THE EFFECT OF RISK, PROFITABILITY AND LIQUIDITY ON CAPITAL ADEQUACY

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ABSTRACT

The purpose of this research was to determine the effect of partial Non Performing Loan (NPL), Risk Index (ZRISK), Return on Assets (ROA), Net Interest Margin (NIM), Loan to Deposit Ratio (LDR) and Loan to asset Ratio (LAR) to the Capital Adequacy Ratio (CAR) on banking companies listed on the Stock Exchange. The research population was banking companies listed in Indonesia Stock Exchange during the three (3) year period from 2010 to 2012. The sample used in this research was determined using purposive sampling technique in which there are 29 companies that meet the criteria for sample selection. The analysis technique used is multiple linear regression and the processing of the data using SPSS v15.0. The results showed that the ROA, LDR and LAR have no significant effect on CAR. While the NPL, Risk Index and NIM have significant effect on CAR. Predictive ability of the six independent variables on CAR was at 32.9 % while the remaining 77.1 % is influenced by other factors not included in the regression model.

Keyword*: Risk, Profitability, Liquidity, Capital Adequacy*

INTRODUCTION

The banking sector is the backbone of other industrial sectors. If the banking sector has a problem then it will impact the industry that it supports. Bank is a specifically business unit, because in running operations depends on the source of funds from the public. Therefore, the survival of the bank is determined by the people's trust in the institution. In other words, the bank will have liquidity problems due to loss of people trust that will also have an impact to the change in earnings. Competition in the banking sector intensifies, banks are required to provide a more dynamic service to attract the attention of the public trust. This is done to achieve a goal that is gaining maximum profit. In addition the bank also aims to maintain the viability of the company (going concern) as well as other companies. In order to operate optimally, the bank must have a strong capital obtained from the expansion of the work done. In the Indonesian Banking Architecture (API), Bank Indonesia has set the criteria on a good bank that one of them is to have a strong capital in order to create a stable financial system to encourage the growth of the national economy. Capital aspects for national banks is important because a very large capital strength needed in the global competition. Capital is a very important factor for the development of the bank's progress and to maintain public trust. The wider people measure the success of the company based on performance

management to manage earnings. The use of bank capital is intended to meet all the needs that support the operations, these operations will be said well if the bank had a good capital adequacy. One to measure the fulfillment of the obligation of capital, can be measured using the Capital Adequacy Ratio (CAR). According Dendawijaya, CAR is one indicator of the bank's health. This ratio is used to measure the capital adequacy of a bank for support assets that contains or produces risk, such loans (Dendawijaya, 2009).

Credit became a source of revenue and the largest profits of banks. Banks will be said to be successful when it can manage credit well. Lending by banks have risk, and the risk is large enough that it was not a smooth mortgage payment that will affect the bank performance. The ratio used in the measurement of the banking ratio is asset quality as measured by Non- Performing Loans (NPLs). In addition to NPLs, banking risk can also be measured through the Risk Index Values (ZRISK). Risk index measures the value of bank risk related in return on assets, which indicates that the credit decision has an influence on the capital adequacy of banks. ZRISK have a significant negative effect on CAR, where by increasing of this ratio, the bank's capital adequacy ratio will be reduced (Margaretha, 2011).

Profitability is also one of factors that affect the bank 's capital. Profitability is the ability of banks to generate profits. If the bank would generate an operating profit it will increase the capital adequacy. Profitability can be regarded as the ability indicator of banks to maintain capital adequacy. Because with the profitability, the banks will be able to thrive and survive until the future activities. Return on Assets (ROA) and Net Interest Margin (NIM) are ratios that can be used to measure the profitability of a bank. ROA and NIM measures the ability of banks to earn profits from their business activities. If the rate of profit higher, it will effect to the equity increase, with the increase of the equity, the health of the bank related to capital ratio (CAR) is also increasing.

Health of bank capital is also influenced by the level of liquidity. As much as any assets owned by the bank if the bank threatened liquidity conditions it will be difficult if depositors want to make withdrawals. Liquidity is defined as the ability of banks to fulfill all the obligations of their debts, can pay back all depositors as well as to meet the credit demand put forward without any delays (Muljono, 1999). The liquidity ratio is commonly used in the banking world is Loan to Deposit Ratio (LDR). LDR widely used to measure the level of bank liquidity. The higher LDR level indicates that all of the funds that banks lend will make the level of liquidity will be smaller or relatively illiquid. Conversely, a low LDR shows that much

money idle so that lending be counterproductive (Faturrohman, 2012). besides the LDR, ratio that used to measure bank liquidity is the Loan to Asset Ratio (LAR). LAR is a ratio used to measure the level of liquidity of banks that show the ability of banks to meet the credit demand with total assets owned. The increasing of this ratio, will lower the liquidity of a bank because total assets that used to fund the credit will be greater.

