

## Maturity, Bond Rating, and Debt to Equity Ratio Effect on Yield to Maturity

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### Abstract

*This study aims to examine the effect of maturity, bond rating, and debt to equity ratio on yield to maturity. The object of this research is corporate bonds listed on the Indonesia Stock Exchange with the period from 2014-2018. The research sample was selected using purposive sampling. This study uses multiple linear regression analysis techniques. The results showed maturity and debt to equity had no effect on yield to maturity, while bond ratings had a negative effect on yield to maturity. The results of this study prove that bond rating information is useful for investors in determining which bonds to buy. The results of this study provide information that investors do not acquire maturity and debt to equity the primary factors in determining bonds. However, it is expected that investors will use debt to equity as additional consideration for investing in bonds. It is expected that the following researchers can research by combining the company's macro and micro factors.*

**Keywords:** Bond Rating; Debt to Equity Ratio; Maturity; Yield to Maturity

### Abstrak

Penelitian ini bertujuan untuk meneliti pengaruh *maturity*, peringkat obligasi, dan *debt to equity* ratio terhadap *yield to maturity*. Objek penelitian ini adalah obligasi perusahaan yang terdaftar di Bursa Efek Indonesia dengan periode dari 2014-2018. Sampel penelitian dipilih dengan menggunakan *purposive sampling*. Penelitian ini menggunakan teknik analisis regresi linear berganda. Hasil penelitian menunjukkan *maturity* dan *debt to equity* tidak berpengaruh terhadap *yield to maturity*, sedangkan peringkat obligasi berpengaruh negatif terhadap *yield to maturity*. Hasil penelitian ini membuktikan informasi peringkat obligasi bermanfaat untuk investor dalam menentukan obligasi yang akan dibeli. Hasil penelitian ini memberikan informasi investor tidak menjadikan *maturity* dan *debt to equity* sebagai faktor utama dalam menentukan obligasi. Namun, diharapkan bagi investor menjadikan *debt to equity* sebagai bahan pertimbangan tambahan untuk berinvestasi di obligasi. Diharapkan peneliti selanjutnya dapat meneliti dengan memadukan faktor makro dan mikro perusahaan.

**Kata Kunci:** Debt to Equity Ratio; Maturity; Peringkat Obligasi; Yield to Maturity.

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## INTRODUCTION

Bonds are as important to an investment portfolio today as ever. For years, investors were told that stocks were the best vehicle for long-term savings, and that sentiment persists today even in the wake of two stock market crashes thus far in the 21st century. But those who downplay the role of bonds may be missing out on significant opportunities. In Indonesia, the validity period for the bonds is from 1 to 10 years. Debt issuance has the purpose to collect funds from the public as a source of funding.

Factors that cause the bond in great demand up now because bonds can be traded and also the Holder of the bond can earn interest (the coupon) relatively higher than the interest rate offered by other investment instruments such as deposits. Holders of these bonds also can benefit from Capital Gains, which are derived from the difference between the price of bonds traded. Bonds can also be used as collateral when requesting a loan at the Bank. Investment bonds are one of the most prudent investments compared to other investments because the payment of debt principal and coupon are guaranteed by the Legislation.

Although Bonds represent a safe investment, the bond issuer may allegedly fail to pay. Vulnerable to interest rates, the economy, and national conditions, because these things will also have an impact on the financial markets. Selling the Bonds before maturity will result in losses for investors because the selling price is lower than the price.

Faerber (2000) stated that investors preferred investing in bonds rather than stock for two reasons, namely: (1) the volatility of stocks is higher than bonds, thereby reducing the attractiveness of investment in the shares, and (2) the bonds offer a rate of positive return with fixed income so that the bonds provide more assurance than stock.

The bond investor calculates bonds with measuring the yield which represents the magnitude of the investment income on the funds invested. One of the methods most often

used investors to measure the yield, namely the yield to maturity. The yield to maturity is the rate of return a compound that will be acceptable to investors if investors purchase bonds at the current market price and hold it until maturity of the bonds. (Kristofferson and Janiman, 2019).

The bond Yield represents the most crucial factor in consideration of the investors to purchase bonds as an instrument of investment. Tandelilin (2017) states that the bond yield is a measure of the revenue bonds to be received by the investors and tend to be unfixed. The bond Yield is not permanent, as befits the interest on the bonds, because of the bond yield associated with the rate of return that is implied by investors. In practice, investors do not know completely about the various factors that can affect the bond yield. But by identifying the factors that can affect yield bonds, investors can maximize the yield.

Based on data published by the Indonesian Bond Pricing Agency (IBPA) (2018), the global economic crisis struck in the year 2015. The crisis leads to a weakening of the Rupiah against the US Dollar. The weakening of the Rupiah could have an impact on the declining price of the bonds is denominated in Dollars. When the price falls means that these instruments are fewer desirables. But in fact, Table 1 shows the increase in the number of bonds. The increase in the number of new bonds each year from 2014-2018, indicating the bond starts much in demand in the midst of the many negative sentiments.

