

The Influence of Macroeconomics Policy to Indonesia Banking Sector Performance

SEFLIZON

Badan Pengawasan Keuangan dan Pembangunan (BPKP)
Perwakilan Jakarta I, Jl. Raya Pramuka No.33 East Jakarta
Tel: 021.856361, Fax: 021.8190663, Hp: 0817722366, Email: seflizon@yahoo.com

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Abstract: The Indonesia monetary crisis in mid 1997 was the background of this research. The objective of this research is to identify the influence of macroeconomics policy to end the monetary crisis and restructuring credibility of banking institution. This research uses testing hypotheses on nonparametric statistics. The data analysis used macroeconomics policy in fiscal, monetary, balance of payment, and influence toward controlling of monetary crisis on foreign exchange and credibility banking institution as indicator of bank performance. The data was divided into two periods, 1997-2001 and post crisis period 2002-2006. The result showed that: monetary crisis does not always refer to foreign exchange because for long crisis period and post crisis, changing foreign exchange is not significant. It is true that monetary crisis is banking institution crisis in all aspect whether management and financial, and banking indicator showed better performance significantly compared to post crisis and long crisis.

Keywords: Macroeconomics, monetary, banking

INTRODUCTION

The foreign exchange crisis began in June 1997 in some Asian countries, starting in Thailand, Philippines, Malaysia, Indonesia, and South Korea. The currency of all five countries mentioned had a significant depreciation to US Dollar. First crisis occurred in Thailand. Thinking that similar crisis would occur in Indonesia, foreign investors withdrew their money at the same time. This led to significant force toward IDR in the foreign exchange market. In June 1997, IDR to US\$ was Rp 2,432. In July 1997, known as the start of monetary crisis, it was Rp 2,600.-. The crisis hit its bottom line in mid June 1998 when IDR hit Rp 16,700/ to 1 US\$. The major cause of the significant drop of IDR was the large amount of leverage that was not properly allocated and managed. The private sectors was too aggressive in investing using foreign debt that was invested for long term and high risk property, and was not protected against exchange rate risk. Banking, functioning as fund intermediary, and main element of payment and credit, has a very strategic function in every country. Until mid 1997, national banking performance was still convincing which was shown by increasingly mobilized public fund, along with the strong credit expansion. However IDR that reached Rp 4,650 per US\$ caused national banking performance to drop significantly. The susceptibility of national banking to

fluctuation of exchange rate was caused by some factors. First, how banking was exposed to the risk of rate of exchange movement which is part of open economy system so that the obligation of national banking in foreign currency was depicted from the declining position of net foreign exchange and the increasing administrative account of foreign currency. Second, the amount of non-performed loan on some national banks was increasing significantly while work efficiency got worst. Third, the weak internal banking condition due to management weaknesses, over concentration of providing credit only to certain debtors, lack of bank information transparency, and the ineffectual control from Bank of Indonesia. The national banking conditions and the fluctuation of IDR rate have caused several banks to have trouble in serious liquidity, which eventually set off national banking crisis. Having started with the exchange crisis in 1997, along with government macroeconomics policy to reform and recapitalize banking as a condition of restoring the economic sector linked with macroeconomics and banking performance until 2006, this research focused on the correlation of macroeconomics police to performance of banking sector in Indonesia from 1997 until 2006. Government macroeconomics policy had been expected to end the monetary crisis and restructure credibility of banking institution so that the country's economy would achieve high economic growth.

METHODS

The government accuracy in controlling economy in macro is one of the keys in economic achievement and accomplishment. Government has many instruments in form of policies that can be grouped into 3 (three) kinds of policy; fiscal policy, monetary policy, and balance of payment policy. The fluctuation in foreign exchange affected monetary and balance of payment. During crisis fiscal policy, backed up with central bank, reform government banks.

