



# The Effects of Financial Performance to Corporate Sukuk Ratings in Indonesia

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## **Abstract**

*This study aims to estimate the influence of financial performance is proxied by total assets, debt equity ratio, coverage ratio, return on assets and return on equity to the ranks of corporate sukuk in Indonesia during the 2007-2009 period. This study uses multinomial logistic regression models because there are three categories of sukuk ratings, namely: AA, A, and BBB for 33 sample firms issuing sukuk in the Indonesia. The results of empirical studies have found that the variable total assets and ROA as an indicator of financial performance affects corporate sukuk ranking significantly. In order to achieve sustainable financial performance in order to improve the ranking of the sukuk, the study recommended the company to increase its total assets ROA profitability and improve performance*

*Keywords: sukuk, rating, multinational logistic*

## **INTRODUCTION**

Rating bond holds an important role for financial market participants, especially for lenders (investors) and the firms receiving the loans (issuers), for the fact that bond is an investment product which can not only provide benefits but also cause potential loss (risk) on the investment itself. Bond ratings are the risk scale of all bonds traded on financial markets. Bond rating is important because these rankings give informative statements signaling both debt failure probabilities and corporate risks. In other words, bond ratings are statements about the state of the debtor and likely to be made in connection with the debt held, so it can be said that the ratings are measures of default risks, namely the probability for the issuers or borrower to experience the conditions of unable to meet the financial obligations (Foster, 1986).

For investors, bond rating provides information on the capacity and capability to fulfill his pledge to pay interests or coupons on a regular basis and return the whole principal at its maturity. If there is information that a company will be in repayment default, the ratings of these companies will drop coupled with the drop of the bond prices. Therefore, the rating of the bonds to investors demonstrates both the potential risks involved and the possible expected results. For companies, bond ratings reflect how well the company performs.



An Islamic bond known as *sukuk* is still relatively new as an investment instruments in Indonesian financial market. Islamic bonds actually have common characteristics with conventional bonds. The most fundamental difference is that Islamic bonds do not use a coupon with a fixed interest rate and *sukuk* issuers will not be in a business which is prohibited by Islam, such as conventional banks, conventional insurance and other conventional financial institutions.

As in conventional bonds, an investor intending to invest in *sukuk* must also consider the ranking of the *sukuk*. *Sukuk* rating was also carried out by an institution or a bond rating agencies. The institution conducts its recent analysis of the *sukuk* performance on the basis of relatively independent assumptions. Each newly issued financial statements or the emergence of important happening concerning to the company that materially affects the ability to pay its debt obligations, it will change the position of *sukuk* ranking results, and vice versa. *Sukuk* that has high ratings will be marked by financial fundamentals and strong business, as well as having a good image in public. Therefore, it can be said that the *sukuk* ratings greatly influenced by the financial performance of the companies issuing the *sukuk*.

This study is aimed to estimate the effect of financial performance proxied with total assets, debt equity ratio, coverage ratio, return on assets, and return on equity to the rank of corporate *sukuk* in Indonesia during the period of 2007-2009.

## LITERATURE REVIEW

*Sukuk* rating is strongly influenced by the financial performance of the *sukuk* issuers. Several studies have been conducted to examine the effect of financial ratios, such as total assets, debt equity ratio, coverage ratio, return on assets, and return on equity resulting from the balance sheet, cash flow and income statement among other things are: Horrigan (1996), Pinches and Mingo (1973.1975), Kaplan and Urwitz (1979), Chan and Jagadeesh (2003), Bealkaoui (1980), Touray (2004), Nurhasanah (2003), Kesumawati (2003), and Maylia (2004).

Early research on bond ratings was done by Horrigan (1966) who conducted the study on the bond rating prediction in the United States. By using the five financial variables, namely: total assets, working capital / sales, sales / net worth, operating profits / sales, and the net / debt, the research results can predict correctly 58% and 54% of the new rankings and Moody rating changes and also 52% and 57% of new bond rating and bond rating changes of the S & P in the period of 1959-1964.

