International Journal of Latest Research in Humanities and Social Science (IJLRHSS)
Volume 06 - Issue 04, 2023
www.ijlrhss.com || PP. 370-375

Analysis of the Effect of Firm Size, Liquidity, Profitability, and Retained Earnings on Bond Ratings

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Abstract: This study aims to analyze the effect of firm size, liquidity, profitability and retained earnings on bond ratings. This study uses quantitative methods with secondary data. The population in this study are banking companies listed on the IDX in 2018-2021. The number of companies used in this study were 10 companies and the samples used were 40 financial statements. The sampling technique used was purposive sampling. The data analysis technique used is multiple linear regression analysis with the help of the SPSS 24 application. The results of the analysis show that partially firm size and profitability have an effect on bond ratings. Meanwhile, liquidity and retained earnings have no effect on bond ratings. The results of this study illustrate the importance of firm size and profitability in determining company bond ratings .

Keywords: Firm Size, Liquidity, Profitability, Retained Earnings, and Bond Ratings .

1. Introduction

The capital market is one of the choices for the public, especially investors in investing. Bonds are securities or debt acknowledgments issued by the government or companies in which there is an agreement for payment according to the maturity date accompanied by periodic interest payments to the holder (investor). According to IDX (2010) bonds are transferable medium-long term debt securities, containing promises from the issuing party to pay compensation in the form of interest for a certain period and repay the principal debt at a predetermined time on the part of the bond buyer. From this understanding, bonds can be regarded as capital market products which can provide a fixed income (fixed-income securities).

Bond ratings are very important for investors who will invest in bonds, with bond ratings investors can find out information about the company's performance and the risk of bonds being traded. Before being offered, bonds must be rated in advance by a bond rating agency. Bond ratings for issuers are used as a driving force for improving company performance and a means of promotion in selling bonds issued (Novitasari, 2018).

Tandelilin (2010:251) states that the level of bond ratings varies from one rating agency to another. Information in the form of company financial reports is used as a measure of the company's ability to pay its obligations to investors. Bond rating carried out by bond rating agencies is an added value for companies that issue bonds, because it can give investors confidence in making investment decisions.

Research on the variables that influence bond ratings in Indonesia yielded a number of interesting findings that need further investigation. Firm size, liquidity, profitability, and retained earnings are some of the variables that are considered to have an impact on bond ratings and are being investigated in this study. These factors were chosen because of the inconsistency of the findings in each of the previous studies.

Small companies are more risky than large companies. Owned assets Large companies are relatively larger in number so with these assets can be used as collateral to pay bonds. Research conducted by Fikriyah (2018) shows that firm size has a significant effect on bond ratings.

High liquidity can give a signal to investors that company have the ability to carry out its obligations in relatively short term. Bonds with a level of liquidity higher tend to have a higher price high compared to bonds with low level of liquidity. Research Darmawan et al. (2020) and Fikriyah (2018) show the results that liquidity has a positive and significant effect on bond ratings.

Profitability is the company's ability toEarn profits with management skills owned resources (Hanafi and Ismiyati, 2003). Companies with high profitability will be attractive to investors, given that more and more The higher this ratio, the better the productivity assets in obtaining net profit. Research conducted by Hasan and Dana (2018) and Kepramereni et al. (2021) shows that profitability has a positive effect on bond ratings.

Profit value held high indicates that the performance the company is good, so it can be used as a good indicator affect the bond ratings of the company itself. Syawal and Fachrizal's research (2016) shows the result that retained earnings have a positive effect on increasing bond ratings .

This study aims to analyze the effect of firm size, liquidity, profitability and retained earnings on bond ratings. For investors, this research can be used as a consideration in selecting bond ratings when making investment decisions.

2. Literature Review and Hypothesis

2.1. Signal Theory

According to Ulum (2016: 30) signaling theory is related to how to overcome problems that arise from information asymmetry in social settings. In a company, information is needed by all interested parties, but there is still an information asymmetry owned by the company with third parties. Information regarding the issuance of bond ratings can be a signal of the company's financial condition (Fikriyah, 2018).

