

METHODOLOGICAL AND METHODICAL EVALUATION'S ASPECTS OF BANK CREDIT ACTIVITY EFFECTIVENESS

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Introduction. The credit activity of any modern business bank is a philosophy of banking business. However, the credit activity of banks in Ukraine is held back by significant risks due to internal factors as well as the complexities of the environment, which are caused by economic and political instability in society. As a result, growth rates of bank loans have reduced, the quality of their loan portfolio has worsened, which had negatively affected on banks financial results and hinders its support for development of national economy.

Literature review. The importance of this research is determined by broad coverage of scientific works by such scientists as Y. Bezditko, A. Vasiurenko, V. Mishchenko, A. Moroz, M. Novoseltseva, T. Pavlenko, I. Persii-Verhunencko, S. Podik, S. Reverchuk, M. Savluk, A. Solodko and others.

However, despite of the great contribution of these and others scientists to this problem, the available assessment methodology of this part of banking business remains imperfect and the current situation with significant amounts of past due loans in banks indicate insufficient credit management of banks.

Setting objectives. Thus, the purpose of this article is to improve methodology of bank credit effectiveness assessment in order to identify the reserves of the credit mechanisms to support national economy.

Basic material and results. An important part of Ensuring effective credit activity of the bank is the evaluation of its level to identify exciting problems and find solutions.

The research had revealed that some scientists suggest to do such assessment only through analysis of profitability of loan assets (A. Herasymovych, I.M. Parasii-Verhunencko, V. Kochetkov), other scientists through analysis of the profitability and credit risk as well (L. Prymostka, A. Lavrushin, I. Mamonova, N. Valentseva), others – on basis of cost approach (V. Volohov).

A critical review of existing scientists' points of view and our own research allows determining the evaluation approach of the bank credit activity effectiveness, which are based on these initial positions.

First, the efficiency of credit activity is to be measured at the volume of income, yield and profitability of bank credit operations, while the quality of the loan portfolio in terms to credit risk measures the effectiveness of bank credit management.

Second, determination of the bank credit effectiveness should be made through group of indicators that collectively define efficiency of both credit operations and employee's activity of credit bank department in each of its structural level.

Third, when determining bank's credit efficiency one should consider the impact on cost of bank credit operations related to debt provisioning, since those expenses are part of bank expenses.

Fourth, when determining bank's credit efficiency, one should take into account not only interest income and interest expenses, but non-interest income and non-interest expenses that relate to the creation of resources for making credits and its accommodation in loan assets.

Therefore, we consider it possible to develop a model for evaluating the bank credit efficiency on the basis of indicators grouped as it shows in Figure 1.

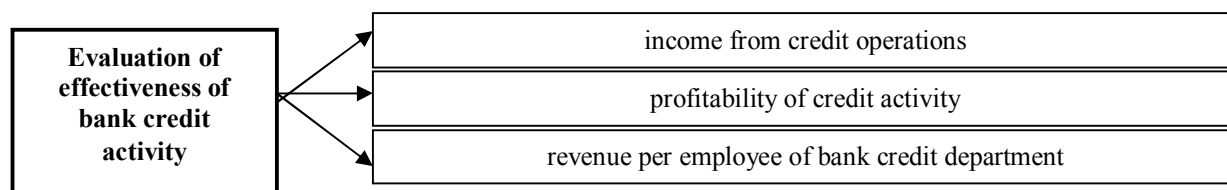


Fig. 1. Grouping of evaluation's indicators of bank credit activity effectiveness

According to each of these groups, the system of parameters is developed (table 1).

As shown in the Table 1, the index of profitability of credit exposure (K_1) is an universal indicator of the effectiveness of credit activities, which shows how much revenue bank receives from each hryvnia that was invested in credit operations. Its application allows making comparative analysis of the effectiveness of different types of banking transactions (transactions with securities, currency, leasing etc.) and optimizing the direction of bank's resources utilization, giving priority to the most profitable activities.

