Technical Analysis of Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index and Money Flow Index on The Stock Prices of Companies Listed on The IDX30 Index on The Indonesia Stock Exchange

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ABSTRACT: Every year, the number of investors in Indonesia is growing rapidly. To reduce the risk of loss, it is important to have a strategy in investing, one of which is by utilizing technical analysis. This study aims to assess the extent to which the technical analysis of the Moving Averages Convergence Divergence (MACD), Stochastic Oscillator (SO), Relative Strength Index (RSI), and Money Flow Index (MFI) indicators is effective in providing accurate signals related to stock prices during the 2024 Presidential Election on stock prices listed on the IDX30 Index. This study uses descriptive research with a quantitative approach. The method used in this study is technical analysis that focuses on understanding the relationship between the signals generated by the four indicators and stock price movements. Data analysis used is by accuracy testing and statistical difference testing. The results of the study showed that the four indicators have fairly good accuracy values, where the order of accuracy is the first MACD indicator 89%, the second SO indicator 81%, the third RSI indicator 79%, and the last MFI indicator 63%. However, based on statistical tests conducted, only the Moving Averages Convergence Divergence (MACD) indicator is effective in providing accurate signals related to stock prices during the 2024 Presidential Election for companies listed on the IDX30 Index. The results of this study are expected to provide insight into the signal strength of these technical indicators in predicting stock price movements, which in turn can be used by investors to make better investment decisions in the Indonesian capital market.

KEYWORDS: Accuracy, Investor, IDX30 Index, Technical analysis.

INTRODUCTION

Technological advances have given birth to a modern era marked by economic growth, social mobility, and cultural expansion. With increasingly sophisticated technology, many market players and companies are taking advantage of this innovation to attract public interest, one of which is to invest in the capital market. Securities companies create stock investment applications such as online stock trading and these applications can monitor stock price movements and company performance, including the Most, Hots, Ajaib Mobile Applications. Information about the advantages and disadvantages of investment, types and how to invest is increasingly easy to obtain. With increasingly easy access to investing and thanks to technological advances, investments that were previously only made by individuals with large capital, business interests, and entrepreneurs, have now begun to be reached by young investors, including students. The growth of Single Investor Id (SID) or single identity of stock investors can be seen in the following table:

Table 1. Growth of Single Investor Id (SID) Shares in the Indonesian Capital Market

Year	SID Stock	Growth (%)
2020	1.695.268	-
2021	3.451.513	103,59
2022	4.439.933	28,63
2023	5.255.571	18,37
2024	6.381.444	21,42

Source: PT Kustodian Sentral Efek Indonesia (KSEI) (Processed data)

Table 1.1 is presented based on data on the Indonesian Central Securities Depository Statistics page, recorded as of December 2024 the number of Single Investor Identification (SID) Shares reached 6,381,444 SID. Significant growth occurred in 2021 with a growth of 103.59% and continued to increase until December 2024. Investor growth reflects the interest of the Indonesian people to start investing in the capital market, especially stocks. This investor growth will further increase the number of transactions in the capital market. These new investors need a clear and reliable analysis so that it can be used as a reference and a means of calculating and projecting the results of their investment activities before these investors carry out buying and selling activities in the capital market. Any mistake in making investment decisions will result in losses for investors.

The analysis that investors can use is fundamental analysis and/or technical analysis. Fundamental analysis is the process of analyzing future stock prices based on company performance, its intrinsic value, current economic, market and industry conditions. Although it is a comprehensive analysis, fundamental analysis prioritizes analyzing financial statements. Some aspects that are considered in examining the financial statements are income, costs, assets, liabilities and all aspects of the company's finances. Market performance is not the main focus in fundamental analysis. So fundamental analysis is considered less feasible in determining investment decisions in buying or selling shares. Another assumption is that fundamental analysis will have difficulty getting a clear picture of the company's value such as company management and level of competition.

