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HERDING BEHAVIOR ANALYSIS: A CASE IN INDONESIAN STOCK MARKET

Aditya Salman Alfarisi [1], Adelia Dwi Syafrina[2], Nurul Ifadhoh[3], Mega Noerman Ningtyas[4]
[1,2,3,4]Faculty of Economics, Universitas Islam Negeri Maulana Malik Ibrahim Malang
Jl. Gajayana No.50, Dinoyo, Malang City, East Java, 65144, Indonesia
meganoerman@uin-malang.ac.id

ABSTRACT
This research discusses herding behavior in the Indonesian Stock Exchange using the Kompas 100 Indes. Our study uses the Cross Section Absolute Deviation (CSAD) method to analyze herding behavior in three market conditions: index, bearish, and bullish. Our statistical test results show herding behavior in bearish market conditions (down), no herding behavior in the 2023-2024 market period, and bullish market conditions (up). This study shows that investors have a lot of information and use it well in analyzing the market before making investment decisions. This study's results can help understand investor behavior and reduce investment risk.

Keywords: Herding Behavior; Cross-Sectional Absolute Deviation, Indonesia Stock Exchange

INTRODUCTION

Everyone wants to have a better life in the future. Some people even think about what they should do for a better life in the future. One way to ensure that everyone has a decent life in the future is by investing. Apart from protecting assets from rising inflation, investments also help investors' future needs. Investment success depends on the accuracy of investment decision-making. In addition, the amount of return investors requires is influenced by their ability to choose the assets to be invested (Pudiastuti & Pratiwi, 2021). In today's rapidly developing technology, Indonesians are increasingly interested in investing in stocks.

Information spreads very quickly so that people easily receive information even from around the world. According to the Internet Service Providers Association (APJII) in Indonesia alone, internet users reached 221,563,479 people out of a total population of 278,696,200. The ease of accessing information obtained by the public on the internet affects the decisions taken in investing. Investors tend to think logically and rationally after getting the latest market information. This is supported by traditional financial theory which states that all financial stakeholders think rationally in making decisions in the capital market (Uddin et al., 2021).

This traditional finance theory is based on the Efficient Market Hypothesis proposed by Fama (1970). This theory suggests that an efficient financial market is one in which the prices of traded assets reflect the information available in the market and assumes that investors are rational in making decisions according to current market information. In addition, investors can change their decisions according to market developments (Tlili et al., 2023). This is certainly contrary to the reality in the market. This theory does not consider the existence of deviant behavior by investors and unexpected phenomena that can reduce the level of efficiency of financial markets. The existence of deviant behavior and unexpected phenomena can cause irrational decision-making because it is based on emotional feelings. Therefore, there is a theory that can be an alternative, namely Behavioral Finance.

Behavioral Finance states that financial markets are inefficient, investors can obtain abnormal returns with various strategies based on past information, and investors in making decisions are still biased and irrational. Meanwhile, every investor's behavior

affects stock price movements. Behavioral finance explains sudden market changes more rationally and reasonably (Sharma & Kumar, 2020).

Shiller (2003) in his research, the efficient market hypothesis states that behavioral finance can help find deviations in investor behavior patterns. Hirshlifer (2001) explains that from a psychological perspective on investors, risk and poor judgment affect expectations of security returns. Nair and Antony (2015), in their research, explain that investors have irrational behavior and have a tendency to avoid risk by using past performance as a parameter for future performance.

In several studies on behavioral finance, it show that investors in making decisions are often irrational. Investors are usually influenced by emotional and cognitive biases and in considering decisions, tend to have complex choices because they also consider risk factors. Despite having complete information about asset pricing, investors will still open up opportunities to act irrationally in making decisions. This is because any decision investors make will be influenced by expectations of returns and emotional results. In behavioral finance, there are four main concepts: herding behavior, anchoring, overconfidence, and mental accounting. This research focuses on herding behavior. Herding behavior refers to the behavior of investors in making decisions that tend to follow other investors. Private information is less reliable by investors than collective information, so this aspect is the focus of extensive research. As a result, the risk of low returns and price deviations from fundamental values occurs (Zahera & Bansal, 2018). Herding behavior may occur during bearish markets and bullish markets. A bear market is one in which prices experience a sustained decline, often accompanied by low market returns. In contrast, a bull market describes a situation where prices tend to rise, usually accompanied by high market returns (Pasaribu & Sadalia, 2018).

