

**THE INFLUENCE OF MACROECONOMIC FACTORS ON INDONESIAN BANKING PERFORMANCE (IN BUKU 3 AND BUKU 4 OF 2012-2017 PERIOD)**

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**ABSTRACT:** *Banks should have adequate capacity, especially in holding capital, to be able to manage risks. In its development, the requirements of capital's components and instruments as well as the calculation of bank capital adequacy need to be adjusted to the international standard. Strong capital will make banks healthier and more competitive in the face of the competition from major banks in the ASEAN region and globally. Therefore, the Financial Services Authority (OJK) issued a number of regulations so that the national banking industry is stronger and more trustworthy by the public. The rule is the OJK Regulation (POJK) Number 6/POJK.03/2016 concerning Business Activities and Office Networks Based on the Core Capital. In 2012, the dynamics of the global economy set a negative trend and began to have an impact on the Asian economies, such as Indonesia. In this study, the focus was on the improvement in banking risk indicators that occurred to evaluate the performance of banks by using CAR, ROA, NIM, LDR and NPL variables, and analyze macroeconomic factors such as inflation, interest rates, exchange rates, and GDP. This study aims to describe the performance of banking in Bank Umum Kegiatan Usaha 3 and 4 (BUKU 3 and BUKU 4) consist of NIM, NPL, CAR, ROA, and LDR and analyze the response of macroeconomic variables to banking performance in banks in BUKU 3 and BUKU 4. The method used was the VECM estimation model that was then analyzed with the Impulse Response Function (IRF) and Forecast Error Decomposition of Variance (FEVD). The results of the research on banking performance, if it was grouped based on bank business activities in BUKU 3 and BUKU 4, showed that overall bank performance in BUKU 4 was better than which was in BUKU 3. The result of bank IRF and FEVD in BUKU 3 was that the macroeconomic variable that provide the greatest response and contribution was interest rates. While the result of bank IRF and FEVD in BUKU 4 was that the macroeconomic variable that gave the biggest response and contribution was inflation.*

**KEYWORDS:** Macroeconomic, Indonesia Banking Performance, Panel Data, VECM.

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## INTRODUCTION

In economy, the role of banks is significant as financial institutions that have the main tasks of collecting funds from the community and lending it back to the community or employers to finance real sectors through the provision of credit (Bahsan, 2003). Banks have functions as agents of development, agents of trust, and agents of service. Banks must have adequate capacity, especially in holding capital, to be able to manage risks. In its development, the requirements of capital's components and instruments as well as the calculation of bank capital adequacy need to be adjusted to the international standard, namely the Global Regulatory Framework for More Resilient Banks and Banking Systems better known as Basel III. Strong capital will make banks healthier and more competitive in the face of the competition from major banks in the ASEAN region and globally. Banks are believed to be able to handle risks that arise when business is expanded abroad. Therefore, the Financial Services Authority (OJK) issued a number of regulations so that the national banking industry is stronger and more

trustworthy by the public. The rule is the OJK Regulation (POJK) Number 6/POJK.03/2016 concerning Business Activities and Office Networks Based on the Core Capital. Beside the regulation afore mentioned, there are also Circular Letter Number 27/SEOJK.03/2016 concerning Commercial Bank Business Activities Based on the Core Capital, and Circular Letter Number 14/SEOJK.03/2016 concerning the Opening of Commercial Bank Office Networks Based on the Core Capital.

OJK groups banks based on the business activities or *Bank Umum Kegiatan Usaha* (BUKU) with the core capital owned. BUKU 1 has core capital of less than IDR 1 trillion, BUKU 2 is a core capital bank of IDR 1 trillion to less than IDR 5 trillion, BUKU 3 is a core capital bank of IDR 5 trillion to less than IDR 30 trillion, and BUKU 4 is a bank with capital core IDR 30 trillion and above. The higher the bank's core capital, especially those entering BUKU 4, the stronger the bank and the wider scope of business activities it has. The greater the capital of a bank, the more able the bank to carry out a variety of business activities and gain greater business expansion outside Asia, the more business opportunities that are cultivated so that the bank's capacity to manage risks is greater.