Technical analysis is often the main choice in the investment world. The reason for its popularity is because this analysis allows for a quick and easy assessment of the return on investment. The data that forms the basis of technical analysis comes from historical market data, such as stock prices, trading volumes, and other information. For technical analysis practitioners, this data is sufficient to be the basis for making investment decisions. In technical analysis, stock movements are reflected in the graphs which are the main indicators. These graphs act as a tool for monitoring stock movements over time. Unlike fundamental analysis which takes longer in the stock analysis process, technical analysis focuses more on stock movements which are represented in the form of graphs. This approach highlights how stock prices change over time through graphs, making it easier to monitor stock price movements, especially stocks from a company (Rahman, 2020). Previous studies that argue that the Stochastic Oscillator, Money Flow Index, Moving Average Convergence Divergence and/or Relative Strength Index indicators have an effect on stock prices include: Maricar (2023) used the Moving Average Convergence Divergence and Hybrid Moving Average Convergence Divergence indicators with Arnaud Legoux Moving Average with the aim of research integrating the three important analyzes to identify portfolio investments, the results of the Moving Average Convergence Divergence strategy are more effective than Moving Average Convergence Divergence-Arnaud Legoux Moving Average. In the 2019 Presidential and Vice Presidential Election, there was political competition between the Jokowi-Ma'ruf pair and the Prabowo-Sandi pair. Based on the Regulation of the General Election Commission of the Republic of Indonesia Number 7 of 2019 concerning the Third Amendment to the Regulation of the General Election Commission Number 7 of 2017 concerning the Stages, Programs, and Schedule for the Implementation of the 2019 General Election, the voting schedule is April 17, 2019 and the announcement of the recapitulation and determination of the results of the vote count for the national and international elections on May 21, 2019.

The dynamics after the announcement of the 2019 general election results were not conducive, where there were acts of rejection of the election results that won the Presidential and Vice Presidential Candidates Joko Widodo-KH Ma'ruf Amin. The stock market movement is still overshadowed by the risk of quite high uncertainty in yesterday's trading. Having opened down 0.05 percent, the Composite Stock Price Index (IHSG) then turned things around by rising to the green zone before finally falling back into the red zone and finally closing down 0.2 percent to 5,939.64. Elections in Indonesia, Malaysia and Thailand are believed to have information sensitivity if investors in each country respond to an event (Celis, 2015). The following presents the movement of the IHSG and IDX30 Index at the time of determining the results of the national and international election vote counts.
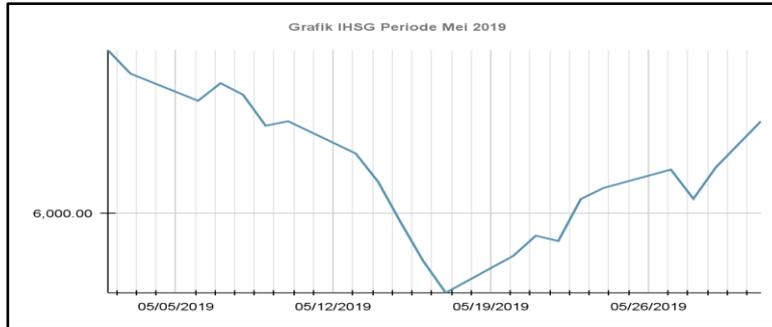
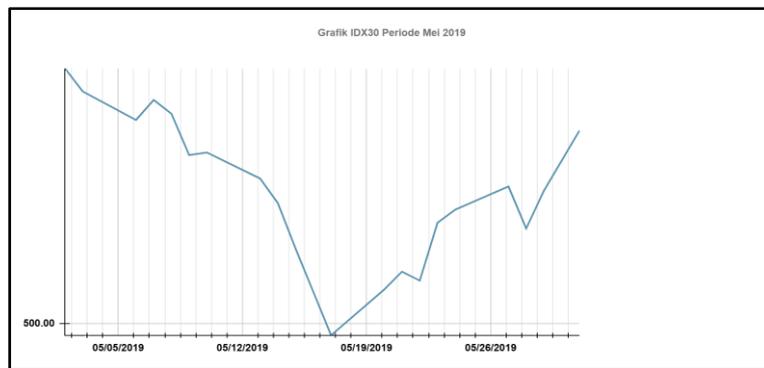**Figure 1. IHSG movement for the period May 2019 (processed data)**

Figure 2. IDX30 Index Movement for the Period of May 2019 (processed data)

Based on Figures 1.1 and 1.2, in May 2019, the JCI and IDX30 Index experienced a fairly drastic decline when the results of the winners were announced and the riots that occurred on May 21, 2019. The movement of the JCI and IDX30 Index rose again when the winner of the 2019 election was determined, namely the Jokowi and Ma'ruf pair.

In the 2024 Presidential Election, the General Election Commission officially determined three pairs of presidential and vice presidential candidates who will compete. The three pairs of presidential and vice presidential candidates determined by the KPU are Anies Baswedan and Muhaimin Iskandar, Prabowo Subianto and Gibran Rakabuming Raka, Ganjar Pranowo and Mahfud MD.