Bealkaoui Studies (1980) analyzed the rating of bonds using Model Discriminant Analysis (MDA) by identifying the characteristics of three key variables, namely; the company issuing, debt instruments issued and market variables representing the views of the company. He raised eight variables, namely: total assets,



total debt, long-term leverage, short-term leverage, interest coverage, liquidity ratio / current ratio, total leverage, and contract bonds / bond indenture. This model correctly predicted 62.5% to 65% of the 275 new bond rating and bond rating holdout S & P in 1978.

Touray (2004) continued the study of Bealkaoui (1980) by using the eight variables of Bealkaoui (1980) but in addition to the use of MDA model, it was also compared to the use of Multinomial Logit Model. The result shows that Logit Multinomial is better than the MDA with 75% correct predictions on a new ranking of the Malaysian Rating Agency, using the 56 ratings of bonds issued in Malaysia during the period of 1992-2003. Unfortunately, this model cannot be used to predict the holdout sample in a period of crisis in Malaysia.

Astuti (2003) examined the effect of the financial statements to the debt ratings. This study used the variables of return on investment, leverage ratios, profitability ratios and operating profits estimated to affect the bond rating. This study provides evidence that the return on investment significantly influences debt ratings, while the three other variables did not significantly affect the debt ratings.

Andry (2005) examined whether the accounting factors (Growth and Size) and non-accounting factors (Sinking Fund, Secure, Maturity and Auditor Reputation) affect the bond rating prediction. This study provides evidence that Growth affects rating bond predictions, while Size does not have any influence to it. In the variables of non accounting factors, it was found out that Sinking Fund, Maturity and Opinion given by the big four affect bond rating predictions, meanwhile Secure has no effect on the rating predictions.

Zuhrotun and Baridwan (2005) examined the effect of the rating announcement toward the bond performances. This study aimed to examine whether there are differences in performance before and after the announcement of bond ratings, and whether there are differences in the performance affected by the rating announcement toward the bond performance of large and small companies. The bond performance differences showed investors' responses to the bond rating announcement. The results of this study are consistent with previous studies that the bad news get more responses from the investors (Hand et al., 1992; Lianto and Matolcsy, 1995; Liu et al., 1999). The downgrade is bad news for bond investors, as it indicates the increasing credit risk due to declining credit worthiness of the corporate bond issuers.

Arundina, Tika and Omar, Dato 'Mohd, Azmin (2009) conducted a study on the influence of the financial performance to *sukuk* ratings in Malaysia using M-Logit model. The results of their study shows that out of the six independent variables (total assets, long-term leverage, interest coverage, ROA, beta and insurance status) only



three variables (total assets, beta and insurance status) are known to have a significant association with the *sukuk* ratings. The combination of the above variables are also known to be better than all other combinations in terms of the classification level, the significance level of the model as well as the significance of each variable

Sejati (2010) examines the factors that affect bond ratings by the independent auditor variables, liquidity (CR), growth, ROA, and size. The sample used is a manufacturing company in the period 2003-2008. Auditor Measurements performed with a dummy variable, which is a category 1 for firms audited by big 4 and category 0 for the company being audited than big 4. The study states that the only growth that significantly influence bond ratings. While simultaneously stating that the test is not significant variables simultaneously to bond ratings.

Susilowati and Sumarto (2010) tested the variable profitability, liquidity, size, and age of the bonds to obtain results about the factors that affect the bond rating prediction. The sample used is a manufacturing company from 2002 to 2006. Results of these studies is the only variable that significantly influence the liquidity of bond rating prediction.

Adrian (2011) which concluded that the profitability has no effect on bond ratings and research Manurutng, et al. (2008) who found that profitability has a positive effect on bond ratings. Other variables in the study Yasa (2007), Adrian (2011) and Manurutng (2008) concluded that the positive effect of liquidity on bond rating, while leverage has no effect on bond ratings.

