



## THE WINNER LOSER ANOMALY IN INDONESIA

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### Abstract

This research examines the market overreaction on the mining companies listed in Indonesia Stock Exchange from 2013 to 2017. The population in this research are all of the mining companies that list in the Indonesia Stock Exchange. The sample is selected according to the criteria of the purposive sampling method. Market overreaction is measured by the abnormal return and indicated with ACAR loser portfolio outperformed of ACAR winner portfolio. The result shows that the ACAR loser portfolio does not outperform of ACAR winner portfolio. The significance value of one sample t-test more than 0,05. This research concludes that the overreaction phenomenon on the mining companies in Indonesia Stock Exchange was not found.

### Abstrak

Penelitian ini bertujuan untuk mengetahui apakah terjadi market overreaction pada saham sektor tambang yang terdaftar di Bursa Efek Indonesia periode 2013-2017. Populasi pada penelitian ini adalah perusahaan pertambangan di Bursa Efek Indonesia. Sampel yang diperoleh sesuai dengan kriteria metode purposive sampling. Market overreaction diukur dengan abnormal return dan ditunjukkan dengan ACAR portofolio loser mengungguli ACAR portofolio winner. Hasil pengujian menunjukkan bahwa ACAR portofolio loser tidak dapat mengungguli portofolio winner. Nilai signifikansi dari uji one sample t-test lebih dari 0,05. Berdasarkan hasil penelitian dapat disimpulkan bahwa tidak terjadi market overreaction pada perusahaan pertambangan di Bursa Efek Indonesia.

## INTRODUCTION

Nowadays, information can be accessed easily. This allows investors and potential investors to invest in stock market. Yulianto et al. (2015) stated that it is difficult to generate a perfect capital markets without taxes. Stock market is usually used as an effective way to accelerate fund accumulation for development funding by doing fund raising mechanisms from community and distributing it to productive sectors (Yuliana, 2013). Other investment alternatives are by using bonds, mutual fund, derivatives and so on (Taslim & Wijayanto, 2016).

Investor's motivation to invest in stock market is to acquire return without neglecting the risks (Hernoyo, 2013). Investors demand certain return rates for the fund as a compensation of opportunity cost and the risk of falling purchasing power parity due to inflation (Tandelilin, 2010). Thus, the bigger the return acquired, the bigger the risk is.

Before doing investment in stock market, investors need information related to market conditions in order to make proper investment decisions. The investors will receive information related to market conditions easily if it is in efficient condition (Maharani & Witiastuti, 2015). It can be implied that information is the basic need for both investors and potential investors to make decisions (Wardoyo & Veronica, 2013).

Efficient Market Hypothesis, proposed by Fama (1970) is an interesting theory concept in financial field on how asset cost is formed as the result of new information responded by investors (Cahyaningdyah & Witiastuti, 2010). The theory explains that securities costs reflect all information available and that the costs will react without any bias to the new information, with the result that in efficient market the cost is determined by the market itself (Soejono, 2017).

Investors respond to new information differently. Both investors and potential investors need information related to flows and market conditions so that they are able to make proper decisions of buying and selling stocks (Yull & Kirmizi, 2012). The changing of information among market agents results inefficient market (Ardiansari & Saputra, 2015).

Ningsih and Cahyaningdyah (2014) stated that when there is an event related to information, it will give a signal to investors. The investors should analyze the information first to find out whether it is a good signal (good news) or bad signal (bad news) as a consideration in making investment decisions, so that the decisions are

considered as rational. It also applies to information related to company financial statement publication, which is based on the standard issued, can be used as a good review for either investors or stakeholders in making decisions (Yanto et al., 2017).

A research by Octavio and Lantara (2014) shows that the efficient market theory investors are considered as rational being, as they make decisions based on rational expectation. Rational investors will invested their funds to efficient stocks (Pardosi & Wijayanto, 2015). The bigger the return expected, the investors need to consider the risk rate of an alternative investment because it will influence investment income (Witiastuti, 2012).

However, in reality, investors respond to the information from its frequency, time, and quantity of stocks buying differently (Yunita, 2012). Some investors show overreaction of the information received. The reaction is only based on intuition without taking attention to fundamental assessment from the stock prices (Swandewi & Mertha, 2013).

The irrationality of the investors to acquire bigger return (abnormal return) which results anomalies in stock market. One of the anomalies which is opposed to the concept of efficient market is winner-loser anomaly. The anomaly is the basic of overreaction to the information of interesting issues in the stock market when there is an error in predicting profit by analysts and investors, which is followed by mispricing stocks and results overreaction to the market (Suciningtias, 2011).

