







The Influence of Investor Sentiment on Returns in the Indonesian Stock Market

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Abstract. This study aims to analyze sentiment towards stocks and the market in influencing stock returns. Panel data regression analysis is used to test the research hypothesis. The sample consists of 93 companies listed on the IDX during the period 2013-2023. The results of the study indicate that stock and market sentiment have a significant positive effect on stock returns in Indonesia. This finding supports the behavioral finance theory which states that emotional and psychological factors contribute to market dynamics. The results of this study enrich the theoretical understanding of stock market behavior, especially in emerging markets such as Indonesia. Investors can use market sentiment analysis in their investment strategy, especially in short-term decision-making. Sentiment has been shown to positively affect stock returns, investors can time their investments based on changes in market sentiment to maximize potential profits. Investors also need to pay more attention to information that influences market sentiment, such as economic news, government policies, or global developments that can increase optimism or pessimism in the stock market.

Keywords: Stock Returns; Sentiment; Market behavior; Investment.

1 Introduction

Stocks are investment instruments whose price movements are influenced by various factors, both fundamental and psychological. In an efficient market, stock prices are expected to reflect information related to the company, but in practice, stock prices are often influenced by investors' emotional behaviour. Some of the main psychological factors that affect stock price movements are investor and market sentiment. Investor sentiment is the optimism or pessimism investors feel toward a stock, while market sentiment is a term that describes the collective views or feelings of investors toward the overall financial market conditions or towards a particular asset at a time. This behaviour often encourages investors to buy or sell stocks without a strong basis in fundamental analysis. In recent years, there have been events that have led to a decline in the performance of the Indonesian stock market. In 2013 and 2015, the decline in the IDX composite Index was in line with the decrease in the consumer confidence index. The events that occurred in those years were the increase in the Fed's interest rate by 0.5% and the economic slowdown in China by 6.9% (cnn.indonesia.com). This event

caused investor pessimism towards the financial market, which had an impact on the decline in the performance of the IDX Composite Index, which also weakened. Furthermore, during the 2020 pandemic, there was also a sharp decline in the consumer index to 92; this decline was followed by the IDX Composite Index performance, which plunged to -5.7%. The level of consumer confidence in the Indonesian economy has increased again in 2021 by 118.5 in line with the recovery after the Covid pandemic, so investors are optimistic about the performance of the IDX composite index, which has also increased again by 10.1%. In the Indonesian stock market, investor sentiment is one of the interesting aspects to study. For example, significant events such as the Federal Reserve's interest rate hike, the global economic slowdown, and the COVID-19 pandemic have affected investor perceptions of risks and opportunities in the market. This condition is reflected in the movement of the Composite Stock Price Index (IHSG), which experienced a sharp decline when negative sentiment dominated and strengthened again when sentiment turned positive. These fluctuations show the importance of understanding the relationship between investor sentiment and stock performance. This is to anticipate risks and take advantage of opportunities in the Indonesian stock market. Understanding this relationship can help investors and policymakers in designing more adaptive investment strategies. These findings are expected to contribute to the existing literature on the effect of sentiment on the stock market and provide guidance for investors in making more rational investment decisions amid market volatility. Stock are investment instruments whose price movements are influenced by various factors, both fundamental and psychological. In an efficient market, stock prices are expected to reflect information related to the company, but in practice, stock prices are often influenced by the emotional behavior of investors. Some of the main psychological factors that influence stock price movements are investor and market sentiment.

2 Literature Review and Hypothesis Development

Investor sentiment plays a crucial role in determining market dynamics, especially in influencing stock prices and returns. Sentiment reflects the psychological state and expectations of investors regarding future stock performance, often leading to overreactions to market information or events. These overreactions, whether optimistic or pessimistic, are evident through changes in stock turnover and price volatility. As a measure of sentiment, stock turnover highlights the intensity of investor activity, with higher turnover often indicating bullish sentiment and optimism toward the market. The significance of investor sentiment is underscored by its documented impact on excess returns and market volatility across various markets and economic conditions.

