

SHORT-TERM OVERREACTION OF ISLAMIC STOCKS TO SPECIFIC EVENTS IN INDONESIA

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ABSTRACT

Overreaction is a phenomenon caused by stock market inefficiencies and also a reaction to certain events. Das and Krishnakumar (2016) explain that some overreaction phenomena violate the theory of capital market efficiency. As experienced by other stocks, Islamic stocks also probably experience market inefficiencies. This study aims to analyse the phenomenon of overreaction in Islamic stocks, as well as the factors that influence the phenomenon, by using a two-stage testing method: two paired sampling and cross-sectional regression. Two specific events which occurred in 2016-2018, and which were followed by price reversal and return reversal, are studied. The results show that the election of Donald Trump as US President (Event 1) and the bombings in Surabaya (Event 2) were significant in the overreaction in the winner stock category. The factors that influenced the two events were different. The overreaction to Trump's election proved to be significantly influenced by information leakage, while the bombings in Surabaya significantly affected the company ownership category. The results indicate that Islamic stocks continue to have several transactions which are prohibited by the DSN MUI fatwa in the short term.

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I. INTRODUCTION

1.1. Background

Investment is one of the economic activities categorised in muamalah as a relationship between humans. Fiqh rules state that the origin law of muamalah is mubah (permissible), as long as there is no prohibition in the Qur'an or Hadith. Because of this rule, investment activity in Islam is also permissible. Investment can be made in two sectors: the real sector and the capital market sector. Investment in the capital market is divided into three alternatives: stocks, bonds, and mutual funds. Stock is a form of investment that has high return and risk. The high risk of the stock market encourages investors to find related information whenever possible. The similar information of the stock prices must be achieved, which is commonly known as the efficient market hypothesis.

Fama (1970) explained that the efficient market hypothesis (EMH) is a situation in which stock prices reflect the available information. On the other hand, the efficiency of a capital market cannot always be reached, with many violations causing inefficiencies. This is called the 'efficient market anomaly'. One efficient market anomaly is known as market overreaction. Das and Krishnakumar (2016) state that some overreaction phenomena break the theory of capital market efficiency, and that these explain the excessive reaction of the capital market to some unexpected events. The extreme form of this phenomenon is price reversal, which is followed by an opposite movement of stock prices. This behaviour causes irrational fluctuations in price movements together with irrational profits received by investors.

Market inefficiency is an event that can occur with various stocks, such as the Islamic capital market in Indonesia. The development of Islamic stocks in Indonesia began to increase when 30 companies were listed on the Jakarta Islamic Index, and 395 companies were listed on ISSI (IDX 2018). The operational rules on Sharia shares, such as DSN fatwa including Fatwa DSN No:80/DSN-MUI/III/2011, explain that Islamic stocks are exempt from behaviours that contain *dharar, gharar, riba, maisir, risywah, immorality and tyranny, taghrir, ghisysy, tanajusy/najsy, ihtikar, bai'al-ma'dum, talaqqi alrukban, ghahn, and tadlis*.

In the Islamic stock market, the ethics described in fatwa DSN MUI dominate every transaction and explicitly explain the efficiency of the stock market. This is because Islamic ethics prioritise problems with a maslaha nature or public benefits (Obaidullah, 2001). This is the case in the research conducted by Ali et al. (2018), which found that the Islamic stock market is more efficient than conventional stock markets in developed markets apart from in Russia and Jordan, because Islamic stocks are subject to shari'ah-compliant laws, good governance and disclosure mechanisms, which make them more efficient. It can be concluded that the ethics described in the DSN fatwa mean that Islamic stock markets are more efficient than conventional ones.

However, based on research conducted by Ali et al. (2013), one phenomenon that violates the theory of market efficiency is that of overreaction occurring in Islamic stocks. Ali et al. suggest that the Islamic stock market in Malaysia has shown overreaction behaviour similar to that in conventional stock markets. In addition, research conducted by Fatima et al. (2019) shows that the sharia stock market in Indonesia may react to negative news. Other research conducted by Abd. Majid

et al., (2016) shows that the movement of share prices in both conventional and Islamic stocks in Indonesia and Malaysia are the same, resulting in Islamic stocks having anomalous monthly effects. Abd. Majid et al. also state that although both conventional and Islamic stock markets have been well integrated in the both markets, the Malaysian stock market has been more efficient than the Indonesian. Therefore, there is a possibility that overreaction may occur in Islamic stocks in Indonesia.

Previous studies have extensively investigated the overreaction phenomenon, some specifically with regard to Islamic stocks, but few have focused on the overreaction to specific events. Therefore, to the best our knowledge, the overreaction to specific events in Islamic stock markets has yet to be empirically examined. A question arises as to whether stock returns are predictable specific events in the Islamic stock market, or can be described as the possibility of an event occurring which causes the overreaction phenomenon, and to determine the phenomenon of overreaction.

