



Effect of Macroeconomic Factors on Credit Risk of Banks in Developed and Developing Countries: Dynamic Panel Method

Azar Ghyasi*

Department of Financial Mathematic, Allameh Tabatae'i University, Iran. *Email: azarghyasi@atu.ac.ir

ABSTRACT

Globalization phenomenon provided a suitable environment with new opportunities for investment in various countries. In this way, the issue of credit risk of countries and rankings of international ranking institutions has become more important. Owing to the fact that using values and numbers and quantization of the measured variables in evaluation of the risk of countries is considered as an appropriate tool for analysis of the economic status of each country. In this paper, it is tried to explore the economic conditions and the effect of macroeconomic variables on the credit risk of developed and developing countries. The model presented in this work can help managers of countries in economic and financial decisions of countries to prevent increase in credit risk and improvement of the credit. For this end, 14 countries in developed and developing countries were selected (developing: Iran, Brazil, Turkey, South Africa, china, Russia and India, developed countries: USA, GBK, Germany, France, Japan, Canada, Switzerland). Results of research revealed that credit risk of the past with regression coefficient as much as 1.174 has the highest contribution to the credit risk of the current period. Furthermore, results implied to the positive and significant effect of development on credit risk of countries.

Keywords: Credit Risk, Developed and Developing Countries, Panel Model

JEL Classifications: G, G2, G21

1. INTRODUCTION

Appropriate relationship between financial and productive systems of each country is one of the most important factors of growth and economic development of that country. As the main part of the financial system, banks play a pivotal role in supplying production, commerce, consumption and even public sectors (Barzani, 2013). In Iran as well, according to the economic structure of the country as well as reasons such as lack of development of capital market and other non-bank and contractual networks, banking system of the country is responsible financing the actual parts of the economy. Unfortunately, this part has not been victorious in its missions. Currently, permanence of the activities and survival of most of the banks is due to supports of the government (Arab Mazar, 2006).

In a market where interest margin of banks is decreasing by intensified competition and pressure for reduction of expenses is always being felt, models of credit risk with the ability of forecasting losses of default of loans will make a relative advantage for banks and financial institutions (Gilak Hakim Abadi, 2010).

Globalization phenomenon on the other hand, provided a suitable environment with new opportunities for investment in various countries. In this way, the issue of credit risk of countries and rankings of international ranking institutions has become more important (jakubik, 2007). Due to the fact that using values and numbers and quantization of the measured variables in evaluation of the risk of countries is considered as an appropriate tool for analysis of the economic status of each country, ranking institutions tried to put the economic and social status of their intended subjects in numbers and classifications and facilitate usage of the extensive set of information and numbers through presenting score and rank for each country. Results of these rankings may affect the economic status of countries from various aspects:

- This ranking influences the interest rates based on which international money markets are ready to give loan to countries.
- Credit ranking of countries is the basis of credit ranking of businesses and companies of the country.
- In certain cases, crediting organizations will not give loan to countries with credit risk exceeding a certain limit.

According to above, in this paper, a model is presented which can help managers of a country for taking macroeconomic and financial decisions so that it can prevent increase in credit risk and help improvement of the credit. In this way, this research attempts to achieve two goals; investigation of the effect of macroeconomic factors on credit risk of banks in developed and developing countries and the contribution of the development of a country to the credit risk of banks.

2. THEORETICAL BACKGROUND

Many countries faced economic crisis in two recent decades and consequently, considerable number of active institutions of these countries were forced to halt their activities and or change their structures (jimenez, 2006). Studies of the World Bank shows that the occurrence of these crises led to loss of a significant part of the financial resources of the countries. Aforesaid crises highlight the necessity of finding the relationship between economic conditions and health of the banking system since during crisis, level of noncurrent receivables increased considerably and a significant portion of the bank resources are lost. Explanation of the above relationship during financial crisis is of more importance and leads to recognition of the banking system resistance particularly from default point of view at the time of banking crises. In addition to what stated above, it must be kept in mind that one of the most important challenges encountered by national banking system in recent years has been the growing trend of deferred loans. This matter has become a national challenge owing to the bank-direction of money market of the country and benefit of banks from major part of cash flow. At present (ziribi, 2011), banks face the problem of confined resources as a result of deferred loans and because of the growing trend of defers in loans, ability of banks for crediting and finally (kattari, 2010), making income from it is constantly reducing. This is while the ratio of deferred loans to facilities in some of banks increased to several times of the acceptable limit. According to what stated above, it is clear that recognition and investigation of the factors contributing to the credit risk of banks and credit institutions is of great importance since it can prevent the loss of default and consequently, banking crisis. In this context, literature review is performed.