According to the General Election Commission Regulation Number 3 of 2022 concerning the Stages and Schedule for the Implementation of the 2024 General Election, it is stated that the Election Campaign Period will start from November 28, 2023 to February 10, 2024. Voting will be on February 14, 2024 and the determination of the Election results will be no later than three days after the Constitutional Court's decision is read out.
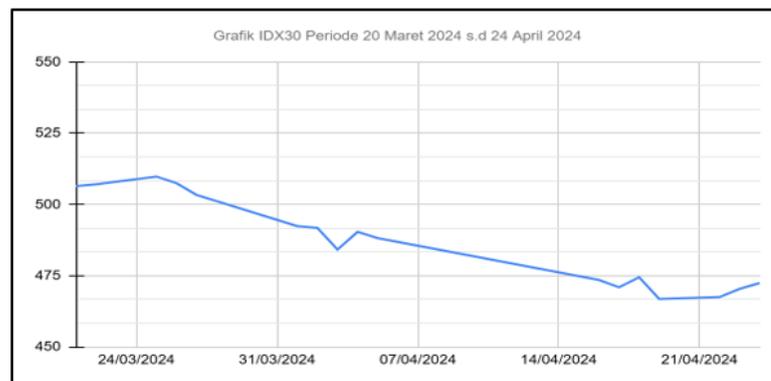

Figure 3. IHSG movement for the period 20 March 2024 to April 2024 (processed data)
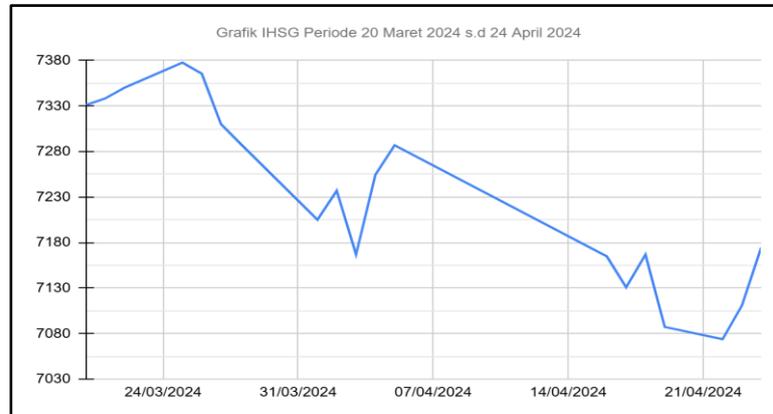
Figure 4. IDX30 movement for the period 20 March 2024 to April 2024 (processed data)

The correction of the JCI and IDX30 Index also occurred in the 2024 Presidential Election. Based on Figures 1.3 and 1.4, that in the period from March 20, 2024 to April 20249, the JCI and IDX30 Index experienced a decline starting from the announcement of the recapitulation of the vote count results until the determination of the elected President and Vice President on April 24, 2024.

Katti (2018) explained that political events are responded to by stock market players. However, in the simultaneous Regional Head Election event, the stock market did not respond to the event.

Several previous studies related to the election or presidential election event include Khan (2017), Khan studied the KSE-100 index on the Pakistan stock exchange for the period 1998-2013 found that there was a significant influence. However, Jiun's research (2018) found that in the Malaysian elections for the period 2007-2015 no influence was found. Diniar's (2015) research on the analysis of the impact of the presidential election on stock returns shows an influence.

Based on the background explained above, where there are various research gaps (Research Gap), growth of stock investors, stock movements during the Presidential Election and the measurement method of each technical analysis indicator that makes an interesting phenomenon in supporting this research to be carried out, the researcher wants to study the Technical Analysis of Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index and Money Flow Index on the stock prices of companies listed on the IDX30 Index on the Indonesia Stock Exchange.

Based on this, the title of this thesis is "Technical Analysis of Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index and Money Flow Index on the stock prices of companies listed on the IDX30 Index on the Indonesia Stock Exchange".

THEORETICAL REVIEW
Investment Theory

Investment is the sacrifice of your resources (time, money, and effort) today in the hope of gaining more resources in the future. Some investment alternatives such as stocks and bonds, and the amount of information about each of these alternatives is very large. (Laopodis, 2020) Based on this perspective, investment can be understood as a sacrifice that is currently made to gain benefits in the future. The purpose of investment is to generate income or appreciation through the acquisition of assets or goods (Hayes, 2022). The value of an asset tends to increase over time because it appreciates. People who buy goods as investments do not do so with the intention of using them for consumption, but rather to generate wealth in the future. According to Laopodis (2020), in a narrow sense, the investment environment refers to the various investment assets/instruments that can be bought and sold by individuals and institutions and the markets in which these assets are traded.

Efficient Market Hypothesis Theory

Efficient Market Hypothesis or known as Random Walk Theory states that the stock price formed is a reflection of all available information. The capital market is said to be efficient, one of which is if the stock price reflects all the information available in the market. All information must be available to investors, to know everything about the company and the company's shares. (Bodie, 2014).

Stock Price

Stock price is one of the important indicators that reflects the performance and market expectations of a company. Stock prices are influenced by various factors including the company's financial performance, growth prospects, industry conditions, market news and rumors, and external factors such as economic and political conditions (Khasanah, 2021).

