

Risk Management, Bank Profitability and Non Performing Loan

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Abstract: Risk management has an important role for supporting good corporate governance and for any business going concern, moreover under the rapid changes of business complexity and economic condition. Bank, specifically, as a business whose rely heavily on public trust, need to have a reliable risk management. The purpose of this study was to analyze the impact of credit risk management on bank profitability, with non-performing loan as an intervening variable in banking industry. This research use descriptive analysis method, with cross sectional and time series analysis. 20 bank was selected as the sample of this research, based on the purposive sampling method. We found evidence that credit risk management and non-performing loan has a significant impact on bank profitability. Bank management need to have a good credit risk management as it will improve non-performing loan, which eventually will improve bank profitability.

1 INTRODUCTION

Globalization has a significant impact on business activities, with free transfer of capital, goods, and services across national frontiers. It has increased the number and the complexity of transactions, which made banking industry always developed their business activities, to meet the business needs. However this brought additional cost for banking industry, as it will increase the banking industry risk. Banking industry activities closely related with many risks, such as market risk, operational risk, reputation risk, liquidity risk, credit risk and so on.

Banking is an industry whose business rely heavily on public trust. Bank need to raise fund from public, in order to be able to distribute fund to the debtor, as a loan, which eventually will provide a profit for the bank. Bank is an industry which quit heavily regulated by government authority, as bank rising a fund from public, so government need to protect the public interest. Therefor bank need to have a proper and reliable risk management, so it could manage risk effectively, specifically credit risk, it could comply with regulations and could maintain public trust. Bank will prone to many risks that it need to have an effective risk management. The failure in detecting and managing bank risk will cause a contraction on bank activities, decrease the output and will impact state economic condition (Joseph et al., 2012)

In the other hand, the awareness of how important it is, for a business not to pursue profit merely, but to prioritize the business going concern itself, has risen the need for every entity to apply good corporate governance in conducting their business activities. The implementation of good corporate governance is influenced by many factors, such as having a sound risk management, as an example.

Patricio (2005) study proved that the increasing of bankruptcy cases around the world has induced the urgency of improving the credit risk management, which is related with the asset's variability of cash flow as an important indicator of bank financial failure. Ghozali (2007) study proved that the implementation of bank risk management increase the shareholder value, providing management with information regarding the loss possibility which allow them to improve the decision making method and process. It is also used to measure bank's performance more accurately and also to develop a sound risk management infrastructure thus improve bank competitiveness.

The US subprime mortgage crisis, in 2008 started with default payment of property credit with subprime mortgage scheme, which could not been paid by the debtor due to the high interest rate and the downfall of property price itself. It boost the number of non-performing loan with worldwide pervasive impact including Indonesia.

The implementation of bank risk management in Indonesia is stipulated in Peraturan Bank Indonesia

Nomor 5/8/PBI/2003. Bank conducting their operational activities based on prudence principles, specifically in deciding credit approval so it could minimize the non-performing loan. Bank will evaluate the potential debtor based on several criterions, which is known as 6 C; debtor's character, capital, collateral, condition, capacity and constraint (Veithzal, 2006).

Non-performing loan is the debtor failureness to repay its debt at the specific period, based on the agreement. The existence of non-performing loan will influence the bank's profitability and bank credit risk. Lower non-performing loan, implies less bank credit risk. In Indonesia, Bank Indonesia regulation Nomor 15/2/PBI/2013, stated the ratio of bank's non-performing loan is 5%. Bank's profitability reflects bank ability to obtain profit, it is also as a measurement of management effectiveness (Wiagustini, 2010:76). Profitability could be measured by return on asset (ROA), which emphasize the company's ability to generate earning from its operational activity. Higher ROA, implies higher Banks's profitability thus better asset utilization by management (Lukman, 2009:118).

Previous study regarding bank's credit risk management, non-performing loan and profitability shown various result. Nawaz et al (2012) study proved that credit risk management impact bank's performance significantly; Li (2014) study proved that credit risk management has a positive influence on bank's profitability. However, Kithinji (2010) found that bank profitability is not influence by bank credit risk management.

Study on non-performing loan and profitability conducted by George et al. (2012); Han & Young (2012) shown that non-performing loan has a negative impact on ROA, significantly. On the contrary with the result of study conducted by Zha & Hui (2012).

2 METHODS

The purpose of this research is to study the influence credit risk management on bank's profitability with non-performing loan as an intervening variable.

To achieve that, we use descriptive analysis method, with cross sectional and time series analysis. The variables involved in this study are:

- credit risk management (as independent variable),
- bank's profitability (as dependent variable) and
- Non-performing loan (as an intervening variable).

