

Valentine's Day and Abnormal Returns in Southeast Asia



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ABSTRACT: The market becomes inefficient as a result of market anomalies such as Valentine's Day, which creates positive emotions and leads investors to act irrationally when making decisions. These irrational actions result in fluctuations in stock prices, which offer investors opportunities for returns. This study aims to investigate the impact of Valentine's Day on market index returns in Southeast Asia from 2014 to 2024. The ARCH-GARCH (1,1) model was used in this study and the results indicate that Valentine's Day has an impact on market index returns in Southeast Asia (specifically Malaysia, Thailand, and Singapore), but not in Indonesia, the Philippines, or Vietnam. These results suggest that investors who are influenced by positive emotions are more likely to feel optimistic when making risky decisions. Therefore, market anomalies like Valentine's Day can be used as a consideration for investors seeking abnormal stock returns.

KEYWORDS: Valentine, market index, behavioral finance, emotion, optimistic

1. INTRODUCTION

The Efficient Market Hypothesis (EMH) states that markets are efficient when investors can use all available public information, such as financial reports, news, regulations, and government economic policies, which are also reflected in the stock prices (Fama, 1970; Philpot & Peterson, 2011; Wuthisatian, 2022). According to EMH, investors act rationally (Fama, 1970) by using technical and fundamental analyses to gain a better understanding of the stocks they want to invest in (Statman, 2005). However, there are market anomalies that contradict the efficient market assumption (Doyle & Chen, 2012). These anomalies cause stock prices to move in unpredictable ways which leads to specific time-based and recurring patterns (Du Toit, et al., 2018; Lobão, 2019; Reddy et al., 2019; Wuthisatian, 2022; Izzahdi & Suryani, 2023) that investors can use to forecast future returns (Popović & Đurović, 2014). Market anomalies arise due to changes in irrational investor behavior (Stracca, 2004; Lepori, 2015; Tuyon & Ahmad, 2016; Du Toit et al., 2018; Metawa et al., 2019; Liang et al., 2020; Shahid et al., 2020). These irrational behaviors lead to investment decisions based on emotional reactions rather than objective information and fundamental analysis (Statman, 2005; Cheng, 2014).

One phenomenon that leads investors to behave irrationally is Valentine's Day, also known as the day of love (Chong & Hou, 2022). For instance, on Valentine's Day in 2024, there was a global increase in spending, with estimates of shoppers spending over \$25.8 billion, averaging \$185.81 per consumer on gift purchases (Grgich, 2024). Additionally, the stock market experienced an increase in the price of securities in various sectors compared to a typical day (Nurmutia, 2023). This increase triggers market overreaction, leading to differences in price behavior patterns (Piccoli et al., 2017). The Valentine's Day overreaction is influenced by emotions in decision-making (Munusamy, 2018; Rosdini et al., 2020; Jung & Jeong, 2021; Tetteh & Amoah, 2021), preferences, risk assessment, and rational thinking among investors (Rosdini et al., 2020; Shu, 2010). Valentine's Day celebrations evoke positive emotions, like feelings of love (Morse & Neuberg, 2004), which lead investors to assess stocks optimistically, triggering a desire to take risks in investing (Lepori, 2015; Kourtidis et al., 2016; Shahid et al., 2020; Chiah & Zhong, 2021). The risk taken by investors not only helps in obtaining returns but will also cause losses when the selling price returns to the original (Tetlock, 2007). Therefore, investors should consider emotional factors because they can influence decision-making (Rosdini et al., 2020).

This study expands previous research conducted by Chong & Hou (2022), which examines the effect of Valentine's Day on stock index returns in several countries, such as the United States, United Kingdom, Germany, France, Japan, Hong Kong, and China. Unlike the previous studies, this research focuses on returns in Southeast Asia. Thus, this study aims to examine the effect of Valentine's Day on stock returns in Southeast Asia. This study contributes to the accounting and finance literature by providing empirical evidence on the effect of Valentine's Day on market index returns. The findings of this study can help investors make better investment decisions by using market anomalies to generate stock returns. The findings are also valuable for company management in addressing market anomalies by altering their business strategies or policies.

2. LITERATURE REVIEW

2.1. *Efficient Market Hypothesis (EMH)*

According to the Efficient Market Hypothesis (EMH), an efficient market is one in which security prices incorporate all publicly available information (Fama, 1970; Siegel, 2010; Sing & Singh, 2019; Brown, 2020). This concept is relevant for financial markets because EMH dictates that all price-sensitive information, whether public or confidential information, is instantly and accurately reflected in market prices (Popović & Đurović, 2014). EMH divides into three forms: strong, semi-strong, and weak forms. (Fama, 1970; Statman, 2005; Kiky, 2018). In a strong-form efficient market, prices are assumed to incorporate all publicly available information and are reflected in stock prices (Fama, 1970; Kang et al., 2022). Furthermore, stock prices encompass all information, including confidential information that is known to a small number of individuals (Kang et al., 2022). Consequently, investors do not receive returns because stock prices always reflect fair prices (Kang et al., 2022).

Semi-strong form efficient market assumes that security prices reflect public information available in the market (Fama, 1970; Alhashel, 2016; Elangovan et al., 2022). Investors are believed to be rational in their investment decisions because they carry out technical and fundamental analysis based on public information (Statman, 2005). However, Valentine's Day which is related to emotions, induces irrational changes in investor behavior, thereby establishing a stock movement pattern that facilitates the acquisition of returns (Du Toit et al., 2018; Lobão, 2019; Reddy et al., 2019; Chong & Hou, 2022; Wuthisatian, 2022; Izzahdi & Suryani, 2023). Weak form efficient markets assume that the prices reflected can be obtained from past data information (Fama, 1970; Statman, 2005; Kang et al., 2022). Weak form efficient market prevents investors from making more returns by relying solely on historical data or information because the price fluctuates as a result of unexpected new information and arises randomly (Fama, 1970; Borges, 2010). This market form can become inefficient if there is a phenomenon such as a market anomaly (Reddy et al., 2019).

