Analysis of The Effect of Capital, Credit Risk, and Liquidity Risk on Profitability in Banks

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Abstract

This research aims to analyze the influence of bank-specific component to profitability of banking industry within the classification of commercial banking category 3 (Bank Umum Kegiatan Usaha 3, classification based on Central Bank of Indonesia) in the period of 2011 until 2015. The number of sample for this research are 8 banks or Bank Devisa. Independent variable used for this research are based on the ratio of banks. There are Capital measured by Capital Adequacy Ratio, Credit Risk measured by Non Performing Loan, and Liquidity Risk measured by Loan to Deposit Ratio. While dependent variable Profitability measured by Return On Assets. This research analyzed using Eviews 7 program for Panel Data Regression. The result of this research shows that Capital and Liquidity Risk has insignificance effect to Profitability. Meanwhile, Credit Risk has significant effect to Profitability

Keywords: CAR, NPL, LDR, Profitability (ROA), Risk

Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh komponen bank-spesifik terhadap profitabilitas industri perbankan yang termasuk dalam kategori Bank Umum Kegiatan Usaha (BUKU) 3 pada periode 2011 hingga 2015. Jumlah sampel untuk penelitian ini adalah 8 bank atau Bank Devisa di BUKU. Variabel independen yang digunakan untuk penelitian ini didasarkan pada rasio bank. Modal yang diukur dengan Capital Adequacy Ratio, Risiko Kredit diukur dengan Non Performing Loan, dan Risiko Likuiditas diukur dengan Loan to Deposit Ratio. Kemudian, variabel depedent Profitabilitas diukur dengan Return On Assets. Penelitian ini telah dianalisis menggunakan program Eviews 7, untuk Regresi Data Panel. Hasil penelitian menunjukkan bahwa Risiko Modal dan Likuiditas berpengaruh tidak signifikan terhadap Profitabilitas. Sementara itu, Risiko Kredit memiliki pengaruh signifikan terhadap Profitabilitas.

Kata Kunci: *CAR, NPL, LDR, Profitabilitas (ROA), Risiko*

1. Introduction

According to Banking Regulation No. 10/1998, banks are defined as busi- ness entities that collect funds from the public in the form of deposits and channel them to the public in the form of credit or other forms.

The bank is a business entity in the financial sector with the main activity of receiving deposits and then re-allocating them in the form of loans and other services to the people who need them. So that banks can obtain benefits that are their main objectives (Rivai et al., 2007 p. 321).

The main objective of the banking business is to achieve maximum profit. Profitability is the bank's ability to generate / earn profits (Gibson, 2011). Bank ROA is an indicator of managerial efficiency, because it can indicate the ability of management of the bank to generate income from its assets (Rose, 2013).

In the last 4 years, the performance of commer- cial banks has increased in terms of capital in the form of capital, core capital and Capital Adequacy Ratio (CAR). While third party funds and lending also increased significantly. The increase in lending was re- corded at 11%- 22% accompanied by an increase in third party funds (DPK) and Loan to Deposit Ratio (LDR).

Banking financial performance can be said to have not experienced an overall increase, because Return on Assets (ROA) in 2013 to 2015 had decreased by 0.79% from 3.11% to 2.32% in 2015. Likewise with profit growth 13 Commercial Banks at BUKU 3 between 2012 and 2014. In 2013 and 2014, the average bank experienced a decline in profit growth, even a minus, meaning that there were banks that did not benefit.

It has been suggested that of the causes of the decline in bank profits in 2013 and 2014 was due to the increase in the BI Rate in June 2012 to June 2013. The BI Rate is a pol- icy interest rate that reflects the monetary policy stance. This reference interest rate is set by Bank Indonesia and announced to the public. In the third quarter of 2013 the BI Rate increased slowly to 7.25 percent and stability was achieved when entering 2014 with a figure of 7.50 percent until the end of 2015. The increase in the BI Rate affected credit distribution in the banking sector which was slow, accompanied by decrease in third party funds.

