The Effect of the Bank Indonesia Interest Rate, Exchange Rate, and Bond Rating against Bond Yield: Registered Corporate Bonds Issuing Company on the Indonesia Stock Exchange

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Abstract

In the current development of the world economic system, movements in the financial system that occur in the world are also affected. Judging from the development of the financial system, it is inseparable from banking, which is an absolute part of it. This condition was reflected in the state of Indonesia during the economic and monetary crisis. This research is a quantitative study with a descriptive analysis approach. The data source is in the form of secondary data obtained from the BEI IBMD 2017-2020. The documentation technique is the data collection technique in this research. All corporate bond issuers listed on the IDx for the 2017-2020 period are the population used in this study. The collection of the samples uses a deliberate sample. In this study the analysis utilizes the determination coefficient, multiple analyzes for linear regression and self-relation. From the above results of discussion and analysis, we can conclude that: 1) the BI rate variable in Indonesia affects bond returns positively and in a significant way in corporate-bond issuing companies; 2) the BT variable affects bond yields in corporate-binding companies; and 3) the BTV has a negative and meaningful effect on bond yields in corporated-bond issuing companies.

Keyword: *BI Rate, Exchange Rate, Bond Rating, Bond Yield.*

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A. INTRODUCTION

The magnitude of the interest rate (BI Rate) is one factor for banks to determine the number of interest rates offered to the public. Interest rates affect the desire and interest of the people to invest their funds in the bank through the products offered (Eichengreen & Hausmann, 1999). The impact on the bank itself, namely the increasing number of funds invested by the public, will increase the bank's ability to channel these funds in the form of credit wherefrom the credit channeled, the bank gets a profit (Ferguson & Schularick, 2007). Thus, the more loans are distributed, the impact on the amount of income that the bank earns.

Unreasonable interest rate developments can directly disrupt banking developments (Fidora, Fratzscher & Thimann, 2007). On the one hand, high interest rates will increase people's desire to save to raise banking funds (Gadanecz, Miyajima & Shu, 2018). The interest rate is a measure of how much it costs or revenues in connection with the use of money for a certain period. On the banking side, with high interest rates, banks will raise funds to distribute credit to the business world (Gupta, Chevalier & Sayekt, 2001).

The BI Rate is an interest rate with a tenor of one month announced by Bank Indonesia periodically, which serves as a signal (stance) for monetary policy (Hasanudin & Awaloedin, 2020). In simple terms, the BI Rate indicates the short-term interest rate desired by Bank Indonesia in its efforts to achieve the inflation target (Hasanudin, 2021).

The establishment of the BI rate usually takes effect during the current quarter at the quarterly meeting of the Board of Directors (January, April, July and October) by taking into account the recommendations for the BI rate generated in the policy reaction role of the Economic Model to achieve the inflation target. In the monthly RDG, too, changes may be made in the BI rate. Changes in the BI rate are made in many 25 basis points (the currency situation can change 25.50 or 75 basis points).

The movement of the rupiah exchange rate against the US dollar after the implementation of the free-floating exchange rate system policy in Indonesia on August 14, 1998, has had an impact on the development of the national economy in both the monetary and real sectors. The depreciation of the rupiah exchange rate against the US dollar became very large at the beginning of implementing the system (Nurwulandari & Adnyana, 2019).

This has resulted in an increasing degree of uncertainty in business and economic activities in Indonesia. Many factors, both non-economic and financial, are accused of being the cause of the fluctuation in the exchange rate (Nurwulandari, Hasanudin & Melati, 2021). Non-economic factors are more often seen as the cause of changes in the rupiah exchange rate against the dollar. To prove, even measure how much the non-economic influence will be tough to do (Obstfeld, Shambaugh & Taylor, 2005). This situation is different from the existence of economic factors, which include inflation, interest rates, money supply, national income, and the position of the international balance of payments, which are generally relatively more measurable (Saenong, Adam, Wali & Millia, 2020).

Bonds are securities or certificates containing a contract between the lender (investor) and the one given the loan (the issuer). An investor who wants to buy bonds should be careful about bond ratings. The credit rating is a risk scale for all traded bonds. This bond rating is critical because it provides an input and indicates the likelihood of a company's bankruptcy (Wahyudi & Pangestuti, 2017).

Bond rating agencies are independent agencies which provide rating information on bond risk scales to show how safe a bond is for investors. The ability to pay interest and pay the principal on loans is shown to demonstrate this security. Investors can utilize the rating agencies' services to obtain bond rating information (Wahyudi, Hasanudin & Pangestutia, 2020).