Winner-loser anomaly is commonly referred as market overreaction. DeBondt and Thaler (1985) stated that market overreaction hypothesis marks winner-loser anomaly. Market Overreaction Hypothesis explains that there is an over flow of stock prices to the opposite direction systematically. A group of stocks with low abnormal return (loser stocks) will experience return reversal with stocks with high abnormal return (winner stocks) for the next period (Hadioetomo & Sukarno, 2009).

Stocks which are popular and high in return will become less popular in the market. Meanwhile, stocks which are low in return and less popular are easy to find in the market (DeBondt & Thaler, 1985). This results from the investor's overreaction in checking the latest information without regard to the older information and as a result, the market agents can determine the stock price is too high for good news and determine the stock price is too low for bad news (Suciningtias,

2011). This overreaction refers to inefficient market condition because the investors obtain abnormal return.

In market, it is common for investors to respond the information related to buying stocks differently. If the behavior exists, there is a chance for the investors to obtain abnormal return by using contrarian investment strategy (Dewant-hi & Wiksuana, 2017). According to Lo and MacKinlay (1990) the consequent of overreaction is to acquire profit from contrarian strategy by buying securities with low performance (loser) in past period and selling them when the stocks are in good performance (winner).

One of practice phenomenon that shows rational investors' in new information. Actually, this information only related to the coal sub-sector. However, the existence of such information should be able to affect the performance of mining sector as the number of stocks in the coal sub-sector is higher than the number of stocks in other mining subsectors.

On February 2016, The ministry of Energy and Mineral Resources (ESDM) predicted that Reference Coal Price would go up in the second quarter until the late of 2016 along with the balance of supply and demands (Prakoso, 2016). Should if this information is received by investors, the stock price of coal sub-sector are supposed to increase, according to market overreaction hypothesis. Several stocks in the coal sub-sector have increased.

However, the phenomenon does not occur to one of coal issuer, PT Delta Dunia Makmur Tbk (DOID). DOID's stock price underreaction to information affecting the company's performance improvement. Stock price in early 2016 was IDR 156, but the stocks flow falls to 35%, which equals to IDR 54, until the end of 2016. The investors did not show overreaction in responding to the information. Overreaction did not exist as the result of the investors made the decisions rationally.

Indonesia's reference coal price in March 2016 was US\$ 51.62 per metric ton, the Ministry of Energy and Mineral Resources predicts Indonesia's HBA will jump to USD \$100 per ton (Audriene, 2017). Investors don't excessive in response to the information issuers of DOID stocks. The low performance of mining stocks in the last years had caused the investors took longer time to make decisions to buy the stocks. So that overreaction phenomenon doesn't occur, because investors are rational to determine the decisions.

Throughout 2013 to 2017, the performance of Composite Stock Price Index (CSPI) is ex-

perience significant growth. The performance of the Composite Stock Price Index is supported by some sectoral stocks listed on the Indonesia Stock Exchange. One of the stocks in mining sector most weak performance among other sectors over the last five years. The average movement of stocks in the mining sector is only 4.98% (Capital Market Statistics OJK, 2017). This is due to the lack of recovery in coal prices due to declining demand and export destination countries such as China experiencing economic slowdown (Audriene, 2017).

However, if viewed on the chart of 2017 the average index of mining sector managed to experience an increase of 15.11% over the last five years (Capital Market Statistics OJK, 2017). The weakening of stock prices in the mining sector in recent years, led to low investor interest in the shares of the sector. Therefore, the authors want to know whether stocks with low investor interest tend to experience overreaction of new information entered in the capital market. The phenomenon is the reason for the author in determining the mining sector company as the object of research.

The test of winner-loser anomaly is done in order to find out the existence of overreaction in mining stocks of Indonesia Stock Exchange by comparing winner portfolio to loser portfolio. A group of winner stocks consists of stocks which the prices go up constantly, while a group of loser stocks consists of stocks which the prices fall (Zarowin, 1990) but to the tendency for losers to be smaller-sized firms than winners. When losers are compared to winners of equal size, there is little evidence of any return discrepancy, and in periods when winners are smaller than losers, winners outperform losers (Zarowin, 1990). Based on the statement, the loser portfolio is not supposed to outperform the winner portfolio return.

However, in inefficient market, there is stock market anomaly which results abnormal return. As the consequence, there is return reversal and it supports overreaction. When there is significant abnormal return, it signifies that the investors act irrationally in making their stocks investment decisions (Pratama et al., 2016). The bigger the investors' demand of stocks, the bigger the chance of the prices increase. As the result, the market becomes inefficient because market agents control the price flow.

