



## Mastering Market Movements: Technical Indicators in IDX30 Stock Selection

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### Abstract

This study aims to analyze the role of trading volume, foreign money flows, and technical chart patterns in shaping investment decisions for IDX30 companies. Utilizing descriptive quantitative research, data was collected from Stockbit and IPOT, focusing on stock price charts, trading volume, and broker summaries from January 1, 2020, to December 31, 2022. The findings reveal that purchase decisions were made when stock prices broke out of a chart pattern, accompanied by increased trading volume and foreign accumulation. Conversely, sell decisions occurred when stock prices broke down from a pattern, followed by increased volume and foreign distribution. These results underscore the importance of technical analysis in guiding informed investment decisions, helping investors avoid irrational practices and potential losses. The study highlights the practical need for investors to integrate technical indicators, such as volume and foreign flows, into their decision-making processes to enhance investment outcomes.

**Keywords:** *Foreign Flow Analysis, Investment Decisions, IDX30 Stock, Technical Analysis, Volume Analysis*

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## 1. INTRODUCTION

In recent years, the Indonesian stock market has grown rapidly. KSEI data in 2022, shows that from 2,484,354 in 2019 to 10,311,152 in December 2022, there was an increase in the number of capital market investors in Indonesia (KSEI, 2022). This increase in investor growth shows the public's positive enthusiasm for Indonesia's world of capital markets. However, not a few of them have sufficient knowledge about the capital market's familiar stock instruments. Some investors may enter the capital market without understanding and having basic knowledge, such as technical analysis of chart patterns, volume, and foreign flow. Investors who do not have sufficient knowledge often use information from influencers or follow their friends, this can result in investment losses, especially in stocks. In addition, the high growth of capital market investors has caused the value of foreign shares to approach half of the total value of shares, around 45%, while the value of local shares is around 55% (KSEI, 2022). The Indonesian stock market has many foreign investors who can influence changes in stock prices on the Indonesia Stock Exchange (IDX). The Indonesia Stock Exchange (IDX) lists eleven sectoral stock indices and 29 types of stock indices in Indonesia. The IDX updates the LQ45, IDX30, and IDX80 indices, which are stock indices with significant market capitalization and high liquidity, every six months and are supported by strong fundamental performance (Ardiansyah, 2017). The IDX30 index represents the performance of leading stocks on the IDX, and is a major investment target for many local and foreign investors.

According to (Lestari, 2020), investment knowledge is a fundamental understanding needed to make investments. The basis for encouraging the development of one's energy to take action is information, and an understanding of investment allows one to decide and consider options when investing. Therefore, an investor must understand various analyses before investing, including technical analysis, chart patterns, volume, and foreign flows. Technical analysis analyzes information generated by recent market activity and can forecast future price changes (Raditya & Sumirat, 2016). Chart patterns are specific patterns, such as head and shoulders and double tops, that appear on stock price charts. These trends can explain the potential for further price movements (Sekuritas, 2022). The amount of assets, or shares, traded over time is known as stock volume. The amount of shares exchanged between the daily open and close can be indicated by the volume of shares (Gibran, 2022). Foreign flow does not involve investors directly in company development because the funds invested in the capital market are securities or equity. Foreign flow has the nature of a more unrestrained and short-term movement, so it has a high level of liquidity and the opportunity to increase capital for domestic companies (Nurchayani & Sari, 2022).

Using buy and sell data, foreign flow analysis examines the flow of foreign capital into a stock. The first terminologies you should understand in this study are foreign net purchases and foreign net sales. Foreign net purchases refer to the total amount of net purchases made abroad in a given period worth more than the amount sold, while net sales indicate the opposite (Adrian, 2020).

The three analyses above can be combined into a powerful analysis. Chart pattern technical analysis needs confirmation from other analysis signals, such as volume, to determine how the market responds when a chart pattern is formed. The two analyses will become even better when foreign flow analysis is added to increase the probability of where the stock will move next. (Z., D., & Mirzaei H.R., 2023)

## 2. LITERATURE REVIEW

Investment analysis is the process of gathering, analyzing, and evaluating information to make smart investment decisions.

### a. Capital Market

Capital markets play an important role in a country's economy. Markets have economic purposes because they provide facilities or means that bring together people, investors with excess funds and issuers who need funds. Capital markets deliver possibilities and opportunities for fund owners to obtain returns based on the characteristics of the selected investment, namely the financial function. Businesses can use capital market funds for various purposes, including expansion, working

capital, and business development. In this way, the community can allocate their funds according to the needs and characteristics of the benefits and risks of each instrument (Martalena & Malinda, 2019).

#### b. Technical Analysis

Based on historical market data such as price and volume information, technical analysis is a method for predicting the direction of stock price movements and stock market indicators other. Technical analysis adherents argue that prices follow certain trends and will continue to do so. Another definition of technical analysis is the study of a security or the market as a whole based on supply and demand (Tandelilin, 2017).

#### c. Fundamental Analysis

Fundamental analysis is an approach to stock price analysis that focuses on the performance of the company issuing shares and the economic analysis that will influence it the future of the company, according to Sutrisno (2017). There are basic approaches to analysis and choosing shares. Company developments, balance sheets and income statements, business projections, collaboration, and expansion plans provide insight into the company's performance. In general, an increase in share prices will occur when the company's performance improves.