The price of circulating shares usually fluctuates, namely it can increase and decrease. Fluctuations in stock prices are due to several factors. According to Zulfikar (2016), stock price fluctuations are influenced by 2 factors, namely internal factors and external factors. Internal factors mean that the rise and fall of stock prices are caused by the company's internal conditions such as sales, financial performance, management performance, company conditions and the industrial sector in which it operates. While external factors are factors that cause changes in stock prices due to conditions outside the company such as inflation, interest rates, foreign exchange rates, and non-economic factors such as social conditions, political conditions, and other factors.

Internal and external factors that affect the price of a stock can be easily identified. The difficult thing is to transform these internal and external factors into a valuation system that can be used to choose which stocks to buy and which stocks to sell to make a profit.

There are 2 methods that can be used in analyzing stocks, namely the fundamental method and the technical method. The fundamental method is a method that assesses stocks by studying indicators related to macroeconomic conditions and the company's industrial conditions to financial conditions and management. The technical method is a method for assessing stocks by evaluating stocks based on statistical data generated from stock trading activities, such as stock prices and transaction volumes (Widoatmodjo, 2015)

Investors are advised to use both stock analyses because stock prices are influenced by external and internal factors. External factors that affect stock prices include regulations, economic recession, market sentiment and others. While internal factors are influenced by dividend decisions, capital structure, risk and profit growth.

Technical Analysis

Technical analysis is an investment approach by studying historical data from stock prices and relating it to the trading volume that occurred and the economic conditions at that time. Technical analysis only considers stock price movements without considering the company's performance. Technical analysis is an effort to estimate stock prices by observing changes in stock prices in the past and an effort to determine when investors should buy, sell or hold their shares. Technical analysis uses market data from stocks, such as the price and volume of stock sales transactions to determine the value of the stock. (Sutrisno, 2017). According to Budiman (2020), most technical analysis methods use stock price charts to provide indicators or clues to technicians to make investment decisions. These indicators usually show when is the right time to buy and when is the right time to sell.

The historical stock prices will be processed with mathematical and statistical formulas that have been created to produce a buy and sell indicator. There are many types of technical analysis methods, such as: Candlestick, Moving Average, Moving Average Convergence Divergence, Relative Strength Index, Stochastic, Bollinger Bands, and so on. Basically, these techniques provide forecasts about future price movements (whether up or down), and provide indicators about when to buy and sell.

Accuracy of Technical Indicators

Technical indicators can be said to be accurate if the results of the analysis or predictions show the same results with reality. If the technical indicator shows that the stock trend will increase, then in reality what happens also shows an increase in the stock trend. In technical analysis there are many indicators that can be used, but here the researcher uses four indicators that are commonly used by traders or investors and with consideration of each basic type of indicator that has been described previously, because these indicators are easy to apply.

Stochastic Oscillator Theory

George Lane was the first person to introduce this indicator, which is used to measure the strength and momentum of stock price movements and to detect whether a stock price has entered the oversold or overbought area. According to Ong in a journal written by Mutmainah (2017), the Stochastic Oscillator is one of the Leading indicators, which is an indicator used to determine marketing momentum or market conditions. This Stochastic Oscillator is formed using two lines, namely the% K line and the% D line. The graph that describes the price position relative to the highest and lowest prices in a certain period is called the% K line, and this line is the main and most important line. While the% D line is often referred to as the trigger line.

Money Flow Index Theory

Money Flow Index is a technical analysis with inputs in the form of volume and stock price. Created by Gene Quong and Avrum Soudack, unlike other technical indicators, Money Flow Index combines volume as an additional input in its calculation. Like many leading technical indicators, both of these indicators assume that volume causes price, by understanding the nature of stock trading volume, technical analysts hope to anticipate the strength of a bullish/bearish trend or the possibility of a reversal. (Gulia, 2016)

The basic calculation of the Money Flow Index is the concept that price changes are influenced by the volume of money flow in a certain price range that causes stock prices to go up and down. In other words, the calculation of the Money Flow Index involves the average of the highest, lowest and closing prices (high, low, and closed) at a stock price. The average of the highest, lowest and closing prices is called the typical price. Changes in value from one trading day to the next create positive and negative relationships. Positive money flow trends towards higher prices, and negative money flow trends towards lower prices. The formula for calculating the Money Flow Index is as follows:

Money Flow Index = 100 - 100/(1 + Money Flow Ratio).

