

Systematic Risk and Non-Systematic Risk Impact on Stock Returns in Health Sector Companies

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Abstract: When an investor decides to invest in the capital market, investor would be understood that the investment will bring profits and contain risks. In the Capital Market, risk can be classified into Systematic Risk (Market Risk), which is the risk that is experienced by all issuers and cannot be diversified, and Non-Systematic Risk, which is the risk that exists in one particular company or industry so that it can still be minimized or diversified. This research aims to prove the effect of systematic and non-systematic risk on stock returns during the Covid 19 pandemic and after, where the moments that cause systematic risk and also non-systematic risk occur together. The Health Sector is a sector that experiences a direct impact because it acts as a basis for defense against the Covid 19 Epidemic. Systematic Risk uses the Stock Beta, Interest Rate, Foreign Exchange, and Inflation, while non-systematic Risk uses the Solvency Ratio (DER) and Profitability Ratio (ROE). Using a purposive sampling technique, 15 health sector companies were selected during 2018 - 2023. Statistical analysis carried out using Smart PLS 4.0 resulted that Systematic Risk and Non-Systematic Risk did not affect Share Returns of Health Sector Companies in the 2018 - 2023 period

Keywords: Systematic Risk, Non-Systematic Risk, Stock Returns

INTRODUCTION

One of the main goals of investors is to obtain a return or return on the funds invested. Returns can be short-term or long-term. The short-term return to be achieved is capital gain, namely the difference between the purchase price of shares and the selling price of shares, while the long-term return from investment is dividends, namely the profit that will be obtained per share. In the investment process, sometimes reality does not necessarily match expectations. A situation that does not match expectations or in other words there is a deviation from expectations can be called a risk. In modern portfolio theory, the risk contained in a stock consists of two risks, namely systematic risk and unsystematic risk.

Systematic risk is the risk that is influenced by the market as a whole or the macroeconomy. Systematic risk is a risk that cannot be eliminated by diversifying, because fluctuations in this risk are influenced by macro factors that can affect the market as a whole, for example, changes in interest rates, foreign exchange rates, government policies, and so on. The measure of systematic risk is called Beta. According to (Tandelilin, 2010) Beta is a measure of the sensitivity of security returns to market returns. The greater the beta of security, the greater the sensitivity of the security's return to changes in market returns. According to (Fahmi, 2015) in investment, it is known that there is a strong relationship between risk and return, namely if the risk is high then the return (profit) will also be high and vice versa if the return is low then the risk will also be low. For this reason, investors need to consider risk factors and adjust them to the level of risk preferences they have. The market risk that investors also face is interest rates. When there is an increase in interest rates on the market, investors will consider switching their investments to financial products that

provide higher returns. If interest rates are higher, investors may be interested in investing their funds in banks. This can affect stock buying and selling transactions in the capital market and will also affect stock returns, and vice versa. The exchange rate is a measure of comparison between a country's currency compared to the currencies of other countries. The weakening value of the Rupiah compared to other countries will make investors choose investments in other, stronger currencies, compared to investing in domestic shares. This will cause a decrease in stock transactions in the Capital Market. In a condition where generally there is a continuous increase in prices of services and goods within a certain time also called inflation, this is a condition that can affect stock returns. The reduced purchasing power of the public due to inflation will also affect the performance of companies whose shares are owned by the public. This will also influence stock trading transactions on the Capital Market. Investors will be careful in choosing companies that experience the direct impact of inflation on company performance. Research conducted by (Permaysinta and Sawitri, 2021) shows that inflation has no effect on stock returns, but the exchange rate has an effect on stock returns.