#### d. Chart Pattern Analysis

Chart patterns comprise three fundamental ideas: trend lines, support, and resistance. You may consider them more sophisticated versions of those ideas (Ong, 2016). While many other chart patterns are often used, two are commonly used: reversal patterns, which indicate a change in direction, and continuation patterns, which indicate a continuation of the trend. A reversal pattern is a pattern on a chart that indicates there is a high probability that the price will break away from the previous trend. It may be a hint or opportunity to sell at the lowest price or buy at the highest price. Continuation patterns, on the other hand, indicate that a trend remains even if its direction changes. Naturally, this often happens because market movements often undergo retracement or briefly deviate from the trend (RHB Securities, 2022).

Double top or bearish reversal, where two peaks form at the same level. Confirmation of the formation of a "Double Top" if the lowest line of the second valley has broken the neckline. The objective target price after the neckline break is the distance between the second peak to the neckline calculated from the break. (Jan Grudniewicz, 2023)

Double bottom is a bullish reversal, where two valleys form simultaneously. Confirmation of the formation of a "Double Bottom" if the lowest line of the second valley has broken the neckline. The objective target of the stock price after the neckline break is the distance between the second valley to the neckline calculated from the break.

#### e. Volume Analysis

Volume can be used to measure the strength of stock price fluctuations by displaying trading activity throughout the session or by reflecting the number of shares exchanged (Grobys, 2023). Trading professionals who use technical analysis should be able to read stock volume because the relative magnitude of market fluctuations can be determined by using it. Price fluctuations become more important when the volume is greater during such movements. On the other hand, price fluctuations will be less noticeable if the volume is smaller. Increasing volume and the price movement of a trend indicate that the trend is probably here to stay. On the other hand, if the volume decreases, it indicates that there may be a "change in trend direction" (Marco Mandas, 2023)

#### f. Foreign Flow Analysis

Foreign flow is an indicator that monitors the flow of foreign funds in a stock. Trade transactions and the amount of net foreign flow can be determined by observing the total net volume and the net value of trade by foreign investors, often referred to as net foreign buy and net foreign sell. Net foreign sales occur when foreign investors withdraw their funds or, in other words, make sales shares larger than the purchase amount, which can cause price increases, shares to move negatively, and stock returns to fall. Meanwhile, net foreign buy is when foreign investors make purchases with an amount greater than the amount sold; then, the share price will move positively and increase stock returns (Saputro & Swanjaya, 2023).

Flow: The inflow of money pushes up prices; conversely, the outflow of money will cause a price decline. Foreign investors rely on information as a basis for transactions. According to (Ruirui Zhu, 2023), falling prices are responded to by additional money outflows, which leads to more supply, resulting in increased selling pressure and deeper price corrections. In the case of Indonesia, it was found that the net flow of foreign funds affected the JCI positively and significantly. A broker summary is a feature that contains a real-time recap of net transactions from brokers on the stock. Through broker summary, we can see what brokers are net buying and what brokers are selling.

Understanding the broker summary can provide a very strong indication of the accumulation or distribution of stock on that day or within a certain period. The accumulation Pattern is a pattern for accumulating stocks. In an accumulation pattern, there is more buying activity than selling. Another characteristic is that the number of buyers is less than the number of sellers, and shares move from many parties to a few parties (Cucinelli & Soana, 2023). The accumulation phase is the first stock cycle phase, or can also be called stage one. In the accumulation phase, because there is still enough selling demand to balance the buying demand, the direction of the stock price trend is stagnant with a limited range (Sideways). (Yeng-May Tan, 2023)

### 3. RESEARCH METHOD

Descriptive quantitative research is the methodology used in this study. The information analyzed included graphs showing stock prices, trading volumes, and statistics of international buyers and sellers expressed in millions, billions, and trillions of dollars. These data points were combined to make conclusions. The stocks listed in the IDX30 Index constitute the study population. Purposive sampling was used in this study, and two stocks, BBRI and BBCA, were acquired.

This study's first data analysis stage involved entering broker summaries using IPOT software and stock price and volume movements using the Stockbit website. This research was conducted on stocks listed on the IDX30 and included in the sample from January 2020, to December 2022. The next step is to determine the chart pattern, volume, and foreign flow patterns in the stocks included in the sample. After conducting the analysis, it can determine the study's results and obtain conclusions that can be used to make decisions.

