Analysis of Company Internal Factors on Yield to Maturity of Corporate Bonds Traded on the Indonesia Stock Exchange

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Abstract:- This study aims to examine and analyze the level of influence of internal company factors on the Yield to Maturity (YTM) of corporate bonds. The type of research used is kasuality. The population in this study are all companies issuing corporate bonds traded on the Indonesia Stock Exchange (IDX) in 2017-2018. This type of research is causality research, namely research that aims to test hypotheses and determine the relationship and influence of independent variables, namely, company size, bond rating, profitability and leverage on the dependent variable, namely yield to maturity bonds. The sampling technique used was purposive sampling. The sample in this study amounted to 104 corporate bonds from 40 companies that were the target population. Analysis of the data used in this study is panel data regression. The results showed that company size variables had a positive effect and profitability had a negative effect, bond rating and leverage variables had no effect, simultaneously the independent variables had a significant and significant effect on the dependent variable, based on the adjusted R square results of 0.8458 or 84.5% so that there were still other factors or variables can affect yield to maturity.

Keywords:- *Company Size, Bond Rating, Profitability, Leverage, Yield To Maturity Bonds.*

I. INTRODUCTION

One of the company's policies in order to obtain funds without having to owe to banks and issue new shares is to issue bonds. Bonds are issued by a company with the aim of avoiding future risks. Bonds are securities issued by a company corporations and governments who want to obtain funds by promising a fixed amount of money (principal or par value) to their holders to be paid at maturity in the future (maturity) accompanied by periodic coupon payments (Fahmi, 2014: 181). Many factors influence it such as global, domestic, political situation, etc.
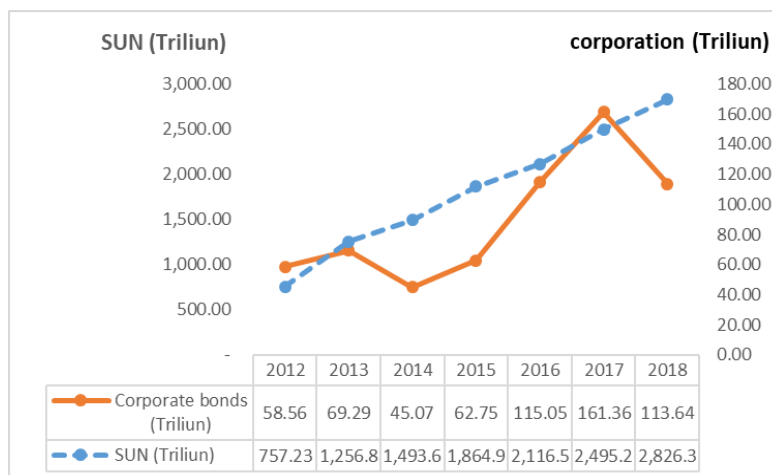

Fig 1:- Comparison of SUN Value and Corporate Bonds in 2012-2018

Based on statistical data from the Indonesian Capital Market processed by the Indonesia Bond Pricing Agency (IBPA), and the Directorate General of Financing and Risk Management of the Ministry of Finance (DJPPR) the value of corporate bonds also jumped even though the value was not as large as the movement of government bonds from the beginning of 2012 to 2018. attractive increase in corporate bonds from 2014 to 2018 tends to be unstable compared to government bonds. In general, the slump in the value of bonds was driven by 4 main factors, namely an increase in

Indonesia's credit rating, a decrease in investment risk, a more attractive bond yield and a new regulation of the Financial Services Authority (OJK), which requires non-bank financial institutions to increase the portion of government bond ownership to 20-30 percent. From the data the value of corporate bonds in 2012 reached 58.56 trillion, in 2013 it reached 69.29 trillion, up about 18% from the previous year, in 2014 it fell -35% with a value of 45.07 trillion this could be due to global and domestic factors such as elections and others, in 2015 it increased again with a