LITERATURE REVIEW

Health Level of Banks

Banking financial institutions play an important role in the economy of a country. In doing their activities, the bank known as a financial institution whose activities are receiving demand deposits, savings and time deposits as well as a place to borrow money that public needed. Definition of the bank under the Act No.10 of 1998 is "Business entities that raise funds from the public in the form of savings and channel them to the public in the form of credit or other forms, in order to improve people's lives a lot". Under SFAS No. 31, the Financial Accounting Standards Board (2008), "Bank is an institution that serves as a financial intermediary between the parties that have the funds and those who need funding, as well as institutions that serve traffic expedite payment". There are three general operational activities performed by banks (Kasmir, 2008) the first operational activitiy is funding from the public in the form of deposits (demand deposits, savings deposits, time deposits), in this case the bank as a place to save money or invest for the community. The second is lending to the public in the form of loans and investments, in this case the bank provides funds for people who need it and the last is giving other bank services such transfer, bank clearing, collection, letter of credit, safe deposit boxes, bank guarantees and other support services that are the main activities of the bank.

In conducting its activities, the bank is trying to perform operations as well as possible to achieve the goal of achieving a high level of profitability. For banks which have excess in things mentioned above has a great opportunity to make a profit compared with a bank that does not have these advantages. Banks are required to maintain the health of banks in accordance with the terms of capital adequacy, asset quality, management quality, liquidity, profitability, solvency and other aspects related to the business of the bank and shall conduct operations in accordance with the precautionary principle. It is mentioned by the Law of the Republic of Indonesia No.10 of 1998. To measure the performance and soundness of banks can be done by assessing the capital factors, asset quality, profitability and liquidity.

The capital factors use of bank capital

is intended to meet all the requirements to support the operations of the bank. The primary function of bank capital is to maintain public confidence, especially the borrower. CAR is a ratio to measure the performance of a bank's capital adequacy to support assets that contain or produce risk, for example loans. In the aspect of asset quality is an assessment of the types of assets owned by the bank, that is by comparing the classified earning assets to earning assets. Profitability in the bank can be measured by Return on Assets (ROA) and Net Interest Margin (NIM). This ratio is used to measure the ability of bank management to benefit which is used for the operations of the bank. Liquidity aspect is based on the ability of banks to pay all his debts mainly savings deposits, demand deposits and deposits at the time charged and can meet all viable loan application approved.

Risk

Dendawijaya said that the problem loans was the failure of the debtor to meet its obligations to pay installments loan principal and interest that has been agreed by both parties in the credit agreement (Dendawijaya, 2005). Meanwhile, according to Siamat problem loans is as follows: "Problem loans or loan problem can be defined as a loan that have a difficulties repayment due to the gap factors and or due to external factors beyond the debtor's ability (Siamat, 2004). According to the definition, the meaning of non-performing loans are loans that have a delay in the payment of principal and interest arrears or even not paid at all, due to the inability of the debtor to pay, so that the loan repayment is not done on time and right amount of appropriate credit agreement.

According Dendawijaya, problem loans are loans that collectibility fall into the category bad credit criteria or also known as Non Performing Loan (Dendawijaya, 2005). This ratio shows the ability of bank management in managing problem loans granted by the bank. That is, the higher ratio make getting worse credit quality of the banks that caused the greater number of problem loans, then the probability of a bank in risk is greater that is the loss caused by the return of bad loans.

In theory, if a bank runs the risk that it will bring great losses to the bank. That impact make the bank will also get the operational difficulties and the functioning of the bank in disbursing funds. Substantial risk of banks make a bank using the capital to cover the losses so that the risk of having an influence on the capital adequacy of banks. Banks have some risk in carrying out its operations. To address these risks necessary risk analysis to determine the cause and effect of each of these risks. Below are the types of bank risks (table 1).

Table 1. Types of bank risk

Credit Risk	Risks arising as a result of the failure of the counterparty to fulfill its obligations.
Market Risk	Risk arising from movements in market variables (adverse movement) of the portfolio held by the Bank which could hurt the bank. Market variables include interest rates and exchange rates.
Liquidity Risk	Partly due to the risk the Bank is unable to meet obligations that have matured.
Operational Risk	Among other risks caused by inadequate or non-functioning of the internal processed, human error, system failure or absence of external problems that affect the bank's operations.
Legal Risk	juridical aspects, among others, due to the lawsuit, the absence of laws and regulations that support or weakness of such engagement is not fulfilled his legal requirement binding contract and collateral are not perfect .
Reputation Risk	Among other risks due to the negative publicity associated with the business of banks or negative perceptions of the bank.
Strategic risk	Risks include the establishment and implementation of the strategy due to the improper bank, business decision making improper or lack of responsiveness of banks to external changes.
Compliance risk	Risk resulting bank does not comply with or implement legislation and other applicable regulations.

