

Bond Rating and Bond Price in Indonesia Stock Exchange

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Abstract—Research on bonds is still limited compared to research on stocks in Indonesia. Bonds can be one type of asset that is quite interesting, because the bond is able to provide fixed income for investors who do not like the risk and can be used as an alternative investment in addition to stocks. This study aims to determine the difference between the price of bonds with high ratings and bonds with low ratings on the Indonesia Stock Exchange. Testing research hypothesis used independent t test independent sample, with tools SPSS application version 13.0. The results showed that there was a significant difference between the price of bonds with high rank (AAA) and the price of low-rated bonds (BBB). The average price of high-rated bonds (AAA) is higher than low-priced bond prices (BBB). The results of this study can provide empirical evidence of bond rating factors that affect bond prices, and for investors interested in investing in bonds, this study is expected to provide even input guidance to invest in bond instruments so as to choose an appropriate bond and provide benefits the maximum.

Keywords—high rated bond; low rated bond; bond price

I. INTRODUCTION

Corporate bonds are securities issued by a company that promises to holders a fixed amount of money at a future maturity date accompanied by periodic interest payments. The fixed amount payable at maturity is the principal of the bond, also called the par value or face value. Periodic interest payments are called coupons [1].

Returns for buyers (bondholders) are generally different from stock returns. For bondholders, bondholders must obtain coupons as interest payments on the bonds that they buy, while shareholders will receive dividends if the company decides to pay dividends. Return in the form of capital gains may also be obtained by bondholders, if bonds are purchased at a par price and sold at a premium price then it will give a return for the holder.

Bond investments are not only enough to calculate the return of the bond, the risk of an investment also needs to be taken into account. Bonds have a lower risk than stocks, but bonds remain a risky asset. Bond risk is the possibility of the bonds are not paid (default) so that the bond rating can be used as a proxy of bond risk. Return and risk are two things that cannot be separated, because the consideration of an investment is a trade-off of these two factors. Return and risk

have a positive relationship, the greater the risk to bear, the greater the return to be compensated, as well as the opposite [2].

Risk is the amount of uncertainty about the profitability of an asset [3]. If the risk of corporate bonds increases, the demand for corporate bonds declines so that the price of corporate bonds declines, while reducing the risk of corporate bonds increases the demand for corporate bonds so the price of corporate bonds increases

Factors affecting bond prices are relatively different from factors affecting stock prices. This can happen because bonds have certain characteristics that are different from stocks. Specific factors that can only affect bond prices are market interest rates, bond liquidity, callability, coupons, maturity, and quality / rating / rating of bonds [1]. Factors used in this study is the rating of bonds. This is because the bond rating factor is a factor that illustrates the risk of a bond.

The previous research that conducted research on the effect of bond rating on bond yield gave different research results, among others, by Nurfauziah and Setyarini which stated that the bond rating did not significantly affect the bond yield [4], Cho et al. states that the reaction of bond returns is significantly positive following upgraded watchlist activities as well as vice versa, but usually does not follow changes in corporate bond rating [5], Manfred and Heinke stated announcements of negative downgrading and watchlist causing significant changes to abnormal returns on the announcement day but upgrading and positive watchlist does not cause significant price changes [6]. The results of this study differ from the results made by Creighton et al stated in the case of downgrades and equity returns, find evidence of large movements in prices in the six months prior to the rating announcement, suggesting that rating changes are largely validating information that has already been factored into equity prices [7]. May stated that the corporate bond market responds significantly to both downgrades and upgrades. In addition, bond prices continue to drift significantly following rating changes. Furthermore, the bond price response to a downgrade is significantly stronger for lower-rated firms while the response to an upgrade is especially strong if the firm's rating is raised from speculative grade to investment grade [8]. Hite and Warga stated that the returns from bonds upgrades to investment grade declared a positive effect on the current

period and the previous 6 months [9]. Sumarna and Badjra states that the rating has a positive and significant effect on the changes in corporate bond prices on companies listed on the Indonesia Stock Exchange [10], Achmad and Setiawan stated that bond ratings with bond prices significant relationship [11]. Finally, Crabtree states that a firm's profit predictability rate positively affects its rating and negatively affects bond yields [12].

Some of the above empirical findings indicate that there are still differences in the results of research on the factors that influence the changes in bond prices resulting in the gap of research results and is a controversial issue. Based on the results of the above studies that are different from the existing theoretical studies of bond rating relationship with bond prices, it is very interesting to do empirical test back for bond rating factor with the aim to compare the difference between the results of bond prices are categorized high rank (represented by AAA rated bonds) and low rated bonds (represented by bonds with BBB ratings). This research is also expected to provide convenience for bond issuer company that is in giving input about ranking factor potentially influence bond price and for investor who is interested to invest in bond, this research is expected to give input even guide to invest in bond instrument.

