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## FUNDAMENTAL ANALYSIS AND TECHNICAL ANALYSIS IN INVESTMENT DECISION MAKING

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### ABSTRACT

Investment is the inclusion of a certain amount of money in a way to be able to add value or pass on the right return (Sutha, 2000). This research aims to understand fundamental analysis and technical analysis needed to make investment decisions. The motivation in this study is to find out the price of the stock purchased and analyze the stock using fundamental analysis and technical analysis. The research methods required from this study are secondary data sourced from historical data, income statements and balance sheets from investing.com 2019-2022, technical analysis sourced from weekly reports dated October 23-27, 2023, the RTI Business application to view stock charts, and data sourced from the siminvest application for buying and selling stock on the siminvest application. The samples used for this study are samples of company stocks sourced from the siminvest application, namely BUKA, GOTO, EMTK, and SIDO. The results showed that in the fundamental analysis on EPS, PER, ROE, DER stock BUKA, GOTO, EMTK, and SIDO increased and decreased. ROA on BUKA stock has increased and ROA on GOTO, EMTK, SIDO stocks has increased and decreased. In technical analysis, GOTO's stock selling price suffered a loss and the stock selling price profited. In EMTK and SIDO stocks just bought shares. In BUKA stock obtained stock returns of 0.0294117, 0.01960784, -0.01941474, in GOTO stock, obtained stock returns of 0.015625 and -0.01538461, in EMTK stock obtained returns of -0.009009009 and in SIDO stock experienced returns of 0.

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### INTRODUCTION.

Investment is the inclusion of some money with the means of being able to add value or pass on the right return (Sutha, 2000). Investment growth has determined rapid growth, not only in terms of total investors and related money, but also from various stages of financial instruments that can be applied investment options (Ovami, 2021). This increase further reduces the readiness of trained human resources who can learn investment management properly (Ovami, 2021).

The investment decision process is an ongoing process until a superior investment decision is made (Jayadi et al., 2022). The stages of an investment decision method include the following: (1) Determination of investment form, (2) Determination of investment strategy, (3) Determination of portfolio strategy and assets and (4) Assessment and analysis of portfolio results (Jayadi et al., 2022).

Lubis (2016) believes that in investment techniques, investors need to understand the basics of investment decisions, namely what investments and when they are carried out. To apply it, there are 3 (three) assessments, namely: (1) Rate of return, (2) Risk rate and availability of money for investment. There is a parallel and linear relationship between risk and return (Ovami, 2021). The following is determined how investment decisions are estimated: Return can be interpreted as the total income on money invested by investors (Ovami, 2021). In investment management, returns are divided into expected returns as well as implemented returns (realized returns or actual returns) (Ovami, 2021). The expected return is the total expected profit in the future. Meanwhile, the actual return is the amount of profit actually found by investors (Ovami, 2021). When an investor invests his funds, he needs to expect a special rate of return after a set period of time. After the investment period is over, investors are directed to the actual return (Ovami, 2021). Long-term investors generally apply fundamental analysis while traders and people who make stock buying and selling transactions in the short term apply technical analysis (Thian, 2021). Technical analysis is not based on increasing the company's revenue, but based on stock price trends (Thian, 2021). Usually, fundamental analysis is used for long-term investment with an annual duration while technical analysis is used for short-term stock trading (Thian, 2021). Fundamental Analysis estimates the health of the company from financial statements and qualitative analysis while technical analysis estimates the anticipation of stock price trends by describing prices and volumes in the past (Thian, 2021). Technical analysis often makes large profits without formulating what company the stock are describing and looking for decisions based only on price charts (Thian, 2021).

This research aims to understand fundamental analysis and technical analysis needed to make investment decisions. The motivation in this study is to find out the prices of shares purchased and analyze stocks using fundamental analysis and technical analysis. Previous research researched by Putra et al. (2019) discusses investors who must be able to make a decision to buy and sell stocks. The research researched by Putra et al. (2019) calculated intrinsic value using fundamental analysis with the Price Earnings ratio (PER) approach. The research conducted in this study uses fundamental analysis using five ratios and technical analysis. Previous research from Aminda et al. (2023) used populations from pharmaceutical subsector companies registered in ISSI for the period 2019-2021. The research conducted by Aminda et al. (2023) focuses on the population of pharmaceutical companies in the pharmaceutical subsector registered in ISSI for the period 2019-2021. From our research focuses on companies engaged in the technology sector and engaged in the health sector.

