What the Factors Differentiates Bond Ratings?

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Abstract
The purpose of this study is to look for factors that differentiate bond ratings listed on PEFINDO. This study uses 32 random samples of corporate bond ratings listed on PEFINDO, and will be analyzed using the multiple discriminant method. The results of this study are of 5 independent variables; corporate size, debt variation, net profit margin, debt to equity, and profit consistency, only 3 independent variables; debt variation, net profit margin and profit consistency that are able to differentiate the bond rating of corporates listed on PEFINDO. Based on the analysis using the Stepwise method, the net profit margin variable is the first variable used for analysis, where the net profit margin variable cannot partially distinguish the bond rating group. In the second stage, the results by using 2 variables, net profit margin and profit consistency are obtained that these two variables are able to distinguish groups of bonds ranked A and AA. Whereas when the debt variation variable is added, then these three variables can distinguish bonds ranked AAA, AA and A.

Introduction

Some funding sources that can be used as alternatives for the business community are through banking, non-banking and capital market funding. One alternative funding is through bond issuance, unlike financing through credit, bond issuance has flexibility in terms of the number of bonds issued as long as it is still in accordance with the ability of assets and profitability of the corporate. However, the issuance of bonds also has some disadvantages including the cost of funds is strongly influenced by the corporate's reputation and the bond issuance process takes a long time. Bonds in circulation in Indonesia are bonds that are registered or in accordance with PT.Indonesian Rating Agency (PEFINDO), which is an agency that gives credit ratings to corporate debt and instruments listed on the Indonesia Stock Exchange. There are several things to note in the analysis of bonds; First, industrial performance which includes industry competition, market prospects and market share, raw material availability, industrial structure, government policy influences, and other economic policies. Second, financial performance which includes aspects of asset quality, profitability ratios, asset and liability management, capital adequacy ratio, debt management level, and interest rate adequacy ratio, and third, non-financial performance which includes consist of management

aspect, corporate reputation, and indenture agreement (covering sinking fund, debt test, dividend test, merger, and sale of asset). The rating of the bond depends on the corporate to be default and the protection provided by the contractor in the event of default. Bond ratings are built on information provided by the corporate, especially financial statements. Highest rating bonds can have AAA or AA. Bonds rated AAA rated as the best quality and have the lowest risk level. The lowest rating is D, which indicates that the corporate is in default state. Important Bond rating, as lower-rated bonds tend to have higher interest costs.

We draw a number of conclusions about the effect of credit rating changes on financial markets in transition economies. First, changes in ratings significantly affect bond and stock markets in these economies, with bond yield spreads increasing and stock market returns declining significantly in response to a domestic-country downgrade. As in previous empirical studies we find no evidence that the effect of domestic-country upgrades on bond and stock spreads is statistically significant. Second, rating changes contribute to contagion or spillover effects, with rating changes of sovereign bonds in one emerging market triggering changes in bond yield spreads and stock market returns in other emerging markets (cross-country contagion effect) (Mateev, 2012).

Using data obtained from the National Bond Registration System and the Economatica database, Lopo et al (2010) evaluated public bond offerings by listed Brazilian corporations in the period from 2005 to 2007. The results of univariate and multivariate analyses and robustness tests show the significance of the income smoothing factor, regardless of the rating agencies like Moody's, Standard & Poor's, and Fitch Investor Service. The results support the notion that income smoothing in Brazil is an information-signaling mechanism and has an impact on the respective bond ratings. These findings from the bond market complement an extensive literature on the equity market indicating that income smoothing has a positive effect on stock prices. Among the main implications of the study, the most important is the evidence that this type of earnings management can have positive effects (beneficial smoothing), by reducing the cost of debt capital because of better ratings. a word of caution is in order, Since less volatile reported earnings affect the ratings given by risk agencies, the practice of pernicious income smoothing can arise, where in a market with asymmetric information, a pooling equilibrium (in the sense of game theory signaling) can occur. This means that firms can practice pernicious smoothing, trying to mimic other firms with genuinely smooth earnings. In this scenario, we believe that it is important to have regulatory instruments to monitor and prevent this type of manipulation from abusively altering the risk perception of the agencies and consequently of bond investors. In the final analysis, the important conclusions to shed light on the factors that explain the cost of debt capital and the ratings received by firms in their public bond offerings.

