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Yield to maturity determinants in Indonesia corporate bonds with leverage as moderating variable

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ABSTRACT

The capital market is a forum for companies to sell shares and bonds in the hope of obtaining additional funds raised from the proceeds of selling part ownership of the company or issuing debt securities. The long-term market or commonly called the capital market has a variety of instruments that can be considered for investors. Furthermore, the purpose of this study is to analyze the important determinants which can have an impact on the yield to maturity of company obligations in Indonesia by placing leverage variable as a moderation variable. The data in this study was obtained from 25 company bonds as a sample of the total population of 59 corporate bonds in industrial sector which were further tested with panel data analysis techniques. It made the total data of 75 with 3 years of research duration. This study found that profitability, leverage and company size influenced the yield to maturity of company bonds in Indonesia. otherwise, bond ratings were found to have no effect. Subsequent findings suggest the role of leverage as a moderation variable. In addition, the end of this part of the study presents practical and academic advice as a form of researcher contribution, to invest in corporate bonds with higher degree of profitability, leverage and company size.

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Introduction

Market has two significant roles as business funding and source of business funds from investor community. Consequently, market is essential for the economic development of a country. According to Ayuningtyas et al. (2020), investment is a commitment to increase income by investing funds in several assets over a predetermined period. On average, investment in Indonesia shows an increase yearly (Sorongan 2017). However, when the world economy is slowing down, making investments is a growth economy and is necessary for export performance growth. This suggests that speculative activity in Indonesia should be a major concern both in times of economic weakness and when it develops to the next level. A bond is a letter of affirmation of obligations given by a public body or privately owned enterprise to the funder, where this obligation will be paid within a predetermined period. For this credit investors are compensated in the form of interest. Corporations as well as the state, can provide bonds. There are slight dissimilarity between state and corporate obligations which contains in yield and risk. Corporate obligations have risks yet can provide bigger yields. On the other hand government obligations could be considered as no risk, the yields and coupons given are relatively lower.

According to IDX market data report, Corporate bond issuance in 2021 increased in the March-April 2021 period, and this increase occurred in line with market optimism about Indonesia's economic recovery. The industrial sector that has improved drastically is the multi-finance industry and special financing institutions. The multi-finance industry sector issued bonds of IDR 8.56 trillion, followed by special financing institutions of IDR 7.11 trillion, and behind the two sectors were telecommunications with an emission value of IDR 4.96 trillion and construction of IDR 3 trillion. The prospect of corporate bond issuance in 2021 is still hampered due to the still soaring spread of the coronavirus plus the implementation of emergency PPKM since July 3, 2021, resulting in a slowing economic recovery in Indonesia and investors' perception of investment risks in Indonesia will also increase due to the possibility of absorption of corporate debt securities (Bawono, 2021). The Indonesian Bond Index (INDOBeX) is an indicator that can help measure the development and movement of bond yields or prices as revealed by idx.co.id. In addition, this index can be a reference to illustrate the overall trend of the bond market.

Based on data from IDX market data report, effective yield can be calculated according to the rise or fall of the yield of all bonds and accumulated accrued interest. Meanwhile, gross redemption yield can be calculated based on the value of bond duration, accrued interest accumulation, and the rise or fall of bond yields, which describes the overall yield level of bonds. Furthermore, there was a decline from 2019 to 2021. Based on data from the Bond Book published by IDX, the influence of Covid-19 caused many foreign markets to withdraw from the bond market. Factors of the Company's financial condition are also influenced by the decline in corporate bond yields, including total assets, the amount of debt, income, and corporate bond ratings (Campbell & Taksler, 2003).