2.2. *Calendar Anomalies*

One type of market anomaly is the calendar anomaly which occurs due to the pattern of stock price movements, specifically certain days, months, years, and periods (Popović & Đurović, 2014; Trisnadi & Sedana, 2016; Lobão, 2019; Ozkan, 2019; Wuthisatian, 2022). The day-of-the-week effect is an example of a calendar anomaly. This phenomenon is characterized by price changes that exceed the average market index on specific days of the week (Țilică & Oprea, 2014; Chiah & Zhong, 2021). The Tuesday effect exists and affects stock returns in Australia due to the difference in the time zones, and hence, the emotional outburst of foreign investors on Monday has an impact on Tuesday (Chiah & Zhong, 2021). Another anomaly is the Monday effect which has a negative impact on returns because investors believe Monday as a challenging day of the week. However, investors have a more positive perception of Friday because they have more free time to analyze stock market price movements, which in turn leads to more trading on Monday (Rystrom & Benson, 1989; Țilică & Oprea, 2014; Caporale et al., 2016; Steinborn, 2023).

The month-of-year effect is the subsequent calendar anomaly, which is characterized by a higher rate of return change in a particular month (Ozkan, 2019). The January effect is the most studied because it has fluctuating returns compared to other months (Wuthisatian, 2022). The January effect happens because investors sell their securities to reduce taxable income on their investment gains before the end of the year (Agnani & Aray, 2011; Wuthisatian, 2022). Returns also increase during holidays like Eid al-Fitr as a result of the positive emotions and moods that investors experience (Ali et al., 2023). Furthermore, the Ramadan effect that relates to the increased returns during the fasting month of Ramadan is also a market anomaly (Ozkan, 2019). The Ramadan effect produces high returns since investors are less selective in their investment decisions due to the positive mood (Al-Hajieh et al., 2011; Rokhim & Octaviani, 2019). Meanwhile, the Valentine's Day effect is also influenced by investor emotions to produce returns (Chong & Hou, 2022).

2.3. *Valentine's Day and Return Stock Market*

Valentine's Day is celebrated not only as a day for romantic relationships but also for non-romantic relationships such as family and friendship (Close & Zinkhan, 2009; Wang et al., 2021; Chong & Hou, 2022). This celebration involves young people expressing their feelings through various rituals that often involve the exchange of romantic items such as gifts, chocolates, greeting cards, and flowers (Close & Zinkhan, 2006; Wang et al., 2021). The days leading up to Valentine's Day see a surge in gift-shopping activity worldwide (Wang et al., 2021). This surge in shopping activity boosts investor confidence making it an attractive prospect for future investment (William, 2022). Investor confidence can increase market demand, driving up stock prices and enabling investors to generate returns (Mitchell, 2023).

Valentine's Day is associated with a range of emotions, particularly love (Morse & Neuberg, 2004). These emotional aspects can influence investors' behavior (Cheng, 2014), choices, risk assessment, and rational thinking (Shu, 2010; Rosdini et al., 2020; Truong et al., 2021). Emotional factors can lead to irrational decision-making, deviating from rational thinking based on available information, thus conflicting with the assumptions of the EMH (Lepori, 2015; Tuyon & Ahmad, 2016; Du Toit et al., 2018; Metawa et al., 2019; Liang et al., 2020; Shahid et al., 2020). Cheung (2010) noted that positive emotions can elevate mood and make the mind more receptive to new opportunities. These emotions also impact investment decisions, with positive emotions

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leading to more optimistic stock assessments and potential returns for investors (Lepori, 2015; Kourtidis et al., 2016; Shahid et al., 2020; Chiah & Zhong, 2021).

The efficient market hypothesis (EMH) posits that stock prices fully reflect all available information (Fama, 1970; Philpot & Peterson, 2011; Wuthisatian, 2022). However, specific days such as Valentine's Day might influence stock price changes due to investor emotions (Țilică & Oprea, 2014), including the positive perception of Valentine's Day (Chong & Hou, 2022). The Valentine's Day effect alters investor behavior, driven by positive emotions, leading to stock index returns in various countries, including the United States, United Kingdom, France, Hong Kong, and China (Chong & Hou, 2022). Therefore, the hypothesis can be formulated as follows:

H1: There is an influence of the Valentine's Day effect on stock returns in Southeast Asia.

3. METHODOLOGY

This study examines the effect of Valentine's Day on stock index returns using the daily value of stock market index prices in Southeast Asia. Southeast Asia was chosen because it has a strong and largest economy in Asia (ASEAN, 2023). However, from a total of 10 (ten) Southeast Asian countries, this study only uses 6 (six) countries (see Table 1) because several countries have a small number of listed companies (Laos, Cambodia, and Myanmar) or does not have a capital market (Brunei Darussalam) (Naufa et al., 2019; Izzahdi & Suryani, 2023). This study uses data sourced from the Eikon Refinitive Database with an observation period of 10 years from 2014 to 2024.

Table 1. Country and Market Indexes

No	Country	Market indexes
1	Indonesia	IDX Composite (JKSE)
2	Malaysia	FTSE Malaysia KLCI
3	Thailand	SET Index
4	Philippines	PSEI Composite
5	Singapore	Straits Time Index
6	Vietnam	Vietnam Ho Chi Minh Stock Index

The independent variable in this study is the Valentine's Day phenomenon on February 14, which is determined by the time of the daily value of the closing price of the market index. This variable is measured using a dummy variable, by giving a 1 if the observation is on Valentine's Day and a 0 if the observation is not on Valentine's Day. The dependent variable uses the calculation of the return index in the form of the daily value of the closing price of the stock market index in six Southeast Asian countries. The calculation of the return index uses the natural logarithm because it can change the distribution of returns that may not be normal into a distribution that is closer to normal and more symmetrical (Chandukala et al., 2008; Shrestha & Qiao, 2010). The calculation of stock index return (R_{it}) uses the following formula:

$$R_{it} = \ln \frac{IHSG_j}{IHSG_{j-1}} \quad (1)$$

Description:

R_{it} = Market index return.

$IHSG_j$ = Current stock index price.

$IHSG_{j-1}$ = Last period's stock index price.

