Factors that Influences Credit Risk of Financing Institutions in Indonesia

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Abstract: This study aims to find and analysis factors that influences credit risk of financial institutions in Indonesia. The factors that influences credit risk are suspected by liquidity, profitability, productivity and leverage. Methodology that researcher used is explanatory with the technic collecting data sourced from financial institutions that are listed on the Indonesia stock exchange. The data used in this research is data time series of quarterly financial reporting data from the 2008-2016 financing company. And then, researcher analysed data by using multiple regression analysis. The result of analysis shows that profitability and leverage ratios have a positive effect on credit risk, while the ratio of liquidity and productivity has a negative effect on credit risk.

1 INTRODUCTION

The problem of credit risk in developing countries in the last twenty years is a problem that gets serious attention and is of special concern to researchers (Apanga et al., 2016); (Altman and Saunders, 1997); (Fatemi and Fooladi, 2006). The issue of credit risk is a very important issue, an embarrassing challenge faced by most financial institutions lately, and many companies fail to manage their credit it well. The study of credit risk is generally conducted in banking institutions (Kolapo et al., 2012); (Caporale et al., 2016); (Manab et al., 2015); (Zribi and Boujelbène, 2011); (Apanga et al., 2016); (Ekanayake and Azeez, 2015), while the study of credit risk in non-bank financial institutions is still rare (Sakyi et al., 2014), Non-bank financial institutions are supplement banking institutions to provide financial services to customers, therefore this study was conducted to ensure the level of risk and how its impact on performance.

The credit risk on financial institutions are the most important types of risk, credit risk occurs when financial institutions provide loan to debtor. According to (Al- Tamimi and Al- Mazrooei, 2007) endlessly arrears on the outstanding loan are called credit risk. Credit risk refers to the risk of economic loss due to the failure of the debtor to fulfil its contractual obligations, including inability to pay, during the period of the current contract or within the period of the agreement (Jorion, 2011), and then (Fatemi and Fooladi, 2006) said that the credit risk arising from the uncertainty for meet obligations of the debtor, the debtor's increasing types of individuals, private institutions and government agencies as well as the increasing variety of credit types (vehicle's, electronic goods, property) showed the importance of credit risk management in managing credit risk in order to avoid uncertainty.

Risk attached to every commercial aspect of the company, for financial institutions and banking credit risk is the most important factor that must be managed properly, managing risk requires serious attention and is the responsibility of all components of the company.

Credit risk plays an important role on the performance of financial institutions because, the risk of bad debts will affect performance of financial institutions. The ability of financial institutions in managing credit greatly determines continuity operational of the company as a whole, the high NPL (Nonperforming Loan) will adversely affect the company, poor return, and decreased investor and stockholder. According (Hampton, 2011); (Modigliani and Pogue, 1973), risk is the actual return of investment that is not in accordance with the

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expected results, where there is a gap between invested with the expected results, while the credit is a loan provided by the financial institution to the creditor in which there are a number of requirements and approved by both parties, including the amount of payment and the credit period.

According to (Nyangosi and Arora, 2011), in order to able manage credit risk well to know the factors causing so that can know how to handle it well. Refer to (Altman, 1968) the financial ratios as predictors and analytical tools for managing credit risk, are also used to detect corporate bankruptcy symptoms, and the high use of debt as one of the causes of corporate bankruptcy.

According to (Heffernan, 2005), there are five ways to minimize credit risk for banking and financial institutions, namely: Pricing the loan, Credit Limits, Collateral or Security, Diversification, Credit Derivatives and Asset Securitisation, then experts agree to assess credit risk by using approach 5C are: Character, Capacity, Capital, Condition, Collateral.

Based on previous study (Manab et al., 2015) said that there have four factors that influence credit are liquidity, productivity, profitability and profit, this result study find that the liquidity ratio, productivity and profitability is significant as a factor affecting the credit risk. Study (Kasana and Naveed, 2016) find that the capital adequacy ratio and loan-loss provision positive effect on credit risk, as well as operating inefficiency, GDP and growth of the company. While return on asset (ROA) significant but negative to credit risk. While operating inefficiency, loan-deposit ratio, no significant effect on credit risk.