For governments and companies, knowledge of several factors that can affect government yield curve bonds and corporate bonds can be a formation in developing market bonds and funds obtained from the low cost of funds. The relationship between bond yields and the difference in maturity time that forms the yield curve of movement in parallel or not is downward or upward. Bond yield as a contributor affects the yield curve from the economic influence which is a factor in the company's financial condition which among others is influenced by total assets, debt, and income (Febriawan and Santosa, 2018). Profitability is one of the factors that investors need to review when investing because the financial result of the corporate could be seen based on its profit as an assessment of the risk of its investment and can be used by bondholders in assessing a credit decision (Alim and Sihombing, 2019). In addition, another factor is bond ratings, where these factors are a sign from bond appraisal agencies as a clue to the level of risk because bond standings can inform security and become a clue to the scale of risk in all bonds traded for investors (Hendaryadi, Yusniar, and Hadi 2019). The high rating of bonds produces a relatively small return (yield); if the bond has a small level, the return (yield) gives a relatively high value. This has a negative relationship with risk in bonds, where the bond rating is high, the less risk and the return (yield). Che-Yahya et al. (2016) conducted a study on the Malaysian bond market in 2012, concluded that profitability had an impact on bond yields. Contrary to the previous result, and Fitriadi & Marsoem (2022) stated that profitability had no impact on bond yields.

Leverage ratio is the next potential factor, where leverage is the ratio of the proportion rating in using debt when investing and the utilization of DER in its measurement (Heyman & Ooghe, 2008). DER is a balanced ratio between a company's capital and debt. This ratio assesses the total fund's inventory from borrowers on the company's owners (Hidayat et al, 2020). Companies with a large DER then cause a small yield value, and if the company is small in scale, it has a small DER, thus causing a large yield in getting investors to buy in corporate bonds. This proves that investors should focus on the company's DER, although many investors think that the company issues bonds in general, thereby minimizing the risk (Listiawati and Paramita, 2018). Research from Hasibuan (2020) stated Debt to Equity Ratio (DER) has a negative effect on Yield to Maturity of Bonds. Contrary to previous result, Siregar & Pratiwi (2020) implied debt to equity ratio had no effect on yield to maturity. The position of the company's wealth is indicated by liquidity. Generally, decision-making within the company is judged by the benchmark liquidity level. The high level of liquidity regards the company's good performance. Increased liquidity in a company supports external factors namely investors in doing transaction therefore the yield would give to shareholder will be bigger (Ernawati, 2019). Corporate scope or size is a scale which categorize companies based on the total value of assets, bonds market value, stocks, and other factors (Maharani and Mawardhi, 2022). Measurement of a corporate can use the number of sales, total assets, and capital expenditures. Siregar & Pratiwi (2020) and Fitriadi & Marsoem (2022) stated firm size has a significant effect on bond yield to maturity. However in another paper, Faizah 2019 stated firm size has no effect on bond yield to maturity.

Seeing the different results from previous research on the can affect corporate bond yields, the author is interested in reconducting the research on the determinant of bond yield. However this paper will use leverage as moderating variable as a novelty from the previous research. Therefore, the research was conducted to

analyze the impact of profitability, obligation rating, liquidity, and firm size on the yield to maturity of company obligations using leverage as the moderation variable in Indonesian stock exchange in 2019-2021.

Method

The method of the study was quantitative method. Study's data is taken from company bonds dealt in the Indonesia Stock Exchange (IDX) through 2019-2021. There are 59 populations in this study however further selection is used to find sample. Furthermore, the purposive sampling technique, a technique with criteria which could be applied as a specific research sample, was used (Sugiyono 2017). The following are some of the sample criteria set, namely: (1.) Fixed Rate corporate bonds for the industrial sector with active status listed on the IDX during the 2019-2021 period; (2) Corporate bonds that have complete financial statements during the period 2019-2021; (3) Non-financial sector bonds. According to the sampling criteria, 25 corporate bonds were obtained as samples from the total population. These samples are fixed-rate corporate bonds with active status during the 2019-2021 period.