value of 62.75 trillion, up about 39%, in 2016 with a value of 115.05 trillion, it rose rapidly to 83%. This shows the bond market is stable and increasingly popular, in 2017 with a value of 161.36 trillion back up about 40% from the previous year and the value the highest of the 2012-2018 period, in 2018 it declined again with a value of 113.64 trillion, down about -30%, due to global and domestic factors such as before the election and others.
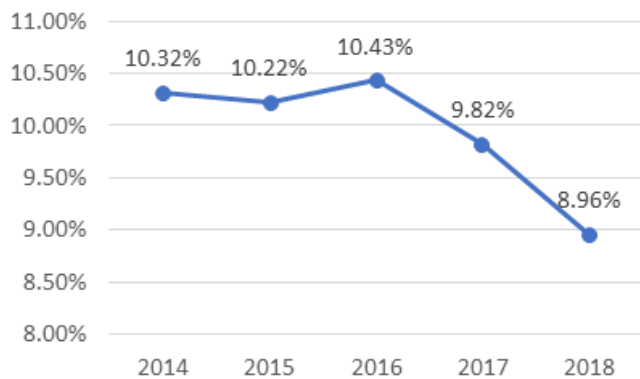

Fig 2 :- Movement of Yield To Maturity in 2014-2018

The average ytm movement from 2014 - 2018 was unstable and relatively declining during the five years, in 2014 the average ytm was 10.32%, 2015 was 10.22%, in 2016 10.43% became the highest average during 2014-2018, in 2017 9.82%, and in 2018 8.96% at the same time became the lowest average during 2014-2018. Many factors influence it, such as global, domestic, year and political situation, etc. As well as previous studies that produce meaningful / inconsistent results from each of the independent variables studied.

Desnitasari's research results (2014), Laeli (2010), and situmorang (2017) stated that company size on yield to maturity bonds had a negative influence on yield to maturity bonds. Another case with Sari's research results (2014), states that company size has no effect by Purwanti (2017).

The results of Purwanti (2017), Oktavian (2015), and Situmorang (2017) research states that bond ratings have a negative effect on bond yields to maturity. This result is contrary to research, and sari. (2014), which stated that bond ratings had a positive effect, as did Indarsih (2013) with its research results that profitability negatively affected bond yield to maturity.

Sari's research results (2014) states that profitability has a negative effect, as well as Faizah (2015) states that the results of his research profitability does not affect the yield to maturity of bonds. This result is contrary to research by Isnurhadi (2011), which states that profitability has a positive effect on yield to maturity of bonds, and according to Terry (2011) states a negative effect.

Sari's research result (2014) states that leverage does not influence bond yield to maturity. This result is contrary to Purwanti (2017) research, which states that leverage has a

negative influence, and a positive effect according to Situmorang (2017) on yield to maturity bonds.

Based on the background of the problem, this research is focused on the following problems:
- Does the size of the company affect the yield to maturty bonds.
- Does the bond rating affect the yield to maturity of the bond.
- Does profitability affect the yield to maturity of bonds.
- Does leverage affect the yield to maturity of bonds.

II. LITERATURE REVIEW

A. Signaling Theory
According to Horne and Wachowicz (2007: 192), signal theory explains why companies present information for the capital market. Furthermore, according to Signaling Theory, it states about how a company should give signals to users of financial statements. Information provided by companies can be accounting and non-accounting, this information is very necessary for investors who will invest their capital. An increase in leverage implies a higher probability of bankruptcy. Therefore a manager will be contractually pressured if a bankruptcy occurs, investors will conclude that you have good reason to believe that the company's condition is far better than that reflected by its share price.

B. Asymetric Information Theory
According to Hanafi (2004: 89) information asymmetry is a situation where agents have more information about the company and future prospects compared to the principal. This condition provides an opportunity for agents to use the information they know to manipulate financial reporting in an effort to maximize their prosperity.

C. Theory of Modigliani Miller (MM)
In 1958, two economists opposed the traditional view of capital structure. They argue that capital structure does not affect the value of the company, then in the early 1960s, the two economists included tax factors in their analysis. They came to the conclusion that the value of a company with a debt value is higher than the value of a company without debt. The increase in value is due to tax savings from the use of debt Brigham (2011), but this theory is based on several assumptions including no brokerage fees, no taxes, no bankruptcy costs, investors can borrow at the same level as the company and no EBIT affected by the use of debt. The assumptions proposed by Modigliani and Miller if it can be fulfilled, it can be concluded that in tax conditions, the company will get better if it uses a larger debt. In fact this is difficult to happen because of some unrealistic assumptions.

