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The Accuracy of Using the Moving Average Cross Indicator in Technical Analysis of Indonesian Banking Stocks

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Abstract

One popular technique for financial decision-making is the moving average cross. This indicator provides signals about future stock price movements. However, the accuracy of this indicator's signals will be evaluated specifically on banking stocks listed on the Indonesia Stock Exchange. Thirty Indonesian banking companies listed on the main trading board in 2026 were selected as the research stocks. A purposive sampling procedure was used to select the research subjects, with issuers on the main board having assets exceeding 100 billion Rupiah and having been listed on the market for at least three years. Issuers on the main board are considered large issuers and can attract investors' attention. The signals provided by the 30 research subjects will then be tested using logistic regression techniques using SPSS. This approach works well for research using moving averages that have been converted into dummy data. Statistical test results indicate that the moving average cross movement is insufficient to decide which banking stocks to purchase; only 46.67% of the signals from the moving average move in accordance with the signal. More comprehensive indicators in technical analysis can be added to the analysis to make decisions and pay attention to the fundamental level of the emiten.

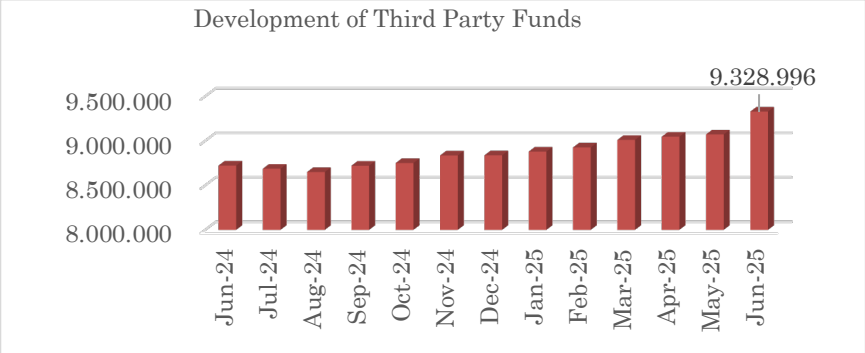
Keywords: *Technical Analysis, Bank's Emiten, Cross Moving Average, Investing*

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INTRODUCTION

Banking financial institutions, with their primary duty, as regulated by law, is to collect funds from the public and redistribute them in the form of credit. Banking in Indonesia serves as a point of reference for depositing, lending, and transferring assets. (Maulidya Fajrini 2025) Undeniably, these institutions offer a comprehensive range of services to support community activities. Banking is a key pillar of credit capital. These financial institutions play a crucial role in determining the direction of a country's economy. Banking capabilities are expected to contribute capital resources to entrepreneurs and trust institutions for investment product services. This crucial role can help build a better national economy in line with the public's financial preferences and behavior. Supporting this comprehensiveness and service, banks also maintain high levels of security in safeguarding each customer's assets, thus maintaining public trust amidst the onslaught of technology-based financial institutions. The following is data on public assets entering banks:

JURNAL PAMATOR
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Source: Indonesian Banking Statistics (2025)

Figure 1. Data on the Development of Third Party Funds of Commercial Banks

Based on data collected by Indonesian Banking Statistics, the public still entrusts their assets to banks for savings and investment. This data demonstrates that the public still has confidence in banks. This is certainly a positive fact that will further enhance the banking sector's success. Increased trust will facilitate banks' better credit distribution. The activities of financial institutions with strong inflows and disbursements are reflected in the company's profits, as reported in annual financial reports.

Companies that successfully record profits are highly sought after by investors. Growing profits, distributed by the company in the form of dividends, will increase demand for its shares. The company's ability to stabilize its performance will also be reflected in its share price. The book "The Intelligent Investor" explains that share prices will follow the performance of a company with strong financial reports. To explain this, investors considering investing in shares can use analytical techniques to assess price movements, namely technical analysis. (Graham 1959)

This analysis is based on each stock price traded on the stock exchange. The price for a single trading day is depicted on a single chart. This collection of charts will establish the company's stock price trend in the market. This analysis is helpful for investors who need to understand price movement conditions. Typically, price movements within an observation period are divided into three categories: uptrends, downtrends, and limited movements. The chart is supported by a moving average indicator, or MA. Research conducted by (Wiwin Lestari, A Ifayani Haanurat, Muchriana Muchran, 2025) indicates that the accuracy of the technical Moving Average is 75%, making it suitable for decision-making.