The role of government banks was to save and accommodate private banks. The origin of banking crisis was actually institutional crisis. Because banking depicts the real sector and macroeconomics as a whole, therefore government must aid banks to grow and develop in order to boost the real sector that has been the back bone of national productivity and job provider. Below is the scheme of impact caused monetary crisis (Hamdy, Hady 2007:14)

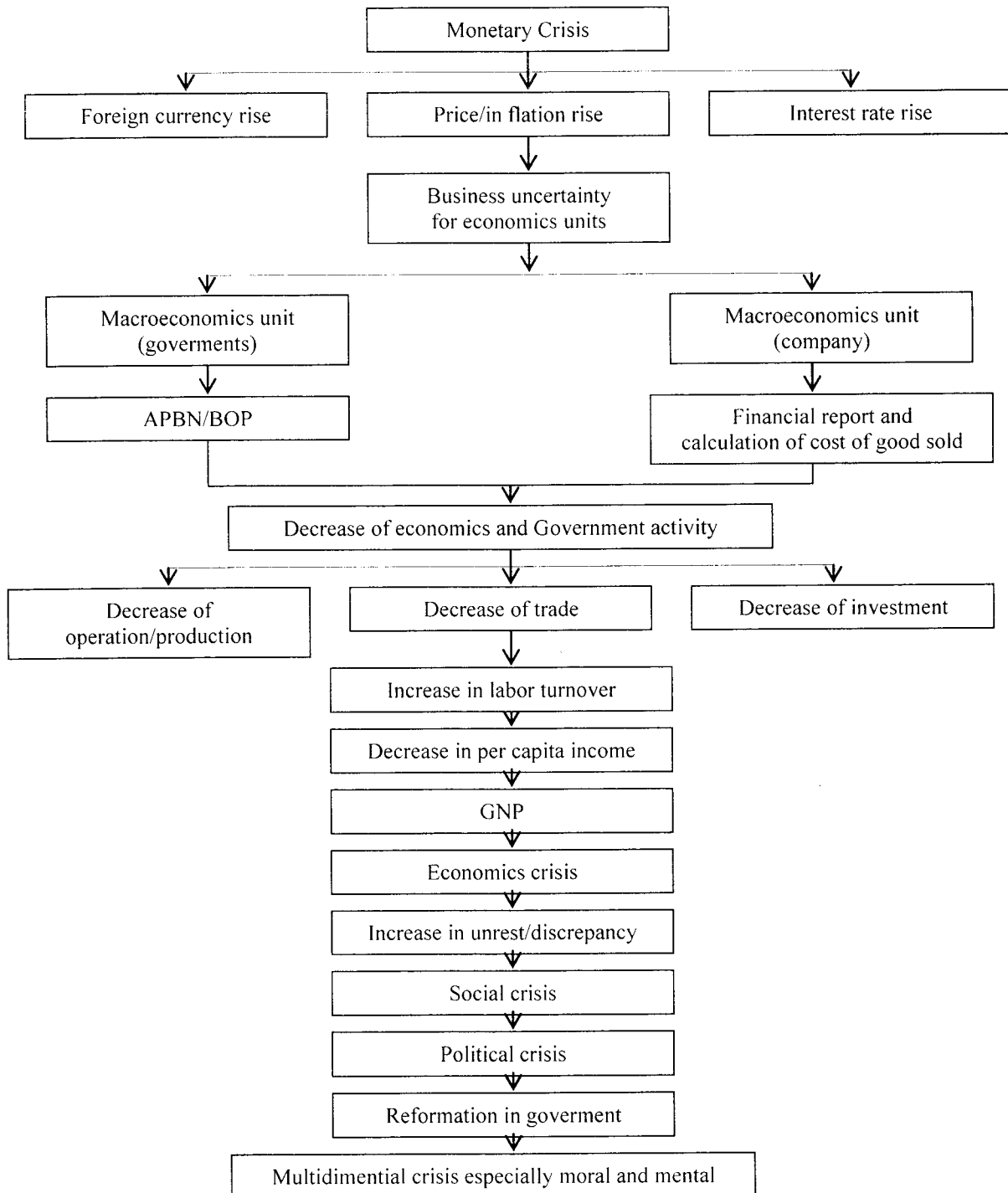


Figure 1. Impact of Monetary Crisis

Musgrave & Musgrave (1998:791) Requirements for economic development in low income countries include those needed for continued growth in the comparatively highly developed countries, but much more besides. To achieve this growth, not only are capital formation (including investment in both physical and human capital) and technological process needed, but also certain changes are required in the social and institutional settings which have been both cause and effect of a low level of economic development. The public sector has an important part to play in all these ingredients of development. There are four indicators of banking performance that are used in this research. First, IDR to US\$ as central bank policy, which is a typical problem for Indonesia as foreign exchange has always been crucial issue. Second is Capital Adequacy Ratio (CAR) as universal standard to know bank's endurance or durability. Third is Return on Asset (ROA) as common ratio in business world. Fourth is Non Performance Loan (NPL), ratio of credit failure where credit is bank's main activity.

Basic assumptions for the underlying hypotheses in this research:

State has significant effect in determining its economics path through macroeconomics policy: financial policy, monetary, and balance of payment. The three policies are correlated one another positively or negatively.

State financial policy is in accordance with monetary function in macroeconomics theory with state financial instrument, which consists of APBN, central bank, and state bank.

Monetary crisis started with currency crisis of IDR to US\$ which affected crisis on balance of payment. Therefore a well-defined fiscal policy was needed to end crisis in monetary and balance of payment.

The starting point of crisis was national banking institution. because bank is a mediator agent in financial and real sector of manufacturing and service, therefore banking business holds a significant role in economics. Banking crisis would disrupt all economic entity because bank is a significant element in process of payment. Hence one bank's crisis would affect to other banks.

