

# Market discipline by depositors : impact of deposit insurance on the Indonesian banking sector

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Miki HAMADA\*

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**Keywords:** Deposit insurance, Market discipline, Depositor discipline

**JEL classification:** G21, G28, G30

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## 1. Introduction

Deposit insurance is a component of a financial safety net. Since the 1990s, IMF crisis management has advised the establishment of deposit insurance as a way of either containing a crisis or winding down crisis-generated blanket guarantees (Garcia, 1999). Before the Asian currency crisis, the Indonesian government offered implicit deposit insurance. It was believed that banks did not go bankrupt and ailing banks were bailed out by the government. Right after the banking crisis in May 1998, Indonesia adopted a blanket guarantee because the crisis triggered by a bank run on the biggest private commercial bank, making the government apprehensive of a contagion of bank runs. In 2005 Indonesia introduced deposit insurance in accordance with IMF conditionality

This paper investigates whether market discipline by depositors is effective in controlling bank

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management, and whether regulatory changes affect depositor behavior. Two changes are measured to determine this effectiveness: changes in the amount of deposits and in the interest rates on deposits. Previous studies have shown that the introduction of deposit insurance decreases market discipline because of moral hazard in an unsophisticated banking system. Some evidence suggests that the effects of deposit insurance depend on the condition of the banking system. The Indonesian case can provide good insights into understanding the effects of deposit insurance on depositor behavior and on financial markets development especially in developing countries. The number of countries that have adopted deposit insurance increased rapidly during the 1990s and accelerated after 2000. Many recent adopters have been the transition countries of Eastern Europe, but they can be found in every region in the world (Demirgüç-Kunt and Laeven, 2008). Indonesia first adopted a policy of explicit deposit insurance; it then changed the limits of guarantee. This change in regulation can give us guidance in designing deposit insurance schemes.

## 2. Deposit Insurance and Market Discipline

### 2.1 Function of deposit insurance and reviews

Failures in the banking industry which produce information capital bring about serious infection in the economy. To minimize the economic and social loss, deposit insurance plays an important role in a banking crisis. The function of deposit insurance is similar to a central bank serving as a "lender of last resort" (Diamond and Dybvig, 1983; Hoelscher et al., 2006). Another function is to compensate small-scale depositors in the event that a bank fails (Hoelscher et al. 2006). More practical roles of deposit insurance are acting as the receiver of failed banks, determining the method of their resolution, undertaking their sale, recapitalization, or liquidation, and dispose of the remaining failed bank assets. As a whole deposit insurance proactively seeks to minimize its exposure to loss (Gracia, 1999).

Deposit insurance supports supervision and regulation by the government and financial authority in an effort to build a safe and sound banking system. However, regulation and supervision are not only measures for controlling the management of banks, monitoring and observation by market participants is also an effective measure on bank management. Market discipline is one of the efficient tools for imposing governance on bank management. The market discipline of banks can be exerted by market price information and by depositors.

There are different views on the effectiveness of market discipline by depositors. Depositors who hold deposits exposed to risk have incentive to monitor the bank. This important depositor function,

however, has limitations due to information problems. To monitor bank performance, accurate information is essential, but depositors usually do not have such information and have difficulty accessing it. Furthermore, their capacity to analyze, evaluate, and utilize such information to control bank management is not sufficient. Therefore market discipline by depositors is not regarded as effective in imposing discipline on banks. Another view is that depositors can exert market discipline through requiring interest rates and shifting their money from deposit accounts. However, effective depositor discipline can be reduced by deposit insurance due to moral hazard.