## 4. RESULTS AND DISCUSSION

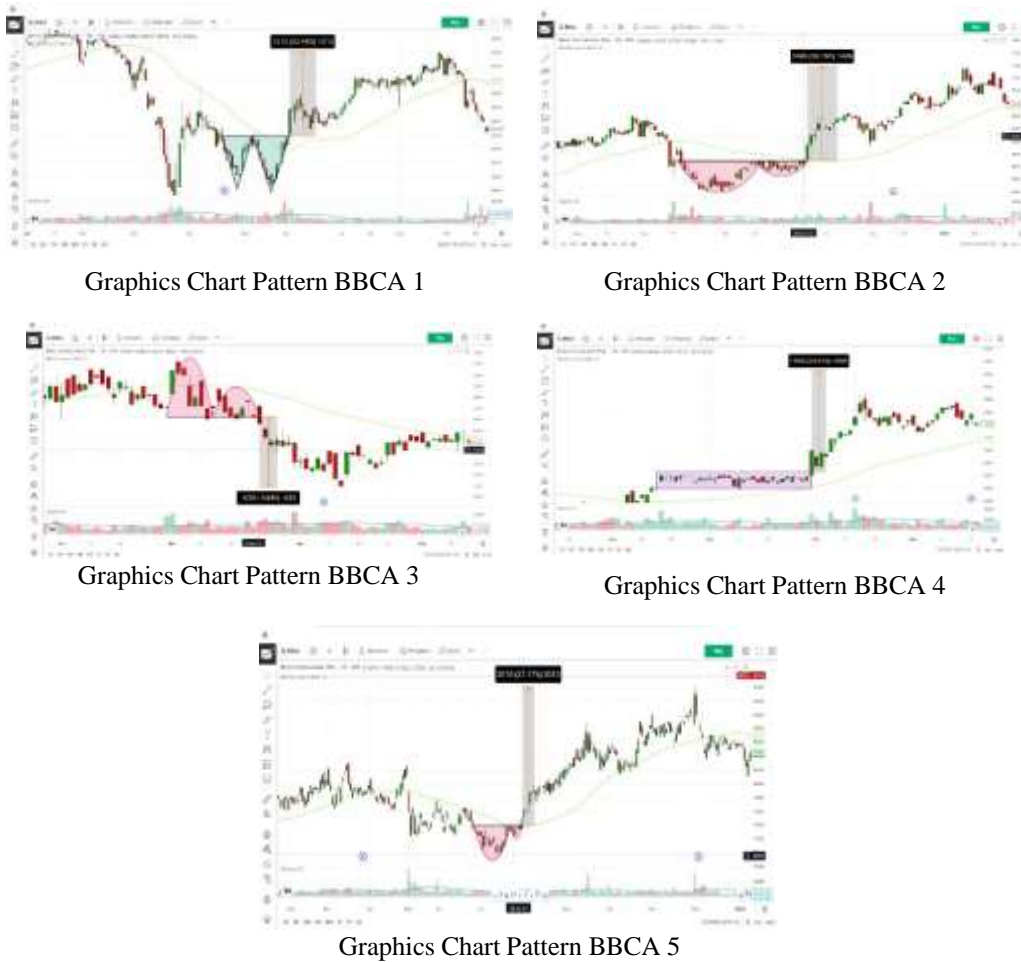
### 4.1 RESULTS

In this study, chart patterns are used to determine the direction of the trend and identify breakouts or breakdowns, while trading volume and foreign fund flows are used to confirm the stock movement patterns.

#### 1. Chart Pattern

According to Tannadi (2022), chart patterns are patterns formed from a collection of several candlesticks in a chart that can signal potential ups or downs in technical analysis. For example, the cup and handle are bullish continuation patterns, giving bullish signals (Ong, 2016).

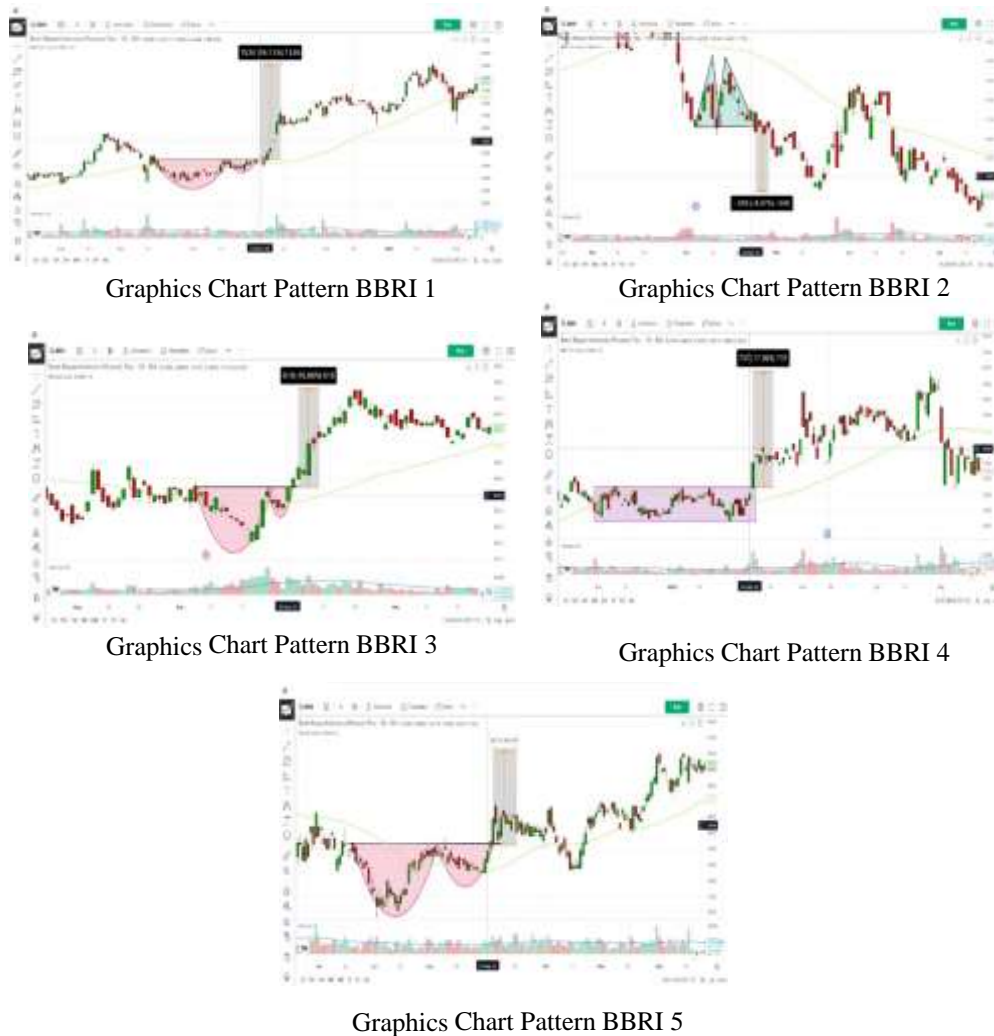
a. Technical Chart Pattern Bank Central Asia (BBCA)