Bonds are long-term transferable debt securities containing the bond issuer's promise to repay compensation in the form of a fixed period of interest and repay the bond to the purchaser at a specified time (Yusuf & Prasetyo, 2019). Two sides, namely the issuer and the investor side, can view the issuance of bonds. As far as the issuer is concerned, the bond issuance is relatively cheaper than bank loans or loans. Bond issuance is a secure alternative for investors because bonds provide fixed

income in the form of interest coupons paid regularly at a competitive interest rate and the main debt payable on time at a predetermined maturity.

Bond income is the key factor for investors to consider as investment instruments when buying bonds. Investors will calculate the investment revenue from funds acquired by means of a yield measures tool for these bonds.

B. METHOD

This research is a quantitative study with a descriptive analysis approach. The data source is in the form of secondary data obtained from the BEI IBMD 2017-2020. The documentation technique is the data collection technique in this research. All corporate bond issuers listed on IDX during the 2017-2020 period are the population in this study. The sample collection uses purposive sampling. The analysis in this study uses the coefficient of determination, multiple linear regression analysis, and autocorrelation test.

C. RESULT AND DISCUSSION

1. Description of Research Object

In this study, the sample used is corporate bond issuing companies listed on the IDX, rated by PT. Petfinder for the period 2017-2020. As many as 25 samples of corporate bonds from 14 companies issuing corporate bonds are as follows:

Table 1 Research Samples

No.	Bonds	Code
1	The Obligation of PLN VIII Year 2017 A	PPLN08A
2	The Obligation of PLN VIII Year 2017 B	PPLN08B
3	The Obligation of PLN X Year 2020 A	PPLN10A
4	The Obligation of XI Perum Pegadaian A	PPGD11A
5	The Obligation of XI Perum Pegadaian A	PPGD12A
6	The Obligation of Jasa Marga XII Q	JMPD12Q
7	The Obligation of Jasa Marga XIII R	JMPD13R
8	The Obligation of Indosat V A	ISAT05A
9	The Obligation of Indosat V B	ISAT05B
10	The Obligation of Indosat VI B	ISAT06B
11	The Obligation of Indosat VII B	ISAT07B
12	The Obligation of Bank Panin II C	PNBN02C
13	The Obligation of Bank Panin III	PNBN04
14	The Obligation of XII Bank BTN	BBTN12
15	Obligation of Indofood Sukses Makmur V	INDF05
16	Obligation of Apexindo Pratama Duta II B	APEX02B
17	The Obligation of Medco Energi Internasional II B	MEDC02B
18	The Obligation of Pupuk Kaltim II	PPKT02
19	The Obligation of Matahari Putra Prima III B	MPPA03B
20	The Obligation of Salim Ivomas Pratama I	SIMP01

21	The Obligation of Mitra Adiperkasa I B	MAPI01B
22	The Obligation of VI Bank Jabar Banten B	BJBR06B
23	The Obligation of XIII Perum Pegadaian A1	PPGD13A1
24	The Obligation of XIII Perum Pegadaian B	PPGD13B
25	The Obligation of XIII Perum Pegadaian C	PPGD13C

Source: Processed data

2. Descriptive Statistical Analysis

In this study, the object of research is the yield obligation of the company issuing Obligations of corporations. Yield Obligation is the profit from the Obligation investment that the investor receives. Following are the results of descriptive statistics that describe the yield obligation as follows:

Table 2 Yield Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Yield	100	6.7493	15.7811	9.475463	1.7957961
Valid N (listwise)	100				

Source: Processed data

Based on the data processing results with 100 observations from 25 samples of Obligation of corporations for four years, namely the 2017 to 2020 period. 7811%. The average (mean) yield value is 9.475463, and the standard deviation is 1.7957961.

Table 3 Yield Obligation of 2017-2020 Period (in%)

Code	Year			
	2017	**2018**	**2019**	**2020**
PPLN17A	12.4939	9.5407	8.4921	7.1708
PPLN17B	14.7812	11.4657	9.3471	8.4424
PPLN20A	13.5988	11.7797	7.9364	6.9540
PPGD20A	13.2841	9.3014	8.7536	7.9187
PPGD19A	11.9310	8.8968	8.3595	7.8150
JMPD20Q	14.2033	9.6814	8.4868	7.8640
JMPD18R	12.1929	8.9879	8.8340	7.3516
ISAT18A	11.7095	8.5760	7.8046	7.1738
ISAT18B	12.1346	8.8134	8.5891	6.8515
ISAT18B	12.5973	9.2235	8.3432	9.4664
ISAT19B	12.7499	8.7402	8.4234	7.6389
PNBN20C	11.9235	11.5293	8.5891	7.4846
PNBN18	12.4556	9.4529	8.3083	12.1812
BBTN17	12.1435	11.9817	8.3160	7.5570
INDF19	12.2636	11.4849	7.4462	7.3896
APEX18B	15.7811	12.5267	12.5915	8.1670
MEDC20B	14.0890	9.8943	9.3016	8.3127