Although bonds are considered a safe investment, bonds still carry risks. One risk is the inability of the corporate to pay off bond interest payments to investors. The bond rating phenomenon can be seen in the case of Mobile 8 Telekom, where in 2010 the corporate failed to pay its 12th interest. In March 2009, IDX also suspended FREN shares and bonds because it could not pay the bond interest of 675 billion rupiah. With defaults, the rating agency PEFINDO downgraded the corporate's bonds to "D" from "CC" (Veronica, 2015).

Following are the bond rating data issued by PEFINDO in early 2018:

Table 1. Rating of Corporate Bonds

Corporates	Rating	Net Profit Margin (%)	Debt/Equity
Siantar Top	A	4,90	1,13
Adira	AAA	13,70	4,6
Mayora Indah	AA	7,30	1,06
Garuda Indonesia	BBB	-6,60	3,63
Jasa Raharja	AAA	11,40	1,23
Indomobil Finance	A	4,30	5,82
Perusahaan Gas Negara	AAA	4,80	1
Bank Tabungan Negara	AA	13,70	10,24
Angkasa Pura	AAA	18,50	0,97
Bank DKI	A	31,10	5,62
Telekomunikasi Indonesia	AAA	25,50	0,77
Elnusa	A	2,60	0,52
Indosat	AAA	5	2,2
Indofood Sukses Makmur	AA	9	1,02
Perusahaan Listrik Negara	AAA	1,60	0,48
Bank Rakyat Indonesia	AAA	32,40	5,9
Bank Mandiri	AAA	32,50	5,1
Semen Indonesia	AA	10,70	0,53
Medco Energi	A	18,50	2,81
Maybank	AAA	3,30	9,34
BNI	AAA	37,40	5,79
Bukopin	A	12,20	10,2
Pengadaian	AAA	22,80	1,79
Jasa Marga	AA	6,90	2,86
Kimia Farma	AA	2,90	1,16
Aneka Tambang	BBB	-5,40	0,7
Bank Mayapada	A	16,20	8,86
Adhi Karya	A	2,40	3,42
Tiga Pilar Sejahtera	BBB	4,30	1,17
Summarecon Agung	A	6,80	1,54
PT,Timah	A	4,70	0,98
Fastfood Indonesia	AA	1,30	1,2

Source: PEFINDO, 2018

The data above shows that; first the majority of companies that are able to produce a fairly high net profit margin, the bonds will have an AA-AAA rating, net profit margin indicates the corporate is able to generate profits (profitable). Second, the majority of companies have a debt to equity ratio of more than 1, this indicates that the corporate uses a fairly large debt composition. John Moody began assessing bond rating in 1909, since then, three rating agencies; Moody's, Standard & Poor's, and Fitch Investor Service began to assess the ratings of corporate bonds. This rating involves assessing the potential future risk of the bond. Some historical factors seem to play an important role in the determination of bonds. The bond rating is

positively influenced by (1) the composition of equity and debt in financing the firm's operations, (2) the profitability of the operation (3) the consistency of earnings in the corporate operations, (4) firm size, and (5) the least use of the debt subordination. In turn, the rating of the received bond affects the rate of return on the bond demanded by the investor. The worse the bond rating. the higher the required rate of return on the stock market (Scott et al. 2000).

1)   Bond ratings agencies base their quality ratings largely on an analysis of the level and trend of some of the issuer's financial ratios. The key ratios used to evaluate safety are (1) Coverages ratios, ratios of company earnings to fixed cost, low or falling coverage ratios signal possible cash flow difficulties, (2) Leverage ratio (debt to equity ratio), A too high leverage ratio indicates excessive indebtness, signaling the possibility the firm will be unable to earn enough to satisfy the obligation on its bonds, (3) Liquidity ratio, The two common liquidity ratios are current ratio and quick ratio. These ratios measure the firm's ability to pay bills with cash currently being collected, (4) Profitability ratios, which measure of rates of return on assets or equity. Profitability ratios are indicator of a firm's overall financial health. The return on assets is the most popular of these measures, Firms with higher return on assets should be better able to raise money in security markets because they offer prospects for better returns on firm's investments. And last one is Cash flow to debt ratio. One of the factors determining bond safety is total outstanding debt of the issuer. If you bought a bond today, you would be distressed to see the firm tripling its outstanding debt tomorrow. Your bond would be of lower quality than it appeared when you bought it. To prevent firms from harming bond holders in this manner, subordination clauses restrict the amount of additional borrowing. Additional debt might be required to be subordinated in priority to existing debt. In the event of bankruptcy, subordinated or junior debt holders will not be paid unless and until the prior senior debt is fully paid off (Bodie et al.1999).