Many empirical studies have been conducted on the effectiveness of depositor discipline on banks. Park and Peristiani (1998) examined depositor market discipline on thrifts in the United States, indicating that riskier thrifts pay higher interest rates and attract smaller amounts of uninsured deposits. And qualitative results of uninsured deposits are similar for fully insured deposits, although the statistical significance is substantially lower. Fueda and Konishi (2007) found that depositors disciplined riskier banks by withdrawing their funds around the time of the reinstatement of the deposit insurance limit on time deposits, but not on demand deposits. And depositor discipline was most significant during periods of full deposit insurance coverage rather than limited coverage. Most studies have addressed industrial economies. Hosono (2005) examined the effectiveness of market discipline on banks in four Asian countries including Indonesia. By showing a negative relationship between deposit interest rates and bank equity capital, he suggested that depositors could understand bank risk. Demirgüç-Kunt and Hoizinga (2003) suggest from their cross-country study that explicit deposit insurance reduces required deposit interest rates, while at the same time it lowers market discipline on bank risk taking. Hadad et al. (2010) examined the impact of regulatory changes on market discipline in Indonesia. They paid attention to several regulatory changes: the blanket guarantee in Indonesia from 1998 to 2005, the limited guarantee since 2005 and capital regulation changes in 1998 and 2001. They suggested that the adoption of a limited guarantee in a recovering economy mitigates the role of market discipline. Market discipline differs according to bank type; it functions more on listed banks and foreign banks than on unlisted banks and domestic banks.

## 2.2 Background in Indonesia

Deposit insurance in Indonesia was introduced in 2005 as one of the banking restructuring policies after the Asian currency crisis and subsequent financial crisis in 1997/1998. Introducing explicit deposit insurance under the guidance of the IMF has been one of the important components for creating a financial safety net.

Before the Asian crisis, deposits were guaranteed implicitly by the government. Until the late 1990s, state-owned banks dominated the Indonesian banking sector, and the Indonesian government had

direct authority in the management of state-owned banks. A private ailing bank would also be bailed out. For a long time in Indonesia it was believed that banks would not go bankrupt. In 1998 during the banking turmoil of the Asian crisis, the government introduced a blanket guarantee in order to alleviate banking unrest.

The establishment of deposit insurance in Indonesia was stipulated in the banking law of 1998, and the Indonesia Deposit Insurance Corporation (LPS: Lembaga Penjamin Simpanan) began operations on 22 September 2005. A limited guarantee was adapted, and deposit insurance now covers current deposits, saving deposits, time deposits and certificates of deposit (CDs). A member bank pays a one-time membership contribution of 0.5% of its paid-up capital and a flat-rate 0.1% semi-annual premium (0.2% p.a.) based on its monthly average of insurable deposits. At first the deposit insurance limit was set at 100 thousand rupiahs; then during the global financial crisis in 2008, the LPS raised the limit to 2 billion rupiah in order to avoid bank runs, one of the countermeasures it took to prevent financial turmoil.<sup>i</sup>

### 3. Empirical Analyses

#### 3.1. Data set

This paper undertakes an empirical analysis of depositor discipline on Indonesian commercial banks using semiannual panel data. The period is from December 1998 to December 2009. The number of sampled banks is 68, and total number of samples is 897. All data are based on the banks' annual financial reports collected by Ekofin Konsulindo<sup>ii</sup>. The 68 banks consist of four state-owned banks, 33 private foreign exchange (forex) banks and 31 private non-foreign exchange (non forex) banks.

#### 3.2. Methodology

To evaluate the function of market discipline in the banking sector, the following regression models are examined using panel data.

There are two measures for imposing discipline on banks, one is through the quantity of deposits; another is through interest rates. To examine depositor discipline, the following two models are tested. The equation 1 examines how bank risk and soundness affects changes in deposits. The equation 2 tests the effects of bank risk and soundness by interest payments.

$$\Delta DEPOSIT_t = \alpha_0 + \alpha_1 ASSET_{t-1} + \alpha_2 CAPITAL_{t-1} + \alpha_3 CASH_{t-1} + \alpha_4 NPL_{t-1} + \varepsilon \dots\dots\dots(1)$$

$$INTPAY_t = \beta_0 + \beta_1 ASSET_{t-1} + \beta_2 CAPITAL_{t-1} + \beta_3 CASH_{t-1} + \beta_4 NPL_{t-1} + \varepsilon \dots\dots\dots(2)$$

