

## Macro and Microeconomic Variables on Stock Return in The Property Sector In 2018-2022

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### Abstract

The purpose of the study, is getting information about investment to the investor based on micro and macro economic indicator. The variabel of micro and macro economic have a fluctuation indicated to Stock Return variabel. In this study, Stock Return is a dependent variable, Return On Asset (ROA), Debt to Equity Ratio (DER), Current Ratio (CR), Inflation, and Interest Rate is independent variable. The sample is using 23 of property company in 2018-2022 years. Variable data of macro economic is collect from website on [www.bi.go.id](http://www.bi.go.id), [www.bps.co.id](http://www.bps.co.id) and data variable of micro economic is collect from company financial statement. The methods of this study is using analisis liner berganda. The result of this study is using the common effect model, because is the best model in this study. The result of Uji F is show ROA, DER, CR, Inflation and Interest Rate is not simultaneous significant to the Stock Return. The Result of Uji T is show the effect of ROA, DER and CR is not significant to the Stock Return, otherwise the Inflation and Interest Rate is significant to the Stock Return.

**Keywords** : Stock Return, ROA, DER, CR, Inflation.

### INTRODUCTION

Property investment is the largest and most attractive sector for investors around the world (Huang & Ozer 2020). Investment is an activity carried out to obtain profit. The capital market provides diverse investment opportunities, and company performance can be used as an alternative by investors in determining investment goals and decisions. The capital market has a mean can encourage effectiveness for investors in allocating funds. The object used in research is property industry listed on the IDX (Indonesia Stock Exchange). The property sector can impact on Indonesia economic increase, because can be evidenced by the rapid development of hotels, apartments, housing, and offices (Yusrizal et al., 2023).

The property sector is a business, can be managed by entities or individuals by selling, buying, renting, designing and constructing all aspects include land and buildings. Ownership of buildings, facilities and infrastructure can be referred to as corporate or personal assets. According Muhammad (2023), The property sector has a significant effect to national economic growth in Indonesia, and is one of the long-term investments can also generate profits. According Yuwono & Yeo (2020), property is a primary need and also an asset for long-term investment can generate profits.

Capital market are crucial part of mobilizing funds from the public who will invest in the capital market. According Purwanto & Astuti (2021), The capital market is a between buyers and sellers who trade securities have an age of one year and above, such as stocks. Public interest in investment continues to grow and increase, so information is needed such as indicators can affect Stock Return. Data of KSEI (Indonesian Central Securities Depository), recorded 2,484,354 users in 2019, then increased in 2020 by 56.21% with a total of 3,880,753 users, in 2021 increased by 92.99% with a total of 7,489,337 users, then in 2022 increased by 8.20% with a total of 8,103,795.

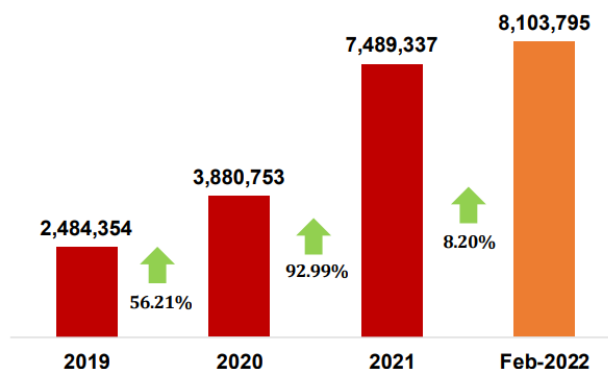


Figure 1. 2019-2022 investor number graph

Source : Data Kustodian Sentral Efek Indonesia (2022)

According the research of Yusrizal et al. (2023), The stock index of the property and building construction sector recorded a decrease of 19.69% year to date. Of the 97 stocks are members of the sector, 58 stocks fell, 24 stocks rise, and 15 were stagnant.