This study uses control variables, the effects of Monday and Friday if Valentine falls on these days. Monday was chosen because it has a negative reaction to stock index prices due to the influence of changes in investor sentiment over the weekend which tends to avoid risk (Kim & Ryu, 2022). Friday is chosen because investors have a more positive perception of Friday due to the amount of free time they have to analyze stock market price movements (Rystrom & Benson, 1989; Țilică & Oprea, 2014; Caporale et al., 2016; Steinborn, 2023). The control variable is measured by a dummy variable, a 1 is for the effect of Monday and Friday or 0 if the observation shows other than Monday and Friday. In addition, this study excludes market indexes that coincide with national holidays or exchange holidays in each country, as stock market trading is suspended on these days. This study also added the day of the budget announcement in Singapore as a special control variable for Singapore market index returns. This variable is measured using a dummy that is a 1 if it coincides with the budget announcement day while a 0 if the observation shows other than the budget announcement day. The day is controlled because the announcement day affects stock price changes. Changes in stock prices occur as a result of investors being influenced by sentiment.

Before hypothesis testing, a classical assumption test is performed first which includes the normality test, stationarity test, and ARCH-LM test. Firstly, the normality test investigates whether the data is normally distributed (Ansofino et al., 2016). The normality test using skewness and kurtosis shows that the data is not normally distributed due to market index returns that tend to fluctuate. Secondly, a stationarity test is a stage in time series to observe the presence or absence of unit roots in the data

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(Ansofino et al., 2016; Rosadi, 2011). The Augmented Dickey-Fuller (ADF) test shows a p-value > 0.05, hence the data is stationary at the first difference. Thirdly, the ARCH-LM test was conducted to investigate whether there was an ARCH effect on the data. ARCH-LM test results show a p-value > 0.05 which means there is an ARCH effect on lags 1 with Chi² of 61.882.

Lastly, this study used the GARCH test with the ARCH-GARCH (1,1) model found based on the stationarity test and ARCH LM test. This model is simple but provides ease of implementation (Bollerslev, 2023). ARCH-GARCH(1,1) is used because this model can provide more realistic calculation possibilities when compared to using only ARCH (Bollerslev, 2023). In addition, this model is also able to overcome the problems of normality, autocorrelation, and heteroscedasticity. The following regression model is used:

$$R_{it} = c + \omega_1 R_{i,t-1} + \beta_1 DV_t + \beta_2 DM_t + \beta_3 DF_t + \varepsilon_t \quad (2)$$

$$R_{it} = c + \omega_1 R_{i,t-1} + \beta_1 DV_t + \beta_2 DM_t + \beta_3 DF_t + \beta_4 DB_t + \varepsilon_t \quad (3)$$

Description:

R_{it} = Market index return.

C = Constant

ω_1 = past period return coefficient value

$\beta_1 DV_t$ = regression coefficient value of Friday's dummy

$\beta_2 DM_t$ = regression coefficient value of Monday's dummy

$\beta_3 DF_t$ = regression coefficient value of Friday's dummy

$\beta_4 DB_t$ = regression coefficient value of the Singapore Budgeting Announcement Day dummy

ε_t = error term

4. RESULTS AND DISCUSSION

Table 2 shows the average positive market index return in Indonesia, Malaysia, and Vietnam, meaning that investors obtain a return. The positive average return in Indonesia (0.06%) indicates a market index return due to a positive reaction among investors on Valentine's Day (Nurmutia, 2023). This reaction was caused by positive news that drove investors' emotions to be optimistic about buying stocks which finally give effect on increasing stock prices and generating returns (Yu et al., 2013).

Table 2. Descriptive Statistics of Stock Index Returns

Country	N	Min	Max	Mean	Standard. Deviation
Indonesian	201	-0.0273	0.0344	0.0006	0.0075
Malaysia	201	-0.0272	0.0152	0.0003	0.0059
Thailand	201	-0.0518	0.0207	-0.0002	0.0086
Phillipines	201	-0.0393	0.0350	-0.0004	0.0102
Singapore	201	-0.0350	0.0264	-0.0000	0.0084
Vietnam	201	-0.0523	0.0379	0.0008	0.0121

Source: Author

In Malaysia, the stock index return has a positive mean of 0.03%, meaning that investors obtain returns on Valentine's Day due to the bullishness in the regional market (Malaymail, 2023). A bullish market is a market condition that experiences an upward trend due to investor optimism (OJK, 2019; Wang et al., 2022). Investor optimism occurs due to positive emotions on Valentine's Day and is positively impacted by the performance of the Wall Street stock market (Malaymail, 2023). Vietnam has a positive mean value due to Valentine's Day being close to the Chinese New Year holiday (William, 2022). This holiday can provide free time for investors to analyze stocks thoroughly so that they become more optimistic about investing (Caporale et al., 2016). Investor optimism in investing can cause an increase in stock prices which result in returns (Wang et al., 2022).

Table 3 shows the results of the GARCH test from all countries in Southeast Asia. The results of the GARCH test are shown in two models. Model 1 explains Valentine's Day, and Model 2 describes the effect of Valentine's Day which is regressed with control variables. Model 2 is considered suitable because it has a lower AIC value compared to Model 1 (Schermer & Martin, 2019). The results of the study show that Valentine's Day affects stock index returns in Southeast Asia so H1 is accepted. This finding is in line with previous research by Chong & Hou (2022) that there is an effect of Valentine's Day on stock index returns caused by irrational investor behavior due to positive emotions during the celebration.

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Table 3. Result ARCH-GARCH Test

	Model 1		Model 2	
	Coef.	p-value	Coef.	p-value
Valentine's day	-0.0025	0.063**	-0.0028	0.043*
Monday			-0.0009	0.079*
Friday			-0.0004	0.560
Cons	0.0004	0.186	0.0005	0.113
Wald chi2	3.45		10.56	
Prob>chi2	0.063**		0.032*	
AIC	-5634.684		-5634.147	

Notes: The coefficient is significant at *p < 0.05; ** p < 0.01

Positive emotions caused by Valentine's Day celebrations trigger investors to be very positive or euphoric, making them feel optimistic and tend to be confident with the information they have (Huang & Goo, 2008; Bouteska & Regaieg, 2020; Aljifri, 2023). This confidence makes investors more courageous when making high-risk investment decisions (Aljifri, 2023). This excessive confidence results in investors that are unable to make rational assessments of investments (Bouteska & Regaieg, 2020). Hence, stock prices fall and investors obtain lower profits, resulting in a decrease in portfolio value. In addition to reducing portfolio value, investors who receive low returns have the potential to experience anxiety that causes stock sales and results in further stock price declines (Pigorsch & Schäfer, 2023). For instance, investor panic during the COVID-19 pandemic resulted in a decline in Valentine's Day returns, as evidenced by research data from 2020 to 2021 (Pratama, 2022). The economic growth of each country began to recover in 2022, following a decline caused by the COVID-19 pandemic, resulting in higher returns for investors than the previous year (Asian Development Bank, 2022). However, investors experienced a decline in returns in 2023 in comparison to 2022 due to inflation in Southeast Asia, which was the result of a recession (Haa, 2022; BBC News Indonesia, 2023).