**Figure 1.** Technical Chart Pattern Bank Central Asia

In BBCA shares, five chart patterns have occurred; the first pattern occurred on April 20, 2020, to June 02, 2020. BBCA formed a double bottom which then broke out on June 03, 2020, and prices tended to rise. The second pattern occurred from September 16, 2020, to November 04, 2020. BBCA formed a cup and handle, which then broke out on November 05, 2020, and prices tended to rise. The third pattern occurred from February 26, 2021, to March 22, 2021, BBCA formed an inverse cup and handle which then broke out on March 23, 2021, and prices tended to fall. The fourth pattern occurs on August 18, 2021, to September 29, 2021, BBCA forms a rectangle, which then breaks out on September 30, 2021, and prices tend to rise. The fifth pattern occurs on June 28, 2022, to July 29, 2022, BBCA forms a cup and handle which then broke out on August 1, 2022, and prices tend to rise.

## b. Technical Chart Pattern Bank Rakyat Indonesia ( BBRI )



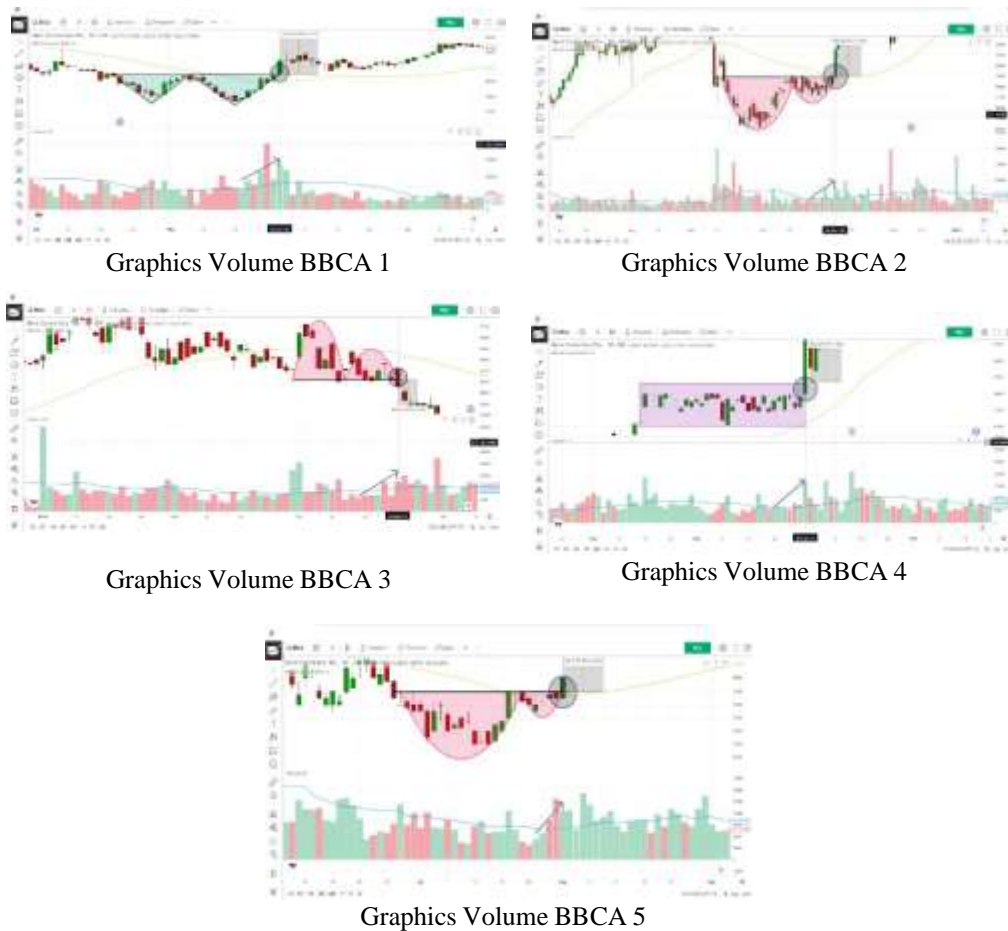
**Figure 2.** Technical Chart Pattern Bank Rakyat Indonesia

In BBRI shares, five chart patterns have occurred; the first pattern occurred from September 16, 2020, to November 03, 2020, BBRI formed a cup and handle, which then broke out on November 05, 2020, and prices tended to rise. A second pattern occurs between April 6, 2021, and April 23, 2021. BBRI's price plummeted after forming a double top and breakout on April 26, 2021. The third pattern occurred on September 06, 2021, to September 30, 2021. BBRI formed a cup and handle pattern, which then broke out on October 01, 2021, and prices tended to rise. The fourth pattern occurred on November 30, 2021, to February 04, 2022, BBRI formed a rectangle, which then broke out on February 07, 2022, and prices tended to rise. The fifth pattern occurs on June 21, 2022, to September 01, 2022, BBRI forms a cup and handle which then breaks out on September 02, 2022, and prices tend to rise. According to Tannadi (2022), chart patterns are patterns formed from a collection of several candlesticks in a chart that can signal potential ups or downs in technical analysis. For example, the cup and handle are bullish continuation patterns, giving bullish signals (Ong, 2016).

