

DETERMINANTS OF CREDIT CRUNCH : A Study on Commercial Banks in Indonesia in  
2005-2010

By : Sulaeman Rahman Nidar \*)

Noviana Puspita Sari \*\*)

\*) Lecturer of Business and Economic Faculty of Padjadajaran University Bandung

\*\*) Alumnae 2008 of Business and Economic Faculty of Padjadajaran University Bandung

**ABSTRACT**

*Banks are business entities that play a role in collecting funds from the community and distribute those funds to the general public. Efforts to raise funds obtained from the wider community through three forms namely, demand deposits, savings deposits, and savings deposits while efforts to distribute funds through from lending activity. Lending activity is able to bring development in the economy.*

*The research was motivated by the phenomenon of bank lending is not optimal. This situation triggered by the LDR commercial banks are still below the standards set by Bank Indonesia. When credit is not ideal and this happens because of the bank is reluctant to channel credit there is a credit crunch phenomenon. Moreover, in this study looks inconsistencies of the factors that influence the distribution of credit. Therefore, this study would examine the factors that influence the lending policies relating to the credit crunch phenomenon which includes mortgage interest rates, Capital Adequacy Ratio (CAR), Non-Performing Loans (NPLs), Loan to Deposit Ratio (LDR), Party Funds Third (DPK), and inflation. This research studied at a commercial bank with the period 2005-2010 (quarterly). Analysis technique used is multiple linear regression with hypothesis test using the t test to see the influence of variable partially and the F test to see the influence of variables simultaneously with a significance level of 5%.*

*Based on the results of processing the data obtained that simultaneous variable mortgage interest rates, CAR, NPLs, LDR, deposits, and inflation have a significant effect on bank lending. Partially, interest rate, LDR, and the NPL have insignificant negative effect on the distribution of bank credit. CAR is significantly negative effect on bank lending. Meanwhile, DPK and inflation has positive and significant effect on bank lending.*

*Keywords: Interest Rate Credit, CAR, NPLs, LDR, DPK, Inflation, Credit Commercial Banks*

**Introduction**

Development of Indonesia's economy after the 1997-1998 crisis showed a good situation over time where the economy is experiencing growth. Indonesia's economy during the year 2003-2010 shows that the occurrence of favorable development on the macro conditions are also developments in the banking sector. The macro level, the condition of inflation in Indonesia has decreased at some time followed by a decrease in the BI (Bank Indonesia) rate.

The banking sector showed a good condition with an increase in deposits (Third Party Fund) during the year 2003-2010 and the level of NPL (Non Performing Loan) at some time during that period has decreased. This is shown in the four years since 2005, the NPL has been able to achieve a level of less than 5%. Developments in the banking sector was also carrying a role in the economic development of Indonesia. Banking in particular commercial banks have an important function and role in the economic and strategic.

Commercial Bank is able to sustain the strength and continuity of payment systems and monetary policy effectiveness (Manurung, Rahardja, 2004). Role in supporting Indonesia's economy from one activity that can bring the economic development lending. It is seen from one of the credit function as a bridge to an increase in national income (Sinungan, 1978). Lending activity in the role in the acceleration of economic development was largely channeled by commercial banks.

Table 1  
LDR, DPK, and Credit of Commercial Bank period 2005-2010

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>LDR</b>	59,66%	61,56%	66,32%	74,58%	72,88%	75,21%
<b>DPK (Billion Rp)</b>	1.127.937	1.287.102	1.510.834	1.753.292	1.973.042	2.338.824
<b>Credit (Billion Rp)</b>	695.648	792.297	1.002.012	1.307.688	1.437.930	1.765.845

*Source: Banking Statistic Indonesia and Central Beuro of Statistic*

The data show that the level of credit continued to increase during the year 2005-2010. When viewed from the level of growth in lending, during 2005 to 2008 there was an increase in credit growth in Indonesia, but in 2009 a decline in credit growth.

These circumstances show that the banking lending occurred in Indonesia have not been optimal. This is supported by the banking liquidity conditions that have not reached the optimum point. Banking liquidity itself seen from the LDR (Loan to Deposit Ratio) where during the period 2005-2010 the level of commercial banks in Indonesia LDR this magnitude do not meet the LDR

standards set by Bank Indonesia is the LDR is about 85% -110% (Manurung, Rahardja, 2004). As of December 2010 still range in the LDR 75.21% and showed a fluctuating condition. From 2005 until 2008 the state of LDR keeps rising in 2005 was 59.66% and in 2008 reached 74.58% and the volatile situation is shown when entering the year 2009 where the LDR has decreased from the previous 74.58% to 72.88% and increased again in 2010 to 75.21%. Amid the funds collected by the commercial banks from the public (third party funds) over the period 2005-2010 increased continuously from year to year.

LDR variable that have not reached the standards set by Bank Indonesia in the middle of the third party funds that continued to show improvement is still not optimal commercial bank lending and deposits related to show there are funds collected by the unemployed. The larger third-party funds that have been collected for commercial banks pose the greater the moral responsibility of commercial banks to channel credit to the debtor. Not optimal in lending was supported by a decrease in lending rates is large enough in 2009 and the decline in lending, which occurs in certain months during the period 2005-2010.

