Herding Dynamics, Volatility, and Market Capitalization: Implications for Stock Returns in Indonesia

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Abstract

This research examines the connections between herd mentality, price fluctuations, and company size in relation to stock performance for firms listed on the IDX from January 2019 through December 2023. The LSV approach is employed to quantify herding behavior, while historical data is used to calculate volatility. The study investigates how market capitalization and volatility influence the link between herd mentality and stock returns. Weekly stock prices, company valuations, trading volumes, and sales proportions from TradingView comprise the dataset. Findings indicate that market capitalization significantly enhances the relationship between herd behavior and stock returns, particularly for large-cap enterprises. Conversely, volatility weakens this relationship, with herd behavior's impact on stock returns diminishing in turbulent market conditions. These results highlight the significance of company size and market volatility in comprehending group investor conduct and its effects on stock market outcomes. The study's implications include the creation of more flexible investment tactics and market regulations that promote stability across various market scenarios.

Keywords: Stock return, Volatility, Market Capitalization

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INTRODUCTION

Abnormal returns in financial markets are a phenomenon that attracts the attention of investors and researchers because they may indicate market inefficiency or anomalies in the stock pricing mechanism. Theoretically, abnormal returns deviate from expected returns based on asset-pricing models, which challenges the assumptions of the efficient market hypothesis (Chen & Liu, 2023; Mensi et al., 2023). This hypothesis states that stock prices always reflect all information available in the market, so the discrepancy between actual and expected returns may be an indication of other factors that play a role in stock price movements (Pham & Chu, 2024).

Abnormal return persistence does not occur uniformly across sectors or under various market conditions. For example, in the agricultural sector, high abnormal returns are more common owing to the economic performance dynamics that depend on certain latent variables (Gómez-Limón et al., 2023). This phenomenon raises questions regarding the factors that lead to sustained above- or below-average returns, ultimately challenging the notions of market efficiency and rapid price adjustment mechanisms. The existence of abnormal returns poses a challenge to investors and policymakers, as it may interfere with investment strategies and capital market regulatory policies. Traditional asset pricing models may not capture all factors that affect stock returns; therefore, investment decisions made based on such models risk being suboptimal (Abdeldayem & Aldulaimi, 2023; Chen & Liu, 2023). Moreover, the abnormal returns that occur during periods of economic crisis point to the need for a deeper understanding of market dynamics, as well as the development of investment strategies that are more adaptive and resilient to market anomalies (Hasan et al., 2022; Pham & Chu, 2024).

Herding behavior is considered one of the contributing factors to fluctuations in stock returns within this framework. This phenomenon occurs when investors make collective investment choices without conducting individual analyses, potentially impacting the efficiency of stock prices. However, the influence of herding on stock returns varies. Research by Kanojia et al. (2022) indicates that in the Indian stock market, herding does not significantly affect stock returns, primarily due to the prevalence of institutional investors who prioritize fundamental and technical analysis over following market trends. Conversely, Ah Mand et al. (2023) discovered that herding in Islamic stocks takes place during market upswings, although its impact on returns is not substantial. This finding suggests that the effect of herding on stock returns may be contingent on the type of market and specific economic conditions.

Research has shown that herd behavior is more pronounced during times of economic instability, such as recessions or pandemics, when investors are more likely to follow collective trends due to reduced confidence in their own assessments (Ahn et al., 2024; Costa et al., 2024). According to Vieito et al. (2024), herding significantly affects volatility and stock returns in the Latin American Integrated Market (MILA), particularly prior to market integration. The study also reveals that herding is more prevalent in bull markets compared to bear markets, suggesting that overall market conditions can shape investor behavior.