In this study, the researchers used variables to analyze banking conditions and macroeconomic variables. These aspects are then assessed by using financial ratios so that they can assess the financial condition of the banking company (Kasmir, 2002). The variables to be examined consist of CAR (Capital Adequacy Ratio), ROA (Return on Assets), LDR (Loan to Deposit Ratio), NIM (Net Interest Margin) and NPL (Non Performing Loans). In addition, from the macroeconomic side, the variables studied are the interest rates, inflation, exchange rates and Gross Domestic Product (GDP).

## LITERATURE REVIEW

### Banking

The definition of a bank, according to Bank Indonesia and according to Law number 7 Year 1992 concerning banking as amended by Regulation number 10 Year 1998, is a business entity that collects funds from the public in the form of deposits and distributes them to the public in the form of loans and/or in other forms in order to improve the lives of many people. The definition of banks according to Financial Accounting Standards number 31 is: Banks are institutions that act as financial intermediaries between parties who have excess funds and parties that need funds, as well as institutions that function to facilitate payment traffic. The definition of banks based on the Decree of the Minister of Finance of the Republic of Indonesia Number 792 Year 1990 are entities whose activities in the financial sector are carry out the collection and distribution of funds to the public, especially to finance company investment.

### Banking Performance

The banking performances studied in this research are:

#### Return on Assets (ROA)

Return on assets is a profitability ratio that shows the comparison between pre-tax profit and total bank assets. ROA is used to measure the effectiveness of a company in generating profits by utilizing *aktiva* or assets it has. In other words, this ratio is used to measure the ability of a

bank's management to obtain *laba* (profits) as a whole. A bank can be included in healthy category if it has a minimum ROA ratio of 1.5%. The greater the ROA of a bank, the greater the level of profit achieved by the bank and the better the bank's position in terms of asset use (Dendawijaya, 2009). ROA can be formulated as follows:

$$ROA = \frac{\text{profit before tax}}{\text{average of total assets}} \times 100\%$$

### **Loan to Deposit Ratio (LDR)**

LDR is one of the liquidity ratios. Liquidity ratio is an analysis carried out on the ability of banks to fulfill their short-term obligations or obligations that are due. Some liquidity ratios that are often used in assessing the performance of a bank include: Cash Ratio (CR), Reserve Requirement (RR), Loan to Deposit Ratio (LDR), and Loan to Asset Ratio (LAR). In this study, LDR is used to measure liquidity because it is a ratio commonly used in Indonesia. This ratio is used to determine the ability of banks to repay obligations to their customers who have invested their funds by relying on loans that have been given as a source of liquidity (Dendawijaya, 2009). According to Bank Indonesia Circular Letter Number 3/30/DPNP dated on December 14<sup>th</sup>, 2001, LDR is the ratio of loans given to the third parties which includes demand deposits, savings deposits, time deposits but not including demand deposits and time deposits between banks. LDR can be formulated as follows:

$$LDR = \frac{\text{the amount of credit given}}{\text{the third - party funds}} \times 100\%$$

### **Net Interest Margin (NIM)**

NIM is a ratio that describes the level of profit obtained by the bank compared to the income received from its operational activities (Margaretha, 2007). This ratio can be formulated as follows:

$$NIM = \frac{\text{net interest income}}{\text{average productive assets}}$$

Net interest income is the interest income from earning assets owned by the bank minus the interest expense given by the bank to the fund owner. The greater the NIM owned by the bank means that the bank is better at managing its productive assets.

