

# THE CORPORATE BOND YIELDS IN INDONESIA

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## ABSTRACT

This research aims to evaluate the corporate bond yields in Indonesia. Population used in this research are all issuer companies were listed in BEI. The sample in this research is 16 bonds from 16 companies. The result in this research find that the interest rates, bond rating and variable of DER have significant relationship on bond yields. Inflation rates and firm size proven have contrast relationship on bond yields.

**Keywords :** *bond yields, interest rates, debt to equity ratio*

## INTRODUCTION

### Background

The stock market is a long-term market in which there are a wide range of capital market instruments that can be traded, the capital market is a market that brings between parties who need funding and those who require long-term funds. Investors were given a wide range of alternative instruments to be developed and maintained for a long period of time in order to get the expected return. This investment is made to finance the company's operations through the issuance of stocks and bonds.

Judging from the investment opportunities in Indonesia each year, an average of investment opportunities has increased from year to year. Even in the current global economic slowdown, the investment transformed into one of the main components to sustain economic growth replaces the export performance which tends to slow down. It proves that Indonesia's investment activities ought to be a major concern, both at the time of the country's economy deteriorated and when the country's economy improves.

There are two kinds of investments that should be known, that investment in real assets and investments in financial assets. Investments in financial assets is the most common type of investment made by investors, because most intangible still has a high value. One example of a financial asset traded on a stock exchange is a bond. Bonds itself divided into two types, government bonds and corporate bonds. Corporate bonds are bonds issued by state-owned enterprises or private companies. Broadly speaking, the bond is a testament to the debt of the issuer are guaranteed by the insurer containing the promise of payments of interest or other appointments as well as the repayment of principal made on the maturity date. The main reason many investors interested in bonds because bonds give returns remain during the period of a relatively long period of time and are not affected by fluctuations in interest rates. In addition, investors want security on his investments through high-quality bonds (Sity Hatanty, 2014).

Factors that cause investors more interested in the types of investments like bonds than stocks, namely, first, the income provided by bonds tend to be fixed, so that the risk

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of loss to be received low investor. Second, if a company went bankrupt then automatically bond investors would get an advantage in the return of the fund compared with shareholders.

Income or yields (returns) to be obtained by investors from the placement of funds in the bonds. As an investment instrument, changes in the rate of return (yield) bonds obtained by investor changing over time. The yield changes affect the level of the market price of the bond itself. Therefore, the investor and the issuer must always pay attention to fluctuations in the price of bonds and the factors affecting changes in the bond yields (Budhi and True, 2011).

Basically the economic conditions affect market conditions, then its in turn market conditions will affect investors. It is difficult for investors to obtain investment returns that contrasts with the trend of the market (Siti Hatanty, 2014). Macroeconomic factors empirically been shown to have an influence on capital market conditions in some countries. These factors are growth in gross domestic product (GDP), the growth rate of inflation, interest rates and currency exchange rate (Tandelilin, 2001: 213). The theory shows that macro variables can affect bond yields.

Interest rates affect the high and low of the bond yields, because when interest rates increase, the relative would reduce the yield received by investors. This is because the interest on the bonds which are fixed (fixed rate), investors will require compensation by asking yield higher, in other words, if the interest rate increases then the magnitude of the yield required by investors will also increase (Ibrahim, 2008). The interest rate is often used by investors as a basic reference and rate of expected return in determining investment decisions will be selected, so that the amount of the bond yields refers to the development of the interest rate set by Bank Indonesia (Krisnilasari, 2007).

Research conducted by Ibrahim (2008), Surya and Nasher (2011) and Noviana (2012) found that the level of interest rates positive and significant effect on bond yields. As with the research Nurfauziah and Adistien (2004) which shows that the interest rate has no effect on bond yields.

Inflation according to the AP Lehner is a phenomenon that always exist in every country and is one of the important indicators in the economy of a country. Inflation is a condition where there is excess demand against the goods in the overall economy. Changes in the rate of inflation is very volatile which impact on investment securities due to the rising inflation means investing in securities such as bonds considered more risky because the market is experiencing price increases as a whole. The high risk posed by inflation, investors expects the yield higher on the investment, in other words the rate of inflation affect the size of the bond yield desired by the investor (Nurfauziah, 2004).