This study confirms the EMH which states that the market is efficient if investors can use all available public information (Fama, 1970; Philpot & Peterson, 2011; Wuthisatian, 2022). The EMH states that investors behave rationally by considering investment decisions based on public information (Fama, 1970). However, Valentine's Day makes investors irrational because they make investment decisions based on positive emotions felt, causing the market to be inconsistent with the EMH assumptions (Tuyon & Ahmad, 2016; Du Toit et al., 2018; Metawa et al., 2019; Liang et al., 2020; Shahid et al., 2020). Investors become more daring in their pursuit of returns by making riskier decisions (Kourtidis et al., 2016; Shahid et al., 2020; Chiah & Zhong, 2021).

Table 4 Panel A shows that Valentine's Day has a positive effect on market index returns in Malaysia, Thailand, and Singapore, except for Indonesia, the Philippines, and Vietnam. In Malaysia, Valentine has a positive effect because the regional market conditions experience an upward trend on Valentine's Day (Malaymail, 2023). This condition arises as a result of the positive emotions that an individual felt or experiences, which can facilitate the acceptance of new opportunities (Cheung, 2010). Positive emotions influence investment decision-making because investors are more optimistic in assessing stocks to generate returns (Lepori, 2015; Kourtidis et al., 2016; Shahid et al., 2020; Chiah & Zhong, 2021).

Table 4. Results by Country

	Indonesian	Malaysia	Thailand	Philippines	Singapore	Vietnam
Panel A: Valentine's day effect						
Valentine's day	-0.0014	0.0022*	-0.0066*	-0.0011	-0.0034*	-0.0027
Cons_	0.0000	0.0000*	0.0003*	-0.0005	0.0001*	0.0004
Panel B: Valentine's day with variable control						
Valentine's day	-0.0015	0.0021*	-0.0068*	-0.0022	-0.0040*	-0.0025
Monday	0.0003	-0.0006	-0.0011	-0.0018	-0.0015	-0.0013
Friday	0.0012	-0.0000	-0.0009	-0.0019	0.0007	-0.0027
Cons	0.0000	0.0000*	0.0006*	0.0002	0.0012*	0.0012

Notes: significant at *p < 0.05

Table 4 shows that Valentine's Day has a negative effect on returns in Thailand and Singapore, meaning that investors in these countries obtain lower returns. This finding can occur due to the positive enthusiasm of the public towards Valentine's Day. Positive enthusiasm can be shown by surveys such as those conducted by the Thai government (Isranews, 2017). Excessive

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euphoria can influence investor behavior to become overconfident in investment decisions (Huang & Goo, 2008; Bouteska & Regaieg, 2020). Excessive self-confidence causes investors to assess the risk in stocks irrationally (Bouteska & Regaieg, 2020). This affects the profits obtained by investors lower than the expected returns.

Table 4 shows that Valentine's Day does not influence market index returns in Indonesia, the Philippines, or Vietnam. This finding contradicts previous research conducted by Chong & Hou (2022) but supports the findings of Qadan et al. (2019) which do not demonstrate the impact of Valentine's Day on stock returns. Chong & Hou (2022) shows the influence of Valentine's Day on stock returns because the samples were from the United States, England, France, Hong Kong, and China. Valentine's Day in these countries causes changes in investor behavior to become irrational. Irrational behavior occurs because investors feel positive emotions such as euphoria. However, this study is conducted in Indonesia, the Philippines, and Vietnam where Valentine's Day is not a local cultural tradition and short-term events that might have minimal impact on the stock market in developing countries. Consequently, investor behavior is not significantly altered.

Valentine's Day is a Western tradition that is not regarded as an Indonesian cultural tradition (Murtadho, 2020). The stock market and investor emotions are not influenced by this celebration, as evidenced by the numerous regions that have issued bans related to the celebration and the social media users who are actively arguing that Valentine's Day is not a local culture (BBC Indonesia, 2019). Investors can act rationally and attempt to investigate pricing when they are not influenced by emotions (Stambaugh et al., 2012).

In the Philippines, investors feel positive emotions towards Valentine's Day which is supported by the Social Weather Stations survey which shows that people feel happy on Valentine's Day (Mangahas & Mahar, 2021). This survey shows that there is an influence of positive emotions during Valentine's Day celebrations, but this may not affect the stock market. Certain investors in the Philippine capital market benefit by using technical analysis and historical data, thus indicating weak form market efficiency (Ady, 2018). Valentine's Day also has no effect in Vietnam because the stock market in that country is less sensitive to cultural events and is therefore considered a relatively weak financial market (Bergsma & Jiang, 2016). In addition, the impact of this event is only felt in certain sectors and cannot be captured in overall stock performance (Singh & Das, 2020).

This study uses control variables, the effects of Monday, Friday, and budget announcements in Singapore. The Monday effect produces low returns because it considers changes in sentiment at the weekend (Kim & Ryu, 2022), while the Friday effect does not show any effect on returns. In addition, this study also tests the budget announcement specifically for Singapore because it is susceptible to sentiment on the stock market. The test results show that this event is not affected by the sentiment of the announcement day so the stock market in Singapore is influenced by positive investor emotions.