#### THEORETICAL REVIEW.

**Fundamental Analysis.** Fundamental Analysis and Fundamental Analysis are analytical methods that estimate various elements, such as company performance, business competition analysis, industry analysis, economic analysis and macro-micro markets (Stiawan, 2021). This analysis compares the intrinsic value of a stock with its market price to ascertain whether the listed stock price has illustrated the value of its intrinsic value or not (Halim, 2005). Fundamental analysis is needed to determine the correct time to buy or sell stocks (Sinaga, 2011). One form of fundamental analysis is through the Top Down Analysis approach. In this approach, three approaches are usually needed Daves (2004), namely: a. Research and understand the state of the economic environment related to the company to be assessed, b. Checking the sustainability capability in industries related to the company, c. Examine the company to be assessed, including key skill strategies, management, rules and other relevant elements.

Stiawan (2021), In general, this fundamental analysis lists a lot of variable data that must be analyzed, where a number of variables are listed that are important enough to be examined, namely: 1. Earnings growth Earnings Per Share (EPS) ratio, 2. EPS Growth Ratio, 3. Stock Price Ratio regarding price per share (Price Earnings Ratio), 4. Stock Price Ratio to Sales (price/sales ratio), 5. Stock Price Ratio regarding book value (price book value), 6. The company's debt ratio (debt ratio), 7. Net profit margin.

Fundamental strength is the level that carries out fundamental analysis, and its creation results from the company's operations. In this analysis, fundamental strength is known as the level of measurement of a substance (company, business entity) using only a picture of its economic and financial framework resulting from the operating effects of that substance. It is impossible to obtain a good financial situation if other aspects and parts of activities are not carried out regularly. This is a

meaning of fundamental strength Małgorzata Tarczyńska-Luniewska (2022), Companies with stronger total fundamental strength (weaker), higher profitability (lower), and higher operational efficiency (lower) have a lower (higher) risk of falling stock prices. In addition, this negative relationship is more pronounced in companies with a large number of short-term institutional investors and companies that are not transparent. Additional testing illustrates that internal control can correct this negative relationship. All these findings are robust for alternative measurement of accident risk and endogeneity correction (MengA et al., 2023).

In research by Dăneț (2020), fundamental analysis remains the basic method in the stock investment study approach. The first advantage of fundamental analysis is the characterization of the company with certain indicators that indicate its financial behavior, helping investors in seeking action over a period of time, works for those who want to see the environment in their time (Dăneț, 2020). According to Bonga (2015), The advantages of fundamental analysis, fundamental analysis has priority for investors for decision making. The advantages it has include: [1] Objectivity: Fundamental analysis applies basic mathematics and statistics to form ratios hence there is no room for personal bias. [2] Long-term focus: The market is generally rejected by fundamental aspects in the long term, hence extending the trend. Fundamental analysis can look at long-term economic, demographic, technological and consumer trends. [3] Value: By ascertaining intrinsic value, fundamental analysis can ensure a suitable purchase value that represents "good value". [4] Increased understanding: Fundamental research provides investors with superior awareness of the company as well as its business. [5] Sleep factor: Investors understand that they are investing in a company whose fundamentals are good because they have practiced "due diligence" analysis. In research conducted by Jakpar et al. (2018), proves fundamental analysis serves to determine positive returns. However, fundamental analysis has its drawbacks. Disadvantages of Fundamental Analysis Apart from its advantages, fundamental analysis also has some negative impacts for investors. These include: [1]. Time-consuming: Fundamental analysis can be hard work and overly complicated. Given the time constraints and difficulty, it can be difficult to gain an edge. [2] Market sentiment: In the short term, the market does not always move in the same direction as the fundamentals, meaning that often short-term momentum will override fundamentals. [3] Time: The issuance of six-monthly financial information can mean that the company's fundamentals have changed significantly and that there is a time lag in investment decision making. This is especially true of the lack of opportunity to react quickly.