**Table 1. Recapitulation Of Trading Bonds**

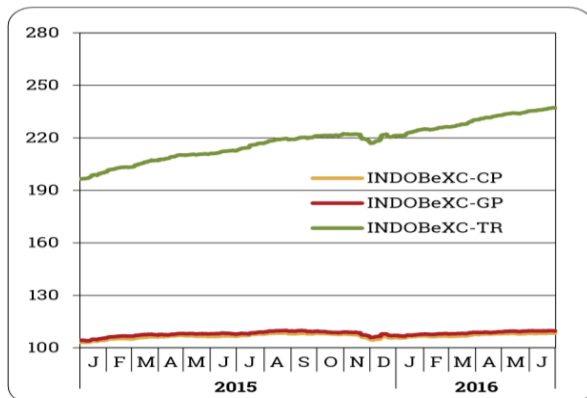
Period	Outstanding	Volume (Million)
2014	223,463,600.00	167,674,457.05
2015	249,879,900.00	187,655,445.10
2016	311,678,550.00	224,317,968.00
2017	387,329,515.00	322,133,270.00
2018	417,110,145.00	301,340,444.00

Source: www.ojk.go.id data reanalyzed.

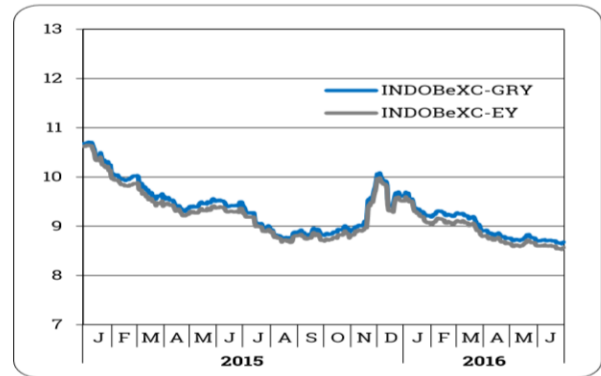
The determination of the yield in bonds in the future can use the yield curve. Ignatius Girendroheru as the President Director of PT. The assessment of the Price Effects of Indonesia or the Indonesia Bond Pricing Agency (IBPA), said that the yield curve IBPA – ICBYC was declined, the decline in yields experienced by the corporate bond tenure length, i.e. 8 years up to 10 years. The shrinks 20.21 basis points from the beginning of 12.17% in October 2015 to 11.96% in October 2015. In a similar period, corporate bonds term i.e. one year up to four years its yield also decreased 17.32 basis points from the position of 11.18% to 11.01%. While the yield of corporate bonds tenor of a medium namely five years to seven years, its yield retreating 12,62 basis points from 11.95% to 11.82%.

(<https://investasi.kontan.co.id/news/november-2015-yield-obligasi-korporasi-menyusut>)

In addition to the above problems, the following there is a chart that shows the increase and decreases in yield in detail with the nominal value of the yield changes occur in fluctuating each month in 2016.



**Figure 1. INDOBeXC (CP; GP; TR) – Corporate Bond Indonesia Indexes**



**Figure 2. INDOBeXC (GRY; EY) – Corporate Bond Indonesia Indexes**

The chart above shows the increase and decrease of the data INDOBeXC – Corporate Bond Indonesia Indexes, which provide a benchmark for the corporate bonds, contains a letter that corporate debt receives a fixed coupon and corporate Sukuk ijarah contract. The focus of the data is that the increase and decrease in yields are seen from the INDOBeXC-EY. INDOBeXC-EY is the data that informs the movement of the yield rate of the overall bond, which is calculated based on the increase or decrease in the level of bond yields and take into account the accumulation of the acquisition of the interest running. The Data show the occurrence of the increase and decrease of the percentage of yields that it produces, as in January 2016 by -4,12% be down in February 2016 by -2,60%. Whereas the increase in yield can be seen to be October 2016 1.51% to 11,57% in November 2016.

These conditions indicate investors expect that the risk of ongoing investment in the country is minimal compared with the risk of short-term. Change over the yield of bonds has the meaning there are several factors that affect the bond yield, especially the yield to maturity of the bonds. Several factors affect the bond yield, namely external factors and internal factors of the company. Factors that can affect the yield of the bonds that such bond rating. (Ahmad & Wahyudiani, 2019; Dara & Windayanti, 2019; Dayanti & Janiman, 2019; Hendaryadi, Yusniar, & Hadi, 2019; Linda Naluritha Sari & Abundanti, 2015; Luo & Chen, 2019; Mega & Widayat, 2019; Putri, Siregar, & Andati, 2020; Sabrina & Lawita, 2019; Setiyani, Baihaqi, & Supriyadi, 2019;

Situmorang, 2017), maturity (Dayanti & Janiman, 2019; Faizah, 2019; Linda Naluritha Sari & Abundanti, 2015; Mega & Widayat, 2019; Putri et al., 2020; Zulfa & Nahar, 2020), and leverage (Ahmad & Wahyudiani, 2019; Faizah, 2019; Purwanti & Purwidiyanti, 2017; Setiyani et al., 2019; Situmorang, 2017; Suryaningprang & Suteja, 2019).

One of the factors that can affect the yield to maturity of a bond remains the life of the bond. Each bond has the maturity, or a life of a bond is known as the maturity. Maturity remains the time at which the value of the principal and interest of bonds must be repaid by the bond issuer. Bonds that have a longer lifespan will have the level of risk is high so the yield to maturity of offered will also be higher than on bonds that have a lifespan shorter maturity.