When credit is channeled optimally or in other words a decline in lending, and it happens because the banks are reluctant to channel credit to become phenomena. Credit Crunch is a phenomenon in which the lending decline in credit supply due to decreased willingness of banks to lend without being followed by higher interest rates (Pasarbasioglu, 1996). And it can be said the credit crunch is a reduction in the availability of credit supply. Where during the credit crunch lenders are reluctant to give loans. The statement proposed by Ding, Domac, and Ferri (1998) in his article entitled "Is There a Credit Crunch in East Asia". Sharper statement was also demonstrated by Gosh and Gosh (1999) which defines the quantity rationing of credit crunch, where interest rates are no longer functioning in balancing demand and supply of credit. Sudip Ghosh (2010) suggests that the credit crunch phenomenon occurs due to supply factors. This is in line with the statement proposed by Chen and Wang (2008) that the credit crunch scenario is due to a decrease in credit supply.

Based on the descriptions above, raised the question to be searched problem solving:

A. How develop of the interest rate, LDR, NPL, CAR, DPK, GDP, and inflation period of 2005-2010.

B. How does the influence of the interest rate, LDR, NPL, CAR, DPK, GDP, and inflation simultaneously and partially on the loan of credit.

## **Literature Review**

Understanding the bank in accordance with Law No. 10 year 1998 about changes to Law No. 7 of 1992 concerning Banking are an entity that collects from the public in the form of deposits and channeled to the community in order to improve the standard of living of the people. Of understanding the role of banks is seen as a functioning entity receiving deposits and channeled to the community. The purpose of these funds is of course to create economic growth and people's lives better.

Role of banks as suppliers of funds to the community is shown through one of the lending activities of banks. There are three types of loans are usually supplied by the bank consumer loans, investment loans and working capital loans. Basically three types of credit they still have the same goal, namely to promote economic growth in Indonesia. The amount of loans made by the bank is certainly not random. Bank will look at various factors that affect this credit.

Factors that affect lending in terms of demand or supply side. In terms of such demand, the credit quality of customers (for example, corporate / individual customers), the interest rate, and the risk of trying (for example, the factors that affect the expansion of the company's decision). In terms of the offer relating to the internal state of such bank, capital adequacy ratio (CAR), deteriorating asset quality, and availability of loanable funds, the NPL problem, and the reluctance of banks to lend because of the high level of business risk.

In this study will be discussed factors that influence the distribution of such loans, interest rates, deposits, GDP (Gross Domestic Product), inflation and banking financial ratios such as CAR

(Capital Adequacy Ratio), NPL, and the LDR. These factors can have a positive or negative effect on banking lending. Interest rates, in effect lending rates will negatively affect the lending.

When interest rates credit is high, then the amount of lending rates will be low, and vice versa when the interest rates of credit is low, then the amount of lending rates will be high. This is because when a high deposit rates, lending rates will go up and when in this position, customers or the public interest likely to save than to borrow the funds to the bank. And conversely, when interest rates low deposit, loan interest rate too low / down to make the customers or the public have a low interest rate for savings and loans will increase as interest rates are low.

Lending rates is itself a commercial bank interest given to the borrower or the price paid by borrowers to the banks. Exposure above the line with Keynes's theory about the direct links between people's willingness to pay the price of money (interest rate) with elements of the demand for money for speculative purposes, in this great demand when interest rates low and demand high interest . Low mortgage interest rates will boost demand for credit lending, this would make larger and conversely, high loan interest rates will reduce demand for credit and making loans will be lower.

Indicator of economic growth in a country can be measured by GDP. GDP is the market value of all final goods and services (final) produced in a country in a period. Where in the PDB, there are four components, namely, consumption, investment, government purchases and net exports. This study will use the level of real GDP as one of the variables. Real GDP is the production of goods and services valued at fixed prices. Directorate of Economic Research and Monetary Policy Bank Indonesia (2001) which states that real GDP has a positive effect on loan disbursements.

In this study, the authors restrict the variables to be examined in line with a phenomenon that occurs. The studied variables related to the lending policies of view of the credit crunch phenomenon. Credit crunch is a phenomenon associated with the lending banks not optimal. In line with the statement put forward by Pasarbasioglu (1996), the credit crunch is a reduction in credit supply due to decreased willingness of banks to lend without being followed by higher interest rates. It could be argued that credit is more influenced by supply factors the bank. In

addition to real GDP and a variable interest rate, other variables that will be examined in this study is to CAR, NPL, LDR, DPK, and inflation.

CAR (Capital Adequacy Ratio) is the capital ratio that indicates the ability of banks to provide funds for business development purposes and to accommodate the risk of loss of funds caused by the bank's operations (Ali, 2004). In conjunction with CAR loans will have a positive and significant impact on bank credit. This is because the higher the level of CAR which will create greater financial resources that can be used for business development and anticipate potential losses resulting from lending. This is in line with the results of research conducted by Boudriga, Taktak and Jellouli (2009) CAR is the higher value will result in increasingly smaller credit exposure.