## **METHODS**

### **Data Sample and Data Sources**

In this research, the samples used were all outstanding *sukuk* during the period of 2007-2009. The pool data observation period was held from January 1, 2007 to December 31, 2009. The listing *sukuk* data from 2007-2009 were obtained from the webmaster of Indonesia Stock Exchange, and the ranking data obtained from the PT. PEFINDO, an independent bond ranking agency in Indonesia. Sampling was performed with purposive sampling method, using specific criterias for sample choosing. The criteria are:

1. *Sukuk* issued by companies listed on the Jakarta Islamic Index of the Indonesian Stock Exchange and they are still outstanding during the observation years of 2007-2009.
2. *Sukuk* issued by company registered in the bond ratings issued by PT. PEFINDO during the observation period.
3. Having a full financial report available for the public.



### Operationalization of Research Variables

There are two types of variables used in this study, the dependent and independent variables. Rating variables used as dependent variables were grouped into three categories: AA, A and BBB. In this case, 1 will stand for *sukuk* AA category, 2 for *sukuk* with category A, 3 for *sukuk* with BBB category. The independent variables used in this study, are:

- a. Total assets (LTA). Total assets are calculated from the sum of current assets and fixed assets of the company.
- b. Debt Equity Ratio (DER). DER ratio is a comparison between the funds from creditors (total debt) owned by the company and funds from the owner (total capital) owned. The larger DER indicates that the capital structure of the business uses relatively more debt than equity.
- c. Coverage Ratio (CR). Interest coverage ratio, which is also called as the "times interest earned" ratio, is a direct measure of the repayment ability of long-term debt calculated from the income statement.
- d. Return on Assets (ROA). ROA is calculated by dividing the profit value with the value of corporate assets.
- e. Return on Equity (ROE). ROE is calculated by dividing the profit value with the equity total value of the company.

### Multinomial Logistic Regression Model (M-Logit)

This study uses Multinomial Logistic Regression Model (M-Logit) which is also called Polychotomous Logistic Regression Model. Multinomial Logit Regression Model is one of the most common methods used to analyze the data when the response is a qualitative variable.

If the dependent variable is regular or irregular, and if the problem includes more than two categories, the extended version of the binary logit model (called Polychotomous or Multinomial regression models) can still be applied to the problem. Strategy multinomial logit usually allow one category to assume a certain value. This category is then used as the reference category for all other categories. This method is also called as the base-line category type. M-Logit coefficients in the base-line logit model for the three bond rating categories (AA, A, BBB) can be written in the general form:

$$\text{Log} \frac{p(\text{group}j)}{p(\text{group}u.J)} = \alpha_{i0} + \beta_{i1} X_1 + \beta_{i2} X_2 + \dots + \beta_{in} X_n \quad (1)$$



Where category J with a capital J in the denominator refers to base-line category, the category with small j in the numerator refers to the other categories.

$\alpha_{i0}$  = constant term

$\beta$  = respective coefficient on the predictor X

$X_1 - X_n$  = predictor variable (independent)

In this case, this is translated into the following equation:

$$\text{Log} \frac{p(AA)}{p(BBB)} = \alpha_{i0} + \beta_{i1} X_1 + \beta_{i2} X_2 + \beta_{i3} X_3 + \beta_{i4} X_4 + \beta_{i5} X_5$$

(2)

$$\text{Log} \frac{p(A)}{p(BBB)} = \alpha_{i0} + \beta_{i1} X_1 + \beta_{i2} X_2 + \beta_{i3} X_3 + \beta_{i4} X_4 + \beta_{i5} X_5$$

(3)

The general form of the M-Logit Regression models shown in the equation above, will be written in the special equation forms of M-Logit Regression models which will be estimated, namely:

$$\text{Log} \frac{p(AA)}{p(BBB)} = \alpha_{i0} + \beta_{i1} LTA + \beta_{i2} DER + \beta_{i3} CR + \beta_{i4} ROA + \beta_{i5} ROE \quad (4)$$

$$\text{Log} \frac{p(A)}{p(BBB)} = \alpha_{i0} + \beta_{i1} LTA + \beta_{i2} DER + \beta_{i3} CR + \beta_{i4} ROA + \beta_{i5} ROE$$

(5)

