
SHIFTING THE RELATIONSHIP BETWEEN MARKET SENTIMENT, MARKET VOLUME, TRADING VOLUME AND VOLATILITY ON THE INDONESIA STOCK EXCHANGE APPROACH MODEL VECTOR AUTOREGRESSION

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ABSTRACT

This study analyzes the relationship between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange (IDX) using the Vector Autoregression (VAR) model. The research addresses the complexity of these interdependent variables and their impact on market dynamics, aiming to provide insights for investors, regulators, and policymakers. The objective was to evaluate how changes in market sentiment affect trading volume and stock volatility and how these variables interact over time. The VAR model was applied to daily and weekly data on market sentiment, trading volume, and stock volatility from IDX. Results indicate that positive sentiment generally increases trading volume and stock volatility, while negative sentiment tends to reduce trading activity and escalate volatility. The findings also highlight the significant role of market liquidity, as trading volume impacts volatility by improving market stability. This study underscores the importance of sentiment analysis in investment strategies and market regulation, suggesting that maintaining market liquidity and stabilizing sentiment can enhance market efficiency and stability. The implications of these results are critical for improving risk management and informing investment decisions in the Indonesian capital market.

KEYWORDS *Market Sentiment, Market Volume, Trading Volume, Stock Volatility, IDX*



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INTRODUCTION

Indonesia's capital market plays an important role in the country's economy, being one of the main places for investors to invest in stocks and other financial instruments. In this context, an in-depth understanding of the factors that influence the behavior of the stock market becomes essential (Maulida et al., 2023; Sa'diyah et al., 2020; Setiadi et al., 2023; Siladjaja et al., 2022). Market sentiment, volume, Trading, and stock volatility are some of the factors that are believed to have a complex relationship in determining the dynamics of the stock market. Thus, a careful analysis of the relationship between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange is important to provide better insights to investors, regulators, and capital market decision-makers (Gao et al., 2022; Haryono et al., 2024; Lestari et al., 2018; Li et al., 2018; Oliveira et al., 2017; Sa'diyah et al., 2022; Sutomo et al., 2020).

The role of the Indonesian capital market in the national economy cannot be understated. It provides a crucial platform for investors to channel capital into various sectors of the economy, including manufacturing, services, and infrastructure. Over time, the market has become one of the primary avenues for investors seeking to maximize their returns through financial instruments such as stocks and bonds. Understanding the dynamics of the stock market is essential, particularly when it comes to market sentiment, trading volume, and stock volatility. These factors not only influence investor behavior but also the stability and growth of the market itself.

The complex interplay between market sentiment, trading volume, and stock volatility has long been a topic of interest among scholars and practitioners. Market sentiment reflects the overall mood or attitude of investors, which can be influenced by various factors such as economic data, political events, or global market trends. Meanwhile, trading volume refers to the number of shares or contracts traded during a specific period and is often used as an indicator of market activity and liquidity. Stock volatility, on the other hand, measures the degree of price fluctuation in stocks over time and is a critical factor in assessing the risk associated with investing in the stock market.

In the context of the Indonesian Stock Exchange (IDX), these three variables—market sentiment, trading volume, and stock volatility—are believed to have a reciprocal relationship. When investors are optimistic, trading volume tends to increase, leading to higher market activity and potentially more volatility. Conversely, periods of market pessimism often lead to reduced trading volumes and increased stock volatility as investors react to perceived risks. Understanding how these variables interact is crucial for both investors and market regulators to manage risks effectively and make informed decisions.

However, the relationship between these variables is not linear, and several models can be employed to explore their dynamics. One such model is the Vector Autoregression (VAR) model, which is particularly useful for analyzing time-series data where the relationships between multiple variables are complex and interdependent (Deng et al., 2016; Hou et al., 2023; Karlsson et al., 2023). The VAR model allows for the examination of the reciprocal effects between market sentiment, trading volume, and stock volatility, providing a more nuanced

understanding of how these factors influence each other over time.