Table 1. Sample List of Industrial Sector Bonds Registered on the Indonesia Stock Exchange (IDX) for the 2019-2021 period

No	Emiten	*Bonds Code*
1	Adi Sarana Armada Tbk, PT	**ASSA01CB**
2	Anabatic Technologies Tbk, PT	**ATIC01CB**
3	Angkasa Pura I (D/H Angkasa Pura I (Persero), PT	**APAI01ACN1**
4	Barito Pacific Tbk, PT	**BRPT01ACN1**
5	Bumi Resources Tbk, PT	**BUMI01CB**
6	Chandra Asri Petrochemical Tbk, PT	**TPIA01BCN1**
7	Dharma Satya Nusantara Tbk, PT	**DSNG01ACN1**
8	Hartadinata Abadi Tbk, PT	**HRTA01CN1**
9	Indofood Sukses Makmur Tbk, PT	**INDF08**
10	Indosat Tbk, PT	**ISAT01CCN3**
11	J Resources Asia Pasifik Tbk, PT	**PSAB01ACN6**
12	Lautan Luas Tbk, PT	**LTLS02BCN2**
13	Mayora Indah Tbk, PT	**MYOR01CN1**
14	Medikaloka Hermina Tbk, PT	**AGII01ACN3**
15	Merdeka Copper Gold Tbk, PT	**MDKA01BCN1**
16	Mora Telematika Indonesia, PT	**MORA01B**
17	Pupuk Indonesia (Persero), PT	**BNTT01CCN1**
18	Pyridam Farma Tbk, PT	**PYFA01**
19	Sampoerna Agro Tbk, PT	**SGRO01ACN1**
20	Sarana Multi Infrastruktur (Persero), PT	**GNSMII01BCN1**
21	Semen Indonesia (Persero) Tbk, PT	**SMGR01ACN2**
22	Sinar Mas Agro Resources and Technology Tbk, PT	**SMAR02ACN1**
23	Steel Pipe Industry Of Indonesia Tbk, PT	**ISSP01ACN1**
24	Tiga Pilar Sejahtera Food Tbk, PT	**AISA01**
25	**Tower Bersama Infrastructure Tbk, PT**	**TBIG03BCN4**

The corporate bonds selected as samples are from companies with complete financial statements engaged in the non-financial sector industry. This study purposes to determine the effect of Profitability, Bond Rating, Liquidity, and Company Size on the Yield to Maturity of bonds with Leverage as moderation. Panel data and EViews 12 was used to process data. The significant level set is α = 5% or 0.05. Which means correctness in concluding results is 95% with error tolerance of 5% (Ghozali 2018). The panel data regression method determines the impact of independent variables with equation as follows:

$$YTM = \beta_0 + \beta_1 \text{ROA}_{it} + \beta_2 \text{ Rating}_{it} + \beta_3 \text{ CR}_{it} + \beta_4 \text{ Size}_{it} + \beta_5 \text{ DER*ROA}_{it} + \beta_6 \text{ DER*Rating}_{it} + \beta_7 \text{ DER*CR}_{it} + \varepsilon$$

Information:

YTM = *Yield to Maturity Bond*
β0 = Constant
β1 – β7 = Regression Coefficient

ROA = Return on Asset
Rating = Bond Ratings
CR = Current Ratio
Size = Company Size
DER*ROA = Interaction between Leverage and Return on Asset
DER*Rating = Interaction between Leverage and Bond Ratings
DER*CR = Interaction between Leverage and Current Ratio
ε = *error*

Results and Discussions

Descriptive Analysis

Descriptive statistics are a description of data appreciated from the average value (mean), standard deviation, maximum and minimum (Ghozali 2018). Descriptive statistics describe the characteristics of the data used in his research in terms of minimum, maximum, mean, median, and standard deviations. The maximum and minimum values are used to see each variable's highest and lowest values. The mean value is used to see the average value of the variable. The median value is used to see the middle value of each variable. While the standard deviation is used to see the homogeneity value of each variable. Here are the descriptive statistical results on each variable:

Table 2. Descriptive Statistics of Variables

	YTM	ROA	RATING	CR	SIZE	DER
Mean	9.219480	0.049013	0.120000	1.641493	3.87E+13	3.114387
Maximum	18.06800	0.607000	1.000000	12.75700	1.79E+14	78.60900
Minimum	3.580000	-0.098000	0.000000	0.234000	1.91E+11	-2.127000
Std. Dev.	3.227845	0.100252	0.327150	1.896304	4.35E+13	9.372664
Observations	75	75	75	75	75	75