PPKT17	11.7849	9.4616	8.6678	7.0756
MPPA17B	13.0420	9.8341	8.5828	7.6439
SIMP018	12.6748	9.1693	9.5815	7.7623
MAPI18B	13.5920	11.3270	8.7786	7.8662
BJBR19B	12.2789	9.7604	8.4287	7.6637
PPGD19A1	12.1022	8.8201	7.9304	6.7492
PPGD17B	12.8210	9.6849	7.9989	7.8073
PPGD18C	14.3326	9.9039	8.8105	8.1274

Source: IBPA (Processed Data)

Based on table 3 above, in 2017, the highest yield was 14.7812%, namely the result on Obligation of PLN VIII Year 2017 Series B (PPLN17B), while the lowest outcome was 8.5760%, namely the yield on Obligation of Indosat V Year 2018 Series A (ISAT18A). In 2020, the highest yield was 8,4424%, namely the yield on Obligation of PLN X Year 2020 Series B (PPLN20B), while the lowest yield was 7,8150%, namely the yield on Obligation of XIII Perum Pegadaian Year 2019 Series A1 (PPGD19A1).

In 2019, the highest yield was 12.5915%, namely the yield on Obligation of Apexindo Pratama Duta II Year 2018 Series B (APEX18B), while the lowest yield was 7.5462%, namely the yield on Obligation of Indofood Sukses Makmur V 2019 (INDF19). In 2019, the highest yield was 7,4462%, namely the yield on the Obligation of Bank Panin III Year 2019 (PNBN19), while the lowest yield was 7,9304%, namely the yield on Obligation of XIII Perum Pegadaian Year 2019 Series A1 (PPGD19A1).

BI Rate

The BI rate is the interest rate set by Bank Indonesia. This variable is measured by recording the Bank Indonesia interest rate (BI rate) data at the end of the year sourced from Bank Indonesia. Following are the descriptive statistics of the BI rate during the 2017-2020 period:

Tabel 4 Descriptive Statistics of BI rate

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BI rate	100	5.85	6.60	6.1975	.32740
Valid N (listwise)	100				

Source: Processed data

Based on table 4, the results of data processing with a total of 100 observations from 25 samples of the Obligation of corporations during the four year observation period from 2017-2020 can be seen that the lowest value of the BI rate is 5.85% which occurred in 2020, while The highest BI rate was 6.60% which occurred in 2017 and 2018. The average (mean) BI rate was 6.1975%, and the standard deviation value was 0.32740.

Exchange Rate

The currency is the currency price of a country that in another country's currency is indicated or valued. The exchange rate in this study is the moderate Rupiah/US Dollars rate during the observation period at the end of the year. In the following, Rupiah/USD exchange rate descriptive stats are as follows during the period 2017-2020:

Table 5 Descriptive Statistics of Rupiah/USD Exchange Rates

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Exchange rate Rp/USD	100	8891	9770	9382.35	282.922
Valid N (listwise)	100				

Source: Processed data

Based on table 5, the results of data processing with a total of 100 observations from 25 samples of Obligation of corporations during the four years observation period from 2017-2021 can be seen that the average (mean) exchange rate of IDR / USD during the observation period is IDR 9,382. - per USD. The lowest exchange rate of IDR / USD was IDR 8,891 per USD, which occurred in 2018, while the highest exchange rate of IDR / USD was IDR 9,770 per USD that occurred in 2020. The standard deviation value was 282,922.

Obligation Rating

The Obligation rating shows an overview of the condition of the Obligation. Suppose the Obligation of the corporation issuing company has a high rating. In that case, it indicates the shape of the issuer's Obligation is good, and the risk level of default is low, and vice versa. In this study, using the Obligation of rating data sourced from PT. Petfinder. Following are the descriptive statistics for the Obligation of rank during the 2017-2020 observation period are as follows:

Table 6 Obligation Rating Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Obligation Rating	100	3	7	5.02	1.241
Valid N (listwise)	100				

Source: Processed data

Based on table 6, data processing results with 100 observations from 25 samples of Obligation of corporations during the four-year observation period from 2017-2020 can be seen that the average value of the Obligation of rating during the observation period is 5.02. The standard deviation value is 1.241. The lowest value of the Obligation of rating is 3 (id AA scale value), while the highest value of the Obligation rating is 7 (idAA + scale value).

3. Coefficient of Determination

The determination coefficient illustrates how much the independent variable, i.e. the rate, exchange rate and the obligation of rating used in the model of regression, can influence, i.e. the output of the obligation. The value of the Adjusted R Square shows the determination coefficient.

