International Journal of Research in Social Sciences
Vol. 9 Issue 3, March 2019,
ISSN: 2249-2496 Impact Factor: 7.081
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A

WAYS OF IMPROVING MANAGEMENT OF CREDIT PORTFOLIO AT COMMERCIAL BANKS

J.K. Majidov*

Abstract

Loans of commercial banks are considered to be an important source of funding the costs of technical and technological re-equipment of the real sector of the economy. In this regard the article outlines the problems related to the improvement of the credit portfolio management of commercial banks of the Republic of Uzbekistan and provides scientific proposals and practical recommendations developed by the author.

Key words: loan, credit portfolio, investment loans, overdue loans, a commercial bank, diversification, interest rate, reserve, risk, revenue.

* **Tashkent Financial Institute, Republic of Uzbekitan**

Introduction

The “Action Strategy for the Development of the Republic of Uzbekistan for 2017-2021” sets forth objectives to expand the scope of the prospective investment projects and further expansion of lending to small businesses and private entrepreneurship [1]. This, in turn, causes the need for improving management of a credit portfolio at commercial banks because a high level of credit risk at commercial banks, inadequate funding sources for lending operations, high interest rates of loans do not enable raising the volume of the banking lending.

Literature review

Theoretical and practical aspects of the management of a credit portfolio of commercial banks have been studied in the scientific researches of foreign economist scientists, such as J.Sinkey, U.Soto, T.Mazurina, M.Matovnikov, S.Moiseyev. Having researched these issues they have developed relevant scientific conclusions and practical recommendations.

From the point of view of J.Sinkey, the use of modern methods of credit portfolio analysis and management at ommercial banks will enable reducing the level of credit risk and raising profitability of loans [2].

In the opinion of Uerta de Soto, primarily, the reduction of interest rates for loans extended by the commercial banks transforms unprofitable investment projects into the income-bearing investment projects. Secondly, financing of investment projects at the expense of loans which are not secured by banks by means of voluntary savings definitely leads to failure of investment projects and non-repayment of loans [3].

According to the opinion of T.Mazurina, the following conditions must be met for developing the real sector lending:

- efficient investment and industrial policies of the government;
– development of the investment infrastructure that enables reducing the level of risks associated with the implementation of investment projects;
– raising invetment attractiveness of the companies [4].

From the point of view of M. Matovnikov, the main factor preventing improvement of commercial banks' long-term lending practice is the lack of long-term resources at banks. A simple and adequate way of solving this problem is to obtain a loan from the Central Bank secured with liquid assets [5].

In his scientific paper, S.Moiseyev believes that the acquisition of resources by the commercial banks secured by liquid assets is not applicable for the Russian banking practice because the Stabilization Fund in Russia does not necessarily raise the public debt burden to the government by issuing securities [6].

According to the opinion of G.Panova, in order to increase the lending opportunity, first of all, it is necessary to ensure adequacy of their deposit base. In order to ensure the adequacy of the deposit base of commercial banks, it is crucial to introduce limits based on the experience of German banking practice. According to this practice, in Germany, 60% of term deposits and 10% of transactional depoits are directed to the lending operations [7].

Research methodology

The following research methods have been applied in this scientific article:

– descriptive statistics methods (tables, bar-charts);

– linear multi-factor econometric model.

Revenues obtained from the loans are accepted as an efficient factor of the model (CREDPROFIT - 1 Revenue of 1 UZS loan, %) and an interest rate of the loan is accepted as an impact factor (CREDRATE – average annual interest rate of loan extended, %) and the value of logarithm lending volumes (CREDVOL – volume of loans extended, trln. UZS) have been used in this model.

The percentage of interest-bearing loans is typically the result of a change in two factors:

– change in the volume of credit placement;

– change in the level of interest rates.

However, there are also preferential lending rates in practice of our republic, and their profitability is low.

One of the basic principles of multi-factor econometric analysis is to determine the level of interrelation between the factors selected for this model, i.e., the relationship between the selected factors and the multicollinearity problem. Thus correlation coefficients among factors are calculated for this factor.