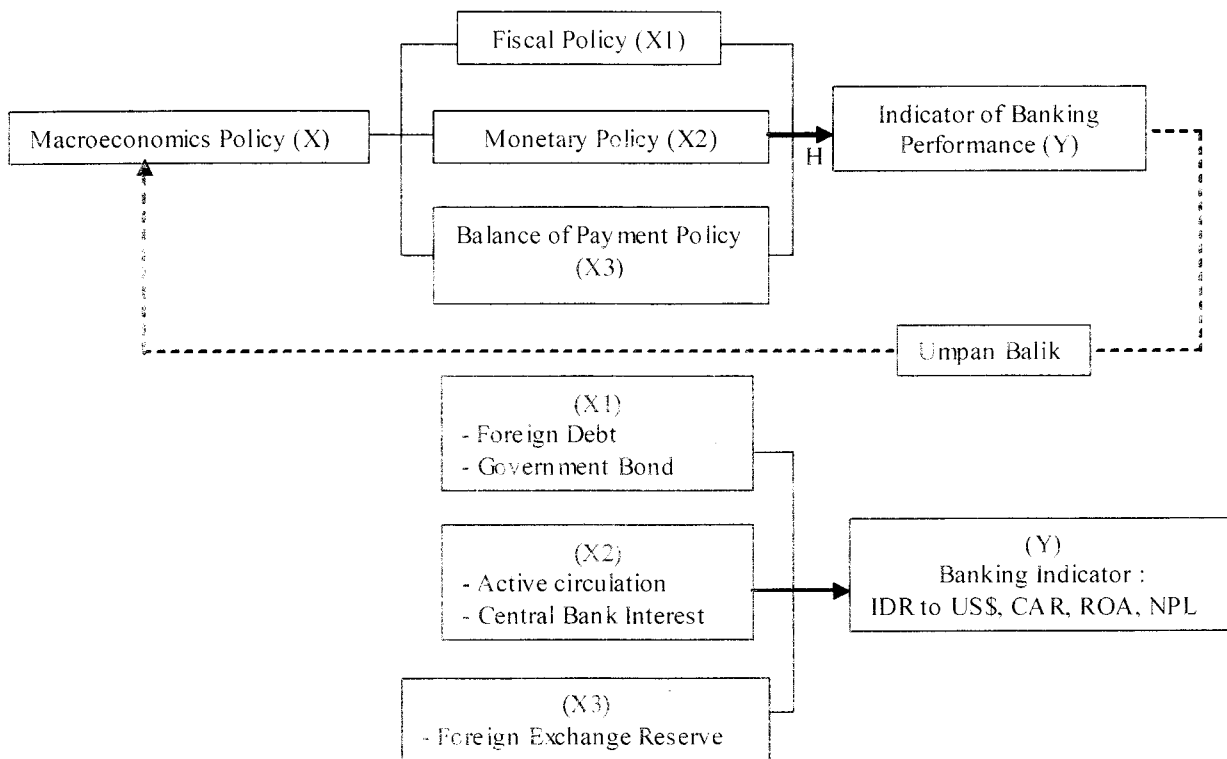


Figure 2. Research Framework

According to Lukman Dendawijaya in Banking Management (2001:160), each crisis has its own indicators. Monetary crisis was indicated by depreciation of IDR to US\$ and the significant decrease on balance of payment. Banking crisis was indicated by liquidation of 16 banks, the formation of BPPN for banking recapitalization, and the significant increase of foreign debt. Economic crisis was indicated by extremely high interest rate, stagnancy

in real sector, exceptionally high inflation rate, and labor turnover in many real sectors. Crisis in trust was indicated by the low trust to government, demonstration by college students from many universities, blasphemy to President Soeharto, and demands by college students, people, and politicians. Social crisis was indicated by the increase of unemployment rate, increase of poor people, riots and plunders, and increase in criminal rate.

Political crisis was indicated by formation of many political parties, demonstration against government, cynical, and blasphemy toward government policy. In economics factor, gross domestic product, inflation, and unemployment rate are three most informed economics performance. Indonesia's economic growth from 1997 – 2006 can be seen on table 1 below:

Tabel 1. Indonesia Economic Growth 1997 - 2006

Year	1997	19 98	1999	2000	2001	2002	2003	2004	2005	2006
▲%GDP	4,7	-13,1	1,0	5,1	4,7	4,8	4,3	5,1	5,7	5,5

Source : Processed data

Tabel 2 Indonesia Inflation Rate 1997 – 2006

Year	1997	19 98	1999	2000	2001	2002	2003	2004	2005	2006