The level of investor sentiment can be measured by stock turnover [1] [2]. The higher the level of share turnover, the more optimistic investor sentiment towards a stock is. This can be caused by overreaction. Overreaction is an excessive reaction from investors in responding to information/events that occur and have entered the market. This information can be good information or wrong information. After the information is announced, investors will automatically have new expectations. The emergence of new

investor expectations will encourage reactions in the market. Investor reactions are reflected in changes in stock prices (returns). [3] found that share turnover is positively correlated with stock returns.

High investor sentiment can mean that investors are bullish about the stock market [4]. This will cause stock prices to increase as well as excess stock returns. [5] found a significant relationship between investor sentiment and stock return volatility using the generalized autoregressive conditional heteroscedasticity (GARCH) model. [6] show the importance of analyzing investor sentiment in the Australian stock market because return anomalies become stronger after periods of high sentiment. Market sentiment reflects collective perceptions of the direction of financial markets, which can influence investment behaviour. The Consumer Confidence Index is an indicator that can be used to measure the level of market sentiment towards economic and financial conditions in a country [7] [8].

Investor sentiment is related to the psychological state of investors and their expectations regarding future stock performance. [9] stated that the COVID-19 pandemic affected individuals' mentality in investing in financial markets. This is because, during the COVID-19 pandemic, investors prioritized their lives and livelihoods more than wealth and free time. The Study by [10] found that there is a positive relationship between the sentiment index/optimism index and excess returns on stock markets in Brazil and China. Excess returns are more sensitive to changes in investor mood during periods of negative sentiment/optimism index values. This shows that the level of investor sentiment is also influenced by beliefs about changes in economic conditions, which also affect investor moods and investment decisions. [11] stated that events such as MERS and COVID-19 caused differences in stock trading volumes on the Indonesia and Malaysia Stock Exchanges. [12] found that market sentiment had a positive effect on excess returns. Other studies have found that market sentiment does play an essential role in explaining the economic and financial impacts, including the COVID-19 outbreak [13]. Based on panel data, [14] found that the stock market responded negatively to the increase in COVID-19 cases. [15] found that the COVID-19 outbreak had a negative impact on the stock market in Canada and the US.

Many studies do not separate investor sentiment and market sentiment. Still, in this study, the two factors are distinguished more specifically to enrich the analysis and see the extent of their influence on stock price movements. In summary, the literature shows that investor sentiment significantly affects stock returns in the Indonesian market through various mechanisms, including herding behaviour, political cycles, and the interaction of rational and irrational feelings. The unique characteristics of the Indonesian stock market, such as its inefficiency and the behaviour of domestic versus foreign investors, further complicate this relationship. Future research should continue to explore these dynamics, especially considering the ongoing economic and political changes. Based on the literature above, the research hypotheses are as follows:

H1: Market sentiment has a significant effect on stock returns.

H2: Investor sentiment has a significant effect on stock returns.

3 Methodology

3.1 Data

This study uses data from companies listed on the Indonesia Stock Exchange (IDX). The sample used was 93 companies with a research period of 2012-2023. The target population used as the research sample was determined based on the following criteria: 1) Shares of companies that were consistently listed during the observation period from January 2011 to December 2023 because this study also uses t-2 data, 2) Shares of companies whose trading volume is not zero for 12 consecutive months, this criterion is to avoid inactive shares or shares with low liquidity levels. These sectors are agriculture; basic and chemical industries; consumer goods industry; infrastructure, utilities, and transportation; mining; miscellaneous industry; property, real estate, and building construction; trade, services, and investment.

3.2 Analysis Method

To test the hypothesis, we use the stock return, market sentiment and specific sentiment in the econometric model as follows:

$$R_{it} = \alpha_0 + \alpha_1 MS_t + \alpha_2 IS_{it} + \varepsilon_{it}$$

where R_{it} is the return of the company's stock in period t . MS_t is market sentiment in period t ; IS_{it} is investor sentiment of company i in period t ; ε_{it} is the error term; α_1 - α_2 are each regression coefficient of the variables.

