

## The Effectiveness of Technical Trading Strategy in Facing Phenomenon Sell in May on LQ45 Index Stocks



Edvin Pratana<sup>1</sup>, Umi Muawanah<sup>2\*</sup>, Oyong Lisa<sup>3</sup>, Sri Hastuti<sup>4\*</sup>

<sup>1,2,3,4</sup>Universitas Gajayana Malang

**ABSTRACT:** The Sell in May phenomenon is a concept where stock prices in the market decline, not reflecting the actual conditions. This phenomenon has occurred in the last 3 years on the Indonesia Stock Exchange during the month of May. This research aims to analyze the impact of the Sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index. This research is a type of descriptive study with a quantitative approach. The sampling method used purposive sampling 16 companies from the LQ45 Index during the research period. The research results prove that the sell in May phenomenon occurred 6 times out of the 10 periods studied. 4 out of the 6 occurrences of the sell in May phenomenon were dominated by the energy sector companies whose stocks performed poorly or negatively. The Parabolic Stop and Reverse technical strategy outperformed Simple Moving Average, Relative Strength Index, and Bollinger Band technical strategies.

**KEYWORDS:** Sell in May, LQ45 Index, & Technical Strategy

### INTRODUCTION

*Sell in May and Go Away* as one of the Market Anomalies. Fitriyani & Sari, (2013) in Zarika L.M., & Paramita, R.A.S., (2021) state, "The capital market anomaly has developed into a concept that states that the prices of stocks circulating in the market do not reflect the actual condition of a company's shares." According to data quoted from stockbit.com, over the past 3 years, the IHSG (Indonesia Stock Exchange) has consistently experienced a decline in value in May, specifically -0.8% in 2021, -1.11% in 2022, and -4.08% in 2023. Various countries also experienced a decline in value in year 2023, including the Malaysian stock market -2.04%, the Singaporean stock market -3.42%, the Hong Kong stock market -8.35%, the Chinese stock market -3.57%, the Australian stock market -2.98%, the British stock market -5.39%, the German stock market -1.62%, and the American stock market -3.48%. Zhao (2013) stated, "The phenomenon of 'sell in May and go away' negatively affects stock returns, especially in developing countries, including Indonesia, which is the subject of this research." Lloyd, et al. (2017) noted, "The phenomenon of 'sell in May and go away' negatively affects stock returns in 34 countries, including Indonesia." This phenomenon can be utilized by the public to obtain capital gains in the stock market. Tadas et al., (2023) "With the presence of technical analysis in decision-making regarding when to enter and exit stock trading and evaluate the current stock market trend." Technical analysts make investment assessments regarding future stock market movements based on graphical representations of past price and volume data (Srushti Dongrey, 2022). The accuracy and effectiveness of technical strategies that align with current market conditions are required to gain profits from stock trading transactions, especially in facing the sell in May phenomenon. The accuracy of technical strategies focuses on the number of correct technical strategy signals. Meanwhile, the effectiveness of technical strategies focuses on the number of correct and profitable signals in the technical strategy (Charoenwang. B, 2012). This study aims to analyze the impact of the Sell in May phenomenon and evaluate the accuracy and effectiveness of strategies among the Simple Moving Average, Parabolic Stop and Reverse, Relative Strength Index, and Bollinger Band in predicting stock movements during the sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index from 2014 to 2023.

There are several previous studies that serve as references for the current research, including: In the study by Bouman & Jacobsen, (2002) it was found that "there is a negative relationship between sell in May and go away and the stock market." There is a strong relationship between the length and timing of the summer holiday and the impact of this holiday on trading activities". Guo, et al, (2014) in their research found that "Sell in May and Go Away occurs in the Chinese stock market, where it negatively affects most industries in the Chinese stock market." Therefore, a trading strategy is needed that can protect investors from losses. However, research conducted by Hayati, et al. (2020) produced different findings, where "there is no Sell

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in May and Go Away phenomenon and January Effect. This is evidenced by the absence of significant differences between returns from May to October and returns from November to April." Research conducted by Hapsari, S.A & Sumarsono, (2021) aligns with Hayati, *et al*, (2020) where it was found that "the Sell in May and Go Away phenomenon only significantly affects the returns of certain sectors, namely the agricultural sector and other sectors. The Sell in May and Go Away phenomenon does not significantly affect the risk of the Sectoral Stock Price Index on the Indonesia Stock Exchange."