$\Delta DEPOSIT_t$  indicates changes in deposits; the variable is the difference in deposit ratio from period t-1 to period t. The deposit ratio is the ratio of the total amount of deposits to total assets. Here four types of deposits are examined as independent variables: time deposits from third parties (TIME\_THIRD), time deposits from related parties (TIME\_RELATED), total time deposits (TIME) which are the sum of time deposits from third parties and related parties, and total deposits (DEPOSIT) which are the sum of demand deposits, saving deposits and time deposits.

INTPAY indicates interest payment which is calculated as the total amount of interest expense divided by the total amount of deposits. The payment of interest on deposits is approximated by INTPAY.

The model examines three periods: period I (December 1998 to June 2005)<sup>iii</sup>, period IIa (December 2005 to June 2008) and period IIb (December 2008 to December 2009). Period I was the time of blanket guarantee; period IIa was the time that explicit deposit insurance was introduced and applied; period IIb was the time of explicit deposit insurance and when the deposit insurance limit was raised to 2 billion rupiahs (225,000 dollars) from 100 million rupiahs (11,000 dollars).

The first concern of this analysis is whether depositor bank selection and the behavior of bank selection is changed due to the introduction of deposit insurance. Under the blanket guarantee it is supposed that depositors are indifferent to the risk of the banks where they deposit their savings. The introduction of explicit deposit insurance is assumed to change depositor behavior, and they begin to pay more careful attention to bank riskiness, soundness and performance.

The Indonesian experience offers us a good opportunity to investigate the changes in depositor behavior. The expectation is that depositors will change their behavior over the periods examined. In period I it is expected that depositors were indifferent to bank risk. In period IIa it is assumed they started to pay attention to bank risk. In period IIb there are two assumptions: that depositors eased their attention on banks due to the expanded coverage of deposit insurance, or they kept more careful watch on banks in order react immediately to any further crisis.

In the analysis ASSET, CASH, CAPITAL and NPL (gross Non-Performing Loans) are examined as dependent variables. ASSET is the natural logarithm of total book assets. Since larger banks can

diversify their portfolios and enjoy a lower cost of funds, larger assets seem profitable and safe. Furthermore, since banking services provide economic infrastructure, bank failures affect economic activities negatively, and the negative effect is contagious. Therefore a government devotes efforts to avoid economic disorder and may bail out ailing banks. Thus *too-big-to-fail* problems often occur. Therefore, even under a limited guarantee policy, the size of assets may still be one of the important signs of “safety”.

CASH is the ratio of the total amount of cash holdings to total assets. Liquidity risk arises from a mismatch between a bank’s long-term investments and its short-term liabilities. In order to mitigate the liquidity risk, banks tend to accumulate liquidity assets for precautionary reasons. Liquidity assets consist of cash and reserve funds in the central banks, current deposits in other banks, and tradable securities. In this panel data, the ratio of liquidity assets to total assets is very volatile. Especially after the Asian crisis until 2000, liquidity assets made up almost 50% of total assets; then after 2000 the ratio decreased to less 10%. Therefore, in this analysis the cash position is examined as a proxy for liquidity assets.

CAPITAL is the ratio of bank equity to total assets. Bank soundness is positively associated with the position of a bank’s equity. If well capitalized banks are regarded as safer banks, the coefficient sign of CAPITAL would imply that depositors are concerned about bank soundness.

NPL is the gross amount of non-performing loans which is a straightforward indicator of bank risk. A negative sign for the coefficient of NPL in the regression results would indicate that depositors pay attention to bank risk and take action to shift their deposits to other safer banks or ask for higher interest rates. A positive sign would indicate that depositors are indifferent to bank risk which would mean depositor discipline does not function well. Or it is presumable that riskier banks would raise interest rates on deposits to attract depositors.

