Implication of Macroeconomic Factors to Stock Returns of Indonesian Property and Real Estate Companies

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Abstract

This study aims to identify the effect of interest rate change policy made by Bank Indonesia during the period of January 2010-March 2016 to stock return of the property sector and real estate. In addition, this study also aims to test whether fluctuations in government bond yields, inflation, and indigo exchange also affect the stock returns of the property sector and real estate in Indonesia. By using purposive sampling, there are 15 companies that will be used as research samples. By using multiple linear regression analysis, there is no significant negative effect of interest rate (BI Rate) and inflation on stock return of the property sector and real estate. Nevertheless, it was found that the variable fluctuation of government bond yield and dollar exchange rate against rupiah had a negative and significant effect on stock returns of property and real estate sector in Indonesia. Increased bond yield would make investors choose other instruments as an alternative to investing money. In addition, investors also tend to choose to save money in the form of US Dollar rather than investing money in the capital market, further with the weakening of the value of the rupiah will increase the amount of foreign debt from the company.

Implikasi Faktor-faktor Makroekonomi terhadap Return Saham Perusahaan Properti dan Real Estate di Indonesia

Abstrak

Penelitian ini bertujuan untuk mengidentifikasi pengaruh kebijakan perubahan tingkat bunga yang dilakukan oleh Bank Indonesia selama periode Januari 2010-Maret 2016 terhadap return saham sektor properti dan real estate. Selain itu, penelitian ini juga bertujuan untuk menguji apakah fluktuasi yield obligasi pemerintah, inflasi, dan nila tukar juga turut berpengaruh terhadap return saham sektor properti dan real estate di Indonesia. Dengan menggunakan purposive sampling diperoleh 15 perusahaan yang akan dijadikan sampel penelitian. Dengan menggunakan analisis regresi linier berganda diperoleh hasil bahwa tidak terdapat pengaruh negatif yang signifikan dari variabel tingkat bunga (BI Rate) dan inflasi terhadap return saham sektor properti dan real estate. Namun demikian, ditemukan hasil bahwa variabel fluktuasi yield obligasi pemerintah dan nilai tukar dollar terhadap rupiah berpengaruh negatif dan signifikan terhadap returns saham sektor properti dan real estate di Indonesia. Meningkatnya yield obligasi akan membuat investor memilih instrumen lain sebagai alternatif dalam menginvestasikan uangnya. Selain itu, investor juga cenderung memilih untuk menyimpan uang dalam bentuk US Dolar dibandingkan menginvestasikan uangnya di pasar modal, lebih lanjut dengan melemahnya nilai rupiah maka akan meningkatkan jumlah utang luar negeri dari perusahaan.

JEL Classification: E2, E22

INTRODUCTION

Capital markets are influenced by several factors, including uncertainty in the future domestic macroeconomic circumstances and the world monetary state. These factors as well as many other factors make those prices in the stock market fluctuate. Stock prices in the capital market will depend on external factors that influence investor's decision to buy shares, such as inflation rate, rupiah exchange rate, and interest rate (Moore & Wang, 2014; Liu et al., 2014; Listriono & Nuraina, 2015; Reboredo et al., 2016).

Interest rates, in this case the BI rate, represent the one-year interest rate set by Bank Indonesia (BI) as a benchmark for lending rates as well as savings for banks and/or financial institutions throughout Indonesia. In general, Bank Indonesia will change the BI rate as a response to inflationary changes. If inflation is high or rupiah exchange rate declines, usually Bank of Indonesia will raise the BI rate. The increase in BI rate should be done by BI, in order to keep the public willingness to save money in the bank. In addition, BI will also raise the BI rate if there is a slump of the rupiah against strong foreign currencies such as the US dollar. If the BI rate is not raised, then the people will withdraw their savings to be exchanged for US dollars. Changes in bank interest rates will also affect other capital market investment instruments, one of which is stocks and bonds.