In the study by Pramudya R & Ichsan S, (2020) it was found that "the Moving Average Convergent Divergent indicator shows slower signals than the Bollinger Band and Relative Strength Index. Therefore, the Bollinger Band and Relative Strength Index are better than the Moving Average Convergent Divergent in capturing buy and sell signals." Tadas, *et al*, (2023) found that "the strategy of using Bollinger Bands and the Relative Strength Index (RSI) performed better than the Simple Moving Average (SMA) and the Exponential Moving Average (EMA). Where Bollinger Bands and the Relative Strength Index (RSI) provided higher positive values compared to the others." From the research that has been conducted, it can be explained that each researcher has the common goal of minimizing losses with the hope of maximizing profits. The difference in this research that the author has made is the timeframe used, the testing of technical analysis strategies, and the magnitude of the results obtained. The Dow Theory is a technical framework that predicts the market is in an upward trend if one of its averages rises above its previous highest price, accompanied or followed by a similar rise in another corresponding average. (investopedia.com). Stock prices will move negatively from May to October each year, which is a theory known as Sell in May and Go Away or the Halloween Effect. The effect of Sell in May and Go Away is that investors are harmed due to market conditions. This causes anxiety and fear during the period from May to October (Haggard, & Witte. 2010). In the research conducted by Bouman & Jacobsen (2002), it was found that "there are higher returns during the winter months compared to the summer months, indicating the presence of the Halloween Effect".

## THEORITICAL REVIEW

### Capital Market

The capital market is described as activities related to public offerings and trading of securities, public companies related to the issued securities, as well as institutions and professions related to securities. (UU Pasar Modal No 8 Tahun 1995). A stock index is a statistical measure that reflects the overall price movement of a selected group of stocks based on specific criteria and methodology, and is evaluated periodically. The LQ45 Index is an index that measures the price performance of 45 stocks with high liquidity and large market capitalization, supported by good company fundamentals (idx.co.id).

### Trading Strategy

A systematic discipline or methodology used to make decisions to buy or sell a stock within a certain period is called a Trading Strategy. All market participants use their own trading strategies in the market. There have been many trading strategies in the market over the years (Panchal & Gor, 2022). The strategies used by technical analysts stem from the idea that future stock prices are anticipated through the study of historical stock prices (Magui et al., 2023). According to Bansal (2018) in Magui et al., (2023) "Technical Analysis strengthens stocks to differentiate the expected changes in a stock". If the stock has made progress and reached its highest value, then the stock can be sold from its position, ensuring and generating profit. The principles of technical analysis according to Srushti Dongrey, (2022) among others, are :

1. The action reflected by the market ignore everything.
2. Stock prices always move in trends and tend to continue for some time and may reverse or not at another time.
3. History tends to repeat itself.
4. The market value of a stock is related to the supply and demand factors operating in the market.
5. Actions and reactions influenced by buying and selling pressure cause stock corrections and rallies.

Simple Moving Average serves as a price data smoother by continuously calculating the average price, thereby minimizing the impact of short-term random fluctuations on the stock price over a certain period. Used to determine the direction of a stock's trend or to identify levels of support and resistance (Hayes, 2022 in Magui et al., 2023). Parabolic Stop and Reverse is used to identify trends, and a series of points on the chart represent potential reversal points in the price movement of the traded asset. If the series of points are above the closing price chart, then Parabolic Stop and Reverse identifies a downtrend, and vice versa (Panchal & Gor, 2022). Srushti Dongrey, (2022) "Relative Strength Index identifies when a stock is experiencing a trend reversal." Bollinger Bands focus on volatility as trading bands and react quickly to major market movements. Bollinger Bands identify the existing price volatility level and are dynamic (Kouatli & Yunis, 2021).

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## RESEARCH METHODS

This research aims to determine the impact of the Sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index, as well as to evaluate the accuracy and effectiveness of technical strategies among the Simple Moving Average, Parabolic Stop and Reverse, Relative Strength Index, and Bollinger Band during the Sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index. The research employs a descriptive quantitative approach and uses descriptive statistical analysis. The data sampling technique used purposive sampling method, and the data collection technique used documentation technique, resulting in a sample size of 20 during this research period. Time series data is used in the research. The data used consists of daily closing stock price movements from May to August for companies listed on the LQ45 Index during the period from 2014 to 2023. The 1-month time series period in May is used to describe the changes in stock prices that occur during May in the research period. The 3-month time series period is used in the research with the aim of observing and adjusting the changes in stock prices to make quick adjustments to decisions and technical strategies in the future. The accuracy level focuses on technical strategies that generate the number of correct technical strategy signals divided by the total number of technical strategy signals.

Meanwhile, the effectiveness level focuses on technical strategies that generate the number of correct technical strategy signals as well as capital gains divided by the total number of technical strategy signals. The accuracy and effectiveness levels of technical strategies help market participants choose the strategies used to determine when to conduct buy or sell transactions in stocks to maximize income from the capital market through capital gains from the rising price movements of LQ45 Index stocks. The accuracy level in technical strategies is indeed important, but market participants should also pay attention to the effectiveness level of technical strategies to develop their current capital and minimize capital loss arising from the declining price movements of LQ45 Index stocks. The analysis results are used to determine the numerical outcomes of the impact of the Sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index, as well as to evaluate the accuracy and effectiveness of technical strategies among the Simple Moving Average, Parabolic Stop and Reverse, Relative Strength Index, and Bollinger Band during the Sell in May phenomenon on the Indonesia Stock Exchange LQ45 Index.