Source: Banking Booklet 2012

Non Performing Loan

Non Performing Loan (NPL) is one measure of the bank's activities risk ratio that indicates the magnitude of the risk of non-performing loans at a bank. The existence of Non-Performing Loans in an amount sufficient to cause a lot of trouble as well as reduce the level of health of the bank concerned. Therefore, banks are required to always keep credit are not in non-performing loans. The amount of NPLs is allowed by Bank Indonesia at this time is a maximum of 5%, if it exceeds 5% it will affect the assessment of the Bank is concerned, that will reduce the value. NPL reflect the credit risk, the smaller NPL means the less credit risk borne by the bank. Although it cannot fully avoid the credit risk, but arranged so that the amount of troubled loans is within reasonable limits. banks in providing credit must conduct an analysis of the debtor's ability to repay its obligations. Credit is the provision of money or bills that can be equated, by borrowing agreement or contract between the bank and other parties that requires the borrower to repay the debt after a certain period of time with interest. Non performing loans caused by the failure of the debtor to meet its obligations to pay installments of principal and interest that has been agreed by both parties in the credit agreement. Non performing loans are divided into three types. That is Substandard loans, doubtful

loans and bad credit.

Substandard loans are credit refund the outstanding principal and interest payments have been delayed for three months from the time that has been agreed. Doubtful loans are loans which the return of principal and interest payments have been delayed for six months or twice from the agreed schedule. Bad credit is credit refund the outstanding principal and interest payments have been delayed for more than one year from the maturity of the agreed schedule.

Risk Index (ZRISK)

Risk Index is a measure of the value of the index of bank credit risk. Unlike the bank's NPL that measure risk associated with credit risk, the risk index value measures the risk associated with the bank's return on assets. So if a high index of risk means the risk of major asset returns, this resulted in meperoleh asset productivity and profits decline also resulted in reduced capital adequacy (Hasibuan, 2008).

Profitability

Profitability ratios are a company's ability to generate profits for a certain period. This ratio also used to measure the effectiveness of management of a company. This is showed by the profits generated from sales and investment income. Martono and D. Agus Harjito argued that profitability ratio is a company's ability to earn a return on capital employed to produce those profits. Profitability of a company can be measured by using the ratio of earnings to connect with a certain amount of that sale or capital or assets that were used to generate profit (Martono, et al: 2010).

Profitability has multiple measurements, but were used in this research is the Return On Assets (ROA) and Net Interest Margin (NIM). Return on Assets (ROA) is a ratio used to measure the ability of company management to make a profit as a whole (Sawir, 2005). Syamsuddin expressed Return on Assets (ROA) is a measure of the ability of the company as a whole in making a profit in the total amount of assets available in the company. Syamsuddin suggested the higher this ratio, the better the state of the company. This means that this ratio is used to measure level net income derived from the total assets of the company (Lukman, 2011). Basically, Net Interest Margin (NIM) is a financial ratio as the result of a comparison between the interest income from the assets, which also is the difference between deposit and loan interest. The usefulness of this ratio is to assess the ability of a bank management in managing its productive assets to generate net interest income.

The theory said that the good bank's ability to maximizing profit making bank profitability rate also becomes high. If profits increased it will result in the increase of capital in the bank so that have an effect in increasing the profitability of a bank's

capital adequacy.

Return on Assets (ROA)

Profitability is the ability of a company to generate profit for a certain period. Profitability of the company shows a comparison between the earnings or capital assets that generate such profits. Profitability measured by ROA which measures the ability of bank management to make a profit as a whole (Dendawijaya, 2009). ROA is a ratio used to measure a bank's ability to generate profits relative to the total assets. This ratio measures the company's ability to generate net income under a certain level of assets (Hanafi and Halim, 2009).

The larger ROA ratio of a bank, the greater the level of profit that the bank achieved and the better the bank's position in terms of the use of the asset, so the possibility of a bank in error gets smaller. Therefore, it may be possible that the performance of the company is also increasing. High or low ROA changes will also affect earnings. ROA which means high profitability ratio is also high, with high profitability means the company successful in generating profits, with the achievement of a high earnings that investors can expect to benefit from dividends. According to research conducted by Meythi (2005) explains that ROA is a ratio that is best in predicting earnings growth. This is due to a stable income and asset management effectively and efficiently will affect the company's ability to grow. Given these capabilities, the company can continue to grow with increased profits so that they can also afford to raise capital.

Net Interest Margin (NIM)

NIM is the ratio of net interest income to total loans (outstanding credit). Net interest income derived from interest received from loans minus interest expense of source of funds collected. NIM is healthy if a bank has a NIM above 2%. To obtain improved NIM acquisition, should reduce the cost of funds. The cost is the cost of funds is the interest paid by banks to each source of funds of the bank concerned. Overall, the costs to be incurred by the bank will determine how much the bank must set the interest rate of loans granted to customers to earn net income of banks. Thus the extent to which banks in reducing the cost of funds will improve the acquisition of NIM for the bank. Therefore, it is important for the bank to accurately monitor the cost of funds (Ali, 2004). NIM will affect earning after tax, which if large NIM, then the potential EAT is great. The higher the bank's net interest income earned from the bank's ability to manage its credit, the higher the bank's net profit obtained. Effect of net interest income NIM to the EAT studied by Usman on Shitawati which results indicate that NIM had no significant effect on the profit forecast of the coming years so it

needs to be tested how the effect of NIM on CAR, CAR because it better reflects the performance of bank capital (Shitawati, 2006).

