SEADI DISCUSSION PAPER SERIES

Anticipating Banking Liquidity Crises

A Survey of Indonesian Bankers

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A Survey of Indonesian Bankers

SEADI Discussion Paper No. 6

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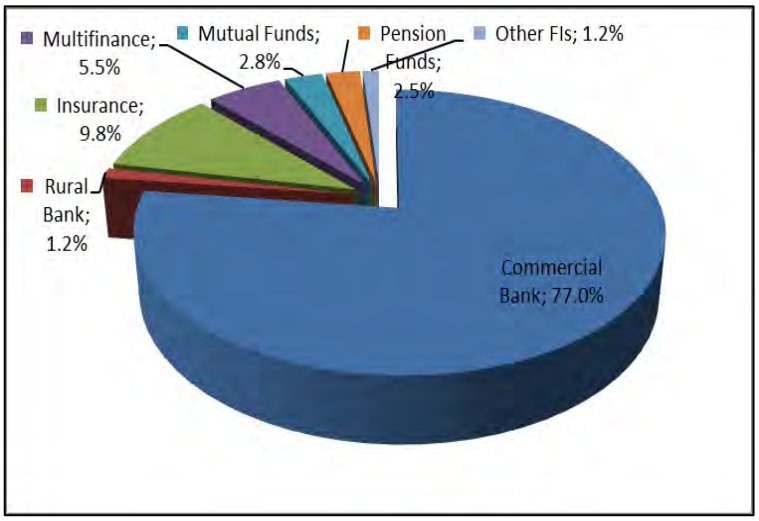
1. Overview

The banking industry dominates Indonesia's financial system. In 2011, the industry's assets accounted for 78.2 percent of the financial system and 47.2 percent of GDP (Figure 1-1). The ratio of bank loans to GDP in Indonesia, however is 29 percent, much lower than in Malaysia (114 percent), Thailand (117 percent), and China (131 percent), suggesting significant room for growth in banking in Indonesia.

Figure 1-1
Composition of Indonesia's Financial System Based on Assets



SOURCE: Bank of Indonesia. 2011. Financial Stability Study. p. 25.

In order to enable growth, depositors must have confidence that their money is safe and borrowers must have confidence that funds will remain available at reasonable rates. The global financial turmoil in 2008 called into question the sustainability of the economic growth in Indonesia. Credit default swaps (CDS) increased from 250 bps in the beginning of 2008 to 980 bps on November 2008. The exchange rate depreciated from IDR 9 (US$118) on June 2008 to IDR 12 (US$151) on November 2008. Meanwhile, annual inflation rose to 11.1 percent, forcing the Bank of Indonesia to gradually raise its policy rate from 8 percent on April 2008 to 9.5 percent on October 2008. Furthermore, the interbank overnight rate increased up to more than 10 percent, suggesting liquidity pressure in the interbank market.

Liquidity shocks in the banking system are believed to be closely related to financial turmoil because an increase in the interbank market rate to a level above the central bank policy rate typically precedes

a financial crisis (Gefang et al, 2011). A liquidity shock may also lead to a liquidity crisis in which depositors withdraw their money from the banking system (a bank rush). In less severe cases, it may also induce a flight-to-quality of deposits from banks perceived as weak to those perceived as strong.

This paper identifies which indicators Indonesian bankers perceive as most relevant in anticipating a banking liquidity crisis, examines herding behavior among banks after a liquidity shock, and how the government could respond to maintain the stability of the banking system.[1] Section 2 presents the theoretical background of a banking liquidity crisis. Section 3 discusses previous studies on this topic. Section 4 describes our data and methodology. Section 5 presents the empirical results of our survey. Section 6 summarizes our conclusions.

[1] Disclaimer: The research designed to measure perceptions and behavior of Indonesian bankers at a particular time.

2. Theoretical Background

The banking industry is significant in any economy. Theoretically, banks are institutions that grant loans and receive deposits from the public (Freixas 1999). In granting loans, they stimulate economic growth by leveraging investment spending. In receiving deposits, they allow the public to earn money on savings. Accepting deposits and granting loans is known as financial intermediation; that is, allocating capital from surplus units to deficit units in an economy. Financial intermediation is more efficient than direct financial transactions among those units. In addition, banks also offer payment services that significantly reduce transaction costs.

As a highly leveraged firm, a bank is vulnerable to various financial risks. A major and destructive risk is to liquidity. Diamond and Dybvig (1983) describe a bank as pool of liquidity that provides depositors with insurance against idiosyncratic needs. Normally, these needs are not perfectly correlated among depositors. This is why a bank whose deposit size is N needs a total cash reserve of less than N to fulfill idiosyncratic needs. This is fundamental for the fractional reserve system, in which some fraction of deposits can be used to finance profitable but illiquid investments. The practice of borrowing short and lending long, however, can make a bank fragile (e.g., when depositors decide to withdraw money for reasons other than meeting idiosyncratic liquidity needs).

Under normal conditions, a bank has depositors' confidence and deposit contracts improve the competitive market outcome and improve risk sharing. The bank uses a certain fraction of funds from the deposit contracts to grant long-term loans to finance productive investments. The bank receives interest income from borrowers and provides a return to depositors. In this equilibrium condition, depositors, the bank, and borrowers all benefit from the deposits and loan contracts. However, if a shock erodes depositors' confidence, the equilibrium is distorted by massive withdrawals, also known as a bank run. A run can leave a bank with negative equity because it must liquidate its loans immediately—and almost always at a bargain price—to pay depositors.

An important assumption of the Diamond and Dybvig model is that depositor panic is the main trigger of a banking liquidity crisis. Recent studies, however, show that a liquidity crisis can happen without a panic. A theoretical model by Carmona (2007) demonstrates that under the standard of the Diamond and Dybvig framework there is an equilibrium condition under which a bank run can occur without a panic among depositors. A bank run can occur during a recession when depositors—who have lost income or are facing significant increases in the prices of goods and services—make large withdrawals. Though not explicitly stated, Carmona's model suggests that a bank run or banking liquidity crisis is a reflection of the business cycle.

3. Previous Studies

This section discusses five studies of banking liquidity: Bonfim and Kim (2012), Carmona (2007), Wagner (2007), Frankel and Saravelos (2010), and Gefang et.al (2011).[2] These studies analyze banking crises using parametric-econometrics models of various economic, financial markets, and banking indicators to propose so-called early warning signs of a crisis.

BONFIM AND KIM

Bonfim and Kim (2012) analyze banks' choices in managing liquidity risk and the potential effects of strategic interactions among banks. One assumption is that when other banks are taking more risk, a given bank may do the same if managers believe they are likely to be bailed out in case of distress. Banks may have incentives to engage in collective risk-taking when there is a strong belief that a collective bailout is possible. Such collective behavior transforms a traditionally microprudential risk into a macroprudential risk, one that may impose much bigger costs on an economy. Because liquidity risk is usually regulated from a microprudential perspective, understanding of interactions among banks can affect how macroprudential policy is designed.

Bonfim and Kim discuss indicators that may be relevant in quantifying how exposed an institution is to liquidity risk. They use a panel dataset of European and North-American banks for the period 2002-2009 in analyzing factors that help explain why some banks adopt globally prudent behavior in managing the liquidity risk underlying financial intermediation functions, whereas others engage in more aggressive risk-taking strategies.

Banks that concentrate assets in lending are perceived as having a more traditional and perhaps more stable intermediation. Even as banks are an economy's main source of liquidity, the maturity gap between the assets and liabilities on their balance sheets means they must manage liquidity risk. To fill the maturity gap, banks can hold a buffer of liquid assets—in cash, short-term assets or government bonds—but doing so may also be inefficient because it limits the provision of liquidity to entrepreneurs and consumers. Therefore, even though banks have some incentive to hold a fraction of liquid assets, these buffers will rarely be sufficient to fully insure against a bank run or a sudden dry up in wholesale markets. In this regard, regulation becomes necessary to mitigate liquidity risk. One justification for such regulation is that banks do not take into account the social optimum when they optimize the relationship between risk and return. Hence, a bank failure may constitute a huge externality on other banks and, ultimately, an entire economy.

[2] See also studies by Baglioni and Monticini (2010), Beirne (2011), Imai and Takarabe (2011).

Bonfim and Kim also find consistent and significant evidence that peer effects influence the liquidity choices of the largest banks. There may be several reasons for this. First, large banks are likely to compete mainly among themselves, replicating risk-taking strategies that maximize profits. Second, they have access to diverse funding sources, usually with lower funding costs, so they can collectively engage in similar funding and liquidity strategies. Third, they may have better liquidity risk management tools than small banks. Finally, they are more likely than small banks to be bailed out in case of systemic distress and thus have similar incentives. Given that peer effects in liquidity risk management are significant only for the largest banks, one could argue that regulation of systemically important financial institutions (SIFIs) will reduce incentives for collective risk-taking (see also Acharya 2009, Acharya and Yorulmazer 2008, Boot 2011, Tirole 2011, and Rajan 2006).

Reserve requirements on bank deposits are the traditional tool of liquidity risk management but they are also important in monetary policy (Robitaille 2011). More important, deposit insurance is now recognized as important in preventing depositors' bank runs. Explicit deposit insurance can sustain runs on bank deposits; however, it is only efficient in minimizing the likelihood of depositors' bank runs. Deposit insurance may not have sufficient tools or funds to mitigate all liquidity-related risks and could generate moral hazard due to its function.

Bonfim and Kim's paper may be especially relevant in contributing to discussion of how regulation can provide incentives to minimize negative externalities. Given the evidence of herding in risk-taking strategies in the run up to the financial crisis, future regulation should include harsher penalties for banks with riskier liquidity positions. In this regard, Bonfim and Kim provide empirical evidence of the determinants of liquidity risk and extend their analysis to strategic interactions and herding behavior. Finally, they provide insights for regulators, most notably on the regulation of the liquidity risk of SIFIs.

The new Basel III regulatory framework is a huge step in the international regulation of banks. At the microprudential level, new liquidity requirements are going to be imposed gradually to reduce excessive maturity mismatches and to ensure that banks hold liquid assets sufficient to survive a short period of stress. The Basel Committee has also proposed the regulation of SIFIs, particularly additional capital requirements. Bonfim and Kim suggest that the new regulatory framework may be missing an element: the systemic component of liquidity risk. The new liquidity risk regulation will ensure that, at the microprudential level, institutions are less exposed to liquidity risk. In addition, more demanding capital requirements are certainly going to reduce risk-taking incentives for SIFIs in general. However, there is consensus that capital requirements are not the best regulatory tool to deal with liquidity risk. In this context, Bonfim and Kim suggest that it may be desirable to impose stiffer liquidity requirements on large systemic institutions at the domestic as well as the global level.

GUILHERME CARMONA

Guilherme Carmona (2007) shows that equilibrium exists with the following properties: all consumers deposit at the bank, all patient consumers wait for the last period to withdraw, and the bank fails with strictly positive probability. He also shows that the probability of a bank failure remains bounded away from zero as the number of consumers increases. This equilibrium explains bank failures driven by extreme withdrawals solely on liquidity since they happen because banks and depositors are illiquid. Furthermore, it does not require the elements usually emphasized: consumers well informed about the true state of nature, a nonzero consumption after a crisis, consumer panic, and sunspots.

Carmona therefore thinks that aggregate risk in Diamond-Dybvig-like (1983) environments can be important in explaining a bank crisis.

Carmona (2007) uses the Diamond and Dybvig framework to show that bank failures caused by large withdrawals are the result of illiquid banks and illiquid consumers. In this version of the framework, such bank failures occur when a large number of depositors need funds in the short term. Failures are possible because banks offer a high short-term interest rate to provide better risk sharing for depositors, but the rate is sufficiently high to lead to a positive probability that the bank will not have enough funds to pay all early withdrawers. These types of failures directly affect banks liquidity.

WOLF WAGNER

Wolf Wagner (2007) examines (1) how increased liquidity of bank assets paradoxically increases banking instability and (2) externalities associated with banking failures. By encouraging banks to reduce risks on balance sheets and by facilitating the liquidation of assets in a crisis, high asset liquidity is stabilizing. But high asset liquidity also makes a crisis less costly for banks. As a result, banks have an incentive to take on an amount of risk that more than offsets the positive direct impact of asset liquidity on stability.

Financial innovations, such as credit derivative instruments, have given banks more ways to sell and hedge loans. Wagner shows that the benefits of increased liquidity, stemming from higher risk transfer in normal times and from enhanced liquidation in a crisis, are counteracted by more risk taking in primary markets. In sum, improved liquidation possibilities in a crisis reduce banks' incentives to avoid a crisis and thereby erode stability. Banks take on an amount of risk that increases the probability of default.

Regulators who want to address this stability issue could attempt to increase capital requirements. However, as asset liquidity increases capital requirements become less effective in ensuring stability. A more direct means for undoing the impact of increased liquidity on stability is to reduce the returns for bank owners in a bank closure.

FRANKEL AND SARAVELOS

Frankel and Saravelos (2010) investigate more than 80 contributions to the pre-2008 literature on crisis indicators, namely a liquidity crisis in U.S. financial markets. They identify which have performed consistently well in predicting a crisis. Among the 17 categories of indicators, two stand out as the most useful leading indicators:

- Level of international reserves
- Movements in the real exchange rate in the run up to the crisis.

The consistency of results is impressive. They hold across different crisis episodes stretching from the 1950s to the early 2000s, even though authors have defined "crisis" and "useful" in different ways. Credit growth and other indicators have also been useful in many studies. The current-account balance has been frequently tested, sometimes with success and sometimes not.

The paper concludes that early warning exercises can be useful in assessing vulnerabilities. The same variable that topped the list of indicators in the earlier literature, central bank reserves, also works the best in predicting who got hit in the 2008-2009 crisis. Other useful early warning indicators are real

effective exchange rate overvaluation, current accounts, and national savings. Many Eastern European countries were hurt by these factors in the crisis, while many Asian countries fared much better.

GEFANG

Gefang et al (2011) propose a statistical model that uses a panel of LIBOR-OIS spreads and bank CDS rates to disentangle liquidity and credit risk. The panel dimensions of the spreads include variation across banks, currencies, and terms. The literature almost always ignores these panel dimensions and simply works with one average LIBOR-OIS spread. From a statistical point of view, their empirical results show that exploiting these panel dimensions improves our understanding of liquidity and credit risk.

In the proposed model, Bayesian estimation methods use a Markov Chain Monte Carlo (MCMC) algorithm that combines familiar algorithms for dynamic factors and Markov switching models. The model depends on the latent credit and liquidity risk factors (L_{kt} and C_t), and the Markov switching states (S_t^L and S_t^C).

The empirical results show that surges in short-term LIBOR-OIS spreads in the 2007–2009 financial crisis were largely driven by liquidity risk while credit risk was more significant in the long-term (twelve-month) LIBOR-OIS spread. Liquidity risk factors are more volatile than the credit risk factor. Most of the familiar events in the financial crisis are linked more to movements in liquidity risk than credit risk.

4. Data and Methodology

DATA

This research study used a questionnaire to collect data from bank executives regarding

- The definition of a banking liquidity crisis;
- The economic, financial market, and banking indicators monitored before a crisis;
- Actions to mitigate the impact of a banking liquidity crisis, conditions that trigger those actions, and whether the actions of other banks are being noticed; and
- Expectations regarding the bank regulator's anticipation and handling of a banking liquidity crisis.

The questionnaire (see Appendix D) was sent to more than 100 executives and/or heads of divisions of commercial banks (except shariah banks). Twenty-six completed questionnaires were returned. The banks that returned the questionnaires have substantial assets (Table 4-1) and are among the largest in Indonesia. Thus, the sample, though small, could represent the majority of Indonesian commercial banks and capture the different perceptions and behaviors of Indonesian bankers. Since the research contain perceptions and behaviors of Indonesian bankers at a particular time then the response might be different over time.

Our sampling method was purposive; that is, the chosen respondents have expertise and 10-20 years of experience in analyzing the effect of macroeconomic shocks and changes in banking and financial institutions on bank performance. Nearly all respondents are from a bank's treasury division or a unit or committe that manages risk and/or asset liquidity.

Table 4-1
Assets of Banks that Returned Questionnaires, as of June 2012

No	Bank Code	Total Asset (IDR Tn)
1	4.1	506.55
2	4.2	461.14
3	4.3	401.83
4	4.4	306.88
5	4.5	176.09
6	4.6	132.68
7	3.1	58.84
8	3.2	58.83
9	3.3	52.01
10	3.4	25.21
11	2.1	16.23
12	2.2	13.89
13	2.3	13.49
14	2.4	13.47
15	2.5	12.59
16	2.6	11.83
17	1.1	9.89
18	1.2	7.36
19	1.3	7.15
20	1.4	6.95
21	1.5	5.50
22	1.6	4.21
23	1.7	3.05
24	1.8	1.62
25	1.9	1.49
26	1.10	1.31
Total		2,310.08

SOURCE: Indonesia Deposit Insurance Corp. Data processed.

DESCRIPTIVE ANALYSIS

The descriptive analysis summarizes responses by relative frequency of a response in total responses. This part of the analysis involves cross-tabulation and ordinal ranking of responses.

CLUSTER ANALYSIS

Cluster analysis groups observations on the basis of similar characteristics. The basic process for cluster analysis is as follows:

- Standardize data.
- Determine similarity by measuring (1) correlation between the pair of objects on several variables, (2) distance between the two objects, or (3) associations between objects.
- Group observations. In a hierarchical cluster method the number of clusters is not predetermined.

Analysis of respondent questionnaires resulted in four clusters based on importance and characteristics (Table 4-2).

Table 4-2
Cluster Analysis Output

Cluster Class	Importance	Characteristics
Number of Sample (n)	*26*	*25*
Valid	*12*	*14*
Missing	*14*	*11*
Cluster 1	Banks 1.2, 2.5, 1.5, 1.10, 4.3	Banks 2.3 and 1.6
Cluster 2	Banks 4.1 and 1.6	Banks 1.2, 2.1, 2.5, 3.2, 3.3, 4.5, 1.10, 1.1, 4.4
Cluster 3	Banks 1.9 and 4.4	Banks 4.1 and 1.5
Cluster 4	Banks 3.3, 4.5, and 1.1	Bank 4.3

FACTOR ANALYSIS

Factor analysis groups variables on the basis of similar characteristics into one or more “factors” such that variables in a group bear a resemblance to each another, or are “highly correlated.” Factor analysis (1) summarizes data by identifying the relationship between variables using a correlation test; and (2) reduces data by grouping variables into a new set of fewer variables (factors). There are two basic steps in factor analysis:

1. Standardize Data. When variables have a variety of units (i.e., kilometer units, percent units), then they should be standardized by changing it into Z-score data for each variable.

2. Assess the Appropriate Variables. Once data are standardized, they are filtered by means of the Measure of Sampling Adequacy (MSA) and the Bartlett Test of Sphericity developed by Kaiser, Mayer and Olkin, to determine which variables are feasible in the factor analysis and to discard variables that do not meet these criteria.

Measure of Sampling Adequacy

Measure os Sampling Adequacy (MSA) numbers are used to determine whether a variable can be predicted by other variables and is appropriate for factoring. Magnitude of rate ranges from 0 to 1 as follows:

- MSA = 0: These variables can be predicted without error by the other variables.

- MSA> 0.5: This variable can still be predicted by other variables and is appropriate for factoring.
- MSA <0.5: This variable cannot be predicted by other variables and is not appropriate for factoring.

Bartlett Test of Sphericity

The Bartlett Test of Sphericity is used to determine whether the matrix is an identity matrix. In factor analysis, a relationship between variables (multi-colinearity) is necessary because the purpose of factor analysis is to connect a set of variables into one factor. When the correlation matrix is the identity matrix, there is no correlation between variables, so factor analysis cannot go further. The hypotheses test is as follows:

Using significance level of α = 5% (= 0.05), then:

a. When Sig> 0.05 then the correlation matrix is the identity matrix (cannot be further analyzed).
b. When: Sig <0.05 then the correlation matrix is not the identity matrix (can be further analyzed).

Since the correlation needed for each variables to be further analyzed by using the Kaiser, Mayer and Olkin (KMO) measurement are above 0.5, then any variables that are not qualified will be dropped (see Table 4-3).

Table 4-3
Bartlett Test of Sphericity Output

No.	Indicator	Kaiser, Mayer, and Olkin (KMO)		
		Importance	Characteristic	Threshold
1	Macroeconomic	0,738	0,793	0,716
2	Financial market	0,720	0,770	0,735
3	Banking sector, loan & deposit growth	0,880	0,892	0,788
	Banking sector, financial ratios	0,710	0,788	0,783
	Banking sector, others’	0,681		
4	Policies/actions (leading indicator)	0,642		0,734
5	Policies/actions (coincident indicator)	0,727		0,768
6	Crisis anticipation	0,621		
7	Crisis mitigation	0,778		
8	Rumors	0,554	0,649	

Other than KMO measurement, the degree of correlation can also measured using Anti-Image Correlation Matrices. In Anti-Image Correlation Matrices, a variable with a value of MSA below 0.5 is considered not feasible for further analysis. The screening process is to remove the infeasible variables one by one to obtain MSA values above 0.5 for feasible variables.

Factoring

After standardizing and filtering variables, we factor them by means of principal component analysis to identify important, characteristic, and threshold indicators.

Increases in foreign debt, fiscal deficits, and oil prices as well as decrease of economic growth in developed countries, ASEAN, and other Asian countries including China, Japan, and Korea are identified as important indicators that respondents feel should be monitored closely.

Respondents assume that the Composite Stock Index, foreign investors' risk appetite, and financial sector stock prices all need to be watched closely for signs of decline, along with an increase in interbank rates and the CDS spread. All of these are considered financial market indicators.

Among the banking sector indicators, loan growth is considered important, whether increasing or decreasing, and should be monitored closely. Therefore, the loan to deposit ratio (LDR) and nonperforming loans (NPL) indicator are important due to their impact on asset quality that might impact bank capital and availability of liquid assets.

Because banking is built on trust it is greatly affected by negative rumors. This is why the closing small or medium banks had such a negative impact on the banking industry.

Respondents indicated that reducing the policy rate, increasing maximum coverage levels, applying fiscal stimulus, and using moral suasion are appropriate actions to minimize a crisis. The regulator's role as lender of last resort is also important in a time of crisis. To anticipate a crisis, sophisticated prudential macroeconomic management, regulation of bank soundness, and transparency are all considered important.