**Technical analysis.** Technical analysis is the study of market characters depicted through graphs, to estimate future price slopes (Stiawan, 2021). However, technical analysis does not only depend on reading price chart patterns (classical), there is another method to show technical analysis, namely through the calculation of each stock indicator in the form of a (modern) calculation method. (Stiawan, 2021). Some types of technical analysis indicators are Moving Average (MA), Moving Average Convergence (MAC), and Stochastic (Stiawan, 2021). In testing in research Agustin (2019), shows that technical analysis is the best model among other models. The results can prove that past stock prices can be used to predict future prices. Investors apply technical analysis as a way to predict future shifts in stock prices (Nuzula et al., 2019). Previous research by Gao et al. (2023), in stock analysis determined a BRB-based model that took three BRBs namely BRB\_1, BRB\_2 and BRB\_3. BRB\_1 is used to take the relationship between the moving average (MA) price trend and buying and selling decisions. BRB\_2 is used to study the state of convergence and divergence of moving averages (MACD). BRB\_3 is used to represent the status of stochastic indicators (KD). Previous research from Barroso et al. (2021), proposes a combination of Technical analysis indicators as well as multiobjective portfolio optimization. The results suggest that this combination can enhance the portfolio's capabilities, deriving investors an ideal strategy by sharing higher returns at a certain level of risk, even by thinking about efficient meaning.

**Investment decisions.** According to Hidayat (2017), Investment is an activity that accommodates funds in one or more stages of assets for a certain period of time in the hope of realizing income and/or investing value in the future. Mudjiyono stated that investment, which is an asset utilized by the company for investment (accretion of wealth) through the circulation of investment income (such as interest, royalties, dividends and income) in order to increase the value of investment and for other uses for the company is very vulnerable to commodity uncertainty in the future.

According to Lypsey (1997), investment is the allowance of goods that are not consumed now where based on the period period, investment is separated into three of them, namely short-term investment, medium-term investment, and long-term investment. Tandelin (2010), stated that there are means for someone to carry out investment, namely: 1. To get a more commensurate life in the future. An experienced person will aim at how to advance his standard of living from period to period or at least try to invest the current level of income so that it does not decline in the future, 2. Lowering inflationary pressures. By investing in the ownership of the company and other objects, one can push oneself from the risk of reducing the value of property and property rights due to the influence of inflation. Indications for saving taxes, 3. Several countries in the world carry out many strategies that are characterized by advancing the emergence of investment in the community through tax facility assistance to people who invest in certain business elements.

Previous research by Loebiantoro et al. (2021), to obtain maximum investment ability, rational investors will carry out investment analysis by utilizing fundamental analysis and technical analysis. But in fact, the irrational linking investment decision-making process is based on behavioral biases. Previous research by Almeida & Vieira (2023), contained new research points and aspects of talent, as well as the identification of networks of unity between authors, institutions, and countries. Furthermore, the article bequeaths valuable knowledge to financial professionals as well as investors interested in implementing this methodology as a way of forecasting prices (Almeida & Vieira, 2023). The highlighted results help decision making, trading plans as well as portfolio management (Almeida & Vieira, 2023). Previous research from Jagirdar & Gupta (2023), that value and contrarian investment strategies should refer to different stocks at a given period point. Furthermore, it was discovered that both investment strategies could work in the same form of market efficiency. Previous research by Agustin (2019), that technical models create the highest estimated performance compared to the other two types, while the integration type creates higher forecast performance than fundamental models. Previous research by Isidore et al. (2022), the implementation of industry analysis and/or the Company's analysis can increase the flexibility to achieve higher returns in the equity market, while the implementation of economic analysis, technical analysis and/or advocate recommendations achieves lower returns. Previous research from Hassan et al. (2023), investor performance is determined by utilizing content, namely personal aspects, social aspects, information markets, company-specific aspects, product-related aspects and demographics. Previous research from Albahli et al. (2023), based on stock price forecasts, suggested strategies convey three types of signals that are assured as buy, sell, or hold to convince investors in making decisions. Previous research by Zhu et al. (2020), assessed the predictability of fundamental strength returns in the context of two aspects that think about investor sentiment and interpretation of arbitrage simultaneously.

