

# Trading Patterns of Stock Before and After Suspension on Indonesia Stock Exchange

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**Abstract**—The goals of this research are to examine the trading pattern and performance of stock before and after suspension in the Indonesia Stock Exchange. The research data used in this research are stock listed in suspension and unsuspension announcement from January 2016 to December 2017. The trading pattern investigated in this research is related to the behavioral finance theory which divides the status of the investor: domestic and foreign investor. To examine investor behavior, the authors used Net Investment Flow calculation, then analyzed it using Pearson Correlation and Vector Auto Regression (VAR). Meanwhile, to calculate trading performance, the authors used cumulative return calculation. By using the daily transaction data of domestic and foreign investor, this study proved that herding behavior is stronger in foreign investors than domestic investors in both suspension periods. The investment performance of foreign investors is better than domestic investors. Domestic investors have the information-based model as an investing pattern, while foreign investors have the value-investing model before suspension and information-based model after suspension.

**Index Terms**—Suspension; Trading Pattern; Trading Performance; Herding

## I. INTRODUCTION

A well-developed capital market will exist if there is free trade mechanism where supply and demand run naturally. Unfortunately, there are still offenses that impair that mechanism, called market manipulation. Manipulation can occur in various forms of insider that can affect stock prices and rumors in internet chat rooms [1]. The case of manipulation being the cause of the capital market not being well developed is because of unfair pricing. One form of supervision about market manipulation has been stated in Indonesia Stock Exchange's (IDX) Trading Regulation number II-A; it regulates how to handle market manipulation by a stock suspension.

Stock suspension is a temporary suspension of stock trading due to significant accumulative price movement at a certain time. Stock suspension has a function to stop stock impair and improve market quality [2]. The suspension provides time for investors to find new information and analyze it. Regulators expect that after opening the stock suspension, the price and volatility of the stock will go back to fairness. However, a study by Lee, Ready, and Seguin (1994) said that stock suspension does not mean lowering price or volatility of stock because it can also increase it. This is in line with research conducted in the Spanish Stock Exchange by Kim, Yague,

Yang (2007) which showed that trading activity increased after stock suspension.

Many research said in the developed stock market, foreign and institutional investors tend to have better information and sophisticated trading performance, whereas domestic and individual investors tend to be psychological biased, which make the limit on their trading performance [3]. Foreign investors become better traders since they are better informed [4]. Foreign investors follow information-based and momentum-trading strategies, which make good subsequent returns [5]. However, other research found the opposite findings, that domestic investors can earn a higher profit than foreign investors in the Indonesian Stock Exchange market [6].

Domestic investors are often pictured by the media to have a behavior that is highly dependent on foreign investors. This behavior called herding behavior. The herding behavior is considered to be characterized only in the domestic market participants [7]. Foreign investors have better knowledge capital and much more complete knowledge than domestic investors [8].

Those research show that the concept of the efficient market hypothesis [9] where the stock prices in the market reflect all relevant information is not the only relevant concept today. Nowadays, psychological factors also determine the investment decision.

The purposes of this research are to study the trading pattern and performance of stock before and after suspension in the Indonesia Stock Exchange based on domestic and foreign investors. The structure of this paper begins with the background and objective of this research, then present the theoretical and empirical studies, including research methodology that is used in this research and ends with the results of the research along with conclusions and recommendations.

## II. LITERATURE REVIEW

### A. Suspension

Based on IDX Regulation No. II-A, Equity Securities Trading, in order to maintain the orderly, fair and efficient trading market securities, IDX may temporarily suspend trading on certain securities if there is an abnormal price movement of the securities. The suspension becomes one of IDX's follow up actions in carrying out the supervisory function.

Suspension of stock trading is one of the stock exchange decisions in order to provide protection to the investor, or it may be due to the imposition of sanctions by the stock exchange to an issuer. Suspension may last for a short period of time (cooling down) due to unusual transactions or may also take place within a few trading days.

The matters that cause the Indonesia Stock Exchange to issue a stock suspension are: Unusual Market Activity (UMA), failure in recording of financial statements, there is a difference between the announcement of corporate action and the actual event, failed to pay debts or bonds, Insider Trading, manipulation of listing proceeds or right issue. One of the most common causes of stock suspend by IDX is a suspension of trading because of UMA.

Suspensions are undertaken to protect investors against unusual patterns of transactions viewed through predetermined parameters and provide an opportunity for investors to take into account all publicly available information and performance of issuers. The unusual price movement that makes prices increase and decrease significantly can occur due to various things. One of the causes is when there is rumor related to the corporate action either giving good or bad impacts. Another reason that will make a bad impact to market are parties who deliberately want to make unfair prices. Based on those things, the role of suspension is needed to protect investors from irresponsible unfair prices.