5. Analysis

DEFINITION OF LIQUIDITY CRISIS [3]

The first part of the questionnaire determined whether Indonesian bankers share a definition of liquidity crisis. The first definition presented is based on a concept of funding liquidity risk (Borio 2010) and the classical definition of bank runs (Diamond and Dybvig 1983): "A condition in which it is difficult for most of the banks to obtain deposits or to retain deposits, and there are significant deposits withdrawals at several (weak) banks" (Q1). No respondents disagreed with this definition (Table 5-1). [4]

Table 5-1
First Definition of a Liquidity Crisis

Q1 * size Crosstabulation

			size			
			Large	Medium	Small	Total
Q1	agree	Count	10	8	8	26
		% within Q1	38.5%	30.8%	30.8%	100.0%
		% within size	100.0%	100.0%	100.0%	100.0%
Total		Count	10	8	8	26
		% within Q1	38.5%	30.8%	30.8%	100.0%
		% within size	100.0%	100.0%	100.0%	100.0%

The next definition of liquidity crisis is related to interbank money market and overnight interest rate. Baglioni and Monticini (2010) found that when there is a liquidity tension, then overnight interest rate tends to jump significantly. Thus, the questionnaire offers the following alternative definition of a liquidity crisis: "A condition in which there is significant pressure in the interbank market and increasing overnight rates." On average, 88.5 percent of the bankers agreed with this definition and only 11.5 percent disagreed (Table 5-2).

[3] Disclaimer: The research designed to measure perceptions and behavior of Indonesian bankers at a particular time.

[4] To investigate responses thoroughly, the sample is divided into three groups of banks based on asset size: large (assets > IDR 25 trillions), medium (IDR 10 < assets ≤ 25 trillions), and small (assets < IDR 10 trillions).

Table 5-2
Second Definition of a Liquidity Crisis

Q2 * size Crosstabulation

			size			
			Large	Medium	Small	Total
Q2	disagree	Count	1	0	2	3
		% within Q2	33.3%	.0%	66.7%	100.0%
		% within size	10.0%	.0%	25.0%	11.5%
	agre	Count	9	8	6	23
		% within Q2	39.1%	34.8%	26.1%	100.0%
		% within size	90.0%	100.0%	75.0%	88.5%
Total		Count	10	8	8	26
		% within Q2	38.5%	30.8%	30.8%	100.0%
		% within size	100.0%	100.0%	100.0%	100.0%

Bankers from two large banks in the sample suggest including exchange rate pressure in the definition. This suggestion has merit as several financial crises have had a "twin crisis" involving the banking system and the foreign exchange market (Shin 2005). Most large banks in Indonesia are *devisa* banks that account for more than 80 percent of market shares in assets, so regulators should note well the threat of a twin crisis.[5] However, this is beyond the scope of analysis in this paper.

Knowing that bankers in the sample share a definition of liquidity crisis, we can proceed confidently to further analysis of their responses to the next part of the questionnaire.

MACROECONOMIC INDICATORS

Respondents identifed inflation and a decrease in foreign reserves as very important indicators that should be monitored closely (Table 5-3). Approximately 58.33 percent responded that inflation is a very important indicator in assessing a liquidity crisis and that the inflation rate is a leading indicator in the economy.

Table 5-3
Importance of Macroeconomic Indicators

No.	Very Important	%	Important	%	Others	Percentage
1	Inflation	58.33	Economic growth	45.83	Rupiah depreciation	45 percent very important; 83 percent important
2	Decrease in foreign reserves	54.17	Increase in foreign debt	45.83		
3			Increase in fiscal deficit	45.83		
4			Increase in government bond	58.33		
5			Decline in developed countries (G3) economy	58.33		
6			Decline in ASEAN+3 (China, Japan, and Korea) economy	58.33		

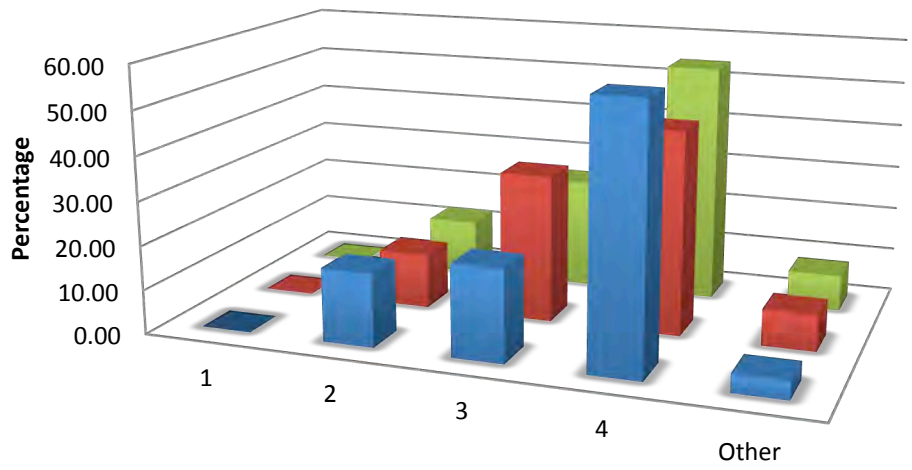
[5] A *devisa* bank is one that Bank of Indonesia (the central bank) allows to conduct transactions in foreign currencies.

No.	Very Important	%	Important	%	Others	Percentage
7			Sharp increase of oil price (% in 1 month)	54.17		
8			Increase of BI rate	45.83		
9			Increase of money supply (% in 1 month)	66.67		
10			Foreign trade (export and import) getting slower	66.67		

Inflation reflects the instability of the national economy. If it is too high, the industry assumes that the risk in the economy is high and the impact on business performance will be negative. To reduce inflation, the monetary authority normally induces liquidity tightening by raising interest rates. Inflation might also make people reluctant to deposit money because the value of money may decrease if the inflation rate is higher than the bank rate. See Figure 5-1.

Figure 5-1

Inflation (% YoY last month)



	1	2	3	4	Other
Importance*	0.00	16.67	20.83	58.33	4.17
Characteristics**	0.00	12.50	33.33	45.83	8.33
Threshold***	0.00	12.50	25.00	54.17	8.33

Note:

***Indicators' importance**	4 = Very important
	3 = Important
	2 = Indifference
	1 = Not Important
	Other = Not Answer
****Indicators' characteristics**	4 = Leading
	3 = Coincident
	2 = Lagging
	1 = Irrelevant
	Other = Not Answer
*****Indicators' threshold**	4 = Very sensitive
	3 = Sensitive
	2 = Less sensitive
	1 = Not Sensitive
	Other = Other threshold

Bankers see a decrease in foreign reserves as a very important indicator that must be watched closely; it is included in the coincident category (Table 5-4). Respondents' perceive a 5 percent to 8 percent decrease in foreign reserves in the last month as the threshold suggesting a liquidity crisis.

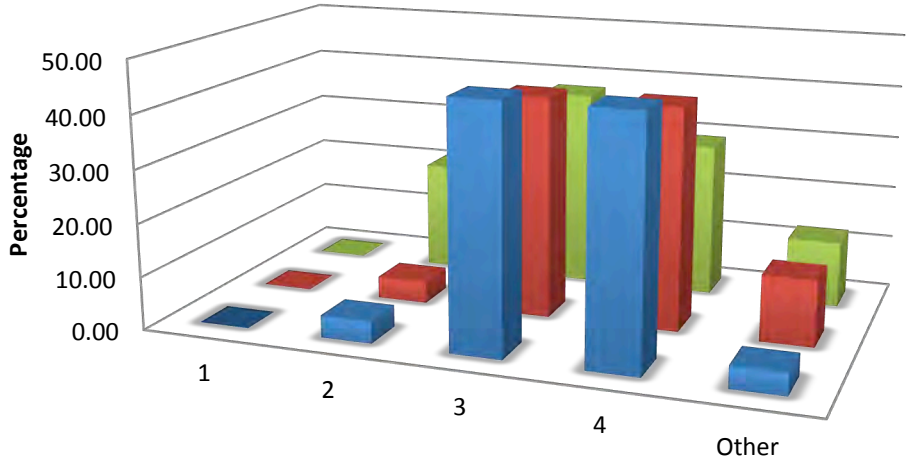
Table 5-4
Characteristics of Macroeconomic Indicators

No.	Leading	%	Coincident	%	Others	%
1	Inflation	45.83	Decrease in foreign reserves	45.83	Rupiah depreciation	41 leading; 67 coincident
2			Increase in BI rate	41.67		

The depreciation of the rupiah falls into two categories, leading indicator and coincident indicator. The exchange rate variable is crucial because of its role in a liquidity crisis; indeed, 91.67 percent of respondents considered it very important. (See Tables 5-3, 5-4 and Figure 5-2.).

Figure 5-2

Rupiah Depreciation (% in past 1-3 months)

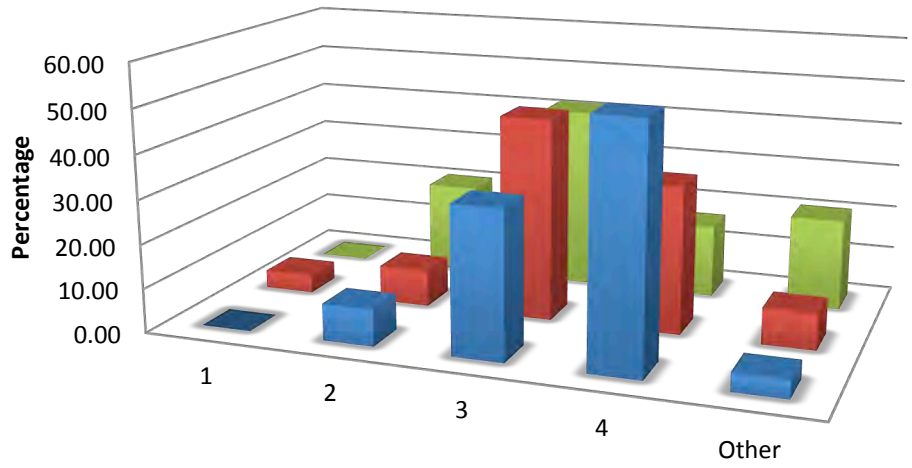


	1	2	3	4	Other
Importance	0.00	4.17	45.83	45.83	4.17
Characteristics	0.00	4.17	41.67	41.67	12.50
Threshold	0.00	20.83	37.50	29.17	12.50

A declining exchange rate may decrease purchasing power (demand), especially in the low and middle income classes. Thus, it may also decrease the production of goods and services. A declining exchange rate and rising interest rate will heavily effect the cost of production, especially for firms that imports raw materials for production. Hence pressure from cost-push inflation is an imminent danger to the national economy. A decrease in foreign reserves was categorized as a coincident indicator by 45.83 percent of respondents and considered to be an indicator that must be monitored. In 2005 and 2008, Indonesia went through a bigt drop in foreign reserves. In 2005, the decline was caused mainly by the slowdown in the national economy attributable to rising oil prices. In 2008, the decline was triggered by the global financial crisis that hit Indonesia's trading partners. See Figure 5-3.

Figure 5-3

Decrease in Foreign Reserves (% in one month)

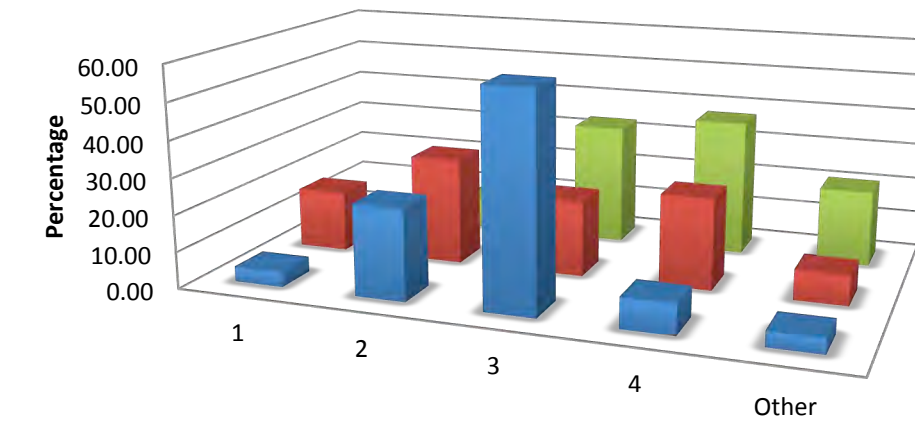


	1	2	3	4	Other
Importance	0.00	8.33	33.33	54.17	4.17
Characteristics	4.17	8.33	45.83	33.33	8.33
Threshold	0.00	20.83	41.67	16.67	20.83

Indonesia's relatively open economic system will be affected by trade with other countries as well as globalization generally. Respondents considered a decline in developed countries' (G3) economy as one of the variables that might affecting the outlook for the national economy.

Figure 5-4

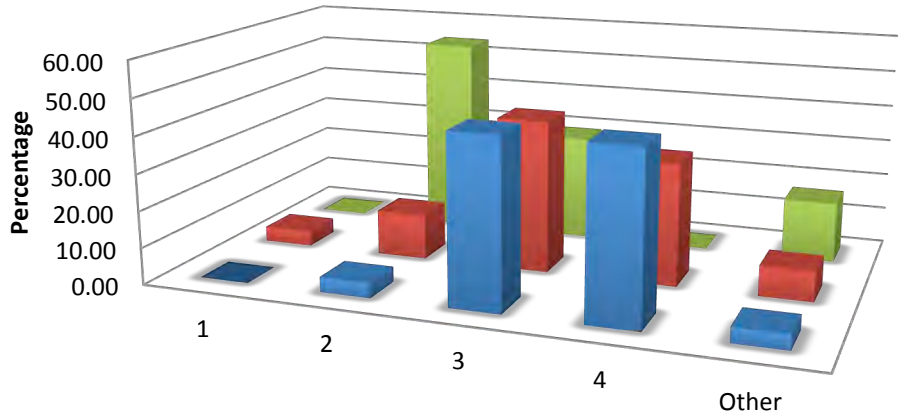
Decline in Developed Countries' (G3) Economy, Growth of the Past Two Quarters



	1	2	3	4	Other
Importance	4.17	25.00	58.33	8.33	4.17
Characteristics	16.67	29.17	20.83	25.00	8.33
Threshold	0.00	8.33	33.33	37.50	20.83

The economic growth of ASEAN +3 countries (China, Japan, Korea) also greatly affects Indonesia's economy because most of the country's exports go to countries in the region. According to respondents, declining economic growth in ASEAN +3 countries is an important variable and a leading indicator.

Figure 5-5
Increase in BI Rate



	1	2	3	4	Other
Importance	0.00	4.17	45.83	45.83	4.17
Characteristics	4.17	12.50	41.67	33.33	8.33
Threshold	0.00	54.17	29.17	0.00	16.67

To achieve the overriding monetary policy objective, Bank Indonesia has implemented a monetary policy framework for management of interest rates (interest rate target), commonly known as the BI rate. At the operational level, the BI rate is reflected in movement in the Interbank Overnight (O/N) Rate.

Fluctuation in interbank rates were expected to be followed by interest rates on deposits, and also in lending rates. A rising BI rate as viewed as an important indicator by 45.83 percent of respondents and as a coincident indicator by 41.67 percent.

FINANCIAL MARKET INDICATORS

In the financial market indicators, an increase in the interbank rate is considered very important in identifying a liquidity crisis. Other important indicators are listed in Table 5-5. Respondents have diverse views on indicator characteristics but hold similar views on which are leading and which are coincident. Some could fall into both categories (e.g., increasing interbank rate, decrease in interbank volume, and worsening of productive asset quality). See Table 5-6.

Table 5-5
Importance of Financial Market Indicators

No.	Very Important	%	Important	%
1	Increase in interbank rate (% in two weeks)	41.667	Decrease in Composite Stock Index (% in two weeks)	58.33
2			Decline in financial sector stock prices	54.17
3			Increase in interbank rate (% in two weeks)	45.83
4			Decrease in foreign investors' risk appetite (% portfolio)	41.67
5			Increase in government bond yields (% in one month)	70.83
6			Decrease in interbank volume	45.83

Table 5-6
Characteristics of Financial Market Indicators

No.	Leading	%	Coincident	%	Others	%
1			Decrease in Composite Stock Index (% in two weeks)	41.67	Increase in interbank rate (% in two weeks)	41.67, leading and coincident
2			Decrease in foreign investors' risk appetite (% portfolio)	41.67	Decrease in interbank volume	33.33, leading and coincident
3			Increase in government bond yields (% in one month)	41.67	Worsening of overall productive asset quality	41.67, leading and coincident

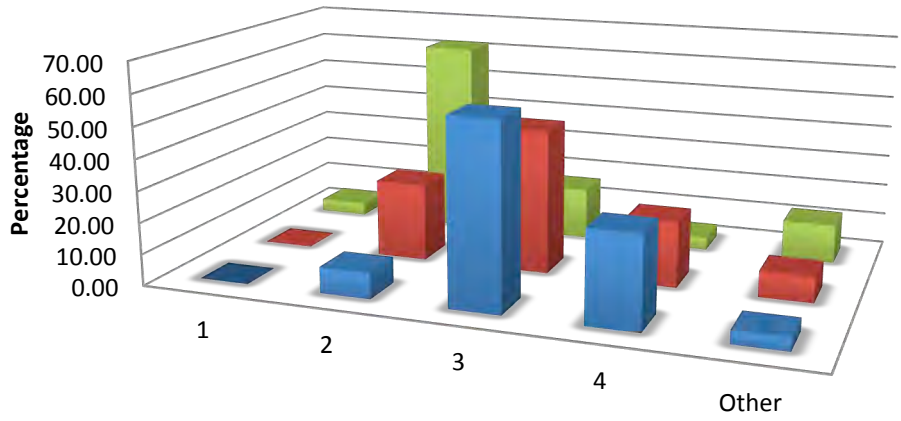
The Composite Stock Price Index (IHSG) is a common reference in monitoring stock market volatility, and 58.33 percent of respondents consider it a coincident indicator for a liquidity crisis. This opinion is supported if the price of shares in the financial sector decrease simultaneously. Respondents also consider that the banking system is experiencing a liquidity crisis. Respondents see a decrease in the composite stock index as a coincident indicator because of its daily activity and ability to shed light on market activity at that time.

The Jakarta Interbank Offered Rate is a reference rate for the interbank money market in Indonesia. Respondents see a rising interbank rate as a very important indicator, and 41.67 percent consider it a leading indicator as well as a coincident indicator. See Figures 5-6 and 5-7.

Bankers view an increase in interbank rates as an indicator of massive funding requests suggestive of a liquidity drought . If such a situation continues, the impact is much worse and a liquidity crisis may occur.

Figure 5-6

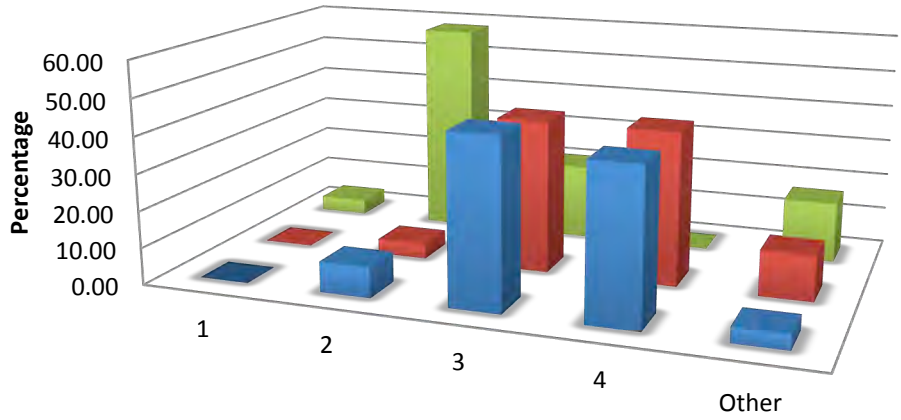
Decrease in Composite Stock Index (% in two weeks)



	1	2	3	4	Other
Importance	0.00	8.33	58.33	29.17	4.17
Characteristics	0.00	25.00	45.83	20.83	8.33
Threshold	4.17	62.50	16.67	4.17	12.50

Figure 5-7

Increase in Interbank Rate (% in two weeks)

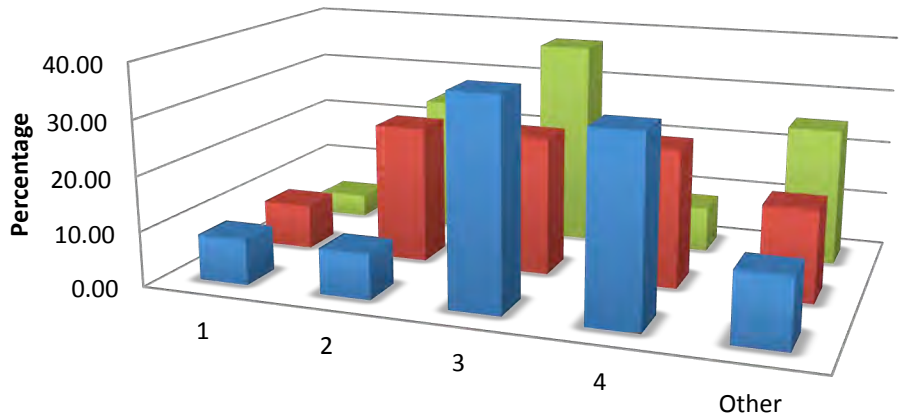


	1	2	3	4	Other
Importance	0.00	8.33	45.83	41.67	4.17
Characteristics	0.00	4.17	41.67	41.67	12.50
Threshold	4.17	58.33	20.83	0.00	16.67

As a market instrument, a credit default swap (CDS) is related to fundamental economic variables, global and domestic. Thus the movement of CDS also reflects perceptions of economic outlook (sovereign risk). Several studies show a strong correlation of CDS behavior and economic fundamentals. CDS also consists of a derivatives instrument and functions as an insurance debt/loan entity. Because CDS is a derivative instrument, valuation theoretically depends on risk-free interest

rate, maturity, strike price, volatility and spot price of the underlying asset. Therefore, bankers see an increase in CDS spreads as an important indicator but vary in their opinion of its status as leading, coincedent, or lagging (approximately 25 percent for each). Bankers do not see these variables as directly related to banking but as explaining the fundamental outlook and condition of the national economy.

Figure 5-8
Increase in CDS Spread (% in one month)

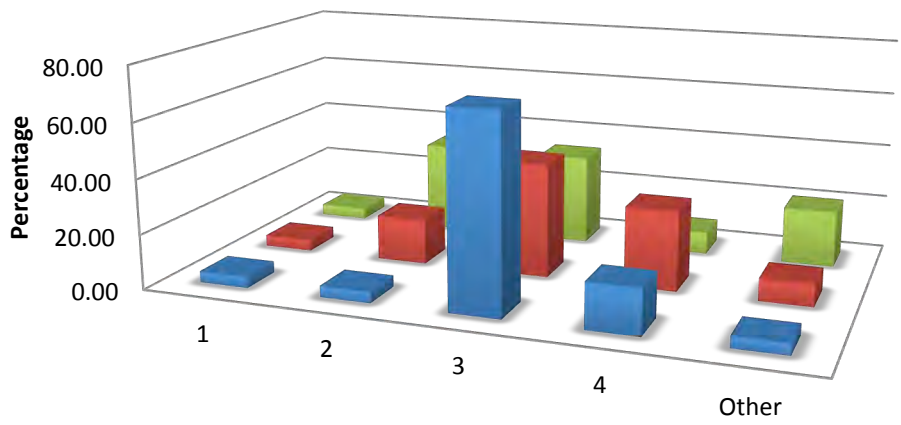


	1	2	3	4	Other
Importance	8.33	8.33	37.50	33.33	12.50
Characteristics	8.33	25.00	25.00	25.00	16.67
Threshold	4.17	25.00	37.50	8.33	25.00

Increases in government bond yields may send a signal to investors that the economy is currently in bad shape, thus it might lower the demand for government bonds resulting in a decrease in prices. In the end, it might put pressure in the government budget, since it will increase the cost of debt. Changes in government bond yields are also associated with changes in country risk levels. Therefore, a significant increase in yields can affect the economy of a country. Based on that assumption, most bankers considered an increase in government bond yields as important and coincident indicator levelling to 70.83 percent and 41.67 percent respectively.