#### METHODS.

The research methods required from this study are secondary data sourced from historical data, income statements and balance sheets from investing.com in 2019-2022, technical analysis sourced from weekly reports dated October 23-27, 2023, RTI Business application to view stock charts, and data sourced from the siminvest application to buy and sell stock on the siminvest application. The sample used for this study is a sample of company stock sourced from the siminvest application. Variable measurement is using fundamental analysis indicators and technical analysis indicators. The stock samples used in this study are:

Tabel 1. Research sample.

Stock code	Company name
BUKA	Bukalapakcom. Tbk.
GOTO	GoTo Gojek Tokopedia Tbk.
EMTK	Elang Mahkota Teknologi Tbk.
SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.

The indicators required in fundamental analysis are using fundamental analysis formulas, namely:

Tabel 2. Fundamental analysis indicators.

Indikators	Fundamental Analysis Formula
Earnings Per Share	$EPS = \frac{Laba Bersih - Dividen}{Jumlah lembar saham beredar}$
Price To Earnings Ratio	$PER = \frac{Harga pasar}{EPS}$
Return on Asset	$ROA = \frac{Laba Bersih}{Total Assets}$
Return on Equity	$ROE = \frac{Laba Bersih}{Ekuitas}$
Debt To Earnings Ratio	$DER = \frac{Total Utang}{Total Modal}$

**Technical analysis.** The technical analysis indicator used in this study is using moving average (MA) conducted in the RTI Business application. To find out the moving average, the study was conducted by looking at the chart on the sample of stocks studied, namely BUKA stock, GOTO stock, EMTK stock, and SIDO stock which is a stock listed on LQ45.

**Investment Decision.** The indicator used in this study is to determine stock returns. According to Jogiyanto (2017), the stock return formula can be expressed as:

$$Stock Return = \frac{Pt - Pt - 1}{Pt - 1} + \frac{Dt}{Pt - 1}$$

## RESULTS.

### Fundamental analysis.

Tabel 3. Results.

		2019	2020	2021	2022
BUKA	EPS	-26.98	-12.74	-8.86	-9.59
	PER	-	-	-48.53	-27.32
	ROA	-1.36	-0.52	-0.06	-
	ROE	-2.42	-1.35	-0.07	-
	DER	0.78	0.62	0.13	-
GOTO	EPS	-6	-4.78	-2.41	-1.73
	PER	-	-	-	-
	ROA	-1.06	-0.47	-0.14	-0.28
	ROE	-1.28	-2.32	-0.14	-0.32
	DER	0.20	3.92	0.05	0.13
EMTK	EPS	25.54	66.7	58.28	11.94
	PER	21.85	20.99	39.12	86.26
	ROA	-0.08	0.11	1.26	0.12
	ROE	-0.15	0.29	0.17	0.14
	DER	0.78	0.67	0.13	0.11
SIDO	EPS	27.06	31.13	33.8	29.57
	PER	23.39	25.67	25.59	25.53
	ROA	0.23	0.24	0.31	0.27
	ROE	0.26	0.29	0.36	0.31
	DER	0.15	0.19	0.17	0.16



**Bukalapak.com Tbk.** Based on the data above, in 2019 EPS ratio BUKA stock amounted to -26.98. In 2020, EPS on BUKA stock was -12.74. In 2021, the stock's EPS was -8.86. In 2022, EPS on BUKA stock is -9.59. In 2019 and 2020, the PER of BUKA stock is unknown due to historical data that has not been found in investing.com. In 2021, the PER on PER shares was -48.53, and in 2022 the PER on BUKA stock was -27.32. In 2019, the ROA on BUKA stock was -1.36. In 2020, the ROA on BUKA stock was -0.52. In 2021, the ROA on BUKA stock was -0.06. In 2019, the ROE on the stock opened at -2.42. In 2020, the ROE on BUKA stock was -1.35. In 2021, the ROE on BUKA stock was -0.07 and in 2022, the ROE is not yet known due to data that has not been found on the investing.com application. In 2019, the DER on BUKA stock was 0.78. In 2020, the DER on BUKA stock was 0.62. This shows a decrease in DER in BUKA stock from 2019 which was 0.78 to 0.62. In 2021, the DER on BUKA stock was 0.13. This shows a decrease from 2020 which was 0.62 to 0.13. Meanwhile, in 2022, the DER ratio of BUKA stock is not yet known due to historical data that has not been found in investing.com.