Analysis and results

The upward tendency of the volume of loans extended by commercial banks of the Republic of Uzbekistan in recent years is justified by the increase of volumes of the banks' regulatory capital and attracted deposits (Table 1).

Table 1

Amount of regulative capital, depoits and loans of commercial banks of the Republic of Uzbekitan, trl. UZS [8]

Indicators	Years				
	2013	2014	2015	2016	2017
Regulative capital	6,5	6,9	7,8	9,4	23,7
Deposits	26,1	28,5	35,6	44,6	58,7
Loans	26,5	34,8	42,7	53,4	108,5

The data in Table 1 illustrates that the upward tendency of the regulatory capital and attracted deposits of commercial banks of the Republic of Uzbekistan over 2013-2017 promoted the increase of loans extended by these commercial banks.

In the management of the credit portfolio of commercial banks it is important to analyze the level and dynamics of interest rates on loans, and to prevent the increase in the reserve allocations directed to cover losses arisen from loans. The reason for this is that interest rates are considered to be the cost of loans.

High interest rates of loans are an obstacle to enhancing the level of access to loans by legal entities and individuals.

The increase in the level of reserve allocations deigned for repaying the loans at commercial banks testifies the deterioration of the structure of loans classified.

Loans of commercial banks are classified into five categories, i.e. subdivided into standard, substandard, unsatisfactory, doubtful and bad (non-performing) loans:

Table 2

Structure of classified loans of the commercial banks of the Republic of Uzbekistan and reserve allocation rates [9]

Structure of loan classified	Reserve allocation rates, %
Standard loans	1
Substandard loans	10
Unsatisfactory loans	25
Doubtful loans	50
Non-performing loans	100

The information provided in Table 2 shows that reserve allocations are made for all categories of loans classified by commercial banks. Meanwhile, the deterioration of the structure of issued loans causes an increase in the reserve allocations used to cover losses from loans.

Commercial banks are one of the main indicators characterizing the efficiency of the credit portfolio management which take into consideration the amount and level of revenue earned from loans. That's why we carried out an econometric analysis of the profitability of loans extended by commercial banks. With this aim, we have drawn a linear multi-factor econometric model.

Revenues obtained from the loans are accepted as an efficient factor of the model (CREDPROFIT - 1 Revenue of 1 UZS loan, %) and an interest rate of the loan is accepted as an impact factor (CREDRATE – average annual interest rate of loan extended, %) and the value of logarithm lending volumes (CREDVOL – volume of loans extended, trln. UZS) have been used in this model.

Interest gain from loans is typically calculated a a result of change of two factors:

– change in the volume of credit placement;

– change in the level of interest rates.

However, there are also preferential lending rates in practice of our republic, and their profitability is low.

In addition, it should be noted that the practice of extending loan to the household utilities sphere does not exist in our republic.

One of the basic principles of multi-factor econometric analysis is to determine the interdependency degree between the factors selected for this model, i.e., the relationship between the selected factors and the multicollinearity problem.

With this purpose, correlation coefficient is calculated between factors.

When accepting values $i = 1,...,n$ of variables x_i and y_i, the indicator showing a linear interdependency between x and y is widely used, thus correlation coefficient is calculated according to the following formula:

$$r_{xy} = \frac{Cov(x, y)}{\sqrt{Var(x)}\sqrt{Var(y)}}. \qquad (1)$$

(1) value $Cov(x, y)$ of the equation is determined by the following interrelation:

$$Cov(x, y) = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y}) \qquad (2)$$

variables x and y are considered to be a co-variation which is determined in the following way:

$Cov(x, x) = Var(x), \quad Cov(y, y) = Var(y).$

Table 3 illustrates the correlation matrix illustrating revenue gained from the loans extended to the real sector of the economy and impact factors thereto.

Table 3

Correlation matrix between the interdependency of factors

	CREDPROFIT	**CREDRATE**	**LOG(CREDVOL)**
CREDPROFIT	1	0.845	-0.844
CREDRATE	0.845	1	-0.763
LOG(CREDVOL)	- 0.844	- 0.763	1

The data presented in Table 3 illustrates that there is a close relation between private correlation coefficients, namely, an efficient factor (CREDPROFIT) and impacting first factor (CREDRATE). This relation accounts for 0,845. This fact jutifie that the increase of the interest rates result in the growth of the revenue gained from loans. However, the second factor, value of logarithm lending volumes (LOG(CREDVOL)) represents a reverse relation constituting -0,844, which means that the value of logarithm lending volumes cause reduction in profitability, and vice versa.