## 2. Volume

Based on the research above, in volume analysis, there was a tenfold volume increase when the chart pattern broke down on BBCA and BBRI stocks from January 2020, to December 2022. In volume analysis, if the volume increases from before the breakout to the breakout chart pattern, the price will continue to increase or decrease according to the direction of price movement during the breakout. According to (Ahmed Bouteska, 2023), volume can be an indicator tool that can be used as a confirmation tool in several ways. If an increasing volume follows the price movement in a trend, it indicates that the trend will tend to continue (Priyank Sonkiya, 2023).

a. Volume Bank Central Asia (BBCA)

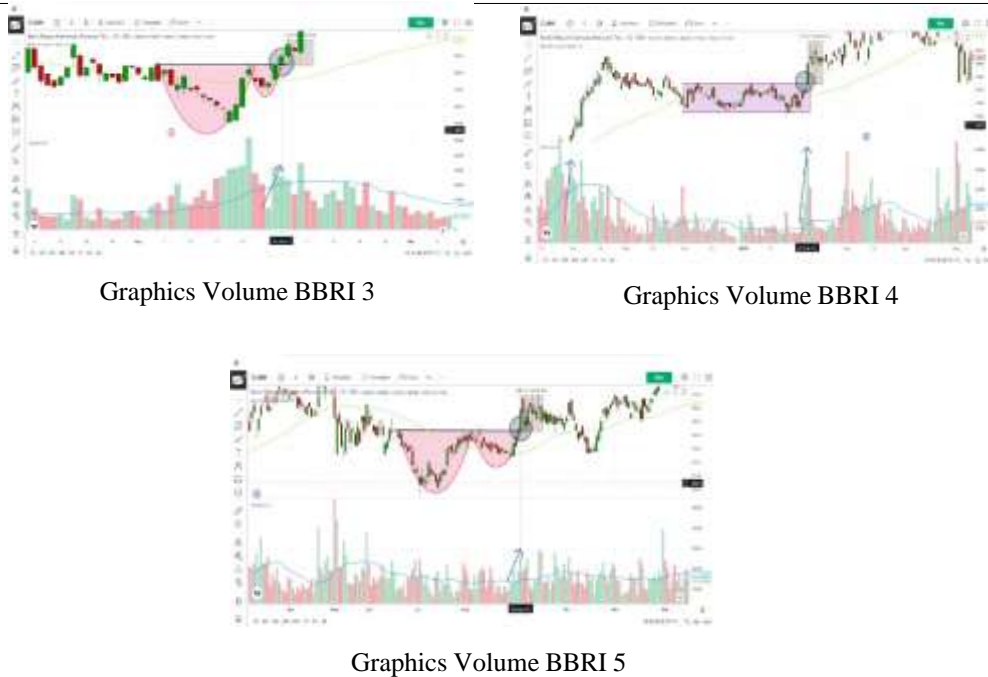


**Figure 3.** Volume Chart Pattern Bank Central Asia

In BBKA shares, there have been 5 volume increases when the chart pattern breakout occurred. The first volume increase occurred on May 20, 2020, to June 03, 2020, and prices tended to rise. The second volume increase occurred on October 22, 2020, to November 05, 2020, and prices tended to rise. The third volume increase occurred from March 15, 2021, to March 23, 2021, and prices tended to fall. The fourth volume increase occurred from September 22, 2021, to September 30, 2021, and prices tended to rise. The fifth volume increase occurred from July 26, 2022, to August 01, 2022, and prices tended to rise.

b. Volume Bank Rakyat Indonesia (BBRI)





**Figure 4.** Volume Chart Pattern Bank Rakyat Indonesia

In BBRI shares, there have been 5 volume increases when the chart pattern breakout occurred. The first volume increase occurred from October 26, 2020, to November 05, 2020, and prices tended to rise. From April 21, 2021, to April 26, 2021, there was a second surge in volume, but prices generally fell during that period. The third volume spike occurred from September 29, 2021, to October 01, 2021, and prices trended upwards. The fourth volume spike occurred from February 3, 2022, to February 7, 2022, and prices trended upwards. The fifth volume increase occurred from August 29, 2022, to September 05, 2022, and prices trended upwards.