#### B. Trading Pattern

The trading pattern that will be discussed in this research is related to the behavioral finance theory. Ricciardi and Simon [10] showed how the pattern and reason for each investor influence the decision-making process in trading. Herding behavior and feedback trading are both commonly used in explaining trading patterns.

##### 1) Herding:

Herding provides an overview of the type of transaction patterns carried out by investors on similar instruments and at almost the same time, both in buy and sell [11]. The investors do herding by following the same information or using the same investment method. As a result, stock prices move far away from their fair prices.

There are several reasons that cause investors to make buy or sell at the same time. All investors receive information at the same time, but only a small part of the investor makes the decision to make transactions first, and the other investors follow. This behavior arises when some investors observe the behavior of other investors and follow it or can be said to follow the leader. One of the psychological factors affecting investor behavior is herding behavior. Herding behavior is often considered as irrational when investors ignore their personal belief and follows other's belief [12]. Bowe and Domuta [13] and Agarwal et al [1] found that foreign investors have stronger herding behavior than domestic investors. Those findings are contrary to the research result by Wei et al [7] that states that herding behavior is considered to be characterized only among domestic market participants.

##### 2) Feedback Trading:

Feedback trading is the flow of transactions at time t depending on the return of assets at time t [11]. There are two types of feedback trading, namely positive feedback trading and negative feedback trading. Positive feedback trading occurs when an investor makes a buy when the stock price rises and sells when the stock price falls. With this positive feedback trading, when the stock market is in a down condition, it can go deeper, and vice versa, going up will increase it even higher. If this condition lasts long and is carried out by many investors, it will make the market become a bubble or crash.

Two theories described by Kamesaka, Nofsinger, & Kawakita [14], are information-based models theory that describes transactions carried out based on information superiority, and the theory of behavioral-based models that explain cognitive errors such as overconfidence and disposition effects affect investor decisions. Both theories explain that there is a pattern of positive feedback trading on transactions carried out.

Negative feedback trading occurs if an investor makes a buy when the stock prices fall and sell when the stock price rises. The behavior of negative feedback trading can occur due to the mechanism of value investing, investors will sell shares when the price is overvalued and will buy shares when the price is undervalued [14]. Value investing is one of the other investment strategies based on investor confidence that when prices go down, the stock price becomes cheap and is used as a time to buy shares, and vice versa.

#### C. Trading Performance

The difference of investor type characteristic that is showed in trading patterns also leads to differences in trading performance. The trading performance formula used in this research is cumulative return. Choe et al. [15] and Taechapiroontong and Suecharoenkit [16] found that domestic investors have an advantage over other types of investors with respect to trading performance. In line with S. -J. Chiang et al.'s [17] research result that when the market is around equilibrium, domestic individual investors' buy-in causes the stock prices to rise. Dvorak [6] who conducted research in the Indonesia Stock Exchange also found that investors in Indonesia have an information advantage over foreign investors on average, resulting in domestic investors actually having higher profits than foreign investors.

Kamesaka et al. [14] found that foreign investors in the Japanese market have good market timing ability, similar to Bae et al.'s [18] study which found that foreign investors in the Japanese market consistently generate gains from trade due to good market timing. Phansatan [3] said that institutional investors have detailed information because they have a good relationship with stock companies.

Based on the theoretical and empirical studies above, the research related to investor trading patterns in responding to potential market manipulation reflected in the announcement of suspension can be a significant contribution to capital market regulators. In accordance with the objectives of the OJK and SRO to ensure the implementation of a fair and

orderly trading system, this research can be one of the considerations of capital market regulators in issuing announcements of suspension. In addition, this research can also be additional knowledge for investors in making investment decisions in the face of potential stock manipulation violations.

### III. RESEARCH METHODOLOGY

This research uses price data and daily stock transactions during the period of 2016 and 2017. The stock data used in this study are related to the announcement time of the suspended and unsuspended stock traded in the Indonesia Stock Exchange (IDX). Time series data with a daily period is used to see investment patterns and performance among various types of investors who make transactions on the IDX. The collection of price data and daily stock transactions is carried out following the suspension announcement time with the part before suspend (D-5 to D-1) and after unsuspend (D+1 to D+5).