D. Bonds
According to Fahmi (2014: 169) bonds are securities sold to the public, which include various provisions that explain various things such as the nominal value, interest rates, time period, the name of the issuer and several other

provisions that are explained in the law passed by related institutions.

According to Moechdie and Ramelan (2012: 299), bonds are one type of debt. Bonds are generally a sign of long-term debt. According to the prevailing convention in Indonesia, debt securities with a tenor of more than five years are called bonds, although some three-year bonds issued by finance companies are marketed and recorded as bonds. The average bond in Indonesia has a tenor of five years and the longest is 30 years.

According to Sjahrial (2009: 238), bonds are an alternative funding through attractive debt for companies or governments because in general debt is directly to the public (capital suppliers). Changes in bond prices in the market are strongly influenced by changes in interest rates and perceptions of risk.

E. Company Size

According to Keown et. al (2011: 3), company size is a measure that shows the size of the company. Company size can be measured using total assets, sales and equity. Large companies have large total assets, sales, and equity. So that large companies have a lower risk of bankruptcy or failure when compared to smaller companies.

F. Bond Rating

Rating agencies that issue bond ratings have their own methodology for determining what factors affect a rating on bonds owned by a company. Quoting Silitonga, Manurung, and Tobing (2009: 45) research which in their research shows several factors that can determine the rating of a bond, namely: future income and cash flow, both short and long term debt, capital structure, liquidity of company assets, quality management and company structure.

G. Profitability

Profitability is a measure used to assess the extent to which a company is able to generate profits. According to Kasmir (2013: 196) profitability ratios are ratios to assess a company's ability to seek profits.

H. Leverage

According to Gumanti (2011: 9), in assessing a company, investors need to know the level of health of the company through its debt ratio. The leverage used is the debt to equity ratio (DER). DER is a ratio that reflects the risk factors faced by investors. This ratio can also be used to see the extent to which owner's capital can cover its debts to outside parties. The lower the DER, the higher the company's ability to pay all of its obligations.

Based on the formulation of the problem and empirical studies that have been carried out, then it can be hypothetically drawn as follows:

- H1: The size of the company is thought to have a negative effect on yield to maturity of bonds.

According to Keown, et al (2011), company size can be measured using total assets, sales, or capital. One measure that shows the size of the company is the size of the assets of the company. Companies that have large total assets show that the company has reached the maturity stage, which in this stage reflects that the company is relatively stable and is more able to generate profits compared to companies with small total assets. Based on the description above, the following hypothesis is proposed.

- H2: Bond rating is thought to have a negative effect on yield to maturity of bonds.

Dhar (2016) conducted research in measuring the effect of bond ratings on bond yields with the research sample of European countries, the results of the study revealed that countries rated with higher ratings tend to provide lower yields. The same thing was also expressed by Ibrahim (2008) that the higher the bond rating, the smaller the YTM of the bond. This indicates that the bond rating issued or rated by PT. PEFINDO is considered by investors in deciding to conduct bond transactions on the Indonesia Stock Exchange. Based on the description above, the following hypothesis is proposed:

- H3: Profitability is thought to have a negative effect on yield to maturity of bonds.

According to Kasmir (2013), large companies are less risky than small companies. This means that large companies have a low default risk or in this case the company is able to meet its long-term obligations. The risk of default is low, so the required yield level is also low. Based on the description above, the following hypothesis is proposed:

- H4: Leverage is thought to have a positive effect on yield to maturity of bonds.

According to Fahmi (2014), the use of debt that is too high will endanger the company because the company will be included in the category of extreme leverage that is the company is trapped in a high level of debt and is difficult to release the debt burden, so the use of large debt will result in a higher risk of being unable repay debt, with the higher level of risk the greater the benefits raised. Thus, with the increase in DER, the yield to maturity offered to investors is greater and the low value of the leverage ratio can be interpreted that only a small portion of assets is funded with debt and the risk of company failure is smaller. Based on the description above, it is proposed hypothesis as follows:

In the conceptual design the authors describe the thought process based on the theoretical foundation, research methods, data analysis, and logical reasons.
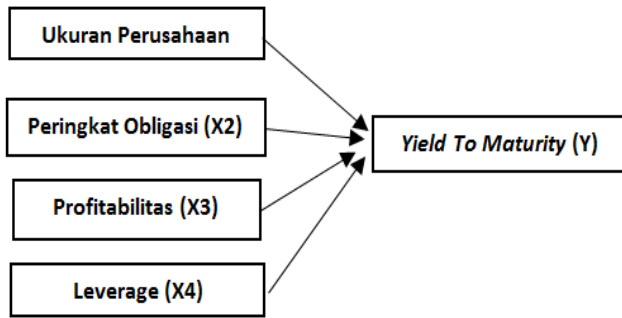
Fig 3:- Research Model

III. METHODOLOGY

This type of research is causality research, namely research that aims to test hypotheses and determine the relationship and influence between two or more variables on other variables. This study aims to examine the effect of independent variables, namely, company size, bond rating, profitability and leverage on the dependent variable, namely yield to maturity bonds.

This study uses two types of variables, namely the dependent variable and the independent variable. Yield To Matirity Bonds (Y) in this study serve as the dependent variable. Company size (X1), bond rating (X2), profitability (X3), leverage (X4), as an independent variable, then the measurement method and scale of each variable related in this study to support success in the research to be conducted.

This research is a type of applied research with quantitative analytical analysis. Quantitative research

methods can be interpreted as research methods based on the philosophy of positivism, used to examine specific populations or samples.

The sample is part of the number and characteristics possessed by the population or in other words the sample is part of the population that is expected to represent the study population. The sampling method used is the purposive sampling method, where sampling is adjusted to the required sample requirements. The sample in this study is the data of company size, bond rating, profitability, leverage and yield to corporate bonds which are still traded within 2 years from January 2017 to December 2018. The total sample in this study is 104 bonds that are still traded from 40 companies.
- Corporate bonds registered and traded during 2017-2018
- Corporate bonds included in the banking and financial sectors
- Do not pay coupons in fixed amounts and there is a floating rate effect on bond yields
- Bond issuing companies do not publish complete financial statements during the observation period.

IV. RESULTS AND DISCUSSION

The type of data used in this study is panel data, which is a combination of time series data and cross section data. Time series data per year for the period 2017 to 2018. Cross section includes 104 corporate bonds traded on the Indonesia Stock Exchange.

A. Descriptive Statistics

variable	YTM	SIZE (IDR Triliun)	RATING	ROA	DER
Mean	0.0941	138.16	1.9348	0.0409	1.6886
Maximum	0.1300	1,492.4	4.3880	0.1650	7.0360
Minimum	0.0730	41.82	1.0000	-0.0390	0.0790
Std. Dev	0.0109	1.6935	0.9167	0.0438	1.3813
N	208	208	208	208	208

Table 1:- Descriptive Statistics of Variables Size, Rating, ROA, DER for 2017-2018

Based on table 1 above the average YTM for 2017-2018 is 9.41%, the maximum YTM value of the GWSA01CN1 bonds from PT. Greenwood Sejahtera Tbk, and the minimum YTM comes from PRTL01ACN1 bonds from PT. Indonesian Telecommunications Professional, YTM 2 years of research tends to decrease because it is greatly influenced by bank loan interest rates, and YTM will always be below the average bank credit.

The average size of the company in 2017-2018 Rp. 138.16 trillion, the maximum value of total assets comes from the bonds of PT. State Electric Company (Persero) in the amount of Rp. 1,492,487,745,000,000, and the minimum asset value comes from the bonds of PT. Chandra Asri Petrochemical Tbk in the amount of Rp. 41,822,256,000.

The average bond rating for 2017-2018 is idAA-, the maximum rating of PT. State Electricity Company (Persero)

with a AAA rating, and the minimum value comes from the bonds of PT. Chandra Asri Petrochemical Tbk idBBB,

The average ROA for 2017-2018 is 4.09%, the maximum value of ROA in the study year comes from the bonds of PT. Telekomunikasi Indonesia Tbk, amounting to 16.50%, and the minimum value comes from the bonds of PT. Indosat Tbk, amounting to -3.90%.

The average DER for 2017-2018 is 1.68 times, the maximum DER comes from PT. Tower Bersama Infrastucture Tbk, with DER 7.03 times, and the minimum value comes from the bonds of PT. Greenwood Sejahtera Tbk with DER 0.07 times of its equity.