Researchers related to market overreaction in Indonesia Stock Exchange show various results. Suciningtias (2011) conducted a research on overreaction indications of stocks listed in Jakarta Islamic Index of BEJ for the period 2005-

2006. The researcher used market adjusted model to calculate the abnormal return. It was found that market overreaction indications only occurred during six-month observation.

Similar to Suciningtias (2011), Octavio and Lantara (2014) examined market overreaction of stocks listed in Kompas 100 Index as the sample. The result showed that market overreaction only occurred to loser stocks during observing period.

In another research, Pasaribu (2011) showed that overreaction indications did not exist during the whole observing period (in quarterly, a semester, and a year) in Indonesia Stock Exchange. This especially applied for stocks listed in LQ45 Index.

Similarly, Yunita (2012) agrees with Pasaribu (2011). The researcher stated that there were no overreaction indications anomaly found in financial and property companies listed on Indonesia Stock Exchange (BEI) for the period 2010-2011.

From the researches mentioned above, the recent researcher finds inconsistent from the previous researches. This research aims to retest whether unexpected information in 2013-2017 can overly affect the reaction of market agents. The researcher takes the sample from period 2013-2017 because the researcher believes there are dramatic information that affect the performance of mining stocks in Indonesia Stock Exchange. Other reasons are the researcher aims to obtain updated results of the research available and the researcher considers that there is no similar research done for the same period mentioned.

The goal of this research is, firstly, to find out the existence of market overreaction of mining companies during observing period. Secondly, the research also aims to compare the difference of winner portfolio and loser portfolio by using market overreaction market prediction proposed by DeBondt and Thaler (1985).

The researcher intends to retest whether information can result overreaction phenomenon in Indonesian stock market. This research is done by testing out the data from a sample of stocks from all mining companies listed on Indonesia Stock Exchange for the period 2013-2017. The focus of this research is to form portfolio on the sample determined. The researcher uses market overreaction indicator proposed by DeBondt and Thaler (1985) with a condition if three predictions during observing period are fulfilled,  $<0$ ,  $>0$  and  $>0$ , then there is overreaction.

This research follows the research done by Yunita (2012). What makes the recent research different is that the previous research took pro-

perty and financial sectors as the sample, but the recent research examines companies of mining sector listed in Indonesia Stock Exchange. The recent research uses data from the period 2013-2017 with a goal to provide an updated research, meanwhile the previous research examined data for the period 2010-2011. In this research, the researcher uses forming technique and portfolio examination to choose the data.

### Hypothesis Development

Ningsih and Cahyaningdyah (2014) said that when there is new information in the market, it is expected that investors will be able to analyze first whether the information as good signal or bad signal as a consideration in making investment decision, so that decisions are considered as rational.

In this research signaling theory related to the existence of an information that gives an opportunity for investors to obtain abnormal return resulting in an overreaction phenomenon in the capital market. Then, the existence of an information can be a signal for the company to improve the performance to be better, so it can attract investors to invest in the company concerned.

The overreaction from investors causes securities return reversal. The securities initially generate high return (winner) will reverse and generate low return (loser). On the other hand, securities with low return will generate high return (DeBondt & Thaler, 1985). Thus, overreaction occurs as a result from anomalies called winner and loser.

Overreaction phenomenon is one of anomalies which opposes to efficient market hypothesis developed by Fama (1970). Market overreaction is a type of overreaction from investors of new information which affects stocks prices. The reaction can be measured by using abnormal return from related securities.

In this research market overreaction hypothesis related to the existence of an information that causes investors the opportunity to obtain abnormal return. Investors only use intuition in assessing stocks so that decision making tends to be irrational. This irrational investors leads to overreaction phenomenon that refers to inefficient market conditions, so investors have the opportunity to obtain abnormal returns by applying contrarian investment strategies (Dewanthi & Wiksuana, 2017).

The data obtained from monthly stocks to test the market overreaction. The data are divided into two groups. They are a group of loser stocks

and a group of winner stocks. The group of loser stocks consists of stocks with low return from the average sample and the group of winner stocks consists of stocks with high return from the average sample stocks (DeBondt & Thaler, 1985).

After portfolio of loser and winner stocks are formed, market overreaction testing is done by observing the return flow resulted from each portfolio of stocks based on data from Average Cumulative Abnormal Return (ACAR). Then, the ACAR score will be adjusted with market overreaction indicators proposed by DeBondt and Thaler (1985). In the research, market overreaction is predicted if during observing period it shows  $ACA < 0$ ,  $ACA > 0$  and  $(ACA - ACA) > 0$ . If all indicators are fulfilled, then there is overreaction during the observing period.