### **Capital Adequacy Ratio (CAR)**

CAR is a ratio that shows how far all risk-bearing bank assets (credit, investments, securities, bills on other banks) are also financed from the bank's own capital funds in addition to obtaining funds from sources outside the bank, such as public funds, loans (debt), etc. The higher the CAR, the better the bank's ability to bear the risk of any risky credit or productive assets. The amount of CAR is measured by the ratio between bank capital to Risk Weighted Assets (RWA). According to PBI No. 10/15/PBI/2008 Article 2 which says that Banks are required to provide a minimum capital of 8% of the Risk Weighted Assets (RWA). A bank experiences a risk of capital if it cannot provide a minimum capital of 8% (Dendawijaya, 2009). The amount of CAR of a bank can be calculated by the following formula:

$$CAR = \frac{\text{bank capital}}{\text{Risk Weighted Assets}} \times 100 \%$$

### **Problem on Credit (Non Performing Loan)**

Non Performing Loan is a comparison between non-performing loans and total loans given to debtors or loans that experience difficulty repayment due to intentional factors and/or due to external factors beyond the debtor's control ability. The higher the value of this ratio, because of the greater the credit risk borne by the bank, the less profit (ROA) obtained by the bank (Kasmir, 2008). NPL, according to Bank Indonesia Circular Letter Number 8/31/DPBPR dated on December 12<sup>th</sup>, 2006, systematically can be formulated as follows:

$$NPL = \frac{\text{problematic loan}}{\text{total credit}} \times 100\%$$

### **Macroeconomic Factors**

#### **Interest Rate (BI Rate)**

Interest rate can be interpreted as prices to be paid by banks and/or customers as remuneration for transactions between banks and their customers (Ismail, 2011). Interest rate is a conventional instrument to control or suppress the rate of growth of the inflation rate. High interest rates will encourage people to invest their funds in banks rather than investing their funds in production sectors or industries, which have far greater risk compared to investing money in banks, especially in the form of deposits (Khalwaty, 2000). The interest rate used in this study is the BI Rate.

#### **Inflation**

Inflation is a condition where prices and costs generally increase. In other words, inflation is also a process of decreasing the value of a currency continuously. According to Supriyono (2011), generally, the influences that trigger inflation are excessive demand, scarcity of production, disruption of distribution, increase in electricity rates, oil prices, SBI interest rates, and others.

#### **Gross Domestic Product (GDP)**

Gross Domestic Product (GDP) states total income and national total expenditure on the output of goods and services. The goal of GDP is to summarize economic activity in a particular money value over a period of time (Mankiw, 2007).

According to Djohanputro (2008), mathematically, GDP can be indicated by the following formula:

$$PDB=C+G+I+(X-M)$$

C = Community Consumption

G = Government Expenditures

I = Investment

X = Export

M = Import

### **Exchange Rate (*Kurs*)**

Exchange rate is the price of a currency of a country that is measured or expressed in another currency. The exchange rate between two countries is the price of the currency used by residents of these countries to trade with each other (Mankiw, 2007).

## **RESEARCH METHOD**

### **Research Data**

The type of the data used in this study was panel data. The data used in this study were secondary data which include:

1. The data on bank financial statements that will be examined in the period of 2012-2017.
2. The data regarding the BI Rate interest rate taken from quarterly data for the period of 2012-2017 that was obtained from Bank Indonesia.
3. The inflation data was taken from quarterly data for the period of 2012-2017 contained in Bank Indonesia or economic indicators of the Central Statistics Agency.
4. The data on Gross Domestic Product for the period of 2012-2017 contained in the economic indicators of the Central Statistics Agency.
5. The data concerning the dollar to rupiah exchange rate taken from quarterly data for the period of 2012-2017 that was obtained from Bank Indonesia.

### **Variables**

This research began by analyzing the financial performance of banks, especially the BUKU 4 and BUKU 3 of the bank's financial statements. The banking performance variables that were examined consist of NIM, NPL, CAR, ROA, and LDR. The research variables consisted of macroeconomic variables such as interest rates, inflation, GDP, and exchange rates. These variables were tested by using VECM analysis tool, and were then analyzed with the IRF and FEVD to see the effect on banking performance.