In brief, to say the value of CAR would increase confidence in the banks to lend. NPL (Non Performing Loan) is a ratio used to measure the ability of banks to cover the risk of failure of repayment by the debtor (Darmawan, 2004). The relationship between the NPL, NPL credit is negatively affected bank lending. The greater the level of NPL lending rate will be smaller. Conversely, the smaller the level of NPLs, the greater the level of lending by the bank. This is because it illustrates the level of NPLs of credit risk borne by the bank and the higher value of NPL will also show the soundness of banks that are less good. For this reason, the NPL negative effect on bank lending.

LDR (Loan to Deposit Ratio) is the ratio that indicates the level of bank liquidity. Currently under the provisions of Bank Indonesia LDR standards is located approximately 85% -110% (Manurung, Rahardja, 2004). In relation to lending, LDR has a positive effect on lending. LDR is a high level to high lending rates, and vice versa when the LDR is low, even low levels of lending. This is because the LDR is the ratio that indicates the level of bank liquidity. The higher the level of the LDR showed indications of low capacity of bank liquidity because of the amount of funds required to finance a large enough credit. For the LDR has a positive influence on the level of lending.

DPK (Third Party Funds) are funds raised from outside the bank or the bank itself is not capital, but the funds come from the public. Form of third party funds consist of demand deposits,

savings deposits (Kasmir, 2008). DPK is widened part of the capital which the bank will participate in operational activities, especially bank credit disbursements. The bigger the bank's capital, the greater the confidence of banks to channel funds to the community. Therefore, the deposits have a positive effect on lending Soedarto (2004) and Budiawan (2005).

Banking lending was influenced by a country's economic condition. Economic conditions in a country that would better reflect the risks faced by banks in lending efforts. One indicator of economic conditions is inflation. Inflation is rising prices of goods in general and occurs continuously within a certain time period. Inflation can affect an investor's investment decision, where investors will prefer to invest when the inflation rate tends to be stable. Inflation occurs because the amount of money circulating in a large community, to prevent inflation, Bank Indonesia seeks to reduce the money supply by using the discount rate. Raised the discount rate would reduce the enthusiasm of commercial banks to borrow reserves at Bank Indonesia so it would be even smaller. This makes the ability of banks to lend to smaller communities, the money supply fell, and inflation can be prevented. For that level of inflation has a negative effect on lending.

Based on the theories and concepts relevant to the lending banks, then the hypothesis can be formulated as follows:

1. The interest rates on loans have a negative impact on bank lending in Indonesia
2. Real GDP has a positive impact on bank lending in Indonesia
3. CAR has a positive impact on bank lending in Indonesia
4. NPL has a negative impact on bank lending in Indonesia
5. LDR has a positive impact on bank lending in Indonesia
6. DPK has a positive impact on bank lending in Indonesia

7. Inflation has a negative impact on bank lending in Indonesia

## **Methodology**

Object of this study is to document the condition of Indonesia's economic and financial conditions in the commercial banks in Indonesia by using two types of variables as an object of study, the dependent variable and independent variables.

In this study, methods of data collection was performed using the method of documentation. This method of collecting data from existing documents or records are stored, such as, through newspapers, transcripts of records, books, or anything else. In this study, the methods used to gather documentation and review of secondary data from annual banking statistics can be accessed at [www.bi.go.id](http://www.bi.go.id) and [www.bps.go.id](http://www.bps.go.id).

This research was library research methods. This method is all the work done by researchers to gather information relevant to the topic or issue that will be or are being investigated. The study explores the information through the theories contained in books, journals, and scholarly works related to research.

In this study the design of the analysis used by verificatif analysis and descriptive analysis.

### 1. Analysis verificatif

Verificatif analysis used in this study was multiple regression. Multiple regression is a statistical technique that predicts the values of one variable based on two or more other variables. In multiple regression there are two or more independent variables used to predict the outcome. And possessed a common form of multiple regression is like;

$$Y = + 1 X 1 + 2 X 2 + 3 X 3 + \dots + t X t + u$$



It is behind the selection of statistical techniques in research is the presence of independent variables that affect more than one outcome of the dependent variable. In this case, want to see the influence of independent variables, namely interest rate, real GDP, CAR, NPL, LDR, DPK, and inflation on bank lending rate in Indonesia as the dependent variable. In addition, the selection of multiple regression is due to each of the independent variables (interest rate, real GDP, CAR, NPL, LDR, DPK, and inflation) to give effect on the dependent variable lending. Multiple regression models in this study are:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + e \dots$$

Y: Loan of Credit

b1 - b7: Coefficient Parameters

X1: Interest Rate Credit

X2: real GDP

X3: CAR

X4: NPL

X5: LDR

X6: DPK

X7: Inflation

e: error

## 2. Descriptive Analysis

This analysis combines reason with the existing literature, so not only from the opinion. Theories used in using this analysis, which in turn is associated with reason and existing problems. Exposure was carried out relating to the results obtained verificatif analysis associated with reason and the existing theory.

The steps for doing this research are:

1. Collecting data banks for each of the variables used (interest rate, real GDP, CAR, NPL, LDR, DPK, and inflation) on a monthly basis during the years 2005-2010.