The measurement of each variable, is provided in table 1, below.

Table 1: Operational variable and measurement

Variable	Definition	Indicator	Measurement scale
X, Credit risk management implementation (SEBI No 13/24/DPNP)	Credit risk management in providing loan	Self-assessment matrix of the implementation quality of credit risk management. Grade 1: Strong Grade 2: Satisfactory Grade 3: Fair Grade 4: Marginal Grade 5: Unsatisfactory	ordinal
Z, Non performing loan (Nawaz et al., 2012)	Credit which collectability included in trouble criterion: special mention, substandard, doubtful and bad	NPL Ratio = (The amount of credit under trouble criterion : the credit total amount) x 100%	Ratio
Y, profitability rate (Gizaw et al., 2014)	Ratio to measure management ability to generate profit	Return On Asset = (Net income : total asset) x 100%	Ratio

Conventional bank (non-Sariah bank) are used as the subject in this research. Sample selection conducted based on non-probability sampling-purposive sampling, which selected based on several criterion (Sekaran, 2011).

Table 2: Purposive sampling criterion

Number	Criteria	Amount
1	Conventional bank issued annual report 2012-2014	119
2	Conventional bank which are not listed in Indonesia Stock Exchanges during 2012-2014	(77)
3	Conventional bank did not provide risk profile and risk management report related with the assessment of the quality of risk management implementation in 2012 -2014 annual report.	(37)
4	Conventional bank fulfil the criterions	20
5	Conventional Bank data used as the sample for 2012-2014	60

At the end this research use 60 samples, as an observation. These samples are taken from 20 selected conventional bank which then being observed for 3 years (2012 – 2014).

Hypotheses being tested in this study are:

- Ho₁: β₁ > 0 “there is no negative influence between credit risk management and non-performing loan”
- Ha₁: β₁ < 0 “there is negative influence between credit risk management and non-performing loan”
- Ho₂: β₂ > 0 “there is no negative influence between non-performing loan and bank profitability”
- Ha₂: β₂ < 0 “there is negative influence between non-performing loan and bank profitability”
- Ho₃: β₃ < 0 “there is no positive influence between credit risk management and bank profitability”
- Ha₃: β₃ > 0 “there is no positive influence between credit risk management and bank profitability”

This research is using path analysis to analyze the data, as described in figure 2.

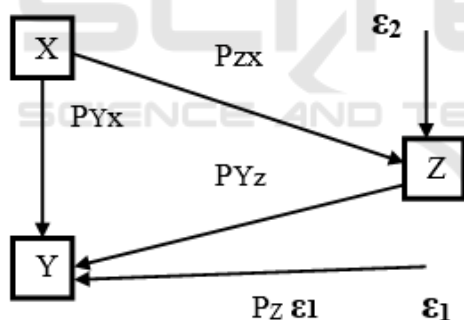


Figure 1: Path analysis diagram

The structural equation for the figure above are:

$$Z = P_{ZX} + \epsilon_2$$

$$Y = P_{YX} + P_{YZ} + \epsilon_1$$

Where as:

- X = credit risk management
- Y = profitability
- Z = non-performing loan
- ε₁ = other variable influencing Y
- ε₂ = other variable influencing Z
- P_{YX} = Path coefficient, X influence on Y
- P_{ZX} = Path coefficient, X influence on Z
- P_{YZ} = Path coefficient, Z influence on Y
- P_{Yε₁} = Path coefficient, ε₁ influence on Y
- P_{Zε₂} = Path coefficient, ε₂ influence on Z

We conducted several test including normality, multicollinearity, heteroscedasticity and autocorrelation test, followed by the F and t test.

In conducting the path analysis, we applied several steps, as described below:

1. Correlation analysis, to analyze the dependencies between variables, which determine using this model :

$$R_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

$$R^2 / KP = r^2 \times 100\%$$

Where as:

- R_{xy} = correlation coefficient
- N = sample size
- x = independent variable value
- y = dependent variable value
- KP = determination coefficient

2. Regression analysis
3. Influence calculation

We conducted one side test, using α 5 %.

3 RESULTS

Table 3 displays the descriptive statistic of credit risk management qualities.

Table 3: Credit risk management descriptive statistic

	N	Minimum	Maximum	Mean	Std. Deviation
X	60	1.00	3.00	2.1167	.55515
Valid (listwise)	N 60				

The average score for the quality of credit risk management from the sample in this research is 2.1667, which shown adequate level. The maximum score 3 shown that the worst self-assessment on the quality of credit risk management is in fair level. The minimum score 1 shown that the best self-assessment on the quality of credit risk management is in strong level. With 0.55515 standard deviation, it shown the deviation and score variability of the quality of credit risk management is quite low.

