Analysis Towards the Factors Relates to the Yield at Sharia Bond Which Listed on Indonesia Stock Exchange During Period of 2020

Troynanda Feriatna¹, Bambang Santoso Marsoem²
¹) Mercu Buana University, Jakarta, Indonesia, tferiatna@gmail.com
²) Mercu Buana University, Jakarta, Indonesia, b_marsoem@mercubuana.ac.id

Corresponding Author: Troynanda Feriatna¹

Abstract: This research analyzes the influence caused by the debt equity ratio (DER), maturity, firm size and rating of Islamic bonds on the yield to maturity (YTM) from corporate Islamic bonds. The research population consisted of corporate sharia bonds traded at the Indonesia Stock Exchange during period of 2020. The sample choosen technique was performed by purposive sampling. The research sample consisted of 59 corporate bonds that issued from 13 companies through all sectors except the banking and financial sectors. The research analysis method used descriptive statistics and multiple linear regression. The outcomes showed partially that the maturity variable had a significant positive affect to YTM, Rating had a negative affect on YTM, while DER and Islamic bond ratings had no affect on YTM. The research implication stated that companies need to increase their sharia bond ratings in order to maintain investor trust. For further research, it is expected to analyze other variables which had an impact to YTM because the coefficient of determination that reached from this research are 67%, while the remaining of 33% was determined by other variables which not explained in this research.

Keywords: DER, Maturity, Firm Size, Sharia Bond Rating, Yield to Maturity

INTRODUCTION

The development of sharia transactions are considered as growth rapidly because according to the guidelines, all sharia transactions are guarantee as an halal transactions, free from interest, elements of usury, gharar and maysir. Sharia transactions will provide benefits and convenience for Muslims in transacting and investing in sharia-based financial products. Sharia-compliant retail bonds are sharia bonds which issued by the government which intended to individual Indonesian citizens. Islamic bonds have a significant increase in value in their development so far, although in 2020 there were actual problems whereas there were 20 companies threatened with default, but the problem was only in yields, not in the form of issuers due to the increase in issuers which was very fastest and in line. Through the investors
who are more likely to look for investments with halal as fundamental and in line with their faith, which makes Islamic bonds looks attractive in the market.

In line with the tendency to default which causes the yield value to drop drastically in 2020, plus the issuers know that there are enough Islamic bond investors that make them believe that what they marketed will be sold, the development of Islamic bonds in 2015 - 2020 has a fairly high increase. The increase in the amounted value of issuance during 2016 - 2020 has a value of 4 times when a surprising phenomenon occurs, where the increase that occurs makes things unusual in terms of debt securities. However, not in line with the increase in the number of ratio of Islamic bond issuers, the yield to maturity of Corporate Sharia Bonds has decreased significantly. This has been recognize by corporate sharia bonds which have a drastic decline in 2020, whereas in 2020 there are 20 companies that are threatened with default.

An owner of capital (investor) who will expend money in Islamic bonds should consider the yield of the company because the yield could provide information related to the amount of revenue that would be received in return of funds invested. One method to calculate the yield that is commonly used by investors is the yield to maturity. Yield to maturity could be said as the rate of compound return which investors would receive if they purchase Islamic bonds at the current market price and keep it till it matures (Indarsih, 2013).

To assess yield to maturity, absolutely inseparable from several factors which influence it. Hamida (2017), and Aisah & Haryanto (2012) found that DER had a negative and significant affect on yield to maturity, while Ibrahim (2008) and also Surya (2011) found that there is a positive and significant affect between those two. Faizah (2019) and Purnamawati (2013) in the other hand found that there is none affect between those two variables. Ibrahim (2008), Surya (2011), and Aisah & Haryant (2012) found that firm size had a positive and significant affect, while Nurfauziah & Setyarini (2004) found it to be negative and significant affect which occur between these two, and Masrurah & Rahmawaty (2019) were also found that there is no affect occur between these two variables. Meanwhile, Hamida (2017), Ibrahim (2008), Masrurah & Rahmawaty (2019) and Surya (2011) found that bond ratings have a negative and significant impact to yield to maturity, and Nurfauziah & Setyadi (2004) and Faizah (2019) found the contrary results, and Aisah & Haryanto (2012) found there is no correlation between these two variables. Aisah & Haryanto (2012) and Faizah (2019) found that maturity had a negative and significant affect on yield to maturity, while Masrurah & Rahmawaty (2019) found that it supposes a positive and significant affect which occur between these two, and Rahman & Sam'ani (2013) found there's none affect between these two variables.