Table 5. Singapore Country Specific GARCH Test Results

	Model 1		Model 2	
	Coef.	P-value	Coef.	P-value
Valentine's day	-0.0034	0.000*	-0.0042	0.008*
Monday	-	-	-0.0014	0.293
Friday	-	-	0.0013	0.450
Budgeting's day	-	-	0.0003	0.878
Cons	0.0011	0.000*	0.0012	0.057*

Notes: significant at *p < 0.05

This study cannot confirm the EMH which assumes that the market is efficient that is market with investors who utilize all available information (Fama, 1970; Du Toit et al., 2018; Elangovan et al., 2022; Nyakurukwa & Seetharam, 2022) as shown through the findings in Malaysia, Thailand, and Singapore. However, Valentine's Day can change investor behavior to be irrational in making decisions because it is influenced by positive emotions (Tuyon & Ahmad, 2016; Du Toit et al., 2018; Metawa et al., 2019; Liang et al., 2020; Shahid et al., 2020). Positive emotions make investors more daring in making risky decisions to generate high returns (Kourtidis et al., 2016; Shahid et al., 2020; Chiah & Zhong, 2021).

5. CONCLUSION

This study aims to determine the effect of Valentine's Day on returns in Southeast Asia from 2014 to 2024. The results of the study found that Valentine's Day affects market returns in Southeast Asia. Valentine's Day is related to positive emotions that lead to inappropriate decisions due to irrational investor behavior. Valentine's Day celebrations make investors feel positive emotions so that they tend to be optimistic when making investment decisions. This optimism makes investors more daring in making risky decisions to generate returns.

The findings of this study can be a reference for investors in utilizing seasonal anomalies to obtain returns. These findings are also useful for company management in responding to market anomalies by changing their business strategies or policies. This study contributes to the accounting and finance literature on the effect of Valentine's Day on stock index returns, especially in Southeast

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Asia. This study shows that Valentine's Day has a positive effect on the return of the Malaysian market index. The results also show that Valentine's Day has negative effects on the return of the Thailand and Singapore market indexes. Thus, this study provides empirical evidence that positive emotions can influence investors in making investment decisions to obtain returns. This study failed to confirm the EMH which assumes that an efficient market occurs if investors behave rationally by making investment decisions based on available information.

Previous studies have reviewed the effect of Valentine's Day on returns in several stock indices. This study uses Southeast Asian country indices and adds the effects of Monday, Friday, and the special announcement day of Singapore as control variables. In this study, there were several flat log-in iterations with maximum likelihood when analyzing data, and the use of ARCH-GARCH caused the analysis results to not get the best estimate. Therefore, further research can use other models such as GARCH-M, TGARCH, or EGARCH. Further research is also expected to explore behavioral finance related to other emotions so that the explanation of the impact of Valentine's Day becomes more complex.

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REFERENCES

- 1) Ady, S. U. (2018). The Cognitive and Psychological Bias in Investment Decision-Making Behavior: (Evidence From Indonesian Investor's Behavior). *Journal of Economics and Behavioral Studies*, 10(1), 86-100. [https://doi.org/10.22610/jeb.v10i1\(J\).2092](https://doi.org/10.22610/jeb.v10i1(J).2092)
- 2) Agnani, B., & Aray, H. (2011). The January effect across volatility regimes. *Quantitative Finance*, 11(6), 947–953. <https://doi.org/10.1080/14697680903540373>
- 3) Al-Hajieh, H., Redhead, K., & Rodgers, T. (2011). Investor sentiment and calendar anomaly effects: a case study of the impact of ramadan on islamic middle eastern markets. *Research in International Business and Finance*, 25(3), 345–356. <https://doi.org/10.1016/j.ribaf.2011.03.004>
- 4) Alhashel, B. S. (2016). Rights offering announcements and the efficiency of the Kuwaiti market. *Applied Economics Letters*, 23(17), 1192–1196. <https://doi.org/10.1080/13504851.2016.1142650>
- 5) Ali, I., Akhter, W., & Chaudhry, N. (2023). Do islamic holy days affect stock returns? empirical evidence from Asian and African markets. *Journal of Islamic Marketing*, 14(1), 273–288. <https://doi.org/10.1108/jima-09-2020-0285>
- 6) Aljifri, R. (2023). Investor psychology in the stock market: An empirical study of the impact of overconfidence on firm valuation. *Borsa Istanbul Review*, 23(1), 93–112. <https://doi.org/10.1016/j.bir.2022.09.010>
- 7) Ansofino, Jolianis, Yolamalinda, & Arfilindo, H. (2016). *Buku ajar ekonometrika (I)*. Yogyakarta: Deepublish
- 8) ASEAN. (2023). *Investing in ASEAN 2023*. Retrieved on December 09, 2023, from <https://asean.org/wp-content/uploads/2022/12/investment-report-2023.pdf>
- 9) Asian Development Bank. (2022). *Southeast Asia rising from the pandemic (Issue March)* Philippines: Asian Development Bank
- 10) BBC Indonesia. (2019). Perayaan Valentine di Indonesia: Dirayakan sekaligus dikutuk. *BBC Indonesia*. Retrieved on December 09, 2023, from <https://www.bbc.com/indonesia/indonesia-47222657>
- 11) BBC News Indonesia. (2023). IMF peringatkan sepertiga ekonomi global alami resesi pada 2023, Menkeu Sri Mulyani: Indonesia juga akan hadapi “ujian sangat berat.” *BBC News Indonesia*. Retrieved on December 09, 2023, from <https://www.bbc.com/indonesia/articles/c51k9y4lnp5o>
- 12) Bergsma, K., & Jiang, D. (2016). Cultural New Year Holidays and Stock Returns around the World. *Financial Management*, 45(1), 3–35. <https://doi.org/10.1111/fima.12094>
- 13) Borges, M. R. (2010). Efficient market hypothesis in European stock markets. *The European Journal of Finance*, 16(7), 711–726. <https://doi.org/10.1080/1351847X.2010.495477>
- 14) Bouteska, A., & Regaieg, B. (2020). Loss aversion, overconfidence of investors and their impact on market performance evidence from the US stock markets. *Journal of Economics, Finance and Administrative Science*, 25(50), 451–478. <https://doi.org/10.1108/JEFAS-07-2017-0081>
- 15) Brown, S. J. (2020). The efficient market hypothesis, the financial analysts journal, and the professional status of investment management. *Financial Analysts Journal*, 76(2), 5–14. <https://doi.org/10.1080/0015198X.2020.1734375>
- 16) Caporale, G. M., Gil-Alana, L. A., & Plastun, A. (2016). The weekend effect: an exploitable anomaly in the Ukrainian stock market? *Journal of Economic Studies*, 43(6), 954–965. <https://doi.org/10.1108/jes-09-2015-0167>
- 17) Chandukala, S. R., Kim, J., Otter, T., Rossi, P., & Allenby, G. M. (2008). Choice Models in Marketing: Economic Assumptions, Challenges and Trends. *Foundations and Trends(R) in Marketing*, 2(2), 97–184. <https://econpapers.repec.org/RePEc:now:fntmkt:1700000008>
- 18) Cheng, P. Y. K. (2014). Decision Utility and Anticipated Discrete Emotions: An Investment Decision Model. *Journal of*