Previous research shows herding behavior in the Indonesian capital market (Rizal N & Damayanti, 2019). In the context of other countries, herding behavior was also found in the Singapore stock market and even the degree of herding was stronger than in Indonesia (Putra A, Rizkianto E, and Chalid A, 2017). Rahman & Ermawati (2020) stated that conducting research on stock markets in 5 ASEAN countries and in the United States, explained that the United States federal funds rate is the dominant global factor that affects herding behavior, while the Singapore stock market is the dominant regional factor that affects the ASEAN stock market. Furthermore, this study shows herding behavior caused by a market surge in the Philippine stock market. Meanwhile, there is herding behavior when the market is down in the Malaysian stock market. More broadly, in Europe, Litimi (2017) stated that there is herding behavior in the French stock market whose results show herding behavior in all periods in 5 out of 11 sectors and does not affect all sectors. Some of the previous studies mentioned above indicate a bias of herding behavior in some stock markets in several countries. However, Dewi (2023) and Javaira & Hassan (2015) research shows no herding behavior in the Karachi stock market. This indicates that investors tend to be rational by considering the information available in making investment decisions.

LITERATURE REVIEW

Efficient Market Hypothesis

According to Ardalan, (2020), the attitudes of market executives always have a tendency that can cause the market to be inefficient. EMH is very controversial and attracts the attention of financial economists. EMH has two important predictions, namely: First, security prices can indicate the information available to investors. Second, the performance of an active trading strategy (buy and self) will find it difficult to exceed the performance of a positive trading strategy (buy and hold).

A perfectly competitive situation is described by the efficient market hypothesis, also known as the efficient market hypothesis. In neo-classical economic theory, this hypothesis is often used. Investors will try to maximize profits by acting rationally and avoiding risks in perfect competition (Fakhry, 2016). This assumption about investor

behavior is expanded in the concept of efficient market hypothesis proposed by Fama (1965) and Malkiel (1962). Fama (1970) explains that an efficient market is a market where investors act rationally, try to predict future market value using current data and actively compete to maximize profits. In addition, according to Fama (1970) also divides efficient markets into three forms, namely: weak, semi-strong, and strong.

According to Fama (1970), a weak efficient market is when asset prices reflect all available historical information. This results in investors will not get abnormal profits from their investments. This weak-form efficient market shows that prices run randomly. The semi-strong efficient market combines historical information and public information. Technical and fundamental analysis cannot be used in this form of an efficient market. The strong form efficient market argues that asset prices in the stock market reflect all information available in the market, combining three historical financial information, public financial information, and private information about asset finances.

Behavioral Finance

According to Nofsinger (2001) behavioral finance is the study of how humans behave financially. Nofsinger also mentions that behavioral finance studies how psychologists influence financial decision-making, companies, and financial markets. This explanation shows that behavioral finance is an approach that explains how psychologists influence people to make investments.

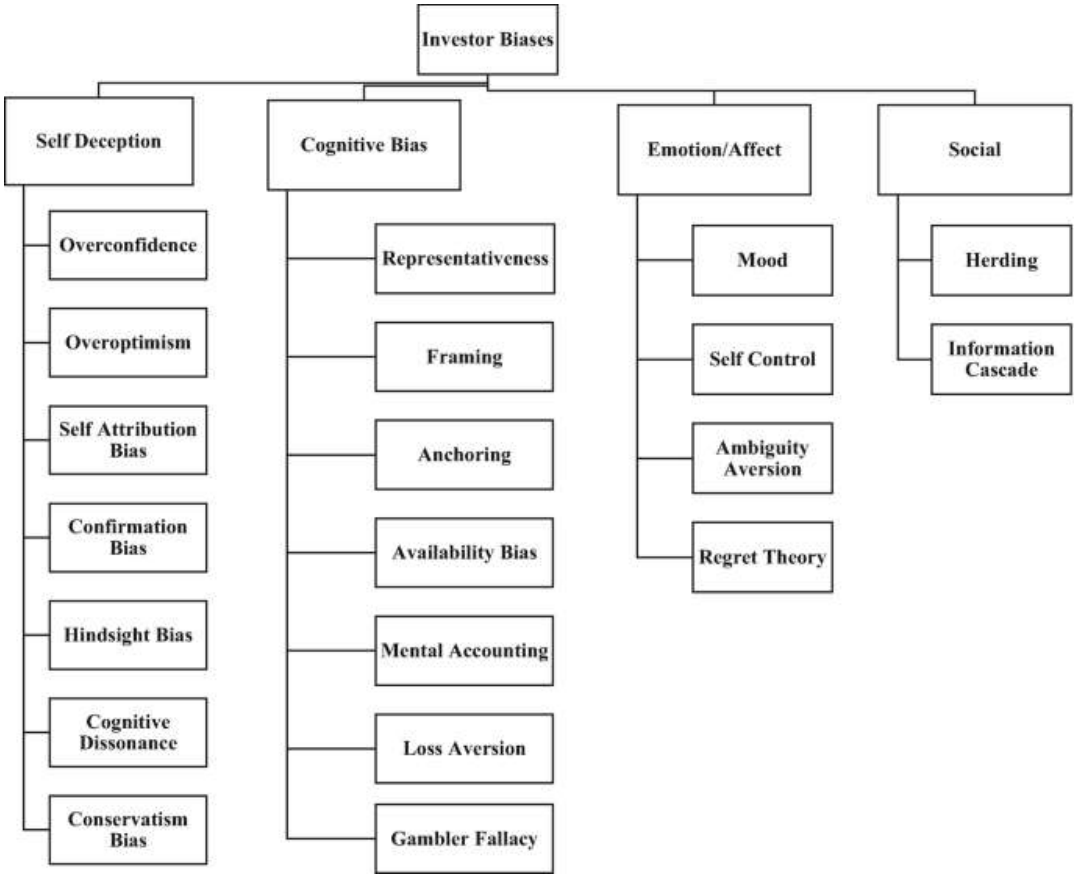
Behavior finance offers an alternative perspective on asset pricing. According to this theory, markets are considered inefficient, and investors who implement strategies based on past data earn unusual returns. In behavioral finance, investors are usually biased and not always rational. While it is commonly known that these investor actions affect asset price movements, asset pricing emphasizes that investors have little rationality and often rely on intuition, shortcuts, and emotions. All behavioral finance elements can now estimate asset price volatility very accurately. Thus, behavioral finance is widely accepted as a theory that can help the study of asset pricing in the future (Sharma & Kumar, 2020).