1.2. Objective

The study refers to the research of Farag and Cressy (2010) and Boubaker et al. (2015), who found that the short-term overreaction phenomenon is caused by several specific events, which occur in extreme price reversals. It also adapts the research of Iihara et al. (2004), whose findings showed that specific events are events that are subsequently followed by a 'return reversal'. Therefore, a specific event will be attend if it has a significant abnormal return in post day, followed by a price reversal. Table 1 shows the significant abnormal returns of each event studied.

Table 1.
Abnormal Returns of Event 1 and Event 2

Time	Event 1	Event 2
	(Trump Effect)	(Bombings Effect)
	Average Abnormal Return	
t-5	-0.0066*	-0.0088*
t-4	0.0003	-0.0025
t-3	0.0058	-0.0031
t-2	0.0044	0.0001
t-1	-0.0049	0.0194**
t=0	0.0073*	0.0003
t+1	0.0146**	0.0111**
t+2	0.0198**	0.0021
t+3	-0.0036	0.0136
t+4	-0.0125*	0.0003
t+5	0.0054	0.0015

Source: Yahoo Finance 2018 (data processed)

Description: ** and * denote significant at levels of 5% and 10%

This paper examines the short-term overreaction to two specific events, namely the election of Trump as US President and the bombings in Surabaya. The Trump effect shows positive and significant average abnormal returns for the two days post-event, followed by a price reversal in four day post event. On the other hand, the bombings effect showed positive and significant average abnormal returns in one day post event. These results are consistent with the literature on the overreaction phenomenon (Boubaker et al., 2015; Farag & Cressy, 2010).

After Trump was officially elected as the US president, the value of the Jakarta Composite Index fell 1.03 percent, or 56.36 points (Yahoo Finance, 2016). On this basis, 220 shares closed down, 100 shares up, while 81 shares remained unchanged (Ika, 2016). The evidence shows that the announcement of the event of Trump's election as US President caused investors in Indonesia to overreact and meant overall stock prices fell.

After the bombings in Surabaya, the Jakarta Composite Index fell by 103.39 points with price of 5,853.44. However, stock market prices rebounded, eventually returning to normal at 5,900 after the event had occurred (Fauzia, 2018). The effects of the event were temporary and had the effect of negative market shock. Research on terrorism conducted by Markoulis and Katsikides (2018), with case studies of 21 countries, shows that the effects caused by terrorism are temporary and subsequent movements will be stable.

This study compares the value of abnormal stock returns for each event in order to determine the phenomenon of overreaction with paired t-test models. The cross-sectional regression method aims to establish the factors affecting the overreaction phenomenon. The originality of the research is the use of specific stocks, namely Islamic ones. Furthermore, cross-sectional regression and overreaction testing are used to test the factors that influence the phenomenon of overreaction by Islamic stocks.

The research is divided into two sections. The first focuses on determining the overreaction following each event by using a test of difference, divided into winner shares and loser shares. In addition, the study also explains the possibility of events occurring. The second section analyses the factors that influence the phenomenon of overreaction based on the previous studies of Farag and Cressy (2010) and Boubaker et al. (2015). The analysis uses two-paired sampling and cross-sectional regression methods to answer them. By using these two methods, the efficiency of the Islamic stock market can also be established, and the issue of a fatwa mismatch can also be explained. Section 2 presents the literature review; section 3 briefly introduces the data and model; section 4 reports the empirical results; and section 4 summarises and concludes the paper.

II. LITERATURE REVIEW

2.1. Background Theory

According to Fatwa DSN No:40/DSN-MUI/X/2003, the Islamic capital market is one whose entire mechanism is related to issuers, types of securities traded, and trading mechanisms which must be implemented in accordance with Islamic principles. These sharia principles are implemented in accordance with Islamic Sharia and supported by DSN MUI, both in relation to this particular fatwa or other related fatwa.

The efficient market hypothesis specifies the nature of market equilibrium, when price fully perfect available information. The theory can be divided into three categories, depending on the nature of the information subset of interest. Strong-form tests are concerned with whether individual investors or groups have monopolistic access to any information relevant for price formation. One would not expect such an extreme model to be an exact description of the world, and it is probably best viewed as a benchmark against which the importance of deviations from market efficiency can be judged. The less restrictive semi-strong form tests the information subset of interest, including all the obviously publicly-available information, while in the weak form it tests the information subset just in terms of historical price or return sequences (Fama, 1970). The phenomenon of overreaction is one of the anomalous phenomena of the market efficiency hypothesis.

De Bondt and Thaler (1985) found that a stock will experience the phenomenon of overreaction if two criteria are met, namely extreme stock movements followed by a reversal in the opposite direction, and with the reversal at first greater following the stock movement. The results obtained from a study conducted by De Bondt and Thaler (1985) showed that loser shares proved to have better performance compared to winner shares. Therefore, overreaction occurs with loser shares. This is reinforced by the higher loser stock returns compared to the winner shares in the testing period. Moreover, positive excess returns are loser stocks.