Bonds are securities containing promises to make a fixed payment according to a predetermined schedule (Gee & Kim, 2014). The bonds themselves are certificates or securities containing contracts between the investor as the funder and the issuer as the borrower of the funds. The bond issuer has an obligation to the holder to pay interest on a regular basis as scheduled and pay off the loan principal at maturity. Yield to Maturity is the proceeds of the bonds profit which have taken into account the profit from the coupon, plus the gain/loss of the price difference, assuming the bonds are held to maturity. Bonds as one of the invest-

ment instruments is the substitute product of stocks, with yield as the main consideration. Government issued bonds have yields that go along with the BI Rate, so that possible changes in the BI Rate as well as bond yields may affect the stock price.

Government bonds are one of the attractive investment alternatives for investors because they are considered safe. Government bonds will not face bankruptcy problems and will surely yield results in the long run, this certainty is also supported because more than 90% of government bonds distribute fixed coupons. Thus, the property stock price will also be affected by the interest rate if the change in interest rate influences the investor to switch from stock investment to bond investment.

BI's policy to lower the BI rate in January 2016 from 7.5% to 7.25%, then 7% and 6.75% in February and March 2016 will certainly affect investor sentiment to buy property stocks (Bank Indonesia, 2017). Generally, the decline in interest rates will increase the Composite Stock Price Index in Indonesia Stock Exchange, although there are some possibilities of anomaly. Property stock prices are highly dependent on the performance of the property industry that relies on bank loans in the form of mortgages, so the property industry is very sensitive to changes in interest rates. If the BI rate and mortgage rates fall, many people will apply for credit to the bank to buy property products such as houses and apartments and of course the stock price increases due to the number of home purchases and corporate's good sales performance.

However, in recent years the property industry in Indonesia has been stagnant due to Bank Indonesia's Loan To Value (LTV) policy which began in 2012. The LTV value is still considered low by the public, resulting in the increase in the sale of property products hampered in recent years, which also affecting the stock price of the property sector.

The negative impact of the BI rate decline on the increase in property stock prices through the LTV factor should be reviewed, due to the

low value of LTV that still hampers the public's desire to buy property products. The lateness of people's desire to buy property products will disturb the profitability of property companies, so that the property subsector is considered less attractive to investors. The graph of stock price movements in the property sub-sector actually declined after the announcement of the BI rate policy in January and February 2016. In addition, the general decline in interest rates will raise the price of bonds that are certainly less favored by investors so that the impact of price changes and bond yields on prices Property subsector shares cannot be ascertained.

The influence of the economic factors to stock return of property sector will be calculated based on Arbitrage Pricing Theory. The Arbitrage Pricing Theory (APT) is a theory of asset pricing which explains that an asset's returns can be forecast using the linear model relationship between the asset's expected return and the macroeconomic factors that affect the asset's risk (Basu & Chawla, 2012). Arbitrage pricing theory provides analysts and investors a multifactor pricing model for securities based on the relationship between a financial asset's expected return and its risks.

Hypothesis Development

The interest rate is one of the attractions for investors to invest in the form of deposits or SBI so that investment in the form of shares will be unrivaled. According to Cahyono (2008), there are two explanations for the increase in interest rates can push stock prices down. First, an increase in interest rates changes the investment return map. Second, an increase in interest rates will cut corporate earnings. This happens in two ways. The increase in interest rates will increase the interest expense of the issuer, so that the profit can be cut. In addition, when interest rates are high, production costs will increase and product prices will be more expensive so that consumers may postpone their purchases and keep their funds in the bank. As a result, the company's sales decreased and this will cause a decline in profits that will suppress the stock price.

Theoretical contradictions also occurred in previous studies, including research conducted by Mok (1993) and Djauhari (2014) that showed interest rates do not have a significant effect on the stock price index property. Mohammad et al. (2009) and Lioui and Maio (2014) said that there is a significant influence between interest rates and stock prices. On the other hand, Vejzagic and Zarafat (2013), Sofyani and Wahyudi (2015) found that interest rate has a negative and significant impact on the property stock price index.

The yield to maturity of a bond is the rate of return an investor obtains when holding a bond until maturity (Fabozzi, 2011). Yield to maturity evaluates both interest income, capital gains and cashflows received throughout the life of the bond market until maturity date (Jung et al., 2016). Specifically, the higher the yield rate to maturity, the lower the rate of price change. For the same large change in yields, at low yield levels leads to larger price changes compared to high yield rates. In other word for a certain change of results, price level changes will be greater at low yields than at high yields (Kusuma, 2005). It can be concluded that bond prices and yields move in the opposite direction, resulting in the movement of yields is in the same direction of interest rate movements.