Research has indicated that the impact of herding behavior varies across different countries and market systems. According to Loang (2023), herding significantly affects stock returns in Islamic stock markets of several Muslim nations, including Indonesia, Kuwait,

Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE), but not in Bahrain. Furthermore, X. Wang et al. (2022) demonstrated that in the Chinese stock market, herding and volatility mutually reinforce each other, leading to more pronounced price fluctuations, particularly after circuit breakers are activated. This observation highlights how herding behavior can intensify market volatility and cause stock prices to deviate from their fundamental value. Research has demonstrated that in developing markets like Vietnam, investor behavior is influenced by herding during volatile periods, leading to stock returns that diverge from their underlying values (Nguyen, 2022). The research of J. Wang & Hudson (2024) indicates that herding becomes more pronounced in both extremely positive and negative market conditions. A study conducted in India by Madaan & Panda (2023) reveals that foreign institutional investors are more prone to exhibit herding behavior when purchasing stocks compared to selling them, suggesting that market trends have a greater impact on investment decisions than fundamental analysis.

The connection between herding and stock returns is significantly influenced by moderating factors such as volatility and market capitalization. The impact of volatility on herding behavior can vary depending on market conditions and the predominant investor types. Research by Maquieira & Espinosa Méndez (2022) indicates that herding tendencies are more pronounced in low-volatility market environments, whereas increased volatility tends to promote more rational and independent decision-making among investors. Additionally, Vieito et al. (2024) discovered that ARCH and GARCH effects are notable in the herding model within the MILA market, indicating that market volatility directly affects the herding behavior of investors. On the other hand, market capitalization is also a moderating factor in the relationship between herding and stock returns. Large-cap stocks tend to experience lower herding behavior than small-cap stocks do because large-cap companies have higher liquidity and more available fundamental information that can be used in making investment decisions (Khayal & Srour, 2024). In contrast, in small-cap markets, investors are more easily affected by mass psychology, so herding behavior is more dominant and causes higher volatility (Nguyen, 2022). Marisetty (2024) study shows that market capitalization significantly moderates the relationship between herding and stock returns in India, where small-cap stocks are more susceptible to price fluctuations due to herding than large-cap stocks. In emerging markets such as Indonesia, Adnan (2023) found that herding behavior is more common in small-cap stocks, as investors are more likely to ignore fundamental information and follow market trends.

Overall, volatility and market capitalization strongly influence the relationship between herding behavior and stock returns. Under some conditions, high volatility can reduce herding tendencies, whereas under other conditions, increased volatility actually reinforces herding behavior, especially in downward markets. Market capitalization also plays an important role, with small-cap stocks being more susceptible to herding-induced price fluctuations than large-cap stocks. An in-depth understanding of these dynamics is crucial for investors in managing risk and regulators in maintaining capital market stability and efficiency.

In the stock market, investors often exhibit a phenomenon known as herd mentality, where they mimic the investment choices of the majority without conducting their own independent analysis. This phenomenon may occur because of psychological factors, such as uncertainty and social pressure, as well as information factors, where investors feel safer

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following collective decisions than individual analysis (X. Wang et al., 2022). Previous studies show that herding can have diverse impacts on stock returns, depending on market conditions and the dominant investor type (Ahn et al., 2024; Loang & Ahmad, 2023). Several studies have found that herding can increase market volatility, lead to deviations in stock prices from their fundamental values, and, in some cases, create price bubbles that risk market stability (Costa et al., 2024; Vieito et al., 2024). However, under efficient market conditions with the dominance of institutional investors, the impact of herding on stock returns tends to be smaller or insignificant (Kanojia et al., 2022).

A company's market capitalization is one of the factors that can moderate the relationship between herding behavior and stock returns. Market capitalization reflects the size of a company and the liquidity of its shares, which affects how investors respond to market information (Nguyen, 2022). Previous studies found that companies with large capitalization tend to have a lower herding effect than companies with small capitalization because more fundamental information is available that can be accessed by investors (Marisetty, 2024; Ferrouhi, 2021). In more developed markets, such as the Latin American Integrated Market (MILA), an increase in market capitalization after market integration leads to reduced herding behavior as information transparency increases (Vieito et al., 2024). In contrast, in emerging markets such as Indonesia and Vietnam, small-cap stocks are more prone to herding behavior as investors tend to ignore fundamental information and follow price trends (Adnan, 2023; Phan et al., 2023).