The overreaction shown by investors causes popular stocks with high return become less popular. It also applies for less popular stocks with low return become popular in the market (DeBondt & Thaler, 1985).

H1: There is an overreaction phenomenon during observing period.

This condition affects stocks with high return to be low in return, and stocks with low return to be high in return. It causes the existence of positive and negative abnormal return. Thus, the difference of abnormal return from each portfolio results market overreaction.

H2: There is a difference in average cumulative abnormal return between winner portfolio and loser portfolio.

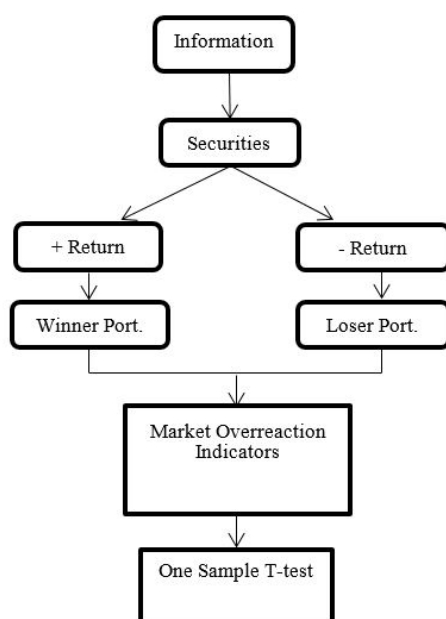


Figure 1. Theoretical Framework

## METHOD

The sample of this research is 20 stocks of mining sector listed on Indonesia Stock Exchange. The researcher obtains the sample by using purposive sampling method with the criteria that the stocks are active for selling and buying stocks in Indonesia Stock Exchange during the observing period; the trading frequency is more than 300 times annually; the stocks are registered in IPO before January 2013; and the stocks data received are complete.

The criteria mentioned are used in order to avoid probable bias from problematic stocks. The data for this research are data of stock prices of closing price. The monthly stock prices will be used as basic calculation for abnormal return of each stock.

The observing period for this research is 60 months. The period is divided into two periods, namely formation period and testing period for each stocks portfolio. Formation period for the first 30 months and testing period stocks portfolio lasts for the rest 30 months.

Formation period is a period where winner portfolio and loser portfolio are formed. Winner portfolio consists of stocks with higher abnormal return score from the overall sample. On the other hand, loser portfolio consists of stocks with lower abnormal return score from the overall sample. The first step to form the portfolio is to calculate monthly actual return with the stocks data based the criteria mentioned before.

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

Where:

$R_{i,t}$  = Actual return securities for firm i on day t

$P_{it}$  = Closing stocks price for firm i on day t

$P_{i,t-1}$  = Closing stocks price on day t-1

The next step is to calculate monthly market return by using Indonesia Composite Index (IHSG) available based on the observing period.

$$R_{mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

Where:

$R_{mt}$  = Market return on day t

$IHSG_t$  = IHSG on day t

$IHSG_{t-1}$  = IHSG on day t-1

Next, abnormal return is calculated from each stock by using market adjusted model method during the observing period as follows.

$$AR_t = R_{it} - R_{mt}$$

Where:

$AR_t$  = Abnormal return for firm i on day t

$R_{it}$  = Actual return for firm i on day t

$R_{mt}$  = Market return on day t

After that, cumulative abnormal return (CAR) is calculated on the first 30 month of observing period.

$$CAR_{it} = \sum_{t=1}^t AR_{it}$$

Where:

$CAR_{it}$  = Cumulative abnormal return on the period t

$\sum_{t=1}^t AR_{it}$  = Abnormal return portfolio on the day t

After calculating the CAR, the researcher sorts the score from the lowest to the highest score (in ascending form). From the ranking, the researcher is able to form winner stocks portfolio and loser stocks portfolio. Winner portfolio consists of 10 stocks with highest CAR score and loser portfolio consists of 10 stocks with lowest CAR score.

The next step is to test each portfolio which has been formed before. During the testing period, the researcher observes the behavior of return from each portfolio by calculating average abnormal return (AAR) score.

$$AAR_t = \sum_{i=1}^k \frac{AR_{it}}{N}$$

Where:

$AAR_t$  = Average abnormal return on day t

$AR_{it}$  = Abnormal return securities for firm i on day t

N = Total of securities

Then, the AAR score will be used to calculate cumulative average abnormal return (CAAR) as follows.

$$CAAR_t = \sum_{i=1}^k AAR_t$$

Where:

$CAAR_t$  = Cumulative average abnormal return on day t

$AAR_t$  = Average abnormal return on day t

The testing continues by calculating average cumulative abnormal return (ACAR) of each portfolio for each period using the following formula (DeBondt & Thaler, 1985).