In a research entitled “model of credit risk for loan payback for credit customers of banks,” Kimia Gari et al. (2012) used logistic regression for a sample of 31 companies which received credit facilities from Bank Melli of Shahreza during 2007-2011. For this purpose, 28 variables which were significant in banking system and after separation of qualitative and quantitative ones. 15 main variables were selected and data were analyzed by SPSS and results of the relationship between customers and payback were presented.

Ashraf Ahmadian (2012) conducted a research entitled “management of credit risk, challenge of finance in Iranian banking system” for providing a model for filling gaps between banking system and private sector for financing.

Armashi (2011) accomplished an MSc thesis to study the relationship between credit risk of customers and some financial

and demographic variables. After estimation of the model, following results were obtained. Factors including sex, income level, residence type, age and employment status of the customers contribute to the default of facilities. However, income level has a negative effect and size of the loan and payback duration are not effective in the study case.

Castro (2013) conducted a research entitled “macroeconomic factors of credit risk in banking system: GIPSI case.” In this study, the relationship between advances of macroeconomics in Greece, Ireland, Portugal, Spain and Italy which were affected by unsuitable financial and economic conditions is studied. Results of this work illustrated that all political standards which can be implemented for development of growth, employment, productivity and competition and to reduce public and foreign debts in these countries are necessary for making stability of their economy.

Da Silva and Divino (2013) performed a study in Brazil entitled “role of banking regulations in an economy under credit risk and cash shock.” Their results suggested that credit risk is periodic and default risk depends upon structural characteristics. Therefore, banking policy makers can reduce fluctuations in outcome through setting policies for promotion of financial stability and efficiency.

Study of Paulo et al. (2012) entitled “evaluation of credit risk and the effect of Basel new capital treaty on small and moderate companies: Empirical analysis” showed that non-default risk in coming year is the function of profitability, cash, coverage and activity as well as reduction of leverage function. Smaller companies and those who have only one banking relationship will have probability higher default risk. Findings imply that a main bank is very motivated for implementation of policies to reduce risks through increase in a margin which we very high before.

Mandala et al. (2012) presented a paper entitled “evaluation of credit risk: Application of data mining in a rural bank” to introduce a decision tree for evaluation of credit risk in Bali using data mining. Presented model provided a new criterion for analysis of the utility of loan. Results illustrated that if this model is used, bank can reduce inefficient loans up to 5% and bank in turn can be classified as an efficient bank.

Factors contributing to the credit risk of bank customers (case study: Agriculture bank) was the work of Arab Mazar to discover factors influencing the credit risk of legal customers of Iranian agriculture bank using logit regression method. For this purpose, financial and qualitative information of a random sample including 200 companies which received facilities from this bank during 1999-2004 were investigated. In this research, after evaluation of credit documents of each of the samples, 36 explaining qualitative and quantitative variables were first studied. Finally, from the variables, 17 effective factors were recognized.

Model of ranking of the credit risk in developing countries using the analysis of independent variables conducted by Gilak Hakim Abadi revealed that the effect of constant ratio of national gross capital to gross domestic product (GDP) on risk rank of

countries is positive. It shows the higher capability of countries in accomplishing financial obligations. Moreover, ratio of overall foreign debts to exportation of products and services negatively affects the credit risk of studied countries including Iran.

Determination of the effect of country’s credit risk ranking on international capital mobility in Iran published by Barzani uses Fink ranking model to obtain country’s credit risk in such a way that by recognizing factors contributing to the credit risk, each of them can be estimated separately and finally, credit risk of the country is estimated. Then, final model explores the effect of this variable on net international capital in Iran using time series data and the method of mean squares. Eventually, it was concluded that all noted variables contribute to the net mobility of the international capital.

Based on what introduced above, model of this research will be as follows:

$$CredRisk_{it} = \alpha + \sum_{j=1}^J \gamma_j CredRisk_{i,t-j} + x'_{it} \beta + \eta_i + \varepsilon_{it}$$

In above formula, i stands for the country and t represents time. Vector x includes all explanatory variables such as GDP , currency exchange rate, interest rate, inflation, government debt among others, β is the vector of coefficients, η_i is the unobserved effects of each period and ε_{it} is the component of interruption.