Liquidity

This assessment is based to determine the bank's ability to meet obligations in the form of demand deposits, savings and time deposits. Measurement of liquidity is dilemma measurement, because on one side, the main banking business is to market and play money for the benefit of its customers. This means that banks must maximize marketing business money and as small as possible to prevent idle money. On the other hand, banks must be maintained deposits liquidity condition in order to fulfill the demand deposit withdrawals by customers. The lower levels of liquidity mean more money is unemployed, the more money idle means the bank cannot maximize profits. Benefits of liquidity measures for banks is to enhance the public and government trust.

Liquidity in a bank becomes important, because the bank's ability to assess liquidity to reach it debts, can pay back all depositors, as well as to meet the credit demand without delay. Management always keep the liquidity position of banks in good position so far as possible reduce the existence of idle funds. Banks are considered liquid if it has the means liquid assets such as cash equal in amount to the estimated liquidity needs. Based on the theory of liquidity is a commercial loan theory or known as the productivity theory of credit, bank liquidity can be guaranteed if the bank earning assets consist of short-term credit disbursed in the business activities to be normal, if the bank in question provide a longer credit the source should be taken from capital funds and long-term funding. So if the bank is continuously give great credit will increasingly require funds to finance loans that will reduce capital and make capital adequacy will be decline.

Loan to Deposit Ratio (LDR)

Loan to Deposit Ratio is the ratio that is used to look at the company's liquidity. This ratio measures the composition of loans compared to the amount of funds received by the bank. LDR stating how far the bank's ability to repay the withdrawal of funds by depositors to rely on loans as a source of liquidity. In other words, the LDR is used to measure the amount of third party funds are distributed in the form of credit.

LDR can be used assess the bank's management strategy. Management is usually conservative banks have relatively low LDR, otherwise if LDR exceeds the tolerance limit of the bank's management said very expansive or aggressive. The higher the ratio the lower the ability to provide an indication of the liquidity of the bank concerned, due to the amount of funds required to finance the loan becomes larger. This ratio is also an indicator of

vulnerability and the ability of a bank. Safe limit of a bank's LDR is about 80% with a tolerance limit ranging between 85% and 100%. If the ratio of a bank's LDR stood at below 85% (ex. 75%) it can be concluded that the bank can only loan portfolio by 75% of all funds raised. If the bank LDR reached more than 110%, meaning the total loans of the bank exceeds the funds raised. The higher ratio indicates more risky LDR bank liquidity, the lower the ratio LDR otherwise shows a lack of effectiveness of the bank's lending banks so as the loss of opportunity to earn income and capital increase. If the banks are on the LDR standards set by Bank Indonesia, the bank's profits will increase. Bank Indonesia liquidity component establishes ranking criteria as follows: (Joliana, 2013). For the loan to deposit ratio is between 50% - 75% or 50% < ratio ≤ 75% of the bank 's liquidity means highly liquid. For the loan to deposit ratio is between 75% - 85% or 75% < ratio ≤ 85% of the bank 's liquidity means liquid. For the loan to deposit ratio is between 85% - 100% or 85% < ratio ≤ 100% or ≤ 50% means the ratio of a bank 's liquidity is adequate liquid. For the loan to deposit ratio is between 100% - 120% or 100% < ratio ≤ 120% of the bank 's liquidity means less liquid. For the loan to deposit ratio greater than 120% or ≥ 120% means the ratio of bank liquidity illiquid.

Loan to Asset Ratio (LAR)

Loan to Assets Ratio (LAR) is a ratio used to indicate the ability of banks to meet the credit demand by using the total assets of the bank. The LAR has a negative influence on bank capital adequacy. The higher this ratio, the number of loans greater, in other words, if a lot of customers who cannot recover the amount of loans received from banks and interest in accordance with a predetermined time the banks did not get interest income earned from loans, so the bank profits be small (Mahartoko, 2008). So by increasing this ratio would make the capital adequacy of banks is reduced.

Capital Adequacy Ratio (CAR)

CAR is a ratio used to measure a bank's ability to meet its short term obligations when billed (Faturrohman, 2012). Capital to banks is a first- party funding sources, namely the number of funds invested by the owner for the establishment of a bank. If the bank is already operating, capital is one factor that is essential for business development and accommodate the risk of loss. The greater the capital owned by a bank's capital adequacy ratio will increase, whereas if capital company continuously eroded by the losses suffered by the bank, then the bank's capital adequacy ratio would drop, is due to the loss suffered by the bank will absorb the bank's capital (Fitrianto, 2006).

Banks should be able to thrive in a healthy and able to compete in the international banking bank capital must

always follow internationally accepted size, which is determined by the Banking for International Sattlements (BIS), the amount of the CAR is 8% (Riyadi, 2004). With the establishment of the CAR at a certain level meant that the bank has sufficient capital's ability to dampen potential risks. CAR shows how far the entire assets of the banks that contain credit risk, investments, securities, bills of other banks participated financed from the bank's own capital funds in addition to obtaining funds from banks outside sources, such as public funds, loans and others. In other words, the Capital Adequacy Ratio is the ratio of a bank's performance to measure the adequacy of a bank's capital to support assets that contain or produce risk, for example loans.