Previous research shows that the relationship between herding behavior and stock returns is nonlinear and depends on market conditions (Ah Mand et al., 2023; J. Wang & Hudson, 2024). In volatile market conditions, herding behavior tends to be stronger, but its impact on stock returns depends on the size of the firm's market capitalization. In small-cap stocks, herding behavior can exacerbate volatility and cause stock returns to deviate further from their fundamental values (Jabeen et al., 2022). In contrast, in large capitalization stocks, herding behavior is more controlled and tends not to produce significant effects on stock returns because market information is more easily accessible to institutional investors (Danila, 2023).

In addition, research has found that in bull market conditions, herding behavior tends to be stronger in small-cap stocks, as investors tend to speculate on stocks that have high profit potential (Loang, 2023). Conversely, in bearish market conditions, herding behavior may increase in all types of stocks, but the impact on returns is more pronounced in small-cap stocks, as they are more susceptible to selling pressure due to panic selling (J. Wang & Hudson, 2024).

H1: Market capitalization moderates the relationship between herding behavior and stock returns.

In the stock market, investors often exhibit a tendency to mimic the actions of the majority without conducting their own fundamental or technical analysis, a phenomenon known as herding behavior. This practice can influence stock returns in various ways, depending on market conditions and investor characteristics. Research indicates that herding may cause stock prices to diverge from their intrinsic values, heighten market volatility, and result in diminished returns following periods of intense herding (Costa et al., 2024). However, the effect of herding on returns is not consistently significant across all market

conditions. A study by Kanojia et al. (2022) revealed that in the Indian stock market, herding does not substantially impact stock returns, primarily due to the prevalence of institutional investors who rely more heavily on fundamental and technical analysis for their investment decisions. Conversely, Loang & Ahmad (2023) demonstrated that herding significantly affects stock returns in multiple countries, particularly during times of economic uncertainty, such as the COVID-19 pandemic.

Market volatility is an important factor that moderates the relationship between herding and stock returns. Some studies show that herding is stronger in high-volatility conditions due to market uncertainty, which encourages investors to follow the majority decision rather than conduct independent analysis (J. Wang & Hudson, 2024; Nguyen, 2022). By contrast, under low-volatility conditions, investors tend to be more rational and rely on individual analysis rather than following market trends (Engkuchik et al., 2024).

In turbulent markets, research shows that herding and volatility reinforce each other, leading to sharper stock price fluctuations (X. Wang et al., 2022). This indicates that when volatility is high, herding can exacerbate stock price volatility, making stock returns harder to predict and more volatile. However, under certain conditions, volatility can also reduce herding tendencies, especially when investors are more cautious in making investment decisions because of high uncertainty (Fei & Zhang, 2023).

The effect of volatility on herding also differs depending on market conditions. Vieito et al. (2024) found that herding is more dominant in bull markets than in bear markets. However, when market volatility increases, investors often make collective decisions, leading to larger price fluctuations. In addition, Phan et al. (2023) found that herding behavior is stronger on days with high volatility on the Vietnamese stock exchange, especially in smaller markets, such as the HoSE and HNX.

Research by Vieito et al. (2024) on developing markets, specifically the Latin American Integrated Market (MILA), revealed that ARCH and GARCH effects play a significant role in the herding model. This finding indicates that fluctuations in market volatility directly influence the herding behavior of investors in these markets. Other studies also show that institutional investors have a role in reducing the impact of volatility on herding by strengthening market stabilization mechanisms (Kim et al., 2020).