Moving Average Convergence Divergence Theory

Moving Average Convergence Divergence is a stock analysis technique created by Gerald Appel. When two different moving average lines are compared, Moving Average Convergence Divergence calculates a buy or sell signal based on where the lines meet. The Moving Average Convergence Divergence line is generated from the difference between the Exponential Moving Average signal line and the Moving Average Convergence Divergence line itself, these are two lines that can form a sell signal (dead cross) and a buy signal (golden cross). (Vaidya, 2020)

Moving Average Convergence Divergence provides a buy or sell signal based on the intersection between the Moving Average Convergence Divergence line and the signal line. When an intersection occurs where the Moving Average Convergence Divergence line moves from a position below the signal line to the top, this indicates a signal to buy. Conversely, if an intersection occurs where the Moving Average Convergence Divergence line moves from a position above the signal line to the bottom, this indicates a signal to sell. (Chio, 2022).

Relative Strength Index Theory

The Relative Strength Index was developed by J. Welles Wilder in 1978. The Relative Strength Index is an analysis that measures the speed of changes in increases and decreases in stock price movements. The Relative Strength Index indicator can provide information on whether market prices are overbought or oversold. (Wira, 2014). The Relative Strength Index is an oscillator indicator with a value range of 0 to 100. A Relative Strength Index value below 30 indicates oversold stocks, while above 70 means overbought (Glabadanidis, 2020). The Relative Strength Index is calculated based on the average daily gain of a stock over a certain period of time, generally the last 14 days.

The formula compares the average gain with the average loss. If the Relative Strength Index line breaks through level 30 from below, this can be a signal that it is the right time to buy because the stock is estimated to be undervalued. On the other hand, if the Relative Strength Index breaks above the 70 level, then it can be considered a good time to start taking profits (Shynkevich, 2018). Divergence between stock price movements and the Relative Strength Index is also important. For example, if the stock price continues to rise but the Relative Strength Index actually falls, this warns of a possible price reversal (Shapiro, 2018).

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

In order to achieve the research objectives as expected, the researcher prepared a design and conceptual framework which can be displayed graphically as follows:
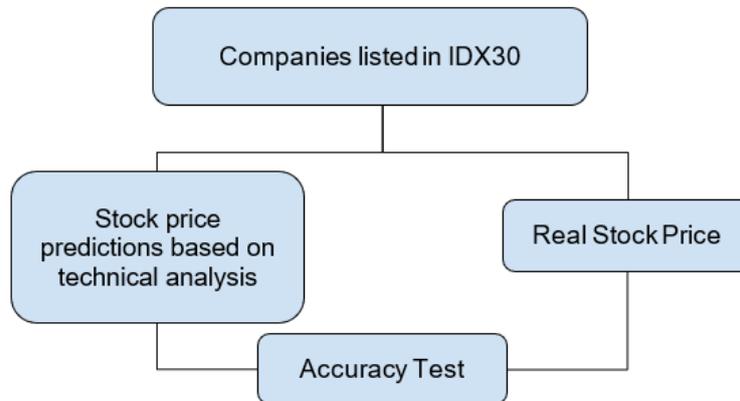
Figure 5. Conceptual Framework
Source: Data Processed by Researchers

Hypothesis

H0: Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index, and Money Flow Index are accurate in providing signals in predicting stock prices during the 2024 Presidential Election for companies listed on the IDX30 Index

H1: Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index, and Money Flow Index are not accurate in providing signals in predicting stock prices during the 2024 Presidential Election for companies listed on the IDX30 Index.

RESEARCH METHODOLOGY

This study uses descriptive analysis with a quantitative approach. The descriptive quantitative data analysis method is a method that helps describe, show or summarize data in a constructive way that refers to statistical descriptions that help understand data details by summarizing and finding patterns from certain data samples. (Aziza, 2023). The object of this research is the shares of companies listed on the IDX30 Index. Data processing is carried out based on information obtained through the history of stock price movements. In this study, researchers use a unique code to convert qualitative data into quantitative data. Providing a unique code to indicate the average difference in each signal so that it can facilitate data analysis.

This descriptive study uses four variables to determine the value of each variable without making a relationship with other variables or conducting research that aims to understand the situation that is determined objectively. This study uses conceptual variables, namely Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index, and Money Flow Index while the operational variables are the share prices of companies listed on the IDX30 Index on the Indonesia Stock Exchange. The population of this study is companies listed on the Indonesia Stock Exchange that are members of the IDX30 Index. Considering the openness of information, the selection and collection of sample data for this study using all populations (census method) as the research sample. The research sample is a company that actively trades its shares on the Indonesia Stock Exchange as many as thirty companies included in the IDX30 Index for the period January 15, 2024 to May 24, 2024 based on the IDX Announcement Attachment No. Peng-00020/BEI.POP/01-2024 dated January 25, 2024.