## RESULT AND DISCUSSION

### RESULT

The results of the Data Analysis show that the Sell in May phenomenon during the period from 2014 to 2023 is presented in Table 1 of the Sell in May phenomenon as follows:

**Table 1. The Sell in May Phenomenon**

No	Tahun	Sektor Usaha							Nilai Rata Rata Presentase Penurunan Harga Saham	Indikasi Sell in May
		Energi	Industri	Kesehatan	Keuangan	Konsumer	Material Dasar	Telekomunikasi		
1	2014	1,19%	-0,44%	-0,08%	0,10%	-0,08%	0,40%	0,75%	1,84%	Tidak Terjadi
2	2015	0,97%	-0,12%	0,05%	0,43%	0,66%	0,25%	0,18%	2,42%	Tidak Terjadi
3	2016	-0,72%	-0,43%	0,42%	0,08%	0,26%	-1,15%	0,45%	-1,08%	Terjadi
4	2017	-1,49%	-5,76%	0,10%	1,03%	0,47%	1,37%	-0,09%	-4,35%	Terjadi
5	2018	1,15%	-0,06%	-0,60%	-0,10%	0,09%	-0,48%	-0,57%	-0,57%	Terjadi
6	2019	-2,16%	-0,36%	-0,43%	-0,94%	-0,39%	-0,67%	0,11%	-4,84%	Terjadi
7	2020	2,23%	2,08%	0,16%	0,84%	-1,94%	2,61%	-0,14%	5,84%	Tidak Terjadi
8	2021	-1,19%	0,24%	0,06%	0,10%	-0,44%	-0,54%	0,49%	-1,28%	Terjadi
9	2022	2,99%	0,71%	0,59%	0,64%	2,60%	1,02%	0,00%	8,55%	Tidak Terjadi
10	2023	-3,09%	-1,30%	-0,12%	-0,05%	1,54%	-0,20%	-0,22%	-3,44%	Terjadi

**Data Source:** Researcher (2024)

Based on the analysis of Table 1, the "Sell in May" phenomenon occurred 6 times out of 10 years during the study period for stocks listed on the LQ45 Index. These occurrences were in 2016, 2017, 2018, 2019, 2021, and 2023. Meanwhile, in 4 out of the 10 years studied, the phenomenon did not occur for LQ45 Index stocks, specifically in 2014, 2015, 2020, and 2022. The most significant "Sell in May" phenomenon during the past decade was in 2019, with an average percentage decrease of -4.84% in LQ45 Index stock prices, primarily driven by the energy sector, which contributed a -2.16% decrease. Conversely, the smallest "Sell in May" effect occurred in 2018, with an average percentage increase of -0.57% in LQ45 Index stock prices, with the energy sector contributing the highest increase of 1.15%. During years when the "Sell in May" phenomenon did not occur, the largest average percentage increase in LQ45 Index stock prices was 8.55% in 2022, with the energy sector contributing the highest increase of 2.99%. The smallest average percentage increase was 1.84% in 2014, with the energy sector contributing the highest increase of 1.19%. The most accurate technical trading strategy for analyzing LQ45 Index stock trading is determined by the highest percentage of successful signals during the study period. Below is Table 2, which presents the percentage accuracy of various technical strategies by year.

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**Table 2. The Percentage Accuracy of Various Technical Trading Strategies by Year**

No	Tahun	Nama Strategi Teknikal			
		<i>Simple Moving Average</i>	<i>Parabolic Stop and Reverse</i>	<i>Relative Strength Index</i>	<i>Bollinger Band</i>
1	2014	75,00%	93,75%	12,50%	37,50%
2	2015	93,75%	100,00%	6,25%	12,50%
3	2016	75,00%	93,75%	18,75%	81,25%
4	2017	93,75%	100,00%	6,25%	25,00%
5	2018	81,25%	100,00%	31,25%	68,75%
6	2019	75,00%	93,75%	12,50%	6,25%
7	2020	43,75%	93,75%	25,00%	31,25%
8	2021	50,00%	87,50%	12,50%	43,75%
9	2022	75,00%	81,25%	6,25%	43,75%
10	2023	62,50%	87,50%	25,00%	37,50%

**Data Source:** Researcher (2024)

From Table 2, the percentage accuracy of technical trading strategies by year can be analyzed as follows. Simple Moving Average strategy exhibited fluctuations in accuracy, with the highest accuracy recorded at 93.75% in 2015 and 2017, and the lowest at 43.75% in 2020. Parabolic Stop and Reverse strategy consistently performed well, achieving the highest accuracy of 100% in 2015, 2017, and 2018, and the lowest accuracy of 81.25% in 2022. Relative Strength Index strategy showed limited accuracy, peaking at 31.25% in 2018 but dropping to a low of 6.25% in 2015, 2017, and 2022. Accuracy for Bollinger Band strategy also varied, with the highest accuracy at 81.25% in 2016 and the lowest at 6.25% in 2019. Next analysis table 3 presents the percentage accuracy of technical strategies by business sector.