The Moving Average itself is an additional indicator or feature to emphasize the current trend in stock prices. However, the technical aspects of stock price movements cannot be ascertained solely by observing the trend recorded on the chart. Stock prices are highly dynamic and sensitive to all ongoing economic activity. However, indicators for stock investment are more familiar to new investors than the fundamentals of the issuer itself. (Mishkin 2017) This perception gap is what researchers will examine statistically to determine the magnitude of the moving average's contribution to forecasting direction. Understanding the contribution of one analytical tool to investing can provide investors with a reference point for developing market strategies. Therefore, this study is entitled "Accuracy of Using the MACD Indicator in Technical Analysis of Indonesian Banking Stocks."

RESEARCH METHODS

The data collection techniques in this study used observation and documentation. The researcher observed the stock price movements of the banking sector, the object of the

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study, using investing.com. The page provides a stock chart analysis feature, using a cross symbol on price movements. This data represents the average stock price data that has been converted into a graph in the Analysis tool. The data recorded by the Analysis tool displays a line that follows the candlestick of the stock price movement. There are two lines used in this study: the Cross MA 9 and 20. This means that the line is the result of the average data from price movements over 9 days and 20 days. Line 9 is more sensitive in responding to prices. If the MA 9 line crosses the 20 line downwards, it indicates a decline (Death Cross). Conversely, if the MA 9 line crosses the 20 line upwards, the price will experience an increase (Death Cross).

Observations will determine how many times the Moving Average (MA) line will cross. The collected data consists of golden crosses and death crosses. Researchers convert the observed and documented data into numerical values that can be calculated using statistical tools. If the stock price moves according to the displayed MA Cross, it is represented by the number 1; if the stock price does not move according to the MA signal, it is represented by the number 0. Logistic regression statistical testing will be used to measure the effect of the moving average on stock price movements. This method is used because the data used in the dependent variable is dichotomous, meaning the research data has only two possibilities: the price moves according to the signal or not. (Sofwatillah 2024)

The population of data observed consists of all 47 banking issuers listed on the Indonesia Stock Exchange. However, the stocks studied here are those listed on the main listing board of the Indonesia Stock Exchange, totaling 30, based on January 2026 data from the Indonesia Stock Exchange. These issuers are considered large companies and have greater value compared to similar issuers in the same sector. This technique adheres to purposive sampling principles. (Sucipto, 2025)

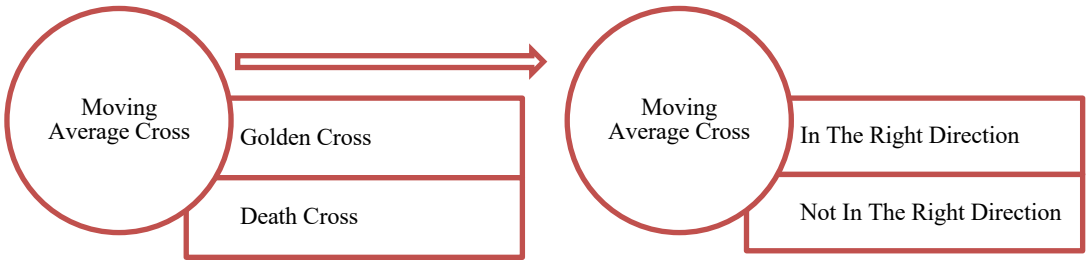


Figure 2. Conceptual framework for this study

RESULT AND DISCUSSION

Logistic Regression

Table 1: Case Processing Sumary

Case Processing Summary			
Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	360	100.0
	Missing Cases	0	.0
	Total	360	100.0
Unselected Cases		0	.0
Total		360	100.0

a. If weight is in effect, see classification table for the total number of cases.

Source: processed by researchers

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This study uses 360 data samples from 30 banking stocks on the main board of the Indonesia Stock Exchange. The 30 issuers as samples consist of MA Cross signals that appeared during the 2025 trading period. The signals in question are the intersection of the Moving Average 9 and Moving Average 20 lines. As explained in the method, the researcher will document the golden cross and death cross signals that are formed. However, the data is also supplemented with MA Cross signals that formed at the end of 2024 to ensure a minimum of 12 signals for each stock studied. The results of observations on the 30 issuers produced 12 MA Cross signals, so the total data to be tested in this study is 360 signal data..