When the BI Rate increases, people prefer not to apply

Table 1. Data of Indonesian Commercial Banks (in billion rupiah)

	2012	2013	2014	2015
Capital	496.629	626.888	694.198	914.657
Core Capital	444.545	565.774	694.198	812.590
Credit Distribution (Non Bank)	2.707.862	3.292.874	3.674.308	4.057.904
Third-party funds	3.225.198	3.633.968	4.114.420	4.413.056
Return On Asset	3.11%	3.08%	2.85%	2.32%
Capital Adequacy Ratio	17.43%	18.13%	19.57%	21.39%
Loan to Deposit Rasio	83.58%	89.70%	89.42%	92.11%

for credit. Rising lending rates are risky for customers who have difficulty paying their debts. This condition can increase the ratio of non-performing loans. Rising BI Rate causes the Loan to Deposit Ratio to decrease while Third Party Funds (DPK) can increase because people prefer to save their funds in the hope of a high rate of return. But on the management side of the bank has its own concerns, that is when the BI Rate rises, the interest on the DPK return will go up, so the bank must be prepared with deposits that have matured interest.

Based on the above phenomenon, it can be simplified that there is a gap between ROA which is decreasing every year, accompanied by an increase in bank capital, loan to deposit ratio, and non-bank loan distribution. The decline in net profit was due to the increase in the BI Rate for the last 3 years. However, if we look back on whether there is a direct influence on capital increase, loan to deposit ratio, and non-bank loan distribution to decrease bank profit directly without the role of the BI Rate.

2. Literature Review and Theoretical Framework
Profitability

Profitability is the company's ability to generate profits (Gibson, 2011). One of the main objectives of the bank is to achieve optimal profit from each of its business activities. Every bank will always try to increase its profit (profit). If the bank manages to achieve its optimal profits, it can be said that the bank is able to manage its resources effectively as well as efficiently. If a bank has a low profit level, it means that the bank is unable to manage its resources properly, so that it cannot generate high profits.

Profitability ratios, known as profitability ratios, can be used to measure the level of effectiveness of management in carrying out its operations. ROA shows the results of return on assets which means that ROA can measure how much net income will be generated from every one rupiah of funds embedded in total assets. The higher returns on assets means the higher the amount of net income generated from each rupiah fund embedded in total assets. If there is a decrease in ROA from the current year to the previous year, it means that there are several factors that influence it (Hery, 2015)

Capital

Capital has several functions according to Saunders & Cornett (2006), namely:
1. To absorb unexpected losses with enough margin to inspire confidence and allow financial intermediaries to continue.
2. To protect uninsured depositors, bondholders and creditors in the event of bankruptcy, and liquidation.
3. To protect insurance funds for financial intermediaries and taxpayers.
4. To protect the owner's financial intermediaries against the increase in insurance premiums.
5. To fund branches and other real investments needed to provide financial services.

CAR is an indicator of capital adequacy used to assess the health of a bank. Capital adequacy is related to the provision of own capital which is needed to cover the risk of losses arising from the movement of bank assets, which is basically the majority of funds sourced from third party funds or the public. If the CAR of a company increases, then the ability of the bank to bear the risk of financing also increases. According to Bank Indonesia Regulation No. 13/3 / PBI / 2013, when a bank's CAR does not reach its minimum, 8% means that the bank is considered to have potential difficulties that could endanger its business continuity.

Risk management

Bank Indonesia Regulation No. 11/25 / PBI / 2009 states that, risk management is a series of methodologies and procedures used to identify measures, monitor and control risks arising from all bank business activities. Referring to Bank Indonesia Regulation No. 13/1 / PBI / 2011 concerning the assessment of the soundness level of commercial banks there are 8 kinds of risks that can be found in the bank industry, namely: Credit Risk, Liquidity Risk, Market Risk, Operational Risk, Legal Risk, Reputation Risk, Strategic Risk and Compliance Risk.

Credit Risk

Credit risk is a potential loss due to the failure or inability of the customer to return the amount of the loan obtained from the bank and the interest in accordance

with a predetermined period of time (Siamat, 2005). Credit risk comes from a variety of bank functional activities such as credit, treasurry and investment, and trade finance, which are recorded in the banking book, as well as trading books (Ali, 2006).