B. Stationary Test
Before modeling or processing data, it is necessary to know whether the data used is stationary or not. Stationarity

testing is used to see data behavior. To find out stationary data, a unit root test method is used, namely the Augmented Dickey Fuller (ADF) test. All data used in the regression were carried out unit root tests based on the ADF critical limit value of 1%. Following are the stationary test results of each of the variables used in this study.

Variable	t-statistik	Critical values 1%	Prob.	Unit root test
YTM	-4.056654	-3.463067	0.0014	Level
SIZE	-3.503330	-3.462574	0.0088	Level
RATING	-3.870610	-3.462901	0.0027	Level
ROA	-4.026721	-3.462253	0.0016	Level
DER	-4.274865	-3.462412	0.0006	Level

Table 2:- Stationary Variable Test

The results from table 2 show the variables YTM, Size, Rating, ROA, DER show the prob value. <0.05 (5%). and the value of each ADF is more than the critical value of 1%, this result shows that all variables in this study are stationary at the first difference level.

A. Selection of Panel Data Regression Model

Test	Statistik	Prob.	Selected Model
Chow test	3.311568	0.0000	*Fixed Effect*
Hausman test	96.064579	0.0000	*Fixed Effect*

Table 3:- Chow test, Hausman test

Table 3 shows that Prob. Chi-Square or p-value of 0.0000 which value <0.05 then H0 is rejected so that it can be concluded that the Fixed Effect model is more appropriate than the Common Effect model for this study.

According to the statistic test, it can be seen that the p-value = 0.0000 <0.05 so that the fixed effect model in analyzing independent variables namely size, rating, ROA and DER to YTM is more suitable to be used as a panel data regression model in this study. Then it can be decided the best model used is FEM (fixed effect model)

The Hausman test is a statistical test to choose whether the Fixed Effect and Random Effect models are the most appropriate. In this test the best fixed efeect model was chosen, with the following regression model results:

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	1.440102	0.182021	7.911755	0.0000
SIZE	-0.043776	0.005880	-7.445023	0.0000
RATING	0.006196	0.004285	1.446077	0.1513
ROA	0.112582	0.026691	4.218052	0.0001
DER	0.000479	0.002552	0.187844	0.8514
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.845897	Mean dependent var		0.094101
Adjusted R-squared	0.681006	S.D. dependent var		0.010959
S.E. of regression	0.006189	Akaike info criterion		-7.025871
Sum squared resid	0.003831	Schwarz criterion		-5.292919
Log likelihood	838.6906	Hannan-Quinn criter		-6.325154
F-statistic	5.130046	Durbin-Watson stat		1.961905
Prob(F-statistic)	0.000000			

Table 4:- Panel Data Regression Test Results with Fixed effect Model

The regression equation is as follows:

$$YTM_{it} = \beta_{10it} + \beta_1 SIZE_{it} + \beta_2 RATING_{it} + \beta_3 ROA_{it} + \beta_4 DER_{it} + \varepsilon_{it}$$

Therefore the panel data regression model can be formulated as follows:

YTM = 1,440102 – 0,043776 SIZE + 0,006196 RATING + 0,112582 ROA + 0,000479 DER

D. Panel Data Regression Analysis

Based on table 4 above, R-square value (R2) = 0.845, this shows that 84.5% can be explained that simultaneously company size, bond rating, ROA, and DER affect yield to maturity (YTM) of 84.5 %. While the remaining 15.5% yield to maturity (YTM) is influenced by other factors not observed in this study.

Based on table 4.18 above, it can be seen that the calculated F result is 5.130046> F table = 0.1765 and the p-value is 0.00 <0.05, so H0 is rejected which means that the independent variables simultaneously have a significant effect on dependent variable.

T test is done to show how far the influence of one independent variable individually in explaining the variation of the dependent variable. Further discussion regarding the results of the t test for each variable can be seen in the explanation of the table as follows:

Variable	t-statistik	Prob.	t-tabel	Selected Regresi
SIZE	-7.445023	0.0000	-1,6603	Negative (-) Significant
RATING	1.446077	0.1513	-1,6603	Has no effect
ROA	4.218052	0.0001	-1,6603	Positive (-) Significant
DER	0.187844	0.8514	1,6603	Has no effect

Table 5:- Test Results Fixed model effects

- Hypothesis 1 (H1) in this study is to test whether SIZE has a negative effect on Yield To Maturity (YTM)

bonds. Based on the results of data processing using EViews 10 software with a value of α = 5% in table 4, the SIZE variable has a negative coefficient and a t-statistic of -7.445023. With a probability level of 95% (α = 5%), the value of t table is -1.6603. Table 5 shows the t-statistic is in the rejection region H0 which means H1 is accepted so that it can be interpreted that SIZE partially has a negative effect on YTM.