**GOTO.** Based on the data above, the 2019 EPS ratio for GOTO stock is -6. In 2020, 2020's EPS ratio was -4.78. In 2021, the ratio on GOTO stock was -0.14. In 2022, the EPS ratio stands at -1.73. In 2019, 2020 and 2021, the EPS ratio is unknown due to historical data that has not been found in investing.com. In 2022, the EPS ratio on GOTO stock is as high as. In 2019, the ROA ratio on GOTO stock was -1.06. In 2020, the ROA ratio on GOTO stock was -0.47. In 2021, the ROA ratio of GOTO stock was -0.47 and in 2022, the ROA ratio of GOTO stock was -0.28. In 2019, the ROE ratio on GOTO stock was -1.28. In 2020, the ROE ratio on GOTO stock was -2.32. In 2021, the ROE ratio on GOTO stock was -0.14 and in 2022, the ROE ratio on GOTO stock was -0.32. In 2019, GOTO's stock DER was 0.20. In 2020, GOTO's DER stock was 3.92. This has increased from the previous year in 2019 which was 0.20 to 3.92. In 2021, the DER ratio on GOTO stock was 0.05. This decreased from the previous year in 2020 which was 3.92 to 0.05. In 2022, the DER on GOTO stock amounted to 0.13. This has increased from the previous year in 2021 which was 0.05 to 0.13.

**EMTK.** Based on the data above, in 2019 the EPS ratio of EMTK stock was 25.54. In 2020, the EPS ratio on EMTK stock was 66.7. This has increased from the previous year in 2019 which was 25.54 to 66.7. In 2021, EPS on EMTK stock was 58.28. This decreased from the previous year in 2020 which was 66.7 to 58.28. In 2022, EPS on EMTK stock was 11.94. This decreased from the previous year in 2021 which was 58.28 to 11.94. In 2019, the PER ratio on EMTK stock was 21.85. In 2020, the PER ratio on EMTK stock was 20.99. This decreased from the previous year from 2019 which was 21.85 to 20.99. In 2021, the PER ratio of EMTK stock was 39.12. This has increased from the previous year in 2020 which was 20.99 to 39.12. In 2022, the P/E ratio of EMTK stock was 86.26. This has increased from the previous year in 2021 which was 39.12 to 86.26. In 2019, the ROA ratio on EMTK stock was -0.08. In 2020, the ROA ratio on EMTK stock was 0.11. In 2021, the ROA ratio on EMTK stock was 1.26. In 2022, the ROA ratio on EMTK stock was 0.12. In 2019, the ROE ratio on EMTK stock was -0.15. In 2020, the ROE ratio on EMTK stock was 0.29. In 2021, the ROE ratio on EMTK stock was 0.17. In 2022, the ROE ratio on EMTK stock was 0.14. In 2019, the DER ratio of EMTK stock was 0.78. In 2020, the DER ratio of EMTK stock was 0.67. In 2021, the DER ratio of EMTK stock was 0.13. In 2022, the DER ratio to 2022 stocks was 0.11.

**SIDO.** Based on the data above, in 2019, the EPS ratio for SIDO stock was 27.06. In 2020, the EPS ratio on SIDO stock was 31.13. In 2021, the 2021 stock's EPS ratio was 33.8. In 2022, the 2022 stock's EPS ratio was 29.57. In 2019, the PER ratio on EMTK stock was 27.06. In 2020, the EPS ratio increased to 25.67. In 2021, the EPS ratio increased from the previous year in 2020 to 33.8 and in 2022, the EPS ratio decreased to 29.57. In 2019 the ROA ratio was 0.23. In 2020, the ROA ratio increased from 2019 to 0.24. In 2021, the ROA ratio increased from 2020 to 0.31. In 2022, the ROA ratio decreased to 0.27. In 2019, the ROE ratio was 0.26. In 2020, the ROE ratio increased to 0.29. In 2021, the ROE ratio increased to 0.36. In 2022, the ROE ratio decreased to 0.31. In 2019, the DER ratio was 0.15. In 2020, the DER ratio increased to 0.19. In 2021, the DER ratio decreased to 0.17 and in 2022, the DER ratio decreased to 0.16.