According to the description above regarding the impact from DER, Maturity, firm Size and Rating of Islamic Bonds towards Yield to maturity at Islamic Bonds, it can be concluded that so many prior researchers have done this research but it came to show the inconsistencies results. Then it was attracted the authors to reviewing this topic through these four variables. Thus, the author has performed a research entitled “Analysis towards the Factors relates to the Yield at Sharia Bond which Listed on Indonesia Stock Exchange During Period of 2020”.

LITERATURE REVIEW
Sharia Bonds

Sharia bonds are investment certificates of tangible assets or benefits that become the underlying assets (Sukmaningrum et al., 2021). Sharia bonds commonly same to conventional bonds, but several things distinguish between them, such as in terms of principle. Pure conventional bonds are only in the form of debt issued by institutions or
companies that issue bonds. Meanwhile, the principle of sharia bonds represents or in the form of an ownership towards underlying assets issued.

**Sharia Bond Yield**

Sharia bond yields are those bond income which obtained from bond yields and bond interest. Bond investors will calculate on how much investment income is from the funds purchased by the bonds using a yield calculating instruments (Rahardjo, 2004). Fabozzi (2021) declared that yield are consists of current yield and yield to maturity. Current yield is the correlation between annual interest coupons and the market price of bonds, while yield to maturity could be defined as the compound rate of return that investors will receive if the bond purchases at current market price and holds it till the bond mature.

**Debt Equity Ratio (DER)**

DER is an leverage ratio which compares total debt with total equity of shareholders. DER also provide an overview from the capital structure owned by the company so that it could be view the level of risk from non-payment of a debt. According to Septyawanti (2013), if the leverage is high enough, it shows that the high use of debt, so it can bring the company experience financial difficulties and huge chance of bankruptcy.

**Maturity (Maturity Period)**

Maturity is the date on which bondholders will receive repayment of the principal or nominal value of their sharia bonds (Bank Indonesia, 2021). The maturity period of sharia bonds are varies from 365 days to more than 5 years.

**Company Size (Firm Size)**

Company size or Firm Size is a grouping of companies on the basis of operating scale (large or small) that can be used by investors as one of the variables in determining investment decisions. Benchmarks that show the size of a company, including total sales, average sales levels and total assets. Large companies commonly have large total assets so they will catch the investors easily to invest their capital in the company.

**The Rank of Sharia Bond**

The rank of Sharia bonds is one of important factors that affect the yield of Sharia bonds because the rating of sharia bonds is a scale of risk for whole Sharia bonds traded. According to (Mansi & Baker, 2005) the rating of Sharia bonds is one of relevant indicator of the company's credit quality. The rank of Sharia bonds is divided into two, namely investment grade (AAA, AA, A, BBB) and non-investment grade (BB, B, CCC, and D).

**Hypothesis and Theoretical Framework**

The Theoretical Framework from this research could be seen as follows:
Figure 2. Theoretical Framework

The hypotheses that could be drawn from this research are 1) DER is suspected to have a positive affect on yields of Sharia bond; 2) Maturity is suspected to have a negative affect on yields of sharia bond; 3) Size is suspected to have a negative affect on yields of sharia bond and 4) Ratings are suspected to have a negative affect on yields of sharia bond.

