR	CAAR	T-Stat	Significant
-10	-0,0048	- 0,0084	-2,003	0,995
-9	0,0011	- 0,0111	0,114	0,911
-8	-0,0076	- 0,0263	-1,321	0,732
-7	-0,0098	- 0,0532	-0,922	0,643
-6	-0,0145	- 0,0562	-1,603	0,422
-5	-0,0122	- 0,0631	-0,791	0,366
-4	-0,0184	- 0,0988	-2,001	0,311
-3	-0,0209	- 0,0932	-3,287	0,076
-2	0,0089	- 0,1831	0,480	0,144
-1	0,0016	- 0,1432	0,233	0,233
0	-0,0274	- 0,1939	-2,637	0,003
1	-0,0262	- 0,2645	-2,701	0,000
2	-0,0715	- 0,3334	-2,086	0,061
3	-0,0354	- 0,4010	-1,718	0,080
4	-0,0682	- 0,4932	-3,021	0,067
5	-0,0522	- 0,5218	-1,781	0,095
6	-0,0607	- 0,5792	-2,715	0,221
7	-0,0411	- 0,6099	-2,631	0,184
8	-0,0572	- 0,7183	-1,731	0,125
9	-0,0444	- 0,7821	-1,611	0,396
10	-0,0482	- 0,8034	-1,221	0,367

Source: Output processed, 2020

Discussion

The hypothesis in this study is that there is a market overreaction phenomenon towards the announcement of financial statements on the Indonesia Stock Exchange during the observation period. Table 5 shows the results of the t test on the AAR of loser category stocks that are not able to outperform winner stocks, where the difference between loser and winner AAR is less than 0 (zero), which is -6.8541. AAR of loser and winner stocks did not experience a reversal after the announcement of the financial statements. After conducting the One-Sample T-Test, it was found that the t-stat of -7.112 was less than the t-table of 2.0281.

The test results show evidence that the hypothesis H₀ is accepted, that is, there is no market overreaction phenomenon identified by the AAR of loser category stocks and does not outperform the winner, in which the AAR is negative or less than 0 (zero) and statistically significant. So the test results indicate that there is no overreaction phenomenon to the announcement of financial statements on the Indonesia Stock Exchange. The test results of this study are not in line with the research conducted by Alwathnani et al. (2017) and Boubaker et al. (2015).

However, the results of this study are supported by research conducted by Khatua and Pradhan (2014) and Larson and Madura (2003). Announcement of financial reports is information that is provided periodically, either quarterly, semiannually or annually, so that the information in the annual financial statements has been predicted by investors so as to prevent overreaction. Unlike the case with private information and information suddenly, which usually will occur overreaction.

Announcement of financial statements of companies listed on the Indonesia Stock Exchange is public information that can be accessed by anyone, including investors and potential investors. The results showed that winner and loser stocks did not experience overreaction after the announcement of the financial statements. This indicates that the stock market is in a semi-strong market condition, namely all information available to the public regarding the company's future prospects is reflected in the stock price, so that no investor can use the published information to obtain abnormal profits over a long period of time.

Thus, the implication of this research is that the announcement of the financial statements of companies listed on the Indonesia Stock Exchange is public information that can be accessed by anyone, including investors and potential investors. The results showed that winner and loser stocks did not experience overreaction after the announcement of the financial statements. This indicates that the stock market is in a semi-strong market condition, namely all information available to the public regarding the company's future prospects is reflected in the stock price, so that no investor can use the published information to obtain abnormal profits over a long period of time. . Announcement of financial reports is information that is provided periodically, either quarterly, semiannually or annually, so that the information in the annual financial statements has been predicted by investors so as to prevent overreaction. Unlike the case with private information and information suddenly, which usually will occur overreaction

CONCLUSION

Based on the results of this study, the conclusions that can be drawn are the results of the t test on winner category stocks before the event of the announcement of the financial statements, where the AAR value tends to be

negative then AAR turns positive on the date of the financial statement announcement ($t = 0$). After the announcement of the financial statements, investors did not appear to be correcting share prices as an indication that they had overreacted. From the tests conducted, it can be seen that there is no reversal after the announcement of the financial statements. On the other hand, AAR is seen to remain positive and statistically significant even until the 10th day after the announcement of the financial statements.

The results of the t test on the loser category stocks prior to the announcement of the financial statements, where the AAR value tended to fluctuate then the AAR turned negative on the announcement date of the financial statements ($t = 0$). After the announcement of the financial statements, investors did not appear to be correcting share prices as an indication that they had overreacted. From the tests conducted, it can be seen that there is no reversal after the announcement of the financial statements. On the other hand, AAR is seen to remain negative until the 10th day after the announcement of the financial statements. Meanwhile, the results of the t test on AAR for loser category stocks were unable to outperform winner stocks. AAR of loser and winner stocks did not experience a reversal after the announcement of the financial statements. The test results indicate that there is no overreaction phenomenon to the announcement of financial statements on the Indonesia Stock Exchange.