Research regarding the influence of maturity against yield to maturity of bonds is conducted by Daughters et al. (2017), Permana et al. (2017) and Rahman et al. (2013) stated that maturity has an influence on the yield to maturity of the bonds. While the results of the research conducted by Fauziani et al (2017), Purwanti et al. (2017), and Yuliawati et al. (2017) stated that maturity has no effect on the yield to maturity of the bonds.

The second factor that must be considered by the investor before the purchase of the bonds, namely bond ratings. Bond-rating is one of the key factors that can affect the yield of bonds due to the rating of the bonds is also the scale of the risk of all of the bonds traded. The scale of this risk can indicate the level of security a bond that will be bought by investors.

The rating of the bonds issued by an institution official or an agency rating the bonds that aim to assess the performance. It can be utilized by the company in executing the decision whether the bonds worth issued or not. Investors who will invest their capital in the form of bonds may use the bond rating as an indicator. The bond rating used to determine the likely yield that will be obtained and likely risks being borne.

If the rating of the bond's entry in the category is low, then there is a possibility these bonds have a higher risk. As result bonds have a low rating it should provide a yield to maturity higher to compensate for the possibility of the occurrence of the great risk. Bond-rating is important because it can provide information and give signals about the possibility of the company has failed to pay the debt (Situmorang, 2017).

Research on the effect of bond rating on yield to maturity of the bonds is done by (Aisah & Haryanto, 2012), Oktavian et al. (2015) and Susanti et al. (2017) states that the bond rating has an influence on the yield to maturity of the bonds. While the results of the research conducted by the Indarsih (2013), Muslim (2015) and Fauziani et al. (2017) states that the bond rating has no effect on the yield to maturity of the bonds.

In addition to the two factors above, other factors must be considered by investors before making decisions to invest, namely the financial information of the company. One of the financial information that can be considered by investors before deciding to invest is the debt to equity ratio.

Debt to equity ratio is an indicator of the capital structure and financial risk/financial which is the ratio between debt and own capital (Sulistiyowati & Yulianto, 2015), (Yulianto, 2017). The ratio of Debt to equity is used to evaluate the default risk i.e. the risk that may occur due to difficulties fulfilling the payment obligations of the loan principal and interest in maturity.

If the company has large debt compared with the equity, it has, then will arise the risk that the company will face. This risk can be in the form of a lack of confidence of investors at the time of investment activities in companies that issue bonds. At a time when the company has large debt, there is a possibility the company can not return the loan timely and can lead to the two companies in cooperation suffered a loss. To face such risk, the company issuing bonds will choose to offer a yield to maturity of considerable value. Thus, companies that have the value of the debt to

equity ratio are larger, then it will give the yield to maturity of the bonds due to the high risk faced by too greatly.

Research on the influence of debt to equity ratio of the yield to maturity of bonds was committed by a Muslim (2015) and Purwanti (2017) states that the debt to equity ratio has an influence on the yield to maturity of the bonds. While the research conducted by Oktavian et al. (2015) and Aisah (2014) states that the debt to equity ratio has no effect on the yield to maturity of the bonds.

Based on the phenomenon and the differences in the results of previous studies are not consistent, the author is interested in investigating the influence of maturity, bond rating, and debt to equity ratio of the yield to maturity of the bonds on the company that issued the bonds and registered in Indonesia Stock Exchange in the years 2014-2018.

## RESEARCH METHODS

This research using quantitative research methods. This study classified in associative research. Associative research is research to determine the relationship between two or more variables. The relationship between the variables analyzed using relevant statistical data to examine the hypothesis.

The analysis technique used in this research is multiple linear regression analyses. This technique is utilized to test how much influence the independent variable on the dependent variable.

### *Maturity*

Maturity is frequently referred to as the life of the bonds. According to (Tandelilin, 2017) maturity obtains the date when the bondholder will receive the principal money of the loan amounted to a nominal value. Maturity bonds saw from the year or form annual. The maturity date of each bond is different, there are 1 year to more than 10 years. In this study, maturity contained in the company's issued bonds is grouped into two, namely short-term bonds that have maturities of less than 5 years and long-term bonds that have maturities of more than 5 years.

### *Bond Rating*

The bond-rating according to (Hartono, 2017) can be defined as a symbol. The symbol character provided by the agent a rating to indicate the risk of the bonds issued. Bond ratings can indicate the quality of the bonds of a company whether good or bad, so investors can see how big is the risk that the company will face when making an investment.

The type of the rating of the bonds marked with a symbol of the character, then from that symbol which is issued by PT. Pemingkat Efek Indonesia (PEFINDO) marks a company has a bond rating the highest with the symbol AAA, and mark the companies that have a bond rating the lowest with a D. Bond-rating are equally divided into two groups, namely the rank which is worth the investment (investment grade) and the ratings which are not worth the investment (non-investment grade).

### *Debt to Equity Ratio*

According to (Kasmir, 2018) understanding of the solvency ratio or leverage ratio is the ratio used to measure the extent to which debt the company can finance the assets of the company. The purpose of the definition is the company can compare the burden of the debt that is owned with the assets available in the company. This ratio is useful for measuring the ability of the company to repay the entire debt or obligation long-term or short-at the time the company will be liquidated or dissolved.