RESULTS

Descriptive Statistical Analysis
Accuracy Test based on observation
Table 2. MACD indicator Signal Prediction

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
1	ACES	3	0	3	100%
2	ADRO	5	0	5	100%
3	AKRA	6	0	6	100%
4	AMRT	3	0	3	100%

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
5	ANTM	4	0	4	100%
6	ARTO	4	0	4	100%
7	ASII	2	1	3	67%
8	BBCA	4	0	4	100%
9	BBNI	2	1	3	67%
10	BBRI	2	0	2	100%
11	BMRI	2	1	3	67%
12	BRPT	2	0	2	100%
13	BUKA	2	0	2	100%
14	CPIN	2	1	3	67%
15	GOTO	2	1	3	67%
16	ICBP	2	2	4	50%
17	INCO	3	0	3	100%
18	INDF	2	1	3	67%
19	INKP	1	1	2	50%
20	ITMG	4	0	4	100%
21	KLBF	3	0	3	100%
22	MDKA	3	0	3	100%
23	MEDC	4	0	4	100%
24	PGAS	3	0	3	100%
25	PGEO	3	0	3	100%
26	PTBA	3	0	3	100%
27	SMGR	3	0	3	100%
28	TLKM	2	0	2	100%
29	UNTR	3	0	3	100%
30	UNVR	2	2	4	50%
	Jumlah	86	11	97	89%

Source: Author, data processed from attachment 1 (2025)

Table 3. SO indicator Signal Prediction

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
1	ACES	5	1	6	83%
2	ADRO	6	0	6	100%
3	AKRA	4	1	5	80%
4	AMRT	2	2	4	50%
5	ANTM	4	0	4	100%
6	ARTO	4	2	6	67%
7	ASII	7	0	7	100%
8	BBCA	9	0	9	100%
9	BBNI	3	1	4	75%
10	BBRI	4	0	4	100%
11	BMRI	6	0	6	100%
12	BRPT	2	3	5	40%
13	BUKA	3	1	4	75%

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
14	CPIN	2	3	5	40%
15	GOTO	5	1	6	83%
16	ICBP	5	0	5	100%
17	INCO	5	1	6	83%
18	INDF	5	0	5	100%
19	INKP	4	2	6	67%
20	ITMG	5	1	6	83%
21	KLBF	8	1	9	89%
22	MDKA	6	0	6	100%
23	MEDC	4	1	5	80%
24	PGAS	3	4	7	43%
25	PGEO	3	0	3	100%
26	PTBA	5	0	5	100%
27	SMGR	3	1	4	75%
28	TLKM	4	1	5	80%
29	UNTR	3	1	4	75%
30	UNVR	4	3	7	57%
	Jumlah	133	31	164	81%

Source: Author, data processed from attachment 1 (2025)

Table 4. RSI indicator Signal Prediction

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
1	ACES	2	0	2	100%
2	ADRO	1	2	3	33%
3	AKRA	2	0	2	100%
4	AMRT	1	0	1	100%
5	ANTM	2	0	2	100%
6	ARTO	3	0	3	100%
7	ASII	3	0	3	100%
8	BBCA	1	0	1	100%
9	BBNI	2	1	3	67%
10	BBRI	1	1	2	50%
11	BMRI	2	0	2	100%
12	BRPT	1	0	1	100%
13	BUKA	2	1	3	67%
14	CPIN	1	0	1	100%
15	GOTO	1	0	1	100%
16	ICBP	2	1	3	67%
17	INCO	2	0	2	100%
18	INDF	1	1	2	50%
19	INKP	1	1	2	50%
20	ITMG	1	1	2	50%
21	KLBF	1	1	2	50%
22	MDKA	1	0	1	100%

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
23	MEDC	2	0	2	100%
24	PGAS	1	0	1	100%
25	PGEO	2	0	2	100%
26	PTBA	2	0	2	100%
27	SMGR	1	0	1	100%
28	TLKM	3	0	3	100%
29	UNTR	2	1	3	67%
30	UNVR	1	2	3	33%
	Jumlah	48	13	61	79%

Source: Author, data processed from attachment 1 (2025)