H2: Market volatility moderates the relationship between herding behavior and stock returns

RESEARCH METHOD

The data used in this study include companies based on financial performance listed on the Indonesia Stock Exchange (IDX) from January 2019 to December 2023. The data analyzed include weekly information on stock prices, market capitalization, trading volume, and sales proportion. All data were obtained from the TradingView website as the main source. Market volatility is calculated using historical volatility. According to Scrucca (2024), to measure historical volatility, we can use the formula below:

$$\sigma PV = \sqrt{\frac{1}{n} \sum ln\left(\frac{Ht}{Lt}\right)^2}$$

Stock price volatility (σPV) is a statistical measure used to describe the level of stock price fluctuations in a given period. The formula is based on the natural logarithm of the ratio

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of the highest share price (Ht) to the lowest share price (Lt) in each period, which is squared on average, and the square root is taken. This process provides an idea of how many stock price changes occur, taking into account the logarithm to capture relative changes, not just absolute changes. The higher the volatility value, the greater the risk or uncertainty of the stock price. Steps to Calculate Volatility:

1. Collect Stock Price Data: Take the highest stock price (Ht) and lowest stock price (Lt) data for each observation period (e.g., daily, weekly, or monthly).
2. Calculate the Logarithmic Ratio: For period, calculate the natural logarithm (ln) of the ratio of the highest price to the lowest price:

$$ln\left(\frac{H_t}{L_t}\right)$$

3. Square the Logarithm Result: Square the result of the logarithm for each period:

$$ln\left(\frac{H_t}{L_t}\right)^2$$

4. Average of Squares: Calculate the average of the squared logarithms for the entire period:

$$\frac{1}{n}\sum ln\left(\frac{Ht}{Lt}\right)^2$$

5. Take Square Root: Finally, take the square root of the mean square value to obtain the volatility value:

$$\sigma PV = \sqrt{\frac{1}{n}\sum ln\left(\frac{Ht}{Lt}\right)^2}$$

Using these measures, volatility can be calculated to provide insight into the level of risk or volatility of a stock in a given period. If you have such data, I can help calculate it. The measurement of herding behavior was performed using the Lakonishok, Shleifer, and Vishny method, known as the LSV measure. The formula used was as follow:

$$LSV_{i,t} = \left|\frac{B_{i,t}}{N_{i,t}} - P_t\right| - AF_{i,t}$$

LSV is a herding measure for the i-th stock at time t that reflects investors' behavioral tendency to follow group decisions. Component $B_{i,t}$ represents the number of investors who bought the i-th stock at time t, while $N_{i,t}$ is the total number of investors who were active in trading that stock during the same period. The expected probability of stock purchases (P_t) represents the average proportion of purchases expected at time t, assuming that the purchase decisions are independent. To account for random variations around P_t, an adjustment factor ($AF_{i,t}$) was used, which allowed for a more accurate analysis of the herding pattern that occurs in the market. A significantly positive LSV value indicates the presence of a herding phenomenon in the stock.

Calculation Steps Herding:

1. Calculate the Buyer Investor Proportion Ratio: This is the proportion of investors who buy the it stock at time t.

$$\frac{B_{i,t}}{N_{i,t}}$$

2. Subtract from the Expected Probability Pt: This result shows the deviation of the actual purchase proportion from the average expectation.

$$\frac{B_{i,t}}{N_{i,t}} - P_t$$

3. Calculate Absolute Value: The negative sign is removed to measure the magnitude of deviation regardless of the direction.

$$\left| \frac{B_{i,t}}{N_{i,t}} - P_t \right|$$

4. Subtract with Adjustment Factor AFi,t: The adjustment factor (AFi,t) corrects for random variations that may occur around Pt.

$$LSVi,t = \left| \frac{B_{i,t}}{N_{i,t}} - P_t \right| - AF_{i,t}$$

A positive LSVi,t value indicates the herding phenomenon (uniform behavior), which occurs when investors tend to buy or sell stocks simultaneously. A negative LSVi,t value indicates that trading decisions are independent, without any collective behavior patterns. Stock returns are calculated based on daily log-returns summed over a quarterly period using the following formula:

$$R_t = \frac{P_t}{P_t - 1}$$

The difference between Pt and Pt-1 reflects the gain or loss from the change in share price (capital gain or loss). The previous share price (Pt-1) is used for comparison to calculate the percentage change in value, resulting in a return figure that reflects the gain or loss relative to the initial investment value. Moderation regression analysis was used to test this hypothesis. The basic model used is as follows:

Model 1

   Stock Return$_t$ = α+ β1 Herding$_t$ +β2 Volatility$_t$ +β3 Market Cap$_t$ +$_t$

Model 2

   Stock Return$_t$ = α+ β1 Herding$_t$ +β2 Volatility$_t$ +β3 Market Cap$_t$+β4 (Herding$_t$ ×Volatility$_t$)+ β5 (Herding$_t$ ×Market Cap$_t$)+$_t$

Tests are conducted using statistical software such as Stata or R. The F test is used to evaluate the significance of the model, while the t-test is used to test the significance of the coefficients. Moderating variables were tested with the interaction between herding behavior and each moderating variable.