**Table 3. The Percentage Accuracy of Technical Trading Strategies by Business Sector**

No	Nama Strategi Teknikal	Sektor Usaha							Nilai Presentase
		Energi	Industri	Kesehatan	Keuangan	Konsumer	Material Dasar	Telekomunikasi	
1	<i>Simple Moving Average</i>	14,38%	8,13%	3,75%	19,38%	13,13%	9,38%	4,38%	72,50%
2	<i>Parabolic Stop and Reverse</i>	17,50%	11,25%	6,25%	24,38%	15,63%	12,50%	5,63%	93,13%
3	<i>Relative Strength Index</i>	3,13%	1,88%	0,63%	5,63%	0,63%	3,13%	0,63%	15,63%
4	<i>Bollinger Band</i>	6,25%	7,50%	1,88%	9,38%	3,13%	5,00%	1,88%	35,00%

**Data Source:** Researcher (2024)

Based on table 3, the percentage value of accuracy based on technical strategies by business sector that has been analyzed, it is found that the Parabolic Stop and Reverse technical strategy has an average percentage value of accuracy by business sector by year of 93.13% with the financial business sector as the largest contributor. Followed by the Simple Moving Average technical strategy has an average annual accuracy percentage value by business sector of 72.5% with the financial business sector. The Bollinger Band technical strategy has an average annual accuracy percentage value by business sector of 35% with the financial business sector as the largest contributor, and the Relative Strength Index technical strategy has an average annual accuracy percentage value by business sector of 15.63% with the financial business sector as the largest contributor. The energy business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 17.5%, followed by the Simple Moving Average technical strategy of 14.38%, the Bollinger Band technical strategy of 6.25%, and the Relative Strength Index technical strategy of 3.13%. The industrial business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 11.25%, followed by the Simple Moving Average technical strategy of 8.13%, the Bollinger Band technical strategy of 7.5% and the Relative Strength Index technical strategy of 1.88%.

The health sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 6.25%, followed by the Simple Moving Average technical strategy of 3.75%, the Bollinger Band technical strategy of 1.88%, and the Relative Strength Index technical strategy of 0.63%. The financial business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 24.38%, followed by the Simple Moving Average technical strategy of 19.38%, the Bollinger Band technical strategy of 9.38%, and the Relative Strength Index technical strategy of 5.63%. The consumer business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 15.63%, followed by the Simple Moving Average technical strategy of 13.13%, the Bollinger Band technical strategy of 3.13%, and the Relative Strength Index technical strategy of 0.63%.

The basic materials business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 12.5%, followed by the Simple Moving Average technical strategy of 9.38%, the Bollinger Band technical strategy of 5%, and the Relative Strength Index technical strategy of 3.13%. The telecommunications business sector provides a high level of accuracy using the Parabolic Stop and Reverse technical strategy of 5.63%, followed by the Simple Moving Average technical

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strategy of 4.38%, the Bollinger Band technical strategy of 1.88%, and the Relative Strength Index technical strategy of 0.63%. An effective technical strategy in analyzing stock trading in the LQ45 Index is a technical strategy that has a correct signal success rate and prioritizes a positive return or profit value during the stock trading research period. The following is table 4 which presents data on the percentage value of effectiveness based on technical strategies by year.

**Table 4. The Percentage Effectiveness Values Based on Technical Strategies by Year**

No	Tahun	Nama Strategi Teknikal			
		Simple Moving Average	Parabolic Stop and Reverse	Relative Strength Index	Bollinger Band
1	2014	75,00%	93,75%	0,00%	37,50%
2	2015	0,00%	0,00%	0,00%	6,25%
3	2016	75,00%	93,75%	12,50%	81,25%
4	2017	68,75%	68,75%	0,00%	25,00%
5	2018	25,00%	50,00%	12,50%	68,75%
6	2019	43,75%	62,50%	6,25%	6,25%
7	2020	37,50%	68,75%	12,50%	25,00%
8	2021	12,50%	18,75%	0,00%	18,75%
9	2022	43,75%	50,00%	6,25%	25,00%
10	2023	31,25%	50,00%	12,50%	31,25%

**Data Source:** Researcher (2024)

From Table 4, the percentage effectiveness values based on technical strategies by year can be detailed as follows: the Simple Moving Average technical strategy experienced fluctuations in percentage effectiveness values each year, with the highest value being 75% in 2014 and 2016, and the lowest value being 0% in 2015. The Parabolic Stop and Reverse technical strategy experienced fluctuations in percentage effectiveness values each year, with the highest value being 21.33% in 2014 and 2016, and the lowest value being 0% in 2015. The Relative Strength Index technical strategy experienced fluctuations in percentage effectiveness values each year, with the highest value being 12.5% in 2016, 2018, 2020, and 2023, and the lowest value being 0% in 2014, 2015, 2017, and 2021. The Bollinger Band technical strategy experienced fluctuations in percentage effectiveness values each year, with the highest value being 81.25% in 2016, and the lowest value being 6.25% in 2015 and 2019. The percentage of profit obtained from the effectiveness percentage based on technical strategies each year is presented in Table 5.