Figure 5-9

Increase in Government Bond Yield (% in one month)



	1	2	3	4	Other
Importance	4.17	4.17	70.83	16.67	4.17
Characteristics	4.17	16.67	41.67	29.17	8.33
Threshold	4.17	33.33	33.33	8.33	20.83

BANKING INDICATORS

Competition can force banks to take excessive risks, especially in credit markets and deposits. Aggressive credit growth can become a serious problem if it is not matched with growth in third-party funds and the availability of capital as a buffer.

Respondents are concerned with banking indicators, as can be seen by the number of indicators deemed important in monitoring for and anticipating a liquidity crisis. See Table 5-7. Normally, a banking crisis will go through a phase called the liquidity crisis, during which it is difficult to obtain funding in the interbank market and public savings. Symptoms of a liquidity crisis include a significant increase in the overnight interest rate, the number of banks that have an unreasonable interest rate policy, slow growth or decrease in public deposits in the banking industry, flight to quality into the big banks or government banks, and so on. For these reasons a banking crisis can caused by a liquidity crisis in the banking system.

Table 5-7
Importance of Banking Indicators

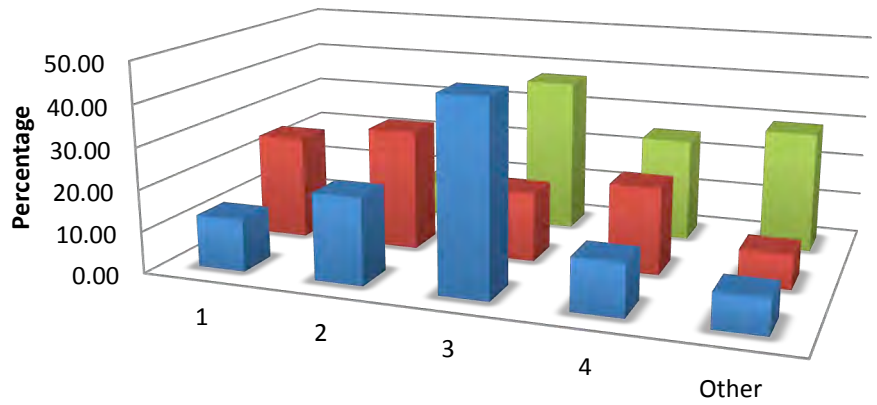
No	Very Important	%	Important	%	Indifference	%
1	Decrease of liquid assets	54,17	Increase of loan growth (%YoY within 1-3 last	45,83	Increasing loan growth for Others Sector	41,67
2	Closing of medium banks (total assets between IDR10-25 trillions)	62,50	Increasing Working Capital Loans	50,00		
3	Rumors about bank closing	54,17	Increasing Investment Loans	45,83		
4	Rumors about central bank policies	50,00	Increasing Consumptive Loans	45,83		
5			Increasing Finacial loan growth	50,00		
6			Decrease of aggregate loan growth	50,00		
7			Decreasing Working Capital Loans	58,33		
8			Decreasing Investment Loans	62,50		
9			Decreasing Consumptive Loans	54,17		
10			Decreasing Farming loan growth	41,67		
11			Decreasing Manufacturing loan growth	66,67		
12			Decreasing Mining loan growth	54,17		
13			Decreasing Property and Construction loan growth	58,33		
14			Decreasing Trading loan growth	62,50		
15			Decreasing Financial loan growth	54,17		
16			Decreasing Services loan growth	50,00		
17			Decrease of deposits growth (%YoY within 1-3 last	50,00		
18			Increase of Loan-to-Deposit Ratio (ratio within 1-3 last months)	45,83		
19			Worsen of non performing loans (gross NPL within 1-3 last months)	45,83		
20			Worsen of overall productive assets quality (within 1-3 last months)	58,33		
21			Decrease of bank capital (CAR within 1-3 last months)	45,83		
22			Decrease of profitability (ROA 1-3 last months)	62,50		
23			Closing of small banks (total assets ≤ IDR10 trillions)	50,00		

Table 5-8
Characteristics of Banking Indicators

No	Leading	%	Coincident	%
1	Decrease of deposits growth (% YoY in past 1-3 months)	54.16	Decreasing property and construction loan growth	41.67
2	Increase of loan-to-deposit ratio (ratio in past 1-3 months)	41.67	Closing of small banks (total assets ≤ IDR10 trillions)	41.67
3	Worsen of non-performing loans (gross NPL in past 1-3 months)	41.67		
4	Decrease of liquid assets (current ratio in past 1-3 months)	58.33		

An increase in loan growth was classified by 45.83 percent of respondents as very important, but in relation to assessing a liquidity crisis 20.83 percent said it was a leading indicator, 16.67 percent said it was coincident, and 29.17 percent said it was lagging. See Figure 5-10.

Figure 5-10
Increase in Loan Growth (% YoY in past 1-3 months)

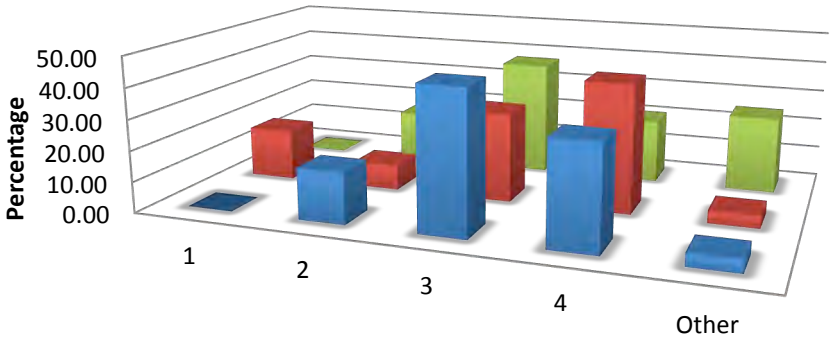


	1	2	3	4	Other
Importance	12.50	20.83	45.83	12.50	8.33
Characteristics	25.00	29.17	16.67	20.83	8.33
Threshold	0.00	8.33	37.50	25.00	29.17

Rapid credit growth might have an impact on the loan to deposit ratio (LDR); 37.5 percent respondents said that if the LDR level increased between 100 percent up to 120 percent, then a liquidity crisis was indicated. Bankers consider these variables important because their business model depends on third-party sources of funding and lending to the real sector. If bank lending is in excess of third-party funds then a liquidity crisis is triggered. See Figure 5-11.

Figure 5-11

Increase in Loan-to-Deposit Ratio (in past 1-3 months)

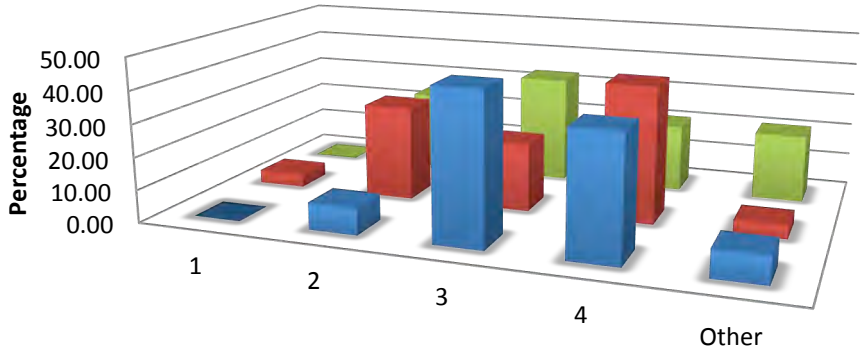


	1	2	3	4	Other
Importance	0.00	16.67	45.83	33.33	4.17
Characteristics	16.67	8.33	29.17	41.67	4.17
Threshold	0.00	16.67	37.50	20.83	25.00

If a bank does not follow prudential principles, the impact of aggressive lending is manifest in an increase in nonperforming loans (NPLs). NPL worsening was considered a leading indicator by 41.67 percent of respondents, with the threshold indicating a liquidity crisis ranging from a 5 percent to 8 percent increase in NPLs. An increase in NPLs can harm bank capital and affect lending for the next period. This, in turn, will affect dividends and retained earnings or capital as a buffer in the event of a crisis. See Figure 5-12.

Figure 5-12

Worsening of Nonperforming Loans (gross NPL in past 1-3 months)

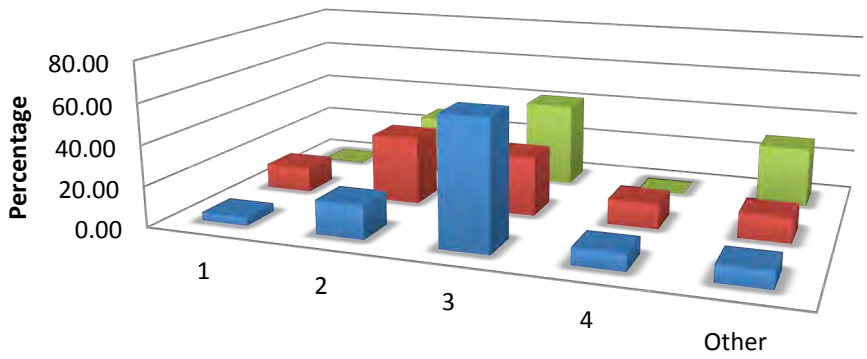


	1	2	3	4	Other
Importance	0.00	8.33	45.83	37.50	8.33
Characteristics	4.17	29.17	20.83	41.67	4.17
Threshold	0.00	25.00	33.33	20.83	20.83

Profitability is the most appropriate indicator of bank performance. Measures of profitability include return on assets (ROA) and return on equity (ROE). ROA is focused on the ability to obtain earnings on operations, while ROE measures the investment return earned from the business owner. Hence, we use ROA as an indicator of bank performance.

Most respondents (62.50 percent) classify a decrease in ROA over a 1-3 month period as an important indicator and 33.33 percent classify it as a lagging indicator. For 41.67 percent of respondents the threshold of decrease is 1 percent ROA. See Figure 5-13.

Figure 5-13
Decrease in Profitability (ROA of past 1-3 months)

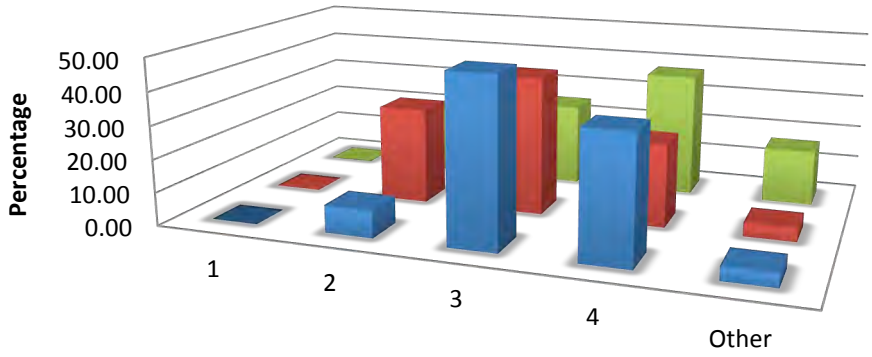


	1	2	3	4	Other
Importance	4.17	16.67	62.50	8.33	8.33
Characteristics	12.50	33.33	29.17	12.50	12.50
Threshold	0.00	29.17	41.67	0.00	29.17

Half of respondents (50 percent) view the closing of small banks as significant in assessing the impact of a liquidity crisis and important in its effect on the banking system. Still, 41.67 percent classify the closing of small banks as a coincident indicator. In contrast, 62.50 percent of respondents view the closing of medium sized banks as very important and predictive of a liquidity crisis; 45.83 percent of respondents classify the closing of these banks as a leading indicator. See Figures 5-14 and 5-15.

Figure 5-14

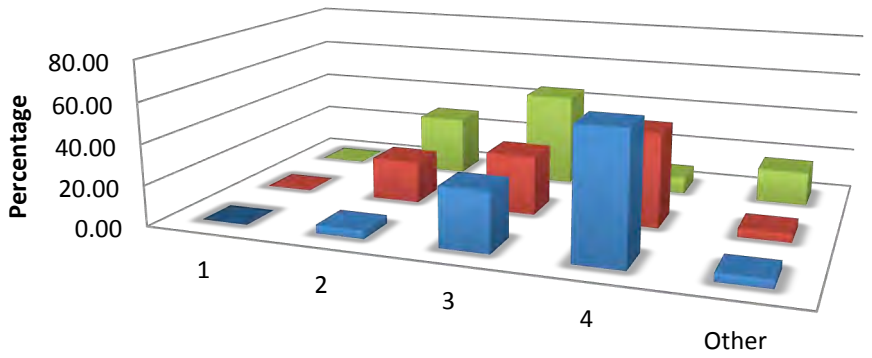
Closing of Small Banks (total less than or equal to IDR 10 trillion)



	1	2	3	4	Other
Importance	0.00	8.33	50.00	37.50	4.17
Characteristics	0.00	29.17	41.67	25.00	4.17
Threshold	0.00	20.83	25.00	37.50	16.67

Figure 5-15

Closing of Medium Banks (total assets IDR 10-25 trillion)



	1	2	3	4	Other
Importance	0.00	4.17	29.17	62.50	4.17
Characteristics	0.00	20.83	29.17	45.83	4.17
Threshold	0.00	29.17	45.83	8.33	16.67

RUMORS IN BANKING INDUSTRY

A controversial aspect of the IMF-supported program for economic stabilization and recovery—which started in November 1997—was the closing of 16 insolvent banks as part of banking system restructuring. Public criticism focused on lack of transparency about the closures. Concerns over this policy may have been more important than the tightening of liquidity that occured at that time.

When transparency is not symetric, it may have a negative impact on the banking industry. Coupled with the rumors circulating in the public, this creates more uncertainty in the economy. Amid such uncertainty, people tend to move their deposits to banks that they perceive to be more secure (flights to quality), or they might kept it at home.

In setting policy, banks take into account rumors about bank closings, central bank policy, financial markets, and foreign countries. Rumors about bank closings were considered very important by 54.17 percent of respondents; 41.67 percent consider rumors of closing a leading indicator. Rumors about central bank policy rate were considered very important by 50 percent of respondents; 45.83 percent considered such rumors a leading indicator as well. Rumors about financial markets and foreign countries are considered important and worthy of constant monitoring. Rumors about financial markets are included in the coincident variables.

Table 5-9
Importance of Rumors in Banking Industry

No	Very Important	%	Important	%
1	Rumors about bank closing	54.17	Rumors about central bank policies	41.67
2	Rumors about central bank policies	50.00	Rumors about financial markets	62.50
			External rumors (foreign countries)	54.17

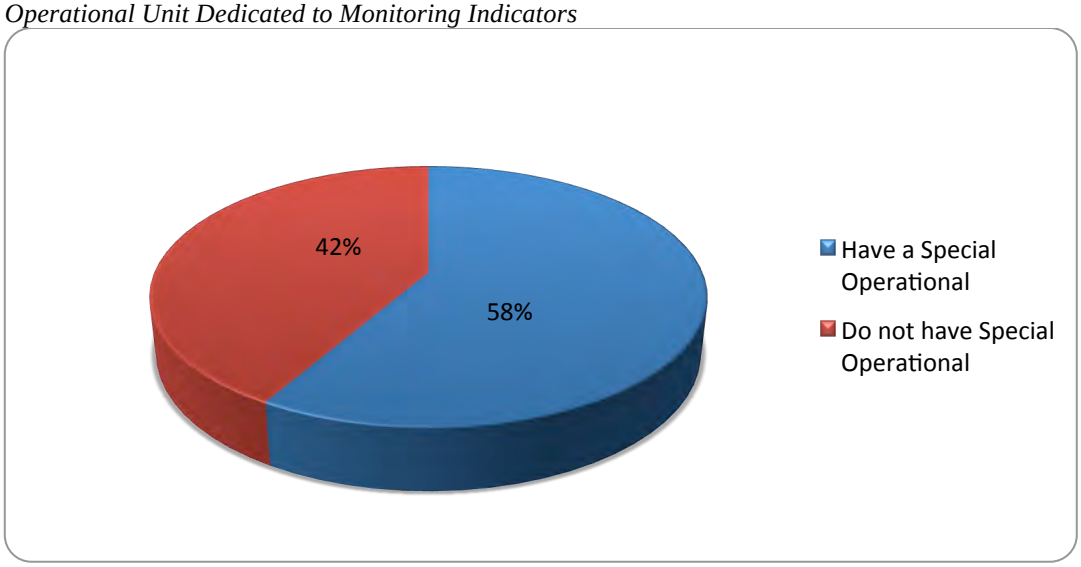
Table 5-10
Characteristics of Rumor Indicators

No	Leading	%	Coincident	%
1	Rumors about bank closing	41.67	Rumors about central bank policies	41.67
2	Rumors about central bank policies	45.83	Financial market rumors	50.00

BANK POLICIES ON LIQUIDITY CRISIS

Fifty-eight percent of bank respondents have an operational unit that monitors leading and coincident indicators of a banking liquidity crisis. A risk management division may monitor market and liquidity functions, and a treasury division may manage risk liquidity. Other monitors include an asset and liquidity committee (ALCO), market and balance sheet risk management (MBR), global market investment management (GMIM), and a liquidity crisis management team (LCMT).

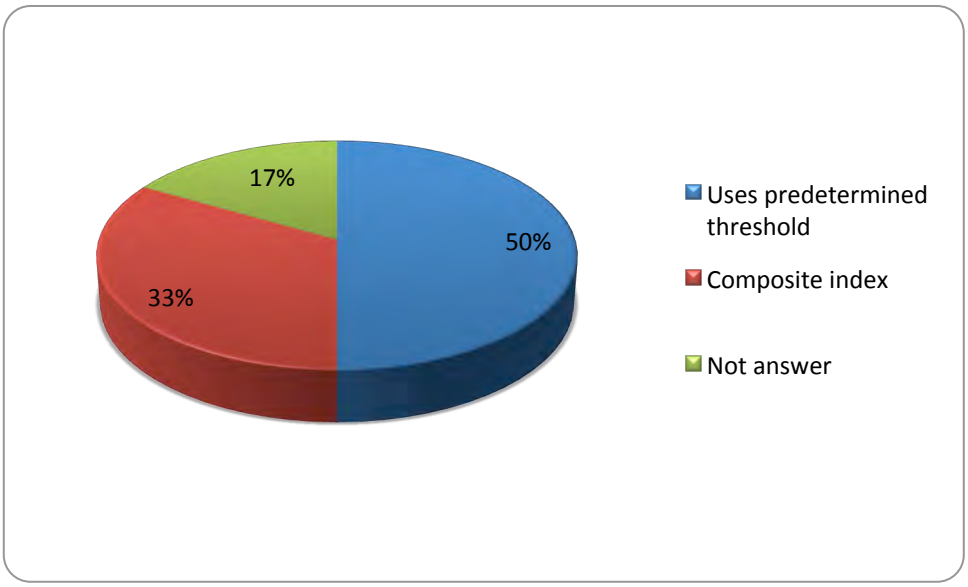
Figure 5-16
Operational Unit Dedicated to Monitoring Indicators



Such special units monitor early warning indicators, such as macroeconomic and banking industry indicators, and immediately investigate the causes of such warnings and take action accordingly. Each year, such units conduct liquidity crisis stress tests. In general, the ALCO will decide whether the contingency funding plan should be activated or not. Each month, Treasury holds ALCO meetings to discuss the main economic and liquidity indicators so that ALCO members are well informed about markets and can prepare for a crisis. As necessary, ALCO and the market risk manager monitor leading indicators more often. The LCMT then evaluates the current liquidity position and decide on actions to be taken.

Banks use leading indicators as early warnings of a liquidity crisis. Approximately 30 percent of banks use a composite index with certain weights on each component and about 50 percent use leading indicators with predetermined thresholds as early warning indicators. See Figure 5-17.

Figure 5-17
How to Use Early Warning System



Coincident indicators change at about the same time as the whole economy so they provide information about the current state of the economy. There are many coincident economic indicators, such as a decrease in foreign reserves, an increase in BI interest rates, decreases in the Jakarta Composite Stock Index, and decreases in foreign investors risk appetite. A coincident index may be used to identify, after the fact, peaks and troughs in the business cycle.

The special units closely monitor liquidity measures as well as equity values as leading indicators, alongside traditional measures such as bond and interbank markets. The extent of each financial crisis is different, so it is difficult to specify a threshold value that signals a banking liquidity crisis very far in advance.

Priorities for policies and actions related to a pending liquidity crisis are described in Table 5-11. A liquidity crisis is pending when closely monitored leading indicators pass certain threshold values.

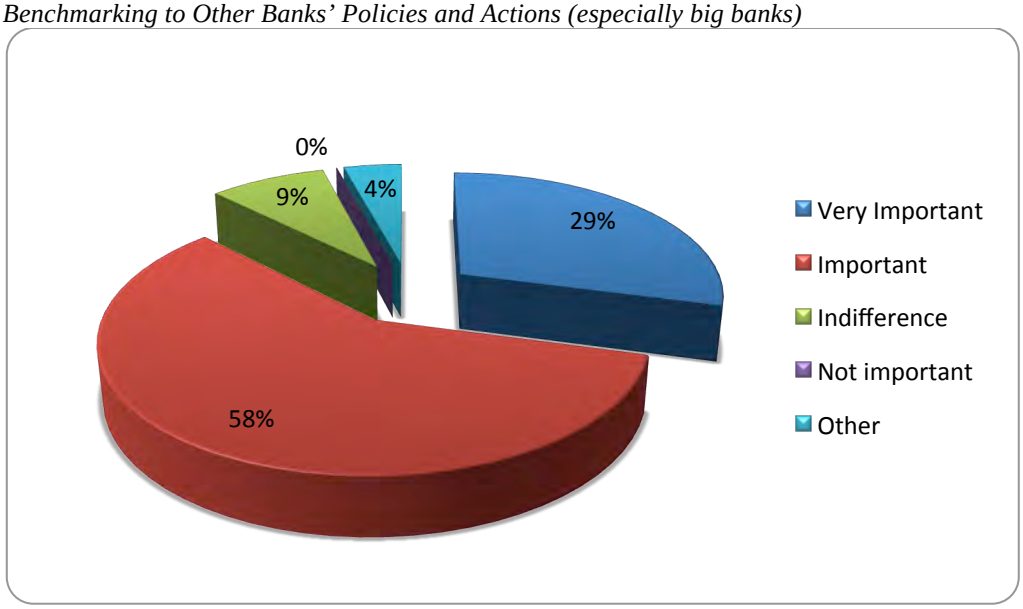
Table 5-11
Priorities for Crisis-related Activity

No	Policies/Action	Very Important	Important	Indifferent	Not Important	Other
1	Benchmark other banks' policies/actions, especially big banks	29.17	58.33	8.33	0.00	4.17
2	Closely watch other banks' financial conditions	54.17	37.50	4.17	0.00	4.17
3	Increase placement to central bank (BI)	37.50	41.67	8.33	4.17	8.33
4	Reduce interbank exposures	54.17	37.50	0.00	0.00	8.33
5	Reduce foreign exchange exposures	29.17	50.00	8.33	4.17	8.33
6	Reduce loan expansion	37.50	54.17	0.00	0.00	8.33
7	Increase deposit rates, especially time deposits	45.83	45.83	0.00	0.00	8.33
8	Intensify public communication	45.83	41.67	4.17	4.17	4.17
9	Intensify communication and consultation to bank regulator (BI)	50.00	45.83	0.00	0.00	4.17

Policies implemented or actions taken by the largest banks are often considered as benchmarks by smaller banks and thus are monitored closely by smaller banks prior to a banking liquidity crisis. The actions, policies, and performance of the largest banks will affect other banks. Their failure could undermine overall confidence in banks (systemic risk).