The purpose of this study is to find and analysis factors that influences credit risk of financial institutions in Indonesia. The results of this study are expected to be useful and provide empirical evidence for companies, investors, policy makers, academics and governments, on the importance of factors that affect credit risk.

2 METHODS

The method used in this study is an explanatory survey with data collection techniques sourced from financial institutions listed on the stock exchanges of Indonesia.

The data used in this research is time series data is data finance company quarterly financial statements from 2008 - 2016. Data were then analysed using multiple regression analysis techniques, the research model as follows:

$$Y = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \varepsilon \quad (1)$$

Where:

Y: Credit Risk	= NPL/Total Loan
X1: Liquidity	= Working capital/Total assets
X2: Profitability	= Retained Earning/Total Asset
X3: Productivity	= EBIT/Total Asset
X4: Leverage	= Equity/Total Liabilities
β_0	= Constants
ε	= error

Based on theoretical framework, hypothesis in this study are as follows:

H_0: Liquidity, profitability, productivity and leverage have no effect on credit risk.

H_1: Liquidity, profitability, productivity and leverage have effect on credit risk.

3 RESULTS AND DISCUSSION

3.1 Result Study

To determine whether the research model is feasible or not, then doing the assumption classic which is includes the test of normality, multicollinearity test, and autocorrelation test. Normality test using jarque bera method, normality test result in Figure 1. Indicates that the variable Liquidity, Profitability, Productivity, Leverage and Credit Risk have normal distribution, with 95% confidence level analysis results show that all normal distributed variables this is seen with the value jarque bera of 1.190724 with *p* value of 0.5513 where *p* value > 0,05.

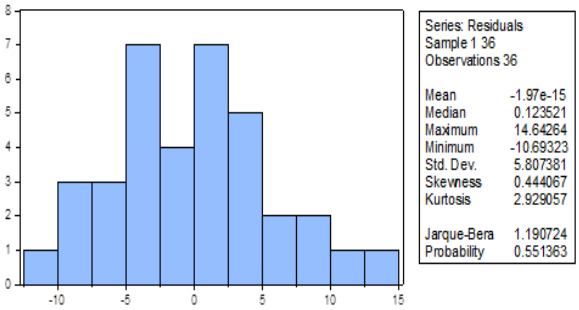

Figure 1: Normality Test

The results of multicollinearity test in Table 1. shows that Liquidity, Profitability, Productivity, Leverage and Credit Risk variables have a tolerance

value between 0.899 to 0.978 for all observation data, the value is greater than 0.10 so it can be concluded that there is no multicollinearity among independent variables, this is reinforced by the value of VIF (variant inflation factors) between 1.023 to 1.113, where the value is less than 10, it can be stated that there is no multicollinearity problem in the prediction model. Autocorrelation test results in Table 4, Durbin Watson value is 1.298, from the analysis results show that the Durbin-Watson value is greater than the value of dL is 1.235, thus there is no problem autocorrelation.

Table 1: Multicollinearity

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Liquidity	0.899	1.113
Profitability	0.978	1.023
Productivity	0.973	1.027
Leverage	0.907	1.103
a. Dependent Variable: Credit Risk		

3.2 Discussion

Descriptive statistical analysis in this study is used to determine the relationship between variables studied, namely liquidity, profitability, productivity, leverage and credit risk. The results of descriptive statistical analysis include mean, maximum, minimum and standard deviation. Mean value indicates the average arithmetic variables in this study, minimum and maximum value high and low values the variables studied, the standard deviation describes the diversity or diversity of data each variable studied. The result of descriptive analysis can be seen in Table 2.