$$ACAR_t = \sum_{i=1}^k \frac{CAAR_t}{k}$$

Where:

$ACAR_t$  = Average cumulative abnormal return of stocks on day t

$CAAR_t$  = Cumulative average abnormal return of stocks on day t

k = Total of replication

After that, the researcher calculates the difference of ACAR from loser portfolio to winner portfolio for each period. The difference of ACAR is used to find out the existence of overreaction. This is indicated by the ACAR value from loser portfolio outperform winner portfolio's value (DeBondt & Thaler, 1985). The formula is as follows.

$$\Delta ACAR_t = ACAR_{L,t} - ACAR_{W,t}$$

Where:

$\Delta ACAR_t$  = The difference between ACAR loser to ACAR winner on day t

$ACAR_{L,t}$  = ACAR loser portfolio on day t

$ACAR_{W,t}$  = ACAR winner portfolio on day t

Then, the researcher calculates t-statistic to test the significant rate of loser and winner ACAR value. The testing is done by using one sample t-test with level of significant 5% in order to find out the difference of ACAR from each portfolio. Based on the result, it can be concluded that there is market overreaction in Indonesia Stock Exchange.

## RESULT AND DISCUSSIONS

The sample of this research by using purposive sampling method. The researcher determines certain criteria and obtained as a sample of 20 companies, as listed in the following table.

**Table 1.** List of Companies

No	Code	Company Names
1.	ADRO	Adaro Energy Tbk.
2.	ARII	Atlas Resources Tbk.
3.	DOID	Delta Dunia Makmur Tbk.
4.	HRUM	Harum Energy Tbk.
5.	ITMG	Indo Tambangraya Megah Tbk.
6.	KKGI	Resource Alam Indonesia Tbk.
7.	MYOH	Samindo Resources Tbk.
8.	PTBA	Tambang Batubara Bukit Asam Tbk.
9.	PTRO	Petrosea Tbk.
10.	SMMT	Golden Eagle Energy Tbk.
11.	TOBA	Toba Bara Sejahtera Tbk.
12.	ELSA	Elnusa Tbk.
13.	ESSA	Surya Esa Perkasa Tbk.
14.	MEDC	Medco Energi International Tbk.
15.	RUIS	Radiant Utama Interinsco Tbk.
16.	INCO	Vale Indonesia Tbk.
17.	PSAB	J Resources Asia Pacific Tbk.
18.	TINS	Timah Tbk.
19.	CTTH	Citatah Tbk.
20.	MITI	Mitra Investindo Tbk.

**Table 2.** The Observation Period

The Formation Period				The Test Period	
2013	2014	2015	2015	2016	2017
January	January	January	July	January	January
February	February	February	August	February	February
March	March	March	September	March	March
April	April	April	October	April	April
May	May	May	November	May	May
June	June	June	December	June	June
July	July			July	July
August	August			August	August
September	September			September	September
October	October			October	October
November	November			November	November
December	December			December	December

The first stage in this research is to form an observation period consisting of the formation period and the test period. Pasaribu (2011) portfolio formation is done on every replication due to dynamic market conditions, so the stocks that

form the portfolio within a certain time is not the same. The formation of this observation period aims to analyze market overreaction based on cumulative abnormal return value of stock. This research was conducted for 5 (five) years consisting

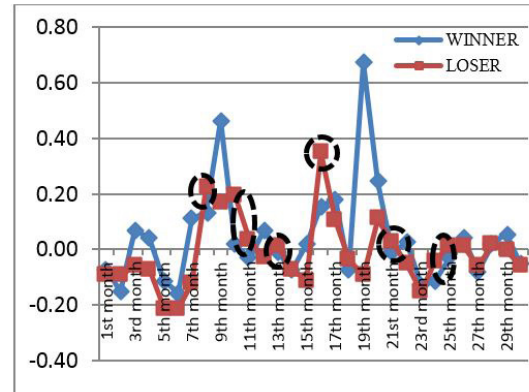
of formation period for the first 30 months and testing period stocks portfolio lasts for the rest 30 months.

The formation of winner and loser stock portfolios begins by ranking the value of Cumulative Abnormal Return (CAR) on each replication. The winner portfolio which consists of 10 stocks receives higher CAR value and the loser portfolio which consists of 10 stocks receives lower CAR value. For more details can be seen in Table 3 as follows.