If the purpose of the company focuses on debt and equity that is owned, then the company can use the solvency ratio i.e. in particular on the debt to equity ratio. The ratio of debt to equity is the ratio used to assess the debt with equity. This ratio can be calculated by using the ratio between the whole debt by all equity (Kasmir, 2018). The debt to equity ratio can be sought with the following formula.

### *Yield to Maturity*

Bonds consider two terms related to the characteristics of income, including bond yields and bond interest rates. The definition of bond yields described by (Tandelilin, 2017) is

a measure of the income that investors will receive from a bond and has a tendency to be variable. Bond yields possess a variable nature because bond yields retain an extremely deep relationship with the level of return required by previous investors.

Bonds that attain different maturities will have different bond yields. This is because the size of the bond yield is related to the maturity date of the bond. The bond yield to maturity is a compound rate of return that investors will receive if they buy bonds at the current market price held until the maturity date of the bonds, which aims to measure the expected rate of return if the bonds are kept until the maturity date of the bonds. The yield to maturity can be calculated by the formula:

$$\text{Yield to maturity} = \frac{C_i + \frac{P_p - P}{n}}{\frac{P_p + P}{2}}$$

Description:

P = Price of bond at this time (t=0).

n = Number of years until the maturity date of the bonds.

C<sub>i</sub> = Coupon payment for bond i of each year.

PP = The par Value of the bonds.

### Determination of Population and Sample Research

The sampling technique used in this research is a non-probability sampling technique, namely purposive sampling. The reason for using this technique is to obtain data that represent the population and varying with the purpose of research by using criteria. The criteria in the sampling of this research are as follows.

1. Companies that issue bonds and are listed on the Indonesia Stock Exchange the period 2014-2018.
2. Companies that issue bonds and there is the annual report of the company for 5 consecutive years from 2014 to 2018.
3. The Data of the annual report and financial statements of the company which can be analyzed and meet the criteria during the period 2014-2018.

From the criteria, then obtained a sample of 10 companies and the data analysis for 5 years, so that the unit is the analysis of the data obtained amounted to 50 data. The following companies that fulfill the criteria and serve as the research sample.

**Table 2. Companies that Become Sample of the Research**

No.	The Name Of The Company
1.	Adira Dinamika Multi Finance Tbk.
2.	PT. Astra Sedaya Finance
3.	PT. Bank UOB Indonesia
4.	PT. BFI Finance Indonesia Tbk.
5.	PT. Federal International Finance
6.	PT. Indomobil Finance Indonesia
7.	PT. Indosat Tbk.
8.	Sarana Multigriya Finansial (PERSERO)
9.	PT. Wahana Ottomitra Multiartha Tbk.
10.	PT. Waskita Karya (PERSERO) Tbk.

Source: [www.idx.co.id](http://www.idx.co.id).

### Data Collection Techniques

The type of data used in this research is quantitative data. Sources of data in this research in the form of secondary data. Secondary Data in this study of the bond rating the corporation which obtained from PT Pefindo, the record issuance of corporate bonds obtained from the Indonesia Stock Exchange, financial statements (annual report) the companies listed on the stock Exchange The effect of Indonesia, and other data related to the bonds obtained from the SERVICE, KSEI, and IBPA.

## RESULTS AND DISCUSSION

### Normality Test

Before doing a regression test and a test of the hypothesis necessary to do a normality test to determine the distribution of the distribution data of the four variables is normal or not normal. The normality tests of data are done by testing the non-parametric Kolmogorov-Smirnov.

**Table 3. The Results of One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		50
Normal Parameters <sup>a</sup>	Mean	.0000000
	Std. Deviation	.00979571
Most Extreme Differences	Absolute	.084
	Positive	.078
	Negative	-.084
Test Statistic		.084
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>

Source: The results of the processing of data SPSS (2020)

The results of the testing data using the Kolmogorov-Smirnov test shows the value of Asymp. Sig. (2-tailed) equal 0,200 which is above 0,05. Then, it can be concluded that data distribution is normal data or the residuals normally distributed.

### Test Multicollinearity

Test of multicollinearity aims to test whether in the regression model discovered the correlation between the independent variables or independent variables.

**Table 4. The Results of Multicollinearity**

Model	Collinearity Statistics	Tolerance VIF	
		Tolerance	VIF
1 (Constant)			
Maturity		.977	1.023
Peringkat Obligasi		.993	1.007
Debt_To_Equity_Ratio		.984	1.016

Source: data reanalyzed.

The results of testing the multicollinearity obtained numbers VIF for the variable maturity of 1,023 with the value of tolerance shows the numbers 0,977, numbers VIF for the variable rating of the bonds amounted to 1,007 with the value of tolerance shows the numbers 0.993 for, and numbers VIF for the variable debt to equity ratio amounted to 1,016 with the value of tolerance shows the numbers 0,984. That is, the third

variable in this study can be said to have no multicollinearity problems.

### Autocorrelation Test

The autocorrelation test has the aim to perform testing in a linear regression model there is a correlation between the errors of the bully in the current period (t) with the error of the previous period (t-1).