RESEARCH METHOD

This research was included in causal research in order to find out the impact between existing variables. This type of research is applied with analytical quantitative analysis. This research analyzed the effects caused by the correlation between DER, Maturity, SIZE and Rating on Islamic Bond Yield in corporate companies during 2020.

The population research used was companies that issued Islamic bonds that were listed at the Indonesia Stock Exchange in 2020. In this research, the sampling was conducted based on purposive sampling method, such as technique in determining the sample with certain considerations (Sugiyono, 2013). The qualifications of the sample used are in accordance with the following criteria: 1) Companies that listed on the IDX during the research period, which is 2020 and issued Sharia Bonds; and 2) The company which has an annual report, with complete annual report so that information and data could be applied in this research.

Based on these criteria, 59 research samples out of 162 existing populations were obtained. The sample was Islamic bonds circulating in 2020 consisting of 13 companies.

Data collection techniques used in this research are obtained from secondary data such as Indonesia Stock Exchange, journals, literature, company websites, Bank Indonesia and OJK. The data used for this research is the company's 2020 annual report which was published by banking companies that registered at the Indonesia Stock Exchange. The data analysis method consists of descriptive analysis and inferential analysis. The descriptive analysis of this research used numerical and graphical methods, while the inferential analysis in this research used classical assumption test, multiple linear regression analysis, regression model test, coefficient of determination, and regression coefficient test.

FINDINGS AND DISCUSSION

Analisis Deskriptif

Descriptive Analysis

The Descriptive analysis from this research are:

1) Yield value ranges from 6.13 to 10.65 with the highest value from Ijarah sharia bond of Global Mediacom Phase I Bonds II year of 2020 Series C and the lowest value was from Angkasa Pura I Ijarah sharia Bonds I Year 2016 Series A. With an average value of 8.29. The standard foreign exchange value of Yield variable is 1.25.
2) DER values range from 0.55 to 3.18, with the highest score from PT Mora Telematik Indonesia and the lowest one from PT Global Mediacom Tbk. With an average DER value of 1.86. The standard foreign exchange value of the DER variable is 0.84.

3) The Maturity value ranges from 1.00 to 7.00, with the highest value from the Shelf-Registered Indosat Syariah Ijarah Bonds II Phase I Year 2017 Series E and the lowest value from the Angkasa Pura I Syariah Ijarah shariah Bonds I Year 2016 Series A. With an average value of 3.78. The standard foreign exchange value of the variable is 1.63.

4) Size values ranged from 2009,76 to 68109.19, with the highest score goes to PT Wijaya Karya and the lowest one goes to PT Lontar Papyrus Pulp & Paper Industry. By an average size value of 32223.5. The standard foreign exchange value of the Size variable is 24437.49.

5) Rating values range from 4 to 7, with the highest score goes to the 2015 Series D Indosat Shelf-Registered Shariah Ijarah Bonds I Phase II and 2015 Series E Indosat Shelf Registration Bonds I and the lowest one was from Polytama Ijarah shariah Bonds I Propindo 2020 Series B. With an average of 6.32. The foreign exchange standard value of the Rating variable is 0.87.

Classic Assumption Test

The normality test result through the eviews 9 program found that the JB value was smaller than the Chi Square table value (3.95 < 9.48), so it can be interpreted that the residual data in this research were normally distributed.

Multicollinearity test results reveal that DER variable has a VIF value of 1.039, with Maturity is 1.011, SIZE is 1.1, and Rating is 1.1. Thus, this regression model did not have multicollinearity issue.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Variance</th>
<th>Uncentered VIF</th>
<th>Centered VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.704405</td>
<td>180.9439</td>
<td>NA</td>
</tr>
<tr>
<td>DER</td>
<td>0.014087</td>
<td>6.230303</td>
<td>1.039287</td>
</tr>
<tr>
<td>MATURITY</td>
<td>0.003014</td>
<td>6.542074</td>
<td>1.011611</td>
</tr>
<tr>
<td>ZIZE</td>
<td>0.014350</td>
<td>156.0307</td>
<td>1.099323</td>
</tr>
<tr>
<td>RATING</td>
<td>0.013937</td>
<td>59.67486</td>
<td>1.096128</td>
</tr>
</tbody>
</table>
The results of the heteroscedasticity test reveal that the DER variable has a prob value of 0.3388 (33.88%), Maturity is 0.5881 (58.81%), Size is 0.2164 (21.64%), and Rating is 0.5543 (55.43%), so it could be said that there are no symptoms of heteroscedasticity appear in this research model.