The research from Mahfudhoh and Cahyonowati (2014), which used 74 firms that are listed in PEFINDO from 2009 to 2012, found that liquidity, profitability, leverage, productivity, growth, security and maturity are insignificant variable to determine bond rating, and firm size and retained earning are significant variable to determined bond rating. While the results of research conducted by Sihombing and Rahmawati (2015) revealed that size had an effect on bond rating, but growth, leverage and profitability had no effect on bond ratings. in contrast to research conducted by Veronica (2015) where using 29 sample of corporate list in BEI period 2011-2013 showed profitability, liquidity, corporate size (size), leverage, and bonds maturity simultaneously affect bond ratings. while the results of research by Mardiyati et al. (2015), using samples of non financial firms listed in Indonesian Stock Exchanged and rated by PEFINDO period 2010-2014, showed that profitability and leverage has positive and significant effect on bond rating, while liquidity and firm size has positive but not significant effect on bond rating. Profitability, liquidity, leverage, and firm size simultaneously had positive and significant effect on bond rating. The results of the study by Utami et al (2015), with used 19 samples of companies that issued the bond and consistently registered in the PEFINDO in 2010-2013, showed that the firm size, leverage, and collateral bonds significantly influence the bond ratings, while profitability and liquidity do not affect the bond ratings. Simultaneously, the result of the study shows that the firm size, profitability, leverages, liquidity, and collateral bonds significantly affect the bond ratings.

In line with the research results of Rosa and Musdholifah (2016), with sample of 176 bond rates by PEFINDO period 2004 to 2013. showed that profitability, growth, and firm size had an

effect on bond rating. In the other hand, leverage, liquidity, and coverage had no effect on bond rating.

Very few research projects based on bonds are conducted in Indonesia, compared to those based on stocks. In fact, investors who do not like taking risks tend to prefer investing in bonds. Several previous studies have reached differing conclusions about the effects of the variables observed, so the factors that affect bond ratings need to be examined once more. Urasti and Pramudika (2016) research aims to determine the effects that firm size, liquidity, profitability, leverage, productivity, security and the age and reputation of the auditor, have on bond rating. 35 corporate bonds listed on the Indonesian Stock Exchange in 2012 were chosen as the sample, and analyses were performed using logistic regression analysis. As a result, found that the only variable significantly influencing bond ratings is their profitability. investors, in order to avoid the risk of a company's default, can thus measure profitability and take that into consideration.

The lastest research of Utami et al (2017) examines the determinants of bond ratings of companies issuing bond in Indonesia in the years of 2009-2014. The results using logistic regression analysis are not fully in accordance with the initial prediction. Out of the four independent variables being studied, only one variable is found to affect the rating of the bond. This is the current ratio of which it has positive effect. This means the better the company's liquidity ratio is, the higher is the rating of its bonds. while the other three ratios, namely profitability ratio, activity ratio, and solvency ratio, are not found as variables that determine the rating of the company's bonds.

This research aimed to classify the independent variables that affect bond ratings. In this study, added consistentcy variables generate profits and various types of short-term debt that is used by companies to be able to distinguish ratings from corporate bonds. Author is interested in doing research again because not all companies that are profitable are able to get high bond ratings, and not all companies that maximize debt structure are able to produce high profits and have high-ranking bonds. Then the hypothesis in this study can be written as follows:

H0: There are no independent variables that are able to distinguish the rank of corporate bonds listed on PEFINDO.

Ha: There are 1 (one) or more independent variables that are able to distinguish the rank of corporate bonds listed on PEFINDO.