Unsystematic risk is the risk inherent in certain investments due to the conditions that exist in each company. This risk can be reduced by diversifying. Included in this risk is financial risk. Several fundamental factors that also influence stock returns include the Debt Equity Ratio (DER), which is a ratio that reflects the company's ability to fulfill all company obligations as indicated by how much of its capital is used to pay debts. The greater this ratio, the riskier it will be for investors because the investment is used to guarantee the company's debt. Several studies on the effect of DER on stock returns show different results, (Devi and Artini, 2019) in their research it turns out that DER has a negative effect on stock returns, on the contrary research conducted by (Christian, Saerang, and Tulung, 2021) shows that DER has a positive effect regarding Returns, it can be understood that the greater the company's debt, the greater the debtors' trust in the Company and this can be interpreted as a good signal because the Company can receive trust from debtors where the debtors have of course considered the company's capital and its prospects. Research conducted by (Hasan, Gasperz, and Limba, 2023) and (Pratiwi and Winarto, 2021) states that DER has no positive effect on stock returns.

The fundamental aspects of a company's finances can also be seen in Return on Equity (ROE), which is a comparison between company profits and company capital. This ratio shows the efficiency of using own capital. The higher this ratio, the better it means that the position of the company owner is stronger, and vice versa (Kasmir, 2015). A high ROE can accelerate the rate of return on investor capital and demonstrate the company's good performance. Some empirical evidence regarding the influence of ROE on stock returns shows different results, research conducted by (Hasan, Gasperz, and Limba, 2023) and (Devi and Artini, 2019), shows that ROE has a positive effect on stock returns while research conducted by (Christian, Saerang and Tulung, 2021), (Dewi, Endiana and Arizona, 2020), (Mangantar, Mangantar and Baramuli, 2020) show that ROE does not have a positive effect on stock prices.

In late 2019, Indonesia experienced the impact of the Covid 19 epidemic, which also affected the Indonesian economy, including in this case the closing movement of the Composite Stock Index (IHSG). In Figure 1, it can be seen that in mid-2020 the IHSG experienced a quite drastic decline from 5.940,048 to 5.149,627. This graph reflects that the COVID-19 epidemic has also influenced investor behavior.

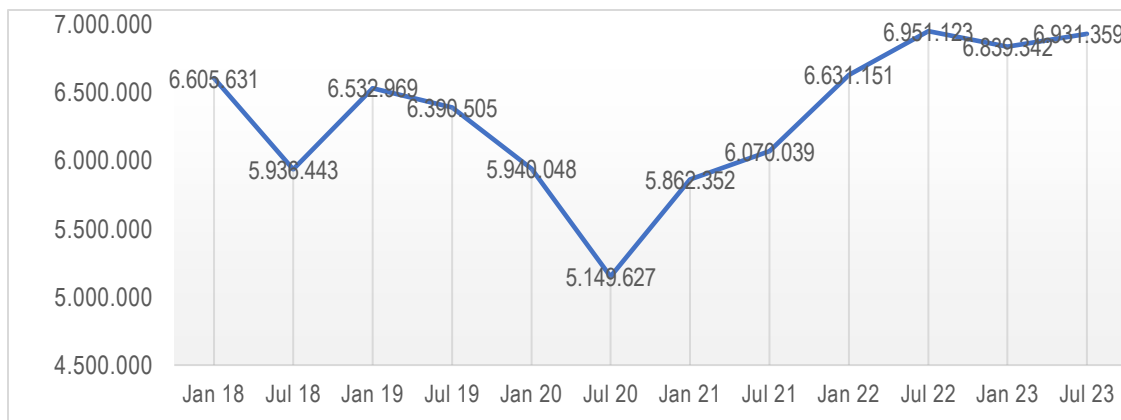


Figure 1. Composite Stock Price Index 2018 – 2023

Source: <https://finance.yahoo.com/>, 2024

The COVID-19 epidemic has also affected the condition of the Indonesian economy. During pandemic, society needs support from the health sector to handle residents affected by the COVID-19 pandemic and also to maintain health as a basis for defense against Covid 19. Companies included in the health sector are sectors that experience a direct impact against COVID-19 19. Return and Risk Health sector companies are object concerned to investors. The increasing need for health will affect the Company's operations. This will affect their profitability and capital structure. It can be seen that there is a decrease in returns and several systematic and non-systematic risk indicators which are reflected in the Beta values, interest rates, Inflation, Foreign Exchange, DER, and ROE of health sector companies which can be seen in Table 1.