In addition, credit risk can be caused by customer factors as borrowers in the presence of moral hazards and adverse choices. High risk borrowers hope to get high returns (high risk, high return), but to get them they make adverse choices. After obtaining a loan, the problem of moral hazard arises because the borrower has the intention to invest his loan funds into investments which he thinks provide a high return (Silvanita, 2008).

This study will use Non Performing Loans as a measure of credit risk. Non-Performing Loan Ratio is the ratio between the number of non-performing loans to the total amount of loans granted. This ratio indicates that the higher the NPL ratio, the worse the quality of credit (Taswan, 2010 p. 166). Non-Performing Loans are ratios that reflect financing risk on bad loans.

Liquidity Risk

Liquidity risk is a risk caused by banks not being able to meet short-term obligations that have matured (Ali, 2006). The assessment of liquidity risk cannot be separated from the role of bank liquidity itself. Liquidity is the ability of a company to fulfill its short-term obligations in a timely manner (Fahmi, 2015 p. 119). Liquidity of a bank with bank liquidity risk and profitability is inversely proportional (Van Horne & Wachowiz, 2005). High bank liquidity will produce low profit, on the contrary when the level of liquidity is low, it will generate high profit.

In liquidity activities, there can be 2 types of risk, namely the risk of excess funds and the risk of lack of funds. When a lot of funds in a bank are unemployed or not running, causing a high interest rate sacrifice, it can be stated that the bank is at risk of excess funds. However, when the funds available to complete the term liability needs are not fulfilled, it means that the bank is at risk of lack of funds (LSPP-IBI, 2012).

Loan to Deposit Ratio is chosen as a measurement tool because this ratio shows the availability of data and sources of funds of the bank at present and in the future. Based on the formula, LDR can find out how much the loan can be financed from loan funds received which are sensitive to changes in interest rates (Soedarto, 2007). The greater this ratio indicates the bank is more aggressive or the bank is quite active in channeling its credit funds, while the smaller this ratio means the greater the third party funds that are not used for lending (Taswan, 2010). A bank's safe LDR limit according to PBI No. 17/11 / PBI / 2015 is the lower limit of the 78% LDR target and the upper limit of the LDR Target is 92%.

Commercial Bank Business Activities (BUKU)

Referring to PBI No. 14/26/2012, Commercial Banks based on Business Activities commercial banks are grouped based on business activities in accordance with their core capital. Banks are categorized into 4 (four) commercial banks business category or BUKU:

a. BUKU 1 is a bank with Core Capital up to less than Rp1,000,000,000,000.00

b. BUKU 2 is a bank with a core capital of at least Rp1,000,000,000,000.00 up to less than Rp5,000,000,000,000.00

c. BUKU 3 is a bank with Core Capital of at least Rp5,000,000,000,000.00 up to less than Rp30,000,000,000,000.00

d. BUKU 4 is a bank with a core capital of at least Rp30,000,000,000,000.00

Hypothesis Development

Capital Influence (CAR) on Profitability (ROA).

Strong capital will be able to maintain the level of public trust in the bank. In accordance with the principle of the bank being an intermediary institution, the funds collected by the bank must be channeled into their business activities and will receive a large profit (Pasaribu & Sari, 2011). When a bank's capital is below 8%, the bank has the potential to be unable to cover its business activities when the risk occurs. For this reason bank capital should be above 8% minimum, because capital is one of the determinants of the rise and fall of profitability or profit (Siamat, 2005).

Afriyie & Atokey (2013) and Antoni & Nasri (2015) show the results that CAR has no significant positive effect on ROA. Sukarno & Syaichu (2006), and Pasaribu & Sari (2011) stated significant positive between CAR and ROA. Meanwhile, Idris et al. (2011) showed a significant negative result between CAR and ROA. So that the neutral hypothesis built is:

Ho1 = Capital does not have a significant effect on Profitability

Ha1 = Capital has a significant effect on Profitability

Effect of Credit Risk (NPL) on Profitability (ROA)

People who have excess funds tend to invest their funds in a place that can provide benefits and security. But problems arise when the stored funds no longer offer security and profit. One of the things that can cause inconvenience is when a credit risk occurs, namely bad credit. Banks receive the excess funds of the community and are responsible for providing a number of benefits in the form of interest and also managing the funds in the form of credit. Banks can take advantage of the difference in profit from lending as banking income (Fahmi, 2015). When a bank has many non-performing loans, the bank's profitability can decrease. NPL according to PBI No. 13/1 / PBI / 2011 is a comparison between the total problem loans to the total loans given to third parties.