2.2. Agency Theory

Agency theory is a theory that explains the relationship that occurs between company management as agents and shareholders as principals. Shareholders are parties who authorize agents to run a company, while agents are parties who are entrusted with and are responsible for what is mandated by shareholders (Novtaviani and Oetomo, 2018).

2.3. Bond

According to Harjito and Martono (2014: 242) bonds are letters acknowledging company debt to other parties that have a certain nominal value and a certain period of time (maturity), and the company that issues them is required to pay interest according to the nominal stated on the letter.

2.4. Bond Ratings

According to Jogiyanto (2015: 230) bond ratings are character symbols given by rating agencies to indicate the risk scale of issued bonds. Bond ratings are used as a proxy for bond risk, to show whether bonds are safe or not. The bond rating process aims to provide investors with accurate information about the financial performance of the company issuing the bonds. In general, bond ratings are divided into two ratings, namely investment grade (AAA, AA, A, BBB) and non-investment grade (BB, B, CCC, and D).

2.5. Firm Size

According to Scott (2012: 93) firm size is a context variable that measures the demands of a company's service or production. Investors will pay special attention to large companies because they are considered more stable and easier to obtain information both internally and externally. Larger companies will also have a stronger position in each industrial sector so as to support the bond ratings obtained (Rianto et al., 2021). Investors use firm size to determine a company's ability to pay bond interest periodically and pay off its principal debt so as to increase bond ratings.
Based on this description, the hypothesis can be formulated:
H_1: Firm size has an effect on bond ratings.

2.6. Likuidity

According to Sutrisno (2013: 222) liquidity is a ratio that is used to determine the extent to which a company's ability to pay off all of its obligations.The higher the level of the liquidity ratio, the higher the company's liquidity position and the higher the bond ratings given. Companies that can fulfill their financial obligations properly and on time will give a signal to investors that the company is liquid and its assets are greater than its current debt. Bonds with high liquidity tend to have higher prices than others, thereby attracting investors' interest to invest (Rivandi and Gustiyani, 2021).
Based on this description, the hypothesis can be formulated:
H_2: Liquidity has an effect on bond ratings.

2.7. Profitability

According to Astuti (2005:36) profitability is the company's ability to generate profits. If the profitability ratio is good, the better it is in describing the company's ability to obtain high profits, the bond ratings will also increase. Bond ratings can increase profits because the profits generated can be used to pay off obligations (Fikriyah, 2018).
Based on this description, the hypothesis can be formulated:
H_3: Profitability affects bond ratings.

2.8. Retained Earnings

According to Sudana (2009:219) retained earnings are one of the company's internal funding sources. Riyanto (1998) states that retained earnings are profits earned by a company that can be partially paid out as dividends and partially retained by the company. Retained earnings are an indicator for companies to give signals to investors regarding their ability to pay obligations (Riyanto, 2011). According to Kepramareni et al.

(2021) companies with high retained earnings show that these companies can finance their growth so that they can increase the company's bond ratings.
Based on this description, the hypothesis can be formulated:
H_4: Retained Earnings affect bond ratings.

3. Methodology and Procedures

3.1. Population and Sample

This research is a quantitative research with hypothesis testing. The data used in this research is secondary data obtained from the website www.idx.co.id , the official *website* of each company and listed in *the bond ratings* issued by PT Pefindo. The population in this study are banking companies listed on the IDX during the 2018-2021 period. Sampling in this study used a purposive sampling method, namely determining the research sample with certain criteria. The criteria for determining the sample as follows:

Table 1 Research Sampel and Selection Process

Criteria	Amount
Banking companies listed on the IDX.	46
Banking company registered with PT Pefindo and has a complete rating at PT Pefindo for the 2018-2021 period.	(31)
Banking companies that publish complete financial reports for the 2018-2021 period	(0)
Companies that have positive retained earnings during the 2018-2021 period.	(5)
Number of companies that meet the criteria	10
Total sample for 4 years of research	40
Total Samples used in the study	**40**