Figure 5-18

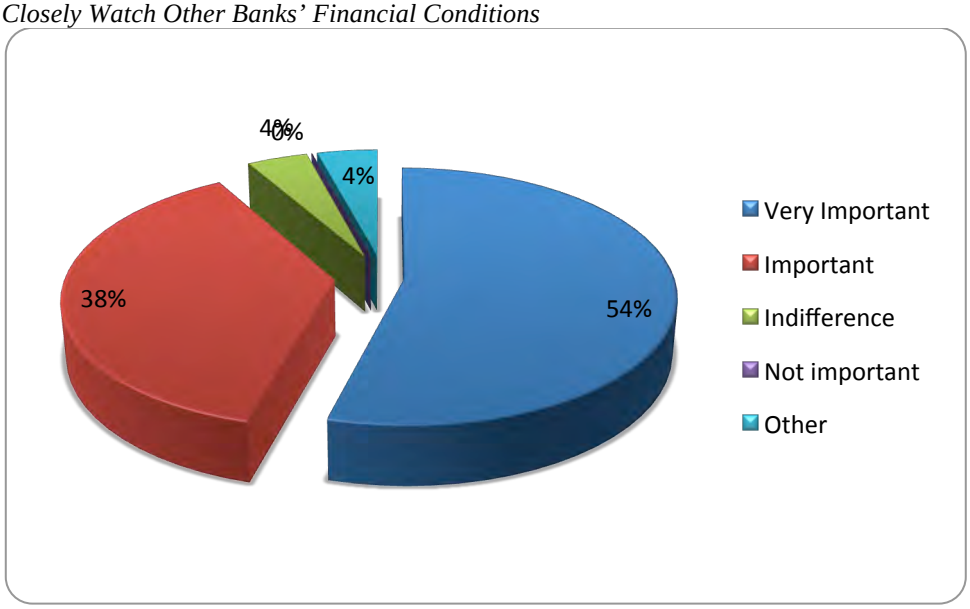
Benchmarking to Other Banks' Policies and Actions (especially big banks)



Nine percent of respondents indicated that they were indifferent to benchmarking to other banks' policies and actions. These were generally the largest banks, and thus likely felt they controlled the banking industry.

Figure 5-19

Closely Watch Other Banks' Financial Conditions



This research also found that banks viewed closely watching other banks' financial conditions,as a very important indicator in determining bank policy.

6. Conclusion

A banking liquidity crisis is a common aspect of extreme crises that have played out in monetary history. During a banking liquidity crisis, some depositors may withdraw their money from banks because they perceive that banks might become problematic or they may move money from banks perceived as weak to those perceived as strong. This causes the interbank rate to rise significantly and intensifies competition on deposit rates.

Among macroeconomic indicators, inflation and foreign reserves are very important and should be monitored closely. Inflation is a leading indicator, while a decrease in foreign reserves and an increase in the BI rate are coincident indicators. Leading financial market indicators are a decrease in the composite stock index, decrease in foreign investors' risk appetite, and an increase in government bond yields. Four banking indicators are watched closely: decrease in growth of deposits, increase in LDR, worsening of NPLs, and decrease in liquid assets.

Bankers consider macroeconomic, financial market, and banking indicators as important to watch. Herding behavior among banks is triggered by false perceptions of regulatory policy. Banks appear to be dependent on one another in setting policy. The actions, policies, and performance of the largest banks might affect other banks, particularly when their failure undermines general confidence in banks and causes systemic risk.

Our research also finds that in mitigating the potential impact of a banking liquidity crisis, banks tend to engage in herding behavior. [6]

[6] Disclaimer: The research designed to measure perceptions and behavior of Indonesian bankers at a particular time.

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Appendix A. Descriptive Analysis Summary

No	Variable	Importance Indicators			Characteristics Indicators		
		Very Important	Important	Other	Leading	Coincident	Other
MACROECONOMICS INDICATORS							
1	Inflation	√			√		
2	Decrease in foreign reserves	√				√	
3	Rupiah depreciation	√	√		√	√	
4	Economic growth		√		√		√
5	Increase in foreign debt		√				
6	Increase in fiscal deficit		√				
7	Increase in government bond		√				
8	Decline in developed countries' (G3) economy		√				
9	Decline in ASEAN+3 (China, Japan, and Korea) economy		√				
10	Sharp increase in oil price		√				
11	Increase in BI rate		√			√	
12	Increase in money supply		√				
13	Slowdown in foreign trade (export and import)		√				
FINANCIAL INDICATORS							
13	Increase in interbank rate	√			√	√	
14	Decrease in Composite Stock Index		√			√	
15	Decline in financial sector stock prices		√				
16	Increase in interbank rate		√				
17	Decrease in foreign investors' risk appetite		√			√	

No	Variable	Importance Indicators			Characteristics Indicators		
		Very Important	Important	Other	Leading	Coincident	Other
18	Increase in government bond yield		√			√	
19	Decrease in interbank volume		√		√	√	
20	Worsening of overall productive asset quality				√	√	
BANKING INDICATORS							
21	Decrease in liquid assets	√			√		
22	Closing of medium banks	√					
23	Rumors about bank closing	√					
24	Rumors about central bank policies	√	√				
25	Increase in loan growth		√				
26	Increasing working capital loans		√				
27	Increasing investment loans		√				
28	Increasing consumption loans		√				
29	Increasing financial loan growth		√				
30	Decrease in aggregate loan growth		√				
31	Decreasing working capital loans		√				
32	Decreasing investment loans		√				
33	Decreasing consumption loans		√				
34	Decreasing farming loan growth		√				
35	Decreasing manufacturing loan growth		√				
36	Decreasing mining loan growth		√				
37	Decreasing property and construction loan growth		√			√	
38	Decreasing trading loan growth		√				
39	Decreasing financial loan growth		√				
40	Decreasing services loan growth		√				
41	Decrease of deposits growth		√		√		
42	Increase of loan-to-deposit ratio		√		√		
43	Worsening of nonperforming loans		√		√		
44	Worsening of overall productive asset quality		√				
45	Decrease in bank capital		√				

No	Variable	Importance Indicators			Characteristics Indicators		
		Very Important	Important	Other	Leading	Coincident	Other
46	Decrease in profitability		√				
47	Closing of small banks		√			√	
48	Rumors about central bank policies		√				
49	Financial market rumors		√				
50	External rumors		√				
51	Increasing loan growth for Others Sector						
RUMORS							
52	Rumors about bank closing	√			√		
53	Rumors about central bank policies	√			√	√	
54	Rumors about central bank policies		√				
55	Financial market rumors		√			√	
56	External rumors (foreign countries)		√				

Appendix B. Factor Analysis Summary

No.	Indicator	Importance	Characteristic	Threshold
Number of Sample (n)		***26***	***25***	***24***
1	Macroeconomic	Increase in foreign debt Increase in fiscal deficit Decline in developed countries Decline in ASEAN Increase in oil price	Decrease in foreign reserves Rupiah appreciation Current account deficit Increase in foreign debt Increase in fiscal deficit Decline in developed countries Decline in ASEAN Slower foreign trade	Increase in government bond Decline in developed countries Increase in BI rate Decrease in BI rate Increase in money supply
2	Financial Market	Decrease in Composite Stock Index Decline in financial sector stock prices Increase in interbank rate Decrease in foreign investors' risk appetite Increase in CDS spread	Decrease in Composite Stock Index Decline in financial sector stock prices Increase in interbank rate Decrease in foreign investors' risk appetite Increase in CDS spread Decrease in interbank volume	Decline in financial sector stock prices Increase in interbank rate Decrease in foreign investors' risk appetite Increase in CDS spread Increase in government bond Decrease in interbank volume
3	Banking Sector Loan and Deposit Growth	Increase in aggregate loans Increase in loan growth Increase in working capital loans Increase in investment loans Increase in consumption loans Decrease in aggregate loans	Increase in aggregate loans Increase in loan growth Increase in working capital loans Increase in investment loans Increase in consumption loans	Increase in aggregate loans Increase in working capital loans Increase in consumption loans Decrease in aggregate loans Decrease in working capital loans Decrease in investment loans Decrease in consumption loans
	Banking Sector Financial Ratios	Increase in LDR Worsening NPL Worsening asset quality Decrease in capital Decrease in liquid assets	Worsening NPL Worsening asset quality Decrease in capital Decrease in liquid assets Decrease in profitability	Increase in LDR Worsening NPL Worsening asset quality Decrease in capital Decrease in liquid assets Decrease in profitability Deposit-rate war
	Banking Sector (Others*)	Closing small banks Closing medium banks Deposit-rate war		

No.	Indicator	Importance	Characteristic	Threshold
4	Policies/Action (Leading Indicator)	Reduce interbank exposures Reduce loan expansion Increase deposit rates, especially time deposits Intensify communication and consultation with bank regulator (BI)		Increase placement BI Reduce interbank exposures Reduce foreign exchange exposure Reduce loan expansion Increase deposit rates, especially time deposit
5	Policies/Action (Coincident Indicator)	Closely watch other banks' financial conditions Reduce interbank exposures Reduce loan expansion Intensify communication and consultation with bank regulator (BI)		Increase placement BI Reduce interbank exposure Reduce foreign exchange exposure Reduce loan expansion Increase deposit rates, especially time deposits
6	Crisis Anticipation	Prudential macroeconomic management Establishment of bank soundness regulation Transparency		
7	Crisis Mitigation	Reduce policy rate Act as LOLR Increase maximum coverage level Fiscal stimulus Moral suasion		
8	Rumors	About bank closing About central bank policies About financial market External rumors	About bank closing About central bank policies About financial market External rumors	

Appendix C. Factor Analysis Output

Importance Variable

MACROECONOMIC INDICATORS

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.361
Bartlett's Test of Sphericity	Approx. Chi-Square	176.164
	Df	120
	Sig.	.001

Anti-image Matrices																	
		Inflation	Economic growth	Decrease foreign reserves	Rupiah appreciation	Rupiah depreciation	Current account deficit	Increase foreign debt	Increase fiscal deficit	Increase government bond	Decline developed countries	Decline ASEAN	increase oil price	Increase BI rate	Decrease BI rate	Increase money supply	slower foreign trade
Anti-image Covariance	Inflation	.328	.073	-.034	.014	-.057	-.039	.003	-.127	.028	-.040	.163	.118	-.144	.037	-.008	.117
	Economic_growth	.073	.278	-.107	.078	.109	.025	.188	-.011	-.104	-.084	.041	.014	-.033	-.064	-.070	.075
	Decrease_foreign_reserves	-.034	-.107	.103	-.081	-.099	-.047	-.103	-.014	.068	.009	-.034	.002	-.003	.044	.069	-.043
	Rupiah_appreciation	.014	.078	-.081	.090	.064	.058	.060	-.002	-.051	.015	.042	-.009	.019	-.055	-.079	.041
	Rupiah_depreciation	-.057	.109	-.099	.064	.274	.009	.119	.094	-.089	.005	-.100	-.037	.022	-.092	-.024	-.023
	Current_account_deficit	-.039	.025	-.047	.058	.009	.176	.040	-.014	-.112	-.005	.051	-.076	.053	.047	-.130	-.010
	Increase_foreign_debt	.003	.188	-.103	.060	.119	.040	.344	.020	-.063	-.114	-.034	-.018	-.012	-.057	-.076	.027
	Increase_fiscal_deficit	-.127	-.011	-.014	-.002	.094	-.014	.020	.214	-.117	.024	-.132	-.085	.099	-.022	.011	-.086
	Increase_government_bond	.028	-.104	.068	-.051	-.089	-.112	-.063	-.117	.326	.006	-.009	.089	-.081	-.048	.100	.029
	Decline_developed_countries	-.040	-.084	.009	.015	.005	-.005	-.114	.024	.006	.223	-.054	-.053	.097	-.080	.082	-.060
	Decline_ASEAN	.163	.041	-.034	.042	-.100	.051	-.034	-.132	-.009	-.054	.357	.053	-.086	.107	-.127	.113
	increase_oil_price	.118	.014	.002	-.009	-.037	-.076	-.018	-.085	.089	-.053	.053	.129	-.107	.001	.046	.087
	Increase_BI_rate	-.144	-.033	-.003	.019	.022	.053	-.012	.099	-.081	.097	-.086	-.107	.152	-.045	-.011	-.082
	Decrease_BI_rate	.037	-.064	.044	-.055	-.092	.047	-.057	-.022	-.048	-.080	.107	.001	-.045	.219	-.071	.009
	Increase_money_supply	-.008	-.070	.069	-.079	-.024	-.130	-.076	.011	.100	.082	-.127	.046	-.011	-.071	.266	-.049
	slower_foreign_trade	.117	.075	-.043	.041	-.023	-.010	.027	-.086	.029	-.060	.113	.087	-.082	.009	-.049	.116
Anti-image Correlation	Inflation	.284a	.242	-.183	.079	-.189	-.162	.010	-.478	.085	-.149	.478	.577	-.645	.138	-.025	.599
	Economic_growth	.242	.292a	-.631	.491	.396	.111	.610	-.045	-.347	-.337	.130	.074	-.161	-.259	-.258	.417
	Decrease_foreign_reserves	-.183	-.631	.322a	-.843	-.587	-.348	-.547	-.093	.371	.058	-.177	.017	-.025	.291	.419	-.395
	Rupiah_appreciation	.079	.491	-.843	.372a	.405	.460	.342	-.012	-.300	.105	.235	-.080	.158	-.394	-.512	.402
	Rupiah_depreciation	-.189	.396	-.587	.405	.418a	.040	.388	.388	-.298	.021	-.319	-.199	.109	-.375	-.090	-.128
	Current_account_deficit	-.162	.111	-.348	.460	.040	.514a	.163	-.070	-.468	-.027	.204	-.503	.327	.241	-.602	-.072
	Increase_foreign_debt	.010	.610	-.547	.342	.388	.163	.346a	.074	-.188	-.413	-.098	-.087	-.051	-.207	-.252	.134
	Increase_fiscal_deficit	-.478	-.045	-.093	-.012	.388	-.070	.074	.456a	-.442	.110	-.477	-.512	.548	-.103	.045	-.547
	Increase_government_bond	.085	-.347	.371	-.300	-.298	-.468	-.188	-.442	.368a	.023	-.026	.432	-.366	-.179	.338	.148
	Decline_developed_countries	-.149	-.337	.058	.105	.021	-.027	-.413	.110	.023	.537a	-.190	-.310	.527	-.361	.335	-.372
	Decline_ASEAN	.478	.130	-.177	.235	-.319	.204	-.098	-.477	-.026	-.190	.277a	.249	-.370	.384	-.412	.554
	increase_oil_price	.577	.074	.017	-.080	-.199	-.503	-.087	-.512	.432	-.310	.249	.292a	-.769	.005	.249	.711
	Increase_BI_rate	-.645	-.161	-.025	.158	.109	.327	-.051	.548	-.366	.527	-.370	-.769	.271a	-.249	-.055	-.618
	Decrease_BI_rate	.138	-.259	.291	-.394	-.375	.241	-.207	-.103	-.179	-.361	.384	.005	-.249	.516a	-.294	.055
	Increase_money_supply	-.025	-.258	.419	-.512	-.090	-.602	-.252	.045	.338	.335	-.412	.249	-.055	-.294	.329a	-.277
	slower_foreign_trade	.599	.417	-.395	.402	-.128	-.072	.134	-.547	.148	-.372	.554	.711	-.618	.055	-.277	.256a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Inflation	1.000	.617
Economic_growth	1.000	.731
Decrease_foreign_reserves	1.000	.780
Rupiah_appreciation	1.000	.875
Rupiah_depreciation	1.000	.682
Current_account_deficit	1.000	.778
Increase_foreign_debt	1.000	.741
Increase_fiscal_deficit	1.000	.774
Increase_government_bond	1.000	.745
Decline_developed_countries	1.000	.849
Decline_ASEAN	1.000	.828
increase_oil_price	1.000	.839
Increase_BI_rate	1.000	.813
Decrease_BI_rate	1.000	.783
Increase_money_supply	1.000	.814
slower_foreign_trade	1.000	.850

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.365	21.030	21.030	3.365	21.030	21.030
2	2.869	17.931	38.961	2.869	17.931	38.961
3	2.212	13.828	52.789	2.212	13.828	52.789
4	1.616	10.101	62.890	1.616	10.101	62.890
5	1.390	8.686	71.576	1.390	8.686	71.576
6	1.047	6.541	78.117	1.047	6.541	78.117
7	.855	5.341	83.458			
8	.703	4.391	87.850			
9	.572	3.573	91.422			
10	.411	2.569	93.991			
11	.361	2.254	96.245			
12	.286	1.788	98.033			
13	.140	.876	98.909			
14	.098	.611	99.520			
15	.041	.254	99.774			
16	.036	.226	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component					
	1	2	3	4	5	6
Inflation	-.020	.611	-.206	-.327	.007	-.306
Economic_growth	.267	.134	.719	-.118	.332	.007
Decrease_foreign_reserves	.411	.626	-.098	.449	-.063	-.061
Rupiah_appreciation	-.472	.574	.251	.481	.047	.162
Rupiah_depreciation	.344	.608	-.355	-.088	-.198	-.146
Current_account_deficit	.821	.024	-.110	-.202	.200	.103
Increase_foreign_debt	.438	.181	-.138	.603	-.350	-.110
Increase_fiscal_deficit	.796	.033	.024	.048	.338	.153
Increase_government_bond	.334	.462	.320	-.312	.470	.001
Decline_developed_countries	.646	-.341	.256	.413	.055	-.275
Decline_ASEAN	.483	.130	-.099	-.098	-.380	.643
increase_oil_price	.469	.109	.597	-.134	-.483	.007
Increase_BI_rate	-.063	.658	-.031	-.483	-.327	-.187
Decrease_BI_rate	-.360	.559	.440	.303	.185	-.143
Increase_money_supply	-.283	.497	-.340	.138	.316	.502
slower_foreign_trade	.299	-.026	-.760	.089	.340	-.241

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.738
Bartlett's Test of Sphericity	Approx. Chi-Square	13.057
	Df	10
	Sig.	.221

Anti-image Matrices						
		Increase foreign debt	Increase fiscal deficit	Decline developed countries	Decline ASEAN	increase oil price
Anti-image Covariance	Increase_foreign_debt	.821	-.055	-.228	-.098	-.065
	Increase_fiscal_deficit	-.055	.782	-.214	-.150	-.115
	Decline_developed_countries	-.228	-.214	.731	-.075	-.102
	Decline_ASEAN	-.098	-.150	-.075	.862	-.110
	increase_oil_price	-.065	-.115	-.102	-.110	.880
Anti-image Correlation	Increase_foreign_debt	.733a	-.068	-.294	-.116	-.077
	Increase_fiscal_deficit	-.068	.731a	-.283	-.182	-.139
	Decline_developed_countries	-.294	-.283	.698a	-.094	-.127
	Decline_ASEAN	-.116	-.182	-.094	.782a	-.127
	increase_oil_price	-.077	-.139	-.127	-.127	.798a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_foreign_debt	1.000	.405
Increase_fiscal_deficit	1.000	.481
Decline_developed_countries	1.000	.547
Decline_ASEAN	1.000	.359
increase_oil_price	1.000	.325

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.117	42.339	42.339	2.117	42.339	42.339
2	.834	16.684	59.023			
3	.775	15.510	74.533			
4	.723	14.468	89.001			
5	.550	10.999	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Increase_foreign_debt	.636
Increase_fiscal_deficit	.694
Decline_developed_countries	.740
Decline_ASEAN	.599
increase_oil_price	.570

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

FINANCIAL MARKET INDICATORS

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	29.005
	df	6
	Sig.	.000

Anti-image Matrices					
		Decline financial stocks	Increase interbank rate	Decrease risk appetite	Increase CDS
Anti-image Covariance	Decline_financial_stocks	.483	.078	-.101	-.247
	Increase_interbank_rate	.078	.755	-.130	-.166
	Decrease_risk_appetite	-.101	-.130	.584	-.149
	Increase_CDS	-.247	-.166	-.149	.384
Anti-image Correlation	Decline_financial_stocks	.686a	.130	-.190	-.574
	Increase_interbank_rate	.130	.744a	-.195	-.309
	Decrease_risk_appetite	-.190	-.195	.825a	-.314
	Increase_CDS	-.574	-.309	-.314	.673a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decline_financial_stocks	1.000	.653
Increase_interbank_rate	1.000	.393
Decrease_risk_appetite	1.000	.660
Increase_CDS	1.000	.803

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.509	62.724	62.724	2.509	62.724	62.724
2	.768	19.192	81.915			
3	.464	11.609	93.525			
4	.259	6.475	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Decline_financial_stocks	.808
Increase_interbank_rate	.627
Decrease_risk_appetite	.813
Increase_CDS	.896

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

BANKING SECTOR INDICATORS

Loan and Deposit Growth

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.582
Bartlett's Test of Sphericity	Approx. Chi-Square	193.926
	df	55
	Sig.	.000