**Table 5. The Results of Autocorrelation**

Model	Std. Error of the Estimate	Durbin-Watson
1	.0101101	1.818

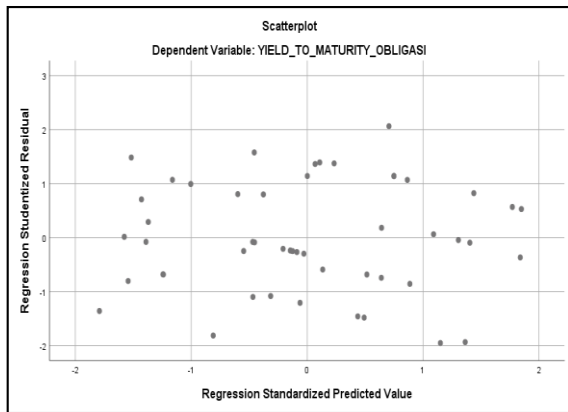
Source: The results of the processing of data SPSS (2020)

From the test results of autocorrelation in Table 5 obtained value of Durbin-Watson amounted to 1,818. When you look at the table of the test statistics of Durbin-Watson which is where the value of dl by 1,4206 and the value of du by 1,6739 in accordance with the three independent variables and 50 data are used, then the value of Durbin-Watson amounted to 1,818 show the results of no autocorrelation positive or negative because  $1,6739 < 1,818 < 4 - 1,6739$ .

That is, can be taken decision research there is no correlation between the errors of the bully in the current period (t) with the error of the previous period (t-1) during the period 2014-2018.

### Heteroscedasticity Test

Heteroscedasticity means, that the variables-explanatory variables in the regression equation have a variance error is unconstant to result in estimators being inefficient, with the aim of which is to test whether the regression model dissimilarity variance from residual of one observation to other observations. The results of testing the heteroscedasticity with the use of testing scatter plots are as follows.



Source: The results of the processing of data SPSS (2020)

**Figure 3. The Results of Heteroscedasticity Using The Scatter Plot**

Based on the results of testing the heteroscedasticity in Figure 3 shows that the dots spread randomly either in the top or at the bottom, not forming a certain pattern, and divided between the number 0 on the X-axis and the Y-axis. Observe the results of these tests it can be asserted that the variables are homoskedasticity or do not have heteroscedasticity. That is, in the regression model obtain a variance from residual of one observation to other observations is fixed.

### Multiple Linear Regression Analysis

Based on the test statistics of the regression has been done, then it can be compiled the equation of multiple regressions of this research is as follows:

**Table 6. The Results of Multiple Linear Regression**

	B	Std. Error	Beta	t	Sig.
(Constant)	.096	.005		19.786	.000
Maturity	-.005	.003	-.238	-1.781	.082
Bond Rating	-.002	.001	-.324	-2.451	.018
Debt_To_Equity_Ratio	.001	.001	.188	1.413	.164

Source: The results of the processing of data SPSS (2020)

$$Y = 0,096 - 0,005 \text{ Maturity} - 0,002 \text{ Bond\_Rating} + 0,001 \text{ Debt\_To\_Equity\_Ratio} + e$$

The Model equation of the multiple regression can be interpreted as follows.

1. The constant value of 0,096 indicates if the variable maturity, bond rating, and debt to equity ratio are fixed or constant where the independent variable is zero or no effect at all. At that point, the value of the dependent variable represents the yield to maturity of the bonds of 0,096.
2. The coefficient of maturity obtained by -0,005, a negative value defines that there is an influence between maturity and yield to maturity of the bond i.e. the relationship in the opposite direction. In other words, if the slightest value of the maturity value yield to maturity bond will increase or on the decrease of 1% maturity will increase 0.005% of the value of the yield to maturity of the bonds.
3. The coefficient of bond rating obtained by -0,002; a negative value defines the absence of influence between the yield to maturity of bonds and bond ratings that the relationship in the opposite direction. In other words, if the smallest the value of bond ratings, then the value of the yield to maturity of the bond increased or in the event of a decline of 1% bond rating will increase to 0.002% of the yield to maturity of the bonds.
4. The coefficient of debt to equity ratio obtained of 0.001, an absolute value defines that there is influence between debt to equity ratio and the yield to maturity of the bonds, namely a direct relationship. In other words, if the larger the value of the debt to equity ratio then the value of the yield to maturity of the bonds will be increased or in the event of a 1% increase in the debt to equity ratio will increase from 0.001% of the yield to maturity of the bonds.
5. e remains a factor other than the independent variables that affect the yield to maturity of bonds as the dependent variable.

### Analysis The Coefficient of Determination

The results of the analysis of the coefficient of determination based on the results of data that has been processed can be seen in the table below, namely:

**Table 7. Analysis The Coefficient of Determination**



Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.446 <sup>a</sup>	.199	.147	.0101101

Source: The results of the processing of data SPSS (2020)

Based on the table and the results of the calculations above can be seen that the value of the coefficient of determination is equal to 19.9% and the value of adjusted R square is equal to 14.7%. These values show that the magnitude of the value of the yield to maturity of bonds by 19.9% can be explained by the variable maturity, bond rating, and debt to equity ratio. Whereas for the remaining 80,1% (100% - a 19.9%) explained by other causes outside of this study or other variables not examined like inflation (Linda Naluritha Sari & Abundanti, 2015), interest rates (Linda Naluritha Sari & Abundanti, 2015) and coupon bonds (Zulfa & Nahar, 2020). The value of adjusted R square is not equal to one, then the variance of the independent variables used in this model does not explain a 100% variance of the dependent variable.