In order to create a multi-factor econometric model on lending profitability, these two factors are also accepted and they are checked for how they perform in the model. Generally, the multi-factor econometric model looks like this:

$$y = a_0 + a_1 x_1 + a_2 x_2 + \ldots + a_n x_n \qquad (3)$$

here y - efficient factor; $x_1, x_2, \ldots, x_n$ - impact factor.

(3) моделдаги номаълум $a_0, a_1, \ldots, a_n$ параметрларни топиш учун қуйидаги нормал тенгламалар тизими тузилади.

$$\begin{cases} na_0 + a_1 \sum x_1 + a_2 \sum x_2 + \ldots + a_n \sum x_n = \sum y \\ a_0 \sum x_1 + a_1 \sum x_1^2 + a_2 \sum x_1 x_2 + \ldots + a_n \sum x_n x_1 = \sum y x_1 \\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ a_0 \sum x_n + a_1 \sum x_1 x_n + a_2 \sum x_2 x_n + \ldots + a_n \sum x_n^2 = \sum y x_n \end{cases} \qquad (4)$$

If this (4) system of standard indicators is solved with the application of Gauss model or substitution model, in this case analytical value of $a_0, a_1, \ldots, a_n$ indefinite parameter will be determined.

The efficiency of the loans extended by commercial banks to the real sector of the economy has been analyzed by using the least squares method of regression analysis. As in indicator, illustrating lending efficiency, we have accepted the the rate of credit profitability for 1 soum (UZS). As impact factors we have accepted average annual interest rates of loans extended to household utilities sphere (credrate) and the overall volume of loans extended (credvol).

With the application of Eviews software using the least squares method we have obtained the following results:

Table 4

The results of a multi-factor econometric model on lending profitability calculated with the application of Eviews software

Variable	Coefficient	Standard error	t-Statistics	Probability
CREDRATE	0.801	0.419	1.910	0.098
LOG(CREDVOL)	-1.805	0.920	-1.961	0.091
C	- 4.123	7.056	-0.584	0.577

R-square	0.838	Dependent variable standard	5.890
Mean R-square	0.792	Deviation from the dependent variable standard	2.848
Regression standard error	1.299	Akaike info criterion	3.605
The sum of residuals squares	11.821	Schwarz criterion	3.696
Logarithmic proximity to reality	15.026	Hannah-Quinn criterion	3.505
F-statistics	18.117	Durbin-Watson statistics	2.021
Probability (F-statistics)	0.000		

Here: dependent variable: CREDPROFIT; method: least squares; random: 2006-2015; number of observations: 10

the econometric model in the analytical form:

$$Credprofit = 0{,}801 \cdot Credrate - 1{,}805 \cdot \log(Credvol) - 4{,}123 \quad (5)$$
$$(1{,}910) \qquad (-1{,}961) \qquad (-0{,}584)$$

$R^2 = 0{,}8;\ \ F = 18{,}117;\ \ DW = 2{,}021;$

Developed multi-factor econometric model illustrate that if the interest rate on loans (CREDRATE) increases by 1% on average, this will cause the rise of the revenues received from loans by average 0,801. However, if value of logarithm lending volumes (LOG(CREDVOL)) increases by 1 unit, the revenues received from loan will reduce by 1,805 on average. The values presented in the model in brackets are the values of the *t*-Student criterion, which determines the reliability of each factor.

The determination ratio R^2 illustrating the value of coefficient obtained and constitutes 0,8. This, in turn, justifies close interdependency between the factors selected. In addition, the revenues from loans (CREDPROFIT) in the multi-factor econometric model for 80% is closely connected with interest rates on loans (CREDRATE) and if value of logarithm lending volumes (LOG(CREDVOL)). The rest 20% are referred to the factors which haven't been taken into consideration.