RESEARCH METHOD

This research used secondary data obtained from each sample company's annual report for 2010-2012 listed on BEI. Other supporting data retrieved from the official website of BEI (www.idx.co.id), Bank Indonesia's website (www.bi.go.id) as well as from journal, bank magazine and other sources that are relevant. The method of data analysis used in this research include descriptive statistical test, classical assumption test and hypothesis test using SPSS software.

Dependen variabel

The dependent variable in this research is the Capital Adequacy Ratio (CAR). CAR is the ratio that shows how large the sum of all bank assets containing risks (credit, investment, securities, bills on other banks) were financed by its own capital beside obtaining funds from sources outside the bank. Below is the formula for determining:

Independent Variables

Independent Variables are banking risks relating to loans measured using the non-performing loan (NPL) and the Risk Index. NPL is a variable risk of non-performing loans, which with the higher NPL ratio indicates that the credit risk of default is also high. NPL measured by indicators of substandard loans, doubtful loans, bad credit divided by total loans. according to BI, good NPL is below 5%.

Risk index measures the value of the bank's risk associated with asset returns. The higher this ratio will further lower the capital adequacy of banks. Profitability as measured by return on assets (ROA) and net interest margin (NIM). ROA and NIM is a profitability ratio that is used to measure the bank's ability to generate profit in the course of operation. The higher the ROA of a bank, the greater the level of profit that the bank achieved and the better the position of the bank in terms of asset utilization.

NIM measures how much banks in reducing the cost of funds will improve the acquisition of NIM. The higher this ratio,

the capital adequacy of a bank will also increase. A bank is said to have healthier if NIM above 2%. Liquidity is measured by the Loan to Deposit Ratio (LDR) and the Loan to Asset Ratio (LAR). The higher the ratio the lower the LDR gives an indication of the ability of the bank's liquidity is concerned, due to the amount of funds required to finance the loan becomes larger. This ratio is also an indicator of vulnerability and the ability of a bank. Safe limit of a bank's LDR is about 80% with a tolerance limit ranging between 85% and 100%. Higher LAR makes CAR decreased due to the increase in LAR, the credit will increase and create a greater risk of bad loans so as to reduce the assets and will reduce capital adequacy.

RESULT AND DISCUSSION

Descriptive Statistic

From the data processing, data lowest NPL ratio was 0%. While, the highest ratio was 8.82%. By looking at the NPL average value of 1.71% it can be concluded that the statistically significant level of NPLs of banks in Indonesia during the period 2010-2012 are within safe limits that do not exceed the standards set by Bank Indonesia at 5%. It also suggests that banks already have good management in managing problem loans. ZRISK ratio data showed the lowest yield of -1.58%. This indicates that the productivity of the assets on the bank's low. While the maximum ratio is 5.26 %. The mean value showed good results, that is 13.73%.

Table 2. Descriptive Statistic of risk, profitability, liquidity and capital adequacy

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	87	,00	8,82	1,7144	1,53427
ZRISK	87	-1,37	62,70	13,7354	14,71449
ROA	87	-1,71	4,33	1,8701	1,03846
NIM	87	1,02	14,00	5,8482	2,33260
LDR	87	40,22	112,20	78,9875	13,33517
LAR	87	,05	93,20	60,8022	11,97957
CAR	87	9,41	29,29	15,9044	3,77397
Valid N (listwise)	87				

From the data, lowest ratio ROA is -1.64%. This suggests that the ability of bank to increase the profits is the worst of the other banks. While the highest ROA is 5.15%. By looking at the mean ROA of 1.87%, it can be concluded that by the statistically, significant level ROA of banking in Indonesia in 2010-2012 can be classified in the health category that is able to generate huge profits. Lowest NIM ratio on the data processing is 1.02% its. While the value of the highest NIM is 14%. This result indicates that the bank is able to effectively put its productive assets in the

form of good credit. The mean value shown in the above results is 5.84%. The mean results indicate that bank management in Indonesia are able to manage their productive assets to generate net interest income properly.

Data lowest LDR is 40.22%. These results indicate that the ability of bank in the distributing credit is still lacking. While the highest LDR is 112.20 %. These results indicate that the level of bank lending is better than the other banks. By looking at the average value of 78.98% LDR it can be concluded that statistically LDR levels in Indonesia in 2010-2012 was between 75% - 85% which means the liquidity of the banks is liquid. Data lowest LAR ratio is 0.05%. While the highest is 93.20% owned by Bank Permata Tbk. in 2012. With an average value of 60.80%.

Data lowest CAR is 9.41% derived from the bank's CAR in 2011, while the highest CAR is 29.29% came from CAR Bank Capital Indonesia in 2010. By looking at the value of the average CAR of 15.90 %, it can be concluded that the statistically significant level of CAR in Indonesia in 2010-2012 was far above the standards set by Bank Indonesia at 8%, it means that banks in Indonesia have a good condition in terms of capital.

