

**EFFECT CAPITAL ADEQUANCY RATIO (CAR) AND NON PERFORMING LOAN (NPL) ON
RETURN ON ASSET (ROA) BANKING IN INDONESIA**
(Survey on Indonesia Stock Exchange /IDX)

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Abstract

The Study will examine the effect of CAR an the level of NPL to ROA on the banks contained in ISE. The research using multiple linier regression analysis model, using data processing program PASW statistic 18.

The test results showed that simultaneous CAR and NPL had on significant effect on ROA. While testing partial show that CAR doesn't have a significant effect on ROA, but NPL have significant effect on ROA.

Keywords : Capital Adquacy Ratio (CAR), Non Performing Loan (NPL), Return on Asset (ROA).

Background

The word of banking is very important place in the economy of the country, because of the importance of the role of banks in the performance of the function it needs to be well and properly. It aims to maintain customer confidence in the banking system. One of the rules that need to be made to regulate the banking system is the regulation of bank capital that serves as a buffer against potential losses (www.bi.go.id).

The crisis in the banking sector in 1997, either directly or indirectly related to the activities normally performed by the banking industry it self. Fund-raising activities conducted by the banking industry will affect stability of the banking industry.

A bank operations can be good if the bank has sufficient capital. Because capital is very infortant factor in business development bank. Assessment of capital to banks based on the Capital Adequacy Ratio (CAR) is a ratio minimum capital obligations that must be owned by the bank.

Health is the influenced by the level of bank capital bank liquidity, the bank's ability to meet its short-term obligations or liability that is due. Banks can not optimize its capital if banks keep liquidity is too high it will be a lot of idle funds, so the profitability is low. Profitability is low, then the bank will not be able to increase its capital. Bank capital is not optimal, so that the bank will not be able to meet the standards of a healthy CAR. So that CAR is also closely linked to liquidity conditions (Dendawijaya,2005).

As examples of cases in Indonesia related to the closing of a bank because of the erosion of CAR due to the level of NPL, which has exceeded the maximum limit set by Bank Indonesia (BI), amounting to 5% is a case of IFI Bank. Revocation IFI Bank done because the bank health continued to deteriorate,

while the owner was also able to recue or selling shares. Market with a statutory violation (in Indonesia Giro Wajib Minimum / GWM) and up to 24 percent surge in NPL. In effect, the IFI's CAR falls below 8 percent minimum requirement so that in September 2008 entry under special supervision by Bank Indonesia.

By knowing the level of CAR, NPL and ROA, it can be seen the financial performance of each bank, if the bank has been working efficiently and can also be shown the soundness of the bank.

Problem are identified as follows :

1. Is the CAR and NPL simulataneously influence the ROA on banking companies listing on IDX?
2. Is the CAR and NPL an effect partially on ROA on banking companies listing on IDX?

Purpose of the study as follows:

1. Know effect simultaneously CAR and NPL on ROA banking listing on IDX.
2. Know effect partially CAR and NPL on ROA banking listing on IDX.

Theory

A. Bank Risks

The types of banking business risks can be divide as follows :

- a. Credit risk
- b. Economic risk
- c. Risk of government policy changes
- d. Liquidity risk
- e. Operational risk
- f. Competition risk
- g. Risk of insufficient capital
- h. Foreign Exchange risk
- i. Risk technology

B. Type of Financial Ratios Bank

According Kasmir (2008), the type of financial ratios that are common to the bank are as follows :

- a. Liquidity ratios is a ratio to measure the bank's ability to meet its short-term obligations at the time billed.
- b. Solvency ratios is a measure of the ability of banks to source funds to finance their activities.
- c. Profitability ratios are often caeled profitabilitas effort. This ratio is used to measure the level of business efficiency and profitability achieved by the banks concerned.