Research Method

This research was conducted with a cross sectional design, where independent variables (Corporate Size, Debt Variation, Net Profit Margin, Debt to Equity, Profit Consistency) and the dependent variable (Bond Rating) are collected at the same time. Population is a complete set of units or individuals whose characteristics want to be known. According to (Anggoro, 2008), populations can be divided into 2 types, namely limited population and unlimited population. A population is said to be limited if the number of members of the population is known with certainty. But if the number of a population cannot be known with certainty, then the population is said to be an unlimited population. The sample in this study was 32 corporates whose bonds were registered with PEFINDO and had BBB to AAA ratings, and the sampling method was carried out randomly. The research data used are historical data in the form of financial statements from samples in the period of 2016-2017.

Because this research uses category-type data, before analyzing the data processing is needed first. The stages in data processing are as follows:

1. Editing Data (editing)

    After the data is collected, the completeness of each data is checked and classified according to the process required.

2. Coding

    Ensuring that the data collected is correct, then ordinal scale data is collected to be coded.

3. Entering Data (Entry)

    All existing data has been entered and tabulated into a table in a file on the computer.

4. Re-checking (Cleaning)

    Before analyzing data on data that has been entered, it is necessary to check the completeness of the data to ensure that the data have been cleared of errors in reading the code so that the data are ready to be analyzed.

5. Data Processing (processing)

    Processing this data using the SPSS program.

Table 2. Data Processing Techniques

No	Variables	Measure	Measure Tool	Result	Measure Scale
1.	Corporate Size	Financial Statement	Total Assets	1. Big 2. Middle 3. Small	1 2 3
2	Debt Variation	Financial Statement	Sum of debt variation (except obligasi)	Sum of debt variation	1,2,3,…
3	Net Profit Margin	Financial Statement	Earning after tax	Ratio	Ratio
4	Debt to Equity	Financial Statement	Total debt/ Total equity	Ratio	Ratio
5	Profit Consistency	Financial Statement	earnings year to year	1. Consistent 2. Inconsistent	1 2
6	Bond Rating	PEFINDO Rank	PEFINDO Rank	1. AAA 2. AA 3. A 4. BBB	1 2 3 4

Multiple discriminant analysis is a regression with the dependent variable in the form of non-parametric or categories with purpose to predict the independent variables, to be included in the linear equation (Ghozali, 2006). The purpose of multiple discriminant analysis is to find ; first, indentify variables that able to distinguish of groups, and using indentified variables to create new linear equation that is able to explain differentiation between groups, in this case corporate size as the independent variable (X1), debt variation as the independent variable (X2), net profit margin as the independent variable (X3), debt to equity as the independent variable (X4), and the profit consistency as an independent variable (X5) will be tested to determine which variables can distinguish bond ratings as dependent variables consisting of AAA rank as (Y1), AA rank as (Y2), A rank as (Y3) and the BBB rank as (Y4).

The linear equation is as follows:
Z = a + bx1 + bx2 +……………..+ bxn + e

Where:
Z = New equation for bond rating
a = Constant (intercept)
x = Independent variable
b = Regression coefficient
e = error

Results and Discussion

There are only 3 independent variables namely; debt variation, net profit margin and profit consistency that can be used into the discriminant function. while the debt to equity variable and corporate size cannot be used into functions.

Table 3. Structure Matrix

	Function		
	1	2	3
Debt Variation	.313	.764[*]	-.564
Net Profit Margin	-.520	.706[*]	.481
Corporate Size[a]	-.031	-.571[*]	-.084
Debt to Equity[a]	-.085	.354[*]	.297
Profit Consistency	.635	-.101	.766[*]

*. Largest absolute correlation between each variable and any discriminant function

a. This variable was not used in the analysis.

Structure matrix table show correlation between independent variable with discriminant function. Corporate size variable have minus correlation among all function, means that corporate size cannot be use for the next analysis. while debt to equity variable also eliminate because only have small correlation among all functions. The last 3 independent variabel have higher correlation, Debt variation have 76,4% with function 2, net profit margin have 70,6% with function 2 and profit consistency have 76,6 % with function 3. The result only 3 independent variable accepted for the next analysis.