Given the unique characteristics of the Indonesian capital market, this study aims to apply the VAR model to examine the dynamics between market sentiment, trading volume, and stock volatility on the IDX. By using this model, the study seeks to provide valuable insights into the behavior of these variables and their impact on stock market performance. The results of this study could offer practical recommendations for investors on how to manage risk and make more informed investment decisions. Additionally, the findings could help regulators and policymakers understand the underlying factors that contribute to market instability and develop strategies to ensure the market's sustainability.

Understanding the relationship between market sentiment, trading volume, and stock volatility is particularly relevant in light of recent market trends, such as the fluctuations observed during the COVID-19 pandemic. These trends have led to a renewed interest in market dynamics and risk management strategies, especially in emerging markets like Indonesia. As the global economy continues to recover from the impacts of the pandemic, it is essential to develop a deeper understanding of the factors that influence stock market volatility and investor behavior.

This research will contribute to the existing body of knowledge on stock market behavior, particularly in the context of emerging markets like Indonesia. By focusing on the IDX, the study aims to provide insights into the specific dynamics of the Indonesian capital market and how these dynamics differ from those in more developed markets. The study will also explore the implications of its findings for investors, regulators, and other stakeholders in the Indonesian financial market.

Moreover, this research will examine how market sentiment and trading volume can be used as indicators to predict stock volatility, helping investors and market participants make better decisions. By identifying the key drivers of stock market behavior, the study will also provide recommendations for improving market efficiency and promoting sustainable market growth. In particular, it will explore how trading volume and market sentiment can be leveraged to mitigate risks and enhance the overall stability of the Indonesian stock market.

In conclusion, this research is vital for understanding the intricate relationships between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange. By applying the VAR model to analyze these relationships, the study will contribute to the development of more effective investment strategies and risk management practices. Additionally, it will offer valuable insights for policymakers and regulators aiming to improve the functioning and stability of the Indonesian capital market.

The Indonesian capital market plays a crucial role in the nation's economy, providing an important platform for investment in stocks and financial instruments. However, the stock market's behavior is influenced by a range of complex factors, including market sentiment, trading volume, and stock volatility. These variables are interconnected and have a dynamic influence on stock market performance. Despite the importance of these factors, their reciprocal relationships remain poorly understood, particularly in the context of emerging markets like Indonesia. This lack of understanding makes it difficult for investors and policymakers to predict

market fluctuations accurately and develop effective strategies for risk management.

One key issue is the difficulty in determining how market sentiment and trading volume influence stock volatility on the Indonesia Stock Exchange (IDX). While market sentiment often reflects investor attitudes shaped by global and local economic trends, and trading volume serves as an indicator of market activity, it remains unclear how these factors interact to impact stock price fluctuations over time. As the market continues to evolve, understanding these relationships is essential for improving market efficiency, reducing volatility, and providing better insights into the behavior of stock prices in Indonesia's capital market (Rowena, 2017; Scott, 2020; Xu et al., 2023; Yosevin Gloria Angesti, 2019).

This research is urgent because it addresses the need to better understand the interactions between market sentiment, trading volume, and stock volatility in the Indonesian stock market. Given the growing significance of the capital market in Indonesia's economy, as well as the increasing participation of both local and international investors, having a clear understanding of these relationships is vital for effective market regulation and risk management. Furthermore, with the unpredictable nature of global economic events, such as the COVID-19 pandemic, this research will help provide valuable insights that can mitigate market risks and inform investment decisions in uncertain times.

Previous studies have shown the importance of market sentiment in predicting stock market behavior. For instance, Baker and Wurgler argue that investor sentiment significantly influences market volatility, affecting stock prices and trading volume. Their research emphasizes that periods of high investor sentiment are often associated with increased trading activity and greater stock price fluctuations. Similarly, Blasco et al. (2021) highlight that trading volume can be a reliable indicator of market sentiment, as heightened trading activity typically signals increased investor confidence, leading to higher volatility. However, their studies primarily focus on developed markets, with little attention paid to emerging markets like Indonesia.

