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Research Article

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Market Anomaly Analysis: Week Four Effect, Rogalsky Effect and Eid Effect on the IDX 30 Index

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Abstract: *This study aims to empirically test abnormal returns on the phenomena of the Eid al-Fitr holiday effect, week four effect, rogalsky effect. The research method uses quantitative research. The sampling technique uses the purposive sampling method and daily data samples are obtained. The research sample uses the IDX 30 Stock Index price sourced from the Indonesia Stock Exchange. Data analysis uses the dummy regression method with Wilcoxon Rank. The results of the study show that the Eid al-Fitr Holiday Effect occurred on the IDX 30 IDX Index from 2023 to 2024, which means that the Eid al-Fitr Holiday Effect causes Abnormal Stock Returns on the ID30 IDX Index. The Week Four Effect from 2023 to 2024 did not occur on the IDX30 Index, which means that the Week Four Effect did not affect the ID30 IDX Index Stock Return. Rogalsky Effect from 2023 to 2024 did not occur in the IDX30 Index, which means that the Rogalsky Effect does not affect the IDX30 IDX Index Stock Return.*

Keywords: *Eid al-Fitr holiday effect, week four effect, Rogalsky effect.*

Introduction

The Efficient Market Hypothesis (EMH) argues that stock prices promptly reflect all available market information (Widayanti 2018). Stock prices do not always remain normal; on certain days or seasons, they can become abnormal. This phenomenon is known as a market anomaly, where a market anomaly is an unpredictable event or situation that provides an opportunity for investors to achieve abnormal returns. Some well-known anomalies are: the January effect, the day-of-the-week effect, the Monday effect, the weekend effect, the Fourth Week effect, the month-of-the-year effect, the turn-of-the-month effect, the turn-of-the-year effect, the holiday effect, and the Rogalsky effect (Widayanti 2018). These anomalies are still widely discussed by researchers, both domestic and international, because not all researchers find seasonal anomalies in the samples studied in efficient markets. Several researchers have tested this stock anomaly, including Marselia (2018), who stated that the Monday effect phenomenon occurred on the Indonesia Stock Exchange between 2010 and 2016. However, interestingly, different results were obtained by Melissa (2017), who stated that returns on Fridays were the lowest compared to other trading days. This contradicts the theory that Monday returns are the lowest.

The Week Four Effect phenomenon is also a seasonal anomaly that has been previously studied. For example, research by Budiman (2021) showed the Week Four Effect phenomenon in LQ-45 stock returns on the Indonesia Stock Exchange (IDX) in 2020-2021. Descriptive statistical analysis of the Week Four Effect showed that the average Monday return in the fourth and fifth weeks was lower than the average return in the first to third weeks. The average return in the fourth and fifth weeks was -0.82 percent, while the first to third weeks were -0.02 percent. A different test was then conducted using a non-parametric statistical approach, the Mann-Whitney test, which showed a significant difference, indicating the presence of a Week Four Effect phenomenon in LQ-45 stock returns on the Indonesia Stock Exchange (IDX) in 2020-2021. Furthermore, Indah (2013) examined stock anomalies related to the January effect

phenomenon. The analysis showed that, based on stock returns and abnormal returns, the January effect phenomenon occurred on the Indonesia Stock Exchange, whereas, based on trading volume activity, the January effect did not occur on the Indonesia Stock Exchange.