Anti-image Matrices

		Increase aggregate loan	Increase loan growth	Increase Working Capital Loans	Increase Investment Loans	Increase Consumptive Loans	Decrease aggregate loan	Decrease Working Capital Loans	Decrease Investment Loans	Decrease Consumptive Loans	Increase deposits growth	Decrease deposits growth
Anti-image Covariance	Increase_aggregate_loan	.054	-.023	-.005	-.016	.006	.011	-.022	.025	.039	.004	-.078
	Increase_loan_growth	-.023	.041	.009	-.017	-.020	.029	.022	-.024	-.019	-.051	-.010
	Increase_Working_Capital_Loans	-.005	.009	.070	-.033	-.014	.057	.017	-.021	-.010	-.063	-.030
	Increase_Investment_Loans	-.016	-.017	-.033	.041	-.010	-.042	-.005	.006	-.020	.050	.076
	Increase_Consumptive_Loans	.006	-.020	-.014	-.010	.567	.008	-.029	.027	.084	.041	-.003
	Decrease_aggregate_loan	.011	.029	.057	-.042	.008	.235	.007	-.022	.017	-.155	-.049
	Decrease_Working_Capital_Loans	-.022	.022	.017	-.005	-.029	.007	.034	-.035	-.059	-.034	.007
	Decrease_Investment_Loans	.025	-.024	-.021	.006	.027	-.022	-.035	.040	.047	.042	-.008
	Decrease_Consumptive_Loans	.039	-.019	-.010	-.020	.084	.017	-.059	.047	.434	.017	-.133
	Increase_deposits_growth	.004	-.051	-.063	.050	.041	-.155	-.034	.042	.017	.191	.061
	Decrease_deposits_growth	-.078	-.010	-.030	.076	-.003	-.049	.007	-.008	-.133	.061	.341
Anti-image Correlation	Increase_aggregate_loan	.701a	-.500	-.081	-.340	.034	.100	-.512	.536	.256	.041	-.578
	Increase_loan_growth	-.500	.665a	.172	-.426	-.134	.301	.591	-.599	-.146	-.584	-.081
	Increase_Working_Capital_Loans	-.081	.172	.719a	-.609	-.072	.444	.344	-.401	-.058	-.542	-.197
	Increase_Investment_Loans	-.340	-.426	-.609	.652a	-.068	-.424	-.130	.142	-.150	.568	.640
	Increase_Consumptive_Loans	.034	-.134	-.072	-.068	.910a	.023	-.210	.182	.170	.125	-.008
	Decrease_aggregate_loan	.100	.301	.444	-.424	.023	.558a	.075	-.223	.054	-.732	-.171
	Decrease_Working_Capital_Loans	-.512	.591	.344	-.130	-.210	.075	.448a	-.956	-.490	-.423	.062
	Decrease_Investment_Loans	.536	-.599	-.401	.142	.182	-.223	-.956	.396a	.360	.483	-.066
	Decrease_Consumptive_Loans	.256	-.146	-.058	-.150	.170	.054	-.490	.360	.587a	.061	-.347
	Increase_deposits_growth	.041	-.584	-.542	.568	.125	-.732	-.423	.483	.061	.339a	.240
	Decrease_deposits_growth	-.578	-.081	-.197	.640	-.008	-.171	.062	-.066	-.347	.240	.232a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.938
Increase_loan_growth	1.000	.948
Increase_Working_Capital_Loans	1.000	.919
Increase_Investment_Loans	1.000	.938
Increase_Consumptive_Loans	1.000	.588
Decrease_aggregate_loan	1.000	.877
Decrease_Working_Capital_Loans	1.000	.957
Decrease_Investment_Loans	1.000	.918
Decrease_Consumptive_Loans	1.000	.721
Increase_deposits_growth	1.000	.933
Decrease_deposits_growth	1.000	.905

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.516	41.053	41.053	4.516	41.053	41.053
2	2.930	26.637	67.690	2.930	26.637	67.690
3	1.189	10.809	78.499	1.189	10.809	78.499
4	1.007	9.150	87.650	1.007	9.150	87.650
5	.541	4.918	92.568			
6	.414	3.765	96.332			
7	.200	1.817	98.149			
8	.099	.904	99.053			
9	.065	.588	99.642			
10	.027	.242	99.884			
11	.013	.116	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component			
	1	2	3	4
Increase_aggregate_loan	.950	.063	.156	.083
Increase_loan_growth	.970	.052	-.042	.064
Increase_Working_Capital_Loans	.951	.074	-.091	-.035
Increase_Investment_Loans	.941	.050	-.170	-.145
Increase_Consumptive_Loans	.700	-.029	-.077	-.301
Decrease_aggregate_loan	-.397	.684	-.348	.361
Decrease_Working_Capital_Loans	-.182	.924	-.044	-.263
Decrease_Investment_Loans	-.062	.874	-.147	-.359
Decrease_Consumptive_Loans	.068	.725	.415	-.135
Increase_deposits_growth	.418	.477	-.263	.680
Decrease_deposits_growth	.140	.277	.856	.274

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.880
Bartlett's Test of Sphericity	Approx. Chi-Square	114.792
	df	15
	Sig.	.000

Anti-image Matrices

		Increase aggregate loan	Increase loan growth	Increase Working Capital Loans	Increase Investment Loans	Increase Consumptive Loans	Decrease aggregate loan
Anti-image Covariance	Increase_aggregate_loan	.139	-.062	-.005	-.008	-.021	.051
	Increase_loan_growth	-.062	.080	-.030	-.027	.000	-.004
	Increase_Working_Capital_Loans	-.005	-.030	.105	-.056	.000	.013
	Increase_Investment_Loans	-.008	-.027	-.056	.101	-.048	-.021
	Increase_Consumptive_Loans	-.021	.000	.000	-.048	.598	.065
	Decrease_aggregate_loan	.051	-.004	.013	-.021	.065	.893
Anti-image Correlation	Increase_aggregate_loan	.882a	-.584	-.040	-.071	-.073	.144
	Increase_loan_growth	-.584	.847a	-.327	-.301	.000	-.014
	Increase_Working_Capital_Loans	-.040	-.327	.878a	-.541	.002	.042
	Increase_Investment_Loans	-.071	-.301	-.541	.871a	-.195	-.071
	Increase_Consumptive_Loans	-.073	.000	.002	-.195	.967a	.090
	Decrease_aggregate_loan	.144	-.014	.042	-.071	.090	.910a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.882
Increase_loan_growth	1.000	.925
Increase_Working_Capital_Loans	1.000	.902
Increase_Investment_Loans	1.000	.911
Increase_Consumptive_Loans	1.000	.522
Decrease_aggregate_loan	1.000	.138

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.280	71.333	71.333	4.280	71.333	71.333
2	.896	14.935	86.268			
3	.546	9.096	95.364			
4	.153	2.552	97.916			
5	.067	1.111	99.027			
6	.058	.973	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_aggregate_loan	.939
Increase_loan_growth	.962
Increase_Working_Capital_Loans	.950
Increase_Investment_Loans	.954
Increase_Consumptive_Loans	.723
Decrease_aggregate_loan	-.371

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

FINANCIAL RATIOS

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.702
Bartlett's Test of Sphericity	Approx. Chi-Square	32.343
	df	21
	Sig.	.054

Anti-image Matrices

		Increase LDR	Worsen NPL	Worsen assets quality	Decrease capital	Decrease liquid assets	Decrease profitability	Decrease banking efficiency
Anti-image Covariance	Increase_LDR	.578	-.016	-.209	-.021	-.106	-.145	-.036
	Worsen_NPL	-.016	.737	-.196	-.124	-.028	.160	-.098
	Worsen_assets_quality	-.209	-.196	.520	-.031	-.097	-.149	.091
	Decrease_capital	-.021	-.124	-.031	.653	-.270	.144	-.023
	Decrease_liquid_assets	-.106	-.028	-.097	-.270	.577	-.071	-.034
	Decrease_profitability	-.145	.160	-.149	.144	-.071	.677	-.207
	Decrease_banking_efficiency	-.036	-.098	.091	-.023	-.034	-.207	.898
Anti-image Correlation	Increase_LDR	.780a	-.025	-.381	-.035	-.183	-.231	-.049
	Worsen_NPL	-.025	.687a	-.316	-.179	-.042	.226	-.121
	Worsen_assets_quality	-.381	-.316	.721a	-.052	-.176	-.251	.134
	Decrease_capital	-.035	-.179	-.052	.664a	-.441	.216	-.030
	Decrease_liquid_assets	-.183	-.042	-.176	-.441	.753a	-.113	-.048
	Decrease_profitability	-.231	.226	-.251	.216	-.113	.585a	-.265
	Decrease_banking_efficiency	-.049	-.121	.134	-.030	-.048	-.265	.537a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_LDR	1.000	.643
Worsen_NPL	1.000	.509
Worsen_assets_quality	1.000	.642
Decrease_capital	1.000	.643
Decrease_liquid_assets	1.000	.616
Decrease_profitability	1.000	.768
Decrease_banking_efficiency	1.000	.249

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.703	38.609	38.609	2.703	38.609	38.609
2	1.368	19.538	58.147	1.368	19.538	58.147
3	.941	13.440	71.587			
4	.756	10.799	82.386			
5	.468	6.684	89.070			
6	.401	5.736	94.806			
7	.364	5.194	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Increase_LDR	.760	.256
Worsen_NPL	.543	-.462
Worsen_assets_quality	.798	.067
Decrease_capital	.580	-.553
Decrease_liquid_assets	.768	-.160
Decrease_profitability	.440	.758
Decrease_banking_efficiency	.269	.421

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	26.221
	df	10
	Sig.	.003

Anti-image Matrices

		Increase LDR	Worsen NPL	Worsen assets quality	Decrease capital	Decrease liquid assets
Anti-image Covariance	**Increase_LDR**	**.600**	**.094**	**-.270**	**-.069**	**-.123**
	Worsen_NPL	**.094**	**.831**	**-.208**	**-.104**	**-.040**
	Worsen_assets_quality	**-.270**	**-.208**	**.554**	**.014**	**-.122**
	Decrease_capital	**-.069**	**-.104**	**.014**	**.689**	**-.268**
	Decrease_liquid_assets	**-.123**	**-.040**	**-.122**	**-.268**	**.579**
Anti-image Correlation	**Increase_LDR**	**.702a**	**.133**	**-.469**	**-.108**	**-.209**
	Worsen_NPL	**.133**	**.677a**	**-.306**	**-.138**	**-.058**
	Worsen_assets_quality	**-.469**	**-.306**	**.686a**	**.023**	**-.215**
	Decrease_capital	**-.108**	**-.138**	**.023**	**.726a**	**-.424**
	Decrease_liquid_assets	**-.209**	**-.058**	**-.215**	**-.424**	**.746a**

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_LDR	1.000	.550
Worsen_NPL	1.000	.253
Worsen_assets_quality	1.000	.619
Decrease_capital	1.000	.468
Decrease_liquid_assets	1.000	.636

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.527	50.536	50.536	2.527	50.536	50.536
2	.883	17.655	68.192			
3	.796	15.911	84.103			
4	.431	8.620	92.723			
5	.364	7.277	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_LDR	.742
Worsen_NPL	.503
Worsen_assets_quality	.787
Decrease_capital	.684
Decrease_liquid_assets	.798

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

OTHERS

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.681
Bartlett's Test of Sphericity	Approx. Chi-Square	24.362
	df	3
	Sig.	.000

Anti-image Matrices

		Closing_small_banks	Closing_medium_banks	War_deposits_rate
Anti-image Covariance	Closing_small_banks	.482	-.269	-.086
	Closing_medium_banks	-.269	.425	-.196
	War_deposits_rate	-.086	-.196	.640
Anti-image Correlation	Closing_small_banks	.669[a]	-.594	-.154
	Closing_medium_banks	-.594	.633[a]	-.375
	War_deposits_rate	-.154	-.375	.785[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Closing_small_banks	1.000	.752
Closing_medium_banks	1.000	.812
War_deposits_rate	1.000	.642

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.206	73.537	73.537	2.206	73.537	73.537
2	.516	17.200	90.737			
3	.278	9.263	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Closing_small_banks	.867
Closing_medium_banks	.901
War_deposits_rate	.801

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

POLICIES/ACTION INDICATORS

Leading Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.642
Bartlett's Test of Sphericity	Approx. Chi-Square	51.886
	df	6
	Sig.	.000

Anti-image Matrices					
		Reduce interbank exposures2	Reduce loans expansion2	Increase deposit rates2	Intensify communication BI
Anti-image Covariance	Reduce_interbank_exposures2	.288	.080	-.158	-.101
	Reduce_loans_expansion2	.080	.354	-.169	.011
	Increase_deposit_rates2	-.158	-.169	.165	-.020
	Intensify_communication_BI	-.101	.011	-.020	.810
Anti-image Correlation	Reduce_interbank_exposures2	.651a	.251	-.722	-.208
	Reduce_loans_expansion2	.251	.644a	-.698	.020
	Increase_deposit_rates2	-.722	-.698	.588a	-.055
	Intensify_communication_BI	-.208	.020	-.055	.896a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Reduce_interbank_exposures2	1.000	.779
Reduce_loans_expansion2	1.000	.678
Increase_deposit_rates2	1.000	.898
Intensify_communication_BI	1.000	.327

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.682	67.051	67.051	2.682	67.051	67.051
2	.802	20.052	87.104			
3	.411	10.268	97.372			
4	.105	2.628	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Reduce_interbank_exposures2	.883
Reduce_loans_expansion2	.823
Increase_deposit_rates2	.948
Intensify_communication_BI	.572

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Coincident Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.727
Bartlett's Test of Sphericity	Approx. Chi-Square	22.960
	df	6
	Sig.	.001

Anti-image Matrices					
		Reduce interbank exposures	Reduce loans expansion	Intensify consultation BI	watch other banks
Anti-image Covariance	Reduce_interbank_exposures	.613	-.167	-.215	-.115
	Reduce_loans_expansion	-.167	.529	-.138	-.266
	Intensify_consultation_BI	-.215	-.138	.740	.034
	watch_other_banks	-.115	-.266	.034	.635
Anti-image Correlation	Reduce_interbank_exposures	.761a	-.292	-.319	-.185
	Reduce_loans_expansion	-.292	.702a	-.220	-.459
	Intensify_consultation_BI	-.319	-.220	.750a	.050
	watch_other_banks	-.185	-.459	.050	.708a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Reduce_interbank_exposures	1.000	.648
Reduce_loans_expansion	1.000	.713
Intensify_consultation_BI	1.000	.452
watch_other_banks	1.000	.554

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.367	59.179	59.179	2.367	59.179	59.179
2	.778	19.452	78.631			
3	.475	11.885	90.516			
4	.379	9.484	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Reduce_interbank_exposures	.805
Reduce_loans_expansion	.845
Intensify_consultation_BI	.672
watch_other_banks	.744

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Crisis Anticipation Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.621
Bartlett's Test of Sphericity	Approx. Chi-Square	18.189
	df	3
	Sig.	.000

Anti-image Matrices				
		Prudential macroeconomic management	**Establishment banksoundness regulation**	**Transparency**
Anti-image Covariance	**Prudential_macroeconomic_management**	**.571**	**-.322**	**-.054**
	Establishment_banksoundness_regulation	**-.322**	**.518**	**-.201**
	Transparation	**-.054**	**-.201**	**.793**
Anti-image Correlation	**Prudential_macroeconomic_management**	**.604a**	**-.592**	**-.080**
	Establishment_banksoundness_regulation	**-.592**	**.583a**	**-.314**
	Transparation	**-.080**	**-.314**	**.755a**

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Prudential_macroeconomic_management	1.000	.703
Establishment_banksoundness_regulation	1.000	.779
Transparency	1.000	.495

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.977	65.907	65.907	1.977	65.907	65.907
2	.687	22.903	88.810			
3	.336	11.190	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Prudential_macroeconomic_management	.839
Establishment_banksoundness_regulation	.883
Transparency	.703

Extraction Method: Principal Component Analysis.

a. 1 components extract

Crisis Mitigation Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.778
Bartlett's Test of Sphericity	Approx. Chi-Square	28.742
	df	10
	Sig.	.001

Anti-image Matrices

		Reducing policy rate	Conducting Lender of the Last Resort	Increase maximum coverage	Fiscal stimuli	Moral Suation
Anti-image Covariance	Reducing_policy_rate	.560	.032	-.221	-.037	-.199
	Conducting_LenderoftheLastResort	.032	.850	-.018	-.104	-.166
	Increase_maximum_coverage	-.221	-.018	.605	-.100	-.113
	Fiscal_stimuli	-.037	-.104	-.100	.736	-.159
	Moral_Suation	-.199	-.166	-.113	-.159	.525
Anti-image Correlation	Reducing_policy_rate	.744a	.046	-.380	-.058	-.367
	Conducting_LenderoftheLastResort	.046	.784a	-.025	-.131	-.248
	Increase_maximum_coverage	-.380	-.025	.791a	-.150	-.201
	Fiscal_stimuli	-.058	-.131	-.150	.842a	-.255
	Moral_Suation	-.367	-.248	-.201	-.255	.760a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Reducing_policy_rate	1.000	.611
Conducting_LenderoftheLastResort	1.000	.251
Increase_maximum_coverage	1.000	.594
Fiscal_stimuli	1.000	.470
Moral_Suation	1.000	.697

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.623	52.453	52.453	2.623	52.453	52.453
2	.890	17.808	70.262			
3	.650	13.005	83.267			
4	.463	9.266	92.533			
5	.373	7.467	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Reducing_policy_rate	.781
Conducting_LenderoftheLastResort	.501
Increase_maximum_coverage	.771
Fiscal_stimuli	.685
Moral_Suation	.835

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rumors Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.554
Bartlett's Test of Sphericity	Approx. Chi-Square	15.257
	df	6
	Sig.	.018

Anti-image Matrices

		Rumors bank closing	Rumors central bank policies	Financial market rumors	External rumors
Anti-image Covariance	Rumors_bank_closing	.798	.095	-.269	-.040
	Rumors_centralbank_policies	.095	.651	-.331	-.036
	Financial_market_rumors	-.269	-.331	.533	-.102
	External_rumors	-.040	-.036	-.102	.936
Anti-image Correlation	Rumors_bank_closing	.548a	.132	-.413	-.047
	Rumors_centralbank_policies	.132	.538a	-.562	-.047
	Financial_market_rumors	-.413	-.562	.534a	-.144
	External_rumors	-.047	-.047	-.144	.815a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Rumors_bank_closing	1.000	.372
Rumors_centralbank_policies	1.000	.555
Financial_market_rumors	1.000	.774
External_rumors	1.000	.220

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.921	48.029	48.029	1.921	48.029	48.029
2	.883	22.076	70.106			
3	.852	21.292	91.397			
4	.344	8.603	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Rumors_bank_closing	.610
Rumors_centralbank_policies	.745
Financial_market_rumors	.880
External_rumors	.469

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Characteristic Variable

MACROECONOMIC INDICATORS

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.437
Bartlett's Test of Sphericity	Approx. Chi-Square	187.053
	df	120
	Sig.	.000

Anti-image Matrices

		Inflation	Economic growth	Decrease foreign reserves	Rupiah appreciation	Rupiah depreciation	Current account deficit	Increase foreign debt	Increase fiscal deficit	Increase government bond	Decline developed countries	Decline ASEAN	increase oil price	Increase BI rate	Decrease BI rate	Increase money supply	slower foreign trade
Anti-image Covariance	Inflation	.097	-.072	.052	.042	-.092	-.009	-.064	-.055	.006	.020	-.028	.070	-.059	-.057	.013	-.058
	Economic_growth	-.072	.359	.048	-.119	.061	-.013	.015	-.013	.059	-.105	.042	.052	-.019	.117	.061	.005
	Decrease_foreign_reserves	.052	.048	.158	-.030	-.044	.011	-.124	-.066	.089	-.066	-.004	.113	-.094	.029	.040	-.074
	Rupiah_appreciation	.042	-.119	-.030	.082	-.078	.008	.014	-.018	-.028	.055	-.009	-.022	.009	-.078	-.052	.015
	Rupiah_depreciation	-.092	.061	-.044	-.078	.254	-.004	.044	.087	-.014	-.019	-.007	-.086	.032	.089	.031	.037
	Current_account_deficit	-.009	-.013	.011	.008	-.004	.273	-.018	-.068	.011	.000	-.077	-.009	-.005	.010	-.099	-.027
	Increase_foreign_debt	-.064	.015	-.124	.014	.044	-.018	.199	.022	-.047	.044	-.017	-.117	.085	-.012	-.070	.103
	Increase_fiscal_deficit	-.055	-.013	-.066	-.018	.087	-.068	.022	.192	-.116	.035	.012	-.082	.076	.029	.106	-.046
	Increase_government_bond	.006	.059	.089	-.028	-.014	.011	-.047	-.116	.208	-.091	.025	.079	-.078	.029	-.112	.046
	Decline_developed_countries	.020	-.105	-.066	.055	-.019	.000	.044	.035	-.091	.110	-.068	-.062	.045	-.060	-.001	-.018
	Decline_ASEAN	-.028	.042	-.004	-.009	-.007	-.077	-.017	.012	.025	-.068	.173	-.011	-.005	.019	.014	-.012
	increase_oil_price	.070	.052	.113	-.022	-.086	-.009	-.117	-.082	.079	-.062	-.011	.178	-.087	.007	.038	-.021
	Increase_BI_rate	-.059	-.019	-.094	.009	.032	-.005	.085	.076	-.078	.045	-.005	-.087	.090	-.002	-.006	.049
	Decrease_BI_rate	-.057	.117	.029	-.078	.089	.010	-.012	.029	.029	-.060	.019	.007	-.002	.093	.034	-.009
	Increase_money_supply	.013	.061	.040	-.052	.031	-.099	-.070	.106	-.112	-.001	.014	.038	-.006	.034	.303	-.097
	slower_foreign_trade	-.058	.005	-.074	.015	.037	-.027	.103	-.046	.046	-.018	-.012	-.021	.049	-.009	-.097	.429
Anti-image Correlation	Inflation	.286a	-.383	.419	.469	-.587	-.057	-.461	-.401	.045	.191	-.215	.534	-.625	-.600	.077	-.282
	Economic_growth	-.383	.197a	.203	-.696	.200	-.041	.056	-.051	.216	-.526	.168	.205	-.103	.643	.184	.013
	Decrease_foreign_reserves	.419	.203	.346a	-.262	-.220	.051	-.702	-.377	.490	-.496	-.025	.675	-.791	.238	.182	-.284
	Rupiah_appreciation	.469	-.696	-.262	.408a	-.540	.054	.110	-.143	-.214	.583	-.073	-.186	.109	-.900	-.329	.079
	Rupiah_depreciation	-.587	.200	-.220	-.540	.369a	-.015	.195	.393	-.062	-.111	-.034	-.403	.210	.577	.111	.112
	Current_account_deficit	-.057	-.041	.051	.054	-.015	.869a	-.078	-.299	.048	-.004	-.357	-.043	-.029	.063	-.346	-.078
	Increase_foreign_debt	-.461	.056	-.702	.110	.195	-.078	.481a	.113	-.233	.297	-.094	-.624	.634	-.091	-.284	.351
	Increase_fiscal_deficit	-.401	-.051	-.377	-.143	.393	-.299	.113	.497a	-.581	.240	.069	-.446	.579	.215	.441	-.159
	Increase_government_bond	.045	.216	.490	-.214	-.062	.048	-.233	-.581	.337a	-.598	.133	.410	-.570	.206	-.447	.153
	Decline_developed_countries	.191	-.526	-.496	.583	-.111	-.004	.297	.240	-.598	.471a	-.491	-.445	.453	-.587	-.007	-.084
	Decline_ASEAN	-.215	.168	-.025	-.073	-.034	-.357	-.094	.069	.133	-.491	.845a	-.064	-.039	.150	.059	-.044
	increase_oil_price	.534	.205	.675	-.186	-.403	-.043	-.624	-.446	.410	-.445	-.064	.322a	-.688	.055	.164	-.077
	Increase_BI_rate	-.625	-.103	-.791	.109	.210	-.029	.634	.579	-.570	.453	-.039	-.688	.286a	-.019	-.037	.251
	Decrease_BI_rate	-.600	.643	.238	-.900	.577	.063	-.091	.215	.206	-.587	.150	.055	-.019	.276a	.205	-.045
	Increase_money_supply	.077	.184	.182	-.329	.111	-.346	-.284	.441	-.447	-.007	.059	.164	-.037	.205	.414a	-.268
	slower_foreign_trade	-.282	.013	-.284	.079	.112	-.078	.351	-.159	.153	-.084	-.044	-.077	.251	-.045	-.268	.709a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Inflation	1.000	.868
Economic_growth	1.000	.903
Decrease_foreign_reserves	1.000	.670
Rupiah_appreciation	1.000	.895
Rupiah_depreciation	1.000	.803
Current_account_deficit	1.000	.788
Increase_foreign_debt	1.000	.703
Increase_fiscal_deficit	1.000	.713
Increase_government_bond	1.000	.831
Decline_developed_countries	1.000	.687
Decline_ASEAN	1.000	.831
increase_oil_price	1.000	.820
Increase_BI_rate	1.000	.899
Decrease_BI_rate	1.000	.975
Increase_money_supply	1.000	.818
slower_foreign_trade	1.000	.696