**Table 3.** Portfolio Formation

Winner	CAR Value	Loser	CAR Value
ELSA	1.07	MYOH	-.471
MEDC	.537	TOBA	-.505
SMMT	.47	PTBA	-.58
INCO	.23	ADRO	-.695
DOID	.214	ARII	-.821
CTTH	.165	MITI	-.918
PSAB	.154	PTRO	-.93
RUIS	.064	KKGI	-.977
ESSA	-.14	ITMG	-1.094
TINS	-.304	HRUM	-1.614

The testing portfolios of this observations to observe the return behavior, whether there is portfolio reversal which caused overreaction. The result of observation on the return behavior is as follows.



**Figure 2.** Volatility of Portfolio Return

From ACAR data of 30 months observation, the researcher found that there are 14 data of winner portfolio generate negative score. Meanwhile, there are 12 data of loser portfolio generate positive score. The second ACAR data shows that there is score reversal on the 8<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 13<sup>th</sup>, 16<sup>th</sup>, 21<sup>st</sup>, 24<sup>th</sup> and 25<sup>th</sup> months. The detail information is in Table 4.

**Table 4.** The Value of ACAR Portfolios

	Winner	Loser	L-W		Winner	Loser	L-W
1 Month	-.071	-.094	-.023	17 Months	.184	.105	-.078
2 Months	-.152	-.094	.057	18 Months	-.072	-.035	.037
3 Months	.070	-.060	-.130	19 Months	.672	-.096	-.768
4 Months	.042	-.070	-.113	20 Months	.243	.109	-.134
5 Months	-.113	-.210	-.097	21 Months	-.009	.025	.035
6 Months	-.157	-.211	-.054	22 Months	.027	-.054	-.081
7 Months	.108	-.122	-.231	23 Months	-.128	-.153	-.025
8 Months	.136	.222	.086	24 Months	-.114	-.045	.069
9 Months	.466	.170	-.295	25 Months	-.033	.014	.047
10 Months	.018	.194	.176	26 Months	.039	.011	-.028
11 Months	-.032	.033	.065	27 Months	-.077	-.061	.016
12 Months	.072	-.030	-.102	28 Months	.018	.018	.000
13 Months	-.007	.014	.021	29 Months	.058	-.002	-.061
14 Months	-.075	-.070	.005	30 Months	-.051	-.055	-.004
15 Months	.017	-.113	-.131				
16 Months	.155	.351	.195	Average	.041	-.010	-.052

**Table 5.** Descriptive Statistics of abnormal return

Code	Min	Max	Mean	STDEV
ADRO	-.2508	.4187	.0019	.1152
ARII	-.6078	.4322	-.0021	.1517
DOID	-.3574	6.778	.1358	.9367
HRUM	-.2180	.8888	-.0137	.1663
ITMG	-.2212	.4144	-.0086	.1457
KKGI	-.3329	.5585	-.0039	.1506
MYOH	-.1924	.3001	-.0044	.1036
PTBA	-.2637	.3062	-.0024	.1234
PTRO	-.2753	.5213	.0088	.1562
SMMT	-.5649	3.6011	.0145	.5025
TOBA	-.3073	.2772	.0057	.1039
ELSA	-.1944	.4819	.0145	.1384
ESSA	-.3096	.4543	-.0016	.1384
MEDC	-.4565	.7811	.0249	.1926
RUIS	-.1218	.1672	-.0023	.0583
INCO	-.2620	.4776	.0078	.1565
PSAB	-.3041	.7508	.0099	.1765
TINS	-.2338	.3462	-.0044	.1279
CTTH	-.1839	.4826	.0067	.1037
MITI	-.3713	.4378	-.0331	.0998

**Table 6.** Descriptive Statistics of the value of ACAR portfolios

Portofolio	Min	Max	Mean	STDEV
Winner	-.157	.672	.041	.176
Loser	-.211	.351	-.010	.125

Table 4 presents the value of ACAR winner and loser portfolio during the research period. The value of winner ACAR portfolio during the tested period is not all positive, even the value of ACAR in the formation period is negative until 2<sup>nd</sup> month of -0.071 and -0.152. However, positive values still dominate the ACAR winner during this period. Then, the value of loser ACAR portfolio in Table 4 shows that the reversal of value becomes positive by the 8<sup>th</sup> month is 0.222 and 11<sup>th</sup> month is 0.033.

The result of return behavior in the observation period of winner and loser portfolio, shows that the portfolio of loser has successfully outperformed the winner's portfolio several times. The reversal of portfolio returns that not constantly but separatist.

After the researcher obtains the data of monthly closing price from each stock listed above, the researcher then conducts calculations in order to obtain stocks abnormal return based on market-adjusted model method. The result of descriptive statistics testing of stocks abnormal return and the value of ACAR portfolios.