RESULTS AND DISCUSSION

Result

The average stock return of 0.264478 indicates that, in general, the stock market provides relatively small returns. However, the very wide distribution of returns, with a maximum of 70.78652 and a minimum of -36.87943, reflects significant fluctuations in stock returns. The high standard deviation (6.098443) confirms that market volatility is very high, which is consistent with the findings of X. Wang et al. (2022) that herding and market volatility reinforce each other and cause sharp price fluctuations.

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Table 1. Result Descriptive Statistic

	STOCK RETURN	HERDING	MARKET CAP	VOLATILITY
Mean	0.264478	-0.092307	8.06E+13	35.69652
Median	0.000000	-1.161781	2.34E+13	30.36457
Maximum	70.78652	67.43785	1.20E+15	156.7080
Minimum	-36.87943	-61.62093	4.97E+11	4.780142
Std. Dev.	6.098443	28.69541	1.66E+14	20.75885

This asymmetric return distribution also indicates market instability, which is in line with the findings of Pham & Chu (2024) that return anomalies often contradict the efficient market hypothesis. This is reinforced by the study of Costa et al. (2024), who found that after periods of intense herding, market returns tend to be lower, while after periods of adverse herding, market returns actually increase. In other words, investors need to understand that stock returns depend not only on fundamental factors but also on collective behavior that affects price dynamics.

In addition, a median return of zero indicates that the majority of stocks do not provide significant returns, making the selection of the right stocks a major challenge for investors. This is also supported by Nguyen (2022), who found that in emerging markets such as Vietnam, herding behavior strongly influences investor behavior during periods of high volatility, causing stock returns to deviate from their fundamental value.

On the herding variable, the negative average of -0.092307 indicates that, in general, the collective behavior of investors is not dominant and that investment decisions tend to be more independent. These results align with the research of Kanojia et al. (2022), which suggests that institutional investors in India prioritize fundamental and technical analysis over following market trends. The -1.161781 median further suggests that a majority of stocks exhibit considerable variations in how investors behave.

However, the maximum value of 67.43785 indicates that herding may occur under certain conditions, especially in stocks exposed to strong public information or in unstable market situations. This is consistent with the research of Ahn et al. (2024), who found that herding is stronger during periods of economic recession due to increased uncertainty, which encourages investors to imitate collective decisions. Similarly, Loang & Ahmad (2023) found that during the COVID-19 pandemic, investors are more likely to turn to collective decisions and ignore individual analysis, which increases market volatility.

In addition, the very high variation in herding (SD 28.69541) indicates diversification of investor behavior, which is consistent with the study of Vieito et al. (2024), who found that herding is more dominant in bull markets than bear markets, and is more common before market integration or increased transparency. This high herding effect can lead to the distortion of stock prices from their fundamental value, as explained by Loang (2023) in the context of Islamic stocks in Muslim countries. In addition, J. Wang & Hudson (2024) emphasize that in turbulent market conditions, herding further amplifies volatility, increasing the potential for investor overreaction to market trends.

The Market Cap variable shows a mean value of 8.06E+13, with a maximum value of 1.20E+15, indicating the dominance of large capitalization companies. However, the much lower

median (2.34E+13) reflects an uneven distribution, where most companies have smaller capitalization than a few giants (outliers). This finding is in line with the research of Khayal & Srour (2024), which shows that larger market capitalization tends to reinforce herding behavior, as stocks with high capitalization are more frequently referenced by investors. In contrast, Marisetty (2024) study in India found that companies with small capitalizations are more susceptible to price fluctuations due to herding, which causes stock returns to be more volatile.