If the yield to maturity is higher than the current yield that is considered appropriate then the bond is said to be underpriced (undervalued) and is a candidate for purchase. Conversely, if yield to maturity is lower than the currently estimated yield, the bond is said to be overpriced (overvalued) and is a candidate for sale.

If interest rates increase so the expected rate of return of the market also increases, then bond prices will decline (Macaulay, 2017). If the interest rate decreases, bond prices increase. So the interest rate and bond prices move in the opposite direction. From the statement above, it is clear that the diversity of interest rates can lead to the diversity of bond prices. This variation in the price of securities caused by changes in the interest rate is called interest rate risk (Kolapo & Fapetu, 2015)

The value of a bond moves in the opposite direction with an interest rate change. If interest rates generally tend to fall, then the value or price of bonds will increase, as investors tend to invest in bonds. Meanwhile, if interest rates tend to increase in general, then the value or price of bonds will fall, because investors tend to invest money in the bank (Mardiyati & Rosalina, 2013).

If the market believes that interest rates will rise, the bonds will be traded at higher yields so that bond prices will fall. Changes in interest rates may occur several months later and may be subject to market expectations. Therefore, if bond yield is expected to rise, bond prices will fall, and vice versa. Thus, bond yields move in the direction of the interest rate. The movement of bond yields in the direction of fluctuations in interest rates also allows the influence of stock price changes in the property sector.

The impact of the decline of the rupiah against the stock market is indeed possible, given that most of the go-public companies in IDX have foreign debt in the form of foreign currency. In addition, those products are generated by these public companies use a lot of materials that have imported content. The decline of the rupiah is likely to cause the amount of companies debt, and production costs also become larger when assessed by the rupiah. But since the establishment of the floating foreign exchange rate system, JCI movement seems to follow the movement of rupiah exchange rates against the dollar or otherwise the movement of the rupiah as if following the movement JCI. This raises the probability that there is a systematic relationship between them.

Research conducted by Hardiningsih et al. (2001) shows that the exchange rate of rupiah against US Dollar has a negative effect on the stock. On the other hand, Suciwati and Machfoedz (2002) and Utami and Rahayu (2003) research results show that the rupiah exchange rate against US dollar has a positive effect on stocks. Mohammad et al. (2009), Vejzagic and Zarafat (2013), Ray and Sarkar (2014), Wong (2017) and Keat et al. (2017) finds some

evidence that the exchange rate market and the stock market are significantly correlated. The relationship between the two markets is mostly negative. Dynamic conditional correlations are found to be high in the period of the financial crises. There are no long-run relationships between the time-varying variances of real exchange rate returns and real stock. Exchange rate is one of the factors taken for the study by Tanted and Khan (2016) which indicates that if the exchange rate appreciates against US dollar, the return on the National Stock Exchange (NSE) NIFTY in India is getting increased.

Research on the impact of inflation and stock prices states that higher inflation will reduce the profitability of the company. The decreasing profit of the company is a bad information for traders on the stock market and may result in a decline in the company's stock price. An analysis conducted by Tanted and Khan (2016) indicating that inflation is negatively influencing the price return of NSE NIFTY. It implies that inflation hike has a negative impact on the price return of India. Another factor taken for the study is the exchange rate which indicates that if the exchange rate appreciates against US dollar, the return on NSE NIFTY will also increase. However, Sucuachi et al. (2016) found that inflation rate positively influence stock price in Philippines. While Sangkyun (1997) who examines the relationship between macroeconomic variables, consumer price index, GDP, Inflation rate, and interest rate on the stock price found that the inflation rate has no effect on the stock price. In addition, Tiwari et al. (2015) found that inflation does not erode the value of stocks in Pakistan.

This study uses APT as the pricing model to determine the macroeconomic factors that affect the stock return of the property sector. The hypotheses which are used in this research are based on the conclusion of the majority of previous journals from various researchers. The hypotheses in this journal are listed below:

Ha1: There is a negative effect of interest rate on stock return of the property sector.