Figure 1. Technical analysis BUKA.  
Source: RTI Bussiness.

On October 23, 2023, the purchase price of BUKA stock is 204. On October 23, there was a purchase of shares that were priced at 206. At \$206, the stock grew by 0.97%.



Figure 2. Technical analysis BUKA.  
Source: RTI Bussiness.

On October 24, 2023, there was a sale of shares at a share price of 206. When the sale of shares is carried out on October 24, 2023, it can earn a profit of 200.



Figure 3. Technical analysis BUKA.  
Source: RTI Bussiness.

On October 25, 2023, there was a purchase at a share price of 206. This is the same as yesterday's share price on October 24, 2023 which was 206.

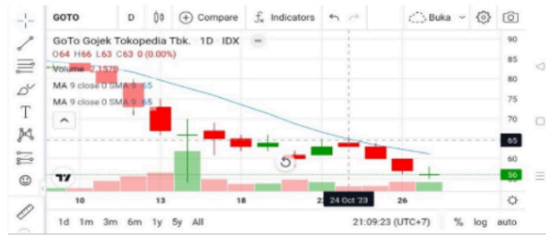


Figure 4. Technical analysis GOTO.

Source: RTI Bussiness.

On October 24, 2023, the share price in GOTO will be at 65. On October 24, 2023, there was a purchase of GOTO stock at a price of 65.



Figure 5. Technical Analysis GOTO.

Source: RTI Bussiness.

On October 24, 2023, GOTO's stock price will be at 65. On October 24, 2023, there was a sale in GOTO stock at a price of 64. It suffered a loss on GOTO stock of 100.



Figure 6. Technical Analysis GOTO.

Source: RTI Bussiness.

On October 24, 2023, GOTO's share price is at 65. On that date, there was a buyback in GOTO stock at a price of 65.



Figure 7. Technical Analysis EMTK.  
Source: RTI Business.

On October 25, 2023, EMTK's share price is at 555. On that date, there was a purchase of EMTK stock which was at a price of 555.



Figure 8. Technical Analysis SIDO.  
Source: RTI Business.

On October 27, 2023, SIDO's share price was at \$575. On that date, there was a purchase of 575 shares. Decision making.

Table 4. Decision making.

Stock	Date	Price	Stock Return
BUKA	October 20, 2023	210	0,0294117
	October 23, 2023	204	
	October 23, 2023	208	0,01960784
	October 24, 2023	204	
	October 26, 2023	202	-0,01941474
	October 27, 2023	206	
GOTO	October 24, 2023	65	0,015625
	October 24, 2023	64	
	October 24, 2023	65	-0,01538461
EMTK	October 24, 2023	550	-0,009009009
	October 25, 2023	555	
SIDO	October 26, 2023	575	0
	October 27, 2023	575	

BUKA Stock. On October 23, 2023, BUKA stock were purchased at a price of 204. At the time of stock purchase, the purchased shares obtained a stock return of 0.0294117. On October 24, BUKA stock were sold, at the time of the stock sale, the shares that had been sold received a return of 0.01960784. On October 26, 2023, shares were purchased at a price of 206. At the time of the

purchase, the purchased shares received a return of -0.01941474. GOTO Stock. On October 24, 2023, a share purchase was made at a price of 65 and a sale at a price of 64 on GOTO stock, at the time of the sale of shares, the shares earned a return of 0.015625. On 24 October, a buyback was made on GOTO stock at a price of 65. At the time of purchase of GOTO stock, the shares earned a return of 0.01538461. EMTK Stock. On October 25, 2023, shares were purchased at a price of 555. At the time of the purchase, the shares earned a return of -0.009009009. SIDO Stock. On October 27, 2023, shares were purchased at a price of 575. When the purchase of shares is made, the shares get a return of 0. The purchase of shares did not get a return because on October 26 and October 27 the shares were at the same price of \$575.