% Inflation	11,1	77,6	2,01	9,3	12,5	10,0	5,1	6,4	17,1	6,6

Source : Processed data

Based on economics growth and rate of inflation which are significant macroeconomics measurement, crisis period is assumed from year 1997 – 2001, thus year 2002 – 2006 is assumed as post crisis period (Prathama 2005: 415).

Macroeconomics policy consists of fiscal, monetary, and balance of payment policy. In this research as mentioned earlier, fiscal policy is the foreign debt and domestic public debt, monetary policy is active circulation and interest rate from Bank of Indonesia, and balance of payment policy is the foreign exchange reserve balance.

Based on macroeconomics theory and research, the hypotheses are as follows:

Main hypothesis:

H : Macroeconomics policy has positive effect to end monetary and banking crisis.

Sub hypothesis:

H1 : Fiscal policy on foreign debt positively affects foreign debt and balance of payment policy on stabilization of rate of exchange

H2 : Fiscal policy on national debt in form of recapitalization banking bond positively affects CAR, ROA, and NPL indicators

H3 : Monetary policy on active circulation and interest rate of Bank of Indonesia positively affect stabilization of IDR

H4 : There is a difference on foreign debt policy and foreign exchange reserve balance of payment policy for stabilization of rate of exchange between crisis period and after crisis period

H5 : There is a difference on fiscal policy on national debt in form of recapitalization banking bond for banking indicators of CAR, ROA, and NPL between crisis period and after crisis period.