Table 2: Descriptive Statistics

	N	Min	Max	Mean	Std.Dev
Liquidity	36	2.76	34.04	18.51	6.60
Profitability	36	0.16	0.39	0.29	0.05
Productivity	36	1.89	13.80	6.11	3.06
Leverage	36	0.84	1.99	1.48	0.29
Credit Risk	36	3.25	31.93	8.82	8.86
Valid N (listwise)	36				

The result of descriptive statistic analysis shows that credit risk that describes comparison between non-performing loan to total loan has mean 8.82 indicate that company has credit risk or bad credit 8.82% from total financing distributed by company to debtor. From the statistical results descriptive liquidity is 18.51%, this shows the company bring liquid in running operational activities. This condition means that the financing institution in Indonesia capital adequacy ratio to total assets can maintain operationalization.

Profitability is the ratio between retained earnings with total assets, describes the level of profit earned by the company within a certain time. The results of statistical analysis in Table 2 show the mean of 0.29 %, this indicates that the company has a low level of profitability in the period of analysis, as well as the level of company productivity describes the low level. This is indicated by the productivity level is 6.11 %. Each level of income after taxes to total assets only produces 6.11 %.

Leverage is the ratio between equity to total Liabilities (Jorion, 2011), the higher the leverage the higher the credit risk. However, high Leverage can increase high return on investment. The result of statistical analysis shows that leverage 1.48 %, this means finance company in Indonesia in finance operational activities and consumer financing 98.52% financed by equity and show the risk of leverage of company is very small.

The results of the correlation analysis are shows complete in Table 3. The results of the study show that the relationship between credit risk and liquidity indicates a significant negative relationship -0.588, the results of this study in accordance with the results of previous research by (Manab et al., 2015); (Yeen Lai et al., 2015), but different from the research (Kasana and Naveed, 2016). Liquidity ratio shows the company's ability to meet the obligations that have matured. This ratio is a comparison between working capital with total assets and become one of the significant factors determining the company's bankrupt (Korol, 2013).

Table 3: Correlations

	Liq	Prof	Prod	Lev	CR
Liquidity	1				
Profitability	.077	1			
Productivity	-.126	-.098	1		
Leverage	-.289	-.105	-.009	1	
Credit Risk	**-.588****	**.116**	**-.092**	**.563****	**1**
**. Correlation is significant at the 0.01 level (2-tailed).					

The relationship of credit risk to the profitability of financial institutions in Indonesia shows a positive relationship 0.116. This means that credit risk has a positive impact on the profitability of the company, as well as leverage is the ratio of total equity to total liabilities from the analysis results show that the positive significant relationship 0.56. This means that

the use of leverage has a linear relationship with credit risk. The relationship of credit risk to the productivity of the study results showed a negative result of -0.092, the ratio of productivity is the ratio between EAT to total assets, from analysis illustrates that companies that have credit risk impact on the productivity of the company.

Credit risk is one risk which should receive the attention of financial institutions. This ratio illustrates the possibility of the debtors return on the agreed commitment agreement (Zribi and Boujelbène, 2011). The importance of managing credit management is to maintain long-term corporate stability and performance, the better manage the credit risk so will impact on the lower the risk of default of the debtor. Thus, identifying the factors that affect credit risk is very important. Table 4. presents the results of regression analysis of factors that affect credit risk.

Table 4: Result of Regression Test

Variable	Coef.	Std. Error	t-Stat	Prob.
C (Credit Risk)	-5.921	10.146	-0.584	0.563
Liquidity	-0.660	0.167	-3.962	0.000
Profitability	32.638	20.791	1.569	0.127
Productivity	-0.381	0.345	-1.102	0.279
Leverage	13.299	3.741	3.554	0.000
R^2	0.570	Mean dependent var		8.819
Adj. R^2	0.515	S.D. dependent var		8.861
S.E. of reg	6.171	Akaike info criterion		6.606
Sum sq. resid	1180.39	Schwarz criterion		6.826
Log likelihood	-113.903	Hannan-Quinn criter.		6.683
F-statistic	10.293	Durbin-Watson stat		1.298
Prob. (F-stat)	0.000			