Table 7 Coefficient of Determination

Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.860[a]	.733	.724	.9561948

a. Predictors: (Constant), Obligation Rating, Exchange Rate of IDR/USD, BI Rate
b. Dependent variable: Yield

Source: Processed Data

On the basis of Table 7, the value of the adjusted r square or the determination coefficient is 0.724, which means that the percentage contribution of the variable effect of the BI rate and the exchange rate is 72.4%. The remaining 28.6% are influenced by variables compared to other variables. This study did not include other independent variables.

4. Multiple Linear Regression Analysis

This analysis aims to determine the extent of the influence of the independent variables on the dependent variable. In this study, the dependent variable is yield, while the independent variables are: BI rate, exchange rate, and Obligation rating.

Table 8 Multiple Linear Regression Analysis

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-42.343	5.425		-7.642	.000
	BI Rate	4.892	.352	.922	15.255	.000
	Exchange Rate of IDR / USD	.003	.000	.364	5.599	.000
	Obligation Rating	-.343	.087	-.207	-3.782	.000

a. Dependent variable: Yield

Source: Processed Data

The interpretation of the equation is as follows:

1. Constant value (α) is - 42.323, which means the yield obligation will decrease to 42.323 where the BI (BI rate), exchange rate and rating obligation are constant (fixed).
2. The BI rate variable (BI rate) regression coefficient ($\beta 1$) is positive; in other words, the 4,892 percent rate is increased by 4,892 percent when the interest rate (BI rate) is 1 percent. A positive coefficient value and a 0.000 significance

level show the positive and significant yield impact of the BI interest rate (BI rate).

3. The exchange rate variable regression coefficient (β2) is good, namely 0.003, indicating that the return increases by 0. 003 if the currency of Rupiah increases by 1 unit (that means the rate of exchange rupiah is weakening against USD). The exchange rate has a negative and significant impact on the result based on these results and a significant level of 0,000.
4. The coefficient of regression (β3) of the rating variable obligation has a negative value of -0.343 indicating that the yield will be decreased by 0.343 each 1 unit increase of the rating obligation. A 0.000 level of negative coefficient value and significance indicate a negative and substantial impact on yield by the obligation of rating.

5. Autocorrelation Test

Autocorrelation test to test if there are autocorrelation problems in the regression model. The Durbin Watson test is used to test whether or not there is an autocorrelation problem. A model that does not have an autocorrelation is a good model of regression.

Table 9 Autocorrelation Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.850[a]	.733	.724	.9561948	2.276

a. Predictors: (Constant), Peringkat Obligation of, Nilai Tukar Rp/USD, BI *rate*
b. Dependent Variable: *yield*

Source: Processed data

Based on table 9, the Durbin-Watson test value is obtained with a value of 2.276. The test criterion for no autocorrelation is du < d < (4 - du), where du is the upper limit value obtained from the DW table and the d value is the Durbin Watson value in the table processed by SPSS. By using a significance level of 5%, the value of du = 1.736 (N = 100, k = 3). Based on these criteria, 1.736 < 2.175 < (4 - 1.736), so it can be concluded that there is no autocorrelation problem.

The BI interest rate (BI rate) has a positive and significant effect on the yield of the Obligation of corporations because it has a positive regression coefficient of 4.527 and has a substantial level of less than 0.05, namely 0.000 < 0.05. The positive direction of the coefficient shows that if there is an increase in the Bank Indonesia interest rate (BI rate), there will be an increase in the yield on bonds.

The data processing results show a positive regression coefficient of 0.002 and a significance level of less than 0.05, i.e. 0.000 < 0.05, respectively. The coefficient value indicates that if the currency of Rupiah increases, which means that the exchange rate of Rupiah depreciates (wanes) from the USD, the bond yield increases.

These results show that the exchange rate affects the outcome negatively and significantly.

The Obligation of rating has a negative and significant effect on the yield of Obligation of companies issuing Obligation of corporations because it has a negative regression coefficient of -0.529 and has a substantial level of less than 0.05, namely 0.005 < 0.05. The negative coefficient direction shows that the higher the Obligation of rating owned by the Obligation of issuing company, the lower the yield of the Obligation.

D. CONCLUSION

Results of the previous debate and analysis suggest that the variable Bank Indonesia Interest Rate (BI rate) has a significant positive impact on corporate yield binding obligations. If the interest rate of the Bank of Indonesia (BI) increases, the return on investors' bonds will also increase. The variable exchange rate has an adverse and significant effect on the corporate yield bond. The obligation of the corporation rating variable has a negative and significant impact on the bonding worker of the bond issuing corporation if it weakens (depreciates) against USD. The higher the Obligation of rating owned by the Obligation of giving company, the lower the Obligation of yield received by investors.

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