The descriptive statistic for profitability shown average score 2.1558 %, which implies the average profitability of conventional bank during the research period is 2.1558 %, with 5.15 % as a maximum score and -1.58 % as the minimum score. Standard deviation score 1.20474, shown the deviation and score variability of the profitability is quite low.

The non-performing loan descriptive statistic shown average score 2,2642 %, which is quite below

the maximum score 5%. The maximum NPL in this research is 9,95 %, with 0,21% as the minimum score. With 1.71488 standard deviation, it shown the deviation and score variability of non-performing loan is quite low.

3.1 Path Analysis Substructure 1

Path analysis on substructure 1, analyze the influence of credit risk management on NPL. Using SPSS we found the value of coefficient correlation or R 0.495, which shown quite strong correlation between variable based on Guildford criterion. The coefficient determination is 24.5 %, which implies that credit risk management contribute 24,5 % influence on NPL. The rest 75,5 % shown the contribution of other factor on NPL.

Table 4: Test result on path coefficient simulant regression

Model	Sum of squares	df	Mean square	F	Sig
1 Regression	42.557	1	42.557	18.849	0,000 ^a
Residual	130.952	58	2.258		
Total	173.509	59			

a. Predictors (constant), X
 b. Dependent variable: Z

From table 4, we can see that F-stat (18,849) > F.table (2.769431), which implies reject Ho. It means that credit risk management has a significant influence on non-performing loan.

Table 5: Test result on path coefficient partial regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std. Error			
1 (Constant)	4.591	0.570		8.054	0.000
X	-0.988	0.228	-.0495	-4.342	0.000

a. dependent variable: Z

From table 5, we can see credit risk management t score is -4.342 which is lower than t table -2.002465, therefor we reject Ho, and so we conclude that credit risk management has significant negative influence on non-performing loan.

3.2 Path Analysis Substructure 2

Path analysis on substructure 2, analyze the influence of credit risk management (X), non-performing loan (Z) on profitability (Y).

Table 6: Coefficient Correlation

Model Summary

Model	R	R Square	Adjusted R	Standard Error of The Estimate
1	0.735 ^a	0.539	0.523	0.83176

a. Predictors: (constant), Z, X

From table 6, we know the coefficient correlation (R) is 0,735, which based on Guildford criterion indicating there is strong correlation between independent and dependent variables, simultaneously.

Based on calculation, the determination coefficient is 53,9%, which shown credit risk management and non-performing loan together, have 53,9% influence on profitability, while the rest 46,1% is influenced by other factors which not being study in this research. The simulant test on substructure 2 found that F-stat is 33,388 which is higher than F.table, 2.769431. It mean the Ho is being rejected, which implies credit risk management and non-performing loan, together, have significant influence on profitability.

As for the next test, we did the partial test to analyze which variable has an influence on profitability.

Table 7: Regression on partial path coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error			
1 (Constant)	1.208	0.459		2.630	0.011
X	0.658	0.145	0.469	4.538	0.000
Z	-0.266	0.073	-0.378	-3.657	0.001

a. dependent variable: Y

From table 7, we know that the path coefficient is 0.469 for credit risk management and for non-performing loan is -0.378. The NPL partially has negative significant influence on profitability, as the t count (-3.657) is less than t table (-2.002465). In means we reject Ho for the second hypothesis.

The test on third hypothesis shown that t count is 4.538 > t table 2.002465, therefor Ho is being rejected, with conclusion that partially credit risk management has positive, significant influence on profitability.

From calculation we also found that the direct effect between X and Y (P_{yx}) is 0,469, the indirect effect of X on Y through Z is 0,187. Therefor the total effect is 0.656.

4 CONCLUSIONS

The research shown that credit risk management and NPL has significant influence on profitability, both contributes 53,9 % influence on profitability. Therefore bank management need to implement a sound and effective credit risk management in order to improve bank's performance, to be able to protect investor interest and the most important one is to prevent the banking crisis, which will have a pervasive impact.

Bank need to be equipped with comprehensive credit risk management which allow management to identify, measure, supervise and control the credit risk.

We found that credit risk management has a negative significant influence on non-performing loan. Applying a sound credit risk management is a must for banking industry, as it will decrease the non-performing loan.

This study also show that nonperforming loan has a negative significant influence on profitability. It means that the increased in nonperforming loan, due the poor bank credit quality, will resulted in a loss from bank's operational activity.

The research shown that credit risk management has a positive, significant influence on profitability. An effective credit risk management will support the achievement of bank profit, thus will increase its profitability.

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