Ha2: There is a negative effect of bond yield on stock return of the property sector.

Ha3: There is a negative effect of US Dollar exchange rate on stock return of the property sector.

Ha4: There is a negative effect of inflation rate on stock return of the property sector.

Ha5: There is a negative effect on bond yield, inflation rate, US Dollar exchange rate, and interest rate on stock return of the property sector.

METHOD

This research used a quantitative method with associative explanation level. The population used is all property and real estate companies listed on the Indonesian stock exchanges in January 2010 until March 2016. The population of existing property companies in Indonesia amounts to 61 companies.

This research uses purposive sampling method. Purposive Sampling is a technique of determining the sample with certain considerations. The purposive sampling criteria used are Listed on the Indonesia Stock Exchange from January 2010 to March 2016, Companies belonging to the property sub-sector, 15 Property companies with the largest capitalization from 2010 to 2016.

Return of stock price is a certain amount of profit earned from a stock. A stock return can also be negative. If it is positive means gain or capital gain and if it is negative means loss or get capital loss. This study uses the monthly return of sample stock price of property sub-sector.

Yield to maturity (YTM) of the bond is the rate of return that investor will obtain if holding a bond until maturity (Titman et al., 2017). YTM evaluates both interest income, capital gains and cashflows received throughout the life of the bond market until the maturity date. Yield to maturity bonds that will be used as a calculation is YTM average of government bond in Indonesia that obtained from historical data from www.investing.com.

The interest rate, in this case the BI rate, represents the one-year interest rate set by BI as a benchmark for lending rates as well as savings for banks and/or financial institutions throughout Indonesia. The exchange rate used is the monthly Rupiah exchange rate against the US Dollar at Bank Indonesia processed from the annual report of Bank Indonesia. The interest rate, exchange rate and monthly inflation data are obtained from the Bank Indonesia annual report published in *www.bi.go.id*. In addition, inflation rate data can also be obtained from the Central Bureau of Statistics.

The analytical technique used in this study is quantitative data analysis, to estimate quantitatively the influence of several independent variables simultaneously or individually to the dependent variable. Functional relationship between one dependent variable with the independent variable can be done by multiple regression. The method of analysis used is a multiple linear regression model with the following model:

$$Y = \alpha + \beta 1 X 1 + \beta 2 X 2 + \beta 3 X 3 + \beta 4 X 4$$

Where:

Y	= Stock Price Index of Property Sector
α	= Random Variable
$\beta 1, \beta 2, \beta 3$	= Coefficients of Regression
X_1	= YTM *Government Bond*
X_2	= BI Rates
X_3	= US Dollar Exchange Rate
X_4	= Inflation Rate

The value of the coefficients of regression is very important as the basis of the analysis. The coefficient b will be positive (+) if it shows a unidirectional relationship between independent variables and the dependent variable, meaning that the increase in the independent variable will result in the increase of dependent variable, and vice versa if the independent variable decreases. While the value of b will be negative (-) if it shows the opposite relationship. This means that the increase of independent variables will result in the decrease of the dependent variable, and vice versa. Equation model obtained from data processing attempted not to be symptoms

of multicollinearity, heteroscedasticity and autocorrelation. To determine whether there are any symptoms will be tested first with the classical assumption test.

The regression coefficient will be calculated by regressing the data of average property sector stock return from January to March 2016 with YTM data, BI Rate data, Inflation Rate, and US Dollar exchange rate. Regression calculations will be done partially by using statistical software such as SPSS. After that partial regression is done, the multiple regression will be calculated with data estimate stock return index of property sub-sector from January to March 2016 as a dependent variable with YTM data, Inflation Rate data, US Dollar exchange rate data and BI rate data as an independent variable.

The test of the partial regression coefficient using the t test to know the significance of the role of independent variables partially with other independent variables is considered constant. Testing of regression coefficients simultaneously using the F test, this test is done to see the effect of independent variables on the dependent variable together.