REFERENCES

- Alwathnani, A. M., Dubofsky, D. A., & Al-Zoubi, H. A. (2017). Under-or-overreaction: Market responses to announcements of earnings surprises. *International Review of Financial Analysis*, 52, 160–171.
- Angelovska, J. (2017). Long and Short-Term Dynamic Relationship between Macedonian and Croatian Stock Markets. *Zagreb International Review of Economics and Business*, 20(2), 11–20. <https://doi.org/10.1515/zireb-2017-0014>
- Arin, K. P., Spagnolo, N., Francis, X., Piotr, T., Hamzah, M. A., Baker, M., Wurgler, J., Bekaert, G., Harvey, C. R., Engle, R. F., Rangel, J. G., Adrian, T., Barberis, N., Blanchard, O., Bouchaud, J., Campbell, J., Chernozhukov, V., Derman, E., Diamond, P., Avramov, D. (2006). *Www.Econstor.Eu. Economics Letters*, 21(3), 461–504.
- Baghestani, H., & Abu Al-Foul, B. (2010). Factors influencing Federal Reserve forecasts of inflation. *Journal of Economic Studies*, 37(2), 196–207.
- Beigi, F., Hosseini, M., & Qodsi, S. (2016). The Effect of the Earning Transparency on cost of capital common stock based on The Fama-French and Momentum Factors. *Procedia Economics and Finance*, 36(2005), 244–255.
- Boubaker, S., Farag, H., & Nguyen, D. K. (2015). Short-term overreaction to

- specific events: Evidence from an emerging market. *Research in International Business and Finance*, 35, 153–165.
- Brown, S. J., & Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics*, 8(3), 205–258.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns. *Journal of Financial Economics*, 14(1), 3–31.
- De Bondt, W. F. M., & Thaler, R. (1985). Does the Stock Market Overreact? *The Journal of Finance*, 40(3), 793–805.
- Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383.
- Grey, C., Stathopoulos, K., & Walker, M. (2013). The impact of executive pay on the disclosure of alternative earnings per share figures. *International Review of Financial Analysis*, 29, 227–236.
- Grohmann, A. (2018). Financial literacy and financial behavior: Evidence from the emerging Asian middle class. *Pacific Basin Finance Journal*, 48(November 2017), 129–143. <https://doi.org/10.1016/j.pacfin.2018.01.007>
- Guru, B. K., & Yadav, I. S. (2019). Financial development and economic growth: panel evidence from BRICS. *Journal of Economics, Finance and Administrative Science*, 24(47), 113–126. <https://doi.org/10.1108/JEFAS-12-2017-0125>
- Kendall, M. G., & Hill, A. B. (1953). The Analysis of Economic Time-Series-Part I: Prices. *Journal of the Royal Statistical Society. Series A (General)*, 116(1), 11.
- Khatua, S., & Pradhan, H. K. (2014). Examining Overreaction in Indian Stock Market for Quarterly News. *EMAJ: Emerging Markets Journal*, 4(1), 1–16. <https://doi.org/10.5195/EMAJ.2014.57>
- Larson, S. J., & Madura, J. (2003). What Drives Stock Price Behavior Following Extreme One-Day Returns. *Journal of Financial Research*, 26(1), 113–127.
- Law, S. H., & Ibrahim, M. H. (2014). The response of sectoral returns to macroeconomic shocks in the Malaysian stock market. In *Malaysian Journal of Economic Studies* (Vol. 51, Issue 2, pp. 183–199).
- Mackinlay, A. C. (2008). Event Studies in Economics and Finance. *Journal of Economic Literature*, 35(1), 13–39.
- Muñoz-Murillo, M., Álvarez-Franco, P. B., & Restrepo-Tobón, D. A. (2020). The role of cognitive abilities on financial literacy: New experimental evidence. *Journal of Behavioral and Experimental Economics*, 84(February 2019), 101482.
- Nugraha, S. S., & Setiawan, I. (2020). Effect of BI Rate, Inflation and Index Dow Jones Against Jakarta Islamic Index (JII). *EkBis: Jurnal Ekonomi Dan Bisnis*, 3(1), 213–220.
- Payne, J. E. (2008). Inflation and inflation uncertainty: Evidence from the

Caribbean region. *Journal of Economic Studies*, 35(6), 501–511.

Schellhorn, C., & Sharma, R. (2013). Using the Rasch model to rank firms by managerial ability. *Managerial Finance*, 39(3), 306–319.

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124–1131.