The Table 5 show the amount of average return of stocks abnormal return. The stock with the highest abnormal return is company stocks from DOID with mean of 0.136. On the other hand, the stocks with lowest abnormal return is the stocks of MITI with the mean of -0.0331.

The standard deviation of abnormal return during the research period in the range of 0, it means the data of research doesn't deviate from the average of data.

In addition to the standard deviation used as a measure of risk. Based on Table 5, the stocks with the lowest risk is MITI shares of 0.099. Meanwhile, the highest risk stock is DOID share of 0.936. This results proved the statement Hernoyo (2013) the bigger the return acquired, the bigger the risk is.

Then, Table 6 shows descriptive statistics of the ACAR value winner and loser portfolio stocks during the five years observed period. Based on the table shows that the stocks of loser have an average value of -0.010 can not outperform winner stocks having an average value of 0.041. Standard deviation owned by the loser portfolio of 0.125, it means there is a deviation of data variations of 0.125. The winner portfolio of 0.176, it means the data deviation of 0.176 from the average value.

Before performing the hypothesis test, the research data should be normal. Normality test of this research using Kolmogorov-Smirnov test. Normality test is used to determine the data obtained has a normal distribution. It can be used for parametric statistical tests (Ghozali, 2011). According to Arifin (2017) the decision criteria in the normality test on SPSS if the significance value greater than 0.05 the data is normally distributed, whereas if less than 0.05 then the data is not normally distributed.

**Table 7.** Normality Data Test

Portfolio	Kolmogorov-Smirnov Test	
	Sig (2 tailed)	Explanation
WINNER	.194	N
LOSER	.389	N
L-W	.125	N

Table 7 shows the results of normality data for the value of ACAR winner portfolio, loser portfolio and the difference between of two portfolios. The significance value of all data tested is more than 0.05, so the data is normally distributed.

The research examines the hypothesis of ACAR value for each portfolios and the difference between of two portfolios. After that, the researcher measures the result by using market overreaction hypothesis proposed by DeBondt and Thaler (1985) if during observing period it shows  $ACA < 0$ ,  $ACA > 0$  and  $(ACA - ACA) > 0$ . If all indicators are fulfilled, then there is overreaction during the observing period.

The criteria for hypothesis tested on SPSS, a significance test was conducted with one samp-

le t-test, at a significance level of 5% ( $\alpha = 5\%$ ). From the results of this test will be obtained t statistic value and significance value that will be used to determine the conclusion. The detail information is in Table 8.

**Table 8.** Result of One Sample t-Test

	t	df	Sig. (2-tailed)	Mean Difference
Winner	1.279	29	.211	.041
Loser	-.450	29	.656	-.010
L-W	-1.648	29	.110	-.052

The average value of winner ACAR is positive with the mean difference of 0.041 and significant rate is more than  $\alpha$  ( $0.211 > 0.05$ ). Thus, it can be implied that the first prediction of market overreaction does not occur. Loser portfolio shows that the value of ACAR is  $\alpha$  ( $0.656 > 0.05$ ). It can be implied that the result does not match with the second prediction of market overreaction, thus there is no overreaction.

Lastly, the researcher examines the score difference of loser ACAR and winner ACAR. Table 8 shows that the average of score difference from both portfolio is negative of -0.051 and the significant of value more than  $\alpha$  ( $0.110 > 0.05$ ). Thus, there is no market overreaction.

It was found that the difference from ACAR value indicates there is no reversal return during testing period of winner and lose portfolio. The result is supported by t-statistic value using one sample t-test at a significant level of 5%.

The criteria proposed by DeBondt and Thaler (1985) the three indicators to predicted market overreaction were not fulfilled. Thus, overreaction phenomenon did not occur during observing period. The result of significance test from the three indicators shows that there is no significant overreaction. It can be concluded that there is no difference ACAR value between winner portfolio and loser portfolio in Indonesia Stock Exchange. Thus,  $H_0$  is not rejected, it is not significantly approved from the three predictions of market overreaction. Meanwhile,  $H_{a1}$  and  $H_{a2}$  are rejected.

The test results show the rejection of the hypothesis which means that the overreaction event does not occur in the mining companies listed on the Indonesia Stock Exchange. Reversal does happen several times, but only happens separately. Abnormal market situations that occur separatist can not be used as an indication of excessive events (Dewanthi & Wiksuana, 2017).

The results of this study do not support the market overreaction hypothesis proposed by DeBondt and Thaler (1985) because the overall portfolio of loser does not outperform the winner portfolio, so there is no portfolio reversal. not an indication of winner-loser anomalies during the study, the Indonesian stock market, especially mining companies, is still relatively efficient in the form of weakness. Investors tend to be rational in making investment decisions, so that all stock prices formed in the stock market can reflect actual market conditions. In addition, this study proves that investors prefer the company's fundamental analysis rather than using contrarian strategy considering the company's performance in the less stable mining sector.