**Table 5. The Percentage Value of Profit Obtained from the Percentage Value of Effectiveness Based on Technical Strategy by Year**

No	Tahun	Nama Strategi Teknikal			
		Simple Moving Average	Parabolic Stop and Reverse	Relative Strength Index	Bollinger Band
1	2014	4,82%	8,70%	0,00%	3,78%
2	2015	0,00%	0,00%	0,00%	0,45%
3	2016	19,02%	21,33%	3,30%	25,08%
4	2017	9,20%	8,81%	0,00%	6,07%
5	2018	1,99%	3,38%	1,69%	5,21%
6	2019	3,19%	5,84%	2,13%	1,50%
7	2020	7,38%	12,28%	8,42%	12,08%
8	2021	0,70%	0,44%	0,00%	0,80%
9	2022	4,20%	4,75%	0,78%	1,57%
10	2023	2,27%	3,35%	2,90%	4,10%

**Data Source:** Researcher (2024)

From Table 5, the percentage of profits obtained from the effectiveness value based on technical strategies by year can be described as follows: the Simple Moving Average technical strategy experienced fluctuations in the percentage of profits obtained from the effectiveness value each year, with the highest value being 19.02% in 2016 and the lowest value being 0% in 2015. The Parabolic Stop and Reverse technical strategy experienced fluctuations in the percentage of profits obtained from the effectiveness value each year, with the highest value being 21.33% in 2016 and the lowest value being 0% in 2015. The Relative Strength Index technical strategy experienced fluctuations in the percentage of profits obtained from the effectiveness value each year, with the highest value being 8.42% in 2020 and the lowest value being 0% in 2014, 2015, 2017, and 2021. The Bollinger Band technical strategy experienced fluctuations in the percentage of profits obtained from the effectiveness value each year, with the highest value being 25.08% in 2016 and the lowest value being 0.45% in 2015. Next, Table 6 presents data on the percentage effectiveness values based on technical strategies by business sector.



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**Table 6. The Percentage Value of Effectiveness Based on Technical Strategy by Business Sector**

No	Nama Strategi Teknikal	Sektor Usaha							Nilai Presentase
		Energi	Industri	Kesehatan	Keuangan	Konsumer	Material Dasar	Telekomunikasi	
1	<i>Simple Moving Average</i>	7,50%	3,13%	2,50%	13,75%	6,25%	6,25%	1,88%	41,25%
2	<i>Parabolic Stop and Reverse</i>	10,63%	5,63%	3,75%	15,63%	8,75%	8,13%	3,13%	55,63%
3	<i>Relative Strength Index</i>	0,63%	1,25%	0,63%	2,50%	0,00%	0,63%	0,63%	6,25%
4	<i>Bollinger Band</i>	6,88%	5,63%	1,88%	8,75%	3,13%	4,38%	1,88%	32,50%

**Data Source:** Researcher (2024)

Based on table 6, the percentage value of effectiveness based on technical strategies by business sector that has been analyzed, it is found that the Parabolic Stop and Reverse technical strategy has an average percentage value of effectiveness by year of 55.63% with the financial business sector as the largest contributor to the percentage value of the effectiveness of the Parabolic Stop and Reverse technical strategy. Followed by the Simple Moving Average technical strategy has an average percentage value of effectiveness by year of 41.25% with the financial business sector as the largest contributor to the percentage value of the effectiveness of the Simple Moving Average technical strategy. The Bollinger Band technical strategy has an average annual effectiveness percentage value of 32.5% with the financial business sector as the largest contributor to the effectiveness percentage value of the Bollinger Band technical strategy, and the Relative Strength Index technical strategy has an average annual effectiveness percentage value of 6.25% with the financial business sector as the largest contributor to the effectiveness percentage value of the Relative Strength Index technical strategy. The energy business sector provides a high percentage value of effectiveness using the Parabolic Stop and Reverse technical strategy of 10.63%. The industrial business sector provides a high percentage value of effectiveness using the Bollinger Band technical strategy and the Parabolic Stop and Reverse technical strategy of 5.63%, the Simple Moving Average technical strategy of 3.13%, and the Relative Strength Index technical strategy of 1.25%.