In emerging markets like Indonesia, Adnan (2023) emphasizes that herding is more common in small-cap stocks, as investors tend to ignore fundamental information and follow the price movements of popular stocks. Therefore, the market capitalization structure can be a moderating variable in the relationship between herding and stock returns. Market volatility shows an average of 35.69652, with a high standard deviation (20.75885). The maximum value of 156.7080 reflects the presence of high-risk stocks, while the minimum value of 4.780142 indicates that there are stocks that remain stable despite volatile market conditions.

The high degree of market fluctuation suggests substantial inherent risk, aligning with the findings of Fei & Zhang (2023), who observed that during the COVID-19 crisis, herd behavior negatively impacted volatility, though this impact diminished in highly uncertain times. In the context of Chinese equities, X. Wang et al. (2022) demonstrate that investors tend to follow market trends without considering fundamental data both before and after circuit breaker activation, leading to increased volatility. According to Engkuchik et al. (2024), herd behavior is more prevalent in ASEAN stock markets during periods of low volatility. This suggests that investors are more likely to act irrationally when market fluctuations are minimal. Complementing this finding, research by Phan et al. (2023) demonstrates that on the Vietnamese stock exchange, herding tendencies are more pronounced on days characterized by high volatility.

Table 2. Result Matrix Correlation

	STOCK RETURN	HERDING	MARKET CAP	VOLATILITY
STOCK RETURN	1			
HERDING	0.639	1		
MARKET CAP	0.012	0.020	1	
VOLATILITY	0.070	0.011	-0.237	1

This correlation matrix shows the dynamic relationship between the variables analyzed, namely, stock return, herding, market capitalization (market cap), and volatility. We note a moderate positive correlation between stock returns and herding, indicating that herding tends to increase stock returns in certain situations. In contrast, the negative relationship between Market Cap and Volatility confirms that companies with large capitalization tend to have lower volatility, reflecting greater stability. The rest of the correlations are weak, reflecting minimal relationships between the variables but still indicate potential linkages that can be further examined in a more specific context.

The initial model, which examines the direct relationship without accounting for moderation, reveals that investor herding, market volatility, and market capitalization significantly impact the dependent variable. Herding demonstrates the strongest influence with a coefficient of 0.135638, followed by volatility at 0.019556, while market capitalization, despite

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its statistical significance, has a much smaller effect at 5.72E-16

Table 3 Result Panel Regression

Variable	Model 1		Model 2	
	Coefficient	Prob.	Coefficient	Prob.
C	-0.467194	0.0000	-0.429126	0.0000
HERDING	0.135638	0.0000	0.014419	0.0000
VOLATILITY	0.019556	0.0000	0.017741	0.0000
MARKET CAP	5.72E-16	0.0294	6.51E-16	0.0057
HERDING × VOLATILITY			-2.35E-17	0.0023
HERDING × MARKET CAP			0.003352	0.0000
R^2	0.412874		0.530375	
F- Stat	2865.583	0.0000	2760.825	0.0000

This model's R^2 value of 0.412874 suggests that it explains approximately 41.29% of the variance in the dependent variable, indicating a moderately strong relationship. However, this also implies that other factors not included in the model may contribute to the remaining variance.

When moderation is included in Model 2, the relationship between the variables becomes more complex. An interaction coefficient between herding and volatility of -2.35E-17 indicates that volatility has a negative moderating effect, weakening the influence of herding on the dependent variable. In contrast, the interaction coefficient between herding and market capitalization of 0.003352 indicates that market capitalization strengthens the influence of herding. In addition, the direct coefficient for herding decreased to 0.014419, indicating that most of its effect was explained by the moderation interaction. Model 2 had an R^2 value of 0.530375, an increase from Model 1, indicating that approximately 53.04% of the variance in the dependent variable could be explained by this model. This increase in explanatory power confirms the importance of including moderating interactions in the analysis to better understand these dynamicse deeply.