Source: Data Processing Eviews 12 (2023)

The outcomes of the descriptive statistical exploration for 2019-2021 with a total of 25 observational data showed that Yield to Maturity (YTM) had the smallest rate of 3.58% obtained from PT. Medikaloka Hermina Tbk bond series in 2020. And the maximum value of 18.07% arises from PT Bumi Resources Tbk, the BUMI01CB obligation series in 2021. The average value confirms average profitability of return estimated by shareholders until maturity is 9.22% of the nominal value of bond issuance. This average yield to maturity value shows investing in corporate bonds is plenty to afford a great return. Furthermore, it was found that the return on assets has a minimum value of -0.0980 times that of PT Bumi Resources Tbk for the BUMI01CB bond series in 2020, this value shows that in 2020 the return on assets has decreased, which is proposed so that industrial sector companies are freer to increase sales. While the maximum value of 0.6070 times that came from PT Tiga Pilar Sejahtera Food Tbk for the AISA01 bond series in 2019, this value shows that in 2019 the return on assets has increased or a high value. 2019 return on assets increases as economic cycles change. The mean value is 0.0490 times and a standard deviation of 0.1003 times. It illustrates average profitability in investors rises while company's profitability decreases.

The bond rating was found to have a minimum value of 0.0000 coming from the companies as samples. This value shows that in 2019 to 2021, the bond rating on the company has decreased or is low in value, this will result in a small net profit that will be obtained, so the quality of the bonds is not good. While the maximum value of 1.0000 comes from the Angkasa Pura I COMPANY (D/H Angkasa Pura I (Persero), where the company has an AAA bond rating during the research year period. The bond rating on Angkasa Pura I (D/H Angkasa Pura I (Persero) has increased or has a high value. The bond rating from 2019 to 2021 increased in line with changes in the economic cycle, such as growth rates and inflation. The average or mean value is 0.120 with a standard deviation of 0.327. Standard deviations greater than mean values indicate that the data is heterogeneous and has a high degree of deviation.

Liquidity (CR) was found to have a minimum value of 0.2340 times that of PT Tower Bersama Infrastructure Tbk. TBIG03BCN4 Bond Series in 2020. This value shows the corporate has 0.2340 times its current assets in meeting its short-term obligations. Meanwhile, the maximum liquidity value is 12.7570 from PT Hartadinata Abadi Tbk bond series HRTA01CN1 in 2020. Liquidity has an average of 1.6415 with a standard deviation of 1.8963. Standard deviations greater than mean values indicate the data varies or is ungrouped and has a high degree of deviation. This shows the average obligation issuer sample corporate has 1.6415 times the current assets in meeting the company's short-term liabilities. Furthermore, the company size (Size) calculated from total assets has a minimum value of Rp191 billion which comes from PT Pyridam Farma Tbk, PYFA01 bond series in 2019. Meanwhile, the maximum value of the company size (size) is

Rp179 trillion which comes from PT Indofood Sukses Makmur Tbk bond series INDF08 in 2021. The corporate's size has an average of Rp38,7 trillion with a standard deviation of Rp43,5 trillion. it shows the data is heterogeneous and has a high degree of deviation. It means corporates in the industrial sector involved in this research sample are categorized as huge firms if the total asset value is above Rp38,7 trillion.

Leverage (DER) was found to have a minimum value of -2.12700 derived from PT. Tiga Pilar Sejahtera Food Tbk series of AISA01 bonds in 2019, this value demonstrates corporate has -2,1270 times the debt resulting from the equity possessed by the corporate. On the other hand the maximum leverage rate is 78.6089 which arises from PT. Anabatic Technologies Tbk series of ATIC01CB bonds in 2021, this value displays corporates have 78,6089 times the debt derived from corporate's equity. Leverage has a mean of 3.1143 with a standard deviation of 9.3726. Standard deviations greater than mean values indicate data varies or is ungrouped and has a high degree of deviation. This displays average bond issuer sample firm has a debt of 3.114387 times the corporate's own equity.