Normality Test

Appropriate graphical method to normality test of the data is to look at the normal probability plot. so that almost all computer applications statistics provide this facility. Normal probability plot is to compare the cumulative distribution of the actual data with the cumulative distribution of a normal distribution (hypothetical distribution). Based on the test results with the help of SPSS, the resulting graph normal probability plot as shown
in Figure 1.

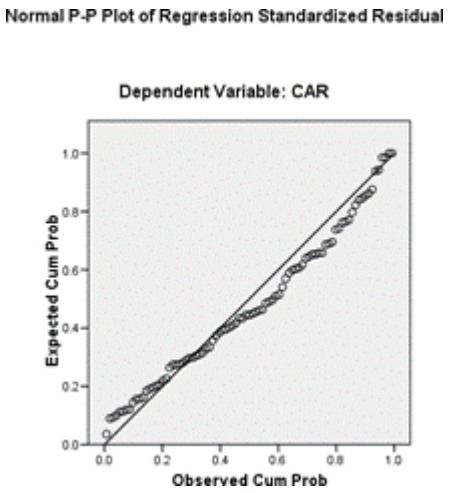

Figure 1. Normal probability plot

From Figure 1 above, it is seen that the distribution of the data to be around around the diagonal so that the assumption of normality can be met and the residual value of the data has been normal. Besides, by using charts, data normality test can be done statistically, by the Kolmogorov-Smirnov test. It can be said that data were normally distributed when the Kolmogorov-Smirnov values greater than 0.5 (Ghozali, 2006).

Autocorellation Test

Detection of the presence or absence of autocorrelation is usually seen from the magnitude of the value of the Durbin-Watson. Regression model was declared free of the problem of autocorrelation if DW value lies between the upper bound (du) and (4-du) or du <DW <4-du. To detect the presence or absence of autocorrelation the DurbinWatson test done (DW) with the condition, if 1.50 < DW < 2.20 means no autocorrelation and if DW < 1.50 or DW > 2.20 means there is autocorrelation.

Table 3. Autocorrelation Test Results

Model	Durbin-Watson
1	1,946(a)

a Predictors: (Constant), LAR, NPL, NIM, ZRISK, ROA, LDR b Dependent Variable: CAR

Durbin Watson test results in Table 3 shows the value of 1.946, while the value of the terms that are used to model the free autocorrelation is between 1.50 to 2.20. DW values in this research lies between 1.50 and 2.20 (1.50<1.946 < 2.20), the autocorrelation coefficients equal to zero and concluded no autocorrelation, so the regression model appropriate.

Heteroscedasticity Test

Heteroscedasticity test was conducted to test whether the regression model of the residual variance occurs inequality an observation to other observations. How to detect the presence or absence of heteroscedasticity can be determined by looking at the presence or absence of certain patterns in the graph the scatterplot between the predicted value of the dependent variable with the residual. To determine whether there is heteroscedasticity between the independent variables can be seen from the graph plots between the predicted value of the dependent variable with the residual. The basis of the analysis through graphs plot heteroscedasticity test is if there is no clear pattern, and the points spread above and below the 0 on the Y axis at random, then there is no heteroscedasticity. Heteroscedasticity test results based on the

scatterplot graph can be seen in Figure 4.2 below. Seen from the Glejser Test results show that the classical assumptions in testing to prevent deviation from the model used. This means that the regression model in this research can be used as a basis for hypothesis testing.

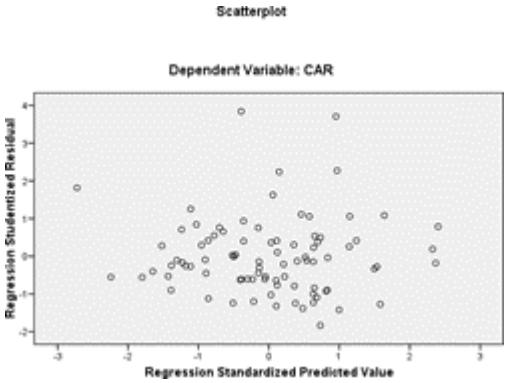

Figure 2. Scatter plot graphic

Based on Figure 2 it can be seen that the data (dots) spread evenly above and below the zero line and not gathered in one place, and do not form a specific pattern so that it can be concluded that the regression is heteroscedasticity problem does not occur. To determine whether there is heteroscedasticity between the independent variables can be seen from the glejser test as in table 4. From the results it can be seen that the value of the significance of the six independent variables for each the NPL 0.464, 0.212 for ZRISK, 0.345 for ROA, 0.966 for NIM, 0.374 for LDR and 0.843 for LAR. All independent variables have a significance above 0.05 so in this model does not happen heteroscedasticity problem.

Table 4. Heteroscedasticity Test Result

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta	B	Std. Error
(Constant)	3,894	1,497		2,602	,011
NPL	,119	,162	,087	,735	,464
ZRISK	-,023	,018	-,159	-1,254	,213
ROA	,301	,317	,150	,951	,345
NIM	,005	,129	,006	,042	,966
LDR	-,023	,025	-,145	-,893	,374
LAR	-,005	,027	-,031	-,199	,843

a Dependent Variable: ABS_RES

Multicollinearity test

Multicollinearity test aims to determine whether there is a definite relationship between some or all of the independent variables from the regression model. Good regression models should not happen correlation between the independent variables. To detect the presence or absence of high multicollinearity between the independent variables can be detected by looking at the value of tolerance and the Variance Inflation Factor (VIF). Cutoff value that is commonly used to indicate multicollinearity is not happening tolerance value above or equal to 0.10 VIF values below 10. Multicollinearity test results can be seen in table 5.