2. Process data from a variable interest rate by taking the average of working capital loans and investment loans each month.
3. Analyzing the development of mortgage interest rates, real GDP, CAR, NPL, LDR, DPK, and inflation
4. Data variables that have been acquired and processed further tested the classical assumption that consists of four tests, the test for normality using the Kolmogorov Smirnov test statistic tools, multicollinearity test with statistical tools Variance Inflation Factor (VIF), heteroscedasticity test using the scatter plot by plotting ZPRED value (predictive value) with SRESID (residual value), and test analysis tools Autocorrelation with Durbin-Watson (DW).
5. Doing both simultaneously test hypotheses and partial, and to find the value of the coefficient of multiple determination.
6. Perform multiple regression analysis on the dependent and independent variables
7. Conclusion

## The Findings

Description of the development of the variables after processing the data obtained the maximum value, minimum value, average value and standard deviation of the data variables are used. The results of processing can be seen in the table below:

Table 2

f

### Descriptive Statistics

N		Minimum	Maximum	Mean	Std. Deviation
Kredit	24	5.68252E5	1.71596E6	1.0505946E6	3.54819381E5
Suku_Bunga_Kredit	24	.12635	.16100	.1407910	.01134744
PDB_riil	24	4.27003E5	5.93704E5	5.0552191E5	5.00851616E4
CAR	24	.1674	.2271	.195389	.0173078
NPL	24	.0289	.0828	.051164	.0189635
LDR	24	.5041	.7758	.667793	.0858701
DPK	24	9.52716E5	2.24164E6	1.5063699E6	3.80910131E5
Inflasi	24	.0259	.1779	.084117	.0428574
Valid N (listwise)			24		

Based on Table 2 above shows the  $N = 24$  time observations, the dependent variable credit has a minimum value of 568 252 billion rupiah and a maximum value of 1.71596 million billion rupiah. This variable also has an average value of 1,050,594.6 billion rupiah with a standard deviation of 354,819.381 billion rupiah. The results showed an average value greater than the standard deviation of the mean value of the data distributed.

Independent Variable Interest Rate Loans have a minimum value of 12.64% and a maximum value of 16.1%. This variable also has an average value of 14.08% with a standard deviation of 1.13%. The results showed an average value greater than the standard deviation of the mean value of the data distributed.

The second independent variable is real GDP, when seen from the results of Table 2 shows the data is properly distributed. It is seen from the average value of real GDP is greater than the value of the standard deviation of consecutive 505,521.91 and 50085.1616 Billion rupiah. Possess in addition to well-distributed data, real GDP has a minimum value of 427 003 billion rupiah and a maximum of 593 704 billion rupiah.

CAR is an independent variable that shows the ratio of bank capital. Throughout the observation period the year 2005-2010, the variable CAR shows the minimum value of 16.74% and a maximum value of this variable by 22.71%. With the number of data observations at 24, the average of this variable is at 19.54% and has a standard deviation of 1.73%.

The results showed an average value greater than the standard deviation of the mean value of the data distributed. As stated previously the bank's capital ratio is shown by the level of CAR, while the risk of one bank indicated by the level of NPLs. NPL is expected to have levels below 5%, the smaller the NPL indicates the risk of smaller banks. During the period 2005-2010 NPL has a minimum value of 2.89% and the maximum value ever achieved during that period NPL is 8.28%. If viewed as a whole the data period 2005-2010, data NPL has been distributed. It is seen from the average value of 5.12% with a standard deviation of 1.89%. Data can be said to be evenly distributed when the average value is greater than the value of standard deviation.

Variables that describe the state of the banking liquidity is LDR. In accordance with the

standards of the Bank Indonesia, banks in Indonesia are expected to have high levels of LDR by 85% -110%. Comparing with the standards set by Bank Indonesia, during the period 2005-2010 the LDR has a minimum value of 50.41% and the maximum value or the highest value of 77.58%. This shows that the level of bank LDR in Indonesia is relatively not meet the standards set by Bank Indonesia. On average, LDR variable has a value of 66.78% with a standard deviation of 8.59%. Although the LDR has not reached the level set by Bank Indonesia, but the data of the LDR has been distributed.

LDR has not only well-distributed data, but also deposits show data that has been distributed. Deposits as part of the funds raised by banks from the public and became the capital for the bank itself. Independent variables deposits is expected to have high value and deposits during the year 2005-2010 shows the minimum value of 952 716 billion rupiah and its maximum value of 2.24164 million billion rupiah with an average of 1,506,369.9 billion rupiah. This variable has a value of standard deviation of 380,910.131 billion rupiah. Average value greater than the standard deviation of the variables is what makes the deposits can be said to have a well-distributed data.

Inflation as an indicator of the macro economic conditions have fluctuated throughout the period of observation is 2005-2010. Inflation has fluctuated an average value of 8.41% with a standard deviation of 4.29%. And fluctuated from these data, the lowest score ever on inflation was at 2.59%, while during the same period of the highest value ever achieved is that inflation reached 17.79%. The number is high enough for a macro indicator of inflation. Although the data have fluctuating inflation, inflation data is properly distributed.

