

Effect of Credit Risk, Liquidity Risk, and Market Risk Banking to Profitability Bank (Study on Devised Banks in Indonesia Stock Exchange)

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Abstract

The Bank has risks consisting of liquidity risk, risks related to its distribution or credit and risks associated with interest rates. Bank Indonesia Regulation (PBI) no. 5/8 / PBI / 2003 concerning Application of Risk Management for Commercial Banks, which has been revised. 11/25/2009, there are seven risks contained in the banking liquidity risk, credit risk, market risk, operational risk, strategic risk, legal risk and reputation risk. This study aims to examine the effect of credit risk, liquidity risk and market risk on the profitability of foreign exchange banks in Indonesia. The study method used in this research is causal method. Population of this study is all banking shares included in the category of private foreign exchange public banks listed in Indonesia Stock Exchange (IDX) and sample obtained by using purposive sampling to get qualified research data. Analysis of data in this study using SPSS 21 software. The results showed that NPL variable, ROE variable, LDR variable does not significant affect to ROE variable and NIM variable in this study has significant affect to the ROE.

INTRODUCTION

Banking Act No. 7 of 1992 which has been revised into Law no 10 of 1998, the definition of a bank is an intermediary institution (function intermediary) which serves to collect funds from the community and channeled to the community through credit and provide other services. Thus, the bank is part of a financial institution that has an intermediary function that is collecting funds from people who are over-funded and channeled the funds collected to the under-funded community. The activity of raising funds and channeling funds is a principal activity whereas providing other bank services is only a support activity. Bank Indonesia Regulation (PBI) no. 5/8 / PBI / 2003 concerning Application of Risk Management for Commercial Banks, which has been revised. 11/25/2009, there are seven risks contained in the banking liquidity risk, credit risk, market risk, operational risk, strategic risk, legal risk and reputation risk. The Financial Services Authority (OJK) noted that the number of loans disbursed by banks as of June 2015 increased by 10.38 percent compared to the same period last year of Rp 3,828 trillion. In addition to credit, bank deposits also experienced growth of 12.65 percent to Rp 4.319 trillion. As credit expands in the first half, banking NPLs also rose to 2.55 percent. In addition, bank NIMs in the first half were at 5.32 percent or slightly down compared to the end of last year, the decline in NIM in the first half due to the downward trend in deposit rates. In addition, banks in Indonesia in the first half reduced their portion of deposits, thus affecting the banking NIMs in general. Return on equity (ROE) of banks in the first half is still at 18 percent. (Jakarta, Kompas.Com).

Loans given by banks must be carefully analyzed so that the credits already granted can be returned according to the agreed agreements. The credit should be prudent because the credit channeled will save the risk which is usually called credit risk. In the banking activities between the collection with the channeling of funds the bank experienced a mismatch both the amount of funds and time period. The amount of funds raised smaller than that distributed will cause the bank to be unable to provide funds if at any time fulfill its obligations. The amount of funds collected by banks is mostly in the short term, while lending is done in the long term. This mismatch causes banks to have liquidity risk. His research Arief and Annes (2012) found that bank liquidity risk negatively affects bank profitability in Pakistan. However, unlike Lartey et al (2013) in Ghana, Dian (2009) in Indonesia, provides evidence that liquidity has a positive effect on banking ROA in Indonesia, while Ahmad (2009) LDR (Loan to Deposit Ratio) has a positive effect on ROA (Return on Asset) of non-go public banks in Indonesia. research Dian (2009), and Ahmad (2009) showed NPL (Non Performing Loan) gives a negative influence on ROA (Return on Asset) banking. Whereas Jane (2014) found that the greater the provision (the level of NPL cost savings) will affect the return of banking stocks in Indonesia. The same result showed by Poudel (2012), even found that NPL level is predictor of banking performance in Nepal.

With the development of bank operations into foreign exchange banks, banks have an additional risk of exchange rate risk. Banks that already have foreign exchange bank status can perform their functions using foreign currency. Imbalance management between assets and liabilities in foreign currency (exposure) is what causes the risk of exchange rate. In his research Ryan and Worthington (2004), and He, et al (2014) showed similar results that exchange rate risk affects the performance of banks with foreign currency exposure. However, by Dian (2009) shows that the NOP (Net Open Position) and SBI interest rate has no effect on the ROA of banking in Indonesia.