Table 5. Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	NPL	,828	1,207
	ZRISK	,730	1,370
	ROA	,473	2,114
	NIM	,562	1,780
	LDR	,447	2,235
	LAR	,479	2,088

a Dependent Variable: CAR

Multicollinearity test results in table 5 above shows that the tolerance values of the three independent variables were above 0.10 and VIF less than 10. It can be concluded that in the regression model there is no problem of multicollinearity, the regression model that is acceptable for use.

Multiple Linear Regression Test

Multiple regression analysis was intended to test the extent of the influence and direction of the effect of independent variables on the dependent variable. Based on the analysis of data with the help of SPSS statistical applications of the obtained important information is summarized in table 6.

Table 6. Multiple linear regression test result

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	20,400	2,286		8,926	,000
	NPL	-,858	,247	-,349	-3,467	,001
	ZRISK	-,078	,027	-,304	-2,835	,006
	ROA	,082	,484	,022	,169	,866

NIM	,612	,198	,378	3,097	,003
LDR	-,009	,039	-,031	-,225	,823
LAR	-,082	,042	-,261	-1,973	,052

a Dependent Variable: CAR

Linear regression analysis is used to know presence or absence effect of independent variables namely NPL, ZRISK, ROA, NIM, LDR and LAR on the dependent variable is the CAR. Based on table 6, the regression equation can be taken as follows. Based on the above calculation shows that the constant coefficient is positive that is 20,400. The magnitude of these constants shows that if the independent variables are assumed to be constant, then the independent variable is the CAR will increase by 20.40 %.

Bank risk proxied by NPL has a significance value of 0.001 which means that NPL has a significant effect on CAR. With a regression coefficient of -0.858, indicates that NPL has a negative effect on the capital adequacy if NPLs have increased the CAR decreased. NPLs are high due to the inadvertent banks in lending so that the higher NPL the worse credit quality banks that caused the greater number of non-performing loans and will reduce the capital adequacy of banks.

Value ZRISK significance of the above results show a significant result which 0.006 that were under 0.05. Thus ZRISK have a significant effect on CAR. With a regression coefficient of -0.078 then there is a negative relationship between the variables ZRISK with CAR. Profitability ROA regression coefficient on the test result is positive is 0.082 with a significance value of 0.866. By looking at the significance value greater than 0.05 then the hypothesis is rejected. Means there is no significant effect between the variables ROA variable CAR. This may occur because the value of ROA in the sample there is still a negative value which means that the bank has not been able to effectively generate revenue so little profit. While a large ROA the bank performed better because the level of investment (return) the greater. But there is a positive relation between ROA with CAR. Where ROA If a bank increases, the CAR has increased. ROA has a positive effect on CAR because the company is a high return on its assets will use a small debt to the level capital costs are relatively small and contain the risk of the bank's own capital is relatively high so as to increase the CAR.

NIM also showed a significant effect on CAR with a significance value of 0.003 so that the hypothesis is accepted. NIM coefficient indicates a positive result is 0.612 which means that NIM has a positive effect on the CAR, where higher NIM can increase Capital Adequacy Ratio (CAR) in the bank. From the above test results, the regression coefficient of liquidity is proxied

by LDR at - 0.009 with a significance value of 0.823. Since the significance value is greater than 0.05 then the hypothesis is rejected. These results indicate that the LDR no significant effect on CAR. LDR has a negative relation to the CAR, the negative relationship means that the higher the value of the LDR then the CAR will decrease. Due to the higher value of the LDR, the more risky the bank's non-performing loans that will occur so that more capital is used to cover losses due to the credit crunch happened. From the result above, significant value of LAR is 0.052. This value means that LAR had not significant effect to CAR. With a coefficient value -0.082 then there is a negative effect of the LAR to CAR. Where with the increasing value of the LAR capital adequacy of banking will decrease.

Discussion

Effect of NPL on CAR

The higher NPLs resulted in higher loan interest arrears potentially lower interest income and provisions for credit costs resulted in the NPL group increases, which have a direct impact in lowering the bank's capital. NPL also indicates high credit quality worsening of banks that led to the greater number of problem loans so that funds are needed to cover the issues that will reduce capital adequacy of banks. conversely, the lower the NPL the capital because the smaller the higher the credit risk borne by the bank. If the bank is able to improve the quality of its assets well and can distribute the credit based on the precautionary principle then the bank will be able to minimize poor credit quality will lead to the greater number of non-performing loans and thus the value of non-performing loans and the lower the bank can increase the bank's capital adequacy.