### **VECM Estimation Model**

The Vector Error Correction Model (VECM) model was chosen after going through the previous pre estimation test. The cointegration between variables was one of the reasons besides the stationary unit root test at the first difference in using the VECM model. The VAR in Level model cannot be used for the analysis based on the pre-estimation testing. Two or more cointegrated series have a long-term relationship, but there is a possibility of not achieving balance in the short term period. Therefore, Engle and Granger (1987) introduced a technique for correcting short-term imbalances towards the long term period called as error correction model (ECM).

### **Impulse Response Function (IRF) Analysis**

The IRF test aims to examine the dynamic structure of the variable system in the observed model which was reflected by the innovation variable, which showed how the responses of each of the other endogenous variables. The IRF can identify a *shock* in an endogenous variable so that it can determine how an unexpected change in a variable affects other variables over time. The IRF functions to isolate a *shock*, to be more specific, means that the economic variables were only affected by the shock or certain shocks. If this is not performed, the specific shock cannot be known and what can be known is only general shock.

### **Analysis of Forecast Error Decomposition of Variance (FEVD)**

Test of forecast error decomposition of variance aims to see how changes in a macro variable, which is indicated by changes in variance errors that are influenced by other variables. Variance decomposition specified the variance of forecasting errors into components that can be associated with each endogenous variable in the model.

## **RESEARCH RESULT**

### **Pre-Estimation Test**

#### **Stationarity Test**

The main requirement for time series data analysis is the assumption that each data used is stationary. The variables used in this study were macroeconomic variables consisting of GDP, interest rates, inflation, exchange rates and banking performance variables consisting of CAR, LDR, NIM, ROA, and NPL. The formal testing to see whether the data is stationary is by using *Augmented Dickey Fuller* (ADF). The hypotheses of this test are:

$H_0$ : the data process is not stationary

$H_1$ : the data process is stationary

If the p-value obtained is less than 5% then  $H_0$  is rejected, this means that the data is stationary. Table 15 shows that not all variable data values are stationary at their level, but all stationary variables in the first derivative (first difference) are both in BUKU 3 and in BUKU 4. Thus, it can be explained that all variables used in this study are stationary.



**Table 1. Test of Stationary of BUKU 3 and BUKU 4 of Banks**

Variable	P-value				Explanation
	BUKU 3		BUKU 4		
	Level	1 <sup>st</sup> Difference	Level	1 <sup>st</sup> Difference	
NPL	0.6506	0.0000	0.6709	0.0003	Stasioner I (1)
CAR	0.6245	0.0000	0.8448	0.0000	Stasioner I (1)
ROA	0.0387	0.0000	0.2822	0.0000	Stasioner I (1)
NIM	0.0399	0.0000	0.1068	0.0000	Stasioner I (1)
LDR	0.0039	0.0000	0.0215	0.0386	Stasioner I (1)
Inflation	0.5711	0.0001	0.4767	0.0003	Stasioner I (1)
Interest rate	0.7925	0.0001	0.7472	0.0000	Stasioner I (1)
PDB	0.0000	0.0132	0.0000	0.0000	Stasioner I (1)
Exchange rate	0.0005	0.0000	0.0035	0.0000	Stasioner I (1)

### Optimal Lag Test

VECM estimation is very sensitive to the lag length of the data used. The lag length is used to determine the time needed for the influence of each variable on the past variable. In this study, the determination of lag length was done by looking at the highest value of the sequential modified AIC and SC test statistic. The lag length included in this study was from 0 to lag 4. Based on the Schwarz Information Criterion (SC), the optimal lag length is obtained for both BUKU 3 and BUKU 4 of banks. The selection of criteria using SC followed the statement stated by Reimers (1992) who found that SC is running well in choosing the optimal lag length.