In an effort to control risk, the bank establishes a number of risk-related conditions, such as credit risk, the bank will establish long term loan loans by providing long-term loans, the bank faces greater uncertainty. In addition, bank liquidity will be affected more by providing long-term loans. Determination of such conditions also applies to short-term loans, these are accumulated at an early stage where banks provide certain conditions that must be met and implemented by the debtor before loan disbursement takes place. Of the four risks, the research findings say that the biggest risk faced by the banks is credit risk.

Banks that have operated as foreign exchange banks, have an additional risk of exchange rate risk. The bank can perform its functions using foreign currency. The management of unbalanced exposures in assets and liabilities creates an exchange rate risk. Research He, et al. (2014) shows the result that exchange rate risk positively impacts the performance of banks with foreign currency exposure. Investors in determining investment options into a stock, will assess the company's ability to generate profits or provide results from investments invested. Therefore, companies that have gone public will seek to increase the value of their shares through profitability. Research Liadaki and Gaganis (2010), gives results that profitability has a positive relationship with the stock price of banks in Europe. Similarly, Tan and Floros (2012) study concluded that stock price volatility is a manifestation of the rise and fall of bank ROE in China.

LITERATURE REVIEW

The signal or signal according to Brigham and Houston (2006: 46) is an action taken by the company's management that gives investors clues about how management views the prospect of the company. Companies with lucrative prospects will try to avoid the sale of shares and seek any new capital required in other ways, including the use of debt in excess of normal capital structure targets. The signal theory is based on the assumption that the information received by each party is not the same. In other words, signal theory is concerned with information asymmetry. Signal theory indicates the existence of information asymmetry between the management company and the parties concerned with the information. To that end, managers need to provide information required by interested parties through the issuance of financial statements.

Assessment Bank Performance and Risk

Based on Bank Indonesia Regulation Number 13/1 / PBI / 2011, starting January 1, 2012 all commercial banks in Indonesia must use the latest bank rating guidance, RGEC method which stands for Risk Profile, Good Corporate Governance, Earnings and Capital . The method began to be used to assess the soundness of the bank's position at the end of December 2011. The regulation replaces the previous regulation, namely Bank Indonesia Regulation Number 6/10 / PBI / 2004 concerning Commercial Bank Health Rating System using CAMELS (Capital, Asset Quality , Management, Earnings, Liability and Sensitivity to Market Risk).

The amendment of the regulation is a step towards improving the bank's health assessment based on changes in business complexity and risk profile, the implementation of consolidated supervision, and changes in the approach of bank soundness rating. Substantively there are some changes in the assessment factors, but in terms of principles and the process of calculating the level of health, PBI No. 13/1 / PBI / 2011 is not much different from the PBI Number 6/10 / PBI / 2004. Bank health rating factor as regulated in Bank Indonesia Circular Letter no. 13/24 / DPNP dated October 25, 2011, among others, includes an assessment of the following factors:

- 1) Credit risk
Is a risk due to failure of the debtor and / or other parties in fulfilling the obligations to the bank. Credit risk is generally found in all bank activities whose performance depends on the performance of the counterparty, the issuer or the borrower's performance.
- 2) Market risk
Is a risk to the balance sheet position and administrative accounts including derivative transactions, due to changes in market conditions, including the risk of changes in option prices. Market risk includes among others interest rate risk, exchange rate risk, equity risk, and commodity risk.
- 3) Liquidity risk
Is a risk due to the inability of the bank to meet the obligations due from sources of cash flow financing, and / or of high quality liquid assets that can be mortgaged, without disrupting the activity and financial condition of the bank. This risk is also called the risk of liquidity funding (funding liquidity risk). Liquidity risk can also be caused by the inability of banks to liquidate assets without being subject to material discounts due to the absence of an active market or severe market disruption. This risk is called market liquidity risk.
- 4) Operational risk
Is a risk due to inadequacy and / or malfunction of internal processes, human error, system failure, and / or any external event affecting bank operations. Operational risk can be sourced from human resources, processes, systems, and external events.

- 5) **Legal risk**
Is a risk arising from lawsuits and / or weakness of juridical aspect. This risk may also arise, among others, due to the absence of the underlying legislation or the weakness of the engagement, such as the non-fulfillment of the terms of the contract or inadequate collateral.
- 6) **Strategic Risk**
Is a risk due to the inaccuracy of banks in making decisions and / or implementation of a strategic decision and failure in anticipating changes in the business environment. Strategic risks arise from weaknesses in the process of strategy formulation and inaccuracy in strategy formulation, inaccuracy in strategy implementation, and failure to anticipate changes in the business environment
- 7) **Risk of compliance**
Is a risk arising due to the bank does not comply and / or does not implement the rules and regulations and applicable regulations.