#### **Description :**

$$\text{Log} \frac{p(AA)}{p(BBB)} = \text{Fungsi Logit untuk AA} = 1 \text{ terhadap Fungsi Logit untuk BBB} = 3$$

$$\text{Log} \frac{p(A)}{p(BBB)} = \text{Fungsi Logit untuk A} = 2 \text{ terhadap Fungsi Logit untuk BBB} = 3$$



$\alpha_0$  = Intercept

LTA = Log Total Assets

DER = Debt Equity Ratio

CR = Coverage Ratio

ROA = Return on Assets

ROE = Return On Equity

## RESULTS AND DISCUSSION

### Analysis of Research Findings

#### *Data Testing Method*

Test results on the classical assumption test in this study are as follows:

**Table 1 : Classical Test Assumptions**

Uji Asumsi	Nama Uji	P-Value
Normality	Kolmogorov Smirnov Test	0.229
multicollinearity	Pearson Correlation Test	< 0.80

#### **Normality Test**

Normality test aims to examine if the regression model, the independent and dependent variables have normal distributions or not. Good regression models should have data normal or close to normal distributions. To find out data normality can be done by looking at the histogram or normal probability plot. The requirements for normality can be met if the residuals come from a normal distribution and the data value distributions of the will take place around a straight line (Santoso, 2003).

The normality test for this study was done using the One Sample Kolmogorov Smirnov Test. The results of the data normality test showed a significant value or P-value is > 0.05, equal to 0.229. It is proven that the data were normally distributed.

#### **Multicollinearity Test**

Basically multicollinearity is the existence of a perfect (near perfect) linear relationship between some or all of the independent variables (Kuncoro, 2004). Colinearity test aims to test if there is a correlation between an independent variable



and the others in the model. In this study the Pearson Correlation Test was used for that purpose. Colinearity occurs when the correlation value between the variables is higher than 0.8 (Gujarati, 2003). Based on the Pearson Correlation Test it was found that there was no significant correlation between those variables.

## HYPOTHESIS TESTING

### Rating Class Distribution

Multinomial Logistic (M-Logit) Regression Model was used in this study. It is also called as Polychotomous Logistic Regression Model. The study was performed using a sample (synthesized current rating sample) to build the model, predict an original case, and examine the significance of the variable. The following table shows the distribution of sukuk rating grade used in this study.

**Table 2 : Case Processing Summary**

	N	Marginal Percentage
Y		
AA	6	18.2%
A	23	69.7%
BBB	4	12.1%
Valid	33	100.0%
Missing	0	
Total	33	

### Multinomial Logit Model

The results of the parameter estimation in Table 3 below are shown as follows:  
Equation 1 predicts logit (AA / BBB), AA is compared to BBB

$$= (-116,920) + (3,856) * LTA + (86 857) * ROA$$

Equation 2 predicts logit (A / BBB), A is in comparison to BBB

$$= (-61,893) + (2,172) * LTA + (29 860) * ROA$$

Based on the partially test results (Wald), the chance of *sukuk* to get AA or A rating in comparrison to a chance to get BBB ratting is positively associated with the





total assets and the return on assets. Both variables are significant in determining the ranking of *sukuk*.

**Table 3 Parameter Estimates**

Y <sup>a</sup>	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
AA Intercept	-116.920	37.115	9.924	1	.002			
LTA	3.855	1.227	9.870	1	.002	47.212	4.263	522.912
ROA	86.857	34.686	6.270	1	.012	5E+037	157191778.7	1.764E+067
A Intercept	-61.893	29.264	4.473	1	.034			
LTA	2.172	1.000	4.717	1	.030	8.775	1.236	62.294
ROA	29.860	21.595	1.912	1	.167	9E+012	3.86E-006	2.237E+031

a. The reference category is: BBB

Source: Calculated using SPSS 15.0

### Overall Fit Testing

**Table 4: Model Fitting Information**

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	57.945	60.938	53.945			
Final	40.369	49.348	28.369	25.576	4	.000

To test the general suitability of the model, we use the information of the model suitability as measured by -2Log Likelihood to find out if the independent variables are included into the model, the results will be better than the model including intercept only. As shown in the table, the value of -2Log Likelihood with an



intercept only is 53 945. Meanwhile, by putting the independent variables into the model, the value of -2Log Likelihood comes down to 28,369, or there is a decline of 25 576 on the Chi-square and it 's significant at  $p = 0.000$ . So a model with independent variables provides better accuracy for predicting the *sukuk* ratings.

