

Technical Analysis of Sharia Stock Prices Using Moving Average and Relative Strength Index: Evidence from the Jakarta Islamic Index

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Abstract

Keywords:

Sharia Stock, Technical Analysis, Moving Average, Relative Strength Index, Jakarta Islamic Index

This study aims to analyze the influence of technical indicators on Sharia stock price movements in the Jakarta Islamic Index (JII). The research employs a quantitative approach using secondary data derived from historical stock prices of companies listed in the Jakarta Islamic Index. The sample consists of 10 Sharia-compliant companies, selected through purposive sampling, with a total of 141 observations during the period January 2024 to May 2025. The independent variables used in this study are the 20-day Moving Average (MA20) and the 14-day Relative Strength Index (RSI14), while stock price is used as the dependent variable. Multiple linear regression analysis is applied to examine the influence of the technical indicators on stock price movements. The results show that the Moving Average variable has a positive and significant effect on stock prices, with a regression coefficient of 1.007, a t-value of 215.090, and a significance level of 0.000. In contrast, the Relative Strength Index does not significantly influence stock prices, as indicated by a t-value of 0.486 and a significance level of 0.633. The simultaneous test indicates that the model is statistically significant with an F-value of 291.623. The coefficient of determination ($R^2 = 0.999$) shows that the independent variables explain 99.9% of the variation in Sharia stock prices. These findings suggest that the Moving Average indicator can serve as an effective technical analysis tool for predicting Sharia stock price trends in the Indonesian Islamic capital market.

INTRODUCTION

The development of the Islamic capital market in Indonesia has shown significant growth in recent years along with the increasing public interest in Sharia-compliant investment instruments (Otoritas Jasa Keuangan, 2024). This growth reflects the increasing awareness of investors to conduct financial activities that are not only profitable but also consistent with Islamic ethical principles (Hassan & Aliyu, 2018).

Islamic financial markets provide investment opportunities that avoid prohibited elements such as *riba*, *gharar*, and *maysir* as required by Islamic law (Antonio, 2020). The expansion of Sharia-based financial instruments has strengthened the role of Islamic finance in supporting sustainable economic development (Umar, Kenourgios, & Papadamou, 2021). The increasing development of Islamic capital markets has also attracted the attention of investors who seek ethical and socially responsible investment alternatives (Bouri et al., 2020).

Despite the rapid development of Islamic finance, the level of financial literacy among the Indonesian population remains relatively limited (Otoritas Jasa Keuangan, 2024). According to the National Survey of Financial Literacy and Inclusion conducted in 2024, the Islamic financial literacy rate in Indonesia reached only 39.11 percent (Otoritas Jasa Keuangan, 2024). Meanwhile, the level of Islamic financial inclusion was recorded at 12.88 percent, indicating that public access to Islamic financial products is still relatively low (Otoritas Jasa Keuangan, 2024).

This gap between literacy and inclusion suggests that many individuals still lack sufficient understanding of Islamic financial products and investment mechanisms (Putri & Pratama, 2024). Limited financial knowledge may lead investors to make speculative decisions without adequate risk assessment (Putri & Pratama, 2024). Therefore, improving financial literacy is essential to encourage more rational and informed investment decisions in financial markets (Putri & Pratama, 2024).

In Indonesia, stock trading activities are facilitated by the Indonesia Stock Exchange as the official institution responsible for organizing capital market transactions (Bursa Efek Indonesia, 2023). The Indonesia Stock Exchange plays an important role in providing a platform for companies to raise funds through the issuance of securities (Bursa Efek Indonesia, 2023). In addition, the stock exchange provides opportunities for investors to conduct investment transactions in an organized and transparent market environment (Bursa Efek Indonesia, 2023). All listed shares in Indonesia, including Sharia-compliant stocks, are traded through the Indonesia Stock Exchange (Bursa Efek Indonesia, 2023).

The development of Islamic capital markets in Indonesia is also supported by the collaboration between financial regulators and Islamic authorities (Otoritas Jasa Keuangan, 2023). One of the important mechanisms used to regulate Sharia-compliant investments is the issuance of the Sharia Securities List (Daftar Efek Syariah) (Otoritas Jasa Keuangan, 2023). The Sharia Securities List contains companies whose business activities comply with Islamic investment principles (Otoritas Jasa Keuangan, 2023).

This list serves as an important reference for investors who want to invest in Sharia-compliant financial instruments (Otoritas Jasa Keuangan, 2023). In addition to the Sharia Securities List, the Indonesia Stock Exchange also provides Islamic stock indices as performance benchmarks (Bursa Efek Indonesia, 2023). One of the most prominent Islamic stock indices in Indonesia is the Jakarta Islamic Index (Bursa Efek Indonesia, 2023).