As for the analysis for the Standard Error of the Estimate from the results of processing the data in this study show the value of 0,0101101. That is, the value is included in the low value then the regression model is used to predict the dependent variable because it can make the regression model be more appropriate when predicting the dependent variable if the value of the Standard Error of the Estimate is slighter.

## Hypothesis Test

### The t test

The results of hypothesis testing partially with the analysis of the test of significance of the individual parameters can be seen in Table 6. Based on the results of the first test in Table 6 it can be seen that the value t counts for the variable maturity of  $-1,781 < 2,01290$  or the value of t-count  $<$  t-table and significance value  $0,082 > 0,05$ , then  $H_0$  is accepted and  $H_a$  rejected, meaning there is no significant influence partially between the maturity indexes as the independent variable

on the yield to maturity of bonds as the dependent variable.

The results of the second test in Table 6 it can be seen that the value t count for the variable rating of the bonds by  $-2,451 > 2,01290$  or the value of t-count  $>$  t-table and value significance  $0,018 < 0,05$  then  $H_0$  is rejected and  $H_a$  accepted, meaning there is a significant effect partially between bond rating as the independent variable on the yield to maturity of bonds as the dependent variable.

Meanwhile, the results of the third test in Table 6 it can be seen that the value t count for the variable debt to equity ratio amounted to  $1,413 < 2,01290$  or the value of t count  $<$  t-table and significance value of  $0,164 > 0,05$ , then  $H_0$  is accepted and  $H_a$  rejected, meaning there is no significant influence partially between the independent variables (independent) is the debt to equity ratio of the yield to maturity of bonds as the dependent variable (the dependent) on the company issuing the bonds and are listed on Indonesia Stock Exchange the period 2014-2018.

### The F Test

The results of testing the F test to see whether the model produced can be the best predictor can be seen in Table 8 below:

**Table 8. The Results Of The F Test**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.001	3	.000	3.813	.016
Residual	.005	46	.000		
Total	.006	49			

Source: The results of the processing of data SPSS (2020)

Based on the results of the analysis of the test in Table 8 shows that the calculated F value for all independent variables amounted to  $3,813 > 2,81$  or the value of F-count  $>$  F-table and the value significant at  $0.016 < 0.05$  then  $H_0$  is rejected and  $H_a$  accepted. That is, in this research, there is an influence which significant between maturity, bond rating, and debt to equity ratio as the independent variable to the yield to maturity of bonds as the dependent variable on the company issuing the

bonds and are listed on Indonesia Stock Exchange the period 2014-2018.

### **Discussion of Research Results**

#### **The influence of *Maturity* on *Yield to Maturity***

The results of the statistical test show there is significant influence between maturities against yield to maturity of the bonds. That is, if the maturity has a long period then the yield to maturity of the bonds produced will be greater or smaller.

According to Gebhardt et al. (2005), the duration of a significant effect on a yield with the coefficient negative. The longer the maturity, the longer the duration of bonds it will have an impact on risk maturity. The theory explains that if the company has the maturity or the life of the bond the same but different coupons, it will make the yield received will be the same (Zulfa & Nahar, 2020). The yield should be acceptable to have different values if calculated using duration. The duration of this as a measure in calculating the weighted average of maturity.

The shorter-term bonds will be more attractive to investors because investors consider bonds have a lower risk. In investing, the limited length of the maturity of a bond will have an impact on how much risk is acceptable. (Dayanti & Janiman, 2019; Faizah, 2019; Linda Naluritha Sari & Abundanti, 2015; Mega & Widayat, 2019; Putri et al., 2020; Zulfa & Nahar, 2020), (Purwanti & Purwidianti, 2017)

#### **The Influence of *Bond Ratings* on *Yield to Maturity***

Based on the results of the hypothesis testing that has been done, then it suggests there is a significant influence between the rating of the bonds against the yield to maturity of bonds and has a negative relationship. That is, at the time the bond rating the higher the yield to maturity of the bond obtained will be smaller.

Companies that have bond ratings higher then it would provide a yield to maturity of bonds is small. It is because at the time the

bond rating of a company is high, the risk is low, then the company can minimize the default risk being faced so that the company can anticipate the harmful things that are not a desirable company.

Also, at a time when minor risk then investors will be interested in investing in the company because surely every company like a small risk when going to invest with the profit is even greater. Therefore, a considerable profit can be generated from the value of the yield to maturity of the bonds that great anyway. The company also get other advantages in the form of interest on loans that are fixed or constant, it causes the company that issued the bond will benefit a lot.

According to the theory of signals, should the management company provide a signal (information) to investors? Bond ratings can be used as information that gives rise to the risk of default from bonds used as consideration for investors in deciding how big a risk that will be faced and how large the value of the yield to maturity of bonds will be received at the time of investing. (Ahmad & Wahyudiani, 2019; Dara & Windayanti, 2019; Dayanti & Janiman, 2019; Hendaryadi et al., 2019; Linda Naluritha Sari & Abundanti, 2015; Luo & Chen, 2019; Mega & Widayat, 2019; Putri et al., 2020; Sabrina & Lawita, 2019; Setiyani et al., 2019; Situmorang, 2017)

#### **The Influence of *Debt to Equity Ratio* on *Yield to Maturity***

Based on the results of the hypothesis testing that has been done, then there is no significant influence between the debts to equity ratio of the yield to maturity of the bonds. This shows that at the time the debt to equity ratio the greater the yield to maturity of the bond obtained will be even greater.