Table 4. Discriminant Results of Independent Variables

	Step	Tolerance	Sig. of F to Remove	Between Groups
1	Net Profit Margin	1.000	.007	
2	Net Profit Margin	.999	.054	AA and A
	Profit Consistency	.999	.017	AA and A
3	Net Profit Margin	.989	.057	AAA and AA
	Profit Consistency	.904	.006	AA and A
	Debt Variation	.895	.031	AA and A

From the results of the analysis with the Stepwise method, the net profit margin variable is the first variable used for analysis, where the net profit margin variable cannot partially distinguish bond rating groups. In the second stage, by using 2 variables, net profit margin and profit consistency, the results are obtained that these two variables are able to distinguish groups of bonds ranked A and AA. Whereas when the third variable is added, debt variation, these three variables can distinguish groups of bonds ranked AAA, AA and A. Profit consistency have sig.006 value and debt variation have sig.031 value for distinguish groups of bonds ranked A and AA. while net profit margin have sig.057 value for groups of bonds ranked AA and AAA.

Table 5. Result Discriminant Function Coefficients

	Function		
	1	2	3
Debt Variation	.624	.744	-.418
Net Profit Margin	-.559	.632	.547
Profit Consistency	.810	.151	.654

Table 5 show that debt variation contribute 62.4% for function 1, 74.4% for function 2, and –41.8% for function 3. while net profit margin contribute -55.9% for function 1, 63.2% for function 2, and 54.7% for function 3. The last variable, profit consistency contribute 81% for function 1, 15.1% for function 2, and 65.4% for function 3. We can assume that profit consistency and debt variation are important variables for function 1, because have positive coefficient. For function 2, debt variation and net profit margin are important variables because have highest positive coefficient. For function 3, net profit margin and profit consistency are the important variables.

Table 6. Wilks' Lambda

Step	Variables	Lambda	df1	df2	df3	Exact F				Approximate F			
						Statistic	df1	df2	Sig.	Statistic	df1	df2	Sig.
1	1	.650	1	3	28	5.021	3	28.000	.007				
2	2	.448	2	3	28	4.448	6	54.000	.001				
3	3	.320	3	3	28					4.207	9	63.428	.000

The result of Wilks Lambda show when using first variable (debt variation), significant value of Wilks Lambda is 0.007, while using two variable or adding net profit margin variable, significant value is 0.001. And last part by adding third variable (profit consistency) significant value become 0.000.

Using 3 independent variables have more greater significant, that means as the result of Table 4 discriminant function for distinguish rank of bond between AAA – A needs debt variation, net profit margin, and profit consistency. while using only 2 independent variable with significant value 0.001, discriminant function result on distinguish AA-A only.

Table 7. Result of Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.705[a]	91.7	91.7	.794
2	.153[a]	8.2	99.9	.364
3	.002[a]	.1	100.0	.040

From the results of the Eigenvalues analysis, 3 discriminant functions are produced using 3 independent variables. Eigenvalues value shows that the discriminant function 1, debt variation, net profit margin and profit consistency are able to explain the variation of the dependent variable by 91.7% with 79,4% correlation, the discriminant function 2, debt variation, net profit margin and profit consistency are able to explain the variation of the dependent variable by 8.2% with 36,4% correlation, and The remaining 0.1% is explained by the function 3.

Table 8. Clasification of Discriminat Function

	Function		
	1	**2**	**3**
Debt Variation	.552	.659	-.371
Net Profit Margin	-.059	.067	.058
Profit Consistency	2.190	.408	1.770
(Constant)	-4.499	-4.144	-1.343

Based on the functions of the canonical discriminant function coefficients, then the equation for the discriminant function can be written as follows:

Function 1   Z = -4.499 + 0.552 Debt Variation – 0.059 Net Profit Margin + 2.190 Profit Consistency

Function 2   Z = -4.144 + 0.659 Debt Variation + 0.067 Net Profit Margin + 0.408 Profit Consistency

Function 3   Z = -1.343 - 0.371 Debt Variation + 0.058 Net Profit Margin + 1.770 Profit Consistency

Results using 2 variables, net profit margin and profit consistency was found that these two variables were able to distinguish groups of bonds ranked A and AA. Whereas when the third variable is added, debt variation, these three variables can distinguish groups of bonds ranked AAA, AA and A, where the net profit margin variable distinguishes AAA - AA rating groups while the profit consistency and debt variation variables distinguish AA - A rating groups.