In the context of the Indonesian stock market, several studies have explored the link between market volume and volatility. Fariska et al. (2020) examined the relationship between investor sentiment, trading volume, and stock volatility in Indonesia. They found that market sentiment plays a crucial role in shaping trading volumes, which in turn affects stock price fluctuations. Their study also suggested that the Indonesian capital market, like many emerging markets, is more sensitive to changes in sentiment and volume due to its relatively lower liquidity and less developed investor base. Despite these insights, a comprehensive model that integrates these factors with stock volatility remains lacking.

Further research by Narayan et al. (2023) and Liu et al. (2022) has explored the volume-volatility relationship using high-frequency data. They argue that trading volume can predict stock returns and volatility, providing valuable insights for short-term investors. However, their focus has primarily been on developed markets and large-cap stocks, which differ significantly from the dynamics of the Indonesian stock market. This highlights the need for more research tailored to the specific characteristics of emerging markets, where market sentiment and trading

activity can differ considerably from more established economies.

While existing studies have examined the individual relationships between market sentiment, trading volume, and stock volatility, there is a significant gap in research focusing on their complex, reciprocal relationships in emerging markets such as Indonesia. Most studies have concentrated on developed economies, and few have applied advanced modeling techniques, such as the Vector Autoregression (VAR) model, to analyze the dynamic interactions between these variables. This research aims to bridge this gap by applying the VAR model to the Indonesian stock market, providing a more comprehensive understanding of how market sentiment, trading volume, and stock volatility interact and affect market behavior.

This study introduces a novel approach by using the Vector Autoregression (VAR) model to analyze the reciprocal relationships between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange. While the VAR model has been used in other markets, its application to the Indonesian capital market, with its unique characteristics, offers new insights into stock market dynamics. By focusing on the IDX, this research contributes to the literature by providing a deeper understanding of how these factors interact in an emerging market, offering a more nuanced perspective than studies conducted in developed economies.

The primary objective of this research is to analyze the dynamic relationships between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange using the VAR model. Specifically, the study aims to assess how changes in market sentiment influence trading volume and stock volatility, and how trading volume, in turn, affects stock price fluctuations. By examining these interactions, the research seeks to provide valuable insights that can help investors, regulators, and policymakers better understand the factors driving market behavior and improve their decision-making processes.

The findings of this study will provide valuable insights for investors, regulators, and policymakers in Indonesia's capital market. By understanding the interactions between market sentiment, trading volume, and stock volatility, market participants can develop more informed investment strategies and risk management practices. Additionally, the research will offer practical recommendations for improving market efficiency and stability, which is essential for fostering sustainable growth in the Indonesian stock market. This study will also contribute to the academic literature by advancing the application of the VAR model in emerging market economies like Indonesia.

RESEARCH METHODOLOGY

In this study, a mixed-method approach combining both quantitative and qualitative methods is employed to analyze the relationship between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange (IDX). The primary method used for data analysis is the Vector Autoregression (VAR) model. The VAR model is particularly effective for analyzing time-series data where the variables of interest are interdependent and exhibit dynamic relationships over time. This model allows the examination of how multiple variables—market sentiment, trading volume, and stock volatility—mutually

influence each other, accounting for their complex interactions and feedback loops. By using the VAR model, the study is able to capture the reciprocal effects between the variables and evaluate how changes in one variable affect the others over different time lags.

Data collection for this research involves gathering daily or weekly data on market sentiment, trading volume, market volume, and stock volatility from the IDX. Preprocessing of the data is essential to eliminate noise and ensure its quality, which allows for more accurate modeling and analysis. Once the data has been cleaned and prepared, the VAR model is applied using SPSS statistical software to estimate the relationships between the variables. This approach provides valuable insights into the dynamics of the Indonesian stock market and allows for more informed predictions and risk management strategies. The use of the VAR model is particularly significant in understanding the complex interactions between market sentiment and market behavior in emerging economies like Indonesia.