Table 5. MFI indicator Signal Prediction

No	Stock	True Signal	Failed Signal	Signal Total	Accuracy Value
1	ACES	2	1	3	67%
2	ADRO	0	2	2	0%
3	AKRA	3	0	3	100%
4	AMRT	2	1	3	67%
5	ANTM	2	0	2	100%
6	ARTO	2	0	2	100%
7	ASII	2	0	2	100%
8	BBCA	3	0	3	100%
9	BBNI	0	1	1	0%
10	BBRI	0	2	2	0%
11	BMRI	1	1	2	50%
12	BRPT	1	1	2	50%
13	BUKA	1	2	3	33%
14	CPIN	1	2	3	33%
15	GOTO	1	0	1	100%
16	ICBP	1	0	1	100%
17	INCO	2	2	4	50%
18	INDF	1	1	2	50%
19	INKP	0	2	2	0%
20	ITMG	2	1	3	67%
21	KLBF	2	0	2	100%
22	MDKA	1	1	2	50%
23	MEDC	2	0	2	100%
24	PGAS	2	1	3	67%
25	PGEO	1	0	1	100%
26	PTBA	1	1	2	50%
27	SMGR	2	1	3	67%
28	TLKM	3	0	3	100%
29	UNTR	1	1	2	50%
30	UNVR	1	1	2	50%
	Jumlah	43	25	68	63%

Source: Author, data processed from attachment 1 (2025)

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Recapitulation of Observation Accuracy Test Results

Table 6. Recapitulation of Accuracy Test Results of Technical Analysis on 30 IDX30 Company Shares

No.	Indicator	True Signal	Failed Signal	Signal Total	Accuracy Value
1	MACD	86	11	97	89%
2	SO	133	31	164	81%
3	RSI	48	13	61	79%
4	MFI	43	25	68	63%

Source: Author, processed data (2025)

Inferential Statistical Analysis

Results of Normality Test

Table 7. Normality Test Table

Technical Indicators	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MACD	0.233	30	0.001	0.867	30	0.001
SO	0.169	30	0.029	0.924	30	0.034
RSI	0.226	30	0.001	0.878	30	0.003
MFI	0.313	30	0.001	0.754	30	0.001

Source: Data processed with SPSS (2025)

Mann-Whitney Difference Test Results

Table 8. Mann-Whitney MACD Difference Test Results

Mann-Whitney U	340.5
Wilcoxon W	805.5
Z	-1.718
Asymp. Sig. (2-tailed)	0.086

Source: Data processed with SPSS (2025)

Table 9. Mann-Whitney SO Difference Test Results

Mann-Whitney U	272.5
Wilcoxon W	737.5
Z	-2.724
Asymp. Sig. (2-tailed)	0.006

Source: Data processed with SPSS (2025)

Table 10. Mann-Whitney RSI Difference Test Results

Mann-Whitney U	0
Wilcoxon W	465
Z	-6.807
Asymp. Sig. (2-tailed)	.001

Source: Data processed with SPSS (2025)

Table 11. Mann-Whitney MFI Difference Test Results

Mann-Whitney U	0
Wilcoxon W	465
Z	-6.774
Asymp. Sig. (2-tailed)	.001

Source: Data processed with SPSS (2025)

DISCUSSION

Moving Average Convergence Divergence (MACD) Indicator

The results of the accuracy test based on observations show that the MACD indicator is quite good at predicting or providing signals of increase or decrease in stock prices in 30 companies listed on the IDX30 Index. It is said to be quite good because the accuracy value of the MACD indicator is 89%, which means the accuracy value of the MACD indicator is> 50%. According to statistical tests as additional information for investors and as validation of the results of the observations made, information was obtained that the data distribution was not normal, so the next test carried out was a non-parametric test, namely the Mann Whitney difference test.

Based on the Mann Whitney test on the MACD indicator, it shows that the significance value is> 0.05, namely there is no significant difference between prediction and reality (quite accurate). This is in accordance with the accuracy value according to observations of 89% which according to Santoso, (2020) that the accuracy test is said to be quite good if the accuracy is> 50%.

The results of the accuracy of the MACD indicator are in line with the research of Sami et al., (2022), evaluating the accuracy of MACD and RSI predictions for various stocks, where the results of the analysis showed that a better prediction value was shown in the MACD indicator, which was 80% compared to RSI which was only 56%.

A different opinion from Ale (2017) used the Moving Average Convergence Divergence indicator with the aim of research to explore whether the Moving Average Convergence Divergence technical analysis tool was able to drive Lebanese stock traders to a higher level of profitability, the results were that the application of Moving Average Convergence Divergence in the decision-making process to invest in the Lebanese stock market did not provide a significant contribution to maximizing investment profitability.

Stochastic Oscillator (SO) Indicator

The results of the accuracy test based on observations show that the SO indicator is quite good at predicting or providing signals of increase or decrease in stock prices in 30 companies listed on the IDX30 Index. It is said to be quite good because the accuracy value of the SO indicator is 81%, which means the accuracy value of the SO indicator is> 50%. According to statistical tests as additional information for investors and as validation of the results of the observations made, information was obtained that the data distribution was not normal, so the next test carried out was a non-parametric test, namely the Mann Whitney difference test.