In addition, events that produce the phenomenon of overreaction are ones that show a reversal of returns in the period after the event has occurred (Iihara et al. 2004). Therefore, the determination of several events during the 2013 to 2018 research period was based on the price reversal and return reversal in the period after the event occurred.

2.2. Previous Studies

The concept of overreaction was first proposed by De Bondt and Thaler in 1985, who argued that it was caused by human psychological factors that cognitively responded to certain information excessively. The research of De Bondt and Thaler on stocks on the NYSE during the period January 1936-December 1982 aimed to analyse whether these psychological factors can affect stock prices. They found that the phenomenon of overreaction occurs if two criteria are met: extreme stock movements are followed by a movement in the opposite direction; and the reversal is greater following the first movement of stock prices. The results obtained by De Bondt and Thaler (1985) show that loser stocks displayed better performance compared to winner stocks. Therefore, overreaction often occurs in loser shares.

Short-term research into the overreaction phenomenon was conducted by Larson and Madura (2003) regarding the reaction of the capital market to information disseminated by WSJ or information that was not disseminated. The test analysis used was a cross-sectional regression of daily data over the period January 1989 to December 1995. The dependent variable was the cumulative abnormal return, whereas the independent variables were dummies of the WSJ announcement response, Initial Price Change (IPC), information leakage, company size, and dummies of December, January and Monday effects. The study showed that winner shares which didn't have spreaded information were more likely to experience overreaction, compared to the spreaded ones. This shows that

the overreaction phenomenon depends on information that causes extreme price changes.

Similar research was also conducted by Farag and Cressy (2010). Their study found that unobservable factors can explain the disposition effect of stock markets in emerging states. It employed daily data from 2005 to 2008, using the EGX30 stock index, and variables such as abnormal return, cumulative abnormal return, market capitalisation, trading volume, leakage of information, and a company ownership dummy. Unlike the research of Larson and Madura (2003), this study uses data panel model-fixed effect pooled regression and a polability test to explain the factors that cause overreaction. The results showed that market capitalisation was significantly negative in relation to the phenomenon of overreaction, which means that small companies have a high probability of experiencing a price reversal. The study concludes that any specific information that cannot be explained in the model has a large presentation in analysing stock prices variations after the event.

Boubaker et al. (2015) conducted an analysis of overreaction in the stock markets of developing countries. Their study used a paired t-test and multiple regression model for daily data from 2003 to 2010, and focused on four types of event: terrorist attacks, Middle East turmoil, the privatisation of state enterprises, and the formation of new governments. The results of the study showed that bad news led to more significant overreactive than good news.

Long-term research into the overreaction hypothesis was conducted by Caporale et al. (2019). This examined long-term price overreaction in various financial market modities, the US stock market and FOREX. It employed two tests; first, a number of statistical tests of the overreaction phenomenon, and second a trading robot approach to test the profitability of the classical overreaction and inertia anomalies. The research compared short-term and long-term intervals. The results on the overreaction anomaly in the case of the US stock market and commodity market were rejected both in the short-and long-term. In addition, the results with regard to FOREX were also rejected. Therefore, the overreaction anomalies in the long-term are not profitable, and consequently the latter cannot be seen as inconsistent with the efficient market hypothesis.

III. METHODOLOGY

3.1. Data

The data used were daily stock prices during the period June 2016 to October 2018 on the Jakarta Islamic Index (JII) and the stocks that used during the period of events. Ten specific events are followed by price reversal and return reversal (De Bondt & Thaler, 1985; Iihara et al., 2004). The period used to determine the reaction of these events to the Islamic capital market was divided into three sub-periods: the estimation, event, and test periods. The estimation period ($t-100$) is 100 days before the event occurs; the event period ($t=0$) is the exact day when the event occurs; and test period ($t+100$) is 100 days after the event occurs. Table 1 show the list of events included in the study and the period of each.

Table 1.
List of events and periods included in the study

No.	Specific events	Estimation period	Event period	Test period
		t-100	t=0	t+100
1	Event 1	13 June 2016	9 November 2016	3 April 2017
2	Event 2	25 December 2017	14 May 2018	1 October 2018

3.2. Model Development

The steps of the analysis were conducted in accordance with the research conducted by Boubaker et al. (2015), Musnadi et al. (2018) and Farag and Cressy (2010), by estimating abnormal returns during the test period, namely 100 days after the event occurred.

3.2.1. Determination of the winner and loser stock categories

1. Daily returns

The return variables used are stock returns (R_{it}) and market returns (Rm_t). Price (P_{it}) is defined as the closing price of each share in period t (Lobe & Rieks, 2011).