Based on the results of regression analysis, liquidity ratio has a negative effect on credit risk with the magnitude of -0.660. The results of this study are consistent with studies conducted by (Yeen Lai et al., 2015); (Manab et al., 2015). This means that rising credit risk will not affect the company's liquidity level. On the other hand, liquidity is one of the factors causing corporate bankruptcy, due to the inability of the company to finance its short-term obligations that have matured (Tykvová and Borell, 2012); (Korol, 2013); (Bee et al., 2011). The results of studies in financing institutions in this study provide empirical evidence that credit risk does not provide a significant impact on the level of liquidity of the company. Likewise, with productivity, the results show the value of -0.381, meaning that every 1% increase in credit risk negatively affect company productivity, productivity is the ratio of EBIT/Total Asset, thus any increase in credit risk does not give impact on the level of corporate earnings in a certain period, the results of this study contrasted with the study (Manab et al., 2015). Profitability is the company's ability to generate profits within a certain time period, in this study the profitability significantly positive at 32.638 against credit risks. Results of analysis showed that the company has a high profit, it means the company has a high level of risk. This study in line with results of previous study (Zribi and Boujelbène, 2011); (Manab et al., 2015), but in contrast to studies conducted by (Kasana and Naveed, 2016); (Yeen Lai et al., 2015); (Ekanayake and Azeez, 2015); (Godlewski, 2004) and (Bee et al., 2011), where profitability has a negative effect on credit risk.

Furthermore, the leverage analysis results show a positive value of 13.299, the results of this study contradict the previous study conducted by (Manab et al., 2015); (Sakyi et al., 2014). The use of leverage in financing the company on the one hand gives the company additional capability in managing operations but with high leverage the company has significant financial risk. Good leverage management have a significant impact on the performance of the company in general.

Table 5: Result Test F ANOVA

Model	Sum of Square	df	Mean Square	F	Sig.
Reg	1567.66	4	391.91	10.29	.000[b]
Res	1180.39	31	38.07		
Total	2748.05	35			
a.Dependent Variable: Credit Risk					
b.Predictors: (Constant), liquidity, profitability, productivity, leverage					

Table 5. Showing the results of anova test, the F-count value of 10.29 is greater than F-table 2.63 with probability value is 0.000. With F-count value greater than F-table and probability value 0.000 smaller than p value 0.05, it can be concluded that H_0 rejected and H_1 accepted, it means Liquidity, profitability, productivity and leverage affect credit risk.

Table 6: Result Test Coefficient of Determinant R^2

Model	R	R^2	Adj. R^2	Std. Error of the Estimate
1	0.755[a]	0.570	0.515	6.171
a.Predictors:(constant), liquidity, profitability, productivity, leverage				
b. Dependent Variable: credit risk				

Coefficient of determination R^2 displayed on Table 6. The result of analysis shows that R^2 value is

0.570. This means that as much as 57 %, the credit risk of finance companies in Indonesia is influenced by liquidity, profitability, productivity and leverage amount while the rest of 43 % is influenced by other factors. The results support the results of studies conducted by previous researchers conducted by (Yeen Lai et al., 2015); (Manab et al., 2015) and (Zribi and Boujelbène, 2011).

4 CONCLUSIONS

Some of the findings in this study both descriptively and verification showing that this study has shown the fact that credit risk of finance companies in Indonesia is influenced by liquidity, profitability, productivity and leverage. The result of analysis shows that profitability and leverage ratios have a positive effect on credit risk, while the ratio of liquidity and productivity has a negative effect on credit risk. The results of this study support the previous research conducted by (Yeen Lai et al., 2015); (Manab et al., 2015) and (Zribi and Boujelbène, 2011). Limitations of this study uses only one financial institution does not represent a credit risk for all financial institutions in around Indonesia, for further research is suggested to examine all non-bank financial institutions in Indonesia both shariah and conventional, in order to give a representation significantly. The finding added important evidence to the existing literature on credit risk specifically financial institutions and as important information for government, decisions maker, policy makers and researchers as a further study.

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