3.3 Operational Definition and Measurement

The dependent variable in this study is excess return. Excess return is the excess return of risky assets over the return of risk-free assets [16]. Before calculating excess return, the calculation of R_{it} (Individual Stock Return) and expected return is first carried out. R_{it} can be obtained using the formula [16]:

$$R_{i,t} = \ln \frac{\text{Closing Price}_t}{\text{Closing Price}_{t-1}}$$

where R_{it} is Individual stock return rate in month t ; Closing Price is closing price on stock i in period t . Closing Price _{$t-1$} is Closing price of stock i in period $t-1$. Furthermore, excess return is calculated using the formula:

$$\text{Excess return} = ER_i - R_f$$

Investor sentiment is an individual's excessive feelings such as being too optimistic or pessimistic about a particular stock. The following is the formula used to measure stock-Investor sentiment [2]:

$$\text{adjusted share Turnover} = \frac{R_t}{|R_i|} \times \frac{\text{trading volume}}{\text{number of outstanding shares}}$$

Market sentiment is the general feelings and beliefs held by consumers towards the financial markets. Market sentiment is measured using the Consumer Confidence Index [7]. The formula for calculating the Consumer Confidence Index (CCI) is as follows [8]:

$$\text{CCI} = \text{Net balance} + 100$$

4 Results and Discussion

4.1 Results

As reported in Table 1, the average excess return of companies in Indonesia is negative, -0.02 in the 11-year study period. Although some companies achieve the highest return value of 2.15, this value has yet to be able to increase the average excess return of stocks in Indonesia because many companies still generate low returns. The standard deviation value of the excess return of 0.33 also indicates a high risk of volatility in investing in the Indonesian stock market.

Table 1. Descriptive Statistics

| | Ri-Rf | MS | IS |
|---------|-------|--------|-------|
| Mean | -0.02 | 116.03 | 0.00 |
| Max | 2.15 | 124.20 | 1.64 |
| Min | -1.31 | 92 | -0.92 |
| Std Dev | 0.33 | 9.39 | 0.11 |

The number of samples consists of 93 companies with a research period of 2013-2023 so that the total observations of 1116 each year are 234 companies. Ri-Rf is the excess return; MS is Market Sentiment; IS is Investor Sentiment.

The average sentiment towards the financial market is still good, at 116.03. However, public trust in the financial market has decreased to below 100. This is indicated by the minimum value of market sentiment, which was once at 92. This condition occurred due to the COVID-19 pandemic in the years of the study. The correlation matrix between variables is presented in Table 2.

Table 2. Correlation Matrix

| | Ri _t -Rf _t | MS _t | IS _t |
|----------------------------------|----------------------------------|-----------------|-----------------|
| Ri _t -Rf _t | 1 | | |
| MS _t | 0.12 | 1 | |
| IS _t | 0.33 | 0.02 | 1 |

The number of samples consists of 93 companies with a research period of 2013-2023 so that the total observations of 1116 each year are 234 companies. Ri-Rf is the excess return; MS is the Market Sentiment. IS is investor sentiment.

Because this study uses a panel data regression model, the Chow, Hausman, and Lagrange tests are used to select the appropriate analysis model with the following results:

Table 3. The results of tests for the appropriate estimating models

| | |
|---|------|
| Chow Test (LR Test) Cross-sectional Chi-square | 0.68 |
| Hausman Test Cross-section random, Chi-Sq statistic | 0.89 |
| Lagrange Multiplier Test Breusch-Pagan | 0.39 |

Table 3 shows the results of the Chow test, Hausman test, and Lagrange Multiplier (LM) test. This test is carried out to decide whether the model is CEM, FEM, or REM. If the probability of the Chow test and the Hausman test is less than the significance level ($\alpha = 5\%$), the appropriate model must be FEM. However, if the results of the Hausman test show a significance above 5%, the next step is to conduct a range of multiple tests. If the Lagrange Multiple Test results are more than the significance level ($\alpha = 5\%$), then the appropriate model is CEM. The results are shown in Table 3. After testing and comparing the robustness test results using the Chow Test, Hausman Test, and Lagrange Multiple Tests, it was determined that the appropriate model for this study was CEM.