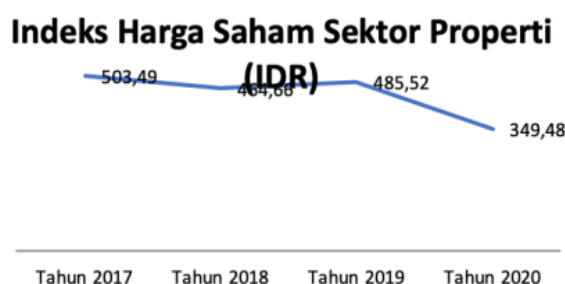


Figure 2. Property Index Share Price Chart 2017-2020

Source : Yusrizal et al. (2023)

Company performance can be assessed based on fundamental analysis. Fundamental analysis consists of fundamental factors of the company's economy come from the business side and company performance, so the company performance can affect stock prices on the capital market and investors decisions (Dianti et al. 2020). In 2018-2022 the stock price of the property sector tends to decrease, this can be caused by the business side and the company's performance in achieving the decrease of property sales target.

According Susilowati (2022), The micro and macro economic factors can affect investment in the capital market. Macroeconomic factors are inflation, exchange rates and interest rates, because macroeconomic factors can fluctuate continuously. Microeconomic factors are DER which can provide information to investors regarding company risk and stock returns. According the research of Asikin et al. (2021), Stock Return is a variable concept, the returns calculated and occurred based on historical data, used as a measure of company performance.

According the research of Anam et al. (2021), to reduce uncertainty and risk will arise, investors need various kinds of information, both information derived from company performance, or relevant economic and political conditions originating from external companies.

Inflation is increase in prices can effect on people's purchasing power to decrease, especially in the property sector, which in turn has an impact on reducing company performance. According Fitriaty & Saputra (2022), stated the property is one of the asset instruments can hedge against inflation, as can provide higher returns than inflation. Indonesia also experienced fluctuations in the inflation rate in the last 10 years 2011-2022, which in 2013 increased to almost 9% and then in 2022 managed to decreased below 6%.

According to the research of Fitriaty & Saputra (2022), The occurrence of inflation also results in an increase in the price of goods and services, which can encourage an increase in interest rates which can be a burden on the financing of Home Ownership Loans (KPR) to increase. This is also a concern for people who want to take out a Home Ownership Loan, which can also cause the level of home sales to decrease, in the end affecting the revenue decrease for property companies. Based on the level of interest rate increases in Indonesia in the past 5 years, it has fluctuated every year.

Financial ratios are tools that can assess company performance based on company data and financial reports. Companies with a high level of profit will attract the attention of investors to invest because the company is considered a superior company. Company shares will increase if the company has superior value. A high level of profitability can indicate that the company has a good performance and has future prospects. Companies with good performance will provide positive signals to investors, so they are interested in investing in shares, so the company's share price will increase and the company's image will be better.

Based on the problems compiled, the level of investors continues to increase from year to year, while the Stock Return of the Property sector has decreased. So it is necessary to conduct research on micro and macroeconomic factors that also affect Stock Return. The author uses ROA, DER, CR as microeconomic indicators and Inflation, Interest Rates as macroeconomic indicators to examine the effect on Stock Return in the Property sector in 2018-2022.

## **LITERATUR REVIEW**

### **Return On Asset**

Return On Asset (ROA), according to the research of Asikin et al. (2021), the ratio has a variable concept to know about the efficiency of management in using assets to create profits. Consists of indicators of net income and total assets. The research of Andriani & Winedar (2020), which uses the sample of 30 companies listed on the Indonesian Stock Exchange (IDX) in 2018, the results show ROA partially has a significant effect on Stock Return. Research of Rifqi (2021), Using the variable ROA on stock return, with a sample of 18 companies in the building and construction sector, the results show ROA has a positive result on stock return variable. Research of Bhima (2016), using the ROA variable on Stock Return variable with 38 sample properties sector, results show the ROA variable is not significant to Stock Return. According to research of Lailita & Yanni (2022), measuring the effect of the ROA variable on the stock return of companies listed on the LQ45 index in the 2015-2019 period, totaling 54 companies, results show ROA has a significant negative result to Stock Return. Research of Dura & Vionitasari (2020), using 24 samples of sector properties company, results show has no significant effect of the variable to Stock Return.