- Hypothesis 2 (H2) in this study is to test whether RATING has a negative effect on YTM. Based on the results of data processing shown in table 4.21, the RATING variable has a negative coefficient and a t-statistic of 1.446077. With a probability level of 95% (α = 5%), the value of t table is -1.6603. Table 5 shows that the t-statistic is in the H0 reception area which means H2 is rejected so that it can be interpreted that RATING partially has no effect on YTM.

- Hypothesis 3 (H3) in this study is to test whether ROA has a negative effect on YTM. Based on the results of data processing shown in table 4, the ROA variable has a positive coefficient and t-statistics of 4.218052. With a probability level of 95% (α = 5%), the value of t table is -1.6603, table 5 the t-statistic is in the rejection area H0 which means H3 is accepted so that it can be interpreted that ROA partially negatively affects YTM.

- Hypothesis 4 (H4) in this study is to test whether Debt to Equity Ratio (DER) has a positive effect on YTM. Based on the regression results in table 4, the DER variable has a positive coefficient and a t-statistic of 0.187844. With a 95% probability level (α = 5%), the t table value is 1.6603. Table 5 the t-statistic is in the receiving region of H0 which means that H4 is rejected so that it can be interpreted that DER partially has no effect on YTM.

E. Classical Assumption Test
Based on the model selection that has been selected, the Fixed Effect Model panel data regression equation is chosen. then the next step is to test the classical assumptions. The classic assumption in linear regression is called the BLUE (Best Linear Unlimited Estimator) assumption. The classic assumption tests conducted for this study are the normality test, the autocorrelation test, the multicollinearity test, and the heterokedasticity test.
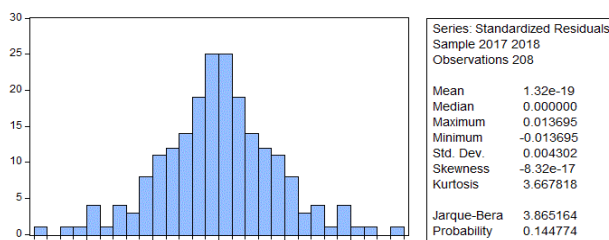

Fig 4:- Residual Normality Test Results

Residual normality test results above are fallow jarque value of 3.8651 with a probability of 0.1447 where> 0.05 so that the residuals are normally distributed.

Multicollinearity is the existence of a perfect linear relationship between variables that explain the regression model, to measure the occurrence of multicollinearity in the regression model seen from the correlation coefficient between each independent variable. If the coefficient > 0.80, then in the regression model multicollinearity occurs.

	SIZE	RATING	ROA	DER
SIZE	1.000000	-0.431446	-0.243691	0.106958
RATING	-0.431446	1.000000	0.017276	0.046526
ROA	-0.243691	0.017276	1.000000	-0.398600
DER	0.106958	0.046526	-0.398600	1.000000

Table 6:- Multicollinearity Test Results

Correlation coefficient values between independent variables can be seen in table 4.16 above. Correlation between size and rating of -0.431446 <0.80 which means no multicoreanity, correlation between rating and ROA of 0.017276 <0.80 which means no multicollinearity, the correlation coefficient between ROA and DER of -0.398600 <0.80 which means no multicoreanity, and the coefficient DER correlation with a size of 0.106958 <0.80 which means no multicollinearity occurs. Seeing the low value of the correlation coefficient between independent variables, it can be concluded that there is no multicollinearity problem in this equation model.

This researcher also wants to test whether the influence of independent variables namely size, rating, ROA, and DER on the dependent variable, namely yield to maturity, contains heterokedasticity problems using the Heteroskedasticity LR Test method. The test is as follows:

Panel Cross-section Heteroskedasticity LR Test

Null hypothesis: Residuals are homoskedastic
Equation: UNTITLED
Specification: YTM C SIZE RATING ROA DER

	Value	*df*	*Probability*
Likelihood ratio	77.54696	104	0.9756

Table 7:- Heteroscedasticity Test Results

Heterokedastisitas test results shown in table 4.17 shows that the probability value 0.9756> 0.05. So it can be concluded that there is no heterokedastisitas in this regression model.