If the value of significance is less than 5% then Ha is accepted and Ho is rejected, indicating that there is negative effect of fluctuations in bond yields, inflation rate, US Dollar exchange rate, and interest rates on changes in stock prices of the property sector. However, if the significance value obtained is greater than 5% then Ha is accepted and H0 is rejected, indicating that there is no negative influence of fluctuations in bond yields, inflation rate, US Dollar exchange rate and interest rates on changes in stock prices of the property sector.

RESULT AND DISCUSSION

This chapter will describe matters relating to the data collected, the results of data processing and discussion of the results of data processing them. The sequence of the discussion systematically is as follows; General description of the object of research, testing classical assumptions, data analysis in the form of regression analysis results, testing of independent variables to the dependent variable. Microsoft Excel and SPSS are used for Data processing in

Table 1. List of Samples

Company Name	Code	Core Business
PT Bumi Serpong Damai Tbk	BSDE	Property And Real Estate
PT Ciputra Development Tbk	CTRA	Property And Real Estate
PT Lippo Karawaci Tbk	LPKR	Property And Real Estate
PT Pakuwon Jati Tbk	PWON	Property And Real Estate
PT Summarecon Agung Tbk	SMRA	Property And Real Estate
PT Kawasan Industri Jababeka Tbk	KIJA	Property And Real Estate
PT Lippo Cikarang Tbk	LPCK	Property And Real Estate
PT Plaza Indonesia Realty Tbk	PLIN	Property And Real Estate
PT Modernland Realty Tbk	MDLN	Property And Real Estate
PT Alam Sutera Realty Tbk	ASRI	Property And Real Estate
PT Ciputra Surya Tbk	CTRS	Property And Real Estate
PT Intiland Development Tbk	DILD	Property And Real Estate
PT Pikko Land Development Tbk	RODA	Property And Real Estate
PT Jaya Real Property Tbk	JRPT	Property And Real Estate
PT Duta Pertiwi Tbk	DUTI	Property And Real Estate

Source: Yahoo Finance (2017)

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BI RATE	75	0.004726	0.006370	0.005534	0.000569
INFLASI	75	0.033500	0.087900	0.057016	0.015133
KURS	75	-0.065700	0.062500	0.005845	0.022287
INDEX2	75	-0.162670	0.200750	0.029985	0.084679
GOV BOND	75	0.003495	0.007088	0.005640	0.000967
Valid N (listwise)	75				

this research. The processed data are: Monthly Individual Stock Returns from each issue during the period of January 2010 to March 2016, the monthly BI Interest Rate from January 2010 to March 2016, monthly Indonesia inflation rate from January 2010 to March 2016, monthly US Dollar exchange rate from January 2010 to March 2016 and monthly Yield Indonesian government bond from January 2010 to March 2016.

This study discusses companies in the property sector, but from 47 companies only 15 (fifteen) companies that meet the criteria according to the purposive sampling method used. For more details, the name of the issuer can be explained in Table 1.

All of the listed issuers will be averaged to become stock return of the property sector index. After going through the process by using the SPSS program, statistical descriptive variable sample company which became the object of this study can be seen in Table 2.

In the Table 2 shows that the amount of data used in this study as many as 75 data samples. The average of the monthly stock return variable (INDEX2) is 0.02998 with the average rate of deviation of 0.0846. The highest monthly stock return value is 0.20 while the lowest monthly stock return value is -0.16. The lowest (minimum) interest rate is 0.0047 and the maximum is 0.00637. In addition, the interest rate shows the average value (mean) of 0.0055 with a standard deviation of 0.000569. The exchan-ge rate of USD exchange rate against the rupiah (minimum) is -0.0657 and the highest (maximum) is 0.0625. In addition, the exchange rate of USD against the rupiah shows the average value (mean) of 0.0058 with a standard deviation of 0.02229. The inflation (minimum) is 0.0335 and the maximum (maximum) is 0.0879. In addition, inflation shows an average value (mean) of 0.0570 with a standard deviation of 0.01513.

While the Yield value of the lowest Indonesian government bond (minimum) is 0.00349 and the highest (maximum) is 0.007088. In addition, Yield of Indonesian government bond shows the average value (mean) of 0.005640 with a standard deviation of 0.0009675.