Stock selection as a sample uses a purposive sampling or judgmental sampling technique. Sampling is done by selecting subjects based on specific criteria set by the researcher: stocks in the suspension announcement list. Stock price data is used to obtain daily returns to determine stock performance. This research used an event study. Data in the study will be analyzed using descriptive and inferential methods. Descriptive method is done by analyzing trade patterns and investment performance of each type of investor. The inferential method is done by using the results issued by the SPSS program through the Pearson correlation to see the correlation between types of investors, the EViews program uses a Vector Autoregression (VAR) model to see the relationship between investment flows (NIF) per investor type and previous stock returns.

Net Investment Flow (NIF) is a calculation that indicates a transaction imbalance and becomes an indicator of whether the investor is making a net buy or net sell transaction. NIF will be positive if the transaction is a net buy, and will be negative if the transaction is net sell [14]. The NIF calculation uses the following equation:

$$NIF_{it} = (NB_{it} - NJ_{it}) / (NB_{it} + NJ_{it}) \quad (1)$$

Notes :

$NIF_{it}$  = Net Investment Flow by i investor at t time.

$NB_{it}$  = Value buy by i investor at t time.

$NJ_{it}$  = Value sell by i investor at t time.

Measurement of investment performance based on the change of the company's portfolio [19]. Determination of the value of the covariance value between returns from retired assets, calculated by the following combination:

$$Cumulative Rupiah Return = \sum_{t=1}^T (Purchases_t - Sales_t) R_t \quad (2)$$

Notes :

$Purchases_t$  = Stock purchase value at t.

$Sales_t$  = Stock sales value at t.

$R_t$  = Stock Return at t.

T = Number of observation sample.

## IV. RESULT

### A. Trading Pattern

The data in Table 1 shows that domestic investors' position is net buy transactions, while foreign investors dneid net sell transactions with an average value of Rp.59 million or \$3,886.71 before the suspend period. It also happened after the unsuspend period in which domestic investors are still conducting net buy transactions, and foreign investors keeps net sell with an average value of Rp.2,8 billion or \$189,860. The result of net transaction value proved that after the unsuspend announcement both the domestic and foreign investors' transaction increased significantly. However, the transaction value of foreign investors increased higher than the domestic investors. This means foreign investors are more responsive to the announcement of unsuspend issued by the Indonesia Stock Exchange as a form of prudence in investing.

The standard deviation of the NIF value can be used as a measure of herding behavior in the different investor types [14]. Before the suspension, foreign investors have a higher NIF standard deviation compared to domestic investors, which is 0.54 (before suspend) and 0.59 (after unsuspend). While the standard deviation of NIF for domestic investors is only 0.015 (before suspend) and 0.011 (after unsuspend). This showed that foreign investors are more engaged in herding behavior than domestic investors. The same result is also shown by Agarwal et al [1] and Bowe & Domuta [13] who examined investor's herding behavior in Indonesia.

Feedback trading is also known as either contrarian investing when the trade imbalance is negatively correlated with past return, or momentum investing when the correlation is positive. The Pearson correlation coefficients between the investor group NIF is measured in Table 2.

The relationship between foreign and domestic investors has a strong negative correlation with a correlation value of -0.646 in the period before the suspend, seen in Table 2. The difference in information gained (asymmetric information) between domestic and foreign investors causes a mismatch in transactions. This occurs when foreign investors have little information compared to domestic investors [20].

Meanwhile, in Table 3 there is a strong negative correlation between domestic investor type (D) and foreign (F) with a correlation value of -0.624 after the unsuspended period. These results illustrate that one type of investor becomes a buyer while the other types of investors become sellers.

Vector Autoregression is used to study whether the movement of transactions (NIF) is influenced by the movement of transactions and previous returns, and also studied the effect of movement of transactions and previous returns to returns that occur on stocks listed in the suspended list. The transaction lag is determined from the lag selection criteria

**TABLE I: Net Transaction and Net Investment Flow**

This table reports net transaction value and NIF carried out by foreign and domestic investors in before suspend and after unsuspend periods. The full sample period is from January 2017 to December 2017. A negative value of net transaction and NIF means sell position vice versa.

Before Suspend	Domestic Investor		Foreign Investor	
	Net Transaction	NIF	Net Transaction	NIF
Mean	59,245,514.00	0.002	-59,176,298.00	-0.082
Std.Dev	2,198,239,835.28	0.015	2,101,773,218.87	0.540
Min	-7,100,067,900.00	-0.079	-7,697,901,000.00	-0.999
Max	8,651,756,000.00	0.028	7,101,167,900.00	1.000
After Unsuspend	Domestic Investor		Foreign Investor	
	Net Transaction	NIF	Net Transaction	NIF
Mean	2,838,605,276.00	0.001	-2,882,067,814.00	-0.090
Std.Dev	20,299,938,617.01	0.011	20,258,957,417.23	0.559
Min	-5,318,125,000.00	-0.036	-143,131,660,200.00	-1.000
Max	143,330,537,200.00	0.045	3,815,125,000.00	1.000

**TABLE II: Pearson Correlation of Net Investment Flow Before Suspend**

This table reports Pearson correlation to see the relationship of Net Investment Flow (NIF) between investor type in before suspend period. \*\* denotes significance at the 10% level.