The GDP growth from 1997 until 2001 was assumed to have covered the minus in 1998. Therefore 1997 – 2001 is called the crisis period while 2002 – 2006 was called post crisis period. Inflation reflects a nation's stabilization and economics resistance because economics can not be separated from price increase. Therefore low inflation reflects it. Indonesia inflation rate is shown below on table 2.

The independent variable (X) in this research is macroeconomics policy that has three sub independent variables which are fiscal policy (X1), monetary policy (X2) and balance of payment policy (X3). Fiscal Policy (X1) is the position of foreign debt in every year. Observing the position, the increase and decrease of foreign debt as measurement of issued policy and the correlation was observed with other variables especially foreign currency. The issuing of government bond with clarification analysis in IDR was also observed as a part of fiscal policy because this policy was taken in order to recapitalize the banking industry, and would showed on indicator of banking performance. Monetary policy (X2), active circulation is broad money pronounced in IDR. Most monetary policy in developed countries is related to inflation, and in Indonesia inflation is measured with consumer index price. Interest rate issued by Bank of Indonesia and certificate of Bank of Indonesia has a time limit of one month and is pronounced in percentage. This policy correlates with speculation of US\$, and active circulation. Balance of payment policy (X3) is the policy of foreign exchange reserve using the concept of International Reserve and Foreign Currency Liquidity which is pronounced in US\$. The dependent variable (Y) is banking performance which has several variables such as IDR to US\$ currency rate as indicator of central bank performance, and several indicators for commercial bank indicators which are Capital Adequacy Ratio (CAR), Return On Asset (ROA), and Non Performing Loan (NPL).

This research is descriptive and functions as verification. Descriptive research according to Asep Hermawan (2006: 17) is a research that explains a certain characteristics of a phenomenon.

The phenomenon in this research is monetary crisis and credibility of banking institution that affects Indonesia economics. Descriptive research has a purpose of creating a picture, systematic view, factual and accurate facts, characteristics thus correlation among phenomena. In this descriptive research to acquire description of independent variables such as macroeconomics policy which consist of three sub variables; fiscal, monetary, and balance of payment policy. Verification research was done to examine the correlation among variables of macroeconomics and banking performance indicators.

This research uses descriptive statistics, and inferential statistics to draw conclusion from

information. Sample was taken in random sampling or block sampling from macroeconomics policy, and banking indicator. Data was taken from Bank of Indonesia such as Indonesia financial and economics statistic, annual reports, and from Indonesia Banking Statistics.

RESULT AND DISCUSSION

Research description is divided into two clusters of data, which is the time of monetary crisis year 1997 – 2001 on table 3 and data prior monetary crisis of year 2002 – 2006 on table 4, the descriptive analysis is presented below:

Table 3. Research Description year 1997 – 2001

Year → Variable ↓	1997	1998	1999	2000	2001
X 1.1 Foreign Debt (Mill \$ US)	53,865	67,321	74,809	74,917	71,377
X 1.2 Government Bond (Trillion IDR)	-	-	281,83	431,80	483,5
X 2.1 Active circulation (Trillion IDR)	355,64	577,38	646,21	747,03	844,05
X 2.2 BI Interest Rate (%)	22.0	27.75	70.81	14.53	17.62
X 3 Foreign Exchange Reserve (Mill \$ US)	26,111	19,867	26,546	27,486	28,571
Y 1.1 IDR to \$US (IDR / \$US)	3,543	10,705	7,467	8,435	10,272
Y 1.2 Capital Adequacy Ratio (CAR) (%)	4.3	-15.7	-8.1	12.5	20,5
Y 1.3 Return On Asset (ROA) (%)	1.37	-18.8	-6.1-6.1	1.56	1.45
Y 1.4 Non Performing Loan (NPL) (%)	8.7	29.1	40.5	28.6	12.1

where:

X : Independent variable (Macroeconomics Policy) Y : Dependent variable (Banking Performance Indicator)

Source: Processed data

Table 4. Research Description year 2002 – 2006

Year → Variable ↓	2002	2003	2004	2005	2006
X 1.1 Foreign Debt (Mill \$ US)	74,661	81,666	82,725	80,072	75,827
X 1.2 Government Bond (Trillion IDR)	419,35	403,44	402,10	399,84	418,74
X 2.1 Active circulation (Trillion IDR)	883,91	955,69	1,033.53	1,203.22	1,382.07
X 2.2 BI Interest Rate (%)	12,93	8.31	7.43	12.75	9.75
X 3 Foreign Exchange Reserve (Mill \$ US)	29,840	34,250	35,827	34,490	41,282
Y 1.1 IDR to \$US (IDR / \$US)	9,261	8,332	9,290	10,055	9,141
Y 1.2 Capital Adequacy Ratio (CAR) (%)	22.4	19.4	19.4	19.3	21.3
Y 1.3 Return On Asset (ROA) (%)	1.96	1.08	2.8	2.7	2,5
Y 1.2 Capital Adequacy Ratio (CAR) (%)	7.6	6.8	5.2	7.6	6.1

where:

X : Independent variable (Macroeconomics Policy) Y : Dependent variable (Banking Performance Indicator)

Source: Processed data

Table 5. Descriptive Statistic Analysis from year 1997 - 2006

	N	Minimum	Maximum	Mean	Std. Deviation
Y 11	10	3.543	10,705.00	7,814.00	3,156.92
Y 12	10	-15.70	22.40	11.53	13.57
Y 13	10	-18.80	2.80	-9.95	6.79

Table 5. (continue) Descriptive Statistic Analysis from year 1997 - 2006

	N	Minimum	Maximum	Mean	Std. Deviation
Y 14	10	5.20	40.50	15.23	12.62
X 11	10	53,865.00	82,725.00	73,724.00	8,387.68
X 12	10	.00	435.30	319.24	173.76
X 21	10	355.64	1,382.07	862.87	302.41
X 22	10	7.43	70.81	20.39	18.80
X 3	10	19,867	41,282.00	21,554.80	13,853.07
Valid N (listwise)	10				

Research descriptive were divided into two groups of data; monetary crisis data from year 1997 – 2001 which is presented on table 3, and post crisis data from year 2002 – 2006 on table 4.

The data from table 5 showed that all variables in table 3 and table 4 are heterogenic based on the minimum value, maximum value and standard deviation.

Table 6. One sample Kolmogorof-Smirnow Test Result

Variable	Asymp.Sig (2 tailed)	Conclusion
X 1.1 Foreign Debt	0.588	Data is normally distributed
X 1.2 Government Bond	0.114	Data is normally distributed
X 2.1 Active circulation	1.000	Data is normally distributed
X 2.2 BI Interest Rate	0.480	Data is normally distributed
X 3 Foreign Exchange Reserve	0.671	Data is normally distributed

Table 7. Multi Co-linearity Test Result

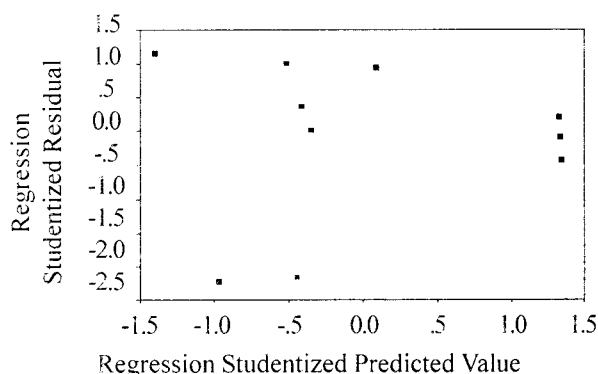
Variable	VIF	Conclusion
X 1.1 Foreign Debt	1.050	No multi co-linearity
X 1.2 Government Bond	1.034	No multi co-linearity
X 2.1 Active circulation	1.034	No multi co-linearity
X 2.2 BI Interest Rate	1.034	No multi co-linearity
X 3 Foreign Exchange Reserve	1.050	No multi co-linearity