In current conditions the debt-to-equity ratio of the company is high then it means that the company needs financing to accommodate the company's needs through loans. Usually, vast companies or companies that have business activities that require large capital tend to need finance in the form of higher debt

and have a total asset of great as well. Conditions such as this show the company is on the maturity stage and have an impact on the value of the debt to equity ratio are high, and the possibility of the company getting profit which is relatively high. Other factors that cause there is no influence between debt to equity ratio with a yield to maturity of bonds that the value of the debt to equity ratio depends on the cash flow and the business characteristics of the company. Because a public company is a big company and requires capital expenditure that is large so it tends to do debt financing is higher. In these conditions, the company has positive cash flow and have prospects and good stability for a relatively long period. This caused the company to give the bond yield is low.

The results of the research contradict the theory that states that with the high debt to equity ratio the company indicated to have risks in the future will have an impact on the high yield corporate bonds. The use of debt the greater will be the resulting in increasing the risk of companies can not afford to pay the debt. (Ahmad & Wahyudiani, 2019; Faizah, 2019; Purwanti & Purwidiyanti, 2017; Setiyani et al., 2019; Situmorang, 2017; Suryaningprang & Suteja, 2019)

## CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

### Conclusions

This study aims to determine the influence of maturity, bond rating, and debt to equity ratio of the yield to maturity. The object of this research is corporate bonds listed on Indonesia Stock Exchange with the period of 2014-2018. This research using multiple regression analyses. Based on the research results, it can be concluded that:

1. In this study, maturity does not affect the yield to maturity of the bonds. This is possible because if the company has the life of the bond the same but different coupons, then make the yield received will be the same. This study contradicts previous research which was stated by. (Kristofferson & Janiman, 2019; Faizah, 2019; Linda Naluritha Sari & Abundanti,

2015; Mega & Widayat, 2019; Daughters et al., 2020; Zulfa & Nahar, 2020), (Purwanti & Purwidiyanti, 2017).

2. In this study, bond ratings negatively affect the yield to maturity. This research is consistent with the theory that explains that the bond rating and yield are inversely proportional so if the bond rating is increased, then the yield offered will go down. It can be concluded that bonds that have high ratings will give a risk of default is small so the impact on the decrease in the bond yield. The results of the above analysis in this study supported the above results of the research presented by. (Ahmad & Wahyudiani, 2019; Dara & Windayanti, 2019; Kristofferson & Janiman, 2019; Hendaryadi et al., 2019; Linda Naluritha Sari & Abundanti, 2015; Luo & Chen, 2019; Mega & Widayat, 2019; Daughters et al., 2020; Sabrina & Lawita, 2019; Setiyani et al., 2019; Situmorang, 2017).
3. In this study, the debt to equity ratio does not affect the yield to maturity. The results of this study in line with research (Faizah, 2019; Hendaryadi et al., 2019). Factors that cause there is no influence between debt to equity ratio with a yield to maturity of the bonds i.e. debt to equity ratio is high not necessarily indicate the performance of the company less good which makes the company issuing the bonds to provide a higher yield to attract investors.

### Implications

In this study there are some implications which are as follows:

1. Investing in bonds, investors are expected to understand more about a variety of aspects, be it micro or macro that may affect the return of the bonds. By the results of the study, bond ratings affect the yield to maturity of the bonds. This indicates that the information of bond rating is beneficial to investors in determining the bonds to be purchased. Bond ratings are low offers a high yield for investors. For investors who pursue a level of profits, then you should invest in

bonds with a bond rating that low, but, on the contrary, for investors who want to feel safe in investing, you should invest in bonds rated high.

2. Maturity and debt to equity do not affect the yield to maturity so that it can be information for the company issuing the bond that the investor does not consider the maturity and the debt-to-equity as a major factor in determining the bond. However, it is expected for investors to acquire debt to equity as consideration for further investment in the bonds. In addition to maturity, bond rating, and debt to equity ratio of the company and the investor also should consider other factors that affect the yield to maturity of the bonds, such as inflation rates, bond coupons, the growth of the company, and the level of interest rates. By combining these factors, investors can minimize the risk of a possible default in the future.

### Recommendations

Based on the results of the research, the recommendations can be offered for subsequent research is as follows:

1. Research is expected to further add to the time frames used as the research sample.
2. It is expected that further research using a sample with an all kind company as well as government bonds and also using bonds with coupons of the floating rate.
3. The researcher is expected can then be examined by combining the factors of macros and micro-companies.

### BIBLIOGRAPHY

Ahmad, G. N., & Wahyudiani, W. (2019). Analisis Determinan Obligasi Korporasi. *Jurnal Aplikasi Bisnis Dan Manajemen*, 5(3), 361–372.  
<https://doi.org/10.17358/jabm.5.3.361>

Dara, S. R., & Windayanti, W. (2019). Determinan Faktor Yield Obligasi Perusahaan yang Terdaftar di Bursa Efek Indonesia. *Jurnal Proaksi*, 6(1), 35–44.

<https://doi.org/https://doi.org/10.32534/jpk.v6i1.844>

Dayanti, N., & Janiman, J. (2019). Pengaruh Maturity, Peringkat Obligasi dan Debt to Equity Ratio terhadap Yield to Maturity Obligasi. *Jurnal Kajian Akuntansi*, 3(1), 78.