### **Significance Testing for Each coefficient**

Likelihood Ratio Test shown in the above table presents the test results on the effects of the independent variables in the final model. 2-log-likelihood is significant in 0000 ( $p < 0.05$ ) for total assets, and 0006 ( $p < 0.05$ ) for ROA. It means that if it is seen from the contribution of each independent variable to the model, total assets and ROA are significant and they contribute to the model. Norusis (1999) states that the Likelihood Test method does not only examine the overall significance for the model, but it is also the most accurate and reliable test to determine the impact of each independent variable in the model.

**Tabel 5 : Likelihood Ratio Tests**

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	60.980	66.966	52.980	24.611	2	.00
LTA	60.672	66.658	52.672	24.303	2	.000
ROA	46.461	52.447	38.461	10.092	2	.006

### **Goodness of Fit test**

**Tabel 6 : Goodness-of-Fit**

	Chi-Square	Df	Sig.
Pearson		60	.167
Deviance	28.369	60	1.000

Goodness-of-Fit Test examines the null hypothesis that the empirical data fits the model (no difference between the model and the data so that the model can be said as fit). If the value of Goodness-of-Fit test statistic is equal to or less than 0.05,



the null hypothesis is rejected, it means that there is a significant difference between the model and observation value, so that the Goodness fit model is not good because the model cannot predict the observation value.

If the value of Goodness-of-Fit is greater than 0.05, the null hypothesis cannot be rejected and it means that the model is able to predict the observation value or the model may be acceptable because it fits the observation data. SPSS output display shows the probability of Pearson (0167) and Deviance (1,000) more than  $\alpha = 0.05$ , it means that the model can be accepted and be able to predict the value of the observation due fitting the observation data.

### ***Pseudo R-Square test***

**Table 7 : Pseudo R-Square**

Cox and Snell	.539
Nagelkerke	.670
Wald	.474

Cox and Snell's R-Square is a measurement that seeks to imitate R<sup>2</sup> measurement in multiple regression based on the likelihood estimation technique with a maximum value of less than 1 (one) so it is difficult to interpret. Nagelkerke's R-Square is a modification of the Cox and Snell coefficient to ensure that its value varies from 0 (zero) to 1 (one). This is done by dividing the value of Cox and Snell's R-Square with its maximum value.

Value of Nagelkerke's R-Square can be interpreted as the value of R<sup>2</sup> in multiple regression. viewed from the SPSS output, the value of Cox and Snell's R-Square is 0539 and Nagelkerke R-square value is 0670, which means that the variability of the dependent variable can be explained by the variability of the independent variable by 67%, and the rest is explained by variables outside the model.

### **RESULTS CLASSIFICATION MODEL M-LOGIT**

Table 8 presents the results of the prediction of the M-Logit coefficient estimation in the previous section. The columns in table 8 are the predictive values and the rows in the table are the actual values. The result shows that 84.8% (28/33) of all valid cases are correctly classified into the previous ranking class. The most appropriate level of classification is in the A ranking category where 95.7% (22/23) of all cases in the group are classified correctly. Next up is the BBB rating category where 75.0% (3/4) of all cases in the group are classified correctly. The lowest accuracy level



is in the AA category, with a slight difference from the other categories in which 50.0% (3/6) of all cases in the group are classified correctly.