Information on deposits from related parties is available in Indonesia. With this data it is possible to investigate whether the function of depositor discipline depends on the type of depositors. Time deposits are comprised of deposits from third parties and related parties of a bank. A third party with deposits in a bank is supposed to pay strict attention to the bank, while a related party, in other words a party who has an advantage regarding information about the bank, does not necessarily behave the same as the third party.



## 4. Empirical Results

### 4.1. Descriptive statistics

Table 1 shows the descriptive statistics of the variables by period: December 1998 to June 2005, December 2005 to June 2008, December 2008 to December 2009. The changes in deposits are mixed. The ratio of total time deposits to total assets (TIME) increases slightly, and that of total deposits to total assets (DEPOSIT) decreases slightly during the periods; meanwhile the ratio of third-party time deposits (TIME\_THIRD) increases significantly, while that of related-time deposit (TIME\_RELATED) tends to decrease. Banks were inclined to reduce deposits from related parties. The decrease in INTPAY is most obvious. The 0.205 figure for INTPAY in period I apparently reflects the aftereffect of the Asian crisis when the interest rate was raised sharply in order to address the deterioration of the exchange rate. In December 1998 the interest rate for a one-month Central Bank Certificate, which is the benchmark interest rate in Indonesia, was 35.52%. This high interest rate gradually decreased toward the end of 1999.

[Table 1 Descriptive Statistics]

The average for NPL tended to decrease. In period I the average rate of non-performing loans to total loans was 0.192; it decreased to 0.039 in period IIa and 0.037 in period IIb. The high NPL ratio in period I might be attributed to the aftereffect of the financial crisis. Around four percent of NPL in the period IIa and IIb figures shows that banks observed the central bank regulation which stipulates that bank NPL is limited and should not exceed five percent. CAPITAL has increased in more recent years. The ratio was 0.112 in period I, which increased to 0.153 in period IIa and 0.188 in period IIb. This can be ascribed to central bank regulations in accordance with the Basel Accords. CASH did not change during the three periods; bank cash holdings are around 1.5% of total assets. ASSET has been expanding. In period I average total assets were 11.3 trillion rupiahs (around 1.3 billion US dollars); these increased to 19.3 trillion rupiahs in period IIa and 26.9 trillion rupiahs in period IIb.

### 4.2. Regression results

#### 4.2.1 Depositor discipline through bank selection

Table 2 presents the results of the panel data analysis of Equation (1)<sup>iv</sup> which examines the effect of deposit insurance on changes in the amount of deposits. The upper set shows the results for period I;

the middle set shows those for period IIa after the introduction of explicit and limited guarantee, and the lower set shows period IIb after the deposit insurance limit was raised.

[Table 2 Regression Results of Change in Deposits]

The coefficients of CAPITAL are positively significant in most of the models except for related-party time deposits. The coefficient of CAPITAL of the dependent variables TIME\_THIRD, TIME and DEPOSIT over all three periods are significantly positive. This suggests that depositors are careful about bank soundness regardless of regulatory status. The degree of caution became larger after the introduction of deposit insurance. The coefficients in period IIa are larger than those in period I, and those in period IIb are much larger than in period IIa. This change suggests that depositors were careful about bank soundness in general, but they became much more careful due to the limited guarantee. Furthermore, the higher deposit insurance limit did not necessarily assure depositors; they became more sensitive to bank soundness during the unstable economic environment like that of the global financial crisis in 2008 and 2009.

The coefficient of CAPITAL in the regression of TIME\_RELATED (related-party time deposits) is positive and statistically significant in period I, but in periods IIa and IIb it turns to insignificant. This indicates that related parties paid less attention to bank soundness than third parties or unrelated parties.