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.655	29.096	29.096	4.655	29.096	29.096
2	2.628	16.422	45.518	2.628	16.422	45.518
3	1.804	11.278	56.796	1.804	11.278	56.796
4	1.637	10.233	67.029	1.637	10.233	67.029
5	1.117	6.982	74.011	1.117	6.982	74.011
6	1.057	6.604	80.615	1.057	6.604	80.615
7	.744	4.651	85.266			
8	.651	4.068	89.334			
9	.501	3.130	92.464			
10	.384	2.399	94.863			
11	.287	1.796	96.659			
12	.244	1.528	98.187			
13	.128	.799	98.986			
14	.101	.634	99.620			
15	.032	.197	99.817			
16	.029	.183	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component					
	1	2	3	4	5	6
Inflation	.169	.687	-.077	-.506	.144	-.290
Economic_growth	-.140	.370	-.272	-.253	.456	.633
Decrease_foreign_reserves	.606	.144	-.474	.137	-.043	-.191
Rupiah_appreciation	-.611	.367	.308	.346	.404	.097
Rupiah_depreciation	.124	.654	-.417	.407	.075	.121
Current_account_deficit	.825	.173	.198	-.094	-.089	.145
Increase_foreign_debt	.700	.044	.241	.354	-.006	-.166
Increase_fiscal_deficit	.691	-.226	.161	-.168	.185	.310
Increase_government_bond	.254	.606	.467	-.191	-.283	.253
Decline_developed_countries	.780	-.033	.197	.038	.192	-.013
Decline_ASEAN	.882	.171	-.005	.025	.083	-.128
increase_oil_price	.499	.074	.059	.729	.164	.063
Increase_BI_rate	-.079	.814	-.374	-.087	-.187	-.216
Decrease_BI_rate	-.397	.260	.548	-.002	.500	-.447
Increase_money_supply	-.163	.430	.631	.058	-.427	.151
slower_foreign_trade	.560	-.184	.092	-.520	.239	-.114

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.793
Bartlett's Test of Sphericity	Approx. Chi-Square	62.125
	df	21
	Sig.	.000

Anti-image Matrices

		Decrease foreign reserves	Current account deficit	Increase foreign debt	Increase fiscal deficit	Decline developed countries	Decline ASEAN	Slower foreign trade
Anti-image Covariance	Decrease_foreign_reserves	.667	.057	-.164	.022	.036	-.115	-.073
	Current_account_deficit	.057	.361	-.082	-.148	.033	-.137	-.055
	Increase_foreign_debt	-.164	-.082	.520	-.159	-.013	-.050	.149
	Increase_fiscal_deficit	.022	-.148	-.159	.544	-.043	.054	-.182
	Decline_developed_countries	.036	.033	-.013	-.043	.370	-.177	-.083
	Decline_ASEAN	-.115	-.137	-.050	.054	-.177	.230	-.029
	slower_foreign_trade	-.073	-.055	.149	-.182	-.083	-.029	.644
Anti-image Correlation	Decrease_foreign_reserves	.818a	.117	-.278	.037	.073	-.294	-.111
	Current_account_deficit	.117	.818a	-.189	-.333	.089	-.476	-.113
	Increase_foreign_debt	-.278	-.189	.819a	-.298	-.029	-.146	.258
	Increase_fiscal_deficit	.037	-.333	-.298	.787a	-.095	.153	-.307
	Decline_developed_countries	.073	.089	-.029	-.095	.798a	-.605	-.170
	Decline_ASEAN	-.294	-.476	-.146	.153	-.605	.743a	-.075
	slower_foreign_trade	-.111	-.113	.258	-.307	-.170	-.075	.807a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decrease_foreign_reserves	1.000	.364
Current_account_deficit	1.000	.700
Increase_foreign_debt	1.000	.515
Increase_fiscal_deficit	1.000	.484
Decline_developed_countries	1.000	.636
Decline_ASEAN	1.000	.781
slower_foreign_trade	1.000	.373

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.854	55.054	55.054	3.854	55.054	55.054
2	.916	13.086	68.140			
3	.758	10.829	78.969			
4	.621	8.875	87.843			
5	.365	5.209	93.053			
6	.335	4.790	97.843			
7	.151	2.157	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Decrease_foreign_reserves	.603
Current_account_deficit	.837
Increase_foreign_debt	.718
Increase_fiscal_deficit	.696
Decline_developed_countries	.798
Decline_ASEAN	.884
slower_foreign_trade	.611

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

FINANCIAL MARKET INDICATORS

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.714
Bartlett's Test of Sphericity	Approx. Chi-Square	58.487
	df	21
	Sig.	.000

Anti-image Matrices

		Decrease Composite Stock	Decline financial stocks	Increase interbank rate	Decrease risk appetite	Increase CDS	Increase government bonds	Decrease interbank volume
Anti-image Covariance	Decrease_Composite_Stock	.399	-.065	-.153	-.059	-.049	-.078	-.052
	Decline_financial_stocks	-.065	.387	-.007	-.042	-.118	.043	-.179
	Increase_interbank_rate	-.153	-.007	.527	-.146	.123	-.076	.049
	Decrease_risk_appetite	-.059	-.042	-.146	.226	-.149	.151	-.098
	Increase_CDS	-.049	-.118	.123	-.149	.286	-.175	.180
	Increase_government_bonds	-.078	.043	-.076	.151	-.175	.804	-.156
	Decrease_interbank_volume	-.052	-.179	.049	-.098	.180	-.156	.677
Anti-image Correlation	Decrease_Composite_Stock	.883a	-.165	-.334	-.197	-.144	-.138	-.099
	Decline_financial_stocks	-.165	.845a	-.016	-.143	-.354	.078	-.351
	Increase_interbank_rate	-.334	-.016	.710a	-.423	.318	-.117	.082
	Decrease_risk_appetite	-.197	-.143	-.423	.719a	-.588	.354	-.249
	Increase_CDS	-.144	-.354	.318	-.588	.621a	-.364	.408
	Increase_government_bonds	-.138	.078	-.117	.354	-.364	.242a	-.211
	Decrease_interbank_volume	-.099	-.351	.082	-.249	.408	-.211	.535a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decrease_Composite_Stock	1.000	.732
Decline_financial_stocks	1.000	.709
Increase_interbank_rate	1.000	.497
Decrease_risk_appetite	1.000	.848
Increase_CDS	1.000	.631
Increase_government_bonds	1.000	.959
Decrease_interbank_volume	1.000	.217

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.566	50.946	50.946	3.566	50.946	50.946
2	1.027	14.676	65.622	1.027	14.676	65.622
3	.945	13.506	79.128			
4	.724	10.339	89.467			
5	.315	4.504	93.971			
6	.284	4.058	98.029			
7	.138	1.971	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Decrease_Composite_Stock	.856	.011
Decline_financial_stocks	.841	-.025
Increase_interbank_rate	.674	-.206
Decrease_risk_appetite	.900	-.196
Increase_CDS	.780	.151
Increase_government_bonds	.197	.959
Decrease_interbank_volume	.463	.044

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.770
Bartlett's Test of Sphericity	Approx. Chi-Square	55.894
	df	15
	Sig.	.000

Anti-image Matrices							
		Decrease Composite Stock	Decline financial stocks	Increase interbank rate	Decrease risk appetite	Increase CDS	Decrease interbank volume
Anti-image Covariance	Decrease_Composite_Stock	.407	-.062	-.166	-.052	-.077	-.071
	Decline_financial_stocks	-.062	.389	-.003	-.058	-.126	-.180
	Increase_interbank_rate	-.166	-.003	.534	-.153	.125	.036
	Decrease_risk_appetite	-.052	-.058	-.153	.258	-.154	-.082
	Increase_CDS	-.077	-.126	.125	-.154	.330	.176
	Decrease_interbank_volume	-.071	-.180	.036	-.082	.176	.709
Anti-image Correlation	Decrease_Composite_Stock	.875a	-.156	-.356	-.160	-.210	-.133
	Decline_financial_stocks	-.156	.846a	-.007	-.183	-.351	-.343
	Increase_interbank_rate	-.356	-.007	.722a	-.411	.298	.059
	Decrease_risk_appetite	-.160	-.183	-.411	.785a	-.526	-.191
	Increase_CDS	-.210	-.351	.298	-.526	.680a	.364
	Decrease_interbank_volume	-.133	-.343	.059	-.191	.364	.600a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decrease_Composite_Stock	1.000	.728
Decline_financial_stocks	1.000	.712
Increase_interbank_rate	1.000	.460
Decrease_risk_appetite	1.000	.826
Increase_CDS	1.000	.599
Decrease_interbank_volume	1.000	.213

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.538	58.969	58.969	3.538	58.969	58.969
2	.946	15.760	74.729			
3	.737	12.289	87.018			
4	.326	5.437	92.455			
5	.284	4.736	97.191			
6	.169	2.809	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Decrease_Composite_Stock	.854
Decline_financial_stocks	.844
Increase_interbank_rate	.678
Decrease_risk_appetite	.909
Increase_CDS	.774
Decrease_interbank_volume	.461

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

BANKING SECTOR INDICATORS

Loan and Deposit Growth

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.633
Bartlett's Test of Sphericity	Approx. Chi-Square	183.760
	df	55
	Sig.	.000

Anti-image Matrices

		Increase aggregate loan	Increase loan growth	Increase Working Capital Loans	Increase Investment Loans	Increase Consumptive Loans	Decrease aggregate loan	Decrease Working Capital Loans	Decrease Investment Loans	Decrease Consumptive Loans	Increase deposits growth	Decrease deposits growth
Anti-image Covariance	Increase_aggregate_loan	.059	-.034	1,49E-02	-.018	.031	-.033	.016	-.015	.001	.069	.029
	Increase_loan_growth	-.034	.045	-.012	-.020	-.017	-.015	.002	-.001	-.011	-.002	.008
	Increase_Working_Capital_Loans	1,49E-02	-.012	.191	-.027	-.064	-.002	.025	-.016	-.031	.010	.103
	Increase_Investment_Loans	-.018	-.020	-.027	.056	-.031	.068	-.026	.021	.001	-.084	-.075
	Increase_Consumptive_Loans	.031	-.017	-.064	-.031	.329	-.079	.009	-.021	.162	.104	-.005
	Decrease_aggregate_loan	-.033	-.015	-.002	.068	-.079	.206	-.064	.051	-.041	-.193	-.141
	Decrease_Working_Capital_Loans	.016	.002	.025	-.026	.009	-.064	.061	-.070	-.055	.084	.027
	Decrease_Investment_Loans	-.015	-.001	-.016	.021	-.021	.051	-.070	.099	.048	-.090	.010
	Decrease_Consumptive_Loans	.001	-.011	-.031	.001	.162	-.041	-.055	.048	.408	-.017	.106
	Increase_deposits_growth	.069	-.002	.010	-.084	.104	-.193	.084	-.090	-.017	.415	.082
	Decrease_deposits_growth	.029	.008	.103	-.075	-.005	-.141	.027	.010	.106	.082	.596
Anti-image Correlation	Increase_aggregate_loan	.743a	-.648	.000	-.309	.223	-.301	.273	-.194	.007	.442	.154
	Increase_loan_growth	-.648	.822a	-.129	-.390	-.142	-.155	.037	-.021	-.083	-.012	.051
	Increase_Working_Capital_Loans	.000	-.129	.893a	-.261	-.257	-.010	.227	-.120	-.113	.034	.304
	Increase_Investment_Loans	-.309	-.390	-.261	.662a	-.230	.629	-.443	.286	.008	-.551	-.409
	Increase_Consumptive_Loans	.223	-.142	-.257	-.230	.769a	-.305	.060	-.116	.443	.280	-.011
	Decrease_aggregate_loan	-.301	-.155	-.010	.629	-.305	.447a	-.571	.358	-.140	-.659	-.403
	Decrease_Working_Capital_Loans	.273	.037	.227	-.443	.060	-.571	.484a	-.897	-.348	.528	.139
	Decrease_Investment_Loans	-.194	-.021	-.120	.286	-.116	.358	-.897	.528a	.240	-.446	.043
	Decrease_Consumptive_Loans	.007	-.083	-.113	.008	.443	-.140	-.348	.240	.705a	-.041	.215
	Increase_deposits_growth	.442	-.012	.034	-.551	.280	-.659	.528	-.446	-.041	.177a	.164
	Decrease_deposits_growth	.154	.051	.304	-.409	-.011	-.403	.139	.043	.215	.164	.325a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.901
Increase_loan_growth	1.000	.942
Increase_Working_Capital_Loans	1.000	.854
Increase_Investment_Loans	1.000	.927
Increase_Consumptive_Loans	1.000	.652
Decrease_aggregate_loan	1.000	.793
Decrease_Working_Capital_Loans	1.000	.879
Decrease_Investment_Loans	1.000	.801
Decrease_Consumptive_Loans	1.000	.626
Increase_deposits_growth	1.000	.464
Decrease_deposits_growth	1.000	.742

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.373	39.753	39.753	4.373	39.753	39.753
2	2.921	26.551	66.304	2.921	26.551	66.304
3	1.289	11.719	78.023	1.289	11.719	78.023
4	.859	7.808	85.831			
5	.660	6.000	91.831			
6	.377	3.431	95.261			
7	.246	2.232	97.494			
8	.151	1.374	98.868			
9	.068	.617	99.484			
10	.030	.276	99.760			
11	.026	.240	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
Increase_aggregate_loan	.909	.255	-.097
Increase_loan_growth	.916	.318	-.034
Increase_Working_Capital_Loans	.906	.118	-.138
Increase_Investment_Loans	.925	.266	.028
Increase_Consumptive_Loans	.771	.167	.175
Decrease_aggregate_loan	-.375	.709	.386
Decrease_Working_Capital_Loans	-.298	.884	-.084
Decrease_Investment_Loans	-.205	.866	-.100
Decrease_Consumptive_Loans	-.349	.652	-.281
Increase_deposits_growth	-.108	.397	.543
Decrease_deposits_growth	.173	-.157	.829

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.892
Bartlett's Test of Sphericity	Approx. Chi-Square	123.208
	df	10
	Sig.	.000

Anti-image Matrices

		Increase aggregate loan	Increase loan growth	Increase Working Capital Loans	Increase Investment Loans	Increase Consumptive Loans
Anti-image Covariance	Increase_aggregate_loan	.123	-.060	-.020	-.025	-.006
	Increase_loan_growth	-.060	.092	-.020	-.049	.000
	Increase_Working_Capital_Loans	-.020	-.020	.254	-.047	-.073
	Increase_Investment_Loans	-.025	-.049	-.047	.115	-.045
	Increase_Consumptive_Loans	-.006	.000	-.073	-.045	.515
Anti-image Correlation	Increase_aggregate_loan	.879a	-.566	-.114	-.209	-.024
	Increase_loan_growth	-.566	.835a	-.128	-.472	.001
	Increase_Working_Capital_Loans	-.114	-.128	.946a	-.272	-.201
	Increase_Investment_Loans	-.209	-.472	-.272	.883a	-.186
	Increase_Consumptive_Loans	-.024	.001	-.201	-.186	.958a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.892
Increase_loan_growth	1.000	.915
Increase_Working_Capital_Loans	1.000	.833
Increase_Investment_Loans	1.000	.918
Increase_Consumptive_Loans	1.000	.607

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.165	83.301	83.301	4.165	83.301	83.301
2	.466	9.318	92.620			
3	.210	4.198	96.818			
4	.097	1.941	98.758			
5	.062	1.242	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_aggregate_loan	.944
Increase_loan_growth	.956
Increase_Working_Capital_Loans	.912
Increase_Investment_Loans	.958
Increase_Consumptive_Loans	.779

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

FINANCIAL RATIOS

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.456
Bartlett's Test of Sphericity	Approx. Chi-Square	90.343
	df	45
	Sig.	.000

Anti-image Matrices

		Worsen NPL	Worsen assets quality	Decrease capital	Decrease liquid assets	Decrease profitability	Increase LDR	Decrease banking efficiency	Closing small banks	Closing medium banks	War deposits rate
Anti-image Covariance	Worsen_NPL	.353	-.168	-.117	.057	.018	-.077	.162	.108	-.116	-.201
	Worsen_assets_quality	-.168	.264	-.059	-.165	-.054	.112	-.113	-.078	.098	.179
	Decrease_capital	-.117	-.059	.462	.027	-.019	.011	-.133	-.054	-.014	-.007
	Decrease_liquid_assets	.057	-.165	.027	.338	-.100	-.205	.099	.088	-.132	-.145
	Decrease_profitability	.018	-.054	-.019	-.100	.476	.180	-.155	.053	.003	-.032
	Increase_LDR	-.077	.112	.011	-.205	.180	.608	-.238	-.086	.088	.134
	Decrease_banking_efficiency	.162	-.113	-.133	.099	-.155	-.238	.373	.073	-.062	-.174
	Closing_small_banks	.108	-.078	-.054	.088	.053	-.086	.073	.235	-.174	-.181
	Closing_medium_banks	-.116	.098	-.014	-.132	.003	.088	-.062	-.174	.195	.171
	War_deposits_rate	-.201	.179	-.007	-.145	-.032	.134	-.174	-.181	.171	.415
Anti-image Correlation	Worsen_NPL	.474a	-.549	-.289	.164	.044	-.167	.446	.374	-.443	-.526
	Worsen_assets_quality	-.549	.496a	-.170	-.554	-.154	.280	-.361	-.313	.434	.541
	Decrease_capital	-.289	-.170	.843a	.070	-.041	.022	-.319	-.165	-.047	-.015
	Decrease_liquid_assets	.164	-.554	.070	.521a	-.250	-.452	.278	.314	-.516	-.386
	Decrease_profitability	.044	-.154	-.041	-.250	.713a	.335	-.369	.158	.008	-.073
	Increase_LDR	-.167	.280	.022	-.452	.335	.236a	-.499	-.229	.256	.267
	Decrease_banking_efficiency	.446	-.361	-.319	.278	-.369	-.499	.423a	.245	-.230	-.441
	Closing_small_banks	.374	-.313	-.165	.314	.158	-.229	.245	.385a	-.811	-.581
	Closing_medium_banks	-.443	.434	-.047	-.516	.008	.256	-.230	-.811	.378a	.601
	War_deposits_rate	-.526	.541	-.015	-.386	-.073	.267	-.441	-.581	.601	.186a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Worsen_NPL	1.000	.675
Worsen_assets_quality	1.000	.836
Decrease_capital	1.000	.643
Decrease_liquid_assets	1.000	.697
Decrease_profitability	1.000	.708
Increase_LDR	1.000	.861
Decrease_banking_efficiency	1.000	.801
Closing_small_banks	1.000	.850
Closing_medium_banks	1.000	.836
War_deposits_rate	1.000	.848

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.454	34.543	34.543	3.454	34.543	34.543
2	1.950	19.496	54.040	1.950	19.496	54.040
3	1.297	12.972	67.012	1.297	12.972	67.012
4	1.055	10.547	77.558	1.055	10.547	77.558
5	.727	7.265	84.824			
6	.617	6.172	90.996			
7	.308	3.081	94.076			
8	.282	2.821	96.897			
9	.236	2.358	99.255			
10	.075	.745	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component			
	1	2	3	4
Worsen_NPL	.701	.148	-.360	.180
Worsen_assets_quality	.759	-.285	-.379	-.187
Decrease_capital	.787	.010	.045	.146
Decrease_liquid_assets	.765	.010	-.135	-.305
Decrease_profitability	.515	-.647	-.136	.076
Increase_LDR	.264	.084	.650	-.601
Decrease_banking_efficiency	.519	-.507	.522	-.052
Closing_small_banks	.426	.768	.228	.166
Closing_medium_banks	.509	.751	-.077	-.083
War_deposits_rate	.370	-.103	.481	.685

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	38.123
	df	10
	Sig.	.000

Anti-image Matrices

		Worsen NPL	Worsen assets quality	Decrease capital	Decrease liquid assets	Decrease profitability
Anti-image Covariance	**Worsen_NPL**	**.536**	**-.155**	**-.185**	**-.096**	**.116**
	Worsen_assets_quality	**-.155**	**.385**	**-.114**	**-.175**	**-.185**
	Decrease_capital	**-.185**	**-.114**	**.599**	**-.013**	**-.069**
	Decrease_liquid_assets	**-.096**	**-.175**	**-.013**	**.564**	**-.086**
	Decrease_profitability	**.116**	**-.185**	**-.069**	**-.086**	**.702**
Anti-image Correlation	**Worsen_NPL**	**.768a**	**-.341**	**-.327**	**-.175**	**.189**
	Worsen_assets_quality	**-.341**	**.755a**	**-.237**	**-.376**	**-.356**
	Decrease_capital	**-.327**	**-.237**	**.840a**	**-.023**	**-.106**
	Decrease_liquid_assets	**-.175**	**-.376**	**-.023**	**.838a**	**-.136**
	Decrease_profitability	**.189**	**-.356**	**-.106**	**-.136**	**.750a**

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Worsen_NPL	1.000	.582
Worsen_assets_quality	1.000	.783
Decrease_capital	1.000	.574
Decrease_liquid_assets	1.000	.610
Decrease_profitability	1.000	.374