Net Investment Flow (NIF)	Before Suspend	
	Domestic	Foreign
Domestic	1	
Foreign	-0,646**	1

**TABLE III: Pearson Correlation of Net Investment Flow After Unsuspend**

This table reports the Pearson correlation to see the relationship of Net Investment Flow (NIF) in each investor type after the unsuspend period. \*\* denotes significance at the 10% level.

Net Investment Flow (NIF)	After Unsuspend	
	Domestic	Foreign
Domestic	1	
Foreign	-0,624**	1

process through the EViews application and the generally accepted prerequisites.

For the period before suspension, it can be seen that in the before the suspend period there was a positive correlation between today's transactions (NIF) with NIF transactions on the previous day, which is significant at the level of  $\alpha = 1\%$ ,  $5\%$  and  $10\%$  for both domestic and foreign investors.

The pattern of feedback trading can be seen from the previous return coefficient of each investor type. On the domestic investors' return, the previous day was positive. This indicates a positive feedback trading on domestic investors for the previous day but not significant. Meanwhile, foreign investors showed negative feedback in the period of the previous one day and the previous two days which were significant. This result is different in several studies, which state that positive feedback trading was conducted by foreign investors [21] and there is also strong evidence of positive feedback trading using daily international portfolio data [5].

After the unsuspend period, there was a positive correlation between today's (NIF) transactions with NIF transactions on the previous one day in both domestic and foreign investors at a significant  $\alpha = 1\%$ ,  $5\%$ , and  $10\%$  level. The pattern of domestic investor transactions shows negative feedback

trading while foreign investors experience significant positive feedback trading, it can be seen in Table 5.

#### B. Investment Performance

To know the investment performance of each investor type during the observation period of suspend and unsuspend, this research used cumulative return with buy and hold assumption. Cumulative return will be presented in the graph so that the performance pattern of each investor type is clear.

It can be seen in Figure 1 that the investment performance of domestic investors overall has suffered losses since before suspend and after unsuspend. The performance of domestic investors only experienced profits during the period of 1 day before suspend and 2 days after the unsuspend announcement. The biggest value of profits was obtained by domestic investors two days after the unsuspend announcement, which was of Rp.1 billion or \$65,876. Cumulatively, domestic investors' losses Rp.4.9 billion or \$322,794 on the fifth day after the announcement of unsuspend. Whereas foreign investors experienced a cumulative profit of Rp.4.7 billion or \$309,619 with opposite positions compared to domestic investors. Foreign investors experienced losses in the period of one day before suspend and two days after the unsuspend announcement. The

**TABLE IV: VAR Model of Net Investment Flow Before Suspend**

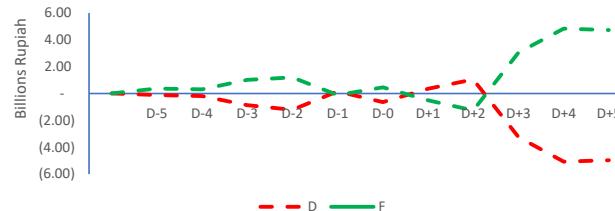
Correlation of daily net investment flow of domestic and foreign investor before suspend period using Vector Autoregression. This table reports transaction movement (NIF) whether influenced by the movement of the transaction and or previous return. Standard errors in parentheses. \*\*\*, \*\*, \* denoted significance at the 1%, 5%, and 10% level.

Before Suspend	Domestic		Foreign	
	NIF	Return	NIF	Return
Constanta	-0.001642	0.113170*	-0.00152	0.073006
NIF(-1)	0.345395*	-0.439771*	0.242879*	-0.025374***
NIF(-2)	-	-	0.141103*	0.013822***
Return(-1)	0.000432	-0.000504	-0.173933*	0.503940*
Return(-2)	-	-	-0.020037***	-0.003738
Adj. R-squared	0.139568	0.001091	0.098845	0.23132

**TABLE V: VAR Model of Net Investment Flow After Unsuspend**

Correlation of daily net investment flow of domestic and foreign investor after the unsuspend period using Vector Autoregression. This table reports transaction movement (NIF) whether influenced by the movement of the transaction and or previous return. Standard errors in parentheses. \*\*\*, \*\*, \* denoted significance at the 1%, 5%, and 10% level.