### **Debt to Equity Ratio**

Debt to Equity Ratio (DER) has a variable concept, namely DER in corporate funding. According to the research of Asikin et al. (2021), a ratio measures the level of debt used in a company. According to the research of Andriani & Winedar (2020), using 30 listed samples from IDX, the result of the variable is partially not significant to Stock Return. According to the research of Rifqi (2021), using 18 listed samples of building and construction sector companies from IDX, Results of the variable has a negative result to Stock Return. Research of Bhima (2016), using 38 sample data of properties sector companies with the DER variable, the results show has no significant result to Stock Return. The research of Faridatul & Nanan (2022), with the object of research food manufacturing companies, results show the variable has a negative and insignificant result to stock prices. Research of Dura & Vionitasari (2020), with a sample of 24 companies sector building and construction, results show has no significant result to the stock prices variable.

### **Current Ratio**

Current Ratio (CR), according to the research of Christianty & Latuconsina (2023), has a variable concept, namely a ratio measures a company's ability to meet the short-term obligations. Consists of current

assets and current liabilities indicators. The research of Andriani & Winedar (2020), using the CR variable on Stock Return using 30 companies listed on the IDX in 2018, results show the variable partially significant to Stock Return. According the research of Faridatul & Nanan (2022), by using listed industry from IDX, the object is foods industry, with 7 samples from 25 companies, results show the variable has a significant effect and positive to stock prices. According the research of Dura & Vionitasari (2020), using the CR variable on Stock Return, with a total sample of 24 properties sub-sector companies, result show the variable has no significant to Stock Return. Research of Parisiana et al. (2022), by using properties sector samples, results show the CR variable has a negative effect to Stock Return. According the research of Novison et al. (2021), using the population of the F&B (Foods and Beverages) industry listed on the IDX with 44 company samples, results show the CR variable has a significant and negative effect to Stock Return.

### **Inflation**

Inflation is a continuous increase in the price of goods has increased from the previous price (Veronica & Pebriani 2020). The research of Purwanto & Astuti (2021), using the Inflation variable on the Stock Return of manufacturing companies listed on the IDX, the results show the Inflation variable has no effect on Stock Return. According Rifqi (2021), using the Inflation variable on Stock Return, with 18 samples of building and construction sector companies listed on the IDX, the results show the Inflation variable has no effect on Stock Return. According the research of Fitriaty & Saputra (2022), using the Inflation variable on the stock performance of building and construction companies, results show the variable has no effect to stock prices. According the research of Ariesa et al. (2020), population of 52 building and construction companies, the results show the variable has no significant to Stock Return. According Ilham et al. (2023), by using property industry as a object, listed from the IDX, results show the variable has a significant result to Stock Return.

### **Interest Rate**

The interest rate collected from Indonesia Bank, used as a standard interest rate for government banks and other private banks there can affect stock fluctuations in the capital market (Veronica & Pebriani 2020). According the research of Purwanto & Astuti (2021), using the Interest Rate variable on Stock Return, which uses a sample of manufacturing companies listed on the IDX, results show the variable has effect to Stock Return. Research of Rifqi (2021), with a sample of 18 building and construction sector companies, results show the negative effect. According Bhima (2016), with 38 samples of properties sector, results show the variable has no effect to Stock Return. According Fitriaty & Saputra (2022), using building and construction sector companies, with variable interest rates on stock performance, results show the variable has a negative result and significant. Research of Utama & Puryandani (2020), determine the result of the Interest Rate variable to Stock Return listed on Sri Kehati for the period 2018, with a population listed on the IDX and 23 companies as samples, results show positive and the significant to Stock Return.

Based on collected previous research, the authors formulate a hypothesis to examine the influence between variables as follows:

- H1 : Find out the result of Return On Asset to Stock Return from property sector 2018-2022.
- H2 : Find out the result of Debt to Equity Ratio to Stock Return from property sector 2018-2022.
- H3 : Find out the result of Current Ratio to Stock Return from property sector 2018-2022.
- H4 : Find out the result of Inflation to Stock Return from property sector 2018-2022.
- H5 : Find out the result of Interest Rate to Stock Return from property sector 2018-2022.