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \text{ and } Rm_t = \frac{Pm_t - Pm_{t-1}}{Pm_{t-1}} \quad (1)$$

2. Stocks abnormal returns (AR)

Abnormal return is defined by using the market adjusted model, whereas the expected return is the value of the market return index in the same period (Musnadi et al., 2018).

$$AR_{it} = R_{it} - Rm_t \quad (2)$$

3. Cumulative abnormal return (CAR)

Cumulative abnormal return is the sum of abnormal returns from a stock. The stock categories are determined from the value of CAR with a period of 10 daily calculations for before the event occurred (Farag and Cressy, 2010). The highest CAR value will be the winner stock category and the lowest will be the loser stock category.

$$CAR_{it} = \sum_{a=1}^t AR_{it} \quad (3)$$

3.2.2. Determination of the overreaction indicator

1. Average abnormal returns (AAR)

The overreaction hypothesis test was conducted by using a paired dependent test to compare the value of average abnormal return (AAR) between the period before the event occurred and the period after it occurred for winner and loser stocks (Musnadi et al., 2018).

$$AAR_t = \frac{\sum_{i=1}^I AR_{it}}{I} \quad (4)$$

2. Cumulative average abnormal returns (CAAR)

Cumulative average abnormal return (CAAR) is used to determine the information leakage (leak) indicator obtained from the CAAR values three days before the event occurred (Boubaker et al., 2015).

$$CAAR_t = \sum_{i=1}^I \frac{CAR_{it}}{I} \quad (5)$$

3.3. Method

The study aims to observe the factors that influence the phenomenon of overreaction by Islamic stocks in Indonesia. The model is based on research conducted by Boubaker et al. (2015) and Farag and Cressy (2010). It uses multiple regression methods with cross-sectional regression categories. The determination of these categories means that there is no effect of time on the model, but it is influenced by the type of stocks of the company observed. The research model is as follows:

$$CAR_i = \alpha + \beta_1 AR_{i(0)} + \beta_2 Leak_i + \beta_3 LTV_i + \beta_4 LSize_i + \beta_5 Dk_i + e_i \quad (6)$$

where

CAR_i	= cumulative abnormal return stock i , with value $CAR_i = \frac{\sum_{t=1}^{100} CAAR_{it}}{10}$ (Boubaker et al., 2015)
$AR_{i(0)}$	= abnormal return of every stock i when the event occurred
$Leak_i$	= leakage of information stock i when the event occurred
LTV_i	= trading volume stock i with value TV_t / TV_{t-1}
$LSize_i$	= natural logarithm of the free float market capitalisation of firm i one day before the event
Dk_i	= dummy variable with a value of 1 if the firm was private, and 0 otherwise
α	= intercept
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$	= estimated parameters
e_i	= error

IV. RESULTS AND ANALYSIS

4.1. Results

4.1.1. Analysis of Overreaction

In line with Musnadi et al. (2018), the test of overreaction in this study uses the value of average abnormal return (AAR). The AAR value will be tested between the period before and after the event for each stock category and for each event. If a difference between the before and after period occurs, this means that overreaction to the event is proven. The tests used were a paired dependent t-test for normal data and the Wilcoxon Signed-Rank test for abnormal data. The results of the significance of the overreaction test can be seen in Table 2.

Table 2.
t-test results for all samples

No	Specific Event	Asymp.Sig	
		winner	Loser
1	Trump Effect (Event 1)	0.061*	0.348
2	Bombings Effect (Event 2)	0.046**	0.770

Source: Yahoo Finance (2018) (data processed)

Description: ** and * indicate significance at the 5% and 10% levels.

Based on the results of the overreaction significance test (Table 2), Events 1 and 2 caused overreaction in the Indonesian Islamic stock market. The two events significantly occur only on winner stocks which had a positive return value, while loser shares did not have significant results for all the samples. These results are confirmed by the significance value of the difference tests, which is higher than the level of significance. Another result that can be explained by the difference tests is that the Islamic capital market is relatively efficient, which is confirmed by Fatwa DSN MUI NO 40/DSN-MUI/X/2003, which states the prices must accurately reflect existing conditions, either economic, emitters, or political, amongst others.

However, the significant overreaction phenomenon to certain events indicates that some transactions contravene the fatwa of DSN MUI. The difference in information between stock prices can be caused by the spread of misleading information, which is prohibited in sharia principles according to Fatwa DSN MUI NO:80/DSN-MUI/III/2011, which rules on misleading information in transactions. This includes information that contains *taghrir*, which is a transaction that seeks to influence other investors in order to obtain a personal profit. The existence of these different and abnormal profit gains indicate that overreaction is taking place. The existence of sharia violations of fatwa DSN are proven in the short term; therefore, stocks in sharia law are a long-term instrument that prohibits the existence of short-term transactions.

4.1.2. Cross- Sectional Regression Test

This test aimed to determine the factors that significantly influenced the overreaction phenomenon in the two events that occurred. Before such testing is conducted, certain assumption tests need to be fulfilled, such as normality, heteroscedasticity, multicollinearity, and autocorrelation tests. All the assumptions in this study show a significant fulfillment. The test results using the cross- sectional regression model are shown in Table 4.

Table 4.