C. Capital Adequacy Ratio (CAR)

CAR by Riyadi (2008) is the ratio of the minimum capital obligations that must be owned by the bank. For the current minimum CAR of 8% of Weighted Assets Ratio (in Indonesia Aktiva Tertimbang Menurut Resiko / ATMR), or couple with market risk, it depends on the condition of the bank concerned. CAR stipulated by BI, referring to the provision / International standards issued by the Bankin for International Settlements (BIS). The formula for calculating CAR is a follows :

$$CAR = \frac{\text{Modal}}{\text{ATMR}} \times 100\%$$

D. Non Performing Loan (NPL)

NPL is the possibility of failure or repayment of credit provided by the bank. BI through BI's regulation provides that the ratio of NPLs amounted to 5%. NPL can be formulated as follows (Joseph and Hanifah, 2006)

$$NPL = \frac{\text{Aktiva Produktif Non Performing}}{\text{Total Loan}}$$

E. Profitability

Profitability demonstrate the company's ability to earn a profit or the extent to which the effectiveness of the management company for a profit. Sartono (2002) argues that the profitability is a follows: "the profitability of a company's ability to earn a profit in relation to sales, total assets or equity".

ROA is a profitability ratio that shows the comparison between income (before taxes) to total bank assets, this ratio shows the efficiency of the management of the assets by the bank concerned. ROA can be formulated as follows (Riyadi,2006) :

$$ROA = \frac{\text{Laba Sebelum Pajak}}{\text{Total Aset}} \times 100\%$$

The subject of this study is banking companies listed on IDX, with the creteria specified in the study were banking company that publishes financial report for the past 5 years or since 2006 and belongs to the largest 10 banks by assets and market share released by BI in 2010, the study subjects were obtained by 9 banking firm. Banking companies are:

1. PT Bank Mandiri Tbk
2. PT Bank Rakyat Indonesia Tbk
3. PT Bank Central Asia Tbk
4. PT Bank Negara Indonesia Tbk
5. PT Bank CIMB Niaga Tbk
6. PT Bank Danamon Tbk
7. PT Bank Pan Indonesia Tbk
8. PT Bank Permata Tbk
9. PT Bank International Indonesia Tbk

Description of CAR

The CAR is one of the important factors in the development of businesses in accommodating the risk of loss, the higher the CAR, the more powerful the ability of the bank to assume the risk of any credit or productive assets at risk. Under the terms of the BI No.10/15/PBI/2008 CAR of Banks effect January 1, 2009 states that the minimum capital requirement of 8% of Risk Weighted Assets (RWA). CAR can be calculated by dividing the capital to RWA. Here is an overview of data development CAR of the banking sector on 9 companies listed in the IDX 2006 to 2010.

Table 1. Trends of Capital Adequacy Ratio (CAR)

| No | Issuers | Year | | | | | Statistical Average |
|----|-----------|-------|-------|-------|-------|-------|------------------------|
| | | 2006 | 2007 | 2008 | 2009 | 2010 | |
| 1 | BMRI | 25,3 | 21,1 | 15,7 | 15,6 | 14,7 | 18,48 |
| 2 | BBRI | 18,82 | 15,48 | 13,18 | 13,2 | 13,76 | 14,88 |
| 3 | BBCA | 22,1 | 19,2 | 15,8 | 15,3 | 13,5 | 17,18 |
| 4 | BBNI | 15,3 | 15,7 | 13,5 | 13,8 | 18,6 | 15,38 |
| 5 | BNGA | 18,88 | 17,03 | 15,59 | 13,53 | 13,24 | 15,66 |
| 6 | BDMN | 20,8 | 20,3 | 15,4 | 20,7 | 16,0 | 18,64 |
| 7 | PNBM | 29,47 | 21,58 | 20,31 | 21,79 | 16,58 | 21,94 |
| 8 | BNLI | 13,5 | 13,3 | 10,8 | 12,2 | 14,1 | 12,78 |
| 9 | BNII | 23,34 | 20,19 | 19,44 | 14,71 | 12,65 | 18,06 |
| | Rata-Rata | 20,83 | 18,2 | 15,52 | 15,65 | 14,79 | 17 |