**Table 2. Optimal Lag Length Test Results for BUKU 3 and BUKU 4**

	Lag	LogL	LR	FPE	AIC	SC	HQ
BUKU 3	0	-1946.488	NA	1153.527	32.59147	32.80053	32.67637
	1	-1099.653	1552.532	0.003313	19.82755	21.91816*	20.67656
	2	-955.6203	242.4546	0.001183	18.77701	22.74918	20.39012
	3	-828.5189	194.8888	0.000579	18.00865	23.86238	20.38588
	4	-686.3917	196.6093*	0.000233*	16.98986*	24.72515	20.13120*
BUKU 4	0	-766.1208	NA	0.000837	18.45526	18.71570	18.55995
	1	-132.5223	1116.340	1.63e-09	5.298149	7.902596*	6.345115*
	2	-32.22885	155.2160	1.10e-09	4.838782	9.787231	6.828017
	3	97.67571	173.2061*	4.05e-10*	3.674388*	10.96684	6.605892

Table 2 shows the optimal lag length test results on all variables, optimum AIC in lag 4 was in BUKU 3 of banks, while the optimum AIC in lag 3 was in BUKU 4 of banks. If it was based on the SC criteria, the optimum lag length was indicated in lag 1. Determining the best fixed model was by using the principle of a simple model and being able to produce the best model

that can explain a strong economic theory. Then, because the optimal lag length has been found, further testing can be carried out, namely the VECM estimation stability test.

### VAR Stability Test

VAR stability is needed to be tested before doing further analysis, because if the VAR estimation result is combined with the unstable error correction model, the Impulse Response Function dan Variance Decomposition will be invalid (Setiawan, 2007, in Rusydiana, 2009). Before entering the further analysis phase, the results of estimation of the system of VAR equations that have been formed was needed to be tested for its stability through VAR stability condition check in the form of roots of characteristic polynomial for all variables used multiplied by the number of lags of each VAR. Based on the results of these tests, a VAR system is considered to be stable if all roots or the roots have modulus that is smaller than 1. In this study, based on the VAR stability test that has been done, it can be concluded that the estimated VAR stability used for IRF and FEVD analysis had been stable because the modulus range was  $< 1$ .

### Cointegration Test

Cointegration test aims to determine whether a group of variables that are not stationary at that level meets the requirements of the integration process, where all variables are stationary at the same degree, namely degrees 1, I (1). Cointegration test was done by using the Johansen Trace Statistic Test method. This test was used to find out whether there was a long-term effect on the variables to be examined. If there is cointegration, the VECM stage can be continued. But if there is no cointegration, the VECM cannot be continued.

**Table 3. Cointegration Test of BUKU 3 and BUKU 4 of Banks**

	BUKU 3		BUKU 4	
	t-Statistic	Prob.	t-Statistic	Prob.
ADF	-2.563898	0.0052	-3.520723	0.0002
Residual variance	0.209317		0.044057	
HAC variance	0.118222		0.028043	

The cointegration test results from the Kao Residual Test statistic shows the Prob value  $< 0.05$ , which means that there is cointegration between variables.

### Impulse Response Function (IRF) Analysis

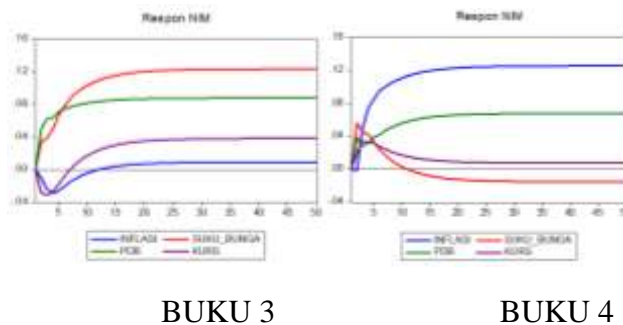
Impulse Response Function Test is used to see the effect of *shock* from a variable on other variables, which in this analysis was not only in short time but it can be analyzed for several quarter in the future as long-term information.