### **RESEARCH METHODS**

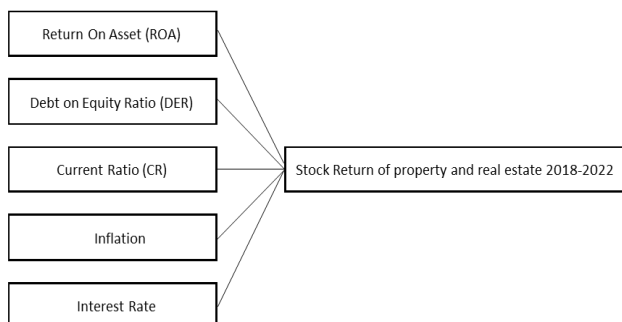
Multiple linear analysis used on the research methods, which consists of variable, dependent is Stock Return and independent consisting of ROA, DER, CR, Inflation and Interest Rates. The model used is a multiple linear regression model, as formula follows:

$$Y_i = \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i}$$

Which is:

Y = Stock Return,  $\beta$  = Koefisian regresi, X1 = ROA, X2 = DER, X3 = CR, X4 = Inflation, X5 = Interest Rate

The model uses quantitative research, data collected from IDX website, BPS (Badan Pusat Statistik) and Indonesia Bank. Research designed to analyze the relationship between variables.



**Figure 3.** Research Model

The object of research on microeconomic variables used as a sample is properties companies, listed on the idx.co.id website, www.idnfinancial.com, ksei.co.id. List of companies are sampled:

**Table 1.** Sample List

No	Stock Code	Company Name
1	APLN	Agung Podomoro Land
2	ASRI	Asri Agung Sedayu Group
3	BSDE	Bumi Serpong Damai
4	CTRA	Ciputra Development
5	DART	Duta Anggada Realty
6	DILD	Intiland Development
7	DMAS	Puradelta Lestari
8	GPRA	Perdana Gapuraprima
9	GWSA	Greenwood Sejahtera
10	JRPT	Jaya Real Property
11	KIJA	Kawasan Industri Jababeka
12	LPKR	Lippo Karawaci
13	MDLN	Modernland Realty
14	MTLA	Metropolitan Land
15	PUDP	Pudjiadi Prestige
16	PWON	Pakuwon Jati
17	RDTX	Roda Vivatex
18	SMRA	Summarecon Agung
19	OMRE	Indonesia Prima Property

20	BKSL	Sentul City
21	DUTI	Duta Pertiwi
22	COWL	Cowell Development
23	BIPP	Bhuwanatala Indah Permai

**Table 2.** Definition of Operational Variables

Variable	Indicator	Formula	Scale
Stock Return (Ri)	Initial Stock Price (Pt) Closing Stock Price (Pt-1)	$R_i = \frac{P_t - P_{t-1}}{P_{t-1}}$	Ratio
ROA	Net Income Total of Assets	$ROA = \frac{\text{Nets Income}}{\text{Total Assets}}$	Ratio
DER	Total of Liabilities Total of Capital	$DER = \frac{\text{Total Debt}}{\text{Total Equity}}$	Ratio
CR	Current Assets Current Liability	$CR = \frac{\text{Currents Assets}}{\text{Currents Liability}}$	Rasio

Source : Parisiana et al. (2022)

Inflation data collected from [www.bps.co.id](http://www.bps.co.id). Interest rate data in this research is annual SBI data collected from [www.bi.go.id](http://www.bi.go.id).

## RESULTS AND DISCUSSION

**Table 3.** Result of Chow Test (Likelihood Ratio / Uji F)

Fixed Effects Tests			
Cross-section fixed effects test			
Effects Test	Statistic	d.f.	Prob
Cross-section F	0.754724	(22,87)	0.7699
Cross-section Chi-square	20.086709	22	0.5776

Source : processed data (2023)

The probability value if (prob.) >  $\alpha$  ( $\alpha = 0.05$ ), accept H0 or mean the best model is CEM (Common Effect Model) and be continued with the LM Test (Lagrange Multiplier). Conversely, if the probability value show the result is <0.05, the best model is the FEM (Fixed Effect Model) / REM (Random Effect Model), which will be resolute based on the Hausman test results.

Results in the chow test table show the probability value exceeds 0.05 mean results the best model is the CEM (Common Effect Model).