Source : results by researcher

Table 1 shows that the average CAR at the Bank Pan Indonesia is the largest among the nine banking companies during the year 2006 to the 2010, average of 21,94% annually. Out second followed by a CAR of Bank danamon, which is an average of 18,64% annually. Thing visible on the opposite Bank Permata where CAR reached an average of only 12,78% annually, though the CAR of Bank Permata still greater than the minimum threshold set by BI, amounting to 8%.

Description of NPL

Non-performing loans is the ratio of non-performing earning assets divided by total bank loans. NPL maximum limit allowed by BI at this time is a maximum of 5%, if a bank's NPL exceeds 5% then this will affect the soundness of the bank's assessment, which will reduce the value/score obtained. The higher level of NPLs at a bank, it indicates that banks are not professionals in the management of credit, as well as giving an indication that the level of risk bank loan is quite high.

Table 2. Trends of NPL

| No | Issuers | Year | | | | | Statistical Average |
|----|-----------|------|------|------|------|------|------------------------|
| | | 2006 | 2007 | 2008 | 2009 | 2010 | |
| 1 | BMRI | 16,3 | 7,2 | 4,7 | 2,8 | 2,4 | 6,68 |
| 2 | BBRI | 4,81 | 3,44 | 2,80 | 3,52 | 2,78 | 3,47 |
| 3 | BBCA | 1,3 | 0,8 | 0,6 | 0,7 | 0,6 | 0,8 |
| 4 | BBNI | 10,5 | 8,2 | 4,9 | 4,7 | 4,3 | 6,52 |
| 5 | BNGA | 3,08 | 3,03 | 2,50 | 3,06 | 2,53 | 2,84 |
| 6 | BDMN | 3,3 | 2,3 | 2,3 | 4,5 | 3,0 | 3,08 |
| 7 | PNBM | 7,95 | 3,06 | 4,34 | 3,15 | 4,36 | 4,57 |
| 8 | BNLI | 6,4 | 4,6 | 3,5 | 4,0 | 2,7 | 4,24 |
| 9 | BNII | 5,03 | 2,92 | 3,20 | 2,42 | 3,09 | 3,33 |
| | Rata-Rata | 6,5 | 3,9 | 3,2 | 3,2 | 2,8 | 3,9 |

Source : results by researcher

Table 2 shows that the average level of NPL at Bank mandiri is the largest among the nine banks during 2006 to 2010, is an average of 6,68% annually. Second best follows by the level of NPL of Bank Negara Indonesia, which is an average of 6,52% annually. Things contradiction seen in Bank central Asia, where the average credit problems will only reach 0,8% annually. The Bank CIMB Niaga with the average level of credit problems will only reach 2,84% annually.

In total average NPL 9 banking companies that were visited during the study period of 2006 to 2010 is 3,9% and the rate of NPL declined during the period 2006 to 2010. NPLs of 9 banking companies tend to decline during the period 2006 to 2010 and still below the maximum NPL set by BI, amounting to 5%. So it can be concluded that in general the condition of the banking sector NPL 9 companies are pretty good.

Description ROA

One indicator are used by companies to measure the ability of bank management to gain or profit as a whole is one of them by measuring the level of ROA. ROA ia a profitability ratio that shows the comparison income (before tax) with the total assets of te bank. The larger the ROA a bank, the greater the level of profits earned by the asset.

These data development ROA in 9 companies of the banking sector sample aauthors listed on the IDX from 2006-2010.