The coefficient of NPL is another main concern in this examination because NPL is a direct indicator of bank risk. Individual banks began to make their NPL figures public in 1998. In period I the coefficients of NPL in all four models are not significant, indicating that under the blanket guarantee depositors did not pay very much attention to bank risk. In period IIa the coefficients of NPL are negative except for related-party time deposits, but all of them are not significant. In period IIb the coefficients are negative and significant in all the models except for related-party time deposits. This indicates that depositors became more sensitive to bank risk during the ongoing financial crisis in 2008 and 2009, and raising the deposit insurance limit under the limited guarantee scheme did not help reassure depositors.

As Table 3 shows, the percentage of unsecured deposit accounts (more than 2 billion rupiahs) has been negligible (0.1%), while the percentage of unsecured deposit nominal amounts is almost half of total deposits. Therefore half of total deposits are very sensitive to financial uncertainty. If economic conditions should worsen, these deposits could easily flow out to neighboring countries like Singapore and Australia where blanket guarantee schemes apply.

[Table 3 Composition of Deposits in Indonesia]

The results for the coefficient of CASH are mixed. In period I and period IIa, only the model for TIME\_RELATED is significant and shows negative. In period IIb it turns positive at 0.439 and significant. In the models for TIME\_THIRD, and TIME, the coefficients are negative and significant. The model for DEPOSIT is negative but not significant. CASH is examined as a proxy of bank provisions for liquidity risk. In case of an unexpected liquidity shortage, banks draw funds from the interbank market or the central bank. Cash holdings are regarded as precautionary reserves. Given this function of cash holdings, the negative and significant coefficients of CASH in the TIME\_THIRD and TIME models in period IIb suggest that unrelated depositors became more careful of a slight change, and they linked the change with bank riskiness.

The results of ASSET are also mixed. In period I all the coefficients of ASSET are positive but not significant; in period IIa they turn negative and significant. In period IIb, the signs are mixed with negatives and positives, and not significant. The mixed results indicate that under the implicit guarantee scheme larger assets seemed to be much safer because of the „too big to fail“ idea. Under the blanket guarantee bank size appears not to be related to safety. Under the explicit and limited guarantee, bank size is not necessarily a sign of safety. In fact, having larger assets has induced depositors to withdraw their money from banks. In period IIb, the effect of ASSET to changes in deposit amount is not clear. It can be said that depositors became more sensitive to bank conditions, then shifted their attention to more specific indicators like NPL and CAPITAL.

In summary, in all three periods depositors apparently pay attention to CAPITAL. Since well capitalized banks are regarded as sound and safer, banks depositors preferred to shift their money to the well capitalized banks. The degree of effect of changes in CAPITAL is higher in periods IIa and IIb. Introducing the limited guarantee made depositors more careful of bank conditions. In recent years depositors have paid attention to NPL and have responded quickly to deterioration in bank risk by shifting their money from risky banks. Depositors select banks based on their conditions, therefore it can be said that discipline is imposed on banks by changes in the amount of deposits. The results demonstrate that deposit insurance has enhanced market discipline by depositors. Interestingly and as expected, related parties seem to be indifferent to bank conditions, therefore market discipline comes from unrelated depositors.

#### 4.2.2 Market discipline through interest expense

Table 4 presents the analytical results of Equation (2) which examined the effect of market discipline caused by bank interest payments. If depositor discipline is functioning, depositors will demand higher interest rates from riskier banks. The expected signs of the coefficients are: negative for CAPITAL, positive for NPL, negative for ASSET, and positive for CASH.

[Table 4 Regression Results of Interest Rate]

The coefficients of CAPITAL are negative in all periods, and significant in periods IIa and IIb, but not significant in period I. The results support the argument that depositor discipline has functioned since the introduction of the limited guarantee. Meanwhile the coefficients of NPL show unclear results. In period I the coefficient is positive and significant indicating that depositor discipline is functioning. In periods IIa and IIb, after the introduction of deposit insurance, the coefficients are not significant and the sign is not the same. The results seem to suggest that depositors are not careful about the bank risk represented by NPL. One possible reason is that depositors do not seek higher interest rates from banks because they shift their money to safer banks given the results of changes in quantity pointed out in section 4.2.1.. Another possible reason is that the level of NPL is less than five percent in periods IIa and IIb (Table 1). The low level of NPL may be regarded as manageable with banks increasing their provisions for NPL.