Normality Test

Normality test aims to test whether in the regression model, residual variables have a normal distribution. To test whether the distribution of data is normal or not, there are two ways to detect it, namely by graph analysis and statistical tests. Graph analysis is the easiest way to see residual normality by looking at a histogram graph comparing observational data with a distribution closer to a normal distribution. Testing the normality of data by analysis can be done by using the Kolmogorov-Smirnov test. Multivariately testing the normality of data performed on the residual value. Normally distributed data are indicated by a significance value above α = 5% or 0.05. Normality test results on the test of 75 data from each variable in Table 3.

Table 3. Normality Test

		BI RATE	INFLASI	KURS	INDEX2	GOV BOND
N		75	75	75	75	75
Normal Parameters[a,b]	Mean	0.005534	0.057016	0.005845	0.029985	0.005640
	Std. Deviation	0.000569	0.015133	0.022287	0.084679	0.000967
Most Extreme Differences	Absolute	0.212	0.165	0.107	0.054	0.148
	Positive	0.135	0.165	0.107	0.042	0.120
	Negative	-0.212	-0.060	-0.094	-0.054	-0.148
Test Statistic		0.212	0.165	0.107	0.054	0.148
Asymp. Sig. (2-tailed)		0.000[c]	0.000[c]	0.032[c]	0.200[c,d]	0.000[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

The Table 3 shows that the average return data of the property sector shares are normally distributed. This is shown by the value Kolmogorov-Smirnov has a significant value of 0.2 Where the results indicate the level of significance above $\alpha = 5\%$ or 0.05, this means that the data in the variable are normally distributed. While in variables of bond Yield, inflation, USD exchange rate against rupiah, and BI Rate is not normally distributed because it has significance level below $\alpha = 5\%$ or 0.05.

Multicolinearity Test

Multicolinearity test aims to test whether the regression model found a correlation between independent variables. If independent variables are correlated, these variables are not orthogonal. Orthogonal variable is an independent variable which correlation value between independent variables equal to zero. To find out whether there is multicoleniarity can be seen from the VIF values contained in each variable as shown in Table 4.

A regression model is said to be free of multicoleniarity if it has a tolerance value below 1 and a VIF value below 10. From Table 4, it is found that all independent variables have tolerance values below 1 and VIF value is far below number 10. So it can be concluded that there are symptoms of multicoleniarity in the regression model. It is found from the table that all independent variables have a tolerance value below 1 and VIF value is far below number 10. So it can be concluded that there are no symptoms of multicoleniarity in the regression model used.

Table 4. Multicolinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	BI RATE	0.250	3.996
	INFLASI	0.684	1.463
	KURS	0.910	1.099
	GOV BOND	0.287	3.487

a. Dependent Variable: INDEX2

Table 5. Durbin Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.586[a]	0.343	0.306	0.0705528115585	2.042

a. Predictors: (Constant), GOV BOND, KURS, INFLASI, BI RATE
b. Dependent Variable: INDEX2

Autocorrelation Test

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in period t-1 (previous). A good regression model is independent from autocorrelation.

Based on the results of regression analysis Table 5 obtained DW value of 2.042. While the DW table for "k" = 4 and n = 75 the magnitude of DW-table: dl (outer boundary) = 1.368; Du (internal limit) = 1.586; 4 - du = 2.41. Thus it can be concluded that DW-test lies in the autocorrelation free area.

Heteroscedasticity Test

The heteroscedasticity test aims to test whether in the regression model there is a variant inequality of one residual observation to the other. If the residual variant of one observation to another observation remains the same, then it is called homocedasticity and if different it will be called heteroscedasticity. A good regression model is a model that does not occur heteroscedasticity.