Table 1. The Average of Beta, Interest Rate, Inflation, Foreign Exchange, DER, ROE and Stock Return

Years	Return	Beta	Inflation	Foreign Exchange	Interest	DER	ROE
2023	- 0,0001	0,42	0,037	15.254	5,81 %	0,59	0,66
2022	- 0,0006	0,33	0,042	14.875	4,00 %	1,69	0,18
2021	0,0013	0,65	0,016	14.311	3,52 %	0,58	0,38
2020	0,0019	0,74	0,020	14.576	4,25 %	0,78	0,09
2019	- 0,0002	0,43	0,030	14.146	5,63 %	0,63	0,75
2018	- 0,0003	0,46	0,032	14.249	5,06 %	0,69	- 0,72

Source: Annual Report of Tbk Company in Health Sector, 2024

LITERATURE REVIEWS

In investment, there is a strong relationship between risk and return, that is, if the risk is high, the return (profit) will also be high, and vice versa, if the return is low, the risk will also be low (Fahmi, 2015). Harry Markowitz took the prize Nobel Prize in Economics in 1990 for Portfolio Theory which explains that risk can be reduced by combining assets into a portfolio. Investors can reduce the risk of their investments by investing their funds in various shares (stock portfolios) in various stock markets or various shares in a stock market (exchange). This is because the risk of individual assets will be greater than the risk of the portfolio. This theory was then refined by William Sharpe by developing a balance theory that links risk and return, namely the Capital Asset Pricing Model (CAPM). This model

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explains that stock returns are a function of the risk-free rate of return, the required rate of return on the market portfolio (market return), and systematic risk which is calculated from the beta coefficient (β) as follows

$$E(R) = R_f + \beta (R_m - R_f)$$

$E(R)$: Expected return
 R_f : Risk-free
 β : Beta (Systematic Risk)
 R_m : Return market

Thus, an investor who wants to invest by buying shares needs to pay attention to the risk of the shares, the higher the risk he accepts, the higher the return he wants

Return

The rate of return is one of the factors that motivates investors to interact and is also a reward for investors' courage in bearing the risks of their investments (Tandelilin, 2010). Return can also be called profits obtained by companies, individuals, and institutions from the results of their investment policies (Fahmi, 2015) Stock returns are measured using the following formula:

$$R_i = \frac{(P_t - P_{t-1})}{(P_{t-1})}$$

Beta

Beta is an indicator of systematic risk (Hanafi, 2011). The amount of risk of a stock is determined by Beta which shows the relationship (movement) between the stock and the market (Fahmi, 2015). Meanwhile, according to (Jogiyanto, 2014) Beta is a measure of the volatility (volatility) of returns of a security or portfolio against market returns. Estimating market Beta by collecting historical values of returns from securities and returns from the market during a certain period. It is assumed that the relationship between security returns and market returns is linear, so beta can be estimated manually by plotting a line between the return points or using regression techniques (Jogiyanto, 2014).

Historical beta can be calculated using historical data in the form of market data (securities returns and market returns), namely with the following formula.

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$$

R_{it} = Return asset I period t
 α_i = intercept from regression
 β_i = coefficient regression
 R_{mt} = return market portfolio in period t
 e_{it} = residual

According to (Fahmi, 2015), Beta assessment can be categorized into the following three conditions:

1. $\beta > 1$ indicates that the company's share price changes more easily than the market index.
2. $\beta = 1$ indicates that changes are not easy to occur due to market conditions.
3. $\beta < 1$ indicates that the magnitude of systematic risk is the same as the market index.

Some empirical evidence regarding the influence of beta (β) on stock returns shows different results, as has been done by (Retha and Budiarti, 2021) and (Azhari, Suharti, and Nurhayati, 2020) resulting in that beta (β) has a significant effect on stock returns. Meanwhile, research conducted by (Ghafar, Freeari, and Satpatmantyo, 2023) showed that beta (β) did not affect returns. Thus, research conducted by (Pratiwi and Winarto, 2021) gave results that there was a significant negative relationship between Stock Beta and Stock Returns.