Investors and creditors have to pay attention to the financial characteristics of each company. Size companies can be used to represent the company's financial characteristics. Companies with a large scale have greater access to obtain funding from various sources, so as to obtain a loan from a lender would be easier for companies with large size have a greater probability to win the competition or to survive in the industry. According to Abraham (2008), there is a negative influence between company size on bond yields.

Capital markets allows the company issuing debt securities in the form of letter, known as bonds. Thus, companies may shy away from state debt to equity ratio (DER) is too high. DER is the ratio between the debt with its own capital. DER can also show the distribution of risk absorbed corporation profits to pay off corporate debt obligations and is usually used as an indicator of capital structure and financial risk of a company.

The greater the DER of a company shows that the risk of the company's operating profit distributions will be more and more absorbed satisfy the obligations of the company. According to research conducted by Artha and True (2011), there is a positive relationship between the debt to equity ratio (DER) on bond yields.

In addition to external factors, investors also need to consider the company's internal conditions. Emerging growth company will use most of its cash flow to finance its investment activities, so it is likely the company is not paying its obligations such as paying interest on the bonds, which led to bonds issued by these companies will have a high risk. High risk is reflected in lower bond ratings. Companies with low bond ratings will usually offer bonds with high yields to attract investors (Immacullata and Restuti, 2007).

The size of the company can also affect the bond issuance. In the bond rating, this is the main factor for assessing whether the company is viable or not to issue bonds, so investors do not hesitate to invest mainly in bonds. Before investing in bonds is advisable for investors to pay attention to bond ratings. PT. Valuation acts as a bond rating agency that has been trusted by Bapepam-LK. The rating assigned range from AAA (very special) to D (in default).

## **LITERATURE REVIEW**

Bonds are a sign of the party issuing the debt to investors as buyers. Parties that issued these bonds are called issuer. In investing in bonds, the life span of a bond market varies depending on the funding needs of the issuer. Date to note is scheduled payment of interest and the maturity date. On these dates payment we will receive a profit from the investment component of the bond. Besides, the flower is also very important to be used as information for the analysis of return concerned (Siti Hatanty, 2014).

Every investment made must be measured the rate of return, as well as bonds. The rate of return is measured from revenue sources that underlie a bond. A major source of the bonds is the interest (Siti Hatanty, 2014).

Revenues or yields (returns) to be derived from investment expressed as yield bonds, which results to be obtained by investors when placing their funds to buy bonds. Before deciding to invest in bonds, investors should consider the amount of bond yields, in order to know the yield expected by investors as a gauge factor of annual returns will be accepted.

The interest rate is a balance between the amount of savings and investments. If the interest rate increases, the amount of savings will also increase. It is quite rational because the flowers are used as an incentive for individuals to save surplus funds will, on the contrary, if the interest rate increases, the amount of investment demand will decline. In bond investing, investors should consider the size of the market interest rate. Because the interest rate affects the yield bonds will be accepted.

The behavior of the price of a bond is strongly influenced by the level of market interest rates. If market interest rates rise, then the market price of the bond will fall, and this causes an increase in bond yields, on the contrary if market interest rates fall then the market price of bonds will rise and yields to be down. Market interest rates is what has always fueled instability (volatility) price of a bond (Ang, 1997).

Inflation is rising prices of basic goods continuously over a period of time. Sometimes inflation can be profitable and can be detrimental as well. The most dominant effect is the increased production costs and lead to decreased performance of

the company, which is why market participants are less like high inflation. Samuelson and Nordhaus (2001) says that the inflation rate is rising in price direction generally prevailing in an economy.

An increase in inflation in the bond investment will lead to a decrease in the real value of investor interest income earned over the life of the bond. Economic conditions have increased inflation, interest rates will tend to increase. The inflation rate will affect market interest rates and further interest rate will affect the level of prices and bond yields. If the investor estimates that the increase in inflation, investors will ask for higher compensation due to a decrease in the real value of cash flows derived from bonds (Tandelilin, 2005).

Rating bonds is an important indicator in buying bonds, especially corporate bonds, or bonds issued by the company. Companies often pay to get its debt ratings. Debt ratings are an assessment of credit worthiness of the issuer company. Definitions used credit worthiness based on how likely the company will default and owned creditor protection in the event of default (Ross et. Al, 2008).

Bond rating is a statement in the form of a symbol of the circumstances of the company issuing the bonds issued by PT. Valuation, variable bond rating and the rating given the symbol is determined by characterizing the rankings by category ranking. The rating used in this research is ranked in the investment grade category were divided into four classifications with the numbers 1 to 4 (Amalia, 2011).