As an investor, anomalies in an efficient market can serve as a reference for implementing strategies to achieve expected returns. These anomalies require investors to be cautious when designing and making investment decisions. They must consider not only quantitative information but also the deviations in the form of the anomalies mentioned above. By combining this diverse information, it is hoped that investors will be able to make investment decisions that will have a positive impact on them, namely achieving the maximum return. Domestic investors play a crucial role in maintaining the stability of the Indonesian capital market. As more domestic investors transact in the capital market, their share ownership will increase. Currently, domestic investors control 40% of the market, up from only 20% previously. This increase may contribute to stabilizing the JCI Index trend, but the increase is not significant. Therefore, given the current uncertain global situation, efforts are needed to increase the number of domestic investors in the capital market. Capital markets need to be efficient to incentivize investors to continue actively participating in transactions. According to Tanderilin, an efficient market is one in which security prices reflect all available information (Tanderilin, 2010). In reality, we cannot truly speak of an efficient market because market anomalies (irregularities) continually emerge as phenomena that disrupt the efficient market hypothesis. In the financial world, four types of anomalies are recognized: corporate anomalies, seasonal anomalies, event anomalies, and accounting anomalies. (Arteza, 2006) The anomaly discussed in this study is the calendar anomaly (a subset of seasonal anomalies), which generally falsify the weak form of the efficient market hypothesis. This anomaly will cause stock prices to rise or fall, which affects investment profits/returns. The initially random pattern of stock return movements becomes predictable due to the influence of this anomaly, and investors can exploit this opportunity to obtain abnormal returns. (Jogyanth, 2005). In Indonesia, Irani (2006) and Cahyaning Dyah (2010) conducted research on the day of the week effect phenomenon and found that the day of the week effect phenomenon occurs and there is a difference in stock returns on the trading day that produces the lowest return. This occurs on Monday (the Monday effect). The fourth week effect phenomenon was also discovered by Indonesian researchers Iramani (2006) and Lutfiazi (2014), who found that this phenomenon is seen in significant negative returns that occur on the 4th Monday and the 4th Monday of the fourth week. This phenomenon was found to cause anomalies in the 5th week of each month.

Literature Review

Week Four Effect

The efficient market hypothesis theory posits that stock prices reflect all available information. This study specifically examines the existence of the Week Four Effect on the IDX30 Index. The Week Four Effect refers to a historical pattern in which stock returns tend to exhibit certain characteristics (e.g., higher or lower, or different volatility) in the fourth week of each month compared to other weeks. The "Week Four Effect" phenomenon in stock returns is a market anomaly that has attracted the attention of investors and researchers. This anomaly suggests that stock returns on Monday of the fourth week (or sometimes also the fifth week) tend to be negative or lower than Mondays in other weeks of the month. This is part of the "Day of the Week Effect," or seasonal anomaly. One suspected cause of the Week Four Effect is selling pressure from individual investors at the end of the month or the fourth week. Individual investors, especially those who need cash to meet monthly needs (e.g., pay bills, installments, etc.), tend to sell their

shares at the end of the month to liquidate their investments. This can lead to greater selling pressure on the last Monday of the month, depressing stock prices and resulting in lower returns. Another speculation is that unfavorable information tends to be released on weekends or when the market is closed, giving investors time to evaluate it. The impact is then seen on Mondays, particularly in the fourth week, when the accumulation of negative information may be more significant. Several empirical studies in various markets indicate consistent seasonal patterns, such as those conducted by Tutu et al. (2024), Hakim & Zulfikar (2024), and Selvita et al. (2024). Therefore, the observation period from 2023 to 2024 on the IDX30 Index will be examined in depth to analyze whether this Week Four Effect anomaly actually occurs in the Indonesian capital market.

Rogalsky Effect

In addition to the Week Four Effect phenomenon, seasonal patterns in the Efficient Market Theory also recognize the Rogalsky Effect as an interesting calendar anomaly. The Rogalsky Effect suggests that the Monday Effect, the tendency for stock returns to be lower on Mondays compared to other trading days, disappears or even reverses in certain months. This anomaly challenges the assumption of market efficiency, suggesting that return patterns are not always random and may be influenced by seasonal or psychological factors not fully explained by traditional financial models. Previous research by Putri et al. (2021), Widodo (2024), and Tanjung & Komariah (2022) indicated that abnormal returns in the Rogalsky Effect do occur. Given its significance in understanding market dynamics, this study will examine the existence and characteristics of the Rogalsky Effect on the IDX30 Index during the period 2023 to 2024, to determine whether this pattern also occurs in the Indonesian capital market.

Eid al-Fitr Effect

Market anomalies in the Efficient Market Theory are often associated with calendar and psychological factors that influence investor sentiment and trading activity. One such anomaly relevant to the Indonesian capital market context is the Lebaran Effect, which refers to the unusual, usually positive, tendency of stock returns around the Eid al-Fitr holiday period. This anomaly is thought to arise from several factors, such as increased economic activity, the distribution of Eid al-Fitr allowances (THR), which can stimulate consumption and investment, and positive sentiment and optimism ahead of major celebrations. While consistent with behavioral finance concepts, the Eid al-Fitr Effect still challenges the assumption of efficient markets. Previous research by Firdaus (2021) and Hutagalung & Agatha (2023) demonstrated that the Eid al-Fitr Effect phenomenon does indeed occur on the Indonesia Stock Exchange. Therefore, this study will examine whether the Eid al-Fitr Effect truly exists and persists on the IDX30 Index from 2023 to 2024.