The coefficients of CASH are negative in all periods and significant except in period IIa. The negative sign is opposite to expectation, but it is presumable that increased cash holdings simply reduce the interest expense for financial reasons. Looking at the coefficients for ASSET, the last to be examined, the results are mixed. They are negative and significant in periods I and IIa, but turn slightly positive and not significant in period IIb. Asset size is one of the easiest indicators for depositors to judge a bank's soundness. Therefore if depositors regard larger banks as more secure, they will not demand higher interest rates on their deposits. Depositors' evaluation notwithstanding, it could be attributed to the cost of funds. Since larger banks enjoy economies of scale, they can enjoy a lower cost for funds.

In summary, the results of period I are consistent with expectations, which suggests that under a blanket guarantee depositors require higher interest rates of riskier banks and do not of safer banks that have larger assets and/or are well capitalized. In period I the level of NPL was very high at 19.2% on average. Higher NPL would seem riskier, but depositors' original principal of deposit is secured under the blanket guarantee, thus requiring a higher interest rate would seem reasonable for

secured depositors. In periods IIa and IIb the results of the coefficients are mixed. It is conceivable that larger account holders would shift their money to safer banks instead of asking for higher interest rates under the limited guarantee scheme.

## 5. Concluding Remarks

This paper investigated whether market discipline by depositors fulfills its role and empirically examined the effects of deposit insurance on depositors' market discipline of bank management using the panel data of Indonesian commercial banks during 1998 to 2009. Depositor discipline was examined through two measurements: the change in the amount of deposits and in interest rates. To summarize the empirical results, depositors select banks based on a bank's condition, and discipline is imposed on banks by changes in the amount of deposits and in interest rates.

Even under the blanket guarantee (period I), depositors pay attention to bank capitalization. Well-capitalized banks were considered safer, and depositors preferred to put their money into such banks. Introducing a limited guarantee enhanced depositor discipline. They became more careful of bank conditions. Depositors were inclined to be careful of nonperforming loans, which are a direct indicator of bank risk, and they reacted to the growth of such loans by shifting their money from affected banks. During the ongoing financial crisis in 2008 and 2009 especially, depositors became more sensitive to bank risk under the limited guarantee scheme. Meanwhile related parties seem to be indifferent to bank condition, therefore market discipline comes from unrelated depositors.

Under the blanket guarantee, depositors required higher interest rates to compensate for taking bank risk, but under the limited guarantee it is conceivable that unsecured larger deposit holders would shift their money to safer banks instead of asking for higher interest rates. However considering the deposit insurance function which compensates small-scale depositors in the event of a bank failure, it could be said that deposit insurance carries out this function.

The empirical results of this study suggest that depositors basically pay attention to bank capitalization, and they do not totally ignore bank conditions; however, their attention varies according to the regulatory and economic circumstances. Explicit and limited guarantees influence depositor behavior and enhance depositor discipline through bank selection.

This study is a simplified initial analysis using basic information on banks in Indonesia. To enrich

the results, further information needs to be investigated, such as the type of bank (state owned, foreign exchange bank, non-foreign exchange bank, foreign bank), whether a listed or non-listed bank and other characteristics of individual banks.

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<sup>i</sup> New limits became effective on 13 October 2008.

<sup>ii</sup> Indonesian Banking Indicator and Financial Performance Rating, PT Ekofin Konsulindo.

<sup>iii</sup> In period I the panel data is unbalanced due to bank restructuring after the financial crisis.