Estimated results of the cross-sectional regression of winner stock group Events of the election of Donald Trump as the US President (Event 1) and the bombings events in Surabaya (Event 2)

Independent variable	Dependent variable: CAR	
	Trump Effect (Event 1)	Bombings Effect (Event 9)
C	-0.030 (0.987)	0.164 (0.942)
AR	12.493 (0.217)	2.215 (0.453)
Leak	-24.807 (0.075)*	0.125 (0.984)
LTV	-0.069 (0.372)	0.065 (0.663)
LSize	0.002 (0.969)	0.000 (0.996)
Dk	0.191 (0.255)	-0.381 (0.017)**
<i>R-squared</i>	0.692	0.852
<i>Adjusted R-squared</i>	0.307	0.667
<i>Prob(F-statistic)</i>	0.295	0.082*

Source: Yahoo Finance and IDX (2018) (data processed)

Description: the values in parentheses are the p-values

***, **, and * are significant at the levels of 1%, 5% and 10%

4.2. Robustness Test

This section will explain the robustness test. This is a test whereby the researcher examines how certain regression coefficient estimates behave when the regression specification is modified in some way (Lu, Xun et al . 2014). The test in this study uses price clustering, based on clustering in the industrial sectors listed on the IDX.

The study examines two groups of sectors. For the Trump effect (event 1), the first sector comprises the agriculture sectors, consumer goods industry sectors, basic industry and chemicals sectors, mining sectors, and miscellaneous industry sectors. The second sector consists of the trade, service, and investment sectors, property, real estate and building construction sectors, and infrastructure, utilities, and transportation sectors. For the bombings effect (event 2), the first sector comprises the mining, trade, service, and investment; basic industry and chemical; and infrastructure, utilities, and transportation sectors . The results of this test can be seen in Table 5.

In this section, we examine how factors of overreaction with another variable when the price clustering with sectors . From Table 4, with regard to the terrorism events, the information leakage relates to the phenomenon of overreaction significantly and negatively. However, when the sectors clustering shows different results between the two sectors. The first sector shows asymmetrical results, namely a significant negative relationship between information leakage and the phenomenon of overreaction. This indicates that in the sector consisting of consumer goods industry sectors, basic industry and chemicals sectors, mining

Table 5.
Results of the robustness test on the two events. The dependent variable is
cumulative abnormal return (CAR)

Independent Variable	Trump Effect		Bombings Effect	
	Sector 1	Sector 2	Sector 1	Sector 2
C	-1.027	0.997	-3.513	-0.784
AR	-2.646**	3.675	3.852*	9.085**
Leak	-13.641*	13.868	7.084	-28.793**
LTV	0.008	-0.042	0.069	0.018
LSize	0.009	0.129	0.100*	0.029
Dk	0.029	-0.013	-0.415**	-0.304**

Source: Yahoo Finance and IDX (2018) (data processed)

Description: the value in parentheses is p-value

***, **, and * are significant at the levels of 1%, 5% and 10%

sectors, and miscellaneous industry sectors, overreaction is caused by information leakage. These results are consistent with the conclusions of the study. However, the second sector shows different results and the phenomenon of overreaction tends not to be able to determine the factors that influence it because none has a significant relationship.

As for the bombings effect, the results indicate that whatever the stock sector, different results are not presented. In the first sector, the phenomenon of overreaction is related to the dummy variable of company ownership. This result explains that investors in the trade, service, and investment; basic industry and chemicals; infrastructure utilitiers and transportation and mining sectors make overreaction transactions because the company ownership factor and the relate is negative. Investors in property, real estate and building construction, the consumer goods industry, and the mining sector have the same result. This shows that investors overreacted to the bombings in Surabaya and the stock type state-owned companies more dominant to influence the overreaction phenomenon. The robustness test for the bombings event was more robust than for the Trump event because the results do not show asymmetric in the company ownership dummy variable.