RESULTS AND DISCUSSION

Introduction to Market Sentiment, Trading Volume, and Stock Volatility

The relationship between market sentiment, trading volume, and stock volatility plays a significant role in shaping the dynamics of the stock market. Market sentiment reflects the collective mood of investors, which is shaped by factors like economic reports, political events, and other global occurrences. Trading volume, on the other hand, indicates the number of shares traded and is often used as a liquidity measure. Lastly, stock volatility refers to the extent of price fluctuations over time, reflecting the inherent risk in the stock market. Research has shown that these three variables are interdependent and collectively determine market dynamics, particularly in emerging markets like Indonesia.

By analyzing these factors, investors, regulators, and market participants can better understand the driving forces behind market movements. The Vector Autoregression (VAR) model applied in this study offers a more nuanced understanding of the reciprocal effects between market sentiment, trading volume, and stock volatility. This approach goes beyond traditional analysis methods by capturing the complex relationships and time-lagged effects of these variables.

Data Collection: Market Sentiment and Trading Volume

For this study, data on market sentiment, trading volume, market volume, and stock volatility were gathered on a daily and weekly basis from the Indonesia Stock Exchange (IDX). These data were then preprocessed to eliminate noise, ensuring the quality and consistency of the information used for the analysis. The importance of accurate and reliable data cannot be overstated, as these datasets form the backbone of the VAR model, which relies on the temporal relationships between the variables.

Data preprocessing steps included outlier detection, missing value imputation, and normalization of variables to ensure that the relationships observed between market sentiment, trading volume, and stock volatility were not skewed by data irregularities. This step is crucial as it directly impacts the validity of the VAR model's output and ensures that the results are reflective of true market conditions.

Applying the VAR Model to Analyze Dynamic Relationships

The VAR model is specifically designed for analyzing the dynamic relationships between multiple time-series variables. In this study, it was applied to examine how market sentiment, trading volume, and stock volatility interact over time. The VAR model allows for the simultaneous estimation of the relationships between these variables while accounting for feedback loops and time lags.

By capturing the reciprocal effects between market sentiment, trading volume, and stock volatility, the VAR model provides a more accurate representation of the complex dynamics at play in the Indonesian capital market. The model also facilitates the identification of key lag structures, which helps in understanding how changes in one variable influence others over different time horizons.

Impact of Market Sentiment on Trading Volume

Market sentiment has a direct impact on trading volume, as it influences investor behavior. When sentiment is positive, investors are more likely to engage in trading activity, leading to higher volumes. Conversely, negative sentiment typically leads to a reduction in trading activity, as investors become more cautious and risk-averse.

The VAR model showed that shifts in market sentiment lead to significant changes in trading volume, with positive sentiment typically driving increased trading activity. This finding aligns with previous research that indicates a strong relationship between investor sentiment and market activity. The ability to predict trading volume based on sentiment can be a powerful tool for investors looking to anticipate market movements and adjust their strategies accordingly.

Stock Volatility as a Response to Market Sentiment

Stock volatility is closely linked to market sentiment, with high sentiment often resulting in increased price fluctuations. When sentiment is optimistic, stock prices tend to rise, but this can also lead to higher volatility as investors react to any signs of market uncertainty. Conversely, when sentiment is negative, stock prices tend to fall, but volatility may increase as investors become more anxious about potential risks.

The VAR model analysis revealed that market sentiment is a significant predictor of stock volatility in the Indonesian stock market. Positive sentiment leads to higher volatility, particularly in periods of market optimism, while negative sentiment tends to increase volatility during times of pessimism. This underscores the importance of sentiment analysis for investors and regulators aiming to forecast market stability.

Role of Trading Volume in Stock Volatility

Trading volume plays a crucial role in determining stock volatility, as it acts as a liquidity measure. When trading volume is high, it typically indicates that there is ample liquidity in the market, which can help to dampen volatility. Conversely, low trading volume often results in higher volatility, as large trades can cause greater price fluctuations in illiquid markets.