Debt to equity ratio is an indicator of capital structure and financial risk is the ratio between debt and equity capital. DER magnitude increases the risk of a company shows the distribution of the company's operating profit will be greater absorbed satisfy the obligations of the company (Purwanto and Haryanto, 2004).

The lower the DER, the higher the level of corporate funding provided by the debtor, and the greater the protection for creditors in the event of a depreciable asset or a big loss. DER comparison to a company with another company about the same to give a general indication of the value of credit and financial risk of the company itself.

The size of the company is one of the factors that influence investors in deciding to make an investment. Large companies considered to have had the maturity of its liquidity position and is able to obtain a high level of profitability that the company easy access to the capital markets to obtain funds needed (Wiyati, 2008).

Meanwhile, according to Brigham and Houston (2001) the size of the company is the average total net sales for the year to several years. Sales greater than the variable costs and fixed costs, the obtained amount of income before taxes, otherwise if the sale is smaller than the variable costs and fixed costs, the company suffered losses.

## **METHODS**

Data used in this study is a secondary data from Indonesia Bond Market Directory (IBMD) issued by the Indonesia Stock Exchange (IDX) and Indonesia Bond Pricing Agency (IBPA), Indonesia Capital Market Directory (ICMD), Bank Indonesia (BI) and PT. Valuation.

The data used in this research is quantitative data, data collection is based on technical documentation presented in Indonesia Bond Market Directory (IBMD) published by the Indonesia Stock Exchange (IDX) and Indonesia Bond Pricing Agency (IBPA), Indonesia Capital Market Directory (ICMD), Bank Indonesia (BI) and PT. Valuation during the study period.

The population in this study are all companies which sell bonds and has been listed on the Indonesia Stock Exchange (BEI), as many as 116 companies listed on the Stock Exchange. Samples were taken by purposive sampling in accordance with the requirements of sample is required, so the samples taken are not random, in order to obtain a representative sample in accordance with criteria to be determined.

The criteria for the sample were:

1. The company is listed on the Indonesia Stock Exchange (BEI) were issuing corporate bonds and actively traded.
2. Bonds still outstanding or have not matured so as to obtain data rates prevailing bond.
3. The bonds do not have special features (callable and putable) so as not to cause bias to the yield obtained.
4. Bonds with a coupon fixed rate and not a floating rate.
5. Bonds issued by companies registered in the PT. Valuation.

Based on the above criteria, then acquired 16 companies that met the criteria as the study sample.

### Technique Analysis

The analysis used in this research are descriptive statistical analysis, statistical analysis inference and multiple linear regression analysis. Descriptive statistics are statistics that provide an overview or descriptive data that seen from the average value gives an overview of the data that is seen from the average value, standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness (Ghozali, 2011: 19).

Statistics Inference is a statistical tool that serves to analyze the sample data and results will be generalizable to the population where the sample is located. Statistics Inference tried to make various inference against a set of data derived from a sample. Inference actions such as estimating population size, hypothesis testing.

Statistical Analysis Inference consists of Normality Test, Heteroskedasticity Test, Test and Test Multicollinearity Auto Correlation. Normality Test aims to test whether the regression model, the variable spam or residuals have a normal distribution. Multicollinearity test aims to test whether the regression model found a high or perfect correlation between the independent variables (Imam Ghozali, 2011). Heteroskedasticity test is usually done by looking at the graph plot between the predicted value of the dependent variable with the residual (Imam Ghozali, 2011: 139). Autocorrelation test is testing the residual assumptions that have a correlation in the period to-t with the previous period (t-1).

Regression is a technique for regression equation to build the equations to make an estimate. The analytical method used for this research is a quantitative method by using multiple linear method by the formula:

$$YTM = \alpha + \beta SBI + \beta INFLT + \beta RATE + \beta DER + \beta SIZE + e$$

Where:

YTM : Yield to Maturity

INFLT : Inflation

DER : Debt to equity ratio

$\alpha$  : Constants

e : The variable residual

SBI : The interest rate

RATE : Bond Rating

FSIZE : Size of enterprise

$\beta$  : regression coefficient

## DATA ANALYSIS AND DISCUSSION

### Analysis Descriptive Statistics

**Table 1. Descriptive Statistics**

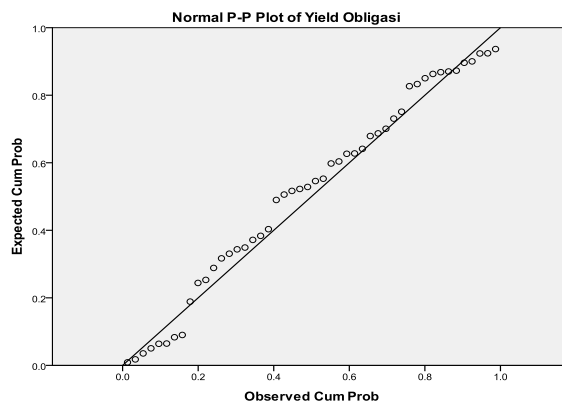
	N	Minimum	Maximum	Mean	Std. Deviation
SBI	48	5.77	6.58	6.2467	.34952
INFLT	48	4.28	6.96	5.5393	1.11235
RATE	48	1.00	4.00	3.0208	.72902
DER	48	.26	11.48	5.0298	3.46978
SIZE	48	2405610	595877391	1.02E8	1.275E8
YIELD	48	7.0717	10.6552	9.251121	.9192334

Source: Data processed, 2015

### Statistical Analysis Inference

#### 1. Normality Test Data

**Picture 1. Normal P-Plot**



On the diagram plot Picture 1. looks normal picture plot point spread around a diagonal line that spread following the direction of the diagonal line. The diagram shows that the regression model utilizable as meet the assumption of normality.

#### 2. Test Multicollinearity

**Table 2. Coefficients**

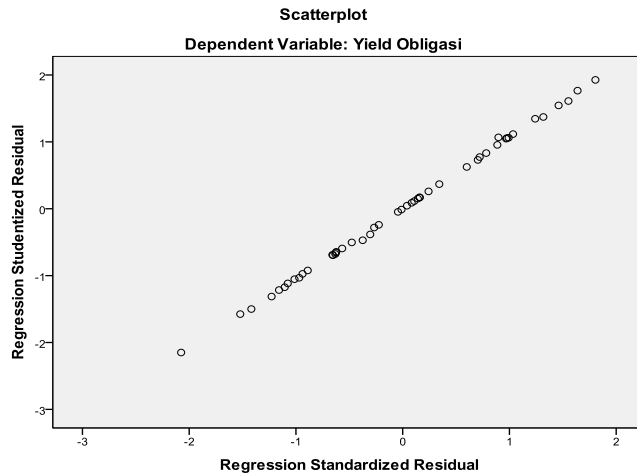
	Collinearity Statistics	
	Tolerance	VIF
SBI	.555	1.801
INFLT	.556	1.799
RATE	.859	1.164
DER	.974	1.027
SIZE	.870	1.149

Source: Data processed, 2015

Based on Table 2. is known that all VIF in the variable X1, X2, X3, X4 and X5 above the tolerance value (VIF) > tolerance, so that it can be concluded that there is no multicollinearity problem.

3. Test Heteroskedasticity

Picture 2. Scalterplot



In the residual image is the difference between the predicted value  $\hat{Y}$  observations. If there is scatter diagram form certain patterns which regularly then regression heteroskedastisitas impaired and if the scatter diagram does not form a random pattern or the regression is not impaired (Pratisto, 2004).

4. Test Autocorrelation

Table 3. Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.721 <sup>a</sup>	.520	.463	.6736224	1.834

Source: Data processed, 2015

Of value-Watson Durbin known that 1,834, it is compared with the value of the 5% significance table sample 48 and 5 independent variables ( $k = 5$ ) = 2.43, the obtained value of DW 1,834 less over that did not happen autocorrelation.

Multiple Linear Regression Analysis

Table 4. Multiple Linear Regression Analysis

Model	Standardized Coefficients
	Beta
(Constant)	
SBI	.681
INFLT	-.099
RATE	-.249
DER	.150
SIZE	-.034

Source: Data processed, 2015

Based on the analysis of data in Table 4, a multiple regression equation can be formulated as follows:

$$YTM = 0,681SBI - 0,099INFLT - 0,249RATE + 0,150DER - 0,034SIZE$$

**5. Hypothesis Testing**

**Analysis The coefficient of determination ( $R^2$ )**

**Table 5.  $R^2$  test results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721 <sup>a</sup>	.520	.463	.6736224

Source: Data processed, 2015

- a.  $R = 0.721$  means that the relationship between the 5 variables X to variable Y amounted to 72.1%. It means high relationship.
- b.  $R^2$  of 0.520 means that 52.0% of variable X. The remaining 48.0% can be explained by other variables not examined in this study.
- c. Standard Error of Estimated means to measure the variation of the predicted value. In this study the standard deviation of 0.6736224. The smaller the standard deviation means that the model is getting better.