Analysis of data for confirmation of hypotheses of research is very important and today, in most of the researches which have based on data collected from the subject of research, analysis of data is the main and the most important part of the research. Raw data are analyzed using statistical methods and are provided for users in the form of information. To investigate the relationship between variables, stability tests are used and then, using Limer tests, pulling and being panel are assessed and if the data are panel, using Hausmann test, it is determined that whether the pattern of data is positive or not. Finally, using dynamic panel regression, model of research is estimated. It must be noted that for this purpose, Arlano and Bond methods are used.

3. RESULTS

3.1. Stability Test

Analysis of the time series is performed by assuming that the series are stable. Stability of a time series means that mean and variance of it are constant by time and the value of covariance in a time period depends only upon the distance or the gap between two periods and is not related to the actual time of calculation of the covariance (baltagi, 2008). If time series is unstable, validity of the statistical tests based on these series is doubted and also, in these situations, spurious regression problem arises. That is, while t-values coefficients are high and no significant relationship is available between variables of the model, determination factor (R^2) is very high and brings about wrong interpretations about the relationship between variables. To overcome this problem, data must be made stable. Unit root test is one of the most popular tests which are used for recognizing the stability of the time

series process. To investigate the presence of a unit root in panel patterns, Levin, Lin and Chu, Im, Pesaran, Fisher for generalized Dickey-Fuller and Fisher for Philips-Prone tests are used. Fisher for generalized Dickey-Fuller and Fisher for Philips-Prone tests are used.

From the above tests, Levin, Lin and Chu (LLC) and Im, Pesaran and Shim (IPS) are investigated. LLC showed that in panel data, using unit root test for combination of data has more power and validity compared to test of unit root in every period. For clarification, AR(1) model is considered as follows (judson, 1999):

$$Y_{it} = \rho_i Y_{i,t-1} + B_{it} \delta_i + \varepsilon_{it}$$

$i=1, 2, \dots, N$ represents the periods, $t=1, 2, \dots, T$ is the time period, ρ_i is the autocorrelation factor of each period and B_{it} is time trend and ε_{it} is the term of interruption having normal distribution with zero mean and variance δ . It is assumed that this term is independent in each period from other periods. Based on the above model, if $|\rho_i| < 1$, Y_{it} is stable and if $|\rho_i| = 1$, Y_{it} has unit root and is unstable. Regarding ρ_i , two presumptions are available; first, ρ_i is the same for all countries; that is, $\rho_i = \rho$, LLC is defined based on this assumption (blundell, 1998).

Second, ρ_i is different for every country. IPS test is as follows:

$$\begin{cases} H_0 : \rho_i = 0 & i = 1, 2, \dots, N \\ H_1 : \begin{cases} \rho_i < 0 & i = 1, 2, \dots, N \\ \rho_i = 0 & i = N_1 + 1, N_1 + 2, \dots \end{cases} & 0 < N_1 < N \end{cases}$$

From the Table 1, unemployment rate is unstable since its significance level is more than 0.05. rest of the variables are significant in this level.

3.2. Dynamic Panel Model

For simplicity, following model is considered:

$$y_{it} = \delta y_{i,t-1} + u_{it} \tag{1}$$

$$i=1, \dots, N; t=1, \dots, T$$

where, $u_{it} = \mu_i + v_{it}$; $\mu_i \sim IID(0, \sigma_\mu^2)$; $v_{it} \sim IID(0, \sigma_v^2)$ and μ_i and v_{it} are independent. Moreover, there is independence among them. To estimate the constant value δ when $N \rightarrow \infty$ and T is constant, 1 is used for elimination of the sectional effects, first order differentiation is taken:

$$y_{it} - y_{i,t-1} = \delta(y_{i,t-1} - y_{i,t-2}) + (v_{it} - v_{i,t-1}) \tag{2}$$

It must be noted that $(v_{it} - v_{i,t-1})$ is same as $MA(1)$. For $t=3$, we have

$$y_{i3} - y_{i2} = \delta(y_{i2} - y_{i1}) + (v_{i3} - v_{i2})$$

Here, y_{i1} is an instrumental variable which is correlated to $y_{i2} - y_{i1}$ and not correlated to $v_{i3} - v_{i2}$. Now, for $t=4$, we have

$$\hat{\delta} = ([\Delta y_{-1}, \Delta X]' W \hat{V}_N^{-1} W' [\Delta y_{-1}, \Delta X])^{-1}$$

$$\hat{\beta} = ([\Delta y_{-1}, \Delta X]' W \hat{V}_N^{-1} W' [\Delta y_{-1}, \Delta X])^{-1} f \tag{9}$$