### 3. Foreign Flow

This study uses foreign flow to complement the chart pattern and volume technical analysis to strengthen the results. Like research conducted by (Lumban Tobing et al., 2019), the solution to avoid or minimize the occurrence of errors is to combine the technical analysis obtained with foreign flow. What is sought in this study is whether there is accumulation (net foreign buy) or distribution (net foreign sell). Net foreign sales occur when foreign investors sell shares in an amount greater than the number of purchases. Meanwhile, net foreign buy is when foreign investors make purchases in an amount greater than the number of sales (Zulfan et al., 2021).



a. Foreign Flow Bank Central Asia (BBCA)

Table Foreign Flow BBKA 1

Code	NBY	NBLot	NBVal	BAvg	#	NSL	NSLot	NSVal	SAvg
AK	278,796	721.8 B	26,888.8	1	CS	186,817	473.2 B	26,716.1	
MS	137,339	562.8 B	26,289.9	2	BB	110,346	298.4 B	26,288.2	
ZP	121,352	308.8 B	26,647.0	3	K2	64,997	298.8 B	26,644.7	
YU	43,479	109.8 B	26,698.8	4	DF	4,213	11.2 B	26,624.1	
IK	23,775	60.8 B	26,575.2	5	IA	488	1.8 B	26,528.8	

Table Foreign Flow BBKA 2

Code	NBY	NBLot	NBVal	BAvg	#	NSL	NSLot	NSVal	SAvg
ZP	209,716	587.1 B	29,023.4	1	MS	198,362	548.8 B	28,828.2	
YU	189,491	548.8 B	28,829.2	2	K2	84,888	298.8 B	28,821.8	
BB	102,383	298.4 B	28,895.9	3	CC	79,328	236.1 B	28,828.8	
CG	68,329	193.4 B	28,914.8	4	AK	61,828	178.2 B	28,898.8	
IK	50,618	158.8 B	29,108.8	5	CS	62,794	167.8 B	29,092.8	

Table Foreign Flow BBKA 3

Code	NBY	NBLot	NBVal	BAvg	#	NSL	NSLot	NSVal	SAvg
ZP	162,838	440.0 B	34,226.7	1	MS	283,498	889.7 B	34,882.8	
IA	143,889	586.4 B	34,425.2	2	CS	262,888	475.7 B	33,888.8	
K2	187,193	372.7 B	34,158.7	3	AK	127,287	424.8 B	34,881.8	
YU	42,332	140.7 B	34,098.8	4	BB	88,282	198.1 B	34,188.8	
IK	28,538	138.7 B	34,282.8	5	CC	88,377	193.4 B	34,888.8	

Table Foreign Flow BBKA 4

Code	NBY	NBLot	NBVal	BAvg	#	NSL	NSLot	NSVal	SAvg
ZP	162,838	440.0 B	34,226.7	1	MS	283,498	889.7 B	34,882.8	
IA	143,889	586.4 B	34,425.2	2	CS	262,888	475.7 B	33,888.8	
K2	187,193	372.7 B	34,158.7	3	AK	127,287	424.8 B	34,881.8	
YU	42,332	140.7 B	34,098.8	4	BB	88,282	198.1 B	34,188.8	
IK	28,538	138.7 B	34,282.8	5	CC	88,377	193.4 B	34,888.8	

Table Foreign Flow BBKA 5

Code	NBY	NBLot	NBVal	BAvg	#	NSL	NSLot	NSVal	SAvg
IK	476,868	358.8 B	7,364.7	1	K2	283,798	288.8 B	7,388.8	
CS	371,561	272.7 B	7,364.8	2	IK	188,487	118.8 B	7,388.8	
BB	368,299	293.8 B	7,361.4	3	BB	88,289	47.8 B	7,348.8	
DF	28,541	29.3 B	7,388.8	4	BB	78,572	88.8 B	7,338.8	
CC	22,889	24.4 B	7,384.8	5	ZP	48,487	48.8 B	7,388.8	

Figure 5. Foreign Flow Table Bank Central Asia

In BBKA shares, there were four accumulations and one distribution. The first accumulation occurred on May 26, 2020, to June 02, 2020, with a net foreign buy of 209,306 lots of shares or around 500 billion rupiah. The second accumulation occurred on October 06, 2020, to November 04, 2020, with a net foreign buy of 202,753 lots of shares or around 600 billion rupiah. The third accumulation occurred on August 18, 2021, to September 29, 2021, with a net foreign buy of 885,189 lots of shares or around 2.9 trillion rupiah. The fourth accumulation occurred on July 20, 2022, to July 29, 2022, with a net foreign buy of 611,367 lots of shares or around 450 billion rupiah. In contrast, distribution occurred on February 08, 2021, to March 22, 2021, with a net foreign sell of -286,899 million lots of shares, around 900 billion rupiah.

b. Foreign Flow Bank Rakyat Indonesia (BBRI)

Table Foreign Flow BBRI 1

Foreign	NSL	NSLot	NSVal	SAvg	#	NSL	NSLot	NSVal	SAvg
CG	2.3 M	788.3 B	3,348.3		1	MS	-891,797	-377.0 B	3,287.0
CG	437,801	144.8 B	3,342.0		2	AK	-391,883	-131.3 B	3,315.6
DX	301,441	118.4 B	3,284.0		3	OK	-276,826	-144.4 B	3,254.7
OK	147,606	47.4 B	3,326.9		4	ZP	-362,162	-118.2 B	3,388.8
YU	128,801	44.2 B	3,347.0		5	CC	-190,826	-59.4 B	3,320.4