The Jakarta Islamic Index consists of selected Sharia-compliant stocks that have high liquidity and large market capitalization (Bursa Efek Indonesia, 2023). The index is frequently used as a benchmark to evaluate the performance of Islamic equities in the Indonesian capital market (Al-Yahyaee, Mensi, & Yoon, 2020). Stock price movements within the index often reflect the overall condition of Sharia-compliant investment activities in the market (Tandelilin, 2017).

Stock prices represent an important indicator of a company's market value in the capital market (Jogiyanto, 2018). Changes in stock prices may occur due to various internal and external factors affecting financial markets (Jogiyanto, 2018). To understand stock price movements, investors generally apply various analytical approaches (Murphy, 1999). One of the most commonly used methods is technical analysis which focuses on historical price data (Murphy, 1999).

Technical analysis attempts to identify price patterns and trends that may indicate future price movements (Park & Irwin, 2007). This approach has been widely used by traders because it provides practical tools for identifying market opportunities (Marshall, Young, & Rose, 2017). Among various technical indicators, the Moving Average is widely applied to determine the direction of price trends (Murphy, 1999). The Moving Average indicator works by smoothing price fluctuations over a specific period of time (Murphy, 1999).

This indicator helps investors identify long-term trends in stock price movements (Marshall et al., 2017). Another commonly used technical indicator is the Relative Strength Index (Wilder, 1978). The Relative Strength Index measures the strength and momentum of price movements within a specific time frame (Wilder, 1978). The RSI indicator is often used to determine whether a stock is in an overbought or oversold condition (Chong & Ng, 2008). These signals provide important information for investors in determining optimal entry and exit points in trading activities (Neely, Rapach, Tu, & Zhou, 2014).

The combination of multiple technical indicators may improve the reliability of trading decisions (Sezer, Gudelek, & Ozbayoglu, 2020). However, empirical studies examining the effectiveness of Moving Average and Relative Strength Index indicators in Islamic stock markets remain limited (Umar et al., 2021). In addition, the characteristics of Sharia-compliant stocks may differ from conventional stocks due to specific screening mechanisms (Mensi, Sensoy, Vo, & Kang, 2020).

Therefore, further research is required to analyze the effectiveness of technical indicators in predicting stock price movements within Islamic equity markets (Bouri et al., 2020). Based on this background, this study aims to analyze the influence of Moving Average and Relative Strength Index indicators on the stock prices of companies included in the Jakarta Islamic Index.

METHODS

This study employed a quantitative research approach to analyze the influence of technical indicators on Sharia stock price movements listed in the Jakarta Islamic Index (JII). The research utilized secondary data obtained from historical stock prices of companies included in the Jakarta Islamic Index. The population of this study consisted of all Sharia-compliant stocks listed in the Jakarta Islamic Index. The sample was determined using purposive sampling based on specific criteria: (1) companies consistently listed in the Jakarta Islamic Index during the observation period and (2) companies with complete historical price data. Based on these criteria, a total of 10 companies were selected as the research sample.

The data used in this research consisted of daily stock price data collected during the observation period from January 2024 to May 2025, resulting in 141 observations. The data were obtained from financial platforms such as the Indonesia Stock Exchange, Yahoo Finance, and other market data sources. This study employed two technical indicators as independent variables: Moving Average (MA) and Relative Strength Index (RSI). The Moving Average used in this research was the 20-day Moving Average (MA20), which represents the average closing price of a stock over the last 20 trading days. The Moving Average is calculated using the following formula:

$$MA_{20} = (\sum Close_i) / 20$$

Where **Close_i** represents the closing price of the stock on day **i**. The second indicator used in this study was the Relative Strength Index (RSI14), which measures the strength and momentum of stock price movements. The RSI is calculated using the following formula:

$$RSI = 100 - [100 / (1 + RS)]$$

Where

$$RS = \text{Average Gain} / \text{Average Loss}$$

The RSI value ranges from 0 to 100. A value above 70 indicates an overbought condition, while a value below 30 indicates an oversold condition. To analyze the effect of these technical indicators on stock prices, this study employed multiple linear regression analysis. The regression model used in this research is formulated as follows:

$$Y = \alpha + \beta_1 MA + \beta_2 RSI + \varepsilon$$

Where:

- **Y** = Stock price
- **α** = Constant
- **β₁** = Coefficient of Moving Average
- **β₂** = Coefficient of Relative Strength Index
- **ε** = Error term

The regression analysis was conducted using statistical software to examine both the partial effect (t-test) and the simultaneous effect (F-test) of the independent variables on stock prices. Additionally, the coefficient of determination (**R²**) was used to measure the proportion of variation in stock prices explained by the independent variables in the model.