Based on the F test is obtained jointly influence the independent variable interest rate, CAR, NPL, LDR, deposits, and credit inflation of the dependent variable. The results are as follows:

Table 3

F test

**ANOVA<sup>b</sup>**

Model	F	Sig.
1 Regression	1.266E3	.000a
Residual		
Total		

From the table above shows a significant F value of 0.000 and is smaller than 0.05, then it can be said to be jointly independent variable interest rate, CAR, NPL, LDR, deposits, and the inflation effect on the dependent variable lending.

2. Multiple coefficient of determination (R<sup>2</sup>)

The coefficient of determination showed how much the independent variable interest rate, CAR, NPL, LDR, DPK, and inflation explain the dependent variable lending. In this study value of the coefficient of multiple determination adjusted R square is visible. Adjusted R square shows the value of R<sup>2</sup> that has been tailored to the independent variables so as to provide a penalty or punishment for the addition of the independent variables are able to increase the predictive power of a model.

Based on the results obtained by processing the data using SPSS is the result that the R<sup>2</sup> value of 0.99 or 99.7% so it can be said that 99.7% of credit variables can be explained by the variable interest rate, CAR, NPL, LDR, DPK, inflation.

Table 4  
Determination Coefficient (R<sup>2</sup>)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999a	.998	.997	1.95044331E13

Influence of independent variables on the dependent variable partial credit outlined below:

Table 5

t test

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficient			Standardized Coefficient	
B		Std. Error	Beta		t	Sig.
1 (Constant)	3.745E14	1.374E14	2.726		0.014	**
Interest rate	-1.102E15	7.741E14	-.035		-1.424	.173
CAR	-1.938E15	3.564E14	-.095	-5.438	.000	***
NPL	-1.266E15	6.285E14	-.068	-2.015	.060	*
LDR	-4.748E13	1.358E14	-.011		-.350	.731
DPK	.838	.032	.900	26.441	.000	***
Inflation	5.191E14	1.479E14	.063	3.510	.003	**

$$Y = 3,745 \times 10^{14} - 1,102 \times 10^{15} X_1 - 1,938 \times 10^{15} X_2 - 1,266 \times 10^{15} X_3 - 4,748 \times 10^{13} X_4 + 0,838 X_5 + 5,191 \times 10^{14} X_6$$

X1 : Interest rate

X2 : CAR

X3 : NPL

X4 : LDR

X5 : DPK

X6 : Inflations

Multiple linear regression equation based on regression coefficients obtained credit interest rate of (-)  $1.102 \times 10^{15}$ . The coefficient indicates a negative relationship between the variable interest rate loans with lending. GDP variable is not included in the regression equation can not pass the test because the classical assumptions. CAR regression coefficient of (-)  $1.938 \times 10^{15}$ . The coefficient indicates a negative relationship between the variable CAR by lending. NPL regression coefficient of (-)  $1.266 \times 10^{15}$ . The coefficient indicates a negative relationship between the variables NPL to loans. LDR regression coefficient of (-)  $4.748 \times 10^{13}$ . The coefficient indicates a negative relationship between the variables LDR with lending. Regression coefficient of DPK (+) 0.838. Coefficient indicates a positive relationship between the variables

Deposits with credit. Regression coefficient for inflation (+)  $5.191 \times 10^{14}$ . Coefficient indicates a positive relationship between inflation variable lending.

Based on the beta regression coefficients in Table 5 it can be concluded DPK variables have the most impact on lending to the beta regression coefficient of (+) followed by the variable CAR 0.900, NPL, inflation, interest rate, and the LDR is a row of (-) 0.095 , (-) 0.068, (+) 0.063, (-) 0.035, (-) 0.011.

Of the t test can be conducted discussions proposed the following hypothesis:

1.H1: loan interest rates have a negative influence on bank credit

Based on t test results obtained that the value t count equal (-) 1.424 to 0.173 significance level. Because of the significance level greater than 0.05 and the value t count are negative, then it is partially independent variable mortgage interest rates are not significantly negative effect on the dependent variable credit. Thus the hypothesis is accepted.

2. H2: CAR positive effect on bank credit

Based on t test results obtained that the value t count equal (-) 5.438 to 0.000 significance level. Because of the significance level less than 0.05 and the value t count are negative, then it is partially independent variables have a significant negative CAR of the dependent variable credit. Thus the hypothesis is rejected.

3. H3: NPL negative effect on bank credit

Based on t test results obtained that the value t count equal (-) 2.015 to 0.060 significance level. Because of the significance level greater than 0.05 and the value t count are negative, then the partial effect of independent variables were not significant NPL negative effect on the dependent variable credit. Thus the hypothesis is accepted.

#### 4. H4: LDR positive effect on bank credit

Based on t test results obtained that the value t count equal (-) 0.350 to 0.731 significance level. Because of the significance level greater than 0.05 and the value t count are negative, then the partial effect of independent variables were not significant LDR negative effect on the dependent variable credit. Thus the hypothesis is rejected.

#### 5. H5: DPK positive effect on bank credit

Based on t test results obtained that the value t count equal (+) 26 441 with a significance level of 0.000. Because of the significance level less than 0.05 and the value t count is positive, then it is partially independent variables have a significant positive effect on DPK dependent variable credit. Thus the hypothesis is accepted.