Table Foreign Flow BBRI 2

Foreign	NSL	NSLot	NSVal	SAvg	#	NSL	NSLot	NSVal	SAvg
CG	3.4 M	1277.0 B	3,798.0		1	CG	-625,341	-247.1 B	3,752.1
OK	3.2 M	1198.3 B	3,737.7		2	C5	-391,389	-143.8 B	3,713.9
ZP	1.9 M	708.0 B	3,788.3		3	DX	-178,175	-76.7 B	3,788.4
OK	770,143	289.0 B	3,727.9		4	YU	-190,889	-69.3 B	3,749.3
OK	329,830	129.1 B	3,795.0		5	IQ	-96,491	-33.0 B	3,848.0

Table Foreign Flow BBRI 3

Foreign	NSL	NSLot	NSVal	SAvg	#	NSL	NSLot	NSVal	SAvg
CG	3.4 M	1277.0 B	3,798.0		1	CG	-625,341	-247.1 B	3,752.1
OK	3.2 M	1198.3 B	3,737.7		2	C5	-391,389	-143.8 B	3,713.9
ZP	1.9 M	708.0 B	3,788.3		3	DX	-178,175	-76.7 B	3,788.4
OK	770,143	289.0 B	3,727.9		4	YU	-190,889	-69.3 B	3,749.3
OK	329,830	129.1 B	3,795.0		5	IQ	-96,491	-33.0 B	3,848.0

Table Foreign Flow BBRI 4

Foreign	NSL	NSLot	NSVal	SAvg	#	NSL	NSLot	NSVal	SAvg
AK	554,263	236.7 B	4,287.0		1	K2	-1.3 M	-493.2 B	4,212.0
BB	432,851	186.2 B	4,305.5		2	C5	-491,389	-194.8 B	4,288.0
ZP	290,271	126.0 B	4,283.2		3	BB	-415,449	-178.4 B	4,288.0
DX	183,540	77.5 B	4,223.0		4	BB	-126,429	-56.2 B	4,288.0
YU	157,975	64.0 B	4,286.0		5	MS	-29,827	-8.0 B	4,247.2

Table Foreign Flow BBRI 5

Foreign	NSL	NSLot	NSVal	SAvg	#	NSL	NSLot	NSVal	SAvg
DX	352,563	151.4 B	4,294.9		1	C5	-231,151	-109.5 B	4,343.4
ZP	343,145	150.3 B	4,356.8		2	AI	-47,880	-7.4 B	4,285.8
AK	107,038	46.0 B	4,340.7		3	GW	-15,914	-6.8 B	4,298.0
OK	26,957	11.7 B	4,329.1		4	AG	-1,284	-0.1 B	4,262.0
YU	14,864	6.5 B	4,344.1		5	GH	600	262.8 M	4,388.0

Figure 6. Foreign Flow Table Bank Rakyat Indonesia

In BBRI shares, there were four accumulations and one distribution; the first accumulation occurred on October 14, 2020, to November 03, 2020, with a net foreign buy of 1,277,166 lots of shares or around 410 billion rupiahs. The second accumulation occurred from September 22, 2021, to September 30, 2021, with a net foreign buy of 7,809,725 shares or around 2.84 trillion rupiah. The third accumulation occurred on January 10, 2022, to February 04, 2022, with a net foreign buy of 2,031,779 lots of shares or around IDR 842 billion. The fourth accumulation occurred on August 31, 2022, to September 01, 2022, with a net foreign buy of 266,129 lots of shares or around 250 billion rupiah. In comparison, distribution occurred on April 06, 2021, to April 23, 2021, with a net foreign sell of -906,287 million lots of shares, around -310 billion rupiah.

4.2 DISCUSSION

Based on the technical analysis of chart patterns, volume, and foreign flow, investment decisions can be made when the stock breaks out of the chart pattern, followed by increased volume and accumulation by foreigners. Chart pattern is a term often used in stocks, referring to patterns formed from price movements over a period. Chart patterns are very important for investors when analyzing future price movements. Chart patterns are also used as technical analysis to predict market prices by the shape that appears from a pattern within a certain time frame. The main characteristic of this chart pattern is the formation of two bottoms in a downtrend with the same or almost the same low point. Then, the BP point (Breakout Point) is the point that validates the formation of the Double bottom pattern. While selling shares can be done when the stock has broken down from the chart pattern, followed by increased sales volume and distribution by foreigners.

## Technical discussion of chart patterns

Technically, the chart pattern occurred 10 times, and the pattern formed on BBCA and BBRI shares started from January 2020, to December 2022. In technical analysis, if a chart pattern has been formed, the price will be confirmed, and the pattern will tend to move according to the type of pattern in the future. According to Tannadi (2022) chart patterns are patterns formed from a collection of several candlesticks in a chart that can signal potential up or down in technical analysis. For example, the cup and handle are bullish continuation patterns, which only give bullish signals. In BBCA shares, five chart patterns have occurred, the first from April 20, 2020, to June 02, 2020. BBCA formed a double bottom, which then broke out on June 03, 2020, and prices tended to rise. The second pattern occurred from September 16, 2020, to November 04, 2020, BBCA formed a cup and handle, which broke out on November 05, 2020, and prices tended to rise. The third pattern occurred from February 26, 2021, to March 22, 2021, BBCA formed an inverse cup and handle, which broke out on March 23, 2021, and prices tended to fall. The fourth pattern occurred from August 18, 2021, to September 29, 2021, BBCA formed a rectangle that broke out on September 30, 2021, and prices tended to rise. The fifth pattern occurred on June 28, 2022, to July 29, 2022. BBCA formed a cup and handle which then broke out on August 1, 2022, and prices tended to rise.