Effect of Risk Index on CAR

Table 5 shows the regression coefficient ZRISK is equal to -0.078. This shows the negative effect of the Risk Index with CAR. Substantial risk that the value of the index indicates risk of major asset returns, asset productivity resulting in decreased gain thus contribute to a reduction of capital adequacy. Conversely, a small ratio indicates that banks can maximize that profitability increased productivity and increase capital adequacy. When the bank's return on assets in a low, that means bank has not been able to obtain the maximum benefit because productivity is so low that the banks have not been able to meet their capital adequacy.

Effect of ROA on CAR

Profitability analysis in this research was measured using ROA due to Bank Indonesia as a builder and banking supervisors prefer the value of a bank's profitability as measured with assets which funds mostly from the public deposits. ROA

is also an objective measurement method is based on accounting data that is available and the amount of ROA reflects the results of a series of corporate policies, especially banking. From the calculation of the partial regression test obtained significance value of 0.866 which means ROA have not significant effect on the level of CAR. Since the significance value is greater than 5% then the hypothesis is rejected. With the significant results indicate that changes in the profitability of the banking company does not affect capital adequacy. It could be because of the data is still contained in the ROA sample is below the average so it can effect the significance value of ROA then this variable have no significant effect on CAR. Negative value of ROA banks indicates that the bank has not been able to maximize it profit. So bank profits are small and can not increase the capital adequacy. The larger ROA show the better performance of a bank, because the level of investment return greater. so with the greater profits will add the capital adequacy of bank.

Effect of NIM on CAR

The bank's income derived from the funds placed in the form of loans allocated to the stability of the bank debt restructuring. So as to boost the bank's capital adequacy. Conversely, the lower the value of the NIM indicates that the bank is not effective in placing assets in the form of credits that can reduce capital adequacy. This variable is influential because banks in Indonesia has been able to reduce the cost of funds so as affect the acquisition of NIM that banks profited from influential sources of bank funds as well as to the increase in the capital adequacy of banks.

Effect of LDR on CAR

LDR reflects the bank's ability to distribute third party funds in the form of credit or similar credit to generate income. Some banks whose capital is below average and has decreased partly due to the weak bank management is mainly due to the lack of proper liquidity management. LDR has no effect on CAR shows the efficiency of banks in managing liquidity. LDR is caused by an increase in loans is much greater than the increase in third- party funds, so the liquidity risk faced by banks will go down, but due to the capital increase is smaller than the increase of Risk Weighted Assets and also an increase in securities that are much smaller than the increase in third-party funds, so that income will getting lower, the decrease of income will reduce the capital and resulted the CAR value was down.

Effect of LAR on CAR

LAR measured liquidity by comparing the total of loans divided by the total asset of the bank. The negative effect occurs due to increased credit LAR, then the risk of bad debts has increased as well. With

the number of loans increased greater than the bank's assets, resulting in the calculation of the RWA increase, causing decline the profits. The decline in profits will cause the decline of capital and effect to reduction of capital adequacy. One of the largest bank income is from loans, so that when the bank experienced bad credit then the bank would decline in revenue. When the bank's revenue declined, the bank would not be able to increase their capital so that the capital adequacy of banks is reduced.This research supports the research conducted by Mahartoko (2008) with the results of LAR have significant negative effect on bank capital adequacy (CAR).

CONCLUSION AND SUGGESTION

Based on the analysis of data and discussion presented in chapter IV, it could be concluded as NPL ratio partially has negative effect to CAR. This is demonstrated by the higher NPL ratio make the quality of bank credit worse. That can cause the greater of credit risk amount so that will lower the capital adequacy of banks. ZRISK ratio partially has negative effect to CAR in Indonesian banks. This shows that the higher the value of ZRISK means a great asset returns that will lower the profits so as can lower the capital adequacy. ROA ratio partially no effect to CAR. This shows that the changes of this ratio do not effect the profitability of bank's capital adequacy. This happens because the sample data of ROA are still much below average indicating profitability in banking in Indonesia is still lacking. NIM ratio partially has positive effect to CAR. This indicates the higher value of the NIM will increase the CAR,and vice versa. Higher NIM value indicates that the bank is more effective in the placement of productive assets in the form of credit so the bank will have the advantage and can raise capital then the banks will increase their capital reserves. LDR has no effect to CAR. This suggests that the rise or fall of the LDR does not affect the value of CAR. LDR has no effect because of the lack of efficiency of banks in managing their liquidity. LAR ratio has no effect to CAR. This indicates a large or small value of LAR does not effect the capital adequacy because from the data, there's many banks are still low in distributing credit so as can not increase the bank's capital adequacy.

ROA results were not significant indicating that ROA does not interpret the adequacy of bank capital in this research. To further improve profitability, the bank should be able to increase their income effectively with the aim that could earn increased profits and achieve maximum results. Liquidity as measured by LDR are not have an effect on capital adequacy. The bank should raise loans to prospective customers for increased revenue, but also should pay attention to the percentage of liquidity to be boundary safe, not too high

and not too low. LAR variables are not effect on capital adequacy. So, go public banks should pay attention to the management of its assets, which the asset is used mainly to fulfill the credit demand.

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