Interest Rates

Bank Indonesia makes monetary policy in the form of interest rate policy which is determined and announced by the Board of Governors of Bank Indonesia. (Boediono, 2011) believes that the interest rate is the value of the use of funds from capital investment. An increase in the BI interest rate will cause an increase in credit, deposit, and other interest rates. And conversely, if the BI interest rate is low, it will reduce the interest rate which will affect the Inventor's preference to divert their funds from Deposits to Shares. If interest rates increase it will also have an impact on the company. Because high interest rates will increase the company's burden, so that when the company's burden increases it can directly reduce the company's profits. When interest rates increase, the stock returns obtained will be low. However, when interest rates decrease or are low, the stock returns obtained will be high. The following is the formula for finding the average value of interest rates in one year:

$$\bar{x}_i = \frac{i_1 + i_2 + i_3 + \dots + i_{12}}{12} \times 100\%$$

Research conducted by (Sadikin, 2020) resulted in the conclusion that interest rates have a significant negative effect on stock returns. This means that a decrease in interest rates affects an increase in stock returns. However, research conducted by (Maharani and Haq, 2020), (Wulandari, Suhono, and Manda, 2021), and (Permaysinta and Sawitri, 2021) shows that interest rates do not affect stock returns.

Inflation

Inflation is a situation where prices generally increase continuously so that the value of the currency decreases. Inflation is the opposite of deflation. Inflation is a condition where there is an increase in prices, while what is meant by deflation is a condition where there is an overall decrease in prices. According to (Boediono, 2011), a short definition of inflation is the tendency for prices to rise generally and continuously.

Foreign Exchange

Foreign Exchange is the price of one currency against another currency. The exchange rate of a currency is determined by the supply-demand relationship for that currency. If demand for a currency increases, while supply remains constant or decreases, then the exchange rate of that currency will rise. Conversely, if the supply of a currency increases, while demand remains constant or decreases, the value of the currency will weaken. Determining the rupiah exchange rate against foreign currencies is important for capital market players in Indonesia. Because the foreign exchange rate greatly influences the amount of costs that must be incurred. As well as the amount of fees that will be obtained in stock and securities transactions on the capital market exchange. Unstable exchange rate fluctuations will reduce the level of confidence of foreign investors in the Indonesian economy. Which in turn will have a negative impact on stock trading in the capital market, foreign investors will tend to withdraw capital resulting in Capital of Flow and this will have an impact on decreasing the IHSG, if the IHSG decreases then this will result in the level of return that will be distributed will decrease

Fundamental Analysis

Fundamental analysis tries to estimate stock prices in the future by (1) estimating the value of fundamental factors that influence stock prices in the future, and (2) applying the relationship between these variables to obtain stock price estimates (Husnan, 2005). In conducting stock valuation analysis, investors can carry out top-down fundamental analysis to assess the company's prospects. The first analysis that must be carried out is an analysis of the macroeconomic factors that influence the performance of all companies, then proceed with industry analysis, and finally, an analysis of the company that issues the securities in question is carried out to assess whether the securities they issue are profitable or detrimental to investors.

Company Financial Report Ratios A company is said to be performing well if the company's profits continue to increase. By increasing company profits, it is said that company management has increased the wealth of company owners. As a result, the company's share price will increase because there is additional net income for the company so the total capital will be greater. The ratios of a company's financial statements are measures of various company performances, both measuring how much net income the company gets, increasing sales, increasing the amount of debt, and increasing cash, all of which will be measured. Whether the company is performing well or not performing well can be seen from the financial ratios, whether the ratio numbers are good. The company's financial ratios can also be compared with the ratio of the industry average.