Source: Data secondary processed author, 2023

Based on the sample criteria that have been determined in this study, a sample of 10 banking companies registered on the IDX was obtained. So that the total sample used in the study was 40.
The following measurements are used for each variable in this study:

Table 2 Variable Measurement

Variable	Indicator	Source
Bond Ratings	AAA : 7 AA : 6 A : 5 BBB : 4 BB : 3 B : 2 CCC : 1 D : 0	Novtaviani and Oetomo (2018)
Firm Size	*Size* = Ln Total Assets	Fikriyah (2018)
Liquidity	$CR = \frac{\text{Aset Lancar}}{\text{Utang Lancar}}$	Hasan and Dana (2018)
Profitability	$ROA = \frac{\text{Laba Bersih}}{\text{Total Aset}}$	Hasan and Dana (2018)
Retained Earnings	RE = Comprehensive Income for the Year – Dividends.	Novia et al (2022)

3.2. Data analysis technique

In this study the data analysis techniques used included descriptive statistics, classical assumption tests, and hypothesis testing.The relationship between variables can be described by the following equation:

$$\boldsymbol{BR = \alpha + \beta_1 SIZE + \beta_2 ROA + \beta_3 CR + \beta_4 RE + \varepsilon}$$

Information:

Y	: *Bond Ratings (BR)*
α	: Constant
$\beta_1 SIZE$	: *Firm Size*
$\beta_2 ROA$	: *Profitability*
$\beta_3 CR$	: *Liquidity*
$\beta_4 RE$	: *Retained Earnings*
ε	: *Error*

4. Results and Discussion

4.1. Descriptive Statistical Analysis

Table 3 Results of Descriptive Statistical Analysis

Variable	N	Minimum	Maximum	Means	std. Deviation
Bond Ratings	40	4	7	6,37	0.925
Firm Size	40	25,788	35,056	32.98282	1.551634
Profitability	40	0.036	3,918	0.55755	0.823214
Liquidity	40	0.000	12,748	33547	2.012905
Retained Earnings	40	78069000000	2 ,E+13	5.08E + 12	6 , 660E +12

Source: Data secondary processed writer, 2023

Based on table 3 shows the amount of data used in this study as much as 40 . From the results of the analysis it can be seen that retained earnings have the highest standard deviation of 6,600,000,000,000 , this shows that retained earnings have the highest data diversity. In contrast to profitability which has the smallest standard deviation of 0.823214 , meaning that profitability has low data diversity .

4.2. Classic assumption test

Table 4 Classical Assumption Test Results

Variable	tolerance	VIF	Heteroscedasticity Test Results
Firm Size	0.208	4,819	0.882
Profitability	0.956	1,046	0.461
Liquidity	0.286	3,491	0.726
Retained Earnings	0.484	2066	0.295
Normality Test Results	0.077		
Durbin Watson results	1,789		

Source: Data secondary processed writer, 2023

Based on table 3 shows the results of the classical assumption test that has been carried out. The results of the normality test using the Kolmogrov-Smirnov test showed a significant value of 0.077 > 0.05. This shows that the data is normally distributed. The results of the multicollinearity test showed that the tolerance value for each variable was greater than 0.10 and the VIF value was less than 10, so it can be concluded that all variables in this study did not have multicollinearity. The results of the autocorrelation test using the Durbin-Watson test show that the DW value is 1.789 which is between -2 and +2, so it can be concluded that the data has no autocorrelation. The results of the heteroscedasticity test using the Sprearman's rho test showed that the significance value was greater than 0.05, so it can be concluded that the variables in this study did not occur heteroscedasticity.

4.3. Hypothesis testing

Table 5 Hypothesis Test Results

Variable	b	t-value	Significance	Information
Firm Size	0.597	3,425	0.002	Influential
Profitability	0.213	1,381	0.176	No effect
Liquidity	0.323	2,830	0.008	Influential
Retained Earnings	-7,879E-15	-0.297	0.769	No effect
Constant	- 13,522	-2,371		
Adjusted R^2	0.309			
F-values		5,365	0.002	

Source: Data secondary processed writer, 2023

Based on the table, the equation can be arranged as follows:

$$\mathbf{BR = -1\ 3.522+0.597SIZE+0.213ROA+0.323CR-7.879E\ RE+\varepsilon}$$

A constant value of -13.552 indicates that if there is an increase in size, ROA, and CR, bond ratings will tend to decrease. Conversely, if there is a decrease in re, it will increase bond ratings. So that the increase in size, ROA and CR has not been followed by an increase in bond ratings.