Arlano and Bond (1991) presented a test for lack of 2nd order serial correlation for distribution of first order difference equations. Importance of this test is that the stability of the GMM estimator coefficients relies upon $E[\Delta v_{it} \Delta v_{i,t-2}] = 0$. In addition, they are the case for Sargan test for excessive limitations by the following distribution:

$$m = \Delta \hat{v}' W \left[\sum_{i=1}^N W_i (\Delta \hat{v}_i) (\Delta \hat{v}_i)' W_i \right]^{-1} W' (\Delta \hat{v}) \sim \chi^2_{p-k-1}$$

Where, P is the number of columns of matrix W and $\Delta \hat{v}$ is the residual of the Arlano two-stage method.

Now that sufficient explanations are presented, all cumulative regression models, panel of constant effects and random effects and dynamic panel can be implemented.

3.2.1. First and second regression

According to Tables 2 and 3, all variables are significant and results confirm that fitted regression is valid since t and F value of all coefficients and overall regression are significant. Determination factor shows that regressions in average explain 99% of the

changes in credit risk of banks. Durbin-Watson statistic for first six models is about 2.1 which illustrates the lack of autocorrelation in presented models. Furthermore, test of unit root for residuals represents their stability.

It must be noted that the credit risk variable which is taken as dependent variable in fitted regression is the ratio of deferred loans of banks to their overall assets which varies between 0 and 0.2. Therefore, small values of the following coefficients in first glance may lead to confusion and used variables may seem unimportant while taking into account the above implication, the importance of the above cases will be found.

With respect to the estimated parameters, sign of the GDP of the previous period is negative which is consistent with theoretical basis. That is, by the growth of GDP in previous 4 years and increase of the resources held by banks, tendency toward receiving facilities for all economic sectors will be increased and banks consider providing facilities in a more competitive environment and ignore the standards and credit quality of the customers. On the other hand, by an optimism toward the future economic conditions, applicants receive facilities and if the trend is not continuous, they will fail to payback their debts.

Partial coefficient of regression means that by keeping all conditions unchanged, credit risk increases in average by 0.024 with 1% increase in GDP.

Table 2: First regression results

Variables	OLS		FE		RE		AB	
	-1	-2	-3	-4	-5	-6	-7	-8
CredRisk (-1)	1.410*** (-14.36)	1.402*** (-14.66)	1.303*** (-12.52)	1.370*** (-11.22)	0.967*** (-65.16)	0.957*** (-50.07)	1.136*** (-11.51)	1.156*** (-10.97)
CredRisk (-2)	-0.433*** (-4.52)	-0.426*** (-4.59)	-0.334*** (-2.90)	-0.406*** (-3.31)			-0.194* (-1.72)	-0.217** (-1.96)
GDP (-1)	-0.024** (-2.50)		-0.041*** (-3.82)		-0.056*** (-4.02)		-0.034*** (-2.62)	
ΔUR (-1)		0.180*** (-2.93)		0.185** (-2.5)		0.291*** (3.61)		0.174* (-1.92)
dummy	-0.138 (-2.1)	-0.180 (-2.96)	-0.149 (-2.11)	-0.179 (-2.43)	-0.244 (-3.16)	-0.266 (-3.62)	-0.258 (-3.09)	-0.281 (-3.47)
Number of obstruction	236	241	236	241	240	246	231	236
R ²	0.9912	0.9928	0.9909	0.9927	0.9892	0.9917		
SBIC	45.59	38.05	20.25	24.06				
F-test			4.99 [0.001]	2.08 [0.084]				
LM-test					75.74 [0.000]	4.11 [0.043]		
Hausman-test					33.59 [0.000]	3.1 [0.377]		
AR1-test							-1.91 [0.056]	-1.99 [0.047]
AR2-test							1.58 [0.115]	1.68 [0.092]
Sargan-test							206.75 [0.207]	202.32 [0.345]

*Significance in 99% level, **significance in 95% level, ***significance in 90% level