After Unsuspend	Domestic		Foreign	
	NIF	Return	NIF	Return
Constanta	0.00188	0.006289	-0.087114	0.007432
NIF (-1)	0.249608*	-0.351346*	0.020653***	0.022757***
NIF (-2)	-	-	0.211351*	0.000195
Return (-1)	-0.009805	0.271935*	-0.717136*	0.282327*
Return (-2)	-	-	0.794679*	-0.009613
Adj. R-squared	0.043113	0.077971	0.069792	0.071297


**FIGURE 1: Cumulative Return**

largest value of profits was obtained by foreign investors on the fourth day after the unsuspend announcement, which was of Rp. 4.8 billion or \$316,207.

The announcement of unsuspend stocks gives the effect on price movements become more stable. The unsuspend announcement means that IDX has made a reasonable assessment of the stocks so that it can be transacted in the capital market. This occurred because as stated in the efficient market hypothesis theory, at this time the price has realized all available information so that there is no hidden information. The influence of a signal from an authoritative authority through the announcement of suspend and unsuspend can be a base for investors to make their decisions.

The results indicate that domestic investors have a time advantage in receiving suspension announcement information compared to foreign investors. Domestic investors are able to utilize suspension information to obtain capital gains (the profit from the difference between the selling price and the purchase price) with the tendency of transactions such as traders or investors with short-term transactions that follow

market conditions and sentiments. This is usually done by investors as an investment option. However foreign investors are able to analyze information well. Foreign investors conduct transactions according to information and momentum-trading strategies to produce better returns [5]. Up to the period after the unsuspend, foreign investors use positive feedback-trading behavior with investment patterns of information-based models. This is in line with the research conducted by Kamesaka, Nofsinger, & Kawakita in 2003 [14] at the Tokyo Stock Exchange.

In general, each investor in the capital market can determine the option of profits, namely capital gains or dividends [22]. Some investors prefer capital gains rather than dividends because dividend profits are only obtained once a year while capital gains can be obtained many times. This type of investor always sees and analyses stock price movements as a basis for making investment decisions, including information related to the stock.

In addition, the Indonesian capital market has not yet applied the obligation of issuers to distribute dividends in

the regulations. Therefore, domestic investors try to utilize all information including the suspension to obtain capital gains. The IDX as the supervisor at this time only asked for an explanation from the issuers that did not distribute dividends to explain the company's steps and business going forward. The majority of issuers said they could not distribute dividends because they still needed funds to expand and repay debt.

## V. CONCLUTION

Based on the results above, it can be concluded that domestic investors are net buyers, while foreign investors are net sellers in both periods of suspension. The foreign investors' herding behavior is stronger than domestic investors in both periods of suspension. The relationship between domestic and foreign investors has a strong negative correlation in both periods of suspension. The behavior of negative feedback trading is carried out by foreign investors, while positive feedback trading behavior is carried out by domestic investors in the period before suspend, whereas in the period after unsuspend, the opposite occurs.

By using a cumulative rupiah return to see the investment performance in stock among the types of investors on the Indonesia Stock Exchange in the period January 2016 to December 2017, it can be said that in the period before suspend, domestic investors experienced a profit of 158 million Rupiahs or 10,409 USD, while foreign investors suffered a loss of 121 million Rupiahs or 7,972 USD. In the period after unsuspend the opposite occurred, domestic investors suffered losses of up to 4.9 billion Rupiahs or \$322,814 USD, while the foreign investors experienced a profit of Rp. 4.7 billion Rupiahs or \$309,638 USD.

In general, domestic investors have an information-based investment pattern model in the period before suspend, while foreign investors have value investing investment patterns in the period before suspend and information-based model patterns in the period after unsuspend.

The Indonesia Stock Exchange (IDX) and the Financial Services Authority (OJK) as the authorities that have a supervisory function need to pay more attention to domestic investors because the largest suspension transactions are carried out by domestic investors, but have a cumulative negative investment performance in the suspension period. This can make the stock price of the suspension stay away from the fair price. Special attention is needed to create a fair and orderly market, and so that investors can be protected and minimize market turmoil. In addition to reducing the number of losses of domestic investors, IDX has to make rules that require issuers to distribute cash dividends to shareholders. The regulation includes, requiring issuers to distribute dividends if they have made a profit, at least 2 years in a row. This rule needs to be designed as well as possible so as not to harm both parties.

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