#### **DISCUSSION.**

**Fundamental Analysis.** Fundamental Analysis in this study uses 5 fundamental analysis ratios, namely EPS, PER, ROE, ROA, and DER. From the results of the discussion, BUKA stock, GOTO stock, EMTK stock, and SIDO stock were examined. From the eps on BUKA stock, there are increases and decreases in EPS on BUKA stock. From the EPS of GOTO stock, there are increases and decreases in EPS in GOTO stock. In EMTK EPS, there is an increase and decrease in EPS in EMTK stock. From the EPS in SIDO stock, there are increases and decreases in SIDO stock. From the PER in GOTO stock, there are increases and decreases in BUKA stock. From the PER in GOTO stock, there are increases and decreases in PER in GOTO stock. From EMTK's PER share, there were increases and decreases in EMTK stock. In the PER of SIDO stock, there is an increase and decrease in the PER of SIDO stock. From the ROA of BUKA stock, there is an increase in the ROA of BUKA stock. From the ROA of GOTO stock, there are increases and decreases in GOTO stock. From the ROA of EMTK stock, there are increases and decreases in the ROA of EMTK stock. From the ROA of SIDO stock, there are increases and decreases in the ROA of SIDO stock. From the ROE of BUKA stock, there is an increase in ROE on BUKA stock. In the ROE of GOTO stock, there is a decrease and increase in the ROE of GOTO stock. In EMTK ROE, there are increases and decreases in EMTK ROE. In SIDO's ROE, there are increases and decreases in EMTK's stock ROE. From the DER of BUKA stock, there are increases and decreases in the DER of BUKA stock. From the DER of GOTO stock, there are increases and decreases in the DER of GOTO stock. From the DER of EMTK stock, there was an increase and decrease in the DER of EMTK stock. From SIDO stock, there are increases and decreases in SIDO stock.

**Technical analysis.** On October 23, 2023, the buy price of BUKA stock will be \$204. On October 23, there was a purchase of shares that were priced at 206. On October 24, 2023, there was a sale of shares at a share price of \$206. When the sale of shares is carried out on October 24, 2023, it can earn a profit of 200%. On October 24, 2023, GOTO's stock price will be at \$65. On October 24, 2023, there was a sale in GOTO stock at a price of 64. It suffered a loss on GOTO stock of \$100. On October 25, there was a purchase of EMTK stock at a price of 555. On October 27, 2023, SIDO stock will be purchased at \$575.

**Decision making.** On October 23, there was a purchase of BUKA stock at a price of 204. On October 24, there was a sale of 206 shares. At the time of selling shares, the return on shares obtained was 0.01960784. On October 26, 2023, shares were purchased at a price of 206. At the time of the purchase of shares, the shares that have been purchased get a return of -0.01941474. On October 24, 2023, a share purchase was made at a price of 65 and a sale at a price of 64 on GOTO stock, at the time of the stock sale, the shares earned a return of 0.015625. On 24 October, a buyback was made on GOTO stock at a price of 65. At the time of GOTO's purchase, the stock earned a return of -0.01538461. On October 24, there was a buyback of GOTO stock, when the purchase of GOTO stock at a price of 65, the shares earned a return of 0.01538461. In the purchase of EMTK stock, EMTK stock earned a return of -0.009009009. On the purchase of EMTK stock, the shares earned a return of 0.

#### **CONCLUSION.**

In this study, there are secondary data that have not all been found to conduct fundamental analysis research and technical analysis in investment decision making. There are limitations to the sample, namely the stock sample which is still not much in this study. Indicators in technical analysis still focus on one indicator only. Suggestion in the research is for future research, you should look for complete data so that the research carried out obtains accurate research results.

Researchers are then expected to select a large sample to conduct fundamental analysis and technical analysis. Further researchers are expected to be able to conduct technical analysis with several technical analysis indicators.

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