Herding Behavior

According to Hwang & Salmon (2004), herding behavior is when investors rely on other investors' decisions rather than their information or analysis to make investment decisions. Devenow and Welch (1996) and Lao and Singh (2011) state two perspectives on what causes herding behavior in financial markets. The first view believes that irrational actions drive herding behavior, while the second view believes that rational actions cause herding behavior.

The irrational viewpoint argues that herding is a psychological phenomenon. It occurs when market participants follow the market consensus rather than their own analysis (Devenow and Welch, 1996). Christie and Huang (1995) state that herding occurs when market participants follow market consensus even though they believe that collective market action is inappropriate. This is due to a person's desire to fulfill their need for confidence and reduce uncertainty (Vaughan and Hogg, 2005). In addition, investors are faced with uncertain situations due to anxiety, according to Lao and Singh (2011). This makes it difficult for them to analyze and make rational decisions. As a result, to reduce their anxiety, they choose to follow the market.

However, from a perspective that considers rational action, the main causes of herding are externalities, compensation, and optimal decision-making in situations where information is distorted (Devenow and Welch, 1996). Information, reputation, and imperfect compensation structure are three reasons for rational herding behavior, according to Bikkhandani and Sharma (2001).



Picture 1. Behavioral Finance Models
Source: Çömlekçi, İ., Özer, A. (2018)

HYPOTHESES

Herding behavior in the Indonesian stock market can be driven by several factors, such as market sentiment, economic events, or even speculative actions by institutional investors. This behavior often leads to price bubbles and increased volatility, negatively impacting market efficiency. Furthermore, according to Gunawan et al. (2019), social media and online forums have amplified herding behavior, as retail investors are influenced by popular trends or opinions shared by influencers or peers without proper analysis of the underlying asset.

This phenomenon is prevalent among individual investors and affects institutional investors, as they sometimes follow market movements to avoid underperformance compared to their peers. Consequently, herding behavior may result in mispricing, leading to substantial corrections when the market reverts to its intrinsic value.

Additionally, herding behavior can be exacerbated during times of market uncertainty, such as financial crises, when investors tend to rely on the actions of others rather than conducting their independent analysis. This was evident during the 2008 global financial crisis and the 2016 market correction, as noted by Ravanola (2017)
H1: There is herding behavior in the Indonesian stock market in the period 2023-2024

Herding behavior can occur in bearish market conditions. This is supported by research by Kumar et al. (2021), which shows herding behavior in bearish market conditions. In their research, Chang et al. (2000) found herding behavior in the stock market in South Korea and Taiwan, which are emerging markets. When the market is bearish, investors in making investment decisions tend to put aside their beliefs and follow the market. This is

in line with research conducted by which shows that there is herding behavior in bearish market conditions.
H2: There is herding behavior during bearish market conditions in the Indonesian stock market.