Antoni & Nasri (2015) and Idris et. al. (2011) obtain-

ing NPL results has a negative effect on ROA. The neutral hypothesis built is:

Ho2 = Credit Risk has no significant effect on Profitability

Ha2 = Credit Risk has a significant effect on Profitability

Effect of Liquidity Risk (LDR) on Profitability (ROA)

One ratio that is often used as an indicator to measure the implementation of the banking intermediary function is the Loan to Deposit Ratio. The higher LDR shows that the financial institution is illiquid or the company cannot fulfill its obligations, whereas when the low ratio level indicates that the bank is liquid or the company can fulfill its obligations. Banks that are in illiquid conditions will find it difficult to regain public trust and carry out the bank's main operational activities in channeling dredges so that they have an impact on high and low profitability (Kasmir, 2011 in Prasetyo and Darmayanti, 2015). Pasaribu & Sari (2011) and Sukarno & Syaichu (2006) get positive results between LDR and ROA. The neutral hypothesis built is:

Ho3 = Liquidity Risk has no significant effect on Profitability

Ha3 = Liquidity Risk has a significant effect on Profitability

3. Research Method
Research Procedure

Population refers to all groups of people, events or things that are interesting to be investigated by researchers and conclusions can be made based on statistical samples (Sekaran & Bougie, 2013). The population in this study is the classification of Commercial Bank Business Activities 3 (BUKU 3) following PBI No. 14/26 / PBI / 2012. Whereas, the sample is a subset of the population (Sekaran & Bougie, 2013). The purposive sampling technique is a sample determination technique due to several criteria set out in this study. The sample used is a Foreign Exchange Bank registered at the Indonesian Banking Directory in 2011 - 2015.

4. Result, Discussion, and Managerial Implication

Data Presentation

Return on Assets (ROA) as the dependent variable in this study shows the average (mean) value of all foreign exchange banks at BUKU 3 in 2011 - 2015 was 1.83% with a mean value of 1.8%. The standard deviation in this variable is smaller than the mean value, meaning that asset turnover is relatively stable.

The average CAR value of all Foreign Exchange Banks at BUKU 3 in 2011 - 2015 was 16% with a middle value of 15.7%. This means that in this period the sample bank has a good CAR value because the value is above the minimum stipulation set by Bank Indonesia, which is 8%. The standard deviation in this variable is smaller than the mean value, meaning that the data in this variable is well distributed.

The average LDR value of all Foreign Exchange Banks at BUKU 3 of 2011 - 2015 was 86.7% with a middle value of 89.2%. That is, in that period the sample bank has a good LDR value because the value is in the middle and maximum provisions set by Bank Indonesia, namely 72% - 92%. The standard deviation in this variable is smaller than the mean value, meaning that the data in this variable is well distributed.

Hypothesis Testing

Based on the regression results of the research model above, the multiple linear regression equation is obtained as follows:

$$ROA_{it} = 0.066026 + 0.036138 * CAR_{it} - 0.727476 * NPL_{it} - 0.042890 * LDR_{it} + \varepsilon_{it}$$

Discussion
Capital Influence (CAR) on Profitability (ROA).

CAR has a probability of 0.4977 5 0.05, which means Ha1 is rejected. The results show that CAR has no significant effect on ROA. The CAR regression coefficient of 0.686813 shows that CAR does not have a positive effect on ROA.

Effect of Credit Risk (NPL) on Profitability (ROA).