<https://doi.org/10.33603/jka.v3i1.2030>

Faerber, Esme. (2000). *Fundamentals of The Bond Market*. New York: McGraw- Hill.

Faizah, Y. L. N. (2019). Pengaruh Lverage Maturity dan Size Perusahaan Terhadap Yield Obligasi Dengan Peringkat Obligasi Sebagai Variabel Intervening. *Journal of Economic, Management, Accounting and Technology*, 2(1), 43–54.

<https://doi.org/10.32500/jematech.v2i1.574>

Gebhardt, William R., Hvidkjaer, Soeren., Swaminathan, Bhaskaran. Journal of Financial Economics 75 (2005) 85–114 The cross-section of expected corporate bond returns: Betas or characteristics?. *Journal of Financial Economics* 75, 85-114. <https://doi.org/10.1016/j.jfineco.2004.04.002>

Hartono, J. (2017). *Teori Portofolio Dan Analisis Investasi* (Edisi 11). Yogyakarta: BPFE.

Hendaryadi, Yusniar, M. W., & Hadi, A. (2019). Pengaruh Tingkat Suku Bunga, Bond Rating, Ukuran Perusahaan, Debt To Equity Ratio (Der) Terhadap Yield To Maturity Obligasi Korporasi Di Bei Periode Tahun 2010-2012. *JWM (Jurnal Wawasan Manajemen)*, 6(3), 295.  
<https://doi.org/10.20527/jwm.v6i3.170>

Husnan, S. (2015). *Dasar-Dasar Teori Portofolio & Analisis Sekuritas* (Edisi 5). Yogyakarta: UPP STIM YKPN.

- Kasmir. (2018). *Analisis Laporan Keuangan* (Cetakan 11). Rajagrafindo Persada.
- Linda Naluritha Sari, N., & Abundanti, N. (2015). Variabel-Variabel Yang Mempengaruhi Yield Obligasi Pada Perusahaan Yang Terdaftar Di Bursa Efek Indonesia. *E-Jurnal Manajemen Universitas Udayana*, 4(11), 3796–3824.
- Luo, H., & Chen, L. (2019). Bond yield and credit rating: evidence of Chinese local government financing vehicles. *Review of Quantitative Finance and Accounting*, 52(3), 737–758.  
<https://doi.org/10.1007/s11156-018-0724-7>
- Mega, A., & Widayat, W. (2019). Effects of Bond's Interest Rate, Rating and Maturity Time Toward Bond's Yields. *Manajemen Bisnis*, 9(1), 99–106.  
<https://doi.org/10.22219/jmb.v9i1.9446>
- Purwanti, P., & Purwidiyanti, W. (2017). Pengaruh Peringkat Obligasi, Tingkat Suku Bunga Sertifikat Bank Indonesia, Rasio Leverage, Ukuran Perusahaan, Umur Obligasi, dan Tingkat Inflasi pada Imbal Hasil Obligasi Korporasi di Bursa Efek Indonesia. *Jurnal Manajemen Dan Bisnis MEDIA EKONOMI*, XVII(1), 13–24.
- Putri, R. M., Siregar, H., & Andati, T. (2020). Effects Of Coupon, Maturity, Liquidity, And Bond Rating On The Yields Of Banking Bonds. *Jurnal Ilmiah Bisnis Dan Ekonomi Asia*, 14(1), 1–13.  
<https://doi.org/10.32812/jibeka.v14i1.125>
- Sabrina, S., & Lawita, F. I. (2019). *Analysis of the Effect of Corporate Governance on Yield to Maturity Through Bond Rating in Indonesian Financial Institution*. 100(Icoi), 121–125.  
<https://doi.org/10.2991/icoi-19.2019.22>
- Setiyani, E. R., Baihaqi, J., & Supriyadi, S. (2019). Pengaruh Profitabilitas dan Solvabilitas Terhadap Yield Sukuk dengan Peringkat Sukuk Sebagai Variabel Moderator pada Perusahaan di Indonesia. *AKTSAR: Jurnal Akuntansi Syariah*, 2(1), 43.  
<https://doi.org/10.21043/aktsar.v2i1.5443>
- Situmorang, B. (2017). Pengaruh Peringkat Obligasi, Debt To Equity Ratio dan Ukuran Perusahaan Terhadap Yield To Maturity Obligasi Korporasi dengan Tingkat Suku Bunga SBI Sebagai Variabel Moderating. *Institute For Managing and Publishing Scientific Journals*, Vol 3, No, 42–58.
- Suryaningprang, A., & Suteja, J. (2019). ... Risk on Yield to Maturity and Its Application on Company Value: A Case Study of Bond Companies Listed in The Indonesia Stock Exchange (IDX) from 2009 to 2013. *Proceeding ...*, (Idx), 2–9. Retrieved from  
<http://proceedings.conference.unpas.ac.id/index.php/ifsac/article/view/109>
- Tandelilin, E. (2017). *Pasar Modal: Manajemen Portofolio & Investasi*. Yogyakarta: Penerbit Kanisius.
- Zulfa, M., & Nahar, A. (2020). Faktor Determinan Yield Obligasi Perusahaan Korporasi. *Jurnal KRISNA: Kumpulan Riset Akuntansi*, 11(2), 110–128.