The random regression model output results in table 4, show the calculated Durbin Watson value (d) of 1.961905. The value of the Durbin Watson table is the upper limit (du) = 1.76098 and the lower limit (dl) = 1.60157 so that the 4-du value = 2.23902 is known. Based on the test criteria, the resulting du value (1.76098) <d (1.961905) <4-du (2.23902) so that it can be concluded that there is no autocorrelation in the data.

F. Analysis of the Effect of Company Size on Yield to Maturity

The t-test results of firm size variables indicate that Company Size (SIZE) partially has a negative effect on YTM, thus this result is consistent with the hypothesis statement made earlier that company size is thought to have a negative effect on YTM bonds.

The results of this study reinforce some of the previous studies including Aisah (2014), Faizah (2015), Situmorang (2017), which stated that company size had a significant negative effect on YTM. In contrast, the results of this study are not in line with the research of Purwanti (2017), Terry (2011), Surya (2011), Listiawaty (2018), and Faizah (2019) which states that company size has no significant effect on YTM.

The results indicate that companies that have large total assets have a smaller risk than small companies that have large risks. With a low level of risk, the yield given is also lower. In addition, large companies are considered to have good prospects in a relatively long period of time, are more stable and are more able to generate profits compared to companies with small total assets.

The negative influence is supported by research data, for example in 2018 PT Perusahaan Listrik Negara had total assets of Rp1,492 trillion and the bonds issued gave YTM of 7.65% 7-year tenor, while PT. Chandra Asri Petrochemical Tbk, which has a much lower total assets of Rp. 44,428 billion, gave YTM higher bonds, which is 8.64% of the 5-year tenor.

The increase in assets followed by an increase in operating results will further increase the confidence of outsiders towards the company. Generally, the larger the size of a company, the easier it is for companies to find external funding sources through debt or bond issuance. This is based on the creditor's confidence in the funds invested into the company guaranteed by the amount of assets owned by the company (Robert Ang, 1997).

G. Analysis of the Effect of Bond Rating on Yield to Maturity

RATING variable t test results interpret that bond ratings partially have no effect on YTM. This result is in line with the hypothesis statement made earlier.

Asymetric Information Theory, bond ratings are used to reduce information asymmetry between management and investors. Bond investors need information that can be used as a reference in their investment decisions, so bond rating information is considered very important for investors to decide whether or not the bonds are suitable for investment and to know the level of risk. Empirically, the results of this study reinforce some of the previous studies including Indarsih (2013), Liu (2010), Meder (2018), who stated that the bond rating has no effect on YTM. Conversely, the results of this study are not in line with research Purwanti (2017), Isnurhadi (2011), Aisah (2014), Yulia (2016),

Oktavian (2015), and Situmorang (2017) which states that bond ratings have a significant negative effect on YTM.

Bond ratings show bond quality, which is reflected in bond risk. Bonds that have high ratings are generally issued by companies that have good financial performance so that the risk is lower. With a low level of risk, the yield given is also lower. While low-ranking bonds will certainly provide high yields to attract investors and compensate for the emergence of large risks.

Its influence is supported by research data, for example for the 2017 TLKM02B bonds PT. Telekomunikasi Indonesia Tbk has a ROA of 16.48% of the bonds issued giving YTM of 9.12%, while MEDC02BCN1 bonds of PT. Medco Energi Internasional Tbk, which has a ROA of -0.55%, gave YTM higher bonds at 10.88%.

In 2018 PT. TBIG02CN1 bonds Telekomunikasi Indonesia Tbk has a ROA of 13.08% of the bonds it issued giving YTM of 8.11%, while the APLN01CN2 bonds of PT. Agung Podomoro Land Tbk, which has a ROA of 0.65%, gave YTM higher bonds at 10.98%.

H. Effect of Return on Assets (ROA) on Yield To Maturity

ROA t-test results show that ROA as a measure of profitability ratios partially influences YTM, thus these results are in line with the hypothesis statement made earlier that profitability is thought to affect YTM bonds.