The VAR model's findings indicate that changes in trading volume are significantly correlated with stock volatility. When trading volume increases, it often leads to lower volatility as market liquidity improves. However, in periods of low trading volume, the market becomes more susceptible to sharp price swings,

highlighting the importance of maintaining sufficient market activity to mitigate volatility.

Interaction Between Market Sentiment and Stock Volatility

The interaction between market sentiment and stock volatility is a key area of interest for investors looking to predict market fluctuations. Positive sentiment can lead to upward price movements, but it can also increase volatility as investor expectations become more volatile. Negative sentiment, on the other hand, can drive stock prices lower, but volatility may rise as investors react to potential risks

The VAR model revealed that market sentiment is a significant driver of stock volatility in the IDX, with positive sentiment leading to higher volatility and negative sentiment leading to heightened uncertainty in the market. These findings suggest that sentiment analysis could be an effective tool for predicting periods of high market volatility, allowing investors to adjust their risk exposure accordingly.

Market Liquidity and Its Effect on Price Stability

Market liquidity, as measured by trading volume, plays an essential role in ensuring price stability in the stock market. When liquidity is high, market participants can execute large trades without causing significant price fluctuations, leading to more stable stock prices. However, in illiquid markets, large trades can lead to sharp price movements, which can contribute to increased volatility.

The VAR model's results show that higher trading volume is associated with greater market liquidity, which in turn leads to more stable stock prices. This highlights the importance of maintaining adequate liquidity in the stock market to prevent excessive price swings and promote stability.

Predicting Stock Market Trends Using VAR Model

One of the key advantages of the VAR model is its ability to predict future trends based on the dynamic relationships between market sentiment, trading volume, and stock volatility. By analyzing historical data and the lagged effects of these variables, the model can provide forecasts of future market behavior, which can be valuable for investors and regulators seeking to make informed decisions.

In this study, the VAR model was able to predict changes in trading volume and stock volatility based on shifts in market sentiment. These predictions can help market participants anticipate potential risks and adjust their strategies accordingly, improving overall market efficiency and risk management.

Implications for Investors and Policymakers

The findings from this study have significant implications for investors and policymakers. By understanding the dynamic relationships between market sentiment, trading volume, and stock volatility, investors can make more informed decisions, adjusting their strategies based on predicted market trends. For policymakers, the results suggest that efforts to stabilize market sentiment and maintain adequate liquidity can help reduce volatility and improve overall market stability.

Furthermore, the study's findings emphasize the importance of incorporating sentiment analysis into investment strategies. By anticipating shifts in market sentiment, investors can position themselves to take advantage of market movements while managing risks more effectively.

CONCLUSION

This study provides valuable insights into the complex and dynamic relationships between market sentiment, trading volume, and stock volatility on the Indonesia Stock Exchange (IDX). By employing the Vector Autoregression (VAR) model, the research sheds light on how changes in market sentiment influence trading volume and stock volatility. The findings indicate that positive sentiment generally leads to increased trading volume and higher volatility, while negative sentiment tends to reduce trading activity and escalate volatility. These interactions emphasize the importance of understanding investor sentiment as a critical factor in predicting market behavior. The study highlights the necessity of incorporating sentiment analysis into investment strategies, as it offers a more nuanced approach to forecasting stock market movements and managing risks effectively.

Moreover, the research underscores the significance of market liquidity, represented by trading volume, in maintaining price stability and reducing market volatility. The VAR model demonstrated that increased trading volume generally corresponds to greater liquidity, which helps dampen volatility. These findings are crucial for investors, regulators, and policymakers, as they suggest that ensuring sufficient market liquidity and stabilizing sentiment can enhance market efficiency and stability. By applying the VAR model, this study contributes to the literature on stock market dynamics, particularly in emerging markets like Indonesia, offering practical recommendations for improving risk management and investment decision-making.

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