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.922	58.446	58.446	2.922	58.446	58.446
2	.828	16.554	75.000			
3	.568	11.366	86.366			
4	.395	7.892	94.258			
5	.287	5.742	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Worsen_NPL	.763
Worsen_assets_quality	.885
Decrease_capital	.758
Decrease_liquid_assets	.781
Decrease_profitability	.612

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

RUMORS INDICATORS

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.649
Bartlett's Test of Sphericity	Approx. Chi-Square	10.831
	df	6
	Sig.	.094

Anti-image Matrices

		Rumors bank closing	Rumors centralbank policies	Financial market rumors	External rumors
Anti-image Covariance	**Rumors_bank_closing**	**.834**	**-.232**	**-.100**	**.033**
	Rumors_centralbank_policies	**-.232**	**.684**	**-.272**	**-.159**
	Financial_market_rumors	**-.100**	**-.272**	**.770**	**-.068**
	External_rumors	**.033**	**-.159**	**-.068**	**.927**
Anti-image Correlation	**Rumors_bank_closing**	**.680a**	**-.307**	**-.124**	**.037**
	Rumors_centralbank_policies	**-.307**	**.612a**	**-.374**	**-.200**
	Financial_market_rumors	**-.124**	**-.374**	**.668a**	**-.080**
	External_rumors	**.037**	**-.200**	**-.080**	**.690a**

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Rumors_bank_closing	1.000	.423
Rumors_centralbank_policies	1.000	.680
Financial_market_rumors	1.000	.555
External_rumors	1.000	.211

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.869	46.723	46.723	1.869	46.723	46.723
2	.932	23.301	70.024			
3	.699	17.471	87.494			
4	.500	12.506	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Rumors_bank_closing	.650
Rumors_centralbank_policies	.824
Financial_market_rumors	.745
External_rumors	.459

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Threshold Variable

Macroeconomic Indicators, All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.559
Bartlett's Test of Sphericity	Approx. Chi-Square	163.630
	df	105
	Sig.	.000

Anti-image Matrices

		Inflation	Economic growth	Decrease foreign reserves	Rupiah appreciation	Rupiah depreciation	Current account deficit	Increase foreign debt	Increase government bond	Decline developed countries	Decline ASEAN	increase oil price	Increase BI rate	Decrease BI rate	Increase money supply	slower foreign trade
Anti-image Covariance	Inflation	.399	-.110	-.028	.118	.115	-.083	.015	.084	-.016	-.048	.046	.119	-.119	-.049	.009
	Economic_growth	-.110	.353	-.009	-.086	-.040	-.106	.016	-.002	.034	-.083	-.205	-.040	.076	-.031	.061
	Decrease_foreign_reserves	-.028	-.009	.276	-.049	.076	.102	-.166	-.054	-.009	-.014	-.047	-.044	.039	.081	-.108
	Rupiah_appreciation	.118	-.086	-.049	.275	-.089	-.051	.067	.017	.008	.079	.104	.054	-.161	-.018	-.096
	Rupiah_depreciation	.115	-.040	.076	-.089	.368	.031	-.116	-.006	-.053	-.024	-.038	.077	.003	-.065	.072
	Current_account_deficit	-.083	-.106	.102	-.051	.031	.683	-.095	-.021	-.020	-.017	.027	.002	-.063	.094	-.057
	Increase_foreign_debt	.015	.016	-.166	.067	-.116	-.095	.181	-.012	.075	-.008	.057	.023	-.054	-.081	.022
	Increase_government_bond	.084	-.002	-.054	.017	-.006	-.021	-.012	.269	-.143	.059	-.043	.003	-.002	.008	.014
	Decline_developed_countries	-.016	.034	-.009	.008	-.053	-.020	.075	-.143	.183	-.091	.002	-.029	-.034	-.029	-.028
	Decline_ASEAN	-.048	-.083	-.014	.079	-.024	-.017	-.008	.059	-.091	.251	.111	-.055	.005	.061	-.144
	increase_oil_price	.046	-.205	-.047	.104	-.038	.027	.057	-.043	.002	.111	.240	.012	-.077	.032	-.078
	Increase_BI_rate	.119	-.040	-.044	.054	.077	.002	.023	.003	-.029	-.055	.012	.254	-.108	-.168	.042
	Decrease_BI_rate	-.119	.076	.039	-.161	.003	-.063	-.054	-.002	-.034	.005	-.077	-.108	.224	.011	.072
	Increase_money_supply	-.049	-.031	.081	-.018	-.065	.094	-.081	.008	-.029	.061	.032	-.168	.011	.335	-.092
	slower_foreign_trade	.009	.061	-.108	-.096	.072	-.057	.022	.014	-.028	-.144	-.078	.042	.072	-.092	.384
Anti-image Correlation	Inflation	.564a	-.294	-.084	.355	.301	-.158	.056	.255	-.059	-.152	.147	.374	-.400	-.133	.024
	Economic_growth	-.294	.417a	-.030	-.277	-.111	-.215	.063	-.008	.133	-.280	-.706	-.135	.269	-.091	.165
	Decrease_foreign_reserves	-.084	-.030	.422a	-.177	.239	.235	-.742	-.198	-.041	-.054	-.182	-.165	.157	.268	-.333
	Rupiah_appreciation	.355	-.277	-.177	.532a	-.281	-.118	.299	.063	.035	.299	.406	.204	-.651	-.060	-.297
	Rupiah_depreciation	.301	-.111	.239	-.281	.672a	.061	-.447	-.019	-.203	-.079	-.128	.251	.011	-.185	.192
	Current_account_deficit	-.158	-.215	.235	-.118	.061	.490a	-.271	-.049	-.055	-.041	.066	.005	-.162	.196	-.112
	Increase_foreign_debt	.056	.063	-.742	.299	-.447	-.271	.417a	-.053	.413	-.037	.273	.105	-.270	-.328	.085
	Increase_government_bond	.255	-.008	-.198	.063	-.019	-.049	-.053	.717a	-.645	.228	-.169	.011	-.006	.027	.044
	Decline_developed_countries	-.059	.133	-.041	.035	-.203	-.055	.413	-.645	.636a	-.422	.008	-.134	-.170	-.116	-.107
	Decline_ASEAN	-.152	-.280	-.054	.299	-.079	-.041	-.037	.228	-.422	.543a	.451	-.218	.019	.212	-.463
	increase_oil_price	.147	-.706	-.182	.406	-.128	.066	.273	-.169	.008	.451	.443a	.050	-.334	.113	-.258
	Increase_BI_rate	.374	-.135	-.165	.204	.251	.005	.105	.011	-.134	-.218	.050	.637a	-.453	-.577	.133
	Decrease_BI_rate	-.400	.269	.157	-.651	.011	-.162	-.270	-.006	-.170	.019	-.334	-.453	.588a	.038	.244
	Increase_money_supply	-.133	-.091	.268	-.060	-.185	.196	-.328	.027	-.116	.212	.113	-.577	.038	.651a	-.258
	slower_foreign_trade	.024	.165	-.333	-.297	.192	-.112	.085	.044	-.107	-.463	-.258	.133	.244	-.258	.546a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Inflation	1.000	.745
Economic_growth	1.000	.793
Decrease_foreign_reserves	1.000	.874
Rupiah_appreciation	1.000	.652
Rupiah_depreciation	1.000	.659
Current_account_deficit	1.000	.684
Increase_foreign_debt	1.000	.917
Increase_government_bond	1.000	.755
Decline_developed_countries	1.000	.863
Decline_ASEAN	1.000	.820
increase_oil_price	1.000	.882
Increase_BI_rate	1.000	.721
Decrease_BI_rate	1.000	.804
Increase_money_supply	1.000	.637
slower_foreign_trade	1.000	.676

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.849	25.662	25.662	3.849	25.662	25.662
2	2.543	16.952	42.613	2.543	16.952	42.613
3	2.246	14.972	57.586	2.246	14.972	57.586
4	1.468	9.787	67.373	1.468	9.787	67.373
5	1.376	9.172	76.545	1.376	9.172	76.545
6	.852	5.682	82.226			
7	.605	4.036	86.262			
8	.577	3.847	90.109			
9	.447	2.978	93.087			
10	.339	2.261	95.348			
11	.246	1.638	96.986			
12	.145	.964	97.950			
13	.128	.853	98.803			
14	.100	.664	99.467			
15	.080	.533	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component				
	1	2	3	4	5
Inflation	-.524	.346	-.033	.496	-.324
Economic_growth	.212	.077	-.616	.553	.237
Decrease_foreign_reserves	.190	.400	.486	.248	.616
Rupiah_appreciation	.669	-.393	.071	.106	-.184
Rupiah_depreciation	.622	-.445	.218	.034	.158
Current_account_deficit	.196	.071	.031	.703	-.381
Increase_foreign_debt	.183	-.079	.826	.311	.312
Increase_government_bond	.710	.218	-.316	-.210	.244
Decline_developed_countries	.598	.552	-.322	-.263	-.167
Decline_ASEAN	-.104	.868	.150	-.001	-.183
increase_oil_price	.317	-.087	-.731	.254	.418
Increase_BI_rate	.731	.345	.079	-.122	-.215
Decrease_BI_rate	.768	-.171	.058	.227	-.359
Increase_money_supply	.693	.100	.342	-.080	-.152
slower_foreign_trade	.091	.789	.069	.027	.200

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Macroeconomic Indicators, Final result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.716
Bartlett's Test of Sphericity	Approx. Chi-Square	45.207
	df	10
	Sig.	.000

Anti-image Matrices

		Increase government bond	Decline developed countries	Increase BI rate	Decrease BI rate	Increase money supply
Anti-image Covariance	Increase_government_bond	.477	-.275	.003	-.079	-.008
	Decline_developed_countries	-.275	.409	-.142	.029	.048
	Increase_BI_rate	.003	-.142	.357	-.141	-.236
	Decrease_BI_rate	-.079	.029	-.141	.644	-.099
	Increase_money_supply	-.008	.048	-.236	-.099	.502
Anti-image Correlation	Increase_government_bond	.693a	-.622	.008	-.143	-.016
	Decline_developed_countries	-.622	.660a	-.371	.056	.106
	Increase_BI_rate	.008	-.371	.712a	-.294	-.558
	Decrease_BI_rate	-.143	.056	-.294	.851a	-.174
	Increase_money_supply	-.016	.106	-.558	-.174	.719a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_government_bond	1.000	.532
Decline_developed_countries	1.000	.597
Increase_BI_rate	1.000	.757
Decrease_BI_rate	1.000	.506
Increase_money_supply	1.000	.534

Communalities

	Initial	Extraction
Increase_government_bond	1.000	.532
Decline_developed_countries	1.000	.597
Increase_BI_rate	1.000	.757
Decrease_BI_rate	1.000	.506
Increase_money_supply	1.000	.534

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.926	58.516	58.516	2.926	58.516	58.516
2	.998	19.964	78.480			
3	.535	10.691	89.171			
4	.323	6.450	95.622			
5	.219	4.378	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_government_bond	.729
Decline_developed_countries	.772
Increase_BI_rate	.870
Decrease_BI_rate	.712
Increase_money_supply	.731

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Financial Market Indicators, All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.662
Bartlett's Test of Sphericity	Approx. Chi-Square	95.854
	df	21
	Sig.	.000

Anti-image Matrices

		Decrease_ Composite _Stock	Decline_financial_ stocks	Increase_interbank _rate	Decrease_risk _appetite	Increase_CDS	Increase_government _bonds	Decrease_interbank _volume
Anti-image Covariance	Decrease_Composite_Stock	.288	-.204	-.079	.094	-.037	.018	.031
	Decline_financial_stocks	-.204	.219	.087	-.070	.028	-.078	-.047
	Increase_interbank_rate	-.079	.087	.254	-.116	.153	-.096	-.168
	Decrease_risk_appetite	.094	-.070	-.116	.198	-.160	-.067	.029
	Increase_CDS	-.037	.028	.153	-.160	.460	-.034	-.160
	Increase_government_bonds	.018	-.078	-.096	-.067	-.034	.278	.016
	Decrease_interbank_volume	.031	-.047	-.168	.029	-.160	.016	.465
Anti-image Correlation	Decrease_Composite_Stock	.459a	-.812	-.294	.394	-.102	.064	.085
	Decline_financial_stocks	-.812	.571a	.370	-.335	.088	-.317	-.146
	Increase_interbank_rate	-.294	.370	.602a	-.519	.447	-.360	-.490
	Decrease_risk_appetite	.394	-.335	-.519	.692a	-.531	-.285	.094
	Increase_CDS	-.102	.088	.447	-.531	.627a	-.095	-.347
	Increase_government_bonds	.064	-.317	-.360	-.285	-.095	.862a	.043
	Decrease_interbank_volume	.085	-.146	-.490	.094	-.347	.043	.782a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decrease_Composite_Stock	1.000	.912
Decline_financial_stocks	1.000	.911
Increase_interbank_rate	1.000	.697
Decrease_risk_appetite	1.000	.845
Increase_CDS	1.000	.461
Increase_government_bonds	1.000	.785
Decrease_interbank_volume	1.000	.633

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.780	53.996	53.996	3.780	53.996	53.996
2	1.464	20.910	74.906	1.464	20.910	74.906
3	.760	10.857	85.763			
4	.496	7.083	92.845			
5	.226	3.224	96.069			
6	.182	2.604	98.673			
7	.093	1.327	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Decrease_Composite_Stock	.428	.853
Decline_financial_stocks	.666	.683
Increase_interbank_rate	.778	-.303
Decrease_risk_appetite	.871	-.294
Increase_CDS	.656	-.176
Increase_government_bonds	.885	-.034
Decrease_interbank_volume	.758	-.241

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Financial Market Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.735
Bartlett's Test of Sphericity	Approx. Chi-Square	72.345
	df	15
	Sig.	.000

Anti-image Matrices

		Decline financial stocks	Increase interbank rate	Decrease risk appetite	Increase CDS	Increase government bonds	Decrease interbank volume
Anti-image Covariance	Decline_financial_stocks	.642	.099	-.011	.005	-.192	-.073
	Increase_interbank_rate	.099	.278	-.117	.158	-.100	-.176
	Decrease_risk_appetite	-.011	-.117	.234	-.177	-.086	.022
	Increase_CDS	.005	.158	-.177	.465	-.032	-.159
	Increase_government_bonds	-.192	-.100	-.086	-.032	.279	.014
	Decrease_interbank_volume	-.073	-.176	.022	-.159	.014	.468
Anti-image Correlation	Decline_financial_stocks	.730a	.235	-.029	.009	-.455	-.133
	Increase_interbank_rate	.235	.657a	-.460	.439	-.358	-.488
	Decrease_risk_appetite	-.029	-.460	.767a	-.537	-.338	.066
	Increase_CDS	.009	.439	-.537	.633a	-.089	-.341
	Increase_government_bonds	-.455	-.358	-.338	-.089	.809a	.038
	Decrease_interbank_volume	-.133	-.488	.066	-.341	.038	.788a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Decline_financial_stocks	1.000	.342
Increase_interbank_rate	1.000	.642
Decrease_risk_appetite	1.000	.815
Increase_CDS	1.000	.456
Increase_government_bonds	1.000	.786
Decrease_interbank_volume	1.000	.603

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.645	60.749	60.749	3.645	60.749	60.749
2	.841	14.013	74.762			
3	.714	11.894	86.656			
4	.468	7.807	94.463			
5	.190	3.169	97.633			
6	.142	2.367	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Decline_financial_stocks	.585
Increase_interbank_rate	.801
Decrease_risk_appetite	.903
Increase_CDS	.675
Increase_government_bonds	.887
Decrease_interbank_volume	.777

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Banking Sector Indicators, Loan and Deposit Growth Variables

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.767
Bartlett's Test of Sphericity	Approx. Chi-Square	286.819
	df	55
	Sig.	.000

Anti-image Matrices

		Increase_ aggregate _loan	Increase loan growth	Increase Working Capital Loans	Increase Investment Loans	Increase Consumptive Loans	Decrease aggregate loan	Decrease Working Capital Loans	Decrease Investment Loans	Decrease Consumptive Loans	Increase_ deposits_ growth	Decrease deposits growth
Anti-image Covariance	Increase_aggregate_loan	.084	-.083	.027	-.025	-.008	-.004	.011	-.026	-.020	.028	.078
	Increase_loan_growth	-.083	.218	-.035	.024	.047	.015	-.035	.044	.023	-.091	-.109
	Increase_Working_Capital_Loans	.027	-.035	.037	-.022	.004	-.004	-.009	.006	.002	-.008	.051
	Increase_Investment_Loans	-.025	.024	-.022	.018	-.023	.004	.007	.002	-.013	-.012	-.041
	Increase_Consumptive_Loans	-.008	.047	.004	-.023	.193	-.016	-.048	.014	.094	.008	.015
	Decrease_aggregate_loan	-.004	.015	-.004	.004	-.016	.066	-.030	-.049	-.026	.025	-.045
	Decrease_Working_Capital_Loans	.011	-.035	-.009	.007	-.048	-.030	.090	-.026	-.037	.030	-.024
	Decrease_Investment_Loans	-.026	.044	.006	.002	.014	-.049	-.026	.107	.022	-.087	.050
	Decrease_Consumptive_Loans	-.020	.023	.002	-.013	.094	-.026	-.037	.022	.104	.006	.010
	Increase_deposits_growth	.028	-.091	-.008	-.012	.008	.025	.030	-.087	.006	.187	-.017
	Decrease_deposits_growth	.078	-.109	.051	-.041	.015	-.045	-.024	.050	.010	-.017	.328
Anti-image Correlation	Increase_aggregate_loan	.759a	-.611	.487	-.642	-.059	-.051	.131	-.279	-.214	.228	.473
	Increase_loan_growth	-.611	.628a	-.382	.372	.228	.128	-.248	.285	.151	-.448	-.406
	Increase_Working_Capital_Loans	.487	-.382	.776a	-.828	.044	-.084	-.161	.097	.028	-.095	.464
	Increase_Investment_Loans	-.642	.372	-.828	.732a	-.390	.115	.161	.052	-.295	-.202	-.526
	Increase_Consumptive_Loans	-.059	.228	.044	-.390	.788a	-.140	-.361	.098	.666	.044	.061
	Decrease_aggregate_loan	-.051	.128	-.084	.115	-.140	.826a	-.393	-.576	-.308	.220	-.305
	Decrease_Working_Capital_Loans	.131	-.248	-.161	.161	-.361	-.393	.850a	-.262	-.380	.232	-.140
	Decrease_Investment_Loans	-.279	.285	.097	.052	.098	-.576	-.262	.746a	.204	-.613	.268
	Decrease_Consumptive_Loans	-.214	.151	.028	-.295	.666	-.308	-.380	.204	.825a	.041	.056
	Increase_deposits_growth	.228	-.448	-.095	-.202	.044	.220	.232	-.613	.041	.793a	-.070
	Decrease_deposits_growth	.473	-.406	.464	-.526	.061	-.305	-.140	.268	.056	-.070	.670a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.817
Increase_loan_growth	1.000	.759
Increase_Working_Capital_Loans	1.000	.900
Increase_Investment_Loans	1.000	.931
Increase_Consumptive_Loans	1.000	.557
Decrease_aggregate_loan	1.000	.953
Decrease_Working_Capital_Loans	1.000	.910
Decrease_Investment_Loans	1.000	.815
Decrease_Consumptive_Loans	1.000	.795
Increase_deposits_growth	1.000	.749
Decrease_deposits_growth	1.000	.438

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.779	61.629	61.629	6.779	61.629	61.629
2	1.845	16.768	78.397	1.845	16.768	78.397
3	.716	6.512	84.909			
4	.660	6.004	90.913			
5	.410	3.727	94.641			
6	.252	2.289	96.929			
7	.160	1.452	98.382			
8	.072	.658	99.039			
9	.051	.463	99.503			
10	.043	.388	99.890			
11	.012	.110	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Increase_aggregate_loan	.898	.101
Increase_loan_growth	.572	.658
Increase_Working_Capital_Loans	.894	.317
Increase_Investment_Loans	.931	.256
Increase_Consumptive_Loans	.746	.027
Decrease_aggregate_loan	.772	-.597
Decrease_Working_Capital_Loans	.815	-.496
Decrease_Investment_Loans	.718	-.547
Decrease_Consumptive_Loans	.856	-.251
Increase_deposits_growth	.715	.487
Decrease_deposits_growth	.635	.185

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Loan and Deposit Growth Variables, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	160.945
	df	21
	Sig.	.000

Anti-image Matrices

		Increase_ aggregate _loan	Increase Working Capital Loans	Increase Consumptive Loans	Decrease aggregate loan	Decrease Working Capital Loans	Decrease Investment Loans	Decrease Consumptive Loans
Anti-image Covariance	Increase_aggregate_loan	.198	-.068	-.063	.018	.029	-.072	-.076
	Increase_Working_Capital_Loans	-.068	.201	-.138	.032	-.007	.008	-.065
	Increase_Consumptive_Loans	-.063	-.138	.290	-.036	-.045	.033	.109
	Decrease_aggregate_loan	.018	.032	-.036	.078	-.049	-.071	-.040
	Decrease_Working_Capital_Loans	.029	-.007	-.045	-.049	.108	-.014	-.036
	Decrease_Investment_Loans	-.072	.008	.033	-.071	-.014	.195	.046
	Decrease_Consumptive_Loans	-.076	-.065	.109	-.040	-.036	.046	.126
Anti-image Correlation	Increase_aggregate_loan	.822a	-.343	-.260	.145	.195	-.367	-.480
	Increase_Working_Capital_Loans	-.343	.780a	-.571	.256	-.048	.040	-.406
	Increase_Consumptive_Loans	-.260	-.571	.694a	-.237	-.253	.139	.572
	Decrease_aggregate_loan	.145	.256	-.237	.775a	-.532	-.574	-.399
	Decrease_Working_Capital_Loans	.195	-.048	-.253	-.532	.868a	-.097	-.309
	Decrease_Investment_Loans	-.367	.040	.139	-.574	-.097	.822a	.294
	Decrease_Consumptive_Loans	-.480	-.406	.572	-.399	-.309	.294	.742a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_aggregate_loan	1.000	.733
Increase_Working_Capital_Loans	1.000	.619
Increase_Consumptive_Loans	1.000	.525
Decrease_aggregate_loan	1.000	.800
Decrease_Working_Capital_Loans	1.000	.830
Decrease_Investment_Loans	1.000	.696
Decrease_Consumptive_Loans	1.000	.793

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.995	71.355	71.355	4.995	71.355	71.355
2	.991	14.156	85.511			
3	.510	7.287	92.798			
4	.252	3.596	96.394			
5	.131	1.869	98.263			
6	.071	1.012	99.275			
7	.051	.725	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_aggregate_loan	.856
Increase_Working_Capital_Loans	.786
Increase_Consumptive_Loans	.724
Decrease_aggregate_loan	.894
Decrease_Working_Capital_Loans	.911
Decrease_Investment_Loans	.834
Decrease_Consumptive_Loans	.891