II. METHOD

A. Population and Sample Research

The population in this study are all listed corporate bonds traded in Indonesia Stock Exchange (IDX) period 2012 until 2015. The method used to determine the sample is by purposive sampling method that is the sample selection method with certain criteria. The sample criteria are:

- Bonds are still outstanding or have not matured so that the bond price data can be obtained
- Bonds rated AAA and Bonds rated BBB

B. Data Analysis Method: Test for Different T-test with Independent Sample

This test is used to determine two unrelated samples having different averages. So, the goal is to compare the average of two groups that are not related to each other. Whether the two groups have the same or not equal meanings are significant. In this research to test the variable of bond rating is used different test of T test with independent sample that is bond price group with AAA rank with bond price group with BBB rating.

III. RESULTS

Methods of data analysis on This study consists of 4 stages, i.e. to Normality Test, Homogeneity Test and Independent T Test.

A. Normality Test

First, the assumption that must be met in the independent t test is normally distributed group data. Can be done with Lilliefors test.

TABLE I. NORMALITY TEST

	Bond Rating	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Bond Prices	1	.110	63	.054
	2	.150	28	.106

P value of Lilliefors test in group 1 represented by AAA rated (high) rating group by 0.054 > 0.05 and in group 2 represented by the low-level BBB (low) bond group of 0.106 > 0.05. Since all > 0.05, both groups are equally distributed based on the Lilliefors test.

B. Homogeneity Test

Secondly, the assumption that must be met in the independent t test is the Variance between groups of the same or homogeneous. Can be done by Lavene's Test method.

TABLE II. HOMOGENEITY TEST

		Levene Statistic	df1	df2	Sig.
Bond Prices	Based on Mean	27.048	1	89	.000
	Based on Median	22.076	1	89	.000
	Based on Median and with adjusted df	22.076	1	46.742	.000
	Based on trimmed mean	26.792	1	89	.000

The table 2 shows the result of homogeneity test with Levene's Test method. Levene value is shown on the line of Value based on Mean, which is 27.048 with p value (sig) of 0.000 where <0,05 meaning there is difference of variance between group or that mean not homogeneous. So, it can be concluded that the two variants between bond prices with high ratings and low bond prices are not the same so that the t test uses table data that is equal variant not assumed (not assumed the two variants are the same).

C. Independent T-test

The table 3 shows the results of t test obtained, t count of 2.615 with sig. = P value = 0.014 which is smaller than $\alpha = 0,05$ so it can be concluded that there is a significant difference between bond price with high rank (AAA) and low rank of bond (BBB).

TABLE III. INDEPENDENT SAMPLES T-TEST

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Bond Prices	Equal variances assumed	27.048	.000	3.518	89	.001	1.55523	.44203
	Equal variances not assumed			2.615	30.659	.014	1.55523	.59481

A positive t value of 2.615 has the mean value of bond prices with a rating that (AAA) is higher than low-priced bond prices (BBB). Mean Difference of 1.55523.

IV. DISCUSSION

Based on the statistical test results, it is found that there is a significant difference between the price of bonds with high rank (AAA) and the price of low-rated bonds (BBB) and the average price of bonds with high rank value higher than the price of bonds with ratings low (BBB). Given this significant difference, it will directly affect the performance difference of high-ranking bonds with low-ranking bonds. The results show that bonds with high ratings have better performance than low-rated bonds.

The results of this study support the theoretical basis, that bonds have a lower risk than stocks, but fixed bonds are risky assets. The risk of a bond is the possibility of an unpaid (default) bond. The bond rating can be used as a proxy for bond risk [2]. Risk is the amount of uncertainty about the profitability of an asset [3]. If the risk of corporate bonds increases, the demand for corporate bonds declines so that the price of corporate bonds declines, while reducing the risk of corporate bonds increases the demand for corporate bonds so the price of corporate bonds increases

The study also supports previous research, Creighton et al stated in the case of downgrades and equity returns, find evidence of large movements in prices in the six months prior to the rating announcement, suggesting that rating changes are largely validating information that has already been factored into equity prices [7]. May stated that the corporate bond market responds significantly to both downgrades and upgrades. In addition, bond prices continue to drift significantly following rating changes. Furthermore, the bond price response to a downgrade is significantly stronger for lower-rated firms while the response to an upgrade is especially strong if the firm's rating is raised from speculative grade to investment grade [8]. Hite and Warga stated that the returns from bonds upgrades to investment grade declared a positive effect on the current period and the previous 6 months [9]. Sumarna and Badjra states that the rating has a positive and significant effect on the changes in corporate bond prices on companies listed on the Indonesia Stock Exchange [10],

Achmad and Setiawan stated that bond ratings with bond prices significant relationship [11]. Finally, Crabtree states that a firm's profit predictability rate positively affects its rating and negatively affects bond yields [12].

V. CONCLUSION

There is a significant difference between the high rated bond price (AAA) and the low-priced bond price (BBB) and the average price of bonds with high ratings higher than low-priced bond prices (BBB). Given these significant differences, high-rated bonds perform better than low-rated bonds.

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