### Table 2. Heteroscedasticity Test Results

<table>
<thead>
<tr>
<th>Heteroscedasticity Test: Glejser</th>
<th>F-statistic</th>
<th>Prob. F(4,54)</th>
<th>0.3646</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>4.456467</td>
<td>Prob. Chi-Square(4)</td>
<td>0.3477</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>5.320883</td>
<td>Prob. Chi-Square(4)</td>
<td>0.2559</td>
</tr>
</tbody>
</table>

Test Equation:
Dependent Variable: ARESID
Method: Least Squares
Date: 12/04/21 Time: 15:58
Sample: 159
Included observations: 59

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.586411</td>
<td>0.864248</td>
<td>1.835597</td>
<td>0.0719</td>
</tr>
<tr>
<td>DER</td>
<td>0.075632</td>
<td>0.078572</td>
<td>0.905129</td>
<td>0.3388</td>
</tr>
<tr>
<td>MATUREY</td>
<td>0.021685</td>
<td>0.039797</td>
<td>0.544387</td>
<td>0.5881</td>
</tr>
<tr>
<td>ZIZE</td>
<td>-0.099177</td>
<td>0.079300</td>
<td>-1.250562</td>
<td>0.2164</td>
</tr>
<tr>
<td>RATING</td>
<td>-0.0486503</td>
<td>0.073151</td>
<td>-0.595045</td>
<td>0.5643</td>
</tr>
</tbody>
</table>

The autocorrelation test result indicates that Durbin Watson's value was 1.92. Since the DW value is between dU and 4-dU, there are no autocorrelation issues occurred.

### Table 3. Autocorrelation Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.162170</td>
<td>Mean dependent var</td>
<td>-4.89E-16</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.065497</td>
<td>S.D. dependent var</td>
<td>0.719322</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.695366</td>
<td>Akaike info criterion</td>
<td>2.222238</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>25.14378</td>
<td>Schwarz criterion</td>
<td>2.458726</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-58.55602</td>
<td>Hannan-Quinn criter.</td>
<td>2.318457</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.677518</td>
<td>Durbin-Watson stat</td>
<td>1.929953</td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.145158</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hypothesis Test**

Derived from the results from Eviews calculation, then the F-count is 27.6, while the F-table value is 2.54. Because the F-count > F-table (27.6 > 2.54), then Ho is accepted, meaning that DER, Maturity, SIZE and Rating simultaneously affect the Yield of Sharia Bond in 2020.
Table 4. F-Test Results

<table>
<thead>
<tr>
<th></th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>S.E. of regression</th>
<th>Sum squared resid</th>
<th>Log likelihood</th>
<th>F-statistic</th>
<th>Prob(F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.671372</td>
<td>0.647416</td>
<td>0.745488</td>
<td>30.01060</td>
<td>-63.77576</td>
<td>27.62493</td>
<td>0.00000</td>
</tr>
<tr>
<td>Mean dependent var</td>
<td>8.331695</td>
<td>1.255478</td>
<td>2.331382</td>
<td>2.507444</td>
<td>2.400109</td>
<td>1.584094</td>
<td></td>
</tr>
</tbody>
</table>

According to the results of the coefficient of determination, the R2 value is 0.671 (67.1%). This shows that the variation of independent variables used in these model (DER, Maturity, SIZE and Rating) are able to describe by 67.1% of the variation in the Yield variable, while the rest could explained by other variables which is not included in this research model.