Effect of Credit Risk on Profitability

Credit risk or often called default risk is a risk due to failure or the inability of customers to return the loan amount obtained from the company and its interest in accordance with the time clock that has been determined. One form of credit risk is non-performing loans, which are classified as substandard, doubtful and loss. The level of credit risk proxied by NPL (Non Performing Loan) can be used to measure the extent to which the existing problem loans can be met with the earning assets held by a bank. (Teguh Pudjo Mulyono, 1995). The higher the ratio, the worse the credit quality of the bank, the higher the number of non-performing loans, and therefore the bank must bear the losses in its operational activities so that it affects the profit decline (ROA) obtained by the bank (Kasmir, 2004).

Influence Liquidity Risk to Profitability

Liquidity is the ability of a company to meet its short-term liabilities. This means that if the company must meet its obligations, the company will be able to meet the debt, especially debt that has matured. If the liquidity level of a bank is high, then the level of profitability will decrease. Conversely, if the bank is experiencing a low level of liquidity, it will lead to increased levels of profitability (Mohammed, 2002: 228). This is in accordance with research conducted by Primary (2011) and Elviani (2012) which concluded that liquidity (LDR) has an effect on profitability. In contrast to the results of research that has been done by Syaharman (2012) which concludes the research of liquidity has no effect on profitability.

Market Risk Influence on Profitability

Interest rate risk is a risk faced by commercial banks due to interest rate changes. This risk will occur when the bank provides loans for longer periods with high interest rates, then the interest rate decreases drastically. The main activity of banking in principle is to act as an intermediary, which is collecting and distributing public funds hence the cost and income of bank operations is dominated by the cost and interest (Dendawijaya, 2003). Net Interest Margin reflects market risk arising from changing market conditions where it can harming the bank (Hasibuan, 2006). To be able to increase the acquisition of NIM then need to press the cost of funds, the cost of funds is the interest paid by the bank to each source of funds concerned. NIM is determined from the interest rate, the greater this ratio then the interest income on productive assets managed by the bank will increase, so the possibility of banks in problem condition will be smaller (Almilia, 2005). So with a high NIM ratio then the profitability (ROA) of banks will also increase.

The framework of thinking in this study are:

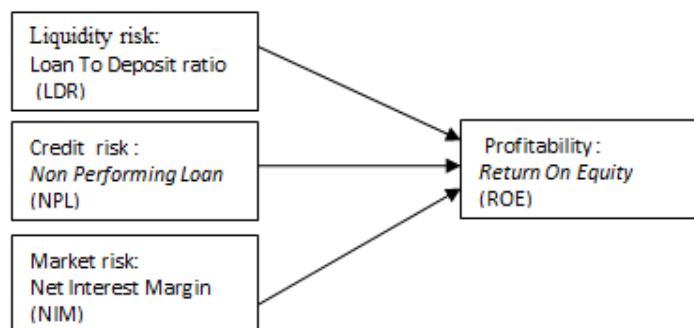


Figure 1
Thought Framework

Hypothesis in this research are:

- Ha 1 : Credit risk significant effect on profitability.
- Ha 2 : Liquidity risk significant effect on profitability.
- Ha 3 : Market risk significant effect on profitability.

METHODOLOGY

This research is a causality research which is a research that examines the influence of independent variable to dependent variable. In this study there is a relationship between the three variables that are bank risk variables, profitability and stock returns. Population is the research is all banking stocks included in the category of private foreign exchange public banks listed on the Indonesia Stock Exchange (BEI) during the period 2013 to 2015. as many as 18 foreign exchange banks. Sampling method used is purposive sampling. data of Foreign Exchange Banks in Indonesia Stock Exchange that meet the above criteria are 15 foreign exchange banks, while 3 banks are not consistently listed on the BEI with a 3 year observation period. Data collection method in this research is by literature study, that is data retrieval obtained from some literature related to the problem under study, The data is from the financial statements of foreign exchange banks listed on the Indonesia Stock Exchange period of 2013-2015 which contained in the Indonesian Capital Market Directory (ICMD) for the period of 2013-2015. Data Analysis Methods include Descriptive Statistical Test, Classical Assumption Test consists of multicolonierity test, autocorrelation, Heteroscedasticity, and normality test. Hypothesis Testing includes Determination Coefficient Test used to determine the amount of contribution generated from the independent variable to the dependent variable. The next test is a significance test consisting of F statistical test and statistical test t.