**Simultaneous Significance Test**

**Table 6. Test results F**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.656	5	4.131	9.104
	Residual	19.058	42	.454	
	Total	39.715	47		

Source: Data processed, 2015

Based on the table above, the third model obtained calculated F value of 9104 with a significance level of 0.000. Due to the probability (sig. 0,000) is smaller than 0.05 and 9204 F count is greater than 2:43, the value of F table regression model can be used to predict the dependent variable (Y) or it can be said variables X influencing variable Y.

**Significance Partial Test**

**Table 7. Test results t**

Model	Unstandardized Coefficients	
	B	Std. Error
(Constant)	-.712	2.081
SBI	1.791	.377
INFLT	-.082	.118
RATE	-.314	.145
DER	.040	.029
SIZE	-2.418E-10	.000

Source: Data processed, 2015

This test is done to determine how far the influence of a partially independent variables (individual) to variations in the dependent variable, or in other words to determine the most dominant factor. T test performed using a level of significance ( $\alpha$ ) of 0.05.

**Discussion**

**Effect of Variable SBI (X1) on bond yields.**

X1 coefficient is 4748 and the value t table for t (0,050, 47) is -2011. Decisions are taken based on comparison of the t value for X1 and t table at the same significant level of 5%. If in this case  $t > t$  table means there is significant influence of variable SBI on



bond yields. Besides significant or not regression coefficient can also be seen from the value of probability. If probability  $< \alpha$  (0.05) then H1 accepted. From the comparison between t count and t table turned out  $t$  (4748)  $>$  t table (-2011) so that it can be concluded that there is significant influence of variables SBI on bond yields.

Of probability values can also be seen that the probability value of  $0.00 < \alpha$  (0.05) means that in this case the same conclusion drawn is that there is significant influence of variable SBI on variable bond yields. Thus, the first hypothesis is accepted.

#### **Effect of Variable INFLT (X2) on bond yields.**

Based on the calculation of SPSS, t count for X2 coefficient is -.692 and t table value for t (0,050, 47) is -2011. Decisions are taken based on comparison of the t value for X2 and t table at the same significant level of 5%. If in this case  $t >$  t table means that there is a significant effect of the variable INFLT on variable bond yields. Besides significant or not regression coefficient can also be seen from the value of probability.

If probability  $< \alpha$  (0.05) then H2 accepted. From the comparison between tcount and ttable turned out  $t$  (-.692)  $<$  t table (-2011) so that it can be concluded that there was no significant effect of the variable INFLT on bond yields. The probability values can also be seen that the probability value  $0,49 > \alpha$  (0.05) means that there is no significant influence of variables INFLT on bond yields. Thus, H2 is not accepted.

#### **Effect of Variable RATE (X3) on bond yields.**

Based on the calculation of SPSS, t count for X3 coefficient is -2161 and t table value for t (0,050, 47) is -2011. Decisions are taken based on comparison of the t value for X3 and t table at the same significant level of 5%. If in this case  $t >$  t table means that there is a significant effect of the variable RATE on variable bond yields. Besides significant or not regression coefficient can also be seen from the value of probability.

If probability  $< \alpha$  (0.05), the H3 is received. From the comparison between t count and t table turned out  $t$  (-2161)  $>$  t table (-2011) so that it can be concluded that there was no significant effect of the variable RATE on bond yields. From a probability value can be seen that the probability value of  $0.03 < \alpha$  (0.05) means that in this case the conclusion drawn that there is a significant effect of the variable RATE on variable bond yields. Thus, H3 is received.

#### **Effect of Variable DER (X4) on bond yields.**

Based on the calculation of SPSS, t value for X4 coefficient is 1.389 and the value of t table for t (0,050, 47) is -2011. Decisions are taken based on comparison of the t value for X3 and t table at the same significant level of 5%. If in this case  $t >$  t table means there is significant influence from variable DER on bond yields. Besides significant or not regression coefficient can also be seen from the value of probability.