Valentine's Day and Abnormal Returns in Southeast Asia

- Behavioral Finance*, 15(2), 99–108. <https://doi.org/10.1080/15427560.2014.908885>
- 19) Cheung, J. H. B. (2010). Does Mr. Market Suffer from Bipolar Disorder? *Journal of Behavioral Finance*, 11(4), 224–238. <https://doi.org/10.1080/15427560.2010.527411>
- 20) Chiah, M., & Zhong, A. (2021). Tuesday blues and the day-of-the-week effect in stock returns. *Journal of Banking & Finance*, 133(December), 1–15. <https://doi.org/10.1016/j.jbankfin.2021.106243>
- 21) Chong, T. T.-L., & Hou, S. (2022). Will stock rise on Valentine's Day? *Review of Behavioral Finance*, 14(5), 646–667. <https://doi.org/10.1108/rbf-02-2021-0015>
- 22) Close, A. G., & Zinkhan, G. M. (2009). Market-resistance and Valentine's day events. *Journal of Business Research*, 62(2), 200–207. <https://doi.org/10.1016/j.jbusres.2008.01.027>
- 23) Close, A., & Zinkhan, G. (2006). A holiday loved and loathed : A consumer perspective of Valentine's day. *Advances in Consumer Research*, 33, 356–365. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1985864
- 24) Doyle, J. R., & Chen, C. H. (2012). A multidimensional classification of market anomalies: Evidence from 76 price indices. *Journal of International Financial Markets, Institutions and Money*, 22(5), 1237–1257. <https://doi.org/10.1016/J.INTFIN.2012.07.003>
- 25) Du Toit, E., Hall, J. H., & Pradhan, R. P. (2018). The day-of-the-week effect: South African stock market indices. *African Journal of Economic and Management Studies*, 9(2), 197–212. <https://doi.org/10.1108/ajems-07-2017-0163>
- 26) Elangovan, R., Irudayasamy, F. G., & Parayitam, S. (2022). Testing the market efficiency in Indian stock market: evidence from bombay stock exchange broad market indices. *Journal of Economics, Finance and Administrative Science*, 27(54), 313–327. <https://doi.org/10.1108/jefas-04-2021-0040>
- 27) Fama, E. F. (1970). Efficient capital market: a review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. <https://doi.org/10.2307/2325486>
- 28) Grgich, L. (2024). 2024 Valentine's Day consumer trends. *National Retail Federation*. Retrieved on December 09, 2023, from <https://nrf.com/blog/2024-valentines-day-consumer-trends>
- 29) Haa. (2022). Anti resesi! Ekonomi Asean diramal tumbuh nyaris 5% di 2023. *CNBC Indonesia*. Retrieved on December 09, 2023, from <https://www.cnbcindonesia.com/news/20221011185824-4-378963/anti-resesi-ekonomi-asean-diramal-tumbuh-nyaris-5-di-2023#:~:text=Selain efek perlambatan di negara mitra dagang%2C penurunan,ke sasaran ikut berperan dalam pelemahan ekonomi Asean>
- 30) Huang, C. L., & Goo, Y. J. (2008). Are happy investors likely to be overconfident? *Emerging Markets Finance and Trade*, 44(4), 33–39. <https://doi.org/10.2753/REE1540-496X440403>
- 31) Isranews. (2017). NECTEC reveals netizens are in tune with Valentine's Day, posting over 1.2 million comments. *Isranews*. Retrieved on December 09, 2023, from <https://www.isranews.org/content-page/item/54106-valentine17022017-1.html>
- 32) Izzahdi, H. Q., & Suryani, A. W. (2023). Covid-19 vaccination, government strict policy and capital market volatility: evidence from ASEAN countries. *Ikonomicheski Izsledvania*, 32(2), 117–135. <https://ideas.repec.org/a/bas/econst/y2023i2p117-135.html>
- 33) Jung, S. H., & Jeong, Y. J. (2021). Examining stock markets and societal mood using Internet memes. *Journal of Behavioral and Experimental Finance*, 32(December), 1–16. <https://doi.org/10.1016/j.jbef.2021.100575>
- 34) Kang, H.-J., Lee, S.-G., & Park, S.-Y. (2022). Information Efficiency in the Cryptocurrency Market:The Efficient-Market Hypothesis. *Journal of Computer Information Systems*, 62(3), 622–631. <https://doi.org/10.1080/08874417.2021.1872046>
- 35) Kiky, A. (2018). Kajian empiris teori pasar efisien (efficient market hypothesis) pada bursa efek Indonesia. *Jurnal Bina Manajemen*, 6(2), 138–156. <https://wiyatamandala.e-journal.id/JBM/article/view/4>
- 36) Kim, K., & Ryu, D. (2022). Sentiment changes and the Monday effect. *Finance Research Letters*, 47(June), 1–5. <https://doi.org/10.1016/j.frl.2022.102709>
- 37) Kourtidis, D., Šević, Ž., & Chatzoglou, P. (2016). Mood and stock returns: evidence from Greece. *Journal of Economic Studies*, 43(2), 242–258. <https://doi.org/10.1108/jes-09-2014-0158>
- 38) Lepori, G. M. (2015). Positive mood and investment decisions: evidence from comedy movie attendance in the U.S. *Research in International Business and Finance*, 34(May), 142–163. <https://doi.org/10.1016/j.ribaf.2015.02.001>
- 39) Liang, C., Tang, L., Li, Y., & Wei, Y. (2020). Which sentiment index is more informative to forecast stock market volatility? evidence From China. *International Review of Financial Analysis*, 71(October), 1–11. <https://doi.org/10.1016/j.irfa.2020.101552>
- 40) Lobão, J. (2019). Seasonal anomalies in the market for American depository receipts. *Journal of Economics, Finance and Administrative Science*, 24(48), 241–265. <https://doi.org/10.1108/jefas-09-2018-0088>
- 41) Malaymail. (2023). Bursa Malaysia opens higher amid positive market sentiment. *Malaymail*. Retrieved on December 09, 2023, from <https://www.malaymail.com/amp/news/money/2023/02/14/bursa-malaysia-opens-higher-amid-positive->