Method

Researchers use the quantitative research method Non-Parametric Statistics. The term nonparametric was first used by Wolfowitz in 1942. Nonparametric statistical methods are statistical methods that can be used by ignoring the assumptions underlying the use of parametric statistical methods, especially those related to the normal distribution. Other terms often used for nonparametric statistics are distribution-free statistics and assumption-free tests. Nonparametric statistics are widely used in social research. Data obtained in social research are generally in the form of categories or ranks. Nonparametric statistical tests are statistical tests that do not require any assumptions regarding the distribution of population data. This

statistical test is also called distribution-free statistics. Nonparametric statistics do not require the distribution of population parameters to be normally distributed. Nonparametric statistics can be used to analyze nominal or ordinal data because in general nominal and ordinal data are not normally distributed. In terms of data size, nonparametric statistics are generally used for small data sets (n <30).

After nonparametric testing, event study testing is continued using dummy regression to test for differences in stock price returns based on the Week Four Effect and the Rogalsky Effect (Gujarati, 2015)..

Results And Discussion

Week Four Effect from 2023 to 2024 on the IDX30 Index

Based on the dummy regression test results, the Week Four Effect variable does not affect abnormal returns on IDX 30 stocks listed on the Indonesian Stock Exchange (IDX) in 2023 or 2024. Data processing using Eviews 12 indicates that in 2024, the probability value is 0.5720, which is greater than α = 0.05. The Wilcoxon Rank Difference test results show a Wilcoxon/Mann-Whitney probability value of 0.5834, which is greater than α = 0.05, thus rejecting H1. Data processing using Eviews 12 indicates that in 2023, the probability value is 0.3489, which is greater than α = 0.05. The Wilcoxon Rank Difference test results show a Wilcoxon/Mann-Whitney probability value of 0.8399, which is greater than α = 0.05, thus rejecting H1.

The Efficient Market Theory (EMH) states that security prices reflect all available information. In its weak form, the EMH argues that current security prices fully reflect all information contained in past security prices. Although the weak form of the EMH states that there are no exploitable patterns, empirical research often finds "market anomalies" or "calendar effects" that exhibit consistent price patterns over time. These findings are inconsistent with the Efficient Market Theory (EMH). The results of this study align with previous research conducted by Tutu et al. (2024), Hakim & Zulfikar (2024), and Selvita et al. (2024).

The findings indicate that the Week Four Effect does not affect the IDX ID30 Index stock returns. The "Week Four Effect" phenomenon in stock returns is a market anomaly that has attracted the attention of investors and researchers. This anomaly suggests that stock returns on Monday of the fourth week (or sometimes also the fifth week) tend to be negative or lower than Mondays in other weeks of the month. This is part of the "Day of the Week Effect," a seasonal anomaly. One suspected cause of the Week Four Effect is selling pressure from individual investors at the end of the month or the fourth week. Individual investors, especially those who need cash to meet monthly needs (e.g., pay bills, installments, etc.), tend to sell their stocks at the end of the month to liquidate their investments. This can lead to greater selling pressure on the last Monday of the month, depressing stock prices and resulting in lower returns. Another speculation is that unfavorable information tends to be released on weekends or when the market is closed, giving investors time to evaluate it. The impact is then seen on Mondays, especially in the fourth week, when the accumulation of negative information may be more significant.

Rogalsky Effect from 2023 to 2024 on the IDX30 Index

Based on the dummy regression test results, it shows that the Rogalsky Effect variable does not affect abnormal returns on IDX 30 stocks listed on the Indonesian Stock Exchange (IDX) in 2023 or 2024. Data processing using Eviews 12 shows that in 2024, the probability value is 0.9021, which is greater than α = 0.05. The Wilcoxon Rank Difference test results show a Wilcoxon/Mann-Whitney probability value of 0.4034, which is greater than α = 0.05, thus rejecting H2.Data processing results using Eviews 12 indicate that in 2023, the probability value is 0.8977, which is greater than a = 0.05. The Wilcoxon Rank difference

test results show a Wilcoxon/Mann-Whitney probability value of 0.6761, which is greater than a = 0.05, thus rejecting H2.