### NIM Response to Macroeconomic Variables

Net Interest Margin (NIM) is the difference between the interest earned from a credit facility and the deposit interest given. The greater the spread obtained, the greater the profit. The



determination of interest, both loan interest and loan interest, referred to the benchmark interest rate determined by Bank Indonesia, namely the BI 7-Day Repo Rate (BI7DRR).

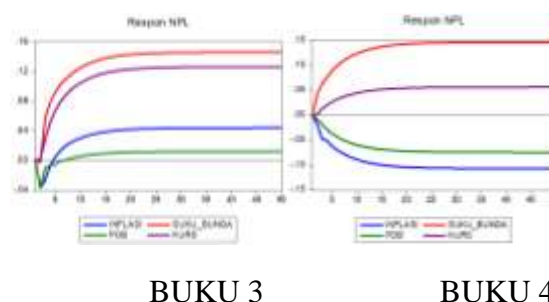


**Figure 1. NIM Response to Inflation, Interest Rates, GDP and Exchange Rate**

Figure 1 shows that NIM has a positive response to GDP. This result is in accordance with previous studies conducted by Dewi and Triaryati (2017). The higher the GDP, the higher the ability of banks to generate profits. Because when GDP is high it could stimulates rapid economic growth, the demand for credit will be high, so that the bank has the opportunity to increase the interest spread generated. In BUKU 3, inflation is responded negatively in the initial period then moved up to the positive balance point. According to Perry in Kosmidou et al., 2005, if banks can anticipate inflation, the bank's profitability will be positive as long as the bank adjusts interest rates at the right time, and results in an increase in profits faster than the increase in costs. On the other hand, in BUKU 4, the initial period was immediately responded positively to the point of balance. In BUKU 4 of Banks, the inflation rate has been anticipated earlier so that banks can increase the NIM as long as the banks can adjust interest rates appropriately to generate profits. The variable exchange rate is responded negatively at the beginning of the period in BUKU 3, then it moved up in the next period to the positive balance point. BUKU 4 responded to exchange rates positively.

### NPL Response to Macroeconomic Variables

Non Performing Loans (NPL) is one measurement of banking performance that measures the ratio of bad loans to current loans. The greater the value of the NPL ratio, the higher the number of bad loans of the banks.



**Figure 2. NPL Response to Inflation, Interest Rates, GDP and Exchange Rate**

Figure 2 shows that the NPL in BUKU 3 responds to negative GDP and inflation in the initial period, then it moved up to the positive balance point in the next period. Unlike the exchange

rate and interest rates, the NPL responded positively to the initial period to the point of balance. On the other hand, in BUKU 4, NPL responded to negative GDP and inflation in the initial period to reach a negative balance point. Exchange rates and interest rates responded positively in the initial period to a positive balance point. According to Ekananda (2017), the cause of problematic financing from the external side is represented by GDP and inflation.

### CAR Response to Macroeconomic Variables

Capital Adequacy Ratio (CAR) is a banking performance indicator that measures capital adequacy to cover losses due to bad credit. The higher the CAR ratio value indicates the ability of banks to be better in facing the risk of losses that might occur.

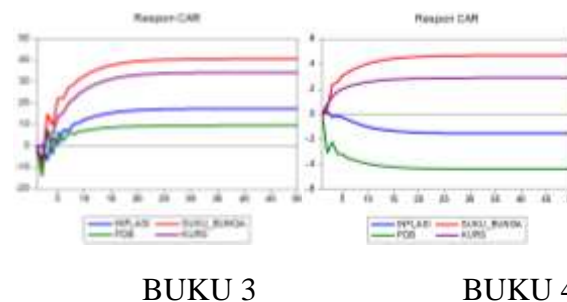


Figure 3. CAR response to inflation, interest rates, GDP and exchange rates

Figure 3 shows that CAR in BUKU 3 responded negatively to interest rates, exchange rates, inflation and GDP in the initial period, then it fluctuated to a positive balance point. Sequentially, at the point of interest rate balance the highest response and the lowest GDP response. In BUKU 4, CAR responded positively to interest rates and exchange rates in the initial period to a positive balance point in the following period, with a higher response to interest rates. On the other hand, inflation and GDP responded negatively in the initial period to the negative balance point in the following period, with a higher response to inflation. According to Samuelson (2001) in Wulaningsih (2012), when GDP is high, the investment demand curve will shift towards a larger direction; greater investment will negatively affect capital because it will drain capital in the short term.