4.3. Analysis

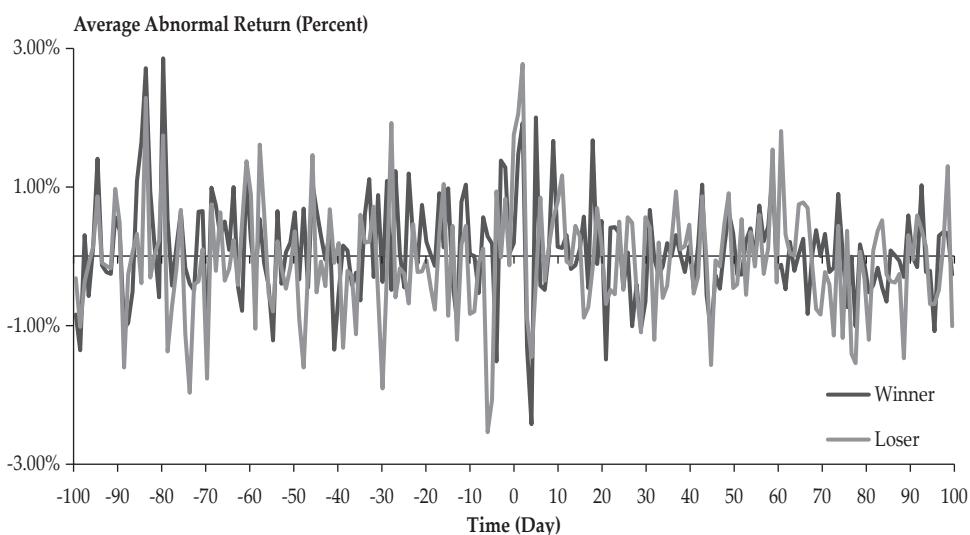
4.3.1. Analysis of Events

Event 1 was one of the events that caused significant overreaction, as measured by using difference testing of the abnormal return value between the period before and after the event. The event occurred on November 9, 2016 and was the election of the 45th US president. It involved two candidates: Hillary Clinton from the Democratic Party and Donald Trump from the Republican Party. The various policies favoured by the two candidates caused reactions amongst investors around the world, including Indonesia, since the United States is at the heart of the world's economy.

After Trump was officially elected, the value of the Jakarta Composite Index fell 1.03 percent, or 56.36 points (Yahoo Finance, 2016). This falling index could

have been one of the indications of overreaction. According to the theory of De Bondt and Thaler (1985), the overreaction phenomenon will occur if there is an extreme price reversal.

In addition, the existence of a negative event can be a factor in overreaction. This caused by the influence of good or bad events on investors' decisions when buying stocks (Boubaker et al., 2015). The election of Trump had a negative influence on Muslim investors because of his negative sentiment towards Islamic law. One negative piece of evidence at Trump's election took place in Los Angeles, an attack on Muslim college students at San Diego State University. That incident caused negative sentiment amongst Muslim investors and made them react excessively. This proves that the overreaction phenomenon occurred due to the election of Trump.



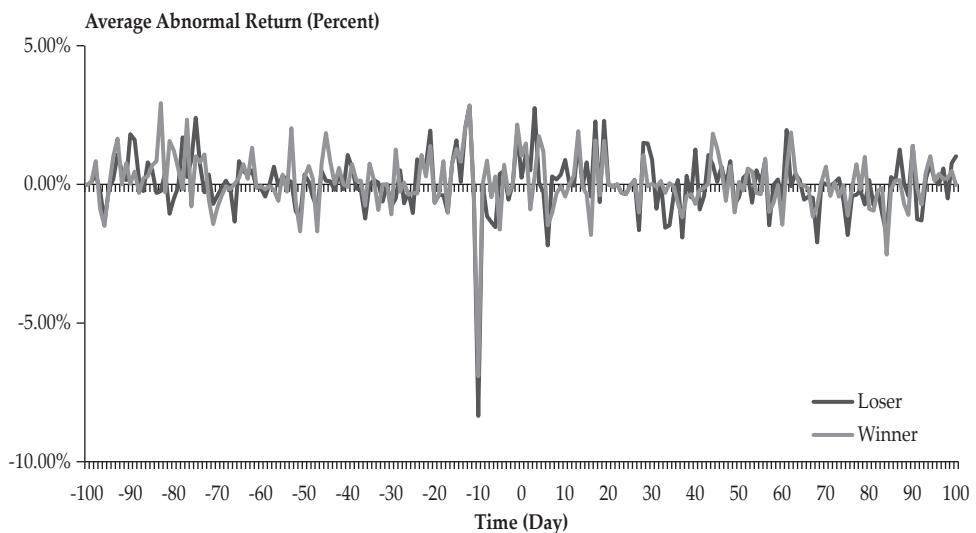
Source: Yahoo Finance (2016) (data processed)

Figure 1.
Winner and loser stock movement in relation to Event 1

Figure 1 explains that during the 201 day period, the movements of winner stock abnormal returns related to Event 1 and based on the previous information were a result of the election of Trump, reaching a minimum value of -2.42 percent on the 4th day after the event. This result indicates an excessive reaction to the election of Trump, which occurred 4 days after the event. These results correspond to the research by Wagner et al. (2018), who found that when Trump was elected, stock price movement tended to be extreme, producing a shock on the first day and a reversal on the third. Price reversal is caused by an overestimation of the winner stocks before an event occurs. The estimation causes such stocks to rise in price and produce high returns. However, when an event occurs and the estimation is proved to be wrong, investors will take the opposite action by selling winner shares and causing the price reversal to decrease. These results are consistent with

the research conducted by Abarbanell and Bernard (2015), Musnadi et al. (2018) and Boubaker et al. (2015).

Another event of significance was the overreaction to Event 2. This bombing event occurred on May 14, 2018 in Indonesia, before the data. It happened in three churches, namely Arjuno GPPS, the GKI Diponegoro, and the Church of Santa Maria Tak Bercela. Stanislaus Riyanta, an observer of terrorism from the University of Indonesia, suspected that the perpetrators of the incident were ISIS groups and he stated that these had started to rise and risked endangering the country. These events caused shocks amongst all communities, especially investors. They made Indonesian investors overreact in stock transactions due to concerns over the stability of state.