Table 8. Auto Correlation Test Result with Dubin Watson

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.392a	.154	-.088	3293.28259	1.747

Normality, multi co-linearity, autocorrelation, and heteroscedasticity test had been done before hypothesis testing was performed. Based on table 6 the normality testing using one sample kolmogorof-smirnof test, there was no normality problem in all independent variables because the significance was > 0.05 and distributed normally. Based on table 7, 8, and picture 1 the result of multi co-linearity, autocorrelation, and heteroscedasticity tests showed that there are no multi co-linearity (all independent variables have VIF < 10), autocorrelation (Durbin-Watson 1.747), and heteroscedasticity.



Picture 1. Scatterplot Graphic

Based on table 9, null hypothesis (Ho) is accepted because p value = 0.805 > 0.05, which means that there is no correlation between IDR to US\$ and foreign debt. There is also no correlation between IDR to US\$ and foreign exchange reserve because the p value = 0.263 > 0.05.

Table 9. Correlation of

	Y 11	X 11	X 3
Y 11 Pearson Correlations	1	.090	-.391
Sig.(2-tailed)		.805	.263
N	10	10	10

Table 9. (continue) Correlation of

		Y 11	X 11	X 3
X 11	Pearson Correlations	.090	1	-.182
	Sig.(2-tailed)	.805	.	.615
	N	10	10	10
X 3	Pearson Correlations	-.391	-.182	1
	Sig.(2-tailed)	.263	.615	.
	N	10	10	10

On table 10, the regression analysis with significance level of $0.558 > 0.05$ means that H_0 is accepted, so there is no significant effect between the variables.

Based on table 11, there is no significant effect between the variables because the significance value is $0.558 > 0.05$. Data on 9 shows that the effect between foreign debt and foreign exchange reserve is 15.4%.

Pair 1, H_0 accepted which means there is no difference of IDR to US\$ during crisis and post crisis. Pair 2, H_0 rejected means there is difference of foreign debt during crisis and post crisis. Pair 3, H_0 accepted means there is no difference between foreign exchange reserve during crisis and post crisis.

From table 13 it can be concluded that H_0 is rejected which means that there is a correlation between government bond and CAR because the coefficient correlation value between the variables is 0.795 with calculated t of $3.7068 > t$ -table of 2.306 or p value $0.006 < 0.05$. The coefficient correlation value of 0.795 also means that the correlation between government bond and CAR is strongly positive. Based on table 9, it is concluded that there is a correlation between government bond and ROA because p value of $0.034 < 0.05$. There is no correlation between government bond and NPL because the coefficient correlation value is -0.303, calculated $t = -0.8993 < t$ -table -2.306 or p value = $0.395 > 0.05$.

Table 10. Analysis of foreign debt, forex reserve, and IDR to US\$

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13775532	2	6887766.138	.635	.558(a)
	Residual	75919971	7	10845710,246		
	Total	89695504	9			

Table 11. Effect of foreign debt, forex reserve, and IDR to US\$

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimaate	Durbin-Watson
1	.392 ^a	.154	-.088	3293.28259	1.747

a. Predictors: (constant), X 3, X 11

b. Dependent Variable: Y 11

Table 12. IDR to US\$, foreign debt, and forex reserve

Description	Sig (2 – tailed)
Pair 1 IDR to US\$ during crisis – Post crisis	0.804 > 0.05 H_0 accepted
Pair 2 Foreign Debt during crisis -- Post crisis	0.027 < 0.05 H_0 rejected
Pair 3 Foreign Exchange Reserve during crisis -- Post crisis	0.358 > 0.05 H_0 accepted