**Table 8 : Classification**

Observed	Predicted			Percent Correct
	AA	A	BBB	
AA	3	3	0	50.0%
A	1	22	0	95.7%
BBB	0	1	3	75.0%
Overall Percentage	12.1%	78.8%	9.1%	84.8%

## DISCUSSION OF RESULTS

The empirical results show that only the total assets and ROA variables as the indicators of financial performance give significant influence to of corporate sukuk ratings in Indonesia. These results are consistent with the findings of empirical studies by Horrigan (1966), Kaplan and Urwitz (1979), Belkaoui (1980), Kamstra (2001), and Cho et al (2002), which concluded that the total asset is an important element in bond rating determination. LeClere (2002), Hu and Hansel (2005), Chancharat et al (2007), and Li (2009) also used this variable in their research to predict corporate financial distress and bankruptcy. Horrigan (1966) describes how the relative measure (expressed in total assets) should make a difference in the eyes of the rater or analyst. The underlying reason is that large companies are better prepared to absorb the negative impacts of economic and other natural crises than small ones. Another point of view says that a larger collection (pool) of assets means that the companies have more resources to use in their projects. Touray (2004) mentions that the larger size of the assets of a company relative to other components, the greater ability of the company to make payments to the lender in the event of a crisis. This leads us to conclude that the greater size of the assets of a company, the bigger chance for the company to get higher ranking.

Empirical findings for ROA variable in this study is in line with studies by Chavesuuk (1999), Kim (2001), Kamstra (2001), and Cho et al (2002) who found a significant relationship between ROA and bond ratings. Hadju and Virag (1996), Wen-Ying, et.al (2006) and Li and Liu (2009) used ROA as one of the important profitability variables in the modeling of financial distress and financial bankruptcy. Liang et al



(2006) also mentioned that the profitability variables are used to measure how well a company generates profits.

The empirical results for the DER, ROA variables and the coverage ratio in this study are in contradiction with many previous studies. Horrigan (1966), Belkaoui (1980), Kamstra (2001), Touray (2004) argued that the interest coverage ratio is a strong indicator of a company's financial strength. Gibson (1998), observed that firms in regulated utilities enjoy a lower cost of funds and also have the ability to raise more funds than firms in other sectors. This is because of their stable income and higher coverage ratio record. The higher a company's interest coverage ratio, the higher ranking the company can achieve. However, according to Touray (2004), there are conflicting findings about the significance of this variable in explaining bond ratings.

Credit risk indicators are also based on the company's present and past profitability. The company's profitability can be demonstrated by the return on assets and return on equity ratios. Jane Tripp Howe, in his article, Credit Analysis for Corporate Bonds emphasizes on the use of this variable in determining the credit quality, as it provides the necessary ROE component analyst and an indication of the existence of the source of future growth. Using ROE requires deep analysis. ROE varies among companies and industries. Perhaps two companies have the same ROE, but a company has a higher influence and the other has a higher asset turnover rate. Deviations on industry standards need further analysis. This could be one of the reasons why this variable is not commonly used in credit analysts.

Profitability ratios measure a company's ability to generate revenue. Income is one of the sources to fund operations. More funds, both in the working capital or cash, higher boosting of the company's liquidity there will be. There are many companies facing financial difficulties when they have negative earnings. Therefore, profit is often used as a predictor of financial distress incident. This ratio is used to test the profitability of total assets, which also represent the performance of management. A higher ratio means better management performance and less possibility for the companies to experience financial difficulties.

## **CONCLUSION**

This study aimed to analyze the effect of financial performance proxied by total assets, debt equity ratio, coverage ratio, return on assets, and return on equity to the rank of corporate sukuk in Indonesia during the period of 2007-2009. This study used multinomial logistic regression model for there are three sukuk rating categories, namely AA, A and BBB found out in 33 sample firms issuing sukuk in Indonesia. The test results showed that the possibilities for sukuk to get AA or A rating in comparison with the ones that has possibilities to get BBB rating are positively



associated with their total assets and return on assets. Both variables are significant in determining the sukuk ranking.

In order to achieve sustainable financial performance for sukuk ranking improvement, this study supports companies to obtain financing from global syariah financial markets. Then the study recommends: (i) the company must increase its total assets, and (ii) the performance of ROA profitability should remain high to attract investors.