DER

Debt to Equity ratio (DER) is a company's solvency ratio, namely how much the company's debt is compared to the company's capital, so the formula for DER is:

$$\text{DER} = \frac{\text{Debt}}{\text{Equity}}$$

For creditors, the greater this ratio means the less profitable it is, because creditors will bear greater risks if the company fails. Meanwhile, for Capital Owners, the greater this ratio, the smaller the risk borne by Capital Owners if the Company fails. Conversely, the smaller this ratio, the greater the level of funding that must be prepared by capital owners. Some empirical evidence regarding the effect of DER on stock returns shows different results (Christian, Saerang, and Tulung, 2021) in their research showing that DER has a significant positive effect on stock returns, while research conducted by (Pratiwi and Winarto, 2021) says that DER does not have a positive effect on stock returns, as well as research conducted by (Mufid, 2020), (Dewi, Endiana and Arizona, 2020) shows that DER has no significant effect on stock returns.

ROE

Return on Equity (ROE) ratio is a profitability ratio to measure a company's performance in generating profits. ROE or profitability of own capital is a ratio to measure net profit after tax with own capital. This ratio shows the efficiency of using own capital. The higher this ratio, the better it means the position of the capital owner is stronger. ROE is calculated using the following formula:

$$\text{ROE} = \frac{\text{Earnings After Tax Income}}{\text{Equity}}$$

Some empirical evidence regarding the effect of ROE on stock returns shows different results, research conducted by (Hasan, Gasperz, and Limba, 2023) and (Devi and Artini, 2019), shows that ROE has a positive effect



on stock returns while research conducted by (Christian, Saerang and Tulung, 2021), (Dewi, Endiana and Arizona, 2020), (Mangantar and Baramuli, 2020) show that ROE does not have a positive effect on stock prices.

Based on this description, the following hypothesis can be formulated:

- H1: Beta has a positive effect on Stock Returns
- H2: Interest rates has a negative effect on stock returns
- H3: Currency Exchange has a negative effect on Stock Returns
- H4: Foreign Exchange has a negative effect on stock returns
- H5: DER has a positive effect on stock returns
- H6: ROE has a negative effect on stock returns

RESEARCH METHOD

This research seeks to test the influence of the independent variable on the Dependent Variable. The data for research is secondary data from a certain period and then hypothesis testing is carried out. Financial data is taken from the BI website, the BEI website at www.idx.com, and the Annual Report for the period 2018 – 2023 which is downloaded from each company's website. The population in this study were all Health Sector Companies list on the BEI. The research sample used a purposive sampling method, which was selected based on certain criteria, those that had complete Market Return and Annual Report data relating to consecutive research variables during the period 2018 - 2023 so that 15 companies were obtained. The data was then processed and tested using the Smart PLS 4.0 program. Independent Variables and Dependent Variables are explained and measured as in the following table:

Table 2. Definition and Measurement of Variables

Variable	Definition	Formula	Source
Stock Return	The difference between the share price in period t and the share price in period t-1	$R_t = \frac{(P_t - P_{t-1})}{(P_{t-1})}$	(Hanafi, 2011)
Beta	A measure of the volatility of a stock compared to the volatility of the stock as a whole	$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$	(Hanafi, 2011)
Interest Rate	BI Interest Rate Policy is announced in the BI Decree every month.	BI Rate	www.bi.go.id
Inflation	Percentage rate of price increase in several price indexes from one period to the next	Inflation Rate	www.bi.go.id
Foreign Exchange	The amount of domestic currency value to obtain 1 unit of foreign currency (US Dollar)	Foreign Exchange	www.bi.go.id
DER	Comparison between Debt and Company Capital	$DER = \frac{\text{Debt}}{\text{Equity}}$	(Kasmir, 2015)
ROE	Comparison between Profits and Capital	$ROE = \frac{\text{Earning after Interest and Tax}}{\text{Equity}}$	(Kasmir, 2015)

RESULT AND DISCUSSION

Descriptive Statistics

Descriptive statistics are limited to providing a general description of the characteristics of the object under study without generalizing the sample to the population. Descriptive statistics are used to explain or provide insight into the characteristics of a data set without drawing general conclusions (Ghozali, 2016). Maximum value, minimum value, mean, and standard deviation describe the distribution of data. In determining the distribution of data in a sample and seeing how close the data is to the mean value; the standard deviation value is used. Standard deviation is the best measure because it describes the size of the distribution for each observation (Ghozali, 2016). can be seen in the table as follows:

Tabel 3. Statistic Descriptive

Variables	Data	Minimum	Maximum	Mean	Std. Deviation
Beta	90	-0,303	1,577	0,500	0,418
Interest Rate	90	0,035	0,058	0,047	0,009
Inflation Rate	90	0,015	0,042	0,029	0,009
Foreign Exchange	90	14.146	15.254	14.568	392
DER	90	-1,94	16,76	0,847	1,886
ROE	90	- 4,96	12,4	0,4773	2,019
Return	90	-0,005	5,367	0,143	0,814

Source: Data Processed, 2024

Evaluation of Measurement Models

Tabel 4. Convergent Validity Test with Loading Factor

Variables	Indicators	Loading Factor	Information
Stock Beta	Stock Beta	1.000	Valid
Interest Rates	Interest Rates	1.000	Valid
Inflation	Inflation	1.000	Valid
Kurs	Kurs	1.000	Valid
DER	DER	1.000	Valid
ROE	ROE	1.000	Valid
Stock Returns	Stock Returns	1.000	Valid

Source: Data Processed, 2024

Based on Table 4, the loading factor values for all indicators for each variable produced can be seen that all variables have loading factor values greater than 0.7 so that they can be stated as measuring the variables.

Structural Model Evaluation (Inner Model)

Table 5 Path Diagram Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Beta -> Return	0,043	0,017	0,121	0,358	0,721
Interest -> Return	-0,078	-0,053	0,121	0,644	0,519
Inflation -> Return	-0,065	-0,105	0,209	0,312	0,755

	<i>Original Sample (O)</i>	<i>Sample Mean (M)</i>	<i>Standard Deviation (STDEV)</i>	<i>T Statistics (O/STDEV)</i>	<i>P Values</i>
Foreign Exchange -> Return	-0,135	-0,098	0,175	0,767	0,443
DER -> Return	0,060	0,054	0,162	0,370	0,711
ROE -> Return	-0,058	-0,037	0,105	0,552	0,581

Source: PLS Output, 2024

The R-Square results in Figure 3 show that the Stock Return variable can be explained by the Stock Beta, Interest Rate, Inflation, Exchange Rate, DER, and ROE variables of 0.042 or 4.2%, the remaining 95.8% are other variables that are not contained in the research model