Relating to the Signaling Theory, the profitability ratio can give a signal to investors about the company's financial condition and know the risk of bonds. If the company's profitability is considered good, it can give a signal that the risk of investment is low and security is more secure and consequently the company gives a smaller yield. The results of this study reinforce some of the previous studies including Isnurhadi (2011), Chin (2012), which states that return on assets has a significant positive effect on YTM. In contrast, the results of this study are not in line with research by Terry (2011), Yulia (2016), Sari (2014), and Faizah (2015), which states that return on assets has no effect on YTM.

The results show that profitability has not been taken into consideration in determining YTM, this is because corporate profits tend to fluctuate and make it difficult to assess bond risk only from the level of profitability of the company. In carrying out its business activities, companies face business risks and regulatory risks so that companies that do not necessarily have high profits have good prospects in fulfilling their long-term obligations. Investors are expected to be more thorough before investing in bonds and consider the potential for long-term business because of the nature of long-term bonds.

I. Effect of Debt to Equity Ratio (DER) on Yield To Maturity

The t-test results of DER variables indicate that the company leverage partially proxied with DER has no effect on YTM, thus this result contradicts the hypothesis

statement made earlier that leverage is thought to have a positive effect on YTM bonds.

Modigliani Miller's theory explains that the value of a company will increase with increasing debt due to tax savings from debt interest payments, but this theory ignores debt risk where the greater debt makes the company offer higher yields as compensation for the emergence of large risks (default risk) . The results of this study reinforce some of the previous studies including Desnitasari (2014), Terry (2011), Aisah (2014), Sari (2014), Faizah (2015), and Listiawati (2018), which stated that debt to equity ratio had no effect on YTM . In contrast, the results of this study are not in line with the research of Surya (2011), Hapsah (2013), and Situmorang (2017), which states that the debt to equity ratio has an effect on YTM.

The relationship does not affect DER to YTM because the increase in the leverage ratio does not affect the probability of an increase in bond yields, which means that the leverage ratio is not taken into account in determining bond yields when seen partially. This is likely because investors pay less attention to the risks when investing in bonds because they consider that bonds are low-risk investments. Investors trust the bond ratings issued by securities rating agencies to measure the risks contained in these bonds, so they do not pay close attention to the company's financial statements or the level of corporate debt.

V. CONCLUSIONS

Based on the results of testing the data using the Fixed Effect Model for variable size, rating, ROA, and der to yield to maturity, the following conclusions can be drawn:

1. The test results using the fixed effect model obtained the coefficient of determination (R2) 84.5% that of the YTM variance can be explained by changes in the variables of company size, bond rating, ROA, and DER. While the remaining 15.5% yield to maturity (YTM) is influenced by other animals not observed in this study.

2. Based on the F test it was found that the model was feasible to be used in the research model, with an F-count value of 5.130046> F-table = 0.1765, it was concluded that the intermediate variables nt

3. The company size variable partially has a significant effect and has a coefficient of a bridge to YTM. This condition shows that the increase in company assets will result in low yields received / hinted, and vice versa if the company's assets are small so the yields received / signaled high but still below the average bank loan interest rates.

4. The bond rating variable partially has no effect and has a positive coefficient on YTM. Rating increase does not affect

5. the probability of an increase in bond yields, which means that the rating is less taken into account in determining bond yields when viewed partially.

6. ROA variable partially has a significant effect and has a positive coefficient on YTM. This condition shows that the increase in earnings after tax will affect the condition

of companies with good performance then the low risk of default and low yield.

7. The DER variable partially has no effect and has a positive coefficient on YTM. Because an increase in the leverage ratio does not affect the probability of an increase in bond yields, which means that the leverage ratio is not taken into account in determining bond yields when viewed partially.

Based on the conclusion above, the writer tries to convey some suggestions for further research.

1. Investors should make a review of bond investment decisions in terms of financial performance (rating and leverage) to measure the expected risk and yield.

2. For bond issuing companies in Indonesia, it is necessary to pay attention to return on assets to increase investor confidence. A good and increased ROA will make investors feel safer so that trust is more awake. Through this research the ROA variable is proven to influence the YTM determination expected by investors.

3. For academics for research that will be able to take a longer period of time so that it reflects the condition of the company in the long term as well as adding other variables in the study such as the level of maturity, coupons, and other financial ratios.

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