If probability  $< \alpha$  (0.05), the H4 is accepted. From the comparison between t count and t table turned out  $t$  (1.389)  $>$  t table (-2011) so that it can be concluded that there is significant effect of the variable DER on bond yields. From a probability value can be seen that probability value of  $0,017 < \alpha$  (0.05) means that in this case the conclusion drawn is that there is significant influence from variable to variable bond yield DER. Thus, H4 is accepted.

#### **Effect of Variable SIZE (X5) on bond yields.**

Based on the calculation of SPSS, t value for X5 coefficient is -.293 and t table for t

(0,050, 47) is -2011. Decisions are taken based on the comparison t count for X3 and t table at the same significant level of 5%. If in this case  $t > t$  table means there is significant influence of the SIZE variable to variable bond yields. Besides significant or not regression coefficient can also be seen from the value of probability.

If probability  $< \alpha$  (0,05). The H5 accepted. From the comparison between t count and t table turned out  $t (-.293) < t$  table (-2011), so that it can be concluded that there was no significant effect of the variable SIZE on bond yields. From a probability value can be seen that the probability value of  $0.77 > \alpha$  (0.05) means that in this case the conclusion drawn that there is no significant influence of the SIZE variable on variable bond yields. Thus, H5 is not accepted.

## **CONCLUSION AND RECOMMENDATION**

### **Conclusion**

1. SBI (interest rate) positive and significant effect on bond yields. Thus, it is consistent with the hypothesis or sign coefficient which has a positive direction indicates that the higher the SBI (the interest rate), then bond yields will rise (the larger). This shows that the SBI (the interest rate) to be considered by investors in deciding to make bond transaction in Indonesia Stock Exchange.
2. INFLT (inflation) negative and significant effect on bond yields. Thus, it is consistent with the hypothesis or sign coefficient which has a negative direction indicates that the greater INFLT (inflation), then bond yields will decline (getting smaller). It shows that INFLT (inflation) to be considered by investors in investing in corporate bonds in the Indonesia Stock Exchange.
3. RATE (bond rating) positive and significant effect on bond yields. Thus, it is consistent with the hypothesis or sign coefficient which has a positive direction indicates that the higher the RATE (bond rating), then bond yields will rise (the larger). This indicates that the RATE (rated bonds) issued or rated by PT. PEFINDO considered by investors in deciding to make bond transaction in Indonesia Stock Exchange.
4. DER (Debt to Equity Ratio) positive and significant effect on bond yields. Thus, it is consistent with the hypothesis or a positive coefficient indicates that the smaller the DER (Debt to Equity Ratio) then bond yields will rise (the larger). This suggests that investors consider how much debt a company has in its capital structure which is reflected in the ratio DER (Debt to Equity Ratio) or, in other words the ratio of DER shows the debt held by the company exaggerated or not, whereas if the ratio DER large enough, it shows the debt held by the company excessive and indicates the possibility that the issuer of bonds or the company will not be able to repay its debt obligations or have a substantial default risk in the future.
5. SIZE (size companies) a significant negative effect on bond yields. Thus, it is consistent with the hypothesis or sign coefficient which has a negative direction indicates that the larger SIZE (size of the company) then bond yields will decline (getting smaller). This shows that the SIZE (size companies) considered by investors in investing in corporate bonds in the Indonesia Stock Exchange. Where the greater scale / size of the company (total assets) it has less risk than small-scale enterprise so that bond yields will decline.

### Recommendation

1. Factors affecting bond yields are vast and unpredictable, so that the variables that have been included in the test of effect on bond yields in this study became less complete. There are many variables that need to be added, so it is clear what factors actually affect the yields on corporate bond in Indonesian stock exchange. So this study and further research can be input and guidance for investors who will invest in bonds.
2. Issuance of bonds which actively circulated now are a company manufacturing, banking and financial institutions, as well as corporate bonds. Because different types of issuers engaged in different fields, it is possible factors affecting bond yields also different, this needs to be studied carefully so that investors will invest in bonds have complete information about the factors that affect the bonds to be invested. For academics, it becomes interesting to be used as new research for the development of financial science management.

### Limitations of Research

1. The bond rating used is issued by PT.Pefindo and are grouped into two categories: investment grade and non-investment grade.
2. The independent variables used in this research use only 5 variables. Where based on the results of the five variables adjusted R-square value of 0.463 or 46.3%, so there is still a 53.7% factor or other variables that can affect bond yields.

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