How to detect the presence or absence of heterocedasticity by looking at the plot graph between the predicted value of the dependent variable (ZPRED) with the residual SRESID. The basis of the analysis is if there is a certain pattern, such as the points that exist form a certain pattern that is regular (wavy, widened, then narrowed) then indicates there has been heterocedasticity, otherwise if there is no clear pattern, and the points spread above and below the number Zero on Y axis, hence there is no heterocedasticity. The results of heteroscedasticity testing were obtained on Figure 1. By looking at the scatterplot graph below, spots appear to be randomly distributed, as well as scattered either above or below the number 0 on the Y-axis. Thus, it can be concluded that the regression equation used does not occur heteroscedasticity.
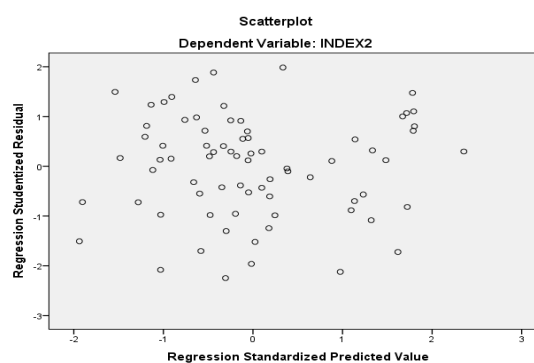

Figure 1. Scatter Plot Graph

Coefficient of Determination (R2)

The coefficient of determination essentially measures how far the model's ability to explain the variation of its dependent variable. When the value of R2 approaching one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. The result of the coefficient of determination can be seen in Table 6.

From the results of regression analysis can be seen also that simultaneously independent

Table 6. R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.586[a]	0.343	0.306	0.0705528115585

F Test Result

Table 7. Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.182	4	0.046	9.150	0.000[b]
	Residual	0.348	70	0.005		
	Total	0.531	74			

a. Dependent Variable: INDEX2
b. Predictors: (Constant), GOV BOND, KURS, INFLASI, BI RATE

variables have a significant influence on the dependent variable. This can be proved from the value of F arithmetic of 9.150 with a significance value of 0.000. Because significant at the level of significance below 5%, the regression model can be used to predict stock returns or it can be said that interest rates, changes in USD exchange rate, inflation, and bond yield simultaneously affect the stock return of the property sector.

T Test Result

The data were obtained then analyzed by regression method and calculated by using SPSS program. Based on the SPSS output, the effect of the three independent variables, namely interest rate, Bond Yield are shown in Table 8.

The test result of each independent variable to the dependent variable shows that yield of Indonesian government bond has no significant effect on stock return, it can be explained that yield of Indonesian government bond has a significance value greater than α = 5% or 0.05 ie 0.070 but can be significant at a significance

level of 10%. While the variable BI rate and inflation do not have a significant effect on stock return, which has a significance value of each of 0.528 and 0.644. Changes in the USD exchange rate against the Rupiah have a significance value smaller than α = 5% or 0.05 so that the hypothesis regarding the effect of the exchange rate against the stock return of the property can be accepted.

Interest Rate and Stock Return

The first hypothesis proposed states that interest rates have a negative and significant effect on stock returns of the property sector. From the results of this study obtained regression coefficient value for variable rate BI Rate of -18.264 with a significance value of 0.528. Because the significance value is greater than 5% or 0.05, the first hypothesis is rejected which means there is no significant negative effect between BI Rate variable to stock return of the property sector.

The absence of the effect of the BI Rate on the Property index indicates that the inc-

Table 8. Result of Hypothesis Testing

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.123	0.089		1.383	0.171
	BI RATE	-18.264	28.790	0.123	0.634	0.528
	INFLASI	-0.304	0.656	-0.054	-0.464	0.644
	KURS	-2.098	0.386	-0.552	-5.438	0.000*
	GOV BOND	-29.098	15.837	-0.332	-1.837	0.070*

* : sig a 10%

rease in interest rates imposed by Bank Indonesia has less impact on shareholders who fall into the Property group. The increasing interest rate is less influential on the high investor interest to invest in the Property group. This is different from the influence of interest rates on developers or developers in the field of property that is heavily influenced by interest rates. Low interest rates can attract buyers to build up housing loans and ultimately determine the level of demand for real estate and property. Comparing the results of previous research, this study was supported by Mok (1993) and Djauhari (2014) which using Arima analysis model found no significant relationship between these two variables. In addition Prastowo (2008) research using Granger Causality also shows that there is no significant influence of BI Rate on stock return.