Source: Yahoo Finance (2018) (data processed)

Figure 2.
Winner and loser stock movements in relation to Event 2

Based on Figure 2, during the 201 day period the movement of abnormal returns on winner shares in relation to the bombings in Surabaya reached a minimum value of -6.92 percent 10 days before the event. This result shows an overreaction before the event occurred. This could indicate an information leak because the overreaction occurred before the event happened. Indonesia and other countries that often experience acts of terrorism are able to influence investors to overreact in order to avoid high losses. The excessive reaction of investors at the time of the event caused a price reversal. This is because investors who invest in stocks in the winner category always make good analysis to obtain high profits. However, when an event occurs, investors will behave in the opposite way by excessively selling their shares, ultimately having an impact on extreme price falls and leading to the overreaction phenomenon. These results correspond to those of Abarbanell and Bernard (2015), Musnadi et al. (2018) and Boubaker et al. (2015).

Table 4 shows the estimation results of both events, with a multiple regression method of cross-sectional data. This estimation aims to consider the factors that influence overreaction by stocks in the winner category when an event occurs. The statistical tests in Table 4 include the R-squared value (R^2), F-statistics, and t-statistics. The statistics on the Trump effect show an R^2 value of 0.692, which means that 69% of the cumulative abnormal return diversity can be explained by the factors in the model, whereas the remaining diversity is explained by other factors outside the model. In addition, the F-statistic value in the winner stock group model shows a value of 0.295, which is higher than the level of significance of 0.05. This shows that the explanatory variables in the model cannot simultaneously explain the phenomenon of overreaction and lead to speculative transactions. Speculative transactions are prohibited by Fatwa DSN NO 40/DSN-MUI/X/2003 Article 5, which states that securities transactions are not allowed as they are speculative and contain elements of *dharar*, *gharar*, *riba*, *maisir*, *risywah*, immorality and tyranny. However, based on the results of research during the period March 2013 to December 2018, Islamic stocks experienced speculative transactions in the short term, whereas they should be long-term investments and short-term buying or selling should be avoided. Other evidence of the explanatory variables' inability to explain the overreaction phenomenon can be seen from the t-statistics of each of these, which describe the relationship with the CAR variable.

The case of the bombings effect (Event 2) is different. The R^2 value is 0.852, meaning that 85% of cumulative abnormal return diversity can be explained by the model, with the remainder explained by other factors outside the model. Furthermore, the F-statistic value in the loser stock group model shows a value of 0.082, which is lower than level of significance of 10%. This indicates that the explanatory variables in the model can simultaneously explain the phenomenon of overreaction. A high R^2 value and a significant F-statistic value can demonstrate that the factors in the model affect the overreaction phenomenon. This argument can be seen in t-statistics, which can be used to explain the relationship between each independent variable and the phenomenon of overreaction, as explained by the cumulative abnormal return (CAR) variable. The model specifications and coefficients of each variable in both events can be written as follows:

$$CAR_i = -0.030 + 12.493AR_{i(0)} - 24.807Leak_i - 0.069LTV_i + 0.002LSize_i + 0.191Dk_i + e_i$$

and

$$CAR_i = 0.164 + 2.215AR_{i(0)} + 0.125Leak_i + 0.065LTV_i + 0.001LSize_i - 0.381Dk_i + e_i$$

Based on the results of estimating the factors that influenced the phenomenon of overreaction in relation to Events 1 and 2 (Table 4), none of the variables with regard to Trump's election is significantly related to the CAR value, apart from the information leakage variable assessed by cumulative average abnormal return three days before the event occurred. The leak of information variable in the winner stock group at the time of Trump's election showed a negative and

significant influence at the level of significance of 10% on the phenomenon of overreaction, with a coefficient of -24,807. This means that when the information leakage increased by 1 percent, the phenomenon of overreaction seen from the CAR value will decrease or hardly to occur at 24,807 percent. These results are in line with the research hypothesis and also with the research conducted by Larson and Madura (2003) on stocks listed on the NYSE index from January 1988 to December 1995.

During the bombings in Surabaya, the only variable that affected the overreaction phenomenon was the dummy variable of company ownership. This variable explains the influence of the type of company, either state (Persero) or private. These variables are negatively and significantly related to the overreaction that occurs from each share that lists the winner stock group, with a coefficient of -0.381. This means that the average difference of the influence from non-state-owned companies on the overreaction phenomenon is -0.381, compared with state-owned companies, if other factors do not change. This shows that state-owned companies have a more dominant influence on the overreaction phenomenon. This result is in line with the hypothesis that there is a significant relationship between the type of company and the phenomenon of overreaction, and also corresponds with the research conducted by Boubaker et al. (2015), who found that there was a negative and significant relationship between the category of company ownership and overreaction to the formation of a new government in Egypt, the stock index used being EGX 30.