#### 6. H6: Inflation negative effect on bank credit

Based on t test results obtained that the value t count equal (+) 3510 with a significance level of 0.003. Because of the significance level less than 0.05 and the value t count is positive, then it is partially independent variables have a significant positive effect on inflation is the dependent variable credit. Thus the hypothesis is rejected.

### 1 Variable Interest Rate Loans

The results of this study indicate that an increase or decrease in mortgage interest rates during the study period did not affect significantly the distribution of credit. The higher level of lending rates, the lower the lending banks, as well as reverse the lower the interest rate the higher the



lending banks. This is consistent with the hypothesis on mortgage interest rates (H1: Interest rates negatively affect credit lending banks, accepted).

Lending rates is the cost to be paid by the borrower on the loan is received and a lender in return for their investments. Interest rates will affect an individual's decision to the choice of spending more money or save money in savings (Nopirin, 1996). Keynes argued there is a direct relationship between people's willingness to pay the price of money (interest rate) with elements of the demand for money for speculative purposes, in this great demand when interest rates low and demand high interest peanuts. Low mortgage interest rates will boost demand for loans to make larger loans, but the levels are not significant and high reverse mortgage interest rates will reduce demand for credit and making loans is lower.

## 2. Variable Capital Adequacy Ratio (CAR)

The results of this study indicate that an increase or decrease in CAR during the study period significantly affect lending. The higher the level of CAR, the lower the lending banks, as well as conversely the lower the CAR of the higher bank lending. This is consistent with the hypothesis on the CAR (H2: CAR positive effect on bank lending, denied).

Capital Adequacy Ratio (CAR) is a ratio that shows how much all that risky bank assets (loans, investments, securities, claims on other banks) participated financed and banks use their own capital, in addition to obtaining funds and resources outside the bank , such as public funds, loans, and others. Throughout the study period 2005-2010 CAR values in the range of 22% and this shows that the CAR has been above the minimum requirement of 8%. Negative relationship in the CAR of the bank credit is associated with the CAR condition that has been above the minimum requirement to show that there is still an unemployed bank capital. This is possible because the bank still see the high business risks in the economy resulting in a decrease in bank loans. The economic crisis that has penetrated the real sector has an impact on company cash flow which in turn will affect the company's ability to meet its obligations. Sluggishness in the real sector will result in increased risk of default so that the banks take some

action credit rationing. And in the context of risk management is particularly relevant if the bank eventually tried to avoid giving credit to high-risk business activities (info bank news, 2011).

### 3. Variable non-performing loans (NPL)

The results of this study indicate that an increase or decrease in NPLs during the study period did not affect significantly the distribution of credit. The higher the level of NPLs, the lower the lending banks, as well as conversely the lower the higher the level of NPLs of banking lending, but the levels were not significant. This is consistent with the hypothesis on the NPL (H3: NPL negative effect on the lending banks, accepted).

NPL is the ratio that measures the ability of banks to cover the risk of failure of repayment by the debtor (Darmawan, 2004). NPL thus reflects the bank's risk, the greater the level of NPLs in which the greater the level of bank risk in bank credit, so that the high credit risk in the bank will reduce lending by banks.

### 4. Variable Loan to Deposit Ratio (LDR)

The results of this study indicate that an increase or decrease in LDR during the study period did not affect significantly the distribution of credit. The higher the level of the LDR, the lower the lending banks, as well as conversely the lower the higher the LDR bank lending. This is consistent with the hypothesis on the LDR (H4: LDR positive effect on bank lending, denied). LDR is a ratio that measures the level of bank liquidity, where the higher the LDR ratio gives an indication of the low capacity of the concerned bank liquidity because of the amount of funds required to finance the greater credit. Data regarding the LDR during the study period is in numbers ranging from 59.66% -75.21% and this rate remains below shows the LDR standards set by Bank Indonesia which ranges from 85% -110%. This situation is an indication of bank lending is not optimal, so in line with these studies, high levels of LDR is not followed by a high level of lending. Or in other words there not optimal in bank lending. In addition, the LDR is still below the standards set by Bank Indonesia show an not optimal in the LDR and be an indication of credit rationing (info bank news, 2011).

## 5. Third Party Funds (DPK)

The results of this study indicate that an increase or decrease in deposits during the study period significantly affect lending. The higher the level of deposits, the higher the lending banks, as well as conversely the lower the level of the lower deposits of banking credit. This is consistent with the hypothesis on the DPK (H5: DPK positive effect on bank lending, accepted). Deposits as funds raised from outside the bank. Funds raised will be part of bank capital, but from the wider community. The presence of deposits of the bank also took a role that is as collector of public funds where the funds have been collected are then distributed through lending. The existence of the right bank to raise funds to make the bank has a moral responsibility to extend credit to the debtor.

View of the results of this study was, DPK has the greatest influence in the distribution of bank credit. This situation is supported by a statement from Dendawijaya (2005) who argued that the funds collected from the community is the largest funding source of the most relied upon by the bank (can reach 80% -90% of all funds managed by the bank).