The health business sector provides a high percentage value of effectiveness using the Parabolic Stop and Reverse technical strategy of 3.75%, followed by the Simple Moving Average technical strategy of 2.5%, the Bollinger Band technical strategy of 1.88% and the Relative Strength Index technical strategy of 0.63%. The financial business sector provides a high percentage value of effectiveness by using the Parabolic Stop and Reverse technical strategy of 15.63%, followed by the Simple Moving Average technical strategy of 13.75%, the Bollinger Band technical strategy of 8.75%, and the Relative Strength Index technical strategy of 2.5%. Furthermore, the consumer business sector provides a high percentage value of effectiveness using the Parabolic Stop and Reverse technical strategy of 8.75%, followed by the Simple Moving Average technical strategy of 6.25%, the Bollinger Band technical strategy of 3.13%, and the Relative Strength Index technical strategy of 0%. The basic materials business sector provides a high percentage value of effectiveness using the Parabolic Stop and Reverse technical strategy of 8.13%, followed by the Simple Moving Average technical strategy of 6.25%, the Bollinger Band technical strategy of 4.38%, and the Relative Strength Index technical strategy of 0.63%. The telecommunications business sector provides a high percentage value of effectiveness using the Parabolic Stop and Reverse technical strategy of 3.13%, followed by the Simple Moving Average technical strategy and the Bollinger Band technical strategy of 1.88%, and the Relative Strength Index technical strategy of 0.63%. The results of the percentage of profit obtained from the percentage value of effectiveness based on technical strategies by business sector are presented in table 7.

**Table 7. Percentage Value of Profit Earned from Percentage Value of Effectiveness Based on Technical Strategy by Business Sector**

No	Nama Strategi Teknikal	Sektor Usaha							Nilai Presentase
		Energi	Industri	Kesehatan	Keuangan	Konsumer	Material Dasar	Telekomunikasi	
1	<i>Simple Moving Average</i>	1,61%	0,37%	0,18%	1,55%	0,63%	0,74%	0,19%	5,28%
2	<i>Parabolic Stop and Reverse</i>	2,14%	0,81%	0,34%	1,71%	0,72%	0,86%	0,31%	6,89%
3	<i>Relative Strength Index</i>	0,20%	0,18%	0,21%	1,11%	0,00%	0,14%	0,08%	1,92%
4	<i>Bollinger Band</i>	1,84%	1,36%	0,30%	1,41%	0,37%	0,66%	0,12%	6,06%

**Data Source:** Researcher (2024)

Based on table 7, the percentage value of profit obtained from the percentage value of effectiveness based on technical strategies by business sector that has been analyzed, it is found that the Parabolic Stop and Reverse technical strategy has an average profit percentage value by year of 6.89% with the energy business sector as the largest contributor to the percentage value of Parabolic Stop and Reverse technical strategy profits.

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### Discussion

The Sell in May phenomenon occurred as many as 6 out of 10 years during the study period. This is evidenced by a decrease in the value of the LQ45 Index share price and has a negative influence on the performance of the LQ45 Index share price movement. It looks like things started in 2016, 2017, 2018, 2019, 2021, and 2023. However, there are also years such as in 2014, 2015, 2020, and 2022 that do not experience the Sell in May phenomenon. This is evidenced by the increase in the value of the LQ45 Index share price and has a positive influence on the performance of the LQ45 Index share price movement. The next steps that can be taken by capital market players based on the discussion above include:

1. Looking for opportunities by understanding macroeconomic conditions and regulations at the beginning of the year. Capital market players look for opportunities from various data sources that are used to estimate where the capital market and business sectors have the potential to grow or move positively next. So that capital market players can identify the potential for the sell in may phenomenon to occur or not and mitigate potential losses from stock trading.
2. Understanding macroeconomic conditions and regulations. Capital market players observe and understand changes in macroeconomic conditions and current regulations that affect the capital market. If capital market players understand and know the factors that change macroeconomic conditions and regulations. Then capital market participants can create an adaptive stock trading strategy in changing money market conditions.
3. Analyze each business sector. By analyzing each business sector in depth, capital market participants can identify historical price movement patterns and market responses to various events that occur.
4. Analyze each company. By analyzing each company with the same business sector in depth, capital market participants can identify historical price movement patterns and market responses to a company from various events that occur. For example, understand how the market reacts to company announcements of increases or decreases in net income on a quarterly, semi-annual, or annual basis.
5. Learning related to the technical strategy to be used. Market participants are advised to study the historical data of stock price movements in the LQ45 Index, especially with the Simple Moving Average, Parabolic Stop and Reverse, Relative Strength Index, and Bollinger Band technical strategies. With the aim that capital market players can recognize and understand the signals of historical data signals of stock price movements in the LQ45 Index, especially with the Simple Moving Average, Parabolic Stop and Reverse, Relative Strength Index, and Bollinger Band technical strategies that have been studied previously.
6. Implement a portfolio diversification strategy based on the learning. Based on the analysis and learning of technical strategies, capital market participants can choose more profitable company business sectors and use technical strategies that are proven to produce a high level of accuracy and effectiveness in trading stocks that have been previously learned.