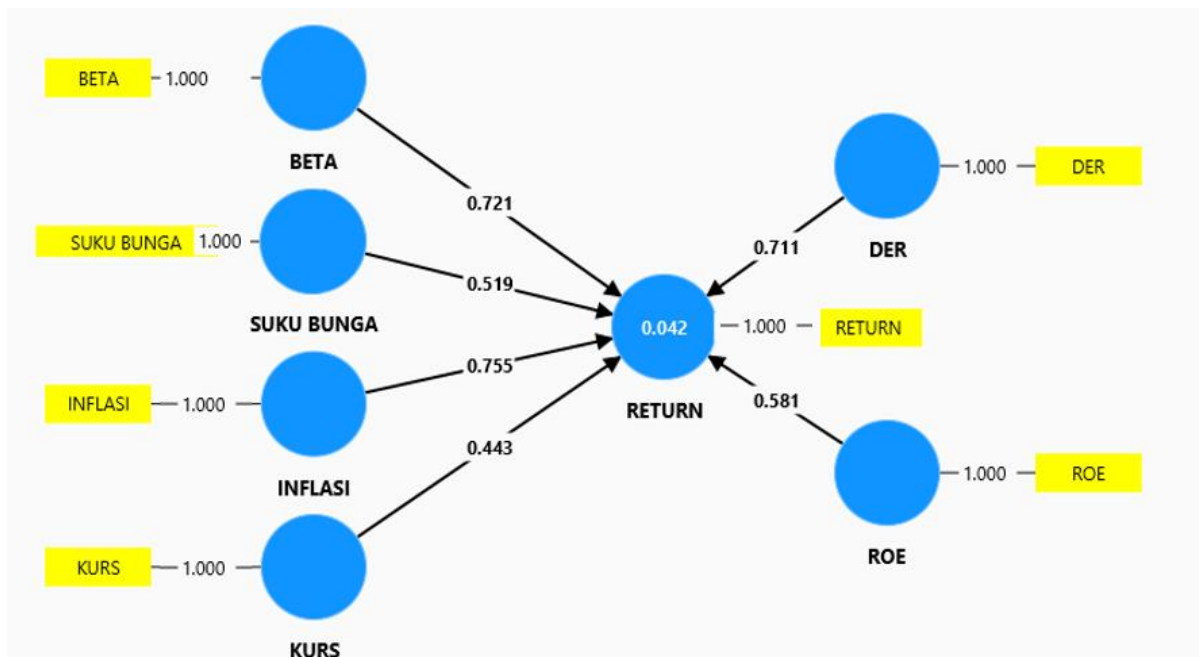


Figure 2. Graphical Output

Hypothesis testing via Smart PLS 4.0 gives the following results:

1. The path coefficient for Stock Beta on Stock Returns has an Original Sample value of 0.043, indicating that there is a positive influence of Beta on Stock Returns. The t-statistic value < 1.96 or $0.358 < 1.96$ and P-value > 0.05 or $0.721 > 0.05$ means that Stock Beta has a positive and insignificant effect on Stock Returns, so the research hypothesis (H1) is that Stock Returns are influenced significantly. positive by Stock Beta is rejected.
2. The path coefficient for Interest Rates on Stock Returns has an Original Sample value of -0.078, indicating that there is a negative influence of Interest Rates on Stock Returns. The t-statistic value < 1.96 or $0.644 < 1.96$ and P-value > 0.05 or $0.519 > 0.05$ means that interest rates have a positive and insignificant effect on stock returns, so the research hypothesis (H2) is that stock returns are influenced by Interest Rates are rejected.
3. The inflation path coefficient on stock returns has an original sample value of -0.065, indicating the negative influence of inflation on stock returns. The t-statistic value < 1.96 or $0.312 < 1.96$ and P-value > 0.05 or $0.755 >$

- 0.05 means that inflation has an insignificant negative effect on stock returns, so the research hypothesis (H3) is that stock returns are influenced by inflation. rejected.
4. The path coefficient for the exchange rate on stock returns has an original sample value of -0.135, indicating that there is a negative influence of the exchange rate on stock returns. The t-statistic value < 1.96 or $0.767 < 1.96$ and P-value > 0.05 or $0.443 > 0.05$ means that the exchange rate has a negative and insignificant effect on stock returns, so the research hypothesis (H4) is that stock returns are influenced by the exchange rate. rejected.
 5. The DER path coefficient on Stock Returns has an Original Sample value of 0.060, indicating a positive influence of Interest Rates on Stock Returns. The t-statistic value < 1.96 or $0.370 < 1.96$ and P-value > 0.05 or $0.711 > 0.05$ means that DER has a positive and insignificant effect on stock returns, so the research hypothesis (H5) is that stock returns are influenced by DER rejected.
 6. The path coefficient for ROE on Stock Returns has an Original Sample value of -0.058, indicating that there is a negative influence of ROE on Stock Returns. The t-statistic value < 1.96 or $0.552 < 1.96$ and P-value > 0.05 or $0.581 > 0.05$ means that ROE has a negative and insignificant effect on stock returns, so the research hypothesis (H6) is that stock returns are influenced by ROE rejected.

CONCLUSION

From the results of the analysis and discussion regarding the influence of stock beta, interest rates, inflation, exchange rate, DER, and ROE on stock returns of health companies listed on the Indonesia Stock Exchange in 2018-2023, the conclusions from the results of this research are as follows:

1. Systematic Risk, that is Beta, Interest Rates, Inflation, and Exchange Rates, have no effect on Stock Returns of health companies listed on the Indonesia Stock Exchange in 2018-2023.
2. Non-systematic risk, that is DER, and ROE, have no effect on Stock Returns of health companies listed on the Indonesia Stock Exchange in 2018-2023

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