Common Effect Model (CEM) with ordinary least square analysis is the right model to test the hypothesis. Therefore, we apply the model in two equations to test the hypothesis. Equation 1 tests the effect of excess market return, MS and IS on Stock Excess Return.

Table 4. Common Effect Model results

| Variables | Coef | t-stat |
|-----------------|-----------|--------|
| C | -0.4985 | -0.78 |
| MS _t | 0.0040*** | 3.92 |
| IS _t | 1.0010*** | 10.99 |
| Adj. R-Square | 0.1173 | |
| F-stat. | 68.93 | |

Significant at 1% = *; Significant at 5% = **; Significant at 10% = ***

Based on the results of the study, the coefficient is 1.0010, an increase in investor sentiment by 1 unit is assumed to increase excess returns by 1.0010 units, assuming other variables remain constant. The coefficient for the market sentiment variable is 0.0040 with a t-statistic of 3.92, which also shows a significant positive effect on excess returns at the 1% significance level. This indicates that market sentiment also contributes to increasing excess returns, although the effect is relatively smaller compared to investor sentiment. The coefficient of 0.0040 indicates that every one-unit increase in market sentiment will add 0.0040 units to excess returns, assuming other variables remain constant. Overall, these results indicate that both sentiment variables, investor

sentiment and market sentiment, have a positive and significant relationship with excess returns, indicating that these sentiment factors may be important variables in predicting excess returns in the capital market studied.

4.2 Discussion

The results of the study show that hypothesis 1 is accepted, indicating a positive and significant effect of investor sentiment on excess return. Theoretically, when investor sentiment increases (for example, positive perceptions of growth or strong market fundamentals), investors tend to increase their positions in stocks, which in turn can increase stock prices and provide excess returns. The high t-statistics that exceed the critical value at the 1% significance level confirm that these results are statistically robust, making it difficult to consider them a coincidence. Thus, investor sentiment is an essential variable in explaining excess return movements in this market. The results of the study also show that hypothesis 2 is accepted. The influence of Smaller Market Sentiment but Positive Significance at the 1% level indicates that market sentiment also plays a vital role in determining excess returns. Although its impact is weaker compared to investor sentiment, the existence of market sentiment still provides additional information about how collective movements or general perceptions in the market can impact stock prices. This may be due to short-term fluctuations that occur due to market reactions to external news or events, which affect short-term return movements. These findings provide valuable insights for investors and portfolio managers in designing investment strategies. They can use sentiment indicators as part of their stock price prediction strategies.

Similarly, although the influence of market sentiment is minor, this variable is still relevant to monitoring this sentiment because small changes in market perception can trigger changes in stock prices, especially in the short term. In the context of traditional asset pricing models, the addition of this sentiment variable suggests that non-fundamental factors, such as market perception or emotion, also make measurable contributions to stock price determination. This could provide additional justification for extending traditional asset pricing models, such as the Fama-French five-factor model, to include sentiment as an extra variable in estimating stock returns. Overall, the results of this study conclude that investment sentiment and market sentiment provide valuable information for stock return analysis and prediction and have the potential to be developed as additional variables in excess return prediction models in the capital market.

5 Conclusion

This study aims to analyze the influence of sentiment from investors and markets on Excess Return. Based on the results of this study, investor sentiment and market sentiment have a significant positive effect on excess returns in the market. This study shows that the first hypothesis is accepted, which confirms that investor sentiment towards individual stocks plays an essential role in increasing excess returns. In addition, the second hypothesis states that market sentiment also has a positive and significant effect

on excess returns received. Although the impact is more minor than investor sentiment, the considerable influence of market sentiment remains relevant, especially in providing additional insight into how general perceptions or collective market movements can affect stock prices, especially in the short term, due to reactions to external news or events.

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