## **BIBLIOGRAPHY**

- Al-Amine, M. Muhammad Al-Bashir. (2000). The Islamic Bonds Markets: Possibilities and Challenges, *International Journal of Islamic Financial Services*, Vol. 3, No. 1
- Amrullah, Karim. (2007). Kemampuan Rasio Keuangan Sebagai Alat Untuk Memprediksi Peringkat Obligasi Perusahaan Manufaktur. *Skripsi. UNS*.
- Andri, Wydia. (2005). Analisis Factor-Faktor yang Mempengaruhi Prediksi Peringkat Obligasi, *Buletin Ekonomi Moneter dan Perbankan*, September 2005
- Arundina, Tika dan Omar, Dato' Mohd, Azmin (2009). Faktor Penentu Peringkat Sukuk, *Buletin Ekonomi Moneter dan Perbankan*, Vol. 12, No. 1, hal. 105-123.
- Astuti, Astuti. (2008) "Pengaruh Laporan Keuangan terhadap Peringkat Hutang (Bond Rating) Studi Empiris pada Perusahaan di Bursa Efek Jakarta". *Wahana*, Vol. 6 No. 2
- Ayub, Muhammad. (2005). *Securitization, Sukuk and Fund Management Potential to be Realized by Islamic Financial Institutions*, 6th International Conference On Islamic Economic Banking and Finance, Jakarta 21-24 Nopember.
- Belkaoui, A. 1980. Industrial bond ratings: A new look, *Financial Management Autumn* 99, 44-51.
- Briefcase Book. (2006). Konsep Dasar Obligasi Syariah, Edukasi Profesional Syariah
- Chanchara. Nongnit, Pamela Davy, Michael McCrae and Gary Tian, 2007, Firms in financial distress, a survival model analysis. Working paper series Wollongong University. November.
- Chaveesuk R. Srivaree-ratana C., and Smith E. 1979. Alternative neural network approaches to corporate bond rating, *Journal of Engineering Valuation and Cost Analysis* September.
- Foster, George. 1986. *Financial Statement Analysis*. Prentice-Hall International, Inc. 2nd Edition.
- Horrigan, J.O. 1966. The determination of long-term credit standing with financial ratios.

Empirical Research in Accounting: Selected studies: 44-62.



- Jensen, M., & W. Meckling (1976), "Theory of the firm: Managerial behavior, agency, and ownership structure," *Journal of Financial Economics*, 305-360.
- Kamstra, M. et.al. 2001. Combining bond rating forecast using logit. *The Financial Review* 37, 75-96.
- Kaplan, R, and G. Urwitz, 1979. Statistical Models of Bond Ratings: A Methodological Inquiry. *Journal of Business*(52), 231-261.
- Keown, Arthur J, David F, Scott, Jr, Jhon D, Martin, dan J. William Petty. (2005), *Basic Financial Management*, 10<sup>th</sup> edition, Prentice-Hall Inc, USA
- Kesumawati, Lusi. 2003. Pengaruh Peringkat Utang dan Berbagai Faktor yang Turut Mempengaruhi Harga Obligasi Sebagai Variabel Kontrol Terhadap Yield Premium Obligasi. *Thesis S-2. Pascasarjana UGM*.
- Kim, K., and Han I. 2001. The cluster-indexing method for case base reasoning using selforganizing maps and learning vector quantization for bond ratingcases, *Expert System with Applications*, 21, 147-156.
- Rachmawati, E. Nuraini. (2007). Menanti Terbitnya Sukuk Negara untuk Mempercepat Tumbuhnya Pasar Keuangan Syariah Indonesia, *Manajemen Usahawan Indonesia*, No.07/Th. XXXVI, hal. 27-38
- Touray, A. K.2004. *Prediction a Bond rating : Multivariate Analysis of Corporate Bond, a new Look at Malaysian Corporate bonds*. Disertasi, Internasional Islamic University Of Malaysia.
- Zuhrotun dan Zaki Baridwan. 2005. "Pengaruh Pengumuman Peringkat Terhadap Kinerja Obligasi". *SNA VIII Solo*, 15-16 September 2005