Evaluation of Inferential Statistical Data

From the test results of the chow test and Hausman panel data regression model, the researchers found fixed effect model is appropriate for determining the consequence of return on assets, bond rating, current ratio, size and leverage on yield to maturity. The chow test found which the probability of chi-square is 0.0000 < 0.05, so the fixed effect model is better than the common effect model. Meanwhile, based on the results of the Hausman test, it can be seen that the probability of chi-square 0.0001 < 0.05, so the fixed effect model is more appropriate to use compared to the Random Effects model. Because there are two tests that have similar results, there is no need to continue with the selection of a determination model, namely the Lagrange Multiplier Test. Furthermore, researchers conducted classical assumption tests in an effort to ensure compliance with statistical requirements in multiple linear regression analyses. Classical assumptions are intended to determine whether the regression coefisian obtained is correct and acceptable and avoid the possibility of a violation of classical assumptions which are the basic assumptions in the regression analysis method.

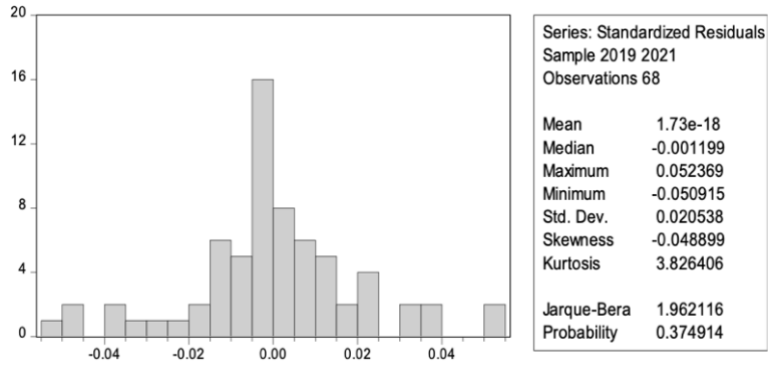

Figure 1. Normality Test Results
Source: Data Processing Eviews 12 (2023)

By normality testing, it could be viewed which the Jarque-Bera probability value is 0.374914 means it is above α (0.05). It can be concluded, the data used in this study are normally distributed, the classical assumption test concerned with the normality test is met.

Table 3. Heteroskedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.586514	Prob. F(7,67)	0.1546
Obs*R-squared	10.66402	Prob. Chi-Square(7)	0.1540
Scaled explained SS	8.856267	Prob. Chi-Square(7)	0.2631

Source: Data Processing Eviews 12 (2023)

The heteroskedasticity test describes the probability of every independent variable has a value of > 5%, therefore the data does not contain in Heteroskedasticity.

Based on Table 4, the coefficients column obtained a value of C = 0.779124 variable return on asset (ROA) value = 0.212215, bond rating = -0.123399, current ratio (CR) = -0.009070 and size = 0.079662. For this reason, the following is a model of the panel data regression equation in this study:

$$Y = 0.779124 + 0.212215 \text{ ROA it} - 0.123399 \text{ Rating it} - 0.009070 \text{ CR it} + 0.079662 \text{ SIZE it}$$

Based on the above equation, the sign of the free variable regression coefficient (return on assets, bond rating, liquidity, company size and leverage shows the path of relationship with Yield to Maturity. In addition, output results of Test F obtained a probability value (F-statistic) of 0.0000 < 0.05. In conclusion H0 is accepted, simultaneously the variables' return on assets, bond ratings, current ratio and size affect the variables' Yield to Maturity. From the Adjusted R2 value results, it can be concluded that the Yield to Maturity of industrial sector firms as a dependent variable could be explained by 92% of the variables ROA, Bond Rating, CR, and Size. The remaining 8% is clarified by other factors. It describes between independent variables have a strong connection since the adjusted value of R2 is below 70%.