The Efficient Market Theory (EMH) states that security prices reflect all available information. In its weak form, the EMH argues that current security prices fully reflect all information contained in past security prices. Although the weak form of the EMH states that there are no exploitable patterns, empirical research often finds "market anomalies" or "calendar effects" that exhibit consistent price patterns over time. These findings are inconsistent with the Efficient Market Theory (EMH). The results of this study are inconsistent with previous research by Putri et al. (2021), Widodo (2024), and Tanjung & Komariah (2022), which showed that abnormal returns in the Rogalsky Effect do occur.

The research findings indicate that the Rogalsky Effect does not affect the IDX ID30 Index Stock Returns. The Rogalsky Effect is a seasonal market anomaly related to the "Monday Effect." The Monday Effect is a phenomenon where the average stock return on Monday tends to be lower or even negative compared to other trading days. The Rogalsky Effect finds that negative Monday returns can disappear or become insignificant in certain months, as overall returns in those months tend to be higher. In short, this is a test of whether the "negative Monday" anomaly disappears in certain months.

Eid al-Fitr holiday effect from 2023 to 2024 on the IDX30 Index

The dummy regression test results in Tables 4.18 and 4.19 indicate that the Eid al-Fitr holiday effect variable influences abnormal returns on IDX 30 stocks listed on the Indonesian Stock Exchange (IDX) in both 2023 and 2024. Data processing results using Eviews 12 indicate that in 2024, the probability value is 0.0119, which is less than a = 0.05. The Wilcoxon Rank Difference test results show a Wilcoxon/Mann-Whitney probability value of 0.0195, which is less than $\alpha = 0.05$, thus H3 is accepted. Data processing results using Eviews 12 indicate that in 2023, the probability value is 0.0210, which is less than $\alpha = 0.05$. The Wilcoxon Rank Difference test results show a Wilcoxon/Mann-Whitney probability value of 0.0160, which is less than $\alpha = 0.05$, thus H3 is accepted.

Eugene Fama explains in the Efficient Market Theory (EMH) that security prices reflect all available information. In its weak form, the EMH theory argues that current security prices fully reflect all information contained in past security prices. Although the weak form of the EMH states that there are no exploitable patterns, empirical research often finds "market anomalies" or "calendar effects" that exhibit consistent price patterns over time. These findings align with the Efficient Market Theory (EMH). The study's findings align with previous research by Firdaus (2021) and Hutagalung & Agatha (2023), which explained that the Eid al-Fitr effect does indeed occur on the Indonesia Stock Exchange.

The findings demonstrate that the Eid al-Fitr holiday effect affects stock returns on the IDX ID30 Index. The "Holiday Effect" refers to a market anomaly where stock market performance tends to differ before and after a long holiday period. In Indonesia, Eid al-Fitr is one of the biggest holidays that has the potential to cause a Holiday Effect. In general, the Holiday Effect, especially related to Eid al-Fitr, is often associated with two phases: Pre-Holiday Period (Before the Holiday): Several studies have found a tendency for negative returns or a decrease in trading activity. This is often associated with investors selling to meet liquidity needs before the long holiday (for example, for THR or Eid expenses). Investors tend to hold cash. Post-Holiday Period (After the Holiday): After a long holiday, the market tends to experience a rebound or positive returns. This can be caused by investors returning to the market with fresh funds, or post-holiday optimism.

Conclusion

After referring to the problem formulation, research objectives, hypotheses, and research results, the researcher made the following conclusions: The Week Four Effect from 2023 to 2024 did not occur on the IDX30 Index, which means that the Week Four Effect did not affect the IDX30 Index Stock Return. The Rogalsky Effect from 2023 to 2024 did not occur on the IDX30 Index, which means that the Rogalsky Effect did not affect the IDX30 Index Stock Return. The Eid al-Fitr Holiday Effect occurred from 2023 to 2024, which means that the Eid al-Fitr Holiday Effect affected the IDX30 Index Stock Return..

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