The Figure below demonstrates the interest rates on loans extended in the national currency by commercial banks and assesses its dynamics (Figure 1).

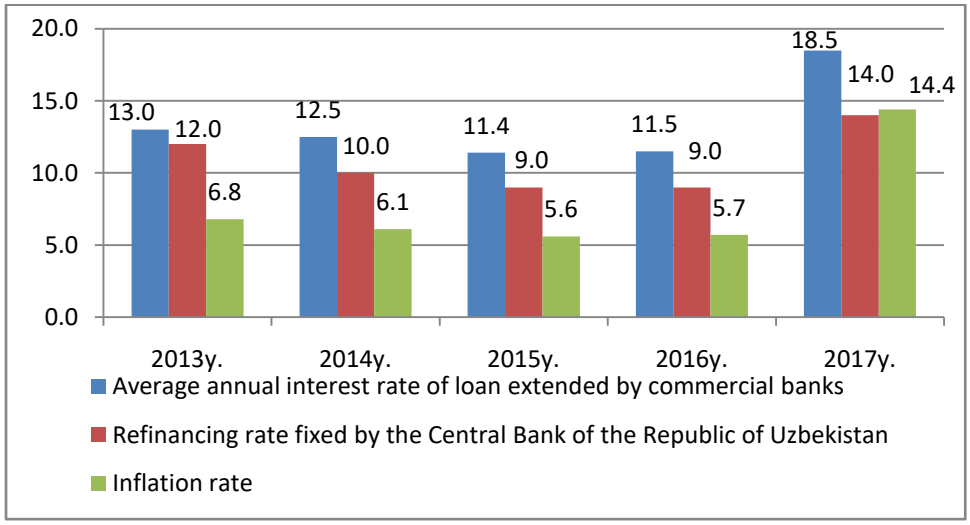

Figure 1. Average annual interest rate of loans extended by commercial banks of the Republic of Uzbekistan in the national currency, refinancing rate fixed by the Central Bank of the Republic of Uzbekistan and annual inflation rate, % [10]

From the data Presented in Figure 1 it is obvious that sharp increase of the inflation rate in Uzbekistan in 2017 forced the Central Bank to raise a refinancing rate. This, in turn, has resulted in the increase of interest rates of loans extended by commercial banks in the national currency.

Credit risk assessment is crucially important in evaluating and managing credit portfolio of commercial banks. As a consequence, preventing the increase of the credit risk level is closely connected with the diversification level of commercial banks.

By the case-study of one of the major banks of the Republic of Uzbekistan, we evaluate the credit portfolio diversification of the Uzbekitan Industrial and Construction Bank.

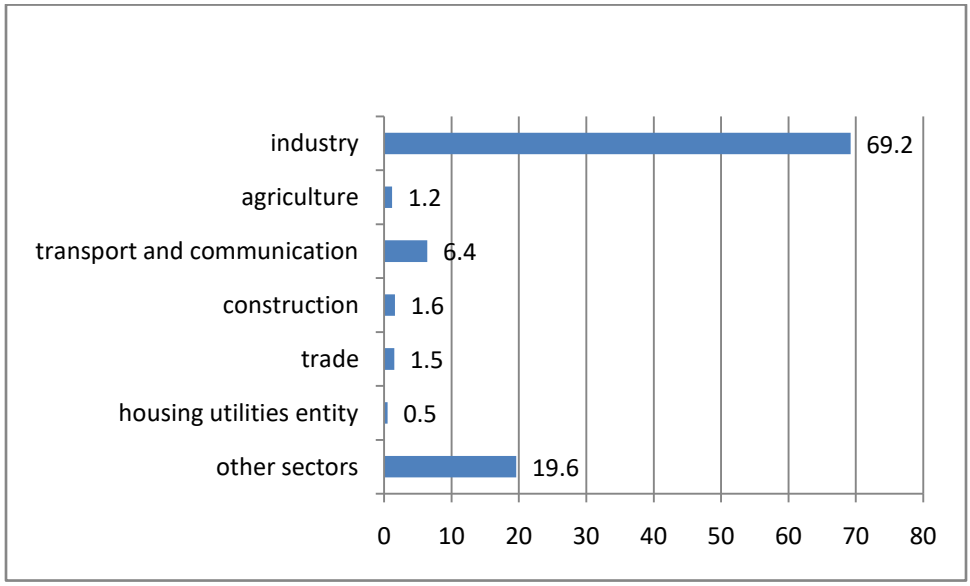

Figure 2. Structure of the credit portfolio of "Uzbekistan Industrial Construction Bank" joint-stock commercial bank [11]