Table 4. Test Results Using Fixed Effect Model Method

Dependent Variable: YTM
Method: Panel Least Squares
Date: 01/18/23 Time: 15:31
Sample: 2019 2021
Periods included: 3
Cross-sections included: 25

Variable	Coefficient		Prob.
C	0.779124		0.0000
ROA	0.212215		0.0025
RATING	-0.123399		0.2443
CR	-0.009070		0.0011
SIZE	0.079662		0.0000
ROA*DER	-0.593901		0.0001
RATING*DER	-0.038494		0.0183
CR*DER	0.005785		0.0001
Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.958167	Prob(F-statistic)	0.000000
Adjusted R-squared	0.922145	Durbin-Watson stat	2.633795

Source: Data Processing Eviews 12 (2023)

Based on the results of hypothesis testing, it was found that profitability positively affects Yield to Maturity. The significance value of the variable indicator ROA (coefficient) is 0.2122 with a probability of 0.0025 (<0.0500). This means that any 0.01 increase in ROA will lead to a rise of 0.2122 Yield to Maturity of corporate obligations. This explains when the corporate's profit increases but most of the assets are obtained from debt, the risk of investing in corporate bonds will increase so that the level of return expected by investors is higher. The results of this study are in line with research conducted by Poghosyan (2014), Radier et al. (2016) and Badoer and Demiroglu (2019) which found that Return on Asset has a positive effect on the Yield to Maturity of bonds. It happens due to the higher the profit obtained by the corporate from asset management, but the corporate's assets come from debt, the investment risk will increase, causing the yield that investors expect will increase.

Furthermore, based on the results of testing the bond rating hypothesis, it does not affect the Yield to Maturity of bonds because it is known that the value of the bond rating variable significance (coefficient) is -0.1234 with a probability of 0.2443 (>0.0500). This means that whatever the rating of corporate bonds has no effect on the increase or decrease in the yield of the bonds offered. This explains that companies and investors have consideration of other variables that are considered more influential in determining the Yield to Maturity of bonds. This study's results align with research conducted by Megananda et al. (2021) which found yield to maturity unaffected by bond rating. This is because investors have other considerations that are directly related to the company's financial condition which is considered more influential in determining the Yield to Maturity of bonds.

Liquidity with the current ratio indicator was found to have a negative impact on the Yield to Maturity of bonds because the significance value of the variable current ratio (coefficient) was -0.0091 with a probability of 0.0011 (<0.0500). This means that an increase in the 0.01 current ratio would cause a decrease in the Yield to Maturity of 0.0091. This explains firms which have a high liquidity are capable to pay off their short-term obligations so that they have a low level of default risk, then the level of returns expected by investors will decrease. The results of this study are in line with research conducted by Nkwede (2018), Zulfa and Nahar (2020) and Radier et al. (2016) which found that the current ratio negatively affects the Yield to Maturity of bonds. This is because the higher the company's ability to meet its short-term payment obligations, the smaller

the risk of investing in bonds issued by the company, so that the level of yield offered by the company will decrease.