Table 2: Clasification Table

Classification Table[a,b]

	Observed		Predicted		
			Direction of Movement		Percentage Correct
			Not moving in the direction	Moving in the direction	
Step 0	Direction of Movement	Not moving in the direction	192	0	100.0
		Moving in the direction	168	0	.0
	Overall Percentage				53.3

Source: processed by researchers

The classification table calculates the MA Cross signal data that moves according to the signal that appears and the price that does not move according to the signal. The 30 issuer data tested showed that 192 MA Cross signals, or 53.33%, did not move according to the signal, and 168 MA Cross signals, or 46.67%, moved according to the signal. This means that out of a total of 360 samples, only 46.67% of prices moved according to the signal, whether it was a golden cross or a death cross. This means that every time a signal appears, the price does not move according to the signal theory. For example, when a golden cross appears, the price should rise after the signal appears. In reality, what occurs in the market is that the stock price of the research object does not move according to the signal or even decreases. Likewise, when a death cross appears, the price movement should decrease when the signal appears, but the stock price of this banking issuer does not actually experience a decline according to the signal.

Table 3: Omnibus Test of Model Coeficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	.145	1	.703
	Block	.145	1	.703
	Model	.145	1	.703

Source: processed by researchers

Interpretation table of Omnibus model coefficient test: A significance value of 0.000 (<0.05) rejects H0, indicating that the addition of independent variables can have a significant impact on the model, or in other words, the model is declared APPROPRIATE. In this study, the results of the statistical test show a sig value of 0.703> 0.05, meaning that the Cross MA signal cannot predict future prices. Cross moving average signals, both death cross and golden cross, appear without providing certainty about the direction of the next

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movement. Investors cannot be fully certain of the signals given. Based on historical data, direction is not only determined by the cross indicator signal that appears. In other words, the model is declared NOT APPROPRIATE.

Table 4: Pseudo R Square

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	497.320[a]	.000	.001

a. Estimation terminated at iteration number 2 because parameter estimates changed by less than .001.

Source: processed by researchers

The 360 Signal data tested through the SPPS application shows that the Nagelkerke R Square Value is 0.001 and the Cox & Snell R Square is 0.001. These figures indicate that the ability of the independent variable to explain the dependent variable is only 0.001 or 0.1% and there are 100% - 0.1% = 99.9% other factors outside the model that explain the dependent variable, namely price movements. This means that Cross MA as an independent variable cannot perfectly explain the direction of subsequent stock price movements. There is too much possibility that variables that influence stock price movements are outside the Cross Moving Average indicator. Therefore, investors must find other variables to invest in banking stocks traded on the main board of the Indonesian Stock Exchange..

Table 5: Hosmer and Lemeshow Test

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Type of MA	-.081	.212	.145	1	.703	.923	.609	1.397
	Constant	-.095	.146	.428	1	.513	.909		

a. Variable(s) entered on step 1: Jenis MA.

Source: processed by researchers

The Chi Square table value for DF 1 (Number of independent variables - 1) and the significance level table 0.05 < 0.703, which means that the X variable represented by the Cross MA is not significant to the stock price movement. Therefore, the Exp (B) table that shows that the stock price can have a movement of 0.923 is still ignored because the influence of the significant results has no effect. This unfit model reinforces the need for investors to add additional variables or indicators to technical analysis. The Chi Square table value for DF 1 (Number of independent variables - 1) and the significance level table 0.05 < 0.703, which means that the X variable represented by the Cross MA is not significant to the stock price movement. Therefore, the Exp (B) table that shows that the stock price can have a movement of 0.923 is still ignored because the influence of the significant results has no effect. This unfit model reinforces the need for investors to add additional variables or indicators to technical analysis

CONCLUSION

This study shows that the Cross MA used for banking stocks listed on the main board of the Indonesia Stock Exchange cannot be used to predict subsequent price movements. This is consistent with the statistical test results discussed above, which indicate that the model is not FIT. Furthermore, highly dynamic stock price movements, influenced by

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market conditions and stock demand, can result in sudden changes in direction. These sudden changes are inversely proportional to the previously formed Cross MA, resulting in stock prices failing to move in accordance with the Cross MA technical analysis theory. When a golden cross signal appears, the price should move up, and when a death cross signal appears, the stock price will likely move down. However, this theory does not indicate significant results in this study. This means that the golden cross and death cross signals formed on the MA line cannot be used as a reference in making investment decisions.

The economic climate, such as policies directly related to the banking sector, must also be taken into account. The Cross MA can still be used as a complementary consideration or additional variable in investment decision-making. Although statistical tests indicate a low probability of movement in accordance with the signal, if the economy is healthy, government policies are supportive, and the issuer has sound internal finances, the Cross Moving Average signal provides confidence that prices will move in accordance with investor predictions. This suggestion is further strengthened because the Cross Moving Average is the result of average price movements converted into a graph in technical analysis. Stock prices are a reflection of healthy companies that indeed have high value. Although in this study, the reflection is closer to the theory of inefficient markets, where the market does not respond quickly to actual market conditions or the market does not reflect the true value of the company.

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