Discussion

The results show that herding has a positive effect on stock returns in the Indonesian market, which means that the collective behavior of investors drives up stock prices and creates profit opportunities. Herding increases market momentum, where investors who follow a buying trend simultaneously push stock prices up, as found by Vieito et al. (2024). Moreover, this behavior also increases the liquidity and attractiveness of stocks, especially for large-cap stocks that tend to be more stable in the face of investment flows (Nguyen, 2022). Under optimistic market conditions, herding reflects investor confidence, accelerates stock price appreciation and generates higher returns (Ah Mand et al., 2023). In emerging markets such as Indonesia, Adnan (2023) found that herding has more impact on small-cap stocks, which are more susceptible to market sentiment and experience spikes in returns when many investors buy in.

This positive relationship between herding and stock returns, however, is not uniform across all market segments. Market capitalization plays a crucial role in moderating the impact of herding, as larger firms tend to exhibit lower susceptibility to collective investor behavior. The results of this study indicate that market capitalization weakens the relationship between herding behavior and stock returns which supports the acceptance of H1. This finding supports previous

research, which states that companies with large capitalization have a lower herding effect than companies with small capitalization (Marisetty, 2024; Ferrouhi, 2021). One of the main reasons for this is that large-capitalization stocks are generally more liquid and have wider access to fundamental information; thus, investors tend to make investment decisions based on rational analysis rather than simply following the majority decision (Nguyen, 2022).

Behavioral finance suggests that investors often do not act rationally due to cognitive biases, emotions, and social influences (X. Wang et al., 2022). One of the key phenomena in behavioral finance is herd mentality, where investors mimic the investment choices of the majority rather than conducting independent analysis. This phenomenon arises from psychological factors such as uncertainty and social pressure, as well as informational factors, where investors feel safer following collective decisions than relying solely on their own assessments (Loang & Ahmad, 2023).

Empirical studies indicate that herding behavior can have varied effects on stock returns, depending on market conditions and the type of investors involved (Ahn et al., 2024). Several researchers argue that herding can increase market volatility, lead to mispricing, and even create speculative bubbles that pose risks to market stability (Costa et al., 2024; Vieito et al., 2024). However, in efficient markets dominated by institutional investors, the impact of herding on stock returns tends to be smaller or even insignificant (Kanojia et al., 2022).

In emerging markets such as Indonesia and Vietnam, small-cap stocks are more susceptible to herding behavior, as investors tend to ignore fundamental information and rely more on price trends (Adnan, 2023; Phan et al., 2023). However, as market capitalization increases, information transparency also increases; thus, investors have more data to consider in their investment decisions (Vieito et al., 2024). As a result, the urge to follow collective decisions is reduced, which weakens the relationship between herding behavior and stock returns.

Furthermore, in a bull market, investors tend to speculate on small-cap stocks, as they are perceived to have higher profit potential, thus amplifying the herding behavior effect (Loang, 2023). Conversely, in a bear market, although herding behavior increases in general, its impact on stock returns is more pronounced in small-cap stocks, which are more susceptible to panic selling than large-cap stocks (J. Wang & Hudson, 2024). This suggests that market capitalization serves as a factor that can reduce the impact of collective investment decisions on stock price movements.

Beyond market capitalization, another key factor shaping the impact of herding on stock returns is market volatility. This study finds that heightened volatility amplifies the relationship between herding behavior and stock returns, reinforcing the acceptance of H2. This finding is consistent with previous studies that show that, in volatile market conditions, investors are more likely to follow collective decisions rather than rely on independent analysis (Nguyen, 2022; J. Wang & Hudson, 2024). This is because of increased uncertainty, which makes investors more susceptible to the influence of market psychology.

Research has shown that herd mentality can cause stock prices to deviate from their fundamental worth and increase market instability, subsequently impacting stock returns (Costa et al., 2024). During periods of high volatility, investors typically face greater uncertainty and are more inclined to follow the crowd rather than conduct their own analysis (Wang et al., 2022). This research corroborates these findings, demonstrating that volatility not only influences the connection between herding behavior and stock returns but also intensifies its impact.