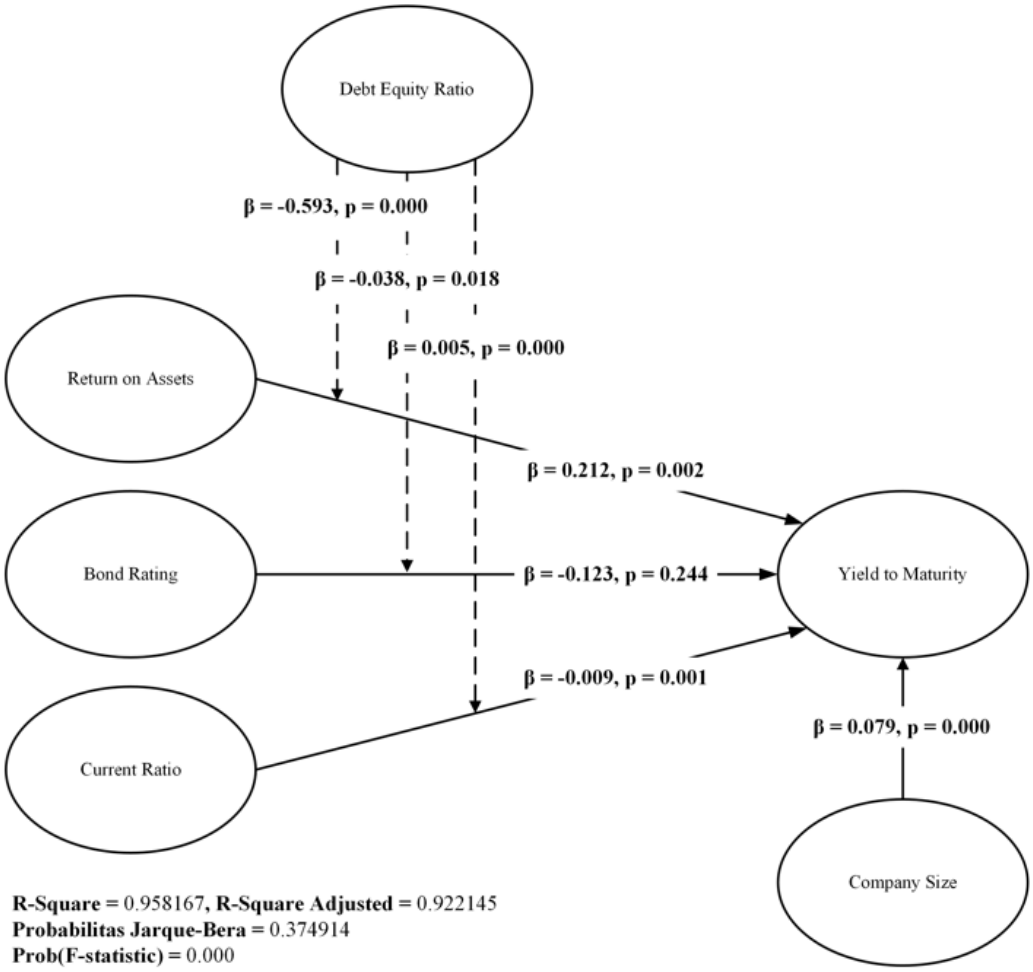

Figure 2. Structural Model Final Research
Source: Data processed by Researchers (2023)

Meanwhile, based on the results of hypothesis testing that the size of the corporate (size) positively affects on the Yield to Maturity of bonds because the significance value of the variable size (coefficient) is 0.0797 with a probability of 0.0000 (<0.0500). This means that every increase of 0.01 in size will cause the Yield to Maturity to raise by 0.0797. This explains that the larger the value of the company size (size), the company has a large total assets, and this is a charm for investors. However, if the company's total assets are mostly derived from debt, then this will increase the risk of investing in the company, therefore, the level of return offered will be even greater. The results of this study are in line with research conducted by Ramadhan et al. (2022) and Megananda et al. (2021) which found that company size (size) has a positive effect on bond Yield to Maturity. This is because the greater the total assets owned by the company and obtained from debt, the higher the risk of investing in the company and the higher return generated. Meanwhile, leverage weakens the effect of return on assets on bond yield to maturity in industrial sector companies listed on the IDX for the 2019-2021 period. This is because the large amount of debt owned by the company will reduce the level of profit obtained, the greater the debt, the smaller the effect of profitability on the yield of maturity of bonds.

The moderation effect test found that statistically leverage moderates and weakens the effect of profitability on bond Yield to Maturity due to a negative significance yield of -0.5939 with a probability of 0.0001 (<0.0500). This means that each leverage will weaken the relationship between profitability and Yield to Maturity of bonds with a scale size of 1 unit of profitability, the bond yield to maturity index decreases by 0.5939. This explains that the greater the company's leverage, the lower its profitability. The amount of profitability has an influence that is in the same direction as the yield to maturity of bonds so that a decrease in profitability will lead to a decrease in yield to maturity. These results are the same as the research conducted by Fabian (2017). Subsequent findings revealed that statistical leverage moderates bond ratings against bond