<sup>iv</sup> For each sample period, the null hypothesis examination shows that an individual effect does not exist using an F-test, and the null hypothesis is rejected for all specifications. So test the null hypothesis was further tested to see if the individual effect is correlated with regressors using Hausman's specification test. The null hypothesis rejected for all specifications, and the fixed-effects model is applied to estimate the regression equations.

Tabel 1 Descriptive Statistics

Period	No. of Obs.	Independent Variables				Dependent Variables					
		ASSET	CASH	CAPITAL	NPL	THIRD_T IME	RELATE D TIME	TIME	DEPOSIT	INTPAY	
I	942	Mean	11,300,000	0.015	0.112	0.192	0.430	0.059	0.489	0.643	0.205
		Std. Dev.	(34,900,000)	(0.010)	(0.165)	(0.618)	(0.189)	(0.100)	(0.182)	(0.158)	(0.311)
		t-value									
IIa	408	Mean	19,300,000	0.014	0.153	0.039	0.471	0.056	0.527	0.640	0.089
		Std. Dev.	(48,400,000)	(0.008)	(0.121)	(0.038)	(0.167)	(0.086)	(0.174)	(0.164)	(0.041)
		t-value	-3.427 ***	1.377	-4.481 ***	5.020 ***	-3.8017 ***	0.6024	-3.5474 ***	0.2734	-3.5474 ***
IIb	204	Mean	26,900,000	0.016	0.188	0.037	0.460	0.048	0.508	0.614	0.093
		Std. Dev.	(66,700,000)	(0.009)	(0.17)	(0.057)	(0.171)	(0.071)	(0.173)	(0.177)	(0.039)
		t-value	-4.7736 ***	-2.2549 **	-5.9619 ***	3.5966 ***	-2.1033 **	1.4949	-1.3922	2.2978 **	5.0995 ***

Note: This table provides the results of t-tests on the equality of means of variables based on period I.

\*, \*\* and \*\*\* indicate significance level of 10, 5 and 1 percent respectively.

Table 2 Regression Results of Change in Deposits

Period I (December 1998 -June 2005)

	(1) TIME_THIRD		(2) TIME_RELATED		(3) TIME		(4) DEPOSIT	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
ASSET	0.003	0.008	0.004	0.006	0.007	0.009	0.009	0.008
CASH	0.675	0.518	-0.793	0.391 **	-0.118	0.565	-0.199	0.509
CAPITAL	0.081	0.025 ***	0.068	0.019 ***	0.148	0.028 ***	0.188	0.025 ***
NPL	-0.002	0.005	0.000	0.004	-0.002	0.006	0.002	0.005
No. of Obs	867		867		867		867	
R-sq	0.036		0.001		0.002		0.034	
F	3.020 **		5.02 ***		8.05 ***		15.52 ***	

Period IIa (December 2005 -June 2008)

	TIME_THIRD		TIME_RELATED		TIME		DEPOSIT	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
ASSET	-0.044	0.014 ***	-0.025	0.007 ***	-0.069	0.014 ***	-0.042	0.013 ***
CASH	-0.140	0.246	-0.217	0.123 *	-0.357	0.249	-1.198	0.882
CAPITAL	0.264	0.076 ***	0.016	0.038	0.279	0.077 ***	0.249	0.069 ***
NPL	-0.163	0.157	0.053	0.079	-0.110	0.159	-0.114	0.147
No. of Obs	408		408		408		408	
R-sq	0.0351		0.0058		0.0611		0.1401	
F	5.43 ***		3.78 ***		9.19 ***		5.51 ***	

Period IIb (December 2008 -December 2009)

	TIME_THIRD		TIME_RELATED		TIME		DEPOSIT	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
ASSET	-0.035	0.037	0.001	0.001	-0.040	0.034	0.030	0.033
CASH	-2.620	1.218 **	0.439	0.243 *	-3.066	1.105 ***	-0.856	1.084
CAPITAL	0.414	0.147 ***	0.011	0.018	0.348	0.133 ***	0.585	0.131 ***
NPL	-0.379	0.209 *	-0.003	0.045	-0.397	0.189 **	-0.433	0.186 **
No. of Obs	204		204		204		408	
R-sq	0.0019		0.098		0.0003		0.0028	
F	4.78 ***		Wald chi2	3.6	F	5.66 ***	F	8.16 ***

Note: \*, \*\* and \*\*\* indicate significance level of 10, 5 and 1 percent respectively.