In relation to previous research, which states that interest rates affect stock returns, if interest rates rise then investors will sell their shares at high prices and will invest their capital in the form of deposits (Dornbusch & Fischer, 1980). Theoretically, changes in interest rates will be inversely related to the performance of stock returns on the market (Sengkyun, 1997; Sofyani & Wahyudi, 2015). This means that if interest rates decrease then the stock returns in the market will tend to increase, and vice versa if the interest rate increased will be followed by a negative reaction to market performance. The results of the tests in this study do not indicate any support for the theory.

Fluctuation of Bond Yield and Stock return

The second hypothesis proposed states that bond yields have a negative and significant effect on the stock return of the property sector. From the research results obtained regression coefficient for Yield of Indonesian government bond of -0.332 with a significance value of 0.07, where this value is significant at the level of $\alpha = 10\%$. Thus, the second hypothesis which states that Yield Indonesian government bond has a negative and significant effect on the stock return of the property sector is acceptable.

The value of a bond moves in the opposite direction with a general interest rate change. If interest rates generally tend to fall, then the value or price of bonds will increase, as investors tend to invest in bonds. Meanwhile, if interest rates tend to increase in general, then the value or price of bonds will fall, because investors tend to invest money in the Bank.

If the market believes that interest rates will rise, the bonds will be traded at higher yields so that bond prices will fall. Changes in interest rates may occur several months later and may be subject to market expectations. Therefore, if bond yield is expected to rise, bond prices will fall, and vice versa. Thus, the bond yield moves in the same direction with the interest rate which means negatively affect the stock return. Increased bond yields will create alternative instruments for investors to invest their funds. Based on the results of research that has been done can be concluded that there is a negative effect of bond yields on stock return of the property sector. The results of this study are in line with Shanken and Weinstein (2006) research on the effect of excess return from government bond on stock return.

Exchange Rate and Stock Returns

The third hypothesis proposed states that the exchange rate has a negative and significant effect on the stock return of the property sector. From the research results obtained regression coefficient for the exchange rate of -0.552 where the level of significance is much lower than $\alpha = 5\%$. Thus, the third hypothesis which states that the exchange rate has a negative and significant effect on the stock return of the property sector is acceptable.

The results of this study indicate that the exchange rate has a negative and significant effect on stock returns in accordance with the theory used, this research is consistent and supports the results of research conducted by Fuadi (2009) and Suyati (2016) which shows that the exchange rate of Rupiah against US Dollar has an effect negative to stock return. This is becau-

se investors tend to prefer to save money in the form of dollars compared with investing money in the capital market. In addition to weakening the value of the rupiah will increase the amount of foreign debt from the company.

Inflation and Stock Return

Based on the result of t-statistic test, it is found that inflation does not significantly influence the stock price, with regression coefficient of -0.54 and significance level of 0.644. In other words, the hypothesis that there is a negative effect of inflation on the stock return of the property sector is rejected. This means that inflation does not affect stock price changes.

When a fundamental variable, which is determined by a simple stock model, is included in the regressions, the effect of inflation on stock returns dissipates. Thus, the observed negative relation between inflation and stock returns is due to a misspecification of the model. In reality, when the relation is properly formulated, inflation and stock returns are independent of each other (Azar, 2010).

This condition can be understood, because inflation occurring in the period under study is relatively stable. Although inflation trend is declining, and stock prices up trend, but inflationary decline does not affect stock prices significantly. Investors and traders still believe that the inflation situation will not be too influential on changes in stock prices because the inflation conditions that occur are still within reasonable limits.

CONCLUSION AND RECOMMENDATION

By using multiple linear regression analysis, there is no significant negative effect of interest rate (BI Rate) and inflation on stock return of the property sector and real estate. Nevertheless, it was found that the variable fluctuation of government bond yield and dollar exchange rate against rupiah had a negative and significant effect on stock returns of property and real estate sector in Indonesia. Increased bond yield will make investors choose other instruments as

an alternative in investing money. In addition, investors also tend to choose to save money in the form of US Dollar rather than investing money in the capital market, further with the weakening of the value of the rupiah will increase the amount of foreign debt from the company.

In making investment decisions, particularly investment in property and real estate sector in Indonesia, investors should consider variables such as rupiah exchange rate against dollar and bond yield fluctuation. This is part of the fundamental analysis that needs to be done by the investor is the analysis of economic factors to be able to complement industry-specific analysis and company analysis specifically.

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