Herding behavior can also occur in bullish market conditions. This is in line with research conducted by Djalil & Laily (2018), which explains herding behavior in bullish market conditions. Market conditions and information owned by an investor can be a factor in making investment decisions, supported by research by Marbun et al. (2020) and Noviliya & Prasetiono (2017) which explain that in bullish market conditions in the Indonesian stock market, there is herding behavior. Herding behavior in bullish market conditions also occurs in the Chinese stock market (Luo & Schinckus, 2015).
H3: There is herding behavior during bullish market conditions in the Indonesian stock market

RESEARCH METHODS

The purpose of this study is to analyze herding behavior in the Indonesian stock market using the Kompas100 index. This analysis is conducted on three different market conditions: index market conditions on July 24, 2023 to March 15, 2024, bearish market conditions on July 24 to September 12, 2023, and bullish market conditions on January 08 to March 15, 2024. The date selection for observation is based on the analysis of the Jakarta Composite Index (JCI) movement from 2023 to 2024. The data collected includes the names of companies incorporated in the Kompas100 index, the closing prices of individual stocks, and the overall market obtained daily. The data documentation process was conducted through the Indonesia Stock Exchange (IDX) official website at www.idx.co.id and the finance.yahoo.com website.

This research focuses on analyzing the Kompas100 index, which accurately represents stock market conditions in Indonesia. The research population includes all companies listed in the Kompas100 index, so the total research population is 100 companies. A purposive sampling technique was used to determine the research sample with the criteria that companies listed in the Kompas100 index consistently during the 2020-2024. Based on these criteria, the number of samples obtained in this study was 59 companies.

Various methods are often used to detect the presence of herding behavior in a stock market. In this study, the authors applied the Cross-Section Absolute Deviation (CSAD) method developed by Chang et al. (2000). This method aims to estimate the existence of a linear relationship between the sensitivity or systematic risk of an asset and stock market returns. The initial data processing stage involves processing sample data in the form of individual stock and market closing prices. The data is then used to measure the respective stock return values. The formula (1) used to calculate the stock return is as follows.

$$Pt = \frac{Pt-(Pt-1)}{(Pt-1)} \quad (1)$$

Furthermore, the second stage is by research conducted by Chang, Cheng, and Khorana (2000), calculating the value of CSAD as the dependent variable using the calculation of return dispersion as follows (Formula 2):

$$CSADt = \sum_{i-1}^{N} |Ri,t - Rm,t| \quad (2)$$

Where CSADt is the Cross Section Absolute Deviation in period t, R(i,t) as the daily return of stock i in period t, R(m,t) the market-weighted return in period t and N represents the number of stocks in the market portfolio.

Chang et al. (2000) calculated the parameters using the capital asset pricing model (CAPM) assumptions to test for herding behavior. According to CAPM, there is a linear correlation between individual and market returns distribution. However, in this study, herding behavior is analyzed through the non-linear correlation between the value of the spread and the market return. In the third stage, Chang et al. (2000) use a quadratic equation to detect herding behavior, relating the CSAD spread value to absolute and squared market returns in the following regression form.

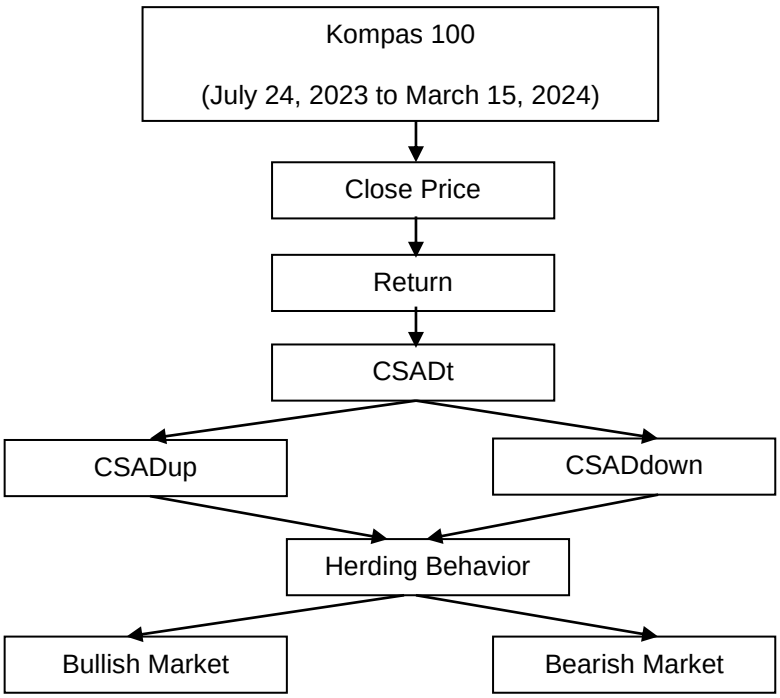
$$CSADt = \alpha + \gamma_1 |R_{m,t}| + \gamma_2 (R_{m,t})^2 + \varepsilon_t \quad (3)$$