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In turbulent markets, previous research has shown that volatility and herding behavior have a reciprocal relationship, where increased volatility can trigger stronger herding, which in turn increases stock price fluctuations (Engkuchik et al., 2024). Thus, the results of this study confirm that under conditions of high volatility, investors are more likely to ignore fundamental and technical analysis, which causes stock returns to be more volatile and prone to herding behavior.

In addition, this study also supports the findings of Vieito et al. (2024), who showed that herding is more dominant in bull markets than bear markets. However, when volatility increases, herding becomes more intense under both market conditions, causing larger price fluctuations. This suggests that the impact of herding on stock returns is amplified when markets are volatile, given that investors tend to be more emotional and responsive to market movements compared to stable market conditions.

More specifically, Phan et al. (2023) found that herding behavior is stronger on days with high volatility on the Vietnamese stock exchange, especially in smaller markets, such as the HoSE and HNX. These findings further reinforce the conclusion that volatility acts as a trigger to strengthen the relationship between herding behavior and stock returns, especially in less liquid or less efficient market environments.

Although the results of this study show that volatility strengthens the relationship between herding behavior and stock returns, some previous studies indicate that institutional investors play an important role in reducing the impact. Kanojia et al. (2022) show that in the Indian stock market, the dominance of institutional investors who rely more on fundamental and technical analysis makes herding behavior not have a significant impact on stock returns. This indicates that although high volatility amplifies herding, the role of institutional investors in stabilizing the market remains relevant in reducing the negative effects of this phenomenon.

Kim et al. (2020) also highlighted that institutional investors can strengthen market stabilization mechanisms by reducing the impact of volatility on herding. Thus, although this study finds that volatility strengthens the relationship between herding behavior and stock returns, it is possible that this effect could be better controlled or even reduced in a market environment with greater institutional investor participation.

CONCLUSION

The results of this study make an important contribution to understanding the dynamics of the relationship between herding, market capitalization, volatility, and stock returns. Market capitalization is shown to be a significant moderator, particularly in large stocks that provide relative stability during normal market conditions but also amplify return fluctuations during herding periods. In contrast, volatility weakens the relationship between herding and stock returns, reflecting the market uncertainty that affects investors' collective patterns. Practically, these findings are relevant to the development of investment strategies and market policies. Institutional investors can capitalize on the relative stability of large stocks during stable market periods, while heightened volatility should be approached with caution, as it tends to reduce the benefits of herding-based strategies. Market regulators can utilize these insights to develop policies that promote information transparency and mitigate volatility risks, particularly for small stocks that are more susceptible to herding during crises. This study also strengthens the existing literature by highlighting the importance of moderating interactions in analyzing the relationship

between market variables. The findings align with cross-country research that underscores the unique dynamics of herding behavior based on market context, both in developed and emerging markets.

Despite these contributions, some limitations of this study open avenues for future research. First, the study primarily focuses on aggregate market behavior without differentiating between industry-specific herding tendencies. Future research could explore sectoral variations in herding behavior to provide more granular insights. Second, while this study considers market capitalization and volatility as moderators, other potential factors, such as investor sentiment, liquidity constraints, or regulatory changes, could further refine the understanding of herding behavior. Lastly, expanding the analysis to a multi-country setting with varying levels of market maturity and investor profiles could offer a broader perspective on how structural differences influence herding dynamics. By addressing these gaps, future studies can contribute to a more comprehensive understanding of herding behavior, offering deeper insights for investors, policymakers, and market regulators.

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List of Abbreviations

LSV (Lakonishok, Shleifer, and Vishny)
IDX (Indonesia Stock Exchange)
MILA (Latin American Integrated Market)
UEA (Uni Emirate Arab)

Authors' Contribution

All authors contributed equally to the research design, data collection, analysis, and manuscript preparation.

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Conflict of Interest

The authors declare no conflict of interest related to this research.

Availability of Data and Materials

The data used in this study is available on the Tradingview.com platform.

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