Yield to Maturity. Due to a negative significance result of -0.0385 with a probability of 0.0183 (<0.0500). This means that each leverage weakens the relationship between bond ratings and bond Yield to Maturity with a scale size of 1 unit, the bond Yield to Maturity index decreases by 0.0385. The results of this study are the same as the research conducted by Xiang, Zhang, and Worthington (2018) which explained that the greater the leverage, the weaker the effect of bond ratings on bond yield to maturity. However, because the hypothesis test results show that bond ratings do not affect yield to maturity, leverage moderation on the effect of bond ratings on Yield to Maturity is not taken into account. Furthermore, it was statistically found that leverage moderated liquidity against the Yield to Maturity of bonds due to a positive significance yield of 0.0058 with a probability of 0.0001 (<0.0500). Leverage moderation has a regression coefficient value of 0.0058, meaning that each leverage will strengthen the relationship between liquidity and Yield to Maturity of bonds with a scale size of 1 liquidity unit, the bond Yield to Maturity index increases by 0.0058. This study's results align with the research conducted by Yunisari and Ratnadi (2018). This explains that in the condition that the company's ability to pay its short-term obligations is high, when coupled with financing from debt, the company's liquidity will be higher because it has sufficient cash to pay its short-term obligations. The company's higher liquidity will reduce the risk of corporate bond investment, so investors' expectations of obtaining yields will decrease. Since bond ratings do not affect yield to maturity, leverage moderation is ignored. This is because companies and investors prefer to consider other factors that are directly related to the company's financial condition in determining the yield to maturity of bonds. Further findings found that leverage strengthens the effect of liquidity on bond yield to maturity in industrial sector companies listed on the IDX for the 2019-2021 period. This is because the large amount of corporate debt will increase its liquidity, so the risk of default on corporate bond yields will be lower, and the yield offered will be lower.

Further research is projected to add research variables, especially from macroeconomic factors such as BI Rate, inflation, and exchange rates which are thought to affect bond yield to maturity. In addition, researchers are further expected to consider other variables related to company sustainability with indicators of the company's ownership structure and GCG. The last suggestion that can be given is to widen the scope of research samples from the financial sector and other industries more broadly to provide a more complete picture of changes in bond yields.

Conclusions

Based on data processed by EViews 12.0, the following conclusions can be drawn: 1) Simultaneously the variables Profitability (ROA), Bond Rating, Liquidity (CR), and Company Size (Size) with the 1everage variable as a moderating variable influence yield to maturity by 92%, and the last 8% is affected by other aspects not involved in the model; 2) Profitability with the Return on Asset indicator possitively affects the yield to maturity of obligations in industrial segment corporates listed on IDX during 2019-2021; 3) The bond rating does not affect the yield to maturity of obligations in industrial corporates listed on IDX for the 2019-2021 period; 4) The current ratio was found to negatively affect on the yield to maturity of obligations in industrial sector companies listed on the IDX for the 2019-2021 period; 5) This study found that size positively affects bond yield to maturity in industrial sector companies listed on the IDX for the 2019-2021 period; 6) Leverage moderates bond ratings against bond yield to maturity in industrial sector companies listed on the IDX for the 2019-2021 period.

For this reason, the benefits which can be provided to managers of industrial sector companies who want to make efficiency in the cost of funds by issuing bonds, this research is expected to be used as information that can be used in decision-making on the yield to maturity of bonds offered, by optimizing asset management in achieving the expected profit, increasing liquidity, and minimizing funding from debt. Furthermore, investors are advised to analyze the company's financial performance and prospects first before investing in bonds. For investors with risk-averse characteristics, looking for corporate bonds from companies with high liquidity is advisable. If the company's profitability is high and the size of the company is large, it is highly recommended to pay attention to the level of debt. For investors with risk-taker characteristics, it is advisable to choose a company with a high level of profitability and a large company size to get a high level of return, but keep in mind that most of it is financed by debt, so the risk is high.

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