**Table 4.** Outcome of the Random Effects Test: Hausman Test

Random Effects Test			
Random effects test cross-section			
Summary of the test	Chi-square statistic	Chi-square. d.f.	Probability
Random cross-section	1.220198	5	0.9429

Source : processed data (2023)

If probability value result show  $<0.05$ , the best model is FEM (Fixed Effect Model). Then if probability value result show  $> 0.05$ , accept  $H_0$ , mean the best model is the REM (Random Effect Model) / (CEM) Common Effect Model, which will be determined based on the LM (Lagrange Multiplier) test results.

The result of Hausman test, show the probability value of cross-section random is 0.9429, mean the probability value is  $> 0.05$ , the best model is the REM (Random Effect Model) / CEM (Common Effect Model).

**Table 5.** Result of Lagrange Multiplier Test

	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	0.733079	0.81172	1.544799
	-0.3919	-0.3676	-0.2139
Honda	0.8562	0.900955	0.31646
	-0.8041	-0.1838	-0.4874
King-Wu	-0.8562	0.900955	0.492929
	-0.8041	-0.1838	-0.311
Standardized Honda	-0.658056	0.151432	-5.513361
	-0.7447	-0.4398	-1
Standardized King-Wu	-0.658056	2.767847	-2.191594
	-0.7447	-0.0028	-0.9858
Gourieroux, et al	--	--	0.811720
			-0.3504

Source : processed data (2023)

Result of probability value if  $<0.05$ , the best model is the REM (Random Effect Model). Then if the probability value  $> 0.05$ , accept  $H_0$ , mean the best model is CEM (Common Effect Model).

Result of the LM Test (lagrange multiplier), show the Breusch food of cross section value is 0.733079 (0.3919), mean the probability value is  $> 0.05$ , the best model used to examine variables is the CEM.

**Table 6.** Result of Common Effect Model (CEM) Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.262888	0.141844	-1.853360	0.0665
ROA	-0.007306	0.009724	-0.751335	0.4541
DER	-0.103226	0.052235	-1.976187	0.0507
CR	0.007317	0.016914	0.432607	0.6662
INFLATION	14.33561	6.013885	2.383751	0.0189
INTEREST RATE	-0.872714	0.369467	-2.362090	0.0199

Root MSE	0.323149	R-S (R-Squared)	0.084045
Average of the D. Variable	-0.049923	Adjusted R-squared	0.042029
Standard Deviation of the D. Variable	0.339127	Standard Error of the Regression	0.331924
Akaike Information Criterion	0.682944	Sum of Squared Residuals	12.00893
Bayesian Information Criterion	0.826157	Maximum likelihood estimation (MLE)	-33.26926
HQ Criterion	0.741073	Regression Analysis	2.000300
The Durbin-Watson Statistic	2.510576	Probability (F-statistic)	0.084229

Source : processed data (2023)

### 1. Coefficient of Determination (R squared)

The result of adjusted R Square in the output represent percentage of model research, or the value show how variable of the independent explains the dependent. In the output image, the Adjusted R-squared value show 0.042029, meaning the variable explain the dependent by 04.20%, while 95.80% is by other variables not in the model research.

### 2. F-Test

The result of F-Test aims to asses the simultaneous impact of the independent variable on the dependent variable in multiple linear regression analysis. The probability value (F statistic), regression F test results are shown.

The hypothesis formulation used is:

H0 : None of the independent variables collectively demonstrate significance with the dependent variable.

H1 : All independent variables collectively show significance with the dependent variable.

The criteria for examine are :



If probability value is  $<0.05$ , the decision is reject  $H_0$  or the independent simultaneously has a significant result to the dependent variable. If probability value is  $> 0.05$ , the decision is accept  $H_0$  or the independent simultaneously has no significant result to the dependent variable.

Based on output, the probability (F-statistic) value show 0.084229, it be conclusion, the independent variable simultaneously have no significant result on Stock Return.

### **3. T-Test**

The T-test to assess the impact of all independent variables on the dependent variable.