## 6. Variable Inflation

The results of this study indicate that an increase or decrease in inflation during the study period significantly affect lending. The higher the rate of inflation, the higher the lending banks, as well as conversely the lower the inflation rate the lower the lending banks. This is in line with the inflation hypothesis (H6: Inflation negative effect on bank lending, denied). Significant effect on the inflation variable credit illustrates that the macro variables have a significant effect on bank credit. Describe a positive relationship when the turbulent state of Indonesia's economy with high inflation rates, bank loans remain in a state that leads to positive. This is an indication that the state of the banking sector is still quite stable when the economy was crises in Indonesia. The situation is not actually in credit growth continues throughout the study period, Indonesia experienced a decline in credit growth sharply in 2009. However, with

the results of this study showed declining inflationary economic conditions in Indonesia at a certain time period of the study still shows the state of the banking sector is not merely co-crash. Picture of a positive relationship is shown also by the investment climate in Indonesia is good. Indonesia's economic growth during the last six years (2005-2010) improved and positive. Growth that occurs is supported by good conditions in export activity, increased consumption and investment. But this condition does not necessarily improve the economic growth experienced crises. First flush occurs when inflation in 2005 rose sharply because of rising fuel prices, GDP in the fourth quarter revised to 4% -4.5% 5.2% where the previous -5.7%. The second turbulence occurred in late 2008 where the decline in exports in the fourth quarter. But overall, economic growth in Indonesia is still relatively high economic growth in the fourth quarter slowed to 5.7%. A good defense situation in Indonesia growth seen in quarter three of 2009 amid the global crisis with growth still above 4%.

Not only crises, it is also quite good conditions on economic growth in Indonesia. This can be seen throughout the years 2006-2007 global demand and export commodity prices are still rising in the international market. This situation is interpreted by domestic investors that the economy is recovering. In 2010, Indonesia's economic growth is continuing and macroeconomic stability is maintained. Growth that occurred was driven exports, consumption, and investment and is expected to Indonesia's economy grew by 6% -6.3% (2005-2010 TKM Bank Indonesia). This shows a good condition after hit by the global economic crisis. This situation is made when inflation has increased the state is followed by a favorable investment climate and economic growth continue to rise so that interest on credit demand was still there.

## Conclusion

Based on the results of data processing has been done on the variable credit, interest rate, real GDP, CAR, NPL, LDR, DPK, and inflation can be concluded:

1. The development of a variable interest rate, real GDP, CAR, NPL, LDR, DPK, and inflation in the period 2005-2010 as follows:

a. The development of a variable interest rate over the period 2005-2010 showed the lowest value of 12.64% and the highest value of 16.1%. The highest value of mortgage interest rates occurred in the first quarter in 2006 and this is the case triggered by the high risk the entire economy. These circumstances make the Bank Indonesia set a policy level the BI rate was maintained at 12.75% and the rate of other monetary instrument does not change.

b. In contrast to the interest rate, the highest value in real GDP occurred in the third quarter of 2010 amounting to 593 704 billion yen, the high value of real GDP in 2010 illustrates that Indonesia's economic growth to crawl into a good direction and continues to increase. Growth was driven by exports, consumption and investment. While the lowest values experienced real GDP had occurred in the first quarter of 2005 amounting to 427 003 billion yen.

c. The third independent variable is the CAR. Throughout the period 2005-2010, the value of this variable has a value as low as 16.74% and the highest value achieved from the ratio of bank capital amounted to 22.71%. The figure shows a good state of bank capital and has met the minimum standards of the Bank Indonesia amounting to 8%. A good bank capital can increase the confidence of banks in their activities.

d. Subsequent development of a fourth independent variable is NPL. NPLs are expected to have values below 5% and all the observation period, the lowest value of 2.89% NPL. However, inversely proportional to the lowest value has been below 5%, the highest NPL figure was sitting at 8.28% in the second quarter of 2006. In the quarter, the conditions for economic growth in Indonesia is still not as expected and is still relatively low. This happens due to low domestic demand, yet the increasing purchasing power, has not improved the investment climate, and government spending is still relatively low.

e. LDR has a development value of the variable which is still below the standards set by Bank Indonesia during the period 2005-2010. LDR standards set by Bank Indonesia is 85% -110% during 2005-2010 and achieved the highest LDR is 77.58%, this figure is certainly far below the standard of Bank Indonesia and the lowest value of 50.41 was held LDR %.

f. Still in the same observation period, the variable deposits have the lowest value of 952 716 billion yen and the highest value of 2.24164 million billion yen. This figure shows the increase of good in society to mobilize funds from the bank's capital. The still high public confidence in national banks to mobilize funds for the high society.

g. Variable inflation developments over the period 2005-2010 has the lowest value of 2.59% and the highest value of 17.79%. Surge in inflation to 17.79% occurred in the fourth quarter of 2005 and the situation was triggered by the rising price of fuel was due to the increase in world oil prices. The increase in fuel price hike is also an impact on other tariffs. Overall, these independent variables have a well-distributed data for which the average of each independent variable has a value greater than the standard deviation.