Table 5. The Results of the Coefficient of Determination

Based on multiple linear regression analysis, the following equation model which obtained is: IR = 16.2 + 0.04DER + 0.21 Maturity – 0.23SIZE – 1.03Rating + e

Table 6. Multiple Linear Regression Analysis

Elicited from the results of the t-test in Table 6 above, it can be interpreted as follows:
1) Partially, DER has an affect on the 2020 Sharia Bond Yield. This could be viewed through the value of t-count > t-table (0.295 > 2.004), so H0 was rejected. In the other hand that DER (Debt Equity Ratio) partially affects the Yield. An increase or decrease in the DER value would change the value of Yield.
2) Partially, Maturity has an impact towards the Yield of Sharia Bond in 2020. This could be seen through the value of t-count > t-table (3.426 > 2.004), so H0 was rejected. It can be interpreted that partially Maturity affects the Yield. An increase or decrease in the Maturity value would changes the value of Yield.
3) Partially, SIZE has no affect on the Yield of Sharia Bond in 2020. This can be viewd through the value of t-count < t-table (-1.882 < 2.004), then H0 is accepted. It can be said that SIZE partially has no impact towards Yield. An increase or decrease in the SIZE
value will not change value of Yield. If the SIZE value increases or decreases by 1%, the Yield value would remains the same or does not change.

4) Partially, the Rating has no affect on the Yield of Sharia Bond in 2020. This can be seen through the value of t-count < t-table (-8.683 < 2.004), then H0 is accepted. It can be said that Rating partially has no influence towards Yield. An increase or decrease in the Rating value will not change the value of Yield. If the Rating value increases or decreases by 1%, the Yield value would remains the same or does not change.

The Discussion of Research Results

The Debt Equity Ratio (DER) has no partial affect on the Yield of Sharia Bond in 2020. A high DER value indicates that the financial risk or the risk of failure to repay the loan. On the other hand, if the DER value is small, then the financial risk or the risk of failure to repay the loan is small as well. This research outcomes was indicated that DER information is not the main consideration for investors when purchase Sharia bonds. The initial hypothesis stated that DER had impact towards the Yield of Sharia Bond. Based on this results, the initial hypothesis was rejected. The conclusion stated that DER has no affect on Yield. The rejection of this hypothesis is in line with previous research by Masrurah & Rahmawaty (2019), Melati (2014), Pratiwi & Asrori (2014), and Purnamawati (2010) whom declared that DER had no impact towards the Yield of Sharia Bond. It can be concluded that the greater the risk faced, the investors will demand a higher yield. Which means that the high default risk of the company in the future, would have an impact to the high yield of the company, on the contrary if the greater the level of risk, the greater profit implied by investors.

Maturity partially affects the Yield of Sharia Bond in 2020 with a positive sign. The time period which is one of the things that influence this as same as the research conducted by prior research. The positive link between maturity and yields of sharia bond is due to the longer the maturity period, if the higher the bond risk, so investors will signal a higher yield to maturity. This results are in accordance with the opinion from Arifin (2007) whom said that the Yield curve in this research has a slope that leads to the upper right (Normal Yield Curve) which reflects to normal conditions where short-maturity sharia bonds have lower yields than sharia bonds with low maturity in the long period. The underlying reason is that short-term securities are more liquid or less sensitive to changes in interest rates. Thus, for long-term investment, the investors generally require a surplus value (premium). This pattern would be found when the economy is experiencing growth and the business is seems profitable so that the companies can finance their investment opportunities. This means that investors’ expectations of future inflation rates are tend to small and will remain low in the near future. The results of this research are in line with previous research by Aisah & Haryanto (2014). One of the factors which affect the price fluctuations of Sharia bonds is the maturity level. Because the total cash flow that received by investors will depends on the age of the investment. Boardly speaking, the longer the maturity level of a Sharia Bond, the greater the level of risk. Therefore, the Yield of Sharia Bond offered would be even greater. This is in accordance with the liquidity preference theory whereas the investors will invest in long-term instruments if the issuer of sharia bonds offers long-term interest rates that are higher than the average short-term interest rates. So the longer the maturity period of Sharia Bond, the greater the level of uncertainty that need to be faced by investors. The shorter the maturity period of Sharia Bond, would bring the smaller the level of risk or uncertainty that will be accepted by investors.