The estimation of the cross-sectional regression model in Events 7 and 9 shows that the overreaction phenomenon is greatly influenced by other variables outside the model. The results are not in line with the research hypothesis, because all the variables in the model are insignificant, apart from one. In addition, the F-stat value that is not significant means the variables in the model are unable to explain the phenomenon of overreaction significantly. Therefore, based on these results, overreaction at the time of the election of Trump was only influenced by the existence of information leakage. These results are very different from those of Farag and Cressy (2010) and Boubaker et al. (2015), which may be because of the differences in the characteristics of the events, and the attitudes of Islamic stock investors in Indonesia.

One of the factors in the overreaction to Trump's election was information leakage. This implies that prior information was obtained, with the aim of making abnormal profits. It also explains that there were transactions that violated Fatwa DSN NO 40/DSN-MUI/X/2003 article 5, which rules that in a securities transaction (included shares), it is not permitted to use inside information to obtain personal gain, often referred to as insider trading. Besides, Fatwa DSN NO 80/DSN-MUI/III/2011 also decrees that in a stock transaction through the stock market, it is prohibited from conducting transactions that contain *tadlis*. One such transaction is front running action, which is taken by a securities exchange member (stock player) to make an advance transaction, after receiving information that a customer will make a large transaction, thus influencing market prices. Such behaviour aims to increase profits and reduce losses. Therefore, short-term transactions are still prohibited in Islamic stocks, which is the reason why Islamic stocks are only long-term investments.

Islamic stocks are one of the long-term investment instruments. However, transactions using the stock exchange have the possibility of being short-term transactions, which is permissible according to Fatwa DSN NO 80/DSN-MUI/III/2011. This fatwa DSN has special provisions for stock transactions by which investors can sell securities (shares) after the sale and purchase agreement is valid, although the settlement of the transaction administration has not yet been completed. This provision, according to the fatwa, is in of *qabdh hukmi*. The contract is explained in Fatwa DSN NO 82/DSN-MUI/VIII/2011; *qabdh hukmi* is a sale and purchase transaction of a commodity purchased which is not physically owned yet, but the ownership document in the form of electronic and non-electronic records exists. This contract is adjusted in the stock transaction, when the buyer already owns the shares after the sale and purchase agreement is valid, although it is not valid administratively. The existence of a fatwa which indicates the possibility of short-term transactions, but notice its provisions described in Fatwa DSN NO 40/DSN-MUI/X/2003 and Fatwa DSN NO 80/DSN-MUI/III/2011.

V. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The results of this study indicate that the Islamic stock market witnessed overreaction to two events, namely Event 1 and Event 2. Both of these were based on existing economic conditions and stock markets, as a result of Donald Trump's election as US President, or the Trump Effect, and the bombings in Surabaya, or the Bombings Effect. The two overreaction phenomena only occurred in relation to the winner stock type during the event. This was evidenced by the difference testing, which having different average abnormal return values of winner shares and loser shares before and after the events. On the other hand, the other events do not show an overreaction phenomenon.

With regard to Trump's election, none of the variables is significantly related to the overreaction phenomenon apart from the leak variable (information leakage). This result is also supported by the F-stat results, which are not significant at the real level. On the other hand, with the bombings in Surabaya, information leakage (leak) did not show a significant relationship with overreaction, which was influenced by the company ownership dummy. This explains that state companies had the possibility of the overreaction at the time of the bombings in Surabaya. These results are very different from those of previous studies conducted by Farag and Cressy (2010) and Boubaker et al. (2015), the reason for which could be the differences in the events characteristics and also differences in sharia stock investors' attitudes in Indonesia.

The factors that influence the existence of overreaction in the two events are each influenced by only one variable. The F-stat value also shows that the variables in the model are insignificant in explaining the overreaction phenomenon. These results indicate that Islamic stocks still involve several transactions which are prohibited by the DSN MUI fatwa in the short term. Short-term transactions of Islamic stock are prohibited, but according to DSN NO 80/DSN-MUI/III/2011, this type of transaction is permitted with a *qabdh hukmi* contract, which is described in Fatwa DSN NO 82/DSN-MUI/VIII/2011. Even if short term transactions of Islamic

stock are permitted, investors must obey the principles of sharia as explained in Fatwa DSN NO 40/DSN-MUI/X/2003 and Fatwa DSN NO 80/DSN-MUI/III/2011.

5.2. Recommendations

The ethics of the Islamic stock market are described in fatwa DSN. These make Islamic stock markets more efficient than conventional stock markets. However, in this research the phenomenon of overreaction was shown to occur in the Islamic stock market, making it less efficient. This is because the phenomenon of overreaction breaks the theory of capital market efficiency (Das & Krishnakumar, 2016). Therefore, investors must ensure that transactions are in accordance with sharia principles, and there is a need for more education for investors in order to conduct stock transactions in accordance with such principles.

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