it can be concluded that the results obtained are significant and there is influence between each independent variable and dependent variable. Multiple Linear Regression Test with equation a follows:

$$ROE = \beta_0 + \beta_1 NPL + \beta_2 LDR + \beta_3 NIM + e$$

RESEARCH RESULT

Table 1 Descriptive Statistics Analysis
 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	45	.00	.97	.2947	.39495
LDR	45	.04	1.19	.6139	.37144
NIM	45	.03	.14	.0730	.02525
ROE	45	.00	.25	.1005	.06229
Valid N (listwise)	45				

Source: data processed

From the table above shows that the amount of data analyzed is 45 with the result is minimum NPL value 0.003 at Bank Mandiri and maximum 0.97 at Panin bank. NPL is a proxy of credit risk or non performing loans, classified as substandard, doubtful and loss. From the above results seen Panin banks face high credit risk. A minimum LDR of 0.04 in Permata Bank and maximum of 1.19 in Mega Bank means that Mega Bank faces a high liquidity risk because its debt is higher than its own. The minimum NIM value of 0.03 in Artha Graha bank and maximum of 0.14 in Bank Danamon indicates that the risk faced by Artha Graha bank is greater because of interest rate change so to increase NIM there needs to be interest cost savings.

Table 2 Test Data Normality
 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		45
Normal Parameters ^{a, b}	Mean	.0000000
	Std.Deviation	.05536870
Most Extreme Differences	Absolute	.146
	Positive	.146
	Negative	-.125
Kolmogorov-Smirnov Z		.983
Asymp. Sig. (2-tailed)		.289

a. Test distribution is Normal.

b. Calculated from data.

From the table above can be seen that the value of Asymp. Sig. (2-tailed) is 0.289 u value is greater than

0.05, it can be concluded that the data in this study is normally distributed. Other Classic Assumption Test such as heteroscedasticity test, autocorrelation and multicollinearity test all meet the requirements..

Table 3 Multicollinearity Test

Model	Unstandardized Coefficients		Standardized Coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
(Constant)	.073	.059			
1 NPL	-.076	.065	-.482	.114	8,750
LDR	-.038	.069	-.229	.115	8.696
NIM	1.013	.358	.411	.915	1.093

Source: data processed

From the above table it can be seen that the value of variance inflation factor (VIF) of six variables are NPL (8,750), LDR (8,690), and NIM (1.093) smaller than 10 and tolerance values of all variables above 0.1, so it can be concluded that the model regression does not experience interference multicollinearity.

Table 4 Test Auto correlation

Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.458 ^a	.210	.152	.05736	2,562

a. Predictors: (Constant), NIM, LDR, NPL

b. Dependent Variable: ROE

Source: Data processed

From the above table Durbin Watson (DW) of 2,562, it can be concluded that there is no negative correlation auto.

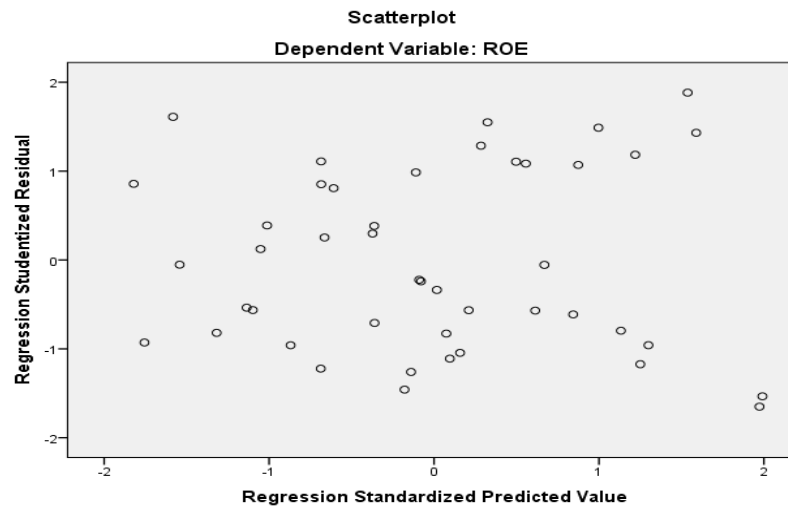


Figure 2 Test Results Heteroskidastity

From the scatter plot above it can be seen that the data points are spread and do not form the pattern. It is seen that the points spread randomly above and below the number 0 on the Y axis. It can be concluded that there is no heteroscedasticity in the regression model. So the regression model is feasible to use.