### ROA Response to Macroeconomic Variables

Return on Assets (ROA) is a company performance indicator that measures the ratio between the levels of a company's profitability to return on assets.

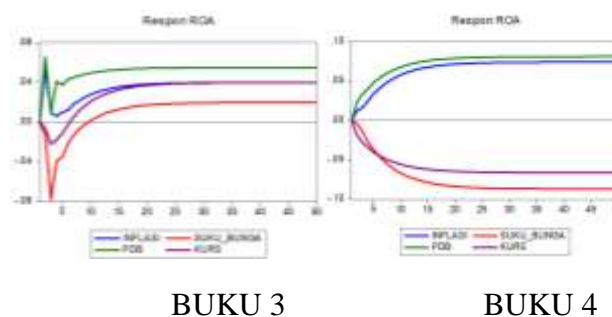
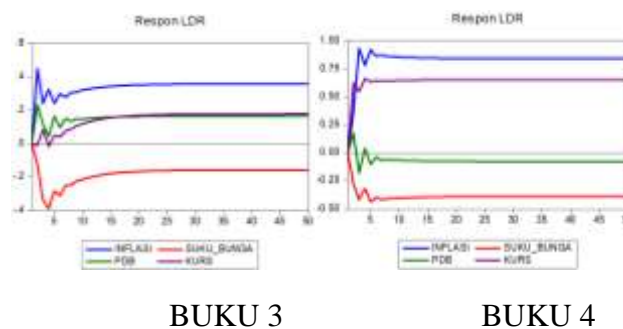


Figure 4. ROA Response to Inflation, Interest Rates, GDP and Exchange Rate

Figure 4 shows that ROA in BUKU 3 responded negatively to interest rates in the initial period with a fairly high standard deviation, and then it moved up to a positive balance point in the next period. The exchange rate was responded negatively in the initial period, and then it moved up to the positive balance point. GDP and inflation responded positively with a fairly high standard deviation in the initial period, and then they declined and moved up to the positive balance point in the next period with a higher response to GDP. In BUKU 4, GDP and inflation responded positively in the initial period and moved up to the balance point in the next period. While interest rates and exchange rates were responded negatively in the initial period and moved down to the point of balance.

### LDR Response to Macroeconomic Variables

The liquidity level of a bank can be measured using loan to deposit ratio (Moore, 2009). Loan to Deposit (LDR) is the ratio between the total credits disbursed to the deposit funds obtained. According to Vento and La Ganga (2009), liquidity is the ability of a bank to obtain and/or raise funds. The LDR ratio must be at a safe limit because it is related to the company's liquidity.



**Figure 5. LDR Response to Inflation, Interest Rates, GDP and Exchange Rate**

Figure 5 shows that the LDR in BUKU 3 responded negatively to interest rates in the initial period with a fairly high standard deviation, then moved up to the negative balance point in the next period. The LDR responded positively to the higher standard deviations sequentially in inflation, GDP and exchange rates in the initial period. Furthermore, it showed fluctuating move in the next period to the point of balance. In BUKU 4, the LDR responded positively to a fairly high standard deviation of inflation and the exchange rate in the initial period, and then it showed fluctuate move in the next period until the balance point was reached. GDP was responded positively in the initial period and then fluctuated in the next period to the negative balance point. While the interest rate was responded negatively with a standard deviation that was quite high in the initial period, then in the next period it moved constantly at the equilibrium point.