With CSADt as the herding measure at time t, α as the intercept variable, γ1 as the linear coefficient between CSAD and market return, γ2 as the non-linear coefficient between CSAD and market return, Rm,t as the market return in period t, and εt as the standard error. The result of γ1 will always be positive and constant for market return. Unlike γ1, if γ2 is positive or insignificant, there is no market herding behavior. Conversely, if γ2 is negative and significant, then herding behavior occurs in the market. In this situation, stock returns tend to be close to the overall market returns due to the actions of investors who follow the market trend. The fourth stage involves using a regression equation to analyze herding behavior in bearish and bullish market conditions, which is as follows.

$$CSAD_t^{DOWN} = \alpha + \gamma_1^{DOWN} \left|R_{m,t}^{DOWN}\right| + \gamma_2^{DOWN} R_{m,t}^{DOWN^2} + \varepsilon_t \quad (4)$$

$$CSAD_t^{UP} = \alpha + \gamma_1^{UP} \left|R_{m,t}^{UP}\right| + \gamma_2^{UP} R_{m,t}^{UP^2} + \varepsilon_t \quad (5)$$

Based on the explanation above, so our research concepts are as follows:



Picture 2. Conceptual Framework

RESULTS

Data analysis in this study was carried out using EViews 12 software. The analyzed data is described through descriptive statistics that provide an overview of the data from the object of research in three different periods: (a) the whole year 2023-2024, (b) bearish market conditions, and (c) bullish market conditions.

Table 1. Descriptive Statistics July 2023-March 2024

	CSAD	ABSMRT	RMT2
Mean	0.014572	0.004724	0.000490
Median	0.013721	0.004142	0.000736
Maximum	0.030531	0.017539	0.016405
Minimum	0.008049	2.83E-05	-0.017539
Std.Dev	0.003669	0.003738	0.006016
Observations	158	158	158

Source: Author Analysis (2024)

Table 1 shows that during the 2023-2024 period, there are 158 observation dates. The Cross-Sectional Absolute Deviation (CSAD) variable has a minimum value of 0.008 and a maximum value of 0.030. The mean value is 0.014, greater than the standard deviation of 0.003, indicating a relatively small distance of data deviation. This means that each CSAD data sample is close to its calculated average. The absolute market return variable ($|Rm,t|$) has a minimum value of 0.0028 and a maximum value of 0.017. The average value is 0.004, which is also greater than the standard deviation of 0.003, indicating a small distance of data deviation, so each sample of absolute market return data is around its calculated average. The squared market return variable (Rm,t^2) has a minimum value of -0.017 and a maximum value of 0.016. The average value is 0.0004, greater than the standard deviation of 0.0006, indicating a large distance of data deviation. This means that each squared market return data sample is not around its calculated mean.

Table 2. Descriptive Statistics in Bearish Market

	CSAD	ABSMRT	RMT2
Mean	-0.052857	0.308000	0.420571
Median	0.050000	0.115000	0.340000
Maximum	0.960000	3.080000	1.750000
Minimum	-1.750000	0.000000	0.020000
Std.Dev	0.557094	0.578287	0.365711
Skewness	-1.019383	3.408216	1.757185
Kurtosis	4.108830	14.70279	6.526867
Jarque-Bera	15.70938	534.9720	72.30298
Probability	0.000388	0.000000	0.000000
Sum	-3.700000	21.56000	29.44000
Sum Sq. Dev.	21.41443	23.07472	9.228377
Observations	70	70	70

Source: Author Analysis (2024)

Table 2 shows that during the bearish condition in 2023-2024, there are 70 observation dates. The Cross-Sectional Absolute Deviation (CSAD) variable has a minimum value of -1.75 and a maximum value of 0.96. The average CSAD value is -0.052, which is lower than the standard deviation of 0.557, indicating a relatively small variation in the data. This indicates that each sample of CSAD data is not too far from its calculated average. The absolute market return variable (|Rm,t|) has a minimum value of 0.00 and a maximum value of 3.08. The mean is 0.308, which is smaller than the standard deviation of 0.578, indicating that the variation in the data is also relatively small. This indicates that

each sample of absolute market return data is not too far from its mean value. The squared market return variable (Rm,t^2) has a minimum value of 0.02 and a maximum value of 0.17. The mean is 0.42, which is greater than the standard deviation of 0.36. This indicates that the data on the squared market return variable does not have significant variation.