Table 3. Trends of Profitability

| No | Issuers | Year | | | | | Statistical Average |
|----|-----------|------|------|------|--------|------|------------------------|
| | | 2006 | 2007 | 2008 | 2009 | 2010 | |
| 1 | BMRI | 1,1 | 2,3 | 2,5 | 3,0 | 3,4 | 2,46 |
| 2 | BBRI | 4,36 | 4,61 | 4,18 | 3,73 | 4,64 | 4,30 |
| 3 | BBCA | 3,8 | 3,3 | 3,4 | 3,4 | 3,5 | 3,48 |
| 4 | BBNI | 1,9 | 0,9 | 1,1 | 1,7 | 2,5 | 1,62 |
| 5 | BNGA | 2,09 | 2,49 | 1,10 | 2,10 | 2,75 | 2,10 |
| 6 | BDMN | 1,78 | 2,43 | 1,52 | 1,50 | 2,79 | 2,00 |
| 7 | PNBM | 2,78 | 3,14 | 1,75 | 1,78 | 1,87 | 2,26 |
| 8 | BNLI | 1,2 | 1,9 | 1,7 | 1,4 | 1,9 | 1,62 |
| 9 | BNII | 1,43 | 1,12 | 1,23 | (0,05) | 1,01 | 0,94 |
| | Rata-Rata | 2,27 | 2,46 | 2,05 | 2,06 | 2,7 | 2,31 |

Source : results by researcher

Table 3 show that the average profitability as measured by ROA at Bank Rakyat Indonesia is the largest among the nine banking companies along 2006 to 2010, average of 4,3% annually. While second best followed by the average profitability of Bank Central Asia, which is an average profitability reaching 3,48% per year during 2006 to 2010. Things contradictions seen in Bank Negara Indonesia and bank Permata the average profitability of 1,62% annually.

Overall the average profitability of acquired 9 companies of the banking sector as sample showed 2,31% rate. However, in 2006 to 2008 the average profitability acquired 9 companies banking sector has decreased. But in the year 2009 to 2010 an average of 9 companies profitability of the banking sector has increased. This means that in the year 2009 to the year 2010, the bank's management was able to manage existing assets so well that the average profitability for the year increased.

Effect of CAR and the NPL againts the ROA and Multiple Regression Analysis

Multiple linear regression analysis is used to determine how much influence the independent variable on the dependent variable. The main purpose of multiple regression analysis wa performed to measure quantitatively the influence of change in the dependent variable based on the value of the independent variable. In this study, the dependent variable is ROA, while the independent variable is CAR as measures by capital divided by risk-weighted figures (RWA) and NPL were measured from non-performing earning assets divided by total loans. The following are the results of the analysis carried by PSAW statistics 18 :

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| (Constant) | ,024 | ,007 | | 3,411 | ,001 |
| CAR | ,028 | ,043 | ,099 | ,641 | ,525 |
| NPL | -,148 | ,062 | -,367 | -2,376 | ,022 |

a. Dependent Variable: ROA

Regression model linier are as follows :

$$ROA = 0,24 + 0,28 \text{ CAR} - 0,148 \text{ NPL}$$

It can be explained as follows :

1. $\alpha = \text{constant of } 0,24$ menas that if all the independent variable (CAR and NPL) held constant (at 0), then the value of ROA of 0,24.
2. *Capital Adequacy Ratio* (CAR) of 0,28 means that if the CAR increased by 1 while the othet variable held constant then the *Return on Asset* would have increased 0,28.
3. *Non Performing Loan* (NPL) of -0,148 means that if the (*Non Performing Loan*) increased by 1 while the other variables held constant then the *Return on Asset* decrease 0,148.

Result

Based on the research and discussion about the effect of the CAR and NPL to ROA in the year 2006 to 2010 banking sector companies listed on the IDX, then at the end of the study, the author draw the following conclusions and recommendations:

1. Effect of CAR and NPL to ROA using the Simultaneous testing (tes statistics F)

F test is used to test the overall regression coefficients to determine the meaning of the relationship between independent variables and related variable. Hypothesis tested is as follows

$H_0 : \beta_0 = \beta_1 = \beta_2 = 0$, meaning that there is no significant effect of the independent variables are simultaneously CAR (X_1) dan NPL (X_2) to dependent variable ROA (Y).