Table 13. Correlation of Government Bond, CR, ROA, NPL

Correlations					
		X 12	Y 12	Y 13	Y 14
X 12	Pearson Correlation	1	.795*	.671*	-.303
	Sig. (2-tailed)	.	.006	.034	.395
	N	10	10	10	10
Y 12	Pearson Correlation	.795**	1	.885**	-.790**
	Sig. (2-tailed)	.006	.	.001	.007
	N	10	10	10	10
Y 13	Pearson Correlation	.671*	.885*	1	-.653*
	Sig. (2-tailed)	.034	.001	.	.041
	N	10	10	10	10
Y 14	Pearson Correlation	-.303	-.790**	-.653*	1
	Sig. (2-tailed)	.395	.007	.041	.
	N	10	10	10	10

Table 15. Government Bond, CR, ROA, NPL

Description	Sig (2 – tailed)
Pair 1 CAR during crisis – post crisis	0.049 < 0.05 Ho rejected
Pair 2 ROA during crisis – post crisis	0.166 > 0.05 Ho accepted
Pair 3 NPL during crisis – post crisis	0.049 < 0.05 Ho rejected
Pair 4 Government Bond during crisis – post crisis	0.144 > 0.05 Ho accepted

Table 16. Correlation of active circulation, BI rate, and IDR to US\$

		Correlations		
		Y 11	X 21	X 22
Y 11	Pearson Correlation	1	.192	.051
	Sig. (2-tailed)	.	.594	.888
	N	10	10	10
X 21	Pearson Correlation	.192	1	-.483
	Sig. (2-tailed)	.594	.	.157
	N	10	10	10
X 22	Pearson Correlation	.051	-.483	1
	Sig. (2-tailed)	.888	.157	.
	N	10	10	10

Table 17. Analysis of active circulation, BI rate, and IDR to US\$

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5754942	2	2877470.876	.240	.793 ^a
	Residual	83940562	7	11991508.89		
	Total	89695504	9			

Table 18. Effect of active circulation, BI interest rate, and IDR to US\$

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.253a	.064	-.203	3462.87581	2.434

a. Predictors: (constant), X 22, X 21

b. Dependent Variable: Y 11

Pair 1, Ho is rejected, which means there is difference of CAR during crisis and post crisis.

Pair 2, Ho is accepted, which means there is no difference of ROA during crisis and post crisis.

Pair 3, Ho is rejected which means there is difference of NPL during crisis and post crisis.

Pair 4, Ho is accepted which means there is no difference of Government Bond during crisis and post crisis.

Based on table 16, it is concluded that there is no correlation between IDR to US\$ and active circulation because the p value = 0.594 > 0.05.

There is also no correlation between IDR to US\$ with BI interest rate because p value = 0.888 > 0.05.

From table 17 & 18, it is shown that the significant level is 0.793 > 0.05 with R Square of 0.064 which means that the correlation of Active circulation, BI interest rate, and IDR to US\$ is not significant and only 6.4%.

CONCLUSION

The regression of macroeconomics policy variable and banking performance indicator is not too significant because sig > α, while the correlation is not too strong because p value > α, except for the correlation of recap obligation with banking performance and the relation between the variables is between 6% - 15%. The analysis between crisis variable time with after crisis time showed sig < α such as foreign debt and also due to the absent of difference such as IDR currency to US\$, and constant recap obligation because it was only published for recapitalization. Based on test for homogeneity of variance, there was no significant difference between IDR currency during crisis and after crisis. CAR and NPL indicator showed differences between crisis time and after crisis, which means the indicator got better while ROA showed no difference due to the asset size that were too much so that there were no difference.

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