From Figure 2 it is possible to make a conclusion that the diversification level of Uzbekistan Industrial Construction Bank is relatively low.

According to the criteria generally-accepted by the international practice, the share of loans extended by commercial banks which exceeds 25%, shouldn't be concentrated on one industry or branch.

Conclusion

An upward tendency of the regulatory capital and attracted deposits of commercial banks of the Republic of Uzbekistan over 2013-2017 has promoted the increase of loans extended by these commercial banks.

Carried out econometric analysis has demonstrated that increase of the average interest rate on loans by 1 percentage point will result in an increase in loan revenues by an average of 0,801.
The low level of credit portfolio diversification of commercial banks and high interest rates on loans in the national currency does not enable reducing credit risk.

In our opinion, the following measures should be undertaken to solve the issues related to improving the management of the credit portfolio at commercial banks:

1. With the aim of raising the diversification level of the credit portfolio of commercial banks, firt of all, the portion of the loans extended by commercial banks, which exceeds 25% shouldn't be concentrated in one industry or sphere. Thus this requirement must be included in the list of compulsory requirements set by the Central Bank to commercial banks. Second, it is necessary to increase the hare of retail loans in the volume of gloss loans. In addition, last but not at least, as it is prohibited to use demand deposits as the financial source for lending operations it is required to impose limits on placing term and saving deposits in the form of loans.
2.

2. It is necessary to introduce credit derivatives in practice of managing credit portfolio of commercial banks. To achieve this objective, first of all, it is necessary to create legal basis for credit derivatives circulation; second, it is required to fix range for fluctuations of the market price of credit derivatives because this type of derivatives can be used for speculative purposes.

This, in turn, can lead to the sharp fluctuations of market prices and thus strengthening probability of the loss which, as a consequence, may be caused to investors.

Reference

1. Decree of the President of the Republic of Uzbekistan №4947 "On the Action Strategy for further development of the Republic of Uzbekistan" as of February 7, 2017 // Collection of legislative materials of the Republic of Uzbekistan. – Tashkent, 2017. – № 6 (766). – p.32.

2. Sinkey J. Financial management at the commercial bank and in the financial services industry. Translated from English. – M.: Alpina Publisher, 2017. – p. 529-275.

3. Uerto de Soto Hesus. Money, bank loan and economic cycles. Translated from English. – Chelyabinsk: Sotsium, 2008. – p. 666

4. Mazurina T.Yu. Banking investment lending: current condition, problems and development prospects// Money and credit. – Moscow, 2013. - №4. – p. 33.

5. Matovnikov M.Yu. Banking system of Russia and long-term resources //Money and credit. – Moscow, 2013. - №5. - p.19.

6. Moiseyev S.R. Monetary policy:theory and practice. Textbook. – M.: Moscow Finance and industry academy, 2011. - p. 714-715.

7. Panova G.S. Credit policy of commercial banks. – M.: Publishing house "DIS", 1997. – p. 194.

8. Monetary policy. www.cbu.uz.

9. Reolution of the Executive Board of the Central Bank of the Republic of Uzbekistan №14/5 as of June 13, 2015 (registered by the Ministry of Justice of the Republic of Uzbekistan №2696 as of July 14, 2015) "On approving the regulation for the the asets quality classification and procedure of creating reserves to cover possible losses by assets at commercial banks" // Collection of legislative materials of the Republic of Uzbekistan. – Tashkent, 2015. - №28. – p. 22-33.

10. Basic directions of monetary policy. www.cbu.uz.

11. Uzbekistan Industrial Construction Bank. Table№ 8. Form № 1516 LES. http://www.uzpsb.uz/ru