### Forecast Error Variance Decomposition (FEVD)

Fluctuations in each variable due to the occurrence of a *shock* can be seen by analyzing the role of each *shock* in explaining the fluctuations of macroeconomic variables through FEVD analysis or also called as variance decomposition analysis, where in this analysis the

contribution of variable shock in the system toward changes in certain variables can be identified.

Based on Table 4, the results of the VD analysis in BUKU 3 of banks, inflation contributes the most to the LDR. The benchmark interest rate and GDP make the biggest contribution to the NIM. The exchange rate makes the biggest contribution to the CAR.

**Table 4. FEVD Results of BUKU 3 of Banks**

	Its Value	INFLATION	INTEREST RATE	GDP	EXCHANGE RATE
NIM	69.59	0.23	10.09	6.55	0.85
NPL	88.44	0.38	4.81	0.06	3.37
CAR	84.58	0.75	4.70	0.32	3.10
ROA	79.76	0.37	0.25	0.88	0.28
LDR	89.18	1.25	0.56	0.27	0.19

Based on table 5, the VD results of BUKU 4 of banks show that the inflation macroeconomic indicators make the biggest contribution to the NIM. The benchmark interest rate and GDP make the biggest contribution to the CAR. Exchange rates make the biggest contribution to the LDR.

**Table 5. FEVD Results of BUKU 4 of Banks**

	Its Value	INFLATION	INTEREST RATE	GDP	EXCHANGE RATE
NIM	63.46	17.83	1.09	4.97	0.63
NPL	71.22	6.13	11.82	2.77	1.56
CAR	51.77	1.00	12.91	12.92	5.18
ROA	47.15	2.96	3.99	3.94	2.68
LDR	77.41	11.19	2.44	0.14	6.71

### Managerial Implication

Bank grouping based on the availability of working capital becomes a microeconomic indicator that can be used as a reference to measure the response to macroeconomic issues. In this study, the important information was obtained regarding the condition of BUKU 3 and BUKU 4 of banking companies based on company performance ratios. This information is expected to be useful for several parties as follows:

#### 1. Banking Institutions

The ratio of Non-Performing Loans (NPL) is a risk that greatly impacts the banking performance, especially its profitability, so that the company actually conducts serious

supervision so that the NPL ratio can be reduced as much as possible. The weakening of the exchange rate followed by an increase in interest rates will have an impact on the increase in the NPL ratio and will reduce the profits obtained. Banks need to anticipate if a high exchange rate weakening occurs and is followed by an increase in interest rates. Selective lending is expected to be the ideal solution, especially in terms of prospective debtor income.

## **2. Bank Indonesia**

Bank Indonesia (BI) has the responsibility to maintain exchange rate stability. When there is a significant weakening of the exchange rate, BI will intervene by raising the benchmark interest rate. This policy has negative impacts on the real sector, especially banking. The results of this study are expected to be a reference for BI in determining the increase in the benchmark interest rate.

## **3. Market Participants**

BUKU 3 and BUKU 4 of banks are public companies listed on the Indonesia Stock Exchange (IDX), one of the sources of the company's equity comes from the capital market. Therefore, market participants (investors) really oversee the performance of the company. If we look at the market structure, BUKU 4 of banks is more attractive to investors because it has better performance. The results of this study can be used as a reference for investors (especially in banks) in allocating their own funds in terms of the company's performance ratio to the ongoing macroeconomic issues.

## **4. General Society**

The results of this study are also expected to provide important information related to the condition of banks in Indonesia today, especially BUKU 3 and BUKU 4 of banks, so that a sense of trust in banking companies can increase.

## **CONCLUSION**

Based on the results of this research and the data analysis, it can be concluded that banking performance, if it is grouped based in BUKU 3 business activities and BUKU 4 of banks, showed that overall BUKU 4 of bank performance is better than BUKU 3. The results of IRF and FEVD of BUKU 3 of banks are variables of macroeconomics that give response and give the biggest contribution was interest rates. While the results of IRF and FEVD of BUKU 4 of banks are the macroeconomic variables that give response and give the biggest contribution was inflation.

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