NPL has a probability of $0.0002 \leq 0.05$ which means that Ha2 is accepted. The results show that NPL has a sig-

Table 2. Research Samples

NO	BANK CODE	BANK NAME
1	028	Bank OCBC NISP
2	023	Bank UOB Indo
3	011	Bank Danamon
4	441	Bank Bukopin
5	022	Bank CIMB Niaga
6	019	Bank Pan Indonesia (Bank Panin)
7	426	Bank Mega
8	013	Bank Permata

Source: www.bi.go.id

Table 3. Results of Descriptive Statistical Analysis

	ROA	CAR	NPL	LDR
Mean	0,018350	0,160925	0,022368	0,867793
Median	0,018000	0,157300	0,022150	0,892850
Maximum	0,031800	0,228500	0,040100	1,005700
Minimum	0,001600	0,118600	0,007300	0,523900
Std. Dev	0,007561	0,022410	0,008118	0,110093

nificant effect of 5% on ROA. The NPL regression coefficient value of -4.312243 indicates that NPL affects ROA.

Effect of Liquidity Risk (LDR) on Profitability (ROA).

LDR has a probability of 0.1015 5 0.05, which means that Ha3 is rejected. The results show that LDR has no significant effect on ROA. LDR regression coefficient value of -1.691381 indicates that the LDR variable does not affect ROA.

Managerial Implication

The implication of this study refers to the results of hypotheses from variables that affect Return on Assets (ROA). Based on the three independent variables namely Capital Influence (CAR), Effect of Credit Risk (NPL) and Effect of Liquidity Risk (LDR) only Credit Risk proxied by Non-Performing Loans (NPLs) have a significant effect on Profitability proxied by ROA. Factors that make it significant, because generally the Foreign Exchange Bank at BUKU 3 has a low problem loans due to selective and prudential principles in lending along with the provision of increased total loans so that the tendency of NPL values to shrink. In addition, credit repayments are quickly repaid with interest loans and increase bank income.

5. Conclusion

1. Capital proxied by Capital Adequacy Ratio (CAR) has no significant effect on Profitability proxied by ROA. The factor that makes it insignificant, because generally the Foreign Exchange Bank at BUKU 3 has a large CAR but does not use it for bank services. So that the benefits obtained by the

amount are not too significant.

2. Credit Risk is proxied by Non-Performing Loans (NPLs) which have a significant effect on Profitability proxied by ROA. Factors that make it significant, because generally Foreign Exchange Banks at BUKU 3 have low problem loans. So that the credit repayment is quickly repaid along with the loan interest and increases the bank's income.

3. Liquidity risk proxied by Loan to Deposit Ratio (LDR) has no significant effect on Profitability proxied by ROA. The factor that made it insignificant, due to the increase in the BI Rate 2012-2014 was followed by an increase in deposit and credit interest rates.

Suggestion

1. The bank should further enhance the principle of prudence in lending with the criteria set by the Financial Services Authority so that the risk of bad credit can be minimized.

2. Banking at BUKU 3 can further channel credit more aggressively so that the total credit channeled is even greater with the precautionary principle.

3. The public should be wiser in accepting loans distributed by banks based on their ability to pay and their financial flow.

Research Limitations

1. The study was conducted at BUKU 3 banks not

Table 4. Results of Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Kesimpulan
CAR	0,036138	0,052617	0,686813	0,4977	Tidak Signifikan
NPL	-0,727476	0,168700	-4,312243	0,0002	Signifikan
LDR	-0,042890	0,025358	-1,691381	0,1015	Tidak Signifikan
C	0,066026	0,022848	2,889771	0,0072	-
R-Squared				0,588883	
Adjusted Square				0,447118	
F-Statistic				4,153947	
Probability (F-Statistic)				0,001263	
Durbin-Watson stat.				1,953598	

on other criteria so that they cannot be compared between bank book criteria.

2. This study only looks at the effect of Capital Influence (CAR), Effect of Credit Risk (NPL) and Effect of Liquidity Risk (LDR) on Return on Assets (ROA) of all banks on BUKU 3 criteria cannot see the influence of each variable to the ROA of each bank.

3. The application of this managerial implication is general for BUKU 3 bank criteria so that further analysis is needed for each bank.

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