Table 3. Descriptive Statistics in Bullish Market

	CSAD	ABSMRT	RMT2
Mean	0.130227	0.513409	0.405000
Median	0.115000	0.455000	0.210000
Maximum	1.640000	1.640000	2.690000
Minimum	-1.200000	0.000000	0.000000
Std.Dev	0.626156	0.377633	0.551116
Skewness	0.172950	0.959417	2.097994
Kurtosis	2.680159	3.390738	7.083601
Jarque-Bera	0.813798	14.06022	125.7011
Probability	0.665711	0.000885	0.000000
Sum	11.46000	45.18000	35.64000
Sum Sq. Dev.	34.11020	12.40678	26.42440
Observations	88	88	88

Source: Author Analysis (2024)

Table 3 illustrates the bullish conditions in 2024 with 88 observation dates. The Cross-Sectional Absolute Deviation (CSAD) variable has a minimum value of -1.20 and a maximum value of 1.64. The mean is 0.130, which is lower than the standard deviation of 0.626, indicating a relatively small variation in the data. This indicates that each sample of CSAD data is not too far from its calculated average. The absolute market return variable ($|Rm,t|$) has a minimum value of 0.000 and a maximum value of 0.164. The mean is 0.513, which is greater than the standard deviation of 0.377, indicating that the data variation is also relatively small. This indicates that each sample of absolute market return data is not too far from its mean value. The squared market return variable (Rm,t^2) has a minimum value of 0.000 and a maximum value of 0.269. Its mean is 0.405, which is lower than the standard deviation of 0.550. This indicates that each sample of squared market return data has a relatively small variation and is close to its calculated average.

To determine whether the distribution of residual values in the regression model has followed a normal distribution or not, a normality test is performed. One method used is the Jarque-Bera statistic. The results of this test show that in the 2023-2024 period, the overall probability value is 0.482416, in bearish market conditions, the probability value is 0.744059, and in bullish market conditions, the probability value is 0.582094. A probability value greater than 0.05 indicates that the residual data is normally distributed.

To evaluate whether there is autocorrelation between residual errors in period t and the previous period (t-1) in a linear regression model, an autocorrelation test is used. The method often used for this purpose is the Langrange Multiplier (LM) test. The results of this test are that in the 2023-2024 period as a whole, the chi-square probability value is 0.0653, in bearish market conditions, the chi-square probability value is 0.0825, in bullish market conditions, the chi-square probability value is 0.0653. A chi-square probability value greater than 0.05 indicates that there are no autocorrelation symptoms in the regression model. This regression analysis aims to describe the relationship between the Cross-Sectional Absolute Deviation (CSAD) dispersion value and the absolute market return and the square of the market return.

Hypothesis 1 There is Herding Behavior in the Indonesian Stock Market for the Period 2023-2024

Herding behavior in the Indonesian stock market can be driven by several factors, such as market sentiment, economic events, or even speculative actions by institutional investors. This behavior often leads to price bubbles and increased volatility, negatively impacting market efficiency. Furthermore, according to Gunawan et al. (2019), social media and online forums have amplified herding behavior, as retail investors are influenced by popular trends or opinions shared by influencers or peers without proper analysis of the underlying asset. This phenomenon is prevalent among individual investors and affects institutional investors, as they sometimes follow market movements to avoid underperformance compared to their peers. Consequently, herding behavior may result in mispricing, leading to substantial corrections when the market reverts to its intrinsic value. Additionally, herding behavior can be exacerbated during times of market uncertainty, such as financial crises, when investors tend to rely on the actions of others rather than conducting their independent analysis. This was evident during the 2008 global financial crisis and the 2016 market correction, as noted by Ravanola (2017).

Table 4. Regression Analysis 2023-2024

Variable	Coefficient	Std. Error	t-Statistik	Prob.
C	0.012983	0.000445	29.16362	0.0000
ABSMRT	0.330989	0.073912	4.478138	0.0000
RMT2	0.051461	0.045926	1.120528	0.2642
R-Squared	0.121172	Mean dependent var		0.014572
Adjusted R-squared	0.109832	S.D. dependent var		0.003669
S.E. of regression	0.003462	Akaike info criterion		-8.475274
Sum squared resid	0.001857	Schwarz criterion		-8.417124
Log likelihood	672.5467	Hannan-Quinn criter.		-8.451659
F-Statistik	10.68564	Durbin-Watson stat		1.278060
Prob(F-statistic)	0.000045			

Source: Author Analysis (2024)

Table 4 shows a constant of 0.689, indicating that if the market return value (|Rm,t|, Rm,t^2) is constant or zero, then the Cross Sectional Absolute Deviation (CSAD) will be at 0.012%. The linear coefficient between CSAD and absolute market return (|Rm,t|) is 0.330, indicating a positive and significant relationship, indicating that CSAD increases with |Rm,t|. For example, if the market return increases by 1%, then CSAD will decrease by 0.330%. The non-linear coefficient between CSAD and market return (Rm,t^2) is 0.051, indicating a positive and significant relationship. This indicates that there is no indication of herding behavior in the Kompas 100 stock index during the 2023-2024 period as a whole.