RESULTS AND DISCUSSION

Descriptive Statistics

This study analyzed 141 observations obtained from ten Sharia-compliant companies listed in the Jakarta Islamic Index during the period January 2024 to May 2025. The data consist of stock prices as the dependent variable and two technical indicators as independent variables, namely Moving Average (MA20) and Relative Strength Index (RSI14). Descriptive analysis shows that stock prices during the observation period experienced fluctuations that reflect market dynamics in the Islamic capital market. The Moving Average indicator represents the trend direction of stock price movements, while the Relative Strength Index reflects the momentum and market conditions related to overbought or oversold levels.

Regression Analysis

To examine the influence of technical indicators on stock prices, this study employed multiple linear regression analysis. The regression model produced the following equation:

$$Y = \alpha + 1.007MA + 0.007RSI + \varepsilon$$

The regression coefficient of Moving Average (MA) is 1.007, indicating a positive relationship between the Moving Average value and stock price movements. This result suggests that an increase in the Moving Average value tends to be followed by an increase in stock prices. Meanwhile, the regression coefficient of Relative Strength Index (RSI) is 0.007, indicating a relatively weak influence on stock prices.

Partial Test (t-Test)

The t-test was conducted to determine the partial effect of each independent variable on stock prices. The results show that the Moving Average variable has a t-value of 215.090 with a significance level of 0.000. Since the significance value is less than 0.05, the Moving Average variable has a statistically significant effect on stock prices. This finding indicates that the Moving Average indicator is an effective tool for identifying stock price trends in the Islamic capital market. In contrast, the Relative Strength Index variable has a t-value of 0.486 with a significance level of 0.633, which is greater than 0.05. This result indicates that the Relative Strength Index does not have a statistically significant effect on stock price movements in the Jakarta Islamic Index.

Simultaneous Test (F-Test)

The simultaneous test was conducted to determine whether the independent variables jointly influence stock prices. The results of the F-test show an F-value of 291.623 with a significance level of 0.000. Since the significance value is less than 0.05, it can be concluded that Moving Average and Relative Strength Index simultaneously influence stock price movements in the Jakarta Islamic Index. This result indicates that the regression model used in this study is statistically significant and suitable for explaining the relationship between technical indicators and Sharia stock prices.

Coefficient of Determination

The coefficient of determination (R^2) obtained in this study is 0.999, indicating that the Moving Average and Relative Strength Index variables explain 99.9% of the variation in stock price movements. The remaining 0.1% is influenced by other factors outside the model. The very high R^2 value indicates that the Moving Average indicator has a very strong relationship with stock prices. This occurs because the Moving Average is derived directly from stock price data, which makes the correlation between the two variables very strong.

Discussion

The findings of this study demonstrate that the Moving Average indicator plays a significant role in predicting stock price movements within the Jakarta Islamic Index. The significant positive effect of the Moving Average variable suggests that this indicator is effective in identifying the direction of stock price trends. When stock prices move above the Moving Average line, it generally signals a bullish trend, indicating potential price increases.

Conversely, when prices fall below the Moving Average line, it may signal a bearish trend and potential price declines. Therefore, investors can use the Moving Average indicator as a practical tool to support investment decision-making in the Islamic capital market. On the other hand, the Relative Strength Index does not show a significant influence on stock prices in this study.

Although RSI is commonly used to identify overbought and oversold conditions, its influence may vary depending on market conditions and trading behavior. In this research, the RSI indicator may function more as a complementary indicator rather than a primary determinant of stock price movements. Overall, the results of this study suggest that technical analysis using Moving Average can provide useful signals for investors in predicting Sharia stock price trends in the Indonesian Islamic capital market.

CONCLUSION

This study examined the influence of technical indicators, namely Moving Average and Relative Strength Index, on Sharia stock price movements listed in the Jakarta Islamic Index. The analysis was conducted using 141 observations obtained from ten Sharia-compliant companies during the period January 2024 to May 2025. The results of the regression analysis indicate that the Moving Average (MA20) variable has a positive and statistically significant effect on stock prices, with a regression coefficient of 1.007, a t-value of 215.090, and a significance level of 0.000. This finding suggests that the Moving Average indicator is effective in identifying trends and predicting stock price movements in the Islamic capital market. In contrast, the Relative Strength Index (RSI14) does not show a significant effect on stock prices, as indicated by a t-value of 0.486 and a significance level of 0.633. This result implies that RSI may not play a dominant role in explaining Sharia stock price movements within the Jakarta Islamic Index during the observation period. The simultaneous test results show that the Moving Average and Relative Strength Index variables collectively influence stock price movements, as indicated by an F-value of 291.623 with a significance level of 0.000. Additionally, the coefficient of determination (R^2) value of 0.999 indicates that the independent variables explain 99.9% of the variation in stock prices, while the remaining 0.1% is influenced by other factors outside the model. Overall, the findings of this study suggest that the Moving Average indicator can serve as an effective technical analysis tool for investors in predicting Sharia stock price trends in the Indonesian Islamic capital market. Investors may utilize Moving Average as a primary indicator for identifying market trends, while the Relative Strength Index may function as a complementary indicator in investment decision-making.

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