Based on the Mann Whitney test on the SO indicator, it shows that the significance value is <0.05, namely there is a significant difference between prediction and reality (less accurate). This does not correspond to the accuracy value according to observations of 81% which according to Santoso, (2020) that the accuracy test is said to be quite good if the accuracy is> 50%.

The results of the accuracy of the SO indicator are in line with Piyapas' research, (2015) using the Stochastics, Relative Strength Index, Money Flow Index indicators with the aim of research to determine the strength of bullish and bearish candle reversal pattern predictions both without technical filters and with technical filters (Stochastics, Relative Strength Index, Money Flow Index) by applying the skewness customized t test and binomial test, the results of Stochastic (% D), Relative Strength Index, or Money Flow Index generally do not increase the profitability or accuracy of candlestick predictions. A different opinion from Lyukevich (2020) using the Exponential Moving Averages, Stochastic Oscillator indicators with the aim of research to create a new trading strategy for the stock market, based on well-known technical indicators, the results of the Stochastic Oscillator provide fewer false signals on medium-term time frames than short-term time frames.

Relative Strength Index (RSI) Indicator

The results of the accuracy test based on observations show that the RSI indicator is quite good at predicting or providing signals of increases or decreases in stock prices in 30 companies listed on the IDX30 Index. It is said to be quite good because the accuracy value of the RSI indicator is 79%, which means the accuracy value of the RSI indicator is> 50%. According to statistical tests as additional information for investors and as validation of the results of observations made, information was obtained that the data distribution was not normal, so the next test carried out was a non-parametric test, namely the Mann Whitney difference test.

Based on the Mann Whitney test on the RSI indicator, it shows that the significance value is <0.05, namely there is a significant difference between predictions and reality (less accurate). This does not correspond to the accuracy value according to observations of 79% which according to Santoso, (2020) that the accuracy test is said to be quite good if the accuracy is> 50%.

The results of the accuracy of the RSI indicator are in line with Asri's research (2019) using the Variable Index Dynamic Average Indicator and the Relative Strength Index Indicator with the results of the comparison between the Variable Index Dynamic Average indicator and the Relative Strength Index indicator seen from the accuracy of the signal and the profit generated that the Variable Index Dynamic Average indicator produces a greater profit compared to the profit generated by the Relative Strength Index indicator. A different opinion from Hasan (2022) uses the Moving Average Convergence Divergence and Relative Strength Index indicators with the aim of research to understand the ability of the Moving Average Convergence Divergence & Relative Strength Index in terms of standard parameters to predict the direction of stock prices, the results of the Moving Average Convergence Divergence and Relative Strength Index are reliable technical indicators.

Money Flow Index (MFI) Indicator

The results of the accuracy test based on observations show that the MFI indicator is quite good at predicting or providing signals of increase or decrease in stock prices in 30 companies listed on the IDX30 Index. It is said to be quite good because the accuracy value of the SO indicator is 63%, which means the accuracy value of the SO indicator is> 50%. According to statistical tests as additional information for investors and as validation of the results of the observations made, information was obtained that the data distribution was not normal, so the next test carried out was a non-parametric test, namely the Mann Whitney difference test.

Based on the Mann Whitney test on the MFI indicator, it shows that the significance value is <0.05, namely there is a significant difference between prediction and reality (less accurate). This does not match the accuracy value according to observations of 63% which according to Santoso, (2020) that the accuracy test is said to be quite good if the accuracy is> 50%.

The results of the accuracy of the MFI indicator are in line with Tharavanij's (2017) research in Profitability of Candlestick Chart Patterns on the Stock Exchange of Thailand, that filtering by Stochastic (% D), RSI, or MFI generally does not increase profitability or accuracy of candlestick predictions. A different opinion from Phuong (2021) uses the Money Flow Index indicator with the aim of research to determine the effect of investor sentiment as measured by the Money Flow Index indicator on stock returns, the results of this indicator still have a significant impact on stock returns at all thresholds.

CONCLUSION

Based on the results of the research on the Technical Analysis of Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index and Money Flow Index on the stock prices of companies listed on the IDX30 Index on the Indonesia Stock Exchange, the following conclusions can be drawn:

1. Based on the observation results that the Technical Analysis of Moving Average Convergence Divergence, Stochastic Oscillator, Relative Strength Index and Money Flow Index are quite accurate in predicting stock price movements during the 2024 Presidential Election in companies listed on the IDX30 Index, the calculation of the percentage of accuracy for each indicator, with the highest technical indicator accuracy value being the MACD indicator 89%, SO 81%, RSI 79% and MFI 63%.
2. Based on statistical tests, it is known that only Moving Average Convergence Divergence is quite accurate in predicting stock price movements during the 2024 Presidential Election in companies listed on the IDX30 Index, while the Stochastic Oscillator, Relative Strength Index and Money Flow Index are less accurate.

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