market-sentiment/54839

- 42) Mangahas, & Mahar. (2021). The SWS Valentine survey. *Phillipine Daily Inquirer*. Retrieved on December 09, 2023, from <https://opinion.inquirer.net/137695/the-sws-valentine-surveys-2>
- 43) Metawa, N., Hassan, M. K., Metawa, S., & Safa, M. F. (2019). Impact of behavioral factors on investors' financial decisions: case of the Egyptian stock market. *International Journal of Islamic and Middle Eastern Finance and Management*, 12(1), 30–55. <https://doi.org/10.1108/imefm-12-2017-0333>
- 44) Mitchell, C. (2023). State Street Investor Confidence Index: Meaning, Uses. *Investopedia*. Retrieved on December 09, 2023, from <https://www.investopedia.com/terms/s/state-street-confidence-index.asp>
- 45) Morse, K. A., & Neuberg, S. L. (2004). How do holidays influence relationship processes and outcomes? examining the instigating and catalytic effects of valentine's day. *Personal Relationships*, 11(4), 509–527. <https://doi.org/10.1111/j.1475-6811.2004.00095x>
- 46) Munusamy, D. (2018). Islamic calendar and stock market behaviour in India. *International Journal of Social Economics*, 45(11), 1550–1566. <https://doi.org/10.1108/ijse-09-2017-0404>
- 47) Murtadho, M. Al. (2020). *Beranda Metro Bupati Bogor: Hari Valentine Bukan Budaya Asli Indonesia*. Retrieved on December 09, 2023, from <https://metro.tempo.co/read/1307374/bupati-bogor-hari-valentine-bukan-budaya-asli-indonesia>
- 48) Naufa, A. M., Lantara, I. W. N., & Lau, W. Y. (2019). The impact of foreign ownership on return volatility, volume, and stock risks: evidence from ASEAN countries. *Economic Analysis and Policy*, 64(December), 221–235. <https://doi.org/10.1016/j.eap.2019.09.002>
- 49) Nurmutia, E. (2023). Momen Valentine, sektor saham ini bakal kecipratan untung, cek rekomendasinya. *Liputan6*. Retrieved on December 09, 2023, from <https://www.liputan6.com/saham/read/5204848/momen-valentine-sektor-saham-ini-bakal-kecipratan-untung-cek-rekomendasinya>
- 50) Nyakurukwa, K., & Seetharam, Y. (2022). Can a 280 character message explain stock returns? Evidence from South Africa. *Managerial Finance*, 48(4), 663–686. <https://doi.org/10.1108/mf-12-2021-0598>
- 51) OJK. (2019). Pengertian Bearish dan Bullish di Pasar Modal. *Otoritas Jasa Keuangan*. Retrieved on December 09, 2023, from <https://sikapuangmu.ojk.go.id/FrontEnd/CMS/Article/20642>
- 52) Ozkan, N. (2019). Hijri calendar effect in Borsa Istanbul gold market and Turkey's foreign exchange market. *Journal of Islamic Accounting and Business Research*, 10(4), 580–590. <https://doi.org/10.1108/jiabr-04-2017-0054>
- 53) Philpot, J., & Peterson, C. A. (2011). A brief history and recent developments in day-of-the-week effect literature. *Managerial Finance*, 37(9), 808–816. <https://doi.org/10.1108/03074351111153203>
- 54) Piccoli, P., Chaudhury, M., Souza, A., & da Silva, W. V. (2017). Stock overreaction to extreme market events. *North American Journal of Economics and Finance*, 41(July), 97–111. <https://doi.org/10.1016/j.najef.2017.04.002>
- 55) Pigorsch, U., & Schäfer, S. (2023). Anxiety in Returns. *Journal of Behavioral Finance*, 0(0), 1–17. <https://doi.org/10.1080/15427560.2023.2257344>
- 56) Popović, S., & Đurović, A. (2014). Intraday and intraweek trade anomalies: evidence from FOREX market. *Applied Economics*, 46(32), 3968–3979. <https://doi.org/10.1080/00036846.2014.948676>
- 57) Pratama, M. A. (2022). COVID-19 dan Efeknya ke Performa Pasar Modal Indonesia. *BI Institute*. Retrieved on December 09, 2023, from <https://www.bi.go.id/id/bi-institute/BI-Epsilon/Pages/Covid-19-dan-Efeknya-ke-Performa-Pasar-Modal-Indonesia.aspx>
- 58) Qadan, M., Aharon, D. Y., & Eichel, R. (2019). Seasonal patterns and calendar anomalies in the commodity market for natural resources. *Resources Policy*, 63(October), 1–22. <https://doi.org/10.1016/J.RESOURPOL.2019.101435>
- 59) Reddy, K., Qamar, M. A. J., & Rao, M. (2019). Return reversal effect in Shanghai A share market. *Managerial Finance*, 45(6), 698–715. <https://doi.org/10.1108/mf-04-2018-0140>
- 60) Rokhim, R., & Octaviani, I. (2019). Is there a Ramadhan effect on Sharia mutual funds? Evidence from Indonesia and Malaysia. *International Journal of Islamic and Middle Eastern Finance and Management*, 13(1), 135–146. <https://doi.org/10.1108/imefm-04-2019-0147>
- 61) Rosadi, D. (2011). *Analisis ekonometrika & runtun waktu terapan dengan R* (N. W. Kurniawan (ed.); I). Yogyakarta: ANDI
- 62) Rosdini, D., Sari, P. Y., Amrania, G. K. P., & Yulianingsih, P. (2020). Decision making biased: How visual illusion, mood, and information presentation plays a role. *Journal of Behavioral and Experimental Finance*, 27(September), 1–11. <https://doi.org/10.1016/j.jbef.2020.100347>
- 63) Rystrom, D. S., & Benson, E. D. (1989). Investor Psychology and the Day-of-the-Week Effect. *Financial Analysts Journal*, 45(5), 75–78. <https://doi.org/10.2469/faj.v45.n5.75>
- 64) Schermer, J. A., & Martin, N. G. (2019). A behavior genetic analysis of personality and loneliness. *Journal of Research in Personality*, 78(February), 133–137. <https://doi.org/https://doi.org/10.1016/j.jrp.2018.11.011>
- 65) Shahid, M. N., Sattar, A., Aftab, F., Saeed, A., & Abbas, A. (2020). Month of Ramadan effect swings and market