The hypothesis formulation used is: 1

H1 : ROA has no significant result to dependent variable

H2 : DER has no significant result to dependent variable

H3 : CR has no significant result to dependent variable

H4 : Inflation has a significant result to dependent variable

H5 : Interest Rate has a significant result to dependent variable

The test criteria are:

If the result of probability value is  $<0.05$ , the decision accept the variable of independent has a significant result to the dependent. If the result probability value is  $> 0.05$ , the decision reject the variable of independent has no significant result to the dependent.

#### **Effect of Return On Asset on Stock Return**

ROA has no significant result on Stock Return, with the probability value of 0.4541, mean  $> 0.05$ , the conclusion is the high and low return of company's income has no effect to the Stock Return of the property sector in 2018-2022.

Research of Bhima (2016), The insignificance between ROA and Stock Return in the property sector because ROA only focuses on the short term, while the propety sector is a long-term investment. The Research of Laulita & Yanni (2022), the higher rate give lower return, mean ROA to have no significant result to Stock Return.

#### **Effect of Debt to Equity Ratio on Stock Return**

DER has no significant result to Stock Return, the probability value show 0.0507, which mean  $> 0.05$ , the conclusion is high or low debt yield of a company has no result to Stock Return the property sector in 2018-2022.

The research of Parisiana et al. (2022), DER has no significant effect because the debt ratio be used by companies in finance operations to improve company performance. Research of Bhima (2016), insignificant between DER on Stock Return, because companies need debt to grow.

#### **Effect of Current Ratio on Stock Return**

CR show has no significant result on Stock Return, with the probability value show 0.6662, which mean  $> 0.05$ , the conclusion is the high or low level of capability to fulfill obligations has no effect to Stock Return in the property sector in 2018-2022.

Research of Christianty & Latuconsina (2023), mentioned investors do not see the high and low level of current debt and current assets owned by the company, this is because PT Modernland Realty, Tbk. In 2017 experienced a decrease in Current Ratio, but Stock Return increased. Research Christianty & Latuconsina (2023), the higher of company's capability to pay debt, the less of company's capability to utilize capital make profit. Company's with low capability to pay short-term debt can affects investors in making decisions to

invest, because has a high risk of bankruptcy. Based on these two research, the author concludes the high or low CR has no result to Stock Return.

### **Effect of Inflation on Stock Return**

The result of Inflation show has a significant to Stock Return, with a probability value of 0.0189, which is  $< 0.05$ , mean the level of price increase can effect to the Stock Return of property industry in 2018-2022.

Research of Veronica & Pebriani (2020), the high or low of inflation value can reflect the condition of the economy, so can be one of the references for investors to making decision. Research of Purwanto & Astuti (2021), mentioned the continuous addition of money, without any increase in production and supply of goods, can adversely affect the performance, which ultimately decrease results in stock value.

### **Effect of Interest Rate on Stock Return**

The result of Interest rates show has a significant to Stock Return, with a probability value of 0.0199, which is  $< 0.05$ , mean the interest rate of return can affect the Stock Return in property sector 2018-2022.

Research of Bhima (2016), high rates can attract the investors to invest in capital market, because can provide high returns. Research of Purwanto & Astuti (2021), increase in interest rates can effect the investors decision to divert their investments in to the bank sector because the return more high than capital market, which can affect to stock returns.

## **CONCLUSION AND SUGGESTION**

The result of testing best model of three models consisting of the FEM Model (Fixed Effect Model), REM Model (Random Effect Model), and CEM Model (Common Effect Model), based on the Chow, Hausman, LM (Lagrange Multiplier) tests, result show the best model is CEM.

The result of testing F, the probability value show 0.084229 is mean  $> 0.05$ , can be interpreted the results show  $H_0$  is accepted, the five independent variables simultanly no significant to the dependent variable. Based on the result, ROA, DER, CR, Inflation and Interest Rates simultanly no significant to Stock Return.

The result of testing T, the significant influence of independent variable to dependent variable based on the probability value result. ROA, DER and CR variables show the probability value is  $> 0.05$ , meaning the variables no have significant to Stock Return. While Inflation and Interest Rate variables show the probability value is  $< 0.05$ , mean the variable has a significant to Stock Return.

The author suggesting for further research, use another micro and macroeconomic variables are not contained in this study, to re-examine another variables can effect or not to the stock return of property industry.

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