SIZE did not have a partial impact towards the yield of sharia Bond in 2020 at a significant level of 5%. P value for SIZE is 0.07 > 0.05 which indicates that SIZE has no impact towards it. This research is in line with Listiawati & Paramita (2018), and Syakdiyah & Putra (2021) who stated that SIZE has no impact on Sharia Bond Yield. A higher SIZE
value will have no impact on the yield of Sharia Bond, whereas big or small companies are required to take notes on obligations compared to expanding their business and because each company that issues Sharia Bonds is guaranteed due to underlaying assets, where the assets have become a level of trust. investors and the things that underlie the company issuing and also due to the need for funds to increase assets, therefore those initial assets before issuing the Sharia bonds are not a benchmark for investors and as if for the yield of Sharia Bond.

Ratings have a partial impact towards the Yield of Sharia Bonds in 2020, and these ratings have a negative effect. The Sharia Bond rating indicates the quality of Sharia Bond as reflected in the Sharia Bond risk. The Sharia Bond rating has a negative correlation with YTM. Companies which have low Sharia Bond ratings certainly offer Sharia Bonds with high yields to gain more interest from investors and provide greater YTM to compensate for the emergence of greater risk. Signaling theory explains why companies have the initiative and drive to provide information from external parties. In relation to this theory, those published information such as rating of Sharia Bonds could be a signal about the condition of Sharia Bonds issued by companies so as to reduce asymmetry between companies and Sharia Bond investors (Zuhrotun & Baridman, 2006). If it is viewed from the Asymmetric Information theory, the rating of Sharia Bonds used to reduce Information failure between management and investors. Sharia Bond investors need information that can be used as a reference to their investment decisions, so that the rating of Sharia Bond information is considered necessary for investors to decide whether the bonds are feasible or not and to reveal the level of risk. The rating of Sharia Bond is one of the characteristics of Sharia Bonds that need to be considered by investors when it comes to purchasing the Sharia Bonds. This is due to this information revealing the quality of Sharia Bond as reflected from Sharia Bond risk. Sharia Bond Rating is also a default measure that has a direct and measurable effect on the company's cost of capital and the interest rate (Brigham & Houston, 2021). Companies which have low rating of Sharia bond will certainly offer the Sharia bonds with high yields to attract more interest from investors (Restuti, 2006). These results support the research from Aisah & Haryanto (2014).

CONCLUSION AND SUGGESTION

Conclusion
Elicited from these analysis and discussion results, it could be served that: 1) DER has no affect on Islamic bond yields; 2) Maturity has a positive and significant affect on Islamic bond yields; 3) SIZE has no affect on Islamic bond yields; and 4) Rating has a negative and significant affect on Islamic bond yields.

Suggestion
According to the research results, the suggestions that can be drawn from this research are as follows:
1) As for companies, companies are required to boost their sharia bond ratings in order to maintain investor trust. Moreover, companies with large assets would find it easier to search external sources of funds through the issuance of Islamic bonds. This is due to both being proven to have an influence on the YTM at corporate sharia bonds.
2) As for investors and potential investors, they require to take notes regarding the company's annual report and the company's sustainability report as a consideration in making investments.
3) As for further researchers, it is suggested to change the type of bonds that are used in the research, for example by replacing to government bonds, expanding the number of research populations and extending the period used. In addition, further researchers are also advised to attach more internal independent variables such as coupons or those
variables other than DER which could be taken from the company's financial statements such as Current Ratio or so on. Or you can use the company's external variables such as inflation, interest rates and so on. Therefore, it can be used as awareness for investors who are going to invest their funds in bonds.

REFERENCES