The value of the net profit margin coefficient for the AAA rating is greater than for the other rating groups. This is inversely proportional to the profit consistency and debt variation variables where the lower the bond rating, the greater the coefficient of the two variables.

Eigenvalues value discriminant function 1 is able to explain the variation of the dependent variable by 91.7% greater than others functions, means function 1 have more accurate for analysis bonds rating. Equation with Z= -4.499 + 0.552 Debt Variation -0.059 Net Profit Margin

+ 2.190 Profit consistency describe the limit of rank of bonds, if the value of Z was minus, then the rank of bonds will be downgraded.

Debt variation has positive coefficient, that mean using more debt will resulting higher Z value, while net profit margin has minus coefficient which means the higher net profit margin will reduce Z value. Interesting part is profit consistency which has the higher positive coefficient among these two variables had the highest positive coefficient among these two variables, but had minus net profit margin. Net profit margin and profit consistency are part of the probability ratio, both of these variables measure a company ability to make profit. The findings in this study show that profit consistency is seen more important because it has positive coefficient value caompared to net profit margin which has a negative coefficient. The negative coefficient value on the net profit margin means company must penetrates profit consistently, fluctuations in earnings will cause bondholders to assess the company is inconsistent in its operations. We can conclude that the positive coefficient on debt variation is to produce a stable profit.

Function 2 with equation Z= -4.144 + 0.659 Debt Variation + 0.067 Net Profit Margin + 0.408 Profit Consistency explain the variation of the dependent variable by 8.2%, describe if corporate have to maximize all variables or Z value will be minus and the rank of bonds will be downgrade. Coeffisient of net profit margin is the lowest one, means corporate in this function have to concentrate on producing earnings. Function 3 equation with Z= -1.343 - 0.371 Debt Variation + 0.058 Net Profit Margin + 1.770 Profit Consistency, only explain the variation of the dependent variable by 0.1% with 0.040 correlation, This function cannot be used.

Table 3 above shows, debt variation and net profit margin have highest correlation at function 2, means maximizing these two variables will result in high or maintaining bonds rank. Meanwhile profit consistency have highest correlation at function 3, means corporate have to rising their consistentcy on profit.

Table 9. Data on Debt Variation Usage and Profit Consistency

Corporate	Bond Rating	Debt Variation	Profit Consistency
Siantar Top	A	6	Consistent
Adira	AAA	5	Consistent
Mayora Indah	AA	3	Consistent
Garuda Indonesia	BBB	5	Inconsistent
Jasa Raharja	AAA	2	Consistent
Indomobil Finance	A	4	Consistent
Perush Gas Negara	AAA	5	Consistent
Bank Tabungan Negara	AA	3	Inconsistent
Angkasa Pura	AAA	6	Consistent
Bank DKI	A	5	Consistent
Telekomunikasi Indonesia	AAA	4	Consistent
Elnusa	A	2	Inconsistent
Indosat	AAA	7	Consistent
Indofood Sukses makmur	AA	4	Consistent
Perusahaan Listrik Negara	AAA	6	Consistent
Bank Rakyat Indonesia	AAA	6	Consistent
Bank Mandiri	AAA	5	Consistent
Semen Indonesia	AA	4	Consistent

Corporate	Bond Rating	Debt Variation	Profit Consistency
Medco Energi	A	6	Inconsistent
Maybank	AAA	6	Consistent
BNI	AAA	6	Consistent
Bukopin	A	5	Inconsistent
Pengadaian	AAA	5	Consistent
Jasa Marga	AA	6	Consistent
Kimia Farma	AA	3	Consistent
Aneka Tambang	BBB	3	Inconsistent
Bank Mayapada	A	5	Consistent
Adhi Karya	A	5	Consistent
Tiga Pilar Sejahtera	BBB	6	Inconsistent
Summarecon Agung	A	5	Consistent
PT.Timah	A	2	Inconsistent
Fastfood Indonesia	AA	3	Inconsistent