Table 3 Composition of deposit in Indonesia

By number of accounts		(thousand)									
		Oct-08		Jan-09		Jun-10		Dec-10		Jan-11	
Secured deposits	>100m	79,903	97.6%	80,927	97.7%	90,764	97.7%	94,861	97.6%	95,202	97.6%
	<100m >200m	891	1.1%	879	1.1%	954	1.0%	1,066	1.1%	1,045	1.1%
	<200m >1b	864	1.1%	804	1.0%						
	<200m >500m					668	0.7%	725	0.7%	715	0.7%
	<500m >1b					285	0.3%	298	0.3%	293	0.3%
	<1b >2b	95	0.1%	107	0.1%	142	0.2%	142	0.1%	138	0.1%
Sub Total		99.9%		99.9%		99.9%		99.9%		99.9%	
Unsecured deposits	<2b >5b	46	0.1%	50	0.1%	61	0.1%	72	0.1%	70	0.1%
	<5b	28	0.0%	29	0.0%	34	0.0%	40	0.0%	39	0.0%
	Sub Total	0.1%		0.1%		0.1%		0.1%		0.1%	
		81,827	100.0%	82,797	100.0%	92,909	100.0%	97,205	100.0%	97,501	100.0%

By nominal amounts		(Trillion Rp)									
		Oct-08		Jan-09		Jun-10		Dec-10		Jan-11	
Secured deposits	>100m	308.8	18.4%	333.6	18.9%	379.0	17.9%	410.1	17.3%	406.3	17.4%
	<100m >200m	111.6	6.6%	121.1	6.9%	134.2	6.3%	148.2	6.2%	147.5	6.3%
	<200m >1b	333.3	19.8%	354.1	20.1%						
	<200m >500m					215.0	10.2%	234.7	9.9%	231.9	10.0%
	<500m >1b					193.0	9.1%	219.3	9.3%	217.2	9.3%
	<1b >2b	133.5	7.9%	150.6	8.5%	170.7	8.1%	197.9	8.3%	192.9	8.3%
Sub Total		52.8%		54.4%		51.7%		51.0%		51.3%	
Unsecured deposits	<2b >5b	146.8	8.7%	157.9	9.0%	192.4	9.1%	228.9	9.7%	223.1	9.6%
	<5b	647.9	38.5%	646.9	36.7%	829.5	39.2%	931.9	39.3%	911.8	39.1%
	Sub Total	47.2%		45.6%		48.3%		49.0%		48.7%	
		1681.9	100.0%	1764.3	100.0%	2113.63	100.0%	2370.98	100.0%	2330.58	100.0%

(Source) Indonesia Deposit Insurance Corporation.

Table 4 Regression Results of Interest Rate

INTPAY is the dependent variable (interest expense /total deposits)

	Period I (12.1998 -06. 2005)		Period IIa (12.2005 -06. 2008)		Period IIb (12.2008 -12. 2009)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
ASSET	-0.102	0.012 ***	-0.029	0.008 ***	0.001	0.020
CASH	-3.273	0.781 ***	-0.526	0.518	-1.645	0.650 **
CAPITAL	-0.035	0.038	-0.085	0.040 **	-0.134	0.078 *
NPL	0.020	0.008 **	0.037	0.086	-0.043	0.111
No. of Obs	867		408		204	
R-sq	0.027		0.0006		0.082	
F	23.820 ***		5.39 ***		2.8 **	

Note: \*, \*\* and \*\*\* indicate significance level of 10, 5 and 1 percent respectively.