From the discussion of the steps that have been taken subsequently for capital market participants above, it can imply:

1. Reduce the risk of losses from negative stock performance. Capital market participants can reduce the risk of losses arising from negative stock price performance. By studying macroeconomic conditions, regulations, business sectors, technical strategies and portfolio verification strategies previously studied.
2. Increase confidence in decision making. With the education, information, and data obtained can make capital market players more confident in making decisions in stock trading.

The phenomenon of sell in may affects LQ45 Index stocks in some business sectors. It is proven that during the research period this occurred as many as 6x out of 10 research periods. Each business sector of the LQ45 Index shares has a different response to the Sell in May phenomenon. This is evidenced by the tendency of stock price movements in the energy and mobile industry business sectors to tend to be more volatile than the health, finance, consumer, basic materials, and telecommunications business sectors. The decline in the LQ45 Index share price which caused the Sell in May phenomenon to occur was supported by the industrial business sector (2017), and the energy business sector (2019 & 2023) as its ballast in the LQ45 Index share price movement. This supports the results of research conducted by Guo, *et al*, (2014) states "The phenomenon of sell in may occurs in the Chinese stock market. The effects of this phenomenon occur in most industries in the Chinese stock market. Although the effect of the sell in may phenomenon cannot always be explained, there are patterns that show its influence on market trend movements". This research is in line with the results of research conducted by Kouatli & Yunis, (2021) that "There are puzzling questions that will never have a direct answer. Answers such as whether prices move with the trend or prices reverse direction. Other environmental factors related to purchase volume and trend changes are important factors in making decisions to buy or sell. It is necessary to examine historical stock price data to develop appropriate technical strategies for each business sector."

From the description of data analysis Accurate technical strategies in analyzing stock trading in the LQ45 Index above that the Parabolic Stop and Reverse technical strategy is generally superior to the Simple Moving Average technical strategy,

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Bollinger Band technical strategy, and Relative Strength Index technical strategy based on by year and business sector in the percentage value of accuracy during the research period. This is evidenced by the Parabolic Stop and Reverse technical strategy dominating in all years and dominating the energy business sector, industrial sector, health business sector, financial business sector, consumer business sector, basic material business sector, and telecommunications business sector in the percentage value of strategy accuracy during this study. This is evidenced by the Parabolic Stop and Reverse technical strategy dominating the accuracy percentage value of all sectors during this research period. The financial business sector is superior in providing high accuracy percentage value results compared to the energy business sector, industrial business sector, basic materials business sector, consumer business sector, health business sector, and telecommunications business sector. So the accurate technical strategy in the study is the Parabolic Stop and Reverse technical strategy with the financial business sector which provides high accuracy results. The next steps that can be taken by capital market players based on the discussion above include:

1. Performance evaluation of the Parabolic Stop and Reverse technical strategy. By evaluating the performance of technical strategies thoroughly and in detail, especially in the financial business sector to determine the success or failure factors of the Parabolic Stop and Reverse technical strategy.
2. Adjustment of the Parabolic Stop and Reverse technical strategy. By adjusting the Parabolic Stop and Reverse technical strategy appropriately by considering the current market conditions, especially the financial sector so that every decision taken can deal with market changes or challenges that occur.
3. Testing, monitoring and updating the Parabolic Stop and Reverse technical strategy. By regularly testing, monitoring, and updating historical stock price data, especially for the broad financial business sector, to ensure that the Parabolic Stop and Reverse technical strategy is in line with the current market conditions of the financial business sector.

From the discussion of the steps that have been taken subsequently for capital market participants above, it can imply:

1. Confidence in making better decisions. With the education, information, and data obtained, it can make capital market players confident in choosing Parabolic Stop and Reverse technical strategies in particular and making decisions in trading, especially financial business sector stocks.
2. Reduce the risk of losses from negative stock price performance. Capital market participants can reduce the risk of losses arising from negative stock price performance. By studying macroeconomic conditions, regulations, business sectors, technical strategies and portfolio verification strategies previously studied.

From the description of data analysis technical strategies that produce a high level of effectiveness in trading LQ45 Index shares above that the Parabolic Stop and Reverse technical strategy is generally superior to the Simple Moving Average technical strategy, Bollinger Band technical strategy, and Relative Strength Index technical strategy based on by year and business sector in the percentage value of effectiveness during the research period. This is evidenced by the Parabolic Stop and Reverse technical strategy dominating in several years, such as in 2014, 2016, 2017, 2019, 2020, 2021, 2022, and 2023 and dominating the energy business sector, industrial sector, health business sector, financial business sector, consumer business sector, basic material business sector, and telecommunications business sector in the percentage value of strategy effectiveness during this study. Not only in terms of the percentage value of effectiveness, but the high profit percentage value of the Parabolic Stop and Reverse technical strategy. Where the Parabolic Stop and Reverse technical strategy dominates in the energy business sector, health business sector, financial business sector, consumer business sector, basic materials business sector, and telecommunications business sector.