Christie and Huang (1995) noted that investors often put aside their personal beliefs and follow market opinion collectively, especially when market pressure increases or market volatility is high. This situation is often the forerunner to the emergence of herding behavior. However, this finding shows different results from those proposed by Christie and Huang (1995), because no evidence of herding behavior was detected in market conditions with high price volatility. According to Wardani (2021), market volatility in early 2020 was more influenced by significant capital outflows, which suggests that the volatility observed during 2023-2024 was not entirely due to herding behavior.

Hypothesis 2 There is Herding Behavior During Bearish Market Conditions in the Indonesian Stock Market

This tendency to follow the crowd in bearish market conditions is often driven by fear and uncertainty, as investors prioritize minimizing losses over seeking potential gains. As a result, they are more likely to rely on the collective actions of others rather than their analysis. Research by Christie and Huang (1995) also supports this, revealing that herding behavior becomes more pronounced during periods of market stress, as investors are more inclined to abandon their judgment in favor of group behavior. In such conditions, the fear of further declines amplifies herding, leading to mass selling and significant price drops, worsening market downturns. This phenomenon is also observed in emerging markets like Indonesia, where investor confidence may be more fragile, and external factors such as global economic events can have a greater impact. According to Tan et al. (2008), herding behavior in bearish markets can lead to inefficiencies, where stock prices deviate significantly from their fundamental values, creating opportunities for further market instability. Therefore, understanding herding behavior, particularly in bearish conditions, is crucial for both policymakers and investors to mitigate its adverse effects on market stability and investor decision-making.

Table 5. Regression Analysis for Bearish Market in 2023

Variable	Coefficient	Std. Error	t-Statistik	Prob.
C	-0.039189	0.108393	-0.361544	0.7188
ABSMRT	0.330989	0.385864	1.926022	0.0583
RMT2	-1.059187	0.244022	-4.340540	0.0000
R-Squared	0.445625	Mean dependent var		-0.052857
Adjusted R-squared	0.429077	S.D. dependent var		0.003669
S.E. of regression	0.420937	Akaike info criterion		1.149247
Sum squared resid	11.87162	Schwarz criterion		1.245611
Log likelihood	-37.22363	Hannan-Quinncriter.		1.187524
F-Statistik	26.92844	Durbin-Watson stat		2.256448
Prob(F-statistic)	0.000000			

Source: Author Analysis (2024)

Table 5 shows the constant value of -0.039, indicating that if the market return value (|Rm,t DOWN|, Rm,tDOWN2) remains constant or zero, then the Cross-Sectional Absolute Deviation (CSAD) will be at -0.039%. The linear coefficient between CSAD and the absolute market return (|Rm,t DOWN|) is 0.743, indicating a positive and significant relationship, indicating that CSAD increases with |Rm,t DOWN|. For example, if the market return increases by 1%, then CSAD will increase by 0.743%. The non-linear coefficient between CSAD and the market return (Rm, tDOWN2) is -1.059, indicating a negative and significant relationship. This indicates the presence of herding behavior in the Kompas 100 stock index during bearish market conditions. During bearish market conditions or when the market is stressed, investors tend to ignore their personal opinions and prefer to follow the general view of the market. This phenomenon often results in herding behavior (Koputra & Mahadwartha, 2021).

Hypothesis 3 There is Herding Behavior During Bullish Market Conditions in the Indonesian Stock Market

In bullish market conditions, herding behavior is often driven by optimism and the fear of missing out (FOMO), as investors are eager to capitalize on upward price movements. This can lead to overvaluation, as investors follow the crowd without adequately assessing the fundamentals of the stocks they are purchasing. According to Chang et al. (2000), herding is more prevalent during periods of market exuberance, when investors are influenced by the general positive sentiment, believing that the rising prices will continue. In addition, research by Prosad et al. (2012) highlights that herding in bullish

markets can lead to speculative bubbles, where asset prices are pushed to unsustainable levels due to mass buying. This is particularly true in emerging markets like Indonesia and China, where investors may rely more on short-term market trends rather than long-term financial metrics. Moreover, herding behavior during bullish periods can also result in reduced market diversity, as many investors hold similar portfolios, increasing systemic risk. When the market eventually corrects, the impact is often more severe, as widespread selling can occur, driving prices down rapidly. This cycle of herding in both bullish and bearish conditions emphasizes the importance of promoting financial literacy and encouraging independent analysis to help investors make more informed decisions.