In volume analysis, there were 10 volume increases when the chart pattern breakout occurred on BBCA and BBRI shares from January 2020 to December 2022. In volume analysis, if the volume increases from before the breakout to the breakout chart pattern, the price will continue to increase or decrease according to the direction of price movement during the breakout. According to Filbert & Prasetya (2014), volume can be an indicator tool that can be used as a confirmation tool in several ways. If an increasing volume follows the price movement in a trend, it indicates that the trend will tend to continue (Lestari, 2020). In BBCA stock, there have been 5 volume increases when the chart pattern breakout occurred.

The first volume increase occurred on May 20, 2020, to June 03, 2020, and prices tended to rise. The second volume increase occurred on October 22, 2020, to November 05, 2020, and prices tended to rise. The third volume increase occurred from March 15, 2021, to March 23, 2021, and prices tended to fall. The fourth volume increase occurred on September 22, 2021, to September 30, 2021, and prices tended to rise. The fifth volume increase occurred on July 26, 2022, to August 01, 2022, and prices tended to rise. In BBRI shares, there have been 5 volume increases when the chart pattern breakout occurred. The first volume increase occurred in volume analysis; there were 10 volume increases when the chart pattern breakout occurred on BBCA and BBRI shares from January 2020 to December 2022. In volume analysis, if the volume increases from before the breakout to the breakout chart pattern, the price will continue to increase or decrease according to the direction of price movement during the breakout. According to Filbert & Prasetya (2014), volume can be an indicator tool that can be used as a confirmation tool in several ways. If an increasing volume follows the price movement in a trend, it indicates that the trend will tend to continue (Cucinelli & Soana, 2023).

In BBCA stock, there have been 5 volume increases when the chart pattern breakout occurred. The first volume increase occurred from May 20, 2020, to June 03, 2020, and prices tended to rise. The second volume increase occurred from October 22, 2020, to November 05, 2020, and prices tended to rise. The third volume increase occurred from March 15, 2021, to March 23, 2021, and prices tended to fall. The fourth volume increase occurred from September 22, 2021, to September 30, 2021, and prices tended to rise. The fifth volume increase occurred from July 26, 2022, to August 01, 2022, and prices tended to rise. In BBRI shares, there have been 5 volume increases when the chart pattern breakout occurred. The first volume increase occurred from October 26, 2020, to November 05, 2020, and prices tended to rise. The second volume increase occurred from April 21, 2021, to April 26, 2021, and prices tended to fall. The third volume increase occurred from September 29, 2021, to October 01, 2021, and prices tended to rise. The fourth volume increase occurred from February 3, 2022, to February 7, 2022, and prices tended to rise. The fifth volume increase occurred from August 29, 2022, to September 05, 2022, and prices tended to rise.

This study uses foreign flow to complement the chart pattern and volume technical analysis to strengthen the results. Like research conducted by (Lumban Tobing et al., 2019), the solution to avoid or minimize the occurrence of errors is to combine the technical analysis obtained with foreign flow. What is sought in this study is whether there is accumulation (net foreign buy) or distribution (net foreign sell). Net foreign sales occur when foreign investors sell shares in an amount greater than the number of purchases. Meanwhile, net foreign buy is when foreign investors make purchases in an amount greater than the number of sales (Zulfan et al., 2021).

## 5. CONCLUSION

Based on the results of the analysis and discussion that researchers in the previous chapter have carried out, the following conclusions can be drawn:

1. The pattern of stock price movements based on the chart patterns formed in IDX30 stocks from January 2020 to December 2022 shows that the patterns often appear as cup and handle, double bottom and double top, and rectangle. The chart pattern that shows the tendency of prices to rise after the breakout is a cup and handle, double bottom and rectangle, while the chart pattern that shows the tendency of prices to fall after a breakdown is a double top and inverse cup and handle.
2. The volume movement of IDX30 stocks from January 2020 to December 2022 shows an increase in volume before the breakout until the breakout chart pattern can confirm the price increase and an increase in volume before the breakdown until the breakdown chart pattern can confirm the price decline.
3. Foreign flow in IDX30 stocks from January 2020 to December 2022 has two types of foreign transactions: accumulation and distribution. Accumulation (net foreign buy) shows foreign purchases that make prices rise, and distribution (net foreign sell) made by foreigners that can make prices fall.
4. The right moment in determining investment decisions in IDX30 stocks for the period January 2020 to December 2022, using chart pattern, volume, and foreign flow analysis, namely, when the stock price has broken out of the chart pattern, followed by increased volume and accompanied by accumulation by foreigners; a purchase decision can be made while the decision to sell shares is made when the stock price has broken out of the chart pattern, followed by increased volume and distribution by foreigners.

## 6. LIMITATION AND IMPLICATION

Some of the limitations of the problem in this study are in terms of a relatively short observation period, namely during the period 2019 to 2022; the analytical tools used to determine investment decision recommendations in this study also only use chart pattern, volume, and foreign flow analysis and related investment decision recommendations in this study are limited to decisions to sell or buy shares or investments as well, no other recommendations are given.

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**Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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