So the effective technical strategy in the study is the Parabolic Stop and Reverse technical strategy with the energy business sector which provides high profit percentage value results. The next steps that can be taken by capital market players based on the discussion above include:

1. Evaluation of the Parabolic Stop and Reverse technical strategy. By evaluating the performance of technical strategies thoroughly and in detail, especially in the energy business sector, to determine the success or failure factors of the Parabolic Stop and Reverse technical strategy in generating profits.
2. Parabolic Stop and Reverse technical strategy adjustment. By adjusting the Parabolic Stop and Reverse technical strategy appropriately by considering the current market conditions, especially the energy sector so that every decision taken can face changes or market challenges that occur.
3. Testing, monitoring and updating of Parabolic Stop and Reverse technical strategy. By regularly testing, monitoring, and updating historical stock price data, especially in the broad financial business sector, to ensure that the Parabolic Stop and Reverse technical strategy is suitable for the current market conditions in the energy business sector.

From the discussion of the steps that have been taken subsequently for capital market participants above, it can imply:



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1. Confidence in making better decisions. With the education, information, and data obtained, it can make capital market players confident in choosing the Parabolic Stop and Reverse technical strategy in particular and making decisions in trading, especially energy business sector stocks.
2. Profitable companies. Capital market participants choose companies with a high level of profit based on the data of energy business sector companies and the data observation period.

From the technical strategies that have been stated that all technical strategies provide buy and sell signals during stock trading but have different results. The difference in results between technical strategies is because they move based on the focus and calculation methods of each strategy. The simple moving average technical strategy focuses on the aspect of identifying trend movements by signaling the presence of a straight line above or below the stock price. The parabolic stop and reverse technical strategy focuses on identifying trend reversals by signaling the presence of dots or balls above or below the stock price. The relative strength index strategy focuses on the aspect of identifying the momentum of stock price movements in an overbought or oversold state by signaling the presence of if the value is above 70 then the stock is declared in an overbought state and if the value is below 30 then the stock is declared in an oversold state. The bollinger band strategy focuses on the volatility aspect of stock price movements by signaling the existence of stock price movements if the price approaches the upper band then the stock is declared in an overbought state and if the price approaches the lower band then the stock is declared in an oversold state. Based on this research, researchers recommend that capital market players use the Parabolic Stop and Reverse technical strategy with the energy business sector and the financial business sector as a goal in trading LQ45 Index shares. This is based on the results of a high level of accuracy in the financial business sector and the results of a high level of profit in the energy business sector using the Parabolic Stop and Reverse technical strategy.

### CONCLUSION

Conclusions from research on the effectiveness of technical trading strategy in facing phenomenon sell in may on LQ45 index stock important conclusion. The impact of the Sell in May phenomenon. The Sell in May phenomenon shows that the decline in stock prices of various business sectors during the study period did occur 6x out of 10 periods of this study. Each business sector of the LQ45 Index stocks has a different response to the Sell in May phenomenon. During this study, the Sell in May phenomenon was dominated by the energy company business sector in 2017, 2019, 2021, and 2023. Of the various technical strategies in this study, the Parabolic Stop and Reverse technical strategy is superior to the Simple Moving Average technical strategy, the Relative Strength Index technical strategy, and the Bollinger Band technical strategy in terms of the results of the accuracy percentage value. This is indicated by the accuracy percentage value of the Parabolic Stop and Reverse technical strategy of 93.13% which is higher than the other technical strategies during the research period. The Parabolic Stop and Reverse technical strategy also excels in its effectiveness percentage value of 55.63% which is higher than other technical strategies. The highest effectiveness percentage value was in the financial business sector during this research period. However, the results of the percentage value of profits obtained from the high effectiveness value are in the energy business sector during this research period. It is important for capital market players to analyze in detail and choose the right technical strategy in making capital market transaction decisions to reduce the impact of the Sell in May phenomenon if it occurs.

### SUGGESTION

For future researchers, it is hoped that they can combine 2 or more technical strategies into 1 technical strategy. With the aim of creating a combination technical strategy in producing a high level of accuracy and a maximum level of profit. This research provides insight for capital market players and the government. Regarding the importance of more detailed insight into the factors that can make better decision making in stock trading or investing in stocks and formulating policies that support the stability of the company's business sector to minimize the occurrence of the Sell in May phenomenon. There are factors that affect the results of the study, especially such as changes in exchange rates, changes in market commodity prices, but are not analyzed in depth, which is a limitation of the researcher. Research data is limited to historical data on LQ45 Index stocks from 2014 to 2023, so the need for data expansion to determine the movement of the direction of the stock price trend.

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