Table 6. Regression Analysis for Bullish Market in 2024

Variable	Coefficient	Std. Error	t-Statistik	Prob.
C	0.144024	0.149414	0.963929	0.3378
ABSMRT	-0.821882	0.516887	1.590061	0.1155
RMT2	1.007815	0.354179	2.845495	0.0056
R-Squared	0.196999	Mean dependent var		0.130227
Adjusted R-squared	0.178105	S.D. dependent var		0.626156
S.E. of regression	0.567663	Akaike info criterion		1.738919
Sum squared resid	27.39051	Schwarz criterion		1.823373
Log likelihood	-73.51243	Hannan-Quinn criter.		1.772943
F-Statistik	10.42647	Durbin-Watson stat		2.480859
Prob(F-statistic)	0.000089			

Source: Author Analysis (2024)

Table 6 shows a constant value of 0.144, indicating that if the market return value (|Rm, tUP|, Rm,tUP2) remains constant or zero, then the Cross-Sectional Absolute Deviation (CSAD) will remain at 0.144%. The linear coefficient between CSAD and absolute market return (|Rm,tUP|) is -0.821, indicating a negative and significant relationship, indicating that CSAD decreases with |Rm,tUP|. For example, if the market return increases by 1%, then CSAD will decrease by 0.821%. The non-linear coefficient between CSAD and market return (Rm,tUP2) is 1.007, indicating a positive and significant relationship. This shows that there is no indication of herding behavior in the Kompas 100 stock index during bullish market conditions. The results of this study, which show the absence of herding behavior during bullish market conditions, are in line with the findings presented by Koputra & Mahadwartha (2021) and Pasaribu & Sadalia (2018). Koputra & Mahadwartha (2021) significantly showed the absence of herding behavior in the Indonesian stock market, especially in the infrastructure, utilities, and transportation sectors when the market is bullish (rising). This finding confirms that the information available to investors has been distributed efficiently, so they do not feel the need to follow market consensus in making investment decisions.

The determination coefficient (R^2) test is useful for evaluating the extent to which the independent variables can explain the variation of the dependent variable in the regression model. The results of the determination coefficient (R^2) test, represented by the adjusted R square value, show several important things: The adjusted R square value for the 2023-2024 period as a whole is -0.006, which indicates that -the variation of the market return variable can explain 0.068% of the CSAD variation. The remaining 100.068% of the variation is influenced by other factors not included in this study. In bearish market conditions, the adjusted R square value is 0.429, which means that around 42.907% of the CSAD value variation can be explained by the variation of the market return variable. The remaining 57.093% of the variation is influenced by other variables not included in the study. In bullish market conditions (rising), the adjusted R square value is 0.178, which indicates that variations in the market return variable can explain 17.810% of the variation in the CSAD value. The remaining variation of 82.190% is influenced by other factors not included in this study.

The results of this test indicate that investors who take part in stocks included in the Kompas 100 stock index show varying responses to various market conditions. The difference in response is reflected in the absence of herding behavior during the 2023-2024 period and bullish market conditions while herding behavior is observed in bearish market conditions. The absence of herding behavior indicates that during the 2023-2024 period and when the market was in bullish conditions, stock prices in the capital market reflected relevant information available to investors to make investment decisions, in line with the efficient market hypothesis (EMH) principle. The availability of easily accessible, valid, and well-managed information plays an important role in preventing investors from making decisions based on market trends or the actions of other investors, which ultimately reduces the possibility of herding behavior in the Indonesian stock market. Herding behavior when the market is in a bearish condition indicates that investors tend to follow the actions or decisions taken by other investors, even though they may not be based on fundamental analysis or objective information about the stocks. This phenomenon can occur due to high uncertainty or intense market pressure, which makes investors more likely to follow the "herd" to reduce risk or follow the current market trend.

CONCLUSION

This study aims to determine the presence of herding behavior on the Kompas 100 index for three periods, namely in 2023-2024, bearish market conditions (down), and bullish market conditions (up). The results of statistical tests show that there is herding behavior in bearish market conditions (down), and there is no herding behavior in the 2023-2024 period and in bullish market conditions (up). The results of this finding indicate that investors behave rationally by considering the information available in the market in making investment decisions during the 2023-2024 market period and during the bullish market. Sufficient information that investors have in analyzing the market can help investors avoid making investment decisions that tend to follow the behavior of other investors. However, during a bearish market, investors tend to be irrational, tend to ignore their analysis and believe more in market analysis so that in making decisions, investors tend to follow other investors. The limitation of this study is that it only uses data from the Kompas 100 index and does not include data from other companies that are not included in the index, which can reduce the representativeness of the research results. In addition, this study only covers the period from July 2023 to March 2024 which may reduce the generalizability of the research results to the past or future. Further research can consider other control variables such as macroeconomic factors, monetary policy, or global events that can affect market performance.

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