$H_1 : \beta_0 \neq \beta_1 \neq \beta_2 \neq 0$, meaning that there is significant effect of the independent variables are simultaneously CAR (X_1) dan NPL (X_2) to dependent variable ROA (Y)

ANOVA^b

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1 | Regression | ,001 | 2 | ,000 | 2,843 | ,069 ^a |
| | Residual | ,005 | 42 | ,000 | | |
| | Total | ,005 | 44 | | | |

a. Predictors: (Constant), NPL, CAR

b. Dependent Variable: ROA

$F_{\text{count}} 2,843$ with significance = 0,069. Than $F_{\text{count}} (2,843)$ is smaller than the $F_{\text{table}} 3,220$. This suggests the conclusion that H_0 accepted by CAR and NPL simultaneously does not have significant effect on ROA. The conclusion is supported by the significant value that indicates the value of 0,069 is greater than the value of $\alpha = 0,05$ means that the influence of the independent variables are jointly insignificant.

2. Effect of CAR on ROA

T statistical test used to examine the effect of independent variables on dependent variables individually. If the value $\text{sig.t} < \text{sig} (0,05)$ or if $t_{\text{count}} > t_{\text{tabel}}$ means dependent variable individu effect on the dependent variable.

$H_0 : \beta_1 = 0$, meaning that there is no significant effect between of CAR (X_1) to the ROA (Y).

$H_1 : \beta_1 \neq 0$, meaning that there is significant effect between of CAR (X_1) to the ROA (Y).

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | ,024 | ,007 | | 3,411 | ,001 |
| | CAR | ,028 | ,043 | ,099 | ,641 | ,525 |

a. Dependent Variable: ROA

The result obtained t_{count} of 0,641 with a significance value = 0,525. Compare with the value of t_{tabel} is $Df = n - k = 45 - 3 = 42$ is 2,021. $T_{\text{count}} 0,642 < t_{\text{table}} 2,021$, means H_0 received the statement on the level of 95% is not the effect of CAR to ROA. This is consistent with the value of a statistical test of significance $0,525 > 0,05$.

3. Effect of NPL on ROA

T statistical test used to examine the effect of independent variables on dependent variable individually. If the value $\text{sig.t} < \text{level of significance} (0,05)$ or if $t_{\text{count}} > t_{\text{table}}$ the dependent variable individu effect the dependent variable.

$H_0 : \beta_1 = 0$, meaning that there is no significant effect between the NPL (X_2) to ROA (Y).

$H_1 : \beta_1 \neq 0$, meaning that there is significant effect between of CAR (X_1) to the ROA (Y).

Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | ,024 | ,007 | | 3,411 | ,001 |
| NPL | -,148 | ,062 | -,367 | -2,376 | ,022 |

a. Dependent Variable: ROA

The result obtained t_{count} of -2,376 with a significance value = 0,022. Compared with the value of t_{table} is $Df = n - k = 45 - 3 = 42$ is 2,021. $T_{count} -2,376 < t_{table} -2,021$, means H_0 rejected with the statement at the level of 95% of the influence on ROA. This is consistent with the value of a statistical test of significance $0,022 > 0,05$.

4. Coefficient of determination is value expressed great influence jointly independent variable on the dependent variable. Problem studied the influence of the ROA. ROA and NPL in the banking company in 2006 to 2010 in exchange coefficient of determination obtained as follows :

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | ,345 ^a | ,119 | ,077 | ,0105713 | ,438 |

a. Predictors: (Constant), NPL, CAR

b. Dependent Variable: ROA

R-square value of 0,119 indicated that the two independent variables consisting of CAR and NPL simultaneously able to explain the changes in ROA of 11,9%. While the remaining 88,1% were other factors beyond the CAR and NPL.

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