Test R Square (R²)

Table 5 Value of Regression Coefficient Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.458 ^a	.210	.152	.05736

The result of R Square test shows a value of 0.152, this means that the NPL, LDR and NIM variables affect the ROE of 15.2%, while the remaining 84.8% is influenced by other factors not explained in this study.

**Table 6 F Count value
ANOVA^a**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.036	3	.012	3.633	.021 ^b
	Residual	.135	41	.003		
	Total	.171	44			

a. Dependent Variable: ROE

b. Predictors: (Constant), NIM, LDR, NPL

In the test (Test-F) obtained significance value of 0.021 said the sample meets the model conformity test, because the signification results under 0.05.

**Table 7
T test**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	.073	.059		1.226	.227	
1	NPL	-.076	.065	-.482	-1.173	.248
	LDR	-.038	.069	-.229	-.561	.578
	NIM	1.013	.358	.411	2.831	.007

Based on the above table it can be concluded that the independent variable affecting the dependent variable (ROE) is the NIM variable, where the significance value of 0.007 or below 0.05. Based on the table then the regression equation is as follows:

$$ROE = 0.73 - 0.76 \text{ NPL} - 0.38 \text{ LDR} + 1.013 \text{ NIM}$$

The constant of 0.73 can be interpreted if the constant value of each variable x is zero then the banking ROE of 0.73%, if NPL and LDR rises then tend to decrease ROE and increase NIM will increase ROE.

DISCUSSION

Effect of NPL on ROE.

Result of research of NPL influence to ROE shows result that variable of NPL does not have an effect to ROE variable. The higher the NPL ratio the lower the ROE ratio. Increased NPLs will result in the worsening of a bank's credit quality. the increasing number of problem loans make banks not dare to increase its credit distribution especially when third party funds can not be achieved optimally it can disrupt the liquidity of a bank. Therefore, the greater the problem loans that are reflected by the NPL value, the less credit that can be channeled to the banks given the credit risks that arise. NPL is a loss of opportunity to earn (income) from credit given, thus reducing the profit and reduce ability to give credit. This study supports the research of Victor Curtis Lartey, Samuel Antwi, Eric Kofi Boadi. (2013), Sofyan Febby Henny Saputri and Hening Widi Oetomo (2016).

The influence of LDR on ROE.

The results of this study indicate that the LDR does not affect ROE This shows the liquidity needs of a bank have different capacities and depending on the size of a bank, the bank's business and so on. The ratio of LDR is the ratio between the amount of funds disbursed to the community (credit) with the amount of third party funds. However, if the loan disbursed by the bank to bad debts will actually cause the bank's income decreased, it means LDR increases but the ROE decreased due to the decrease in income due to bad debts so that bank profits will drop. This is in line with the research of Victor Curtis Lartey, Samuel Antwi, Eric Kofi Boadi. (2013) which concludes that there is an unfavorable influence between liquidity and profitability. This research does not support the research of Diana Puspitasari (2009) and Sofyan Febby Henny Saputri and Hening Widi Oetomo (2016).

Effect of NIM on ROE

Variable NIM in research have an effect on to ROE. Net Interest Margin (NIM) used to measure the bank's management capability in managing its earning assets to generate net interest income. The greater this ratio then increases the interest income. The higher the NIM indicates the more effective the bank in the placement of its assets in the form of credit. The more credit that is distributed means the higher the interest income earned from the loan disbursed then the profit will also increase. If interest income increases then the profit earned by the bank will likely increase. Higher earnings will have an impact on increasing ROE ratios. This study supports the research of Diana (2009) but contrary to Aaron's research (2016).

CONCLUSION

From the results of data testing, then the conclusion of this study is the bigger variable of problem loans that is reflected by the NPL value, the smaller the credit that can be channeled the bank to the community considering the credit risk arising. NPL is a loss of opportunity to earn (income) from the credit provided, thus reducing the profit. The ratio of LDR is the ratio between the amount of funds disbursed to the community (credit) with the amount of third party funds. However, if the loan disbursed by the bank into bad debts will actually cause the bank's income to decline, it means LDR increases but the ROE decreases because of the decrease in income does not affect the ROE while the NIM variables affect the ROE. The higher the NIM indicates the more effective the bank in the placement of its assets in the form of credit. The more credit that is distributed means the higher the interest income earned from the loan disbursed then the profit will also increase.

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