The results of this study are consistent with research found by Dewanthi and Wiksuana (2017) the results showed that overreaction symptoms only occurred in January, May, and November 2016, so that the reversal of portfolio returns that not constantly but separatist. So overall market overreaction does not occur in the stock-27 Index of Business in Indonesia Stock Exchange. This study shows the abnormal return of winner stock is consistently bigger compared to the abnormal return of loser stocks during 2016.

Yunita (2012) study results are also in line with the results of Dewanthi and Wiksuana (2017) research, which states that there was a decline in the winner stock group but the decline was not significant. In contrast, loser stocks did not experience a positive reversal, but actually decreased in value so that loser shareholder investors still get a negative return during the period of this study. Furthermore, the two studies do not recommend the use of contrarian investment strategy because it is very risky to cause losses in investing in Indonesia capital market.

However, unlike the results of research conducted by Hadioetomo and Sukarno (2009) which shows that there is overreaction phenomenon in Indonesia capital market during 2006-2007. In the whole sub-period of semester, the performance of loser stock portfolio managed to surpass the performance of winner stock portfolio. So there is a reversal of portfolio returns that indicate market overreaction in research.

The second hypothesis states there is no difference Average Cumulative Abnormal Return between the period of formation and portfolio testing period based on the test results of one sample t-test. The results show that the loser portfolio continues to decline and the portfolio of winners is constant in generating a positive return. So that loser shareholder investors will suf-

fer losses and winner shareholder investors also still get return.

The results of this study are consistent with research conducted by Pasaribu (2011) where the results of his research indicate that there is no significant difference during the study period, so market overreaction does not occur in Indonesia Stock Exchange. In line with the research of Pasaribu (2011) the results of research conducted by Apriyono and Taman (2013) based on statistical test results showed that there is no difference in average cumulative abnormal return between winner and loser portfolio during 2005-2009 period in Indonesia capital market. because the consistency of overreaction during the month is high and not in a constant period of time, but occurs separately.

Another case with the results of research conducted by Swandewi and Mertha (2013) which shows that there is a significant difference between winner and loser portfolios in manufacturing industry stocks in the Indonesian capital market during 2009-2012. The result of difference test of cumulative average of abnormal return portfolio winner and porter portfolio during seven replication period of study showed negative difference and statistically significant.

The statistical test result using one sample t-test showed no significant difference so that the average of all winner and loser portfolio samples can not support an overreaction event. There is no significant difference between average cumulative abnormal return portfolio winner and loser, because the performance of stocks of mining companies both stocks on winner and loser portfolio in a condition that collapsed. It is shown from the average cumulative abnormal return value of each portfolio is mostly negative.

The performance of stocks in the mining sector has deteriorated in recent years, resulting in lower investor interest in the sector. The low investor interest is due to the low level of liquidity so that the possibility to obtain a return is also low. The condition should be a consideration for investors or potential investors in determining investment decisions. Investors are more rational in considering investment decisions, so stocks in the mining sector that are classified as low investors interest tend to be no overreaction event.

Rational investors will not implement contrarian investment strategies by taking advantage of abnormal market conditions. The absence of any indication of overreaction events in the mining sector in the Indonesia Stock Exchange does not support the implementation of contrarian investment strategies. Investors can not buy

loser stocks in the forming period and sell them in the next period, because the returns to be generated remain negative. This strategy is quite risky to be applied in Indonesia Stock Exchange especially to mining company.

## CONCLUSION AND RECOMMENDATION

Based on the result and data analysis, it can be concluded that there was no indication of market overreaction which led to overreaction during observing period. The result of hypothesis testing with one sample t-test shows that there was no significant value different of cumulative average abnormal return for winner portfolio and loser portfolio in mining companies listed on Indonesia stock exchange.

Based on the research results, some suggestions can be given to the relevant parties are as follows. For the next researchers, it is hoped that this research output can be used as a reference and the researcher suggests to explore on stocks index listed on Indonesia Stock Exchange and to lengthen the observing period in order to provide better description of the market conditions.

For investors, the researcher does not suggest to use contrarian investment strategy because there is a risk if it is applied in Indonesian Stocks Exchange, especially in mining companies. Investors should prioritize the company's fundamental analysis, because the company's performance on the mining sector is less stable in order to make investment decisions more rational.

Furthermore, the researcher expects information from companies agents to be useful to increase company performance in order to attract investors' interest.

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