Table 3: Second regression results

Variables	OLS		FE		RE		AB	
	-1	-2	-3	-4	-5	-6	-7	-8
CredRisk (-1)	1.174*** (-12.28)	1.186*** (-11.45)	1.144*** (-8.76)	1.164*** (-7.26)	0.933*** (-6.93)	0.930*** (-6.7)	0.923*** (-49.86)	0.922*** (-46.04)
CredRisk (-2)	-0.166* (-1.78)	-0.176* (-1.73)	-0.157 (-1.26)	-0.176* (-1.70)	-0.008 (-0.07)	-0.007 (-0.05)		
GDP (-1)	-0.025*** (-2.98)		-0.027* (-1.86)		-0.016* (-1.73)		-0.026** (-2.24)	
ΔUR (-1)		0.089 (-1.58)		0.088** (-2.09)		0.075*** (-3.03)		0.076** (-2.49)
IR_lt (-1)	0.041 (-1.44)	0.041* (-1.69)	0.046 (-1.74)	0.049* (-1.95)	0.062*** (-2.99)	0.067*** (-2.84)	0.066*** (-2.99)	0.070*** (-2.89)
Cred_gr (-3)	0.031*** (-3.69)	0.024*** (-3.04)	0.028*** (-4.47)	0.025*** (-5.29)	0.020*** (-10.5)	0.019*** (-9.24)	0.020*** (-5.54)	0.019*** (-6.38)
Shares_ygr (-1)	-0.003*** (-4.16)	-0.003*** (-4.56)	-0.002*** (-3.34)	-0.003*** (-3.60)	-0.002*** (-2.95)	-0.002*** (-4.55)	-0.002** (-1.98)	-0.002*** (-2.68)
Inf	-0.028 (-0.52)	-0.028 (-0.44)	-0.028 (-1.20)	-0.029* (-1.93)	-0.029** (-2.53)	-0.030*** (-2.94)	-0.030*** (-2.64)	-0.030*** (-3.16)
REER (-1)	0.028*** (-5.95)	0.025*** (-5.27)	0.037** (-2.66)	0.045*** (-4.16)	0.067*** (-3.53)	0.073*** (-4.41)	0.066*** (-4.01)	0.071*** (-3.47)
Dummy	-0.225 (-3.32)	-0.245 (-3.93)	-0.196 (-3.37)	-0.271 (-4.98)	-0.291 (-3.18)	-0.428 (-3.26)	-0.308 (-2.46)	-0.397 (-3.75)
Number of obstruction	225	226	225	226	220	221	223	224
R ²	0.9927	0.9925	0.9923	0.9912				
SBIC	-6.00	-1.06	44.91	42.31				
F-test			1.53 [0.196]	2.09 [0.084]				
AR1-test					-2.09 [0.037]	-2.06 [0.039]	-1.86 [0.063]	-1.89 [0.058]
AR2-test					0.88 [0.378]	0.87 [0.383]	0.83 [0.406]	0.84 [0.400]
Sargan-test					203.34 [0.156]	202.43 [0.180]	212.19 [0.109]	210.41 [0.137]

* significance in 99% level, ** significance in 95% level, *** significance in 90% level

As expected, sign of the GDP variable is negative. Because customers are better able to payback their loans by improvement of the economic conditions, credit risk of banks decreases.

Sign of the variable final products and services importations is positive. Since the importations have unsuitable effect on producers and service providers, importation of products and services with lower price and better quality makes national producers unable to payback their debts. In recent years, portion of national production in products and services markets decreased and contribution of foreign products increased significantly. In other words, expansionary policies of the government for increase of the overall demand is met through increase in imports not in national production. This huge volume of imports has been made possible in the light of oil incomes. In this way, by limitation of currency incomes and compulsory limitation of imports together with 20-30% inflation, heavy economic shocks are not remote. Though extensive imports are the result of considerable oil incomes of the recent years, it must not be forgotten that increase in oil price has direct effects on the price of foreign products and industrialized countries compensate the loss of increase in their oil payments through increase in the price of their products and its pressure is imposed to consuming countries such as Iran.

Inflation rate of the earlier period is negatively related to the credit risk which was expected. Since increase in the price of assets is achieved by inflation, debtors prefer to payback their debts to take back their securities. Partial regression coefficient means that by

keeping all conditions unchanged, credit risk increases by 0.028 with 1% increase in inflation rate.