The results showed that the F test showed a probability value of 0.002, which means less than 0.05, so it can be concluded that the independent variables simultaneously affect the dependent variable. Value results coefficient determination (Adjusted R^2) as big 0.309. Matter This signify that as big 30.9% bond ratings influenced by variable independent (firm size, profitability, liquidity, and retained earnings) and the rest as big 69.1% influenced by variable other. The results of the t test according to table 5 can be interpreted as follows:

It is known that the firm size variable has a t- count value of 3.425 greater than t table 2.022 and a significance value of 0.002 is smaller than α = 0.05,so it can be concluded that firm size has an effect on bond ratings. Investors will pay special attention to large companies, because they are considered more stable and easier to obtain information both internally and externally. Large total company assets are expected to have the ability to pay off better future obligations given the amount of assets large ones can be used as collateral bond issuance. These results are in line with research conducted by Rianto et al (2021), Sari and Badjra (2016), and Fikriyah (2018) which state that *firm size* has an influence on *bond ratings.*

It is known that the liquidity variable has a t- count value of 1.381 which is smaller than t table2.022 and a significance value of 0.176greater than α = 0.05,so it can be concluded that liquidity has no effect on bond ratings. *Liquidity* shows the company's ability to pay its short-term debt. Companies with high *liquidity* may indicate that the company is unable to meet its maturing short-term debt obligations. This will lower the company's bond rating. These results are in line with research conducted by Rivandi and Gustiyani (2021) and Fikriyah (2018) which state that *liquidity* has an influence on *bond ratings.*

The profitability variable is known to have a calculated t value of 2.830 greater than t table2.022 and a significance value of 0.008smaller than α = 0.05, so it can be concluded that prifitability has an effect on bond ratings. Higher company profitability will increase asset productivity in obtaining net profits. This in turn will increase the company's attractiveness to investors, so that it will have an impact on the better the bond rating that will be obtained. This result is in line with research conducted by Novitasari (2018) and Rivandi and Gustiyani (2021) which states that *profitability* has an influence on *bond ratings.*

The retained earnings variable is known to have a t-value of -0.297 which is smaller than t table2.022 and a significance value of 0.769greater than α = 0.05,so it can be concluded that retained earnings have no effect on bond ratings. Retained earnings arise as a result of company activities, namely net income. Retained earnings are profits or residual profits that are not distributed to shareholders in the form of dividends. Thus retained earnings are the accumulation of previous years' profits. If the accumulated losses and distribution of retained earnings exceeds profits, a deficit will occur in retained earnings. The results of this study state that *retained earnings* have no effect on *bond ratings* because companies do not rely too much on retained earnings to pay their obligations to obtain good bond ratings. These results are in line with research that has been conducted by Pradnyawati and Widhiastuti (2022) and Kepramareni et al (2021) which state that *retained earnings* have an influence on *bond ratings*

5. Conclusion

This study aims to analyze the effect of firm size, liquidity, profitability and retained earnings on bond ratings in banking companies listed on the IDX in 2018-2021. Based on the results of the analysis and discussion that have been described, it is concluded that:

1. *Firm size* has an effect on *bond ratings*, so that the research H_1 is accepted.
2. *Liquidity* is not effect on *bond ratings*, so that the research H_2 was rejected.
3. *Profitability* affects *bond ratings*, so that the H_3 of the study is accepted.
4. *Retained earnings* don't has an effect on *bond ratings*, so that the research H_4 is rejected.

Based on the research conclusions, the suggestions that can be given by the author as input are as follows:

1. Future research is expected to broaden the sample and not be limited to banking companies in order to get a different picture of research results.
2. Further research is expected to add independent variables that can potentially affect *bonds ratings*.

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