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Financial Ratio Variables

All Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.745
Bartlett's Test of Sphericity	Approx. Chi-Square	129.590
	df	36
	Sig.	.000

Anti-image Matrices

		Increase_LDR	Worsen_NPL	Worsen_assets_quality	Decrease_capital	Decrease liquid assets	Decrease profitability	Closing small banks	Closing_medium_banks	War deposits rate
Anti-image Covariance	Increase_LDR	.200	-.090	.041	-.108	.025	-.050	.005	.039	-.002
	Worsen_NPL	-.090	.158	-.107	.108	-.030	-.056	.070	-.025	-.062
	Worsen_assets_quality	.041	-.107	.177	-.090	-.079	.040	-.082	-.012	.038
	Decrease_capital	-.108	.108	-.090	.194	.018	-.098	.064	-.027	-.084
	Decrease_liquid_assets	.025	-.030	-.079	.018	.339	-.069	.048	.023	-.114
	Decrease_profitability	-.050	-.056	.040	-.098	-.069	.233	-.090	.017	.070
	Closing_small_banks	.005	.070	-.082	.064	.048	-.090	.325	-.205	-.055
	Closing_medium_banks	.039	-.025	-.012	-.027	.023	.017	-.205	.332	-.094
	War_deposits_rate	-.002	-.062	.038	-.084	-.114	.070	-.055	-.094	.394
Anti-image Correlation	Increase_LDR	.783a	-.506	.218	-.548	.095	-.233	.019	.152	-.007
	Worsen_NPL	-.506	.668a	-.641	.617	-.129	-.294	.307	-.108	-.249
	Worsen_assets_quality	.218	-.641	.756a	-.486	-.321	.196	-.342	-.049	.144
	Decrease_capital	-.548	.617	-.486	.635a	.071	-.460	.257	-.105	-.305
	Decrease_liquid_assets	.095	-.129	-.321	.071	.886a	-.244	.146	.070	-.313
	Decrease_profitability	-.233	-.294	.196	-.460	-.244	.816a	-.327	.062	.230
	Closing_small_banks	.019	.307	-.342	.257	.146	-.327	.578a	-.624	-.153
	Closing_medium_banks	.152	-.108	-.049	-.105	.070	.062	-.624	.732a	-.259
	War_deposits_rate	-.007	-.249	.144	-.305	-.313	.230	-.153	-.259	.845a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_LDR	1.000	.825
Worsen_NPL	1.000	.711
Worsen_assets_quality	1.000	.789
Decrease_capital	1.000	.652
Decrease_liquid_assets	1.000	.658
Decrease_profitability	1.000	.760
Closing_small_banks	1.000	.829
Closing_medium_banks	1.000	.865
War_deposits_rate	1.000	.656

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.044	56.042	56.042	5.044	56.042	56.042
2	1.700	18.889	74.931	1.700	18.889	74.931
3	.798	8.865	83.796			
4	.457	5.077	88.873			
5	.320	3.554	92.427			
6	.258	2.863	95.290			
7	.208	2.315	97.605			
8	.150	1.669	99.274			
9	.065	.726	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Increase_LDR	.776	-.472
Worsen_NPL	.825	-.171
Worsen_assets_quality	.884	.089
Decrease_capital	.761	-.269
Decrease_liquid_assets	.803	-.110
Decrease_profitability	.834	-.254
Closing_small_banks	.437	.799
Closing_medium_banks	.518	.772
War_deposits_rate	.774	.239

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.783
Bartlett's Test of Sphericity	Approx. Chi-Square	103.726
	df	21
	Sig.	.000

Anti-image Matrices

		Increase_LDR	Worsen_NPL	Worsen_assets_quality	Decrease_capital	Decrease liquid assets	Decrease profitability	War deposits rate
Anti-image Covariance	Increase_LDR	.209	-.111	.075	-.126	.014	-.050	.035
	Worsen_NPL	-.111	.176	-.121	.112	-.054	-.043	-.056
	Worsen_assets_quality	.075	-.121	.230	-.097	-.069	.007	-.027
	Decrease_capital	-.126	.112	-.097	.209	.006	-.097	-.090
	Decrease_liquid_assets	.014	-.054	-.069	.006	.362	-.055	-.100
	Decrease_profitability	-.050	-.043	.007	-.097	-.055	.272	.045
	War_deposits_rate	.035	-.056	-.027	-.090	-.100	.045	.511
Anti-image Correlation	Increase_LDR	.739a	-.578	.344	-.603	.051	-.208	.107
	Worsen_NPL	-.578	.688a	-.603	.583	-.214	-.198	-.185
	Worsen_assets_quality	.344	-.603	.779a	-.443	-.238	.028	-.079
	Decrease_capital	-.603	.583	-.443	.657a	.020	-.407	-.277
	Decrease_liquid_assets	.051	-.214	-.238	.020	.925a	-.177	-.232
	Decrease_profitability	-.208	-.198	.028	-.407	-.177	.898a	.120
	War_deposits_rate	.107	-.185	-.079	-.277	-.232	.120	.901a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_LDR	1.000	.699
Worsen_NPL	1.000	.719
Worsen_assets_quality	1.000	.742
Decrease_capital	1.000	.619
Decrease_liquid_assets	1.000	.672
Decrease_profitability	1.000	.733
War_deposits_rate	1.000	.536

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.721	67.437	67.437	4.721	67.437	67.437
2	.879	12.551	79.988			
3	.528	7.549	87.536			
4	.318	4.542	92.079			
5	.277	3.952	96.031			
6	.201	2.871	98.902			
7	.077	1.098	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_LDR	.836
Worsen_NPL	.848
Worsen_assets_quality	.861
Decrease_capital	.787
Decrease_liquid_assets	.820
Decrease_profitability	.856
War_deposits_rate	.732

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

POLICIES/ACTION INDICATORS

Leading Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.734
Bartlett's Test of Sphericity	Approx. Chi-Square	99.308
	df	10
	Sig.	.000

Anti-image Matrices

		Increase placement centralbank	Reduce interbank exposures	Reduce foreignexchange exposures	Reduce loans expansion	Increase deposit rates
Anti-image Covariance	Increase_placement_centralbank	.298	-.070	-.042	-.150	.138
	Reduce_interbank_exposures	-.070	.101	-.072	.041	-.060
	Reduce_foreignexchange_exposures	-.042	-.072	.118	.003	-.035
	Reduce_loans_expansion	-.150	.041	.003	.420	-.178
	Increase_deposit_rates	.138	-.060	-.035	-.178	.220
Anti-image Correlation	Increase_placement_centralbank	.693a	-.405	-.223	-.425	.540
	Reduce_interbank_exposures	-.405	.746a	-.657	.200	-.405
	Reduce_foreignexchange_exposures	-.223	-.657	.815a	.013	-.218
	Reduce_loans_expansion	-.425	.200	.013	.715a	-.586
	Increase_deposit_rates	.540	-.405	-.218	-.586	.683a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_placement_centralbank	1.000	.630
Reduce_interbank_exposures	1.000	.889
Reduce_foreignexchange_exposures	1.000	.884
Reduce_loans_expansion	1.000	.591
Increase_deposit_rates	1.000	.720

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.714	74.289	74.289	3.714	74.289	74.289
2	.651	13.025	87.314			
3	.460	9.197	96.511			
4	.110	2.204	98.716			
5	.064	1.284	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_placement_centralbank	.794
Reduce_interbank_exposures	.943
Reduce_foreignexchange_exposures	.940
Reduce_loans_expansion	.769
Increase_deposit_rates	.849

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Coincident Indicators, Final Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.768
Bartlett's Test of Sphericity	Approx. Chi-Square	189.892
	df	10
	Sig.	.000

Anti-image Matrices						
		Increase placement centralbank	Reduce interbank exposures	Reduce foreignexchange exposures	Reduce loans expansion	Increase deposit rates
Anti-image Covariance	Increase_placement_BI	.029	.000	-.036	.010	-.031
	Reduce_interbank_exposures2	.000	.087	0,09	-.053	-.010
	Reduce_foreignexchange_exposures2	-.036	0,09	.065	-.023	.033
	Reduce_loans_expansion2	.010	-.053	-.023	.068	-.020
	Increase_deposit_rates2	-.031	-.010	.033	-.020	.052
Anti-image Correlation	Increase_placement_BI	.706a	-.002	-.837	.228	-.799
	Reduce_interbank_exposures2	-.002	.865a	.001	-.689	-.141
	Reduce_foreignexchange_exposures2	-.837	.001	.732a	-.345	.562
	Reduce_loans_expansion2	.228	-.689	-.345	.811a	-.342
	Increase_deposit_rates2	-.799	-.141	.562	-.342	.750a

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Increase_placement_BI	1.000	.943
Reduce_interbank_exposures2	1.000	.906
Reduce_foreignexchange_exposures2	1.000	.889
Reduce_loans_expansion2	1.000	.928
Increase_deposit_rates2	1.000	.929

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.595	91.894	91.894	4.595	91.894	91.894
2	.220	4.405	96.299			
3	.122	2.437	98.735			
4	.047	.936	99.671			
5	.016	.329	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Increase_placement_BI	.971
Reduce_interbank_exposures2	.952
Reduce_foreignexchange_exposures2	.943
Reduce_loans_expansion2	.964
Increase_deposit_rates2	.964

Extraction Method: Principal Component Analysis.

a. 1 component extracted.

Appendix D. Questionnaire

Questionnaire

ANTICIPATING BANKING LIQUIDITY CRISIS: A SURVEY OF INDONESIAN BANKERS

A banking crisis can be very damaging to a nation's economy. Generally, this phenomenon occurs suddenly and may trigger high economic and public costs. Theoretically, a banking crisis may be initiated by a liquidity drought in the banking system, which can lead to reduced public confidence in the banks and ultimately bank runs. Thus, a good knowledge and understanding of the nature and character of a liquidity crisis can provide significant benefits for the economy and the banking industry.

The purpose of this questionnaire is to gather information about bank executives' perceptions of and responses to a liquidity crisis in the industry. These perceptionsand responses will cover the conditions **before**, **during**, and **after** the banking liquidity crisis. Some questions that will be answered by this research include:

a. What is a banking liquidity crisis? Can it be anticipated?
b. What are the macroeconomic/financial markets/banking indicators which the banker executives always watch to anticipate liquidity crisis in banking industry?
c. What are the banker executives' responses if there is any shock on the economic/financial markets/banking indicators? Is there any herding phenomenon in banking industry?
d. What are the expectations of the banker executives to the banking regulators and government to anticipate a liquidity crisis in banking industry?

This research is conducted with the funding support from Support for Economic Analysis Development in Indonesia (SEADI). The results of this study are expected to provide insights into the how liquidity crises can be anticipated and mitigated, benefiting a safer and more stable banking industry in Indonesia.

Jakarta, ... June 2012

Salusra Satria

Disclaimer:
Names and data in this questionnaire will be kept confidential and used only for the purpose of this research

I. Personal Identity

Bank Name	:	.....
Respondent's Name	:	.....
Tenure in the banking industry	:	..... years
Phone Number	:	.....
Last Education Degree	:	□ S1 □S2 □S3
Position in the Bank	:	.....

II. Definition of Liquidity Crisis

In your opinion, what are the characteristics of a liquidity crisis in a banking industry? Please circle for suitable characteristics.

#	Characteristics	Statement
1	A condition in which it is difficult for most of the banks to obtain deposits or to retain deposits, and several (weak) banks there are significant deposits withdrawals.	Agree / Disagree
2	A condition in which there is significant pressure in the interbank market and increasing overnight rates.	Agree / Disagree
3	Other (if any), please explain.	

III. Indicators of Liquidity Crisis

1. Which indicators do you closely monitor when a liquidity crisis is forthcoming? Please state the indicators' characteristics and importance (as a signal).

#	Indicators	Characteristic and Importance*	Threshold
I	**Macroeconomic Indicators**		
I.1	Inflation (% YoY last month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	>10% 8%-10% <8% Others ...
I.2	Economic growth (% YoY last quarter)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<4% 4%-7% >7% Others ...
I.3	Decrease in foreign reserves (% within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<5% 5%-8% >8% Others ...
I.4	Rupiah appreciation (% within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant	5%-10%

		Very important / Important / Indifference / Not Important	10%-20% >20% Others ...
I.5	Rupiah depreciation (%within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	5%-10% 10%-20% >20% Others ...
I.6	Current account deficit (% PDB)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<0.5% 0.5%-1.0% >1.0% Others ...
I.7	Increase in foreign debt (% PDB)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-50% >50% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
I.8	Increase in fiscal deficit (% PDB)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
I.9	Increase in government bond (%PDB)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	30%< 30%-60% >60% Others ...
I.10	Decline in developed countries' (G3) economy, growth of the 2 last quarters	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	-3.0%> -3.0% s/d -1% -1%< Others ...
I.11	Decline in ASEAN+3 (China, Japan, and Korea) economy, growth of the 2 last quarters	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	-3.0%> -3.0% s/d -1% -1%< Others ...
I.12	Sharp increase of oil price (% within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<20% 20%-40% >40% Others ...
I.13	Increase of BI rate	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<0.5% 0.5%-1.0% >1.0% Others ...
I.14	Decrease of BI rate	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<0.5% 0.5%-1.0% >1.0% Others ...
I.15	Increase of money supply (% within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<20% 20%-30% >30% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
I.16	Foreign trade (export and import) getting slower (%trade balance's surplus in a month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<20% 20%-30% >30% Others ...
II	**Financial Market Indicators**		
II.1	Decrease of Composite Stock Index Penurunan (% within 2 weeks)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<5% 5%-10% >10% Others ...
II.2	Decline of financial sector stocks prices	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<5% 5%-10% >10% Others ...
II.3	Increase of interbank rate (% within 2 weeks)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<1% 1%-2% >2% Others ...
II.4	Decrease of foreign investors' risk appetite (%portfolio position within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<20% 20%-50% >50% Others ...
II.5	Increase of CDS spread (% within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<10% 10%-30% >30% Others ...
II.6	Increase of government bonds' yield (% within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<1% 1%-2% >2% Others ...
II.7	Decrease of interbank volume	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<20% 20%-50% >50% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
III	**Banking Indicators**		
III.1	Increase of aggregate loan growth (%YoY within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.2	Increase of loan growth (%YoY within 1-3 last months):	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	a. Working Capital Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	b. Investment Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	c. Consumptive Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.3	Increase of loan growth (%YoY within 1-3 last months):		
	a. Farming	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	b. Manufacturing	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
	c. Mining	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	d. Telecommunication	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	e. Property and Construction	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	f. Trading	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	g. Financial	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	h. Services	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	i. Others	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.4	Decrease of aggregate loan growth (%YoY within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
III.5	Decrease of loan growth (%YoY within 1-3 last months):		
	a. Working Capital Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	b. Investment Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	c. Consumptive Loans	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.6	Decrease of loan growth (%YoY within 1-3 last months):		
	a. Farming	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	b. Manufacturing	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	c. Mining	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	d. Telecommunication	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
	e. Property and Construction	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	f. Trading	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	g. Financial	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	h. Services	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
	i. Others	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.7	Increase of deposits growth (%YoY within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<30% 30%-40% >40% Others ...
III.8	Decrease of deposits growth (%YoY within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<0% 0%-10% >10% Others ...
III.9	Increase of Loan-to-Deposit Ratio (ratio within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<100% 100%-120% >120% Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
III.10	Worsen of non performing loans (gross NPL within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	3%-5% 5%-8% 8-10% Others ...
III.11	Worsen of overall productive assets quality (within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	8%-10% 10%-20% >20% Others ...
III.12	Decrease of bank capital (CAR within 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<8% 8%-12% 12-18% Others ...
III.13	Decrease of liquid assets (current ratio 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	>10% 10%-20% 20-30% Others ...
III.14	Decrease of profitability (ROA 1-3 last months)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<0% 0%-1% 1-2% Others ...
III.15	Decrease of banking efficiency	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
III.16	Closing of small banks (total assets ≤ IDR10 trillions)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<3 3-5 >5 Others ...
III.17	Closing of medium banks (total assets between IDR10-25 trillions)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<1 1-2 >2 Others ...

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

#	Indicators	Characteristic and Importance*	Threshold
III.18	War of deposits rate (difference between JIBOR and time deposit rate 1 month, %, within 1 month)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	<1% 1%-2% >2% Others ...
IV	**Rumors**		
IV.1	Rumors about bank closing	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
IV.2	Rumors about central bank policies	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
IV.3	Financial market rumors	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
IV.4	External rumors (foreign countries)	Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
		Leading / Coincident / Lagging / Irrelevant Very important / Important / Indifference / Not Important	
V	**Other Indicators (if any)**		
V.1	.....		
V.2	.....		
V.3	.....		

Notes:

***Indicators' characteristics** (give a circle):

a. *Leading* if the indicator can detect a liquidity crisis 6-12 months before.
b. *Coincident* if the indicator changes (becomes worse) concurrent with a liquidity crisis (T +/- 3 months).
c. *Lagging* if the indicator changes after a liquidity crisis (T+6 months)
d. *Irrelevant* if the indicator does not have any correlation to a liquidity crisis

Every indicators can only has one characteristic.

****Indicators' importance:** give a circle according to the importance of each indicator with the following scale: **Very important; Important; Indifference; or Not Important.**

*****Indicators' threshold:** circle the most suitable threshold value for each of the indicator to indicate a liquidity crisis. If you have another opinion different from the options, please insert your own threshold value.

2. Does your bank have a special operational unit dedicated to monitor the leading indicators and coincident indicators of a banking liquidity crisis?

Yes	No

if your answer is “Yes” then please mention the name and explain the brief job description of the unit:

.....
.....
.....
.....

IV. Bank’s Policies Regarding Liquidity Crisis

3. Please explain how you use the leading indicators as an early warning signal for a banking liquidity crisis.
   a. At least there is one leading indicator showing certain value at predetermined threshold
   b. As a composite index with certain weights on each of its components, and the composite index showing certain level at predetermined threshold
   c. Others (if any), please explain:

4. What policies were conducted by your bank forthcoming a liquidity crisis? A situation where a liquidity crisis forthcoming is when (group) leading indicators that are watched closely pass certain thresholds (please rank your answer based on priority)

#	Policies/Actions	Priority Scale*				Measures			
1	Conducting benchmark to other banks policies/actions, especially big banks	Very important	Important	Indifference	Not Important	Please explain,...			
2	Closely watch other banks' financial conditions	Very important	Important	Indifference	Not Important	Please explain,...			
3	Increase placement to central bank (BI)	Very important	Important	Indifference	Not Important	<10%	10%-20%	20%	Others, ...
4	Reduce interbank exposures	Very important	Important	Indifference	Not Important	<20%	20%-50%	>50%	Others, ...
5	Reduce foreign exchange exposures	Very important	Important	Indifference	Not Important	<20%	20%-50%	>50%	Others, ...
6	Reduce loans expansion	Very important	Important	Indifference	Not Important	<20%	20%-50%	>50%	Others, ...
7	Increase deposit rates, especially time deposits	Very important	Important	Indifference	Not Important	<1%	1%-3%	>3%	Others, ...
8	Intensify public communication	Very important	Important	Indifference	Not Important	Please explain,...			
9	Intensify communication and consultation to bank regulator (BI)	Very important	Important	Indifference	Not Important	Please explain,...			
10	Others, please explain	Very important	Important	Indifference	Not Important	Please explain,...			

Notes:
* Please give a circle according to the importance of each indicator with likert scale: **Very Important, Important, Indifference, and Not Important.**

5. Please explain how you use the concident indicators as an early warning signal for a banking liquidity crisis.
   a. There is at least one coincident indicator showing certain value at predetermined threshold
   b. As a composite index with certain weights on each of its components, with the composite index showing certain level at predetermined threshold
   c. Others (if any), please explain:

6. What policies were pursued by your bank in the middle of a liquidity crisis? For purposes of this question, a liquidity crisis exists when (group) coincident indicators that are monitored closely exceed certain thresholds*

#	Policies/Actions	Priority Scale*				Measures			
1	Conducting benchmark to other banks policies/actions, especially big banks	Very important	Important	Indifference	Not Important	Please explain,...			
2	Closely watch other banks' financial conditions	Very important	Important	Indifference	Not Important	Please explain,...			
3	Increase placement to central bank (BI)	Very important	Important	Indifference	Not Important	<30%	30% - 50%	>50%	Others, ...
4	Reduce interbank exposures	Very important	Important	Indifference	Not Important	<40%	40% - 70%	>70%	Others, ...
5	Reduce foreign exchange exposures	Very important	Important	Indifference	Not Important	<40%	40% - 70%	>70%	Others, ...
6	Reduce loans expansion	Very important	Important	Indifference	Not Important	<40%	40% - 70%	>70%	Others, ...
7	Increase deposit rates, especially time deposits	Very important	Important	Indifference	Not Important	<1%	1%-3%	>3%	Others, ...
8	Intensify public communication	Very important	Important	Indifference	Not Important	Please explain,...			
9	Intensify communication and consultation to bank regulator (BI)	Very important	Important	Indifference	Not Important	Please explain,...			
10	Others (if any), please explain	Very important	Important	Indifference	Not Important	Please explain,...			

Notes:

* Please give a circle according to the importance of each indicator with likert scale: **Very Important, Important, Indifference, and Not Important.**

7. What are your expectations for government/bank regulator (BI) actions regarding a liquidity crisis?*

#	Policies Expected	Priority Scale*				Brief Explanation
I.	**Crisis Anticipation**					
I.1	Prudential macroeconomic management	Very important	Important	Indifference	Not Important	
I.2	Establishment of bank soundness regulation	Very important	Important	Indifference	Not Important	
I.3	Limitation of bank activities	Very important	Important	Indifference	Not Important	
I.4	Transparation	Very important	Important	Indifference	Not Important	
I.5	Others,.....					
II.	**Crisis Mitigation**					
II.1	Reducing policy rate (monetary expansion)	Very important	Important	Indifference	Not Important	
II.2	Foreign exchange reserves traffic controlling	Very important	Important	Indifference	Not Important	
II.3	Conducting role as the Lender of the Last Resort	Very important	Important	Indifference	Not Important	
II.4	Increase maximum coverage level	Very important	Important	Indifference	Not Important	
II.5	Loosen of liquidity/solvability regulation	Very important	Important	Indifference	Not Important	
II.6	Foreign exchange market intervention	Very important	Important	Indifference	Not Important	
II.7	Bailing out banks	Very important	Important	Indifference	Not Important	
II.8	Fiscal stimuli	Very important	Important	Indifference	Not Important	
II.9	*Moral Suation*	Very important	Important	Indifference	Not Important	
II.10	Others...					

Notes:
* Please give a circle according to the importance of each indicator with likert scale: **Very Important, Important, Indifference, and Not Important.**

8. Please briefly explain about your comment regarding crisis handling and mitigation actions of the government/bank regulator (BI), especially during the most recent crisis.

****

Thank you for your kind participation to fill this questionnaire.
May God bless you with joyful and success always.