Source: Data processing

The results of data processing in Table 9. show corporates that have bonds with AAA ratings use more variation of debt and generate more consistent profit each period. while for corporates that have AA-A-rated bonds, it is seen that they only use a few of debt and the net profit margin value tends to be small. The research results of Urasti and Pramudika (2016), found that the profitability variable only partially significantly influences the bond rating, while the firm size, liquidity, leverage, productivity, security, age and auditor reputation do not. These results indicate that the ratings agencies issue their ratings based on the level of profitability of the company, so investors who want to invest in bonds can consider how big is the company's ability to generate profits based on the total asset. Therefore, in order to improve the performance of the bond ratings and to keep competing among other companies in the Indonesian capital market, the companies need to increase their profitability.

A positive relationship between short-term debt to total assets and profitability in both the service and manufacturing industries was found. The findings of this paper are consistent with prior empirical studies that short-term debt to total assets is positively correlated with profitability. This suggests that short-term debt tends to be less expensive, and therefore increasing short-term debt with a relatively low interest rate will lead to an increase in profit levels. Positive relationships between the ratio of total debt to total assets and profitability were found in both the service and manufacturing industries. These findings imply that an increase in debt position is associated with an increase in profitability; thus, the higher the debt, the higher the profitability of the firm. It can be concluded that the capital structure of the firm impacts profitability. It is because interest on debt is tax deductible in United States. The results suggest that profitable firms depend more on debt as their main financing option. Although interest on debt is tax deductible, a higher level of debt increases default risk, which in turn, increases the chance of bankruptcy for the firm. Therefore, the firm must consider using an optimal capital structure. The optimal capital structure includes some debt, but not 100% debt. In other words, it is a "best" debt/equity ratio for the firm, which in turn, will minimize the cost of capital, i.e., the cost of financing the company's operations. In addition, it will reduce the chances of bankruptcy (Gill et al. 2011).

If we review the concept of working capital, where there is an allocation of the use of short-term debt to increase profitability and use of long-term debt for liquidity. The advantages

of using short-term financing are; First, short-term debt offers companies the flexibility of a source of financing compared to long-term debt or equity. Second, interest costs on short-term debt are relatively lower than long-term debt. Using short-term debt makes the corporate's profitability increase. It can be concluded that the use of debt variation is very important to obtain maximum net profit margin results and obtain consistent profits Scott et al. (2000).

Conclusions

Of the five independent variables used to distinguish bond ratings, debt to equity and corporate size cannot be used as discriminant function. From the results of the analysis with the Stepwise method, net profit margin is the first variable used for analysis, where net profit margin variable cannot partially distinguish bond rating groups. In the second stage, by using 2 variables, net profit margin and profit consistency showed that these two variables are able to distinguish groups of bonds ranked A and AA. Whereas when the third variable is added, namely debt variation, these three variables can distinguish bonds of AAA, AA and A. Groups of bonds ranked of AAA and AA are distinguish by net profit margin, while groups of bonds ranked of AA and A are distinguish by profit consistency and debt variation. Establish more consistent profit and using more variation of debt will result positif in bond ranking.

The first limitation of this study is the sample of corporates that issue bonds is still dominated by government corporates (Badan Usaha Milik Negara) and this causes the risk factor for the ratio of debt to equity to be 0. Bond investors' confidence in collateral provided by government corporates is absolute, different from guarantees given by private parties. Second, there are very few samples for bonds rated BBB, this causes no discriminant results for the BBB bond category. The interesting thing from the results of this study is the variable net profit margin and debt variation. Net profit margin indicates the profitability of the corporate and debt variation indicates the use of variations in short-term debt.

The use of variations in short-term debt is very important to obtain consistency in obtaining profitability or even to increase it. Corporates that have AA-A rating bonds are strongly encouraged to use variations in short-term debt and this is aimed at achieving a good level of net profit margin. Obtaining good profitability will lead to investor confidence in the bond investment while reducing the risk of default. It is interesting to do further research to find out how much the correlation and influence of net profit margin and the use of debt resources on bonds that have A-AA ratings by using a larger sample.

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