2. Influence of the independent variable interest rate, CAR, NPL, LDR, DPK, and inflation on bank loans is as follows:

a. Partial variable mortgage interest rates have an effect is not significant and negative relationship to the dependent variable credit. This is evidenced from a larger significance level of 0.05, so that hypothesis 1 is received.

b. Partially variable and CAR have a significant negative relationship to the dependent variable credit. This is evidenced from a smaller significance level of 0.05, so the second hypothesis is rejected.

c. NPL variable partial effect was not significant and negatively related to credit the dependent variable. This is evidenced from a larger significance level of 0.05, so that hypothesis 3 is received.

d. LDR variable partial effect was not significant and negatively related to credit the dependent variable. This is evidenced from a larger significance level of 0.05, so that hypothesis 4 is

rejected.

e. DPK partially significant variable and positively related to the dependent variable credit. This is evidenced from a smaller significance level of 0.05, so that hypothesis 5 is received.

f. Partial inflation variables have a significant and positively related to the dependent variable credit. This is evidenced from a smaller significance level of 0.05, so the hypothesis 6 was rejected.

Overall the independent variables, namely interest rate, CAR, NPL, LDR, DPK, and inflation jointly affect the dependent variable credit.

After testing of several hypotheses and drawing conclusions, suggestions can be presented in this study:

1. Academic advice, if wanted to do some research going back to the factors that influence the lending policies, the authors suggest such as follows:

a. Subsequent research suggested trying to study at another bank, for example, loans to local banks.

b. Further research is better to use an observation period of more than previous studies.

c. When using a variable which has nominal rate in large numbers, it helps in the processing of variable data is made logarithmic so that the model obtained will be simplified.

2. Practical advice, in the decision to make loans, prospective borrowers should consider factors that influence the credit policy was about to be taken within the period of the credit decision-making and consider the condition of the economy is going at that time. For lenders, lending policies should not only focus on credit risk that occurs but also pay attention to economic growth, so hopefully credit will be optimized.

## Reference

- Agung, Juda, dkk. 2001. *Credit crunch di Indonesia setelah krisis fakta, penyebab, dan implikasi kebijakan*. Studi Direktorat Riset Ekonomi dan Kebijakan Moneter.
- Bernanke, Ben S. dan Lown, Cara S. 1991. *The credit crunch*. Brookings Papers on Economic Activity.
- Boediono. 1985. *Seri Sinopsis Pengantar Ilmu Ekonomi No. 5 Ekonomi Moneter*. Yogyakarta: BPFY-Yogyakarta.
- Boudriga , Abdel Kader; Neila Boulila Taktak; dan Sana Jellouli. 2009. *Banking supervision and non performing loans, a cross-country analysis*. Journal of Finance Economic Policy.
- Chen, Nan-Kuang dan Hung- Jen Wang. 2008. *Identifying the demand and supply effect of financial crises on bank credit evidence from taiwan*. Sourthen Economic Journal.
- Dendawijaya, Lukman. 2005. *Manajemen Perbankan*. Bogor: Ghalia Indonesia.
- Ding, Wei; Domac, Ilker; dan Ferri, Giovanni. 1998. *Is there a credit crunch in east asia?*. Asia Pasific Journal of Economics & Business.
- Ghosh, Sudip. 2010. *Is the credit crunch a supply side phenomenon? A theoretical appraisal*. Academy of Banking Studies Journal.
- Ghosh, Swati R dan Atish R. Ghosh. 1999. *East asia in the aftermath: was there a crunch?*. A Working Paper of the International Monetary Fund.
- Gross , David B. dan Nicholas S. Souleles. 2002. *Do Liquidity constraints and interest rate matter for consumer behavior? Evidence from credit card data*. The Quarterly Journal of Economics.
- Hasan, Iftekhar dan Sudipto Sarkar. 2002. *Banks option to lend, interest rate sensitivity, and credit availability*. Review of Derivatives Research.



Kasmir. 2008. *Bank dan Lembaga Keuangan Lainnya*. Jakarta: PT RajaGrafindo Persada.

Mankiw, N. Gregory. 2006. *Pengantar Ekonomi Makro*. Jakarta: Salemba Empat.

Manurung, Mandala dan Prathama Rahardja. 2004. *Uang, Perbankan, dan Ekonomi Moneter*. Jakarta: Fakultas Ekonomi Universitas Indonesia.

Nopirin. 1986. *Ekonomi Moneter*. Yogyakarta: BPFE-Yogyakarta.

Nopirin. 1987. *Ekonomi Moneter*. Yogyakarta: BPFE-Yogyakarta.

Sudjana. 2001. *Statistika Untuk Ekonomi Dan Niaga*. Bandung: PT. TARSITO BANDUNG

Sunyoto, Danan. 2011. *Praktik SPSS Untuk Kasus*. Yogyakarta: Mulia Medika.

Taswan. 2010. *Manajemen Perbankan Konsep, Teknik & Aplikasi*. Yogyakarta: UPP STIM YKPN YOGYAKARTA.

Uyanto, Stanislaus S. 2009. *Pedoman Analisis Data Dengan SPSS*. Yogyakarta: Graha Ilmu.

Wijaya, Krisna. 2010. *Analisis Kebijakan Perbankan Nasional*. Jakarta: PT Elex Media Komputindo

[www.bi.go.id](http://www.bi.go.id)

[www.bps.go.id](http://www.bps.go.id)

<http://www.konsultanstatistik.com/2009/03/uji-normalitas-dengan-kolmogorov.html>

<http://jurnal.pdii.lipi.go.id/admin/jurnal/13209299310.pdf>