Growth of facilities in previous 5 years is positive as expected. By increase in growth of facilities and ignoring standards and credit quality of the applicants, in next periods, credit risk of banks increases. Partial coefficient of regression means that by keeping other conditions unchanged, credit risk increases by 1.174 for 1% increase in the credit risk of the previous period.

Credit risk of the previous period shows a positive relationship which illustrates the problems faced by banks in collection of their receivables. In addition, most of the deferred facilities of banks are given new deadline for payback.

4. CONCLUSION

This research intends to find the effect of macroeconomic variables on the rate of deferred loans of banks. For this purpose, effect of these variables on the value of deferred loans of banking system in various countries and their effects were confirmed. From the estimation of the combined data, it was concluded that GDP growth, GDP, credit risk of the previous period, unemployment, inflation, government debt and private sector debts contribute to the credit risk of the banks. By comparison of the coefficients of the model estimation, it can be said that credit risk of the previous period has highest contribution to the credit risk of banks.

In this research main issues are considered. However, it is recommended that in future works, following issues be taken into consideration:

Some of the functionalities of the banking system leads to failure in achieving goals of providing facilities, excessive increase in the volume of the deferred loans of most of the banks, problems in collecting loans, violation of banks' rights, non-standard utilization of banks' resources by influential people and preventing entrance of these resources to healthy fields of economy. Based on survey of inspection organization, inaccurate investigation of the plans before giving loans such as accurate calculation of the volume of investment until launching and supplying resources or lack of effective supervision over the implementation of plans and allocation of facilities to them and extension of the process of plans implementation are some of the reasons of increase in banks deferred loans.

Furthermore, disregarding regulations in contracts such as carelessness in taking sufficient as well as reliable and valid security instead of facilities and accepting cheque as security which is not a strong security for collecting loans and giving loan to customers with weak background in banking system are some of the reasons of the arisen problems.

Survey of the inspection organization about the deferred loans of the banks reveals that some of the banks collect their earlier loans by giving new loans to their debtors. This action is not only in contradiction with lucre-free banking operation, but also, since this action is only for collecting the earlier debts of the customers, it is not in line with the goals set for giving facilities and is for increase in the number of given loans in branches as a bonus for them, it leads to concealing of the performance and the accuracy of banks about given loans and carelessness in on-time collection of loans. Finally, it leads to overage of the actual loans of banks. According to above facts and obtained results, following recommendations are provided:

Making the statistics and information of the credit risk of active banks as a necessity which demands specific attention. Various models of the credit risk for ranking is not already used in a systematic and effective manner by banks. Investigation of various models of credit risk and trying to matching them with regulations and laws governing Iranian banking system is one of the requirements which must be taken into account.

Consideration of the macroeconomic conditions and prediction of the future periods in addition to the credit status of facilities applicants needs more attention when assessing them for giving loans.

Lack of an independent unit of credit risk for recognition, measurement and control of credit risk is one of the weaknesses of the banking system in Iran. Although risk unit is in work in many banks, it is not implemented effectively.

Volume of deferred loans of banks represents the presence of problems in evaluation of the credit of loans applicants.

Considering standards and guidelines of the committee for determination and calculation of the appropriate ratio of the capital sufficiency to accepted risks is another issue which must be used by active banks.

Providing instructions by monitoring organizations such as central bank regarding performance of risk units of banks and setting an integrated and effective method as well as monitoring the performance of risk units is another requirement for Iranian banking system.

To reduce deferred loans of banks, stability of the financial and monetary policies is of great significance. Moreover, avoiding imperative economy for reduction of the interest rate of facilities which results in rent in economy, independence of central bank for more control on cash flow and inflation rate leads to reduction or at least keeping deferred loans constant.

In addition, through control of the shocks to the real part of the economy (imports, currency exchange rate and so on) and considering appropriate economic policies can make reliable safety margin for economic businesses so that these businesses would not experience bankruptcy under the pressure of some policies such as increase in imports among others.

Since shocks to various parts of the economy has various effects on deferred loans, evaluation of shocks for different parts of the economy for public and private banks, separately can yield more accurate implications for deferred loans of each part of the economy.

Furthermore, it is suggested that in micro level, banks consider the trend of macroeconomic variables in technical and economic evaluation of the projects for giving loans so that in accordance with the forecasts, loans are given in such a way that loans and expected interest can be collected.

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