Valentine's Day and Abnormal Returns in Southeast Asia

- becomes adaptive. *Journal of Islamic Marketing*, 11(3), 661–685. <https://doi.org/10.1108/jima-12-2017-0140>
- 66) Shrestha, G. B., & Qiao, S. (2010). Statistical characterization of electricity price in competitive power markets. *2010 IEEE 11th International Conference on Probabilistic Methods Applied to Power Systems*, 48–53. <https://doi.org/10.1109/PMAPS.2010.5529006>
- 67) Shu, H.-C. (2010). Investor mood and financial markets. *Journal of Economic Behavior & Organization*, 76(2), 267–282. <https://doi.org/10.1016/j.jebo.2010.06.004>
- 68) Siegel, L. B. (2010). Black Swan or Black Turkey? The State of Economic Knowledge and the Crash of 2007–2009. *Financial Analysts Journal*, 66(4), 6–10. <https://doi.org/10.2469/faj.v66.n4.4>
- 69) Sing, N. B., & Singh, R. G. (2019). Market efficiency and inefficiency: an overview on the adaptive market hypothesis. *Management Convergence*, 10(2), 31–38. <https://ssrn.com/abstract=3431939>
- 70) Singh, S., & Das, C. (2020). Calendar anomalies in the banking and IT index: The Indian experience. *Asian Economic and Financial Review*, 10(4), 439–448. <https://doi.org/10.18488/journal.aefr.2020.104.439.448>
- 71) Stambaugh, R. F., Yu, J., & Yuan, Y. (2012). The short of it: Investor sentiment and anomalies. *Journal of Financial Economics*, 104(2), 288–302. <https://doi.org/10.1016/j.jfineco.2011.12.001>
- 72) Statman, M. (2005). Normal Investors, Then and Now. *Financial Analysts Journal*, 61(2), 31–37. <https://doi.org/10.2469/faj.v61.n2.2713>
- 73) Steinborn, M. (2023). Does the day-of-the-week effect exist in other asset classes? Investigation of the globally listed private equity markets. *Studies in Economics and Finance*, 41(1), 102–124. <https://doi.org/10.1108/sef-12-2021-0517>
- 74) Stracca, L. (2004). Behavioral finance and asset prices: Where do we stand? *Journal of Economic Psychology*, 25(3), 373–405. [https://doi.org/10.1016/S0167-4870\(03\)00055-2](https://doi.org/10.1016/S0167-4870(03)00055-2)
- 75) Tetlock, P. C. (2007). Giving Content to Investor Sentiment: The Role of Media in the Stock Market. *The Journal of Finance*, 62(3), 1139–1168. <https://doi.org/10.1111/j.1540-6261.2007.01232.x>
- 76) Tetteh, J. E., & Amoah, A. (2021). Stock market performance: is the weather a bother in the tropics? Evidence from Ghana. *Journal of Economic and Administrative Sciences*, 37(4), 535–553. <https://doi.org/10.1108/jeas-04-2020-0042>
- 77) Țilică, E. V., & Oprea, D. (2014). Seasonality in the Romanian Stock Market: The-day-of-the-Week Effect. *Procedia Economics and Finance*, 15(14), 704–710. [https://doi.org/10.1016/S2212-5671\(14\)00543-7](https://doi.org/10.1016/S2212-5671(14)00543-7)
- 78) Trisnadi, M. M., & Sedana, I. B. P. (2016). Pengujian anomali pasar : day of the week effect pada saham LQ-45 di bursa efek Indonesia. *E-Jurnal Manajemen Unud*, 5(6), 3794–3820. <http://dx.doi.org/10.1080/00036846.2014.948676>
- 79) Truong, Q.-T., Tran, Q.-N., Bakry, W., Nguyen, D. N., & Al-Mohamad, S. (2021). Football sentiment and stock market returns: Evidence from a frontier market. *Journal of Behavioral and Experimental Finance*, 30(June), 1–9. <https://doi.org/10.1016/j.jbef.2021.100472>
- 80) Tuyon, J., & Ahmad, Z. (2016). Behavioral finance perspectives on Malaysia stock market efficiency. *Borsa Istanbul Review*, 16(1), 43–61. <https://doi.org/10.1016/j.bir.2016.01.001>
- 81) Wang, W., Su, C., & Duxbury, D. (2022). The conditional impact of investor sentiment in global stock markets: A two-channel examination. *Journal of Banking and Finance*, 138(May), 1–21. <https://doi.org/10.1016/j.jbankfin.2022.106458>
- 82) Wang, Y., Liu, X., Ju, Y., Börner, K., Lin, J., Sun, C., & Si, L. (2021). Chinese e-romance : analyzing and visualizing 7.92 million alibaba Valentine ' s day purchases. *Data and Information Management*, 5(4), 363–371. <https://doi.org/10.2478/dim-2021-0006>
- 83) William. (2022). How is Valentine's Day Celebrated in Vietnam? *Vietnam Daily*. Retrieved on December 09, 2023, from <https://vietnamdaily.ca/culture/how-is-valentines-day-celebrated-in-vietnam/>
- 84) Wuthisatian, R. (2022). An examination of calendar anomalies: evidence from the Thai stock market. *Journal of Economic Studies*, 49(3), 422–434. <https://doi.org/10.1108/jes-06-2020-0298>
- 85) Yu, L. C., Wu, J. L., Chang, P. C., & Chu, H. S. (2013). Using a contextual entropy model to expand emotion words and their intensity for the sentiment classification of stock market news. *Knowledge-Based Systems*, 41(March), 89–97. <https://doi.org/10.1016/j.knsys.2013.01.001>



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