Table 1

Indexes' system of the bank credit activity effectiveness by level of income from credit operations

Formula	Conventions	Criterion value	Number of formula	Characteristic values of index
$K_1 = \frac{PD}{KP}$	PD- interest income; KP – average rate of credit portfolio for the period	-	1	characterizes the income per one of bank loans
$K_2 = \frac{PD-BK}{KP}$	BK – the amount of losses from writing-off non-performing loans	-	2	characterizes the income per one of bank loans inclusive of costs for writing-off non-performing loans
$K_3 = \frac{PD}{A}$	A – the average rate of bank assets	-	3	characterizes the impact of credit transactions in the profitability of bank assets
$K_4 = \frac{PD}{AD}$	AD – the average rate of the bank earning assets	-	4	characterizes the impact of credit transactions in the profitability of earning assets
$K_5 = \frac{PD}{VD}$	VD – total income of the bank	-	5	shows the proportion of income received from bank credit operations
$K_6 = \frac{PD}{PR}$	PR – bank interest expense	-	7	characterizes the correlation between the level of profitability of bank credit exposure and interest expenses with formation of resources

By condition of ideal financial discipline of borrowers with all contract conditions executed and all credits and interest thereupon completely returned, the index K_1 is equal to the weight-average interest rate of loans. During calculation of this index the numerator is taken as actually received interest income on credits.

For more accurate calculation of bank credit profitability it can be adjusted by the amount of losses from writing-off non-performing loans for analyzing period and its calculated as index K_2 .

Due to the fact that loans are dominating in the total assets of domestic banks, it is advisable to calculate profitability of assets by credit operations (index K_3). Using this index is less popular than the index K_2 .

A sort of this index is the index K_4 , which has only profitable assets in its denominator has only profitable assets. With the high share of such type of loans in total assets, value of the index K_4 will be close to the index (K_3).

Index K_5 characterizes the share of income, which bank received from lending in total income of bank, that it received from all of its earning assets in define period. It could be useful to analyze it in order to compare the values of index K_4 and index K_5 with the value of coefficient of credit activity (KA), which is calculated as:

$$KA = KP : AD. \tag{6}$$

If $K_4 > KA$ and $K_5 > KA$, then effectiveness of credit operations is higher than the efficiency of other banking transactions. Taking this into account is quite important to determine which loans bring profit to the bank, which could be calculated as:

$$KD = (1 - PND) : KP,$$

PND – loans, which bring profit to the bank.

The effectiveness of bank credit activity is estimated through coefficient that characterizes the correlation between level of profitability of credit exposure and interest expenses of asset provision (index K_6). The growth of this index characterizes the bank credit activity as effective.

Evaluation of effectiveness of bank credit operations should be calculated according to indicators as it

shows in the table 2.

The profitability of bank credit operations (K_7) shows how much profit is received for each hryvnia, that were invested in credit operations. The growth of this index at a faster pace than the growth of credit operations profitability index (K_1) indicates the rise of effectiveness of bank credit investments.

Value of index K_7 depends on the volume of credits that did not bring revenue and profit to bank and which can be estimated as coefficient of lost profits for granted credits (K_8).

Table 2

Indexes' system of effectiveness of bank credit operations by profitability's level of credit activity

Formula	Conventions	Criterion value	Number of formula	Characteristic values of index
$K_7 = \frac{PK}{KP}$	PK – income of bank from credit transactions	-	8	shows the general efficiency of placed bank credits
$K_8 = \frac{PK_{nd}}{KP_{do}}$	PKnd – interests that bank has not received due to past-due debt extension and writing-off non-performing loans	-	9	characterizes the bank shortfall in profits due to the existing bad debts
$K_9 = \frac{PK}{A}$	-	$\geq 0,045$	10	shows how much income received bank from credit operations for each hryvnia that were invested in assets
$K_{10} = \frac{PK}{AD}$	-		11	shows how much income received the bank from credit operations for each hryvnia that were invested in earning assets
$K_{11} = \frac{PD}{KP} - \frac{PR}{PPR}$	PPR – interest bearing bank resources	$\geq 0,0125$	12	net spread that characterize the effectiveness of realization of bank function as a dealer between depositors and borrowers, as well as the level of competition in the market
$K_{12} = \frac{PD - (PV - VP)}{PV + VP}$	PV- interest expenses VP – expenses of of the credit department	-	13	characterizes the bank profitability, taking into account interest expenses on borrowings and expenses on realisation of credit department activity
$K_{13} = \frac{PD - PR}{BK}$	BK – bank equity capital	0.1-0.2	14	shows the share of interest margin of the bank in its capital

The growth of profitability's index of bank credit operations for each hryvnia of bank assets (K_9) at a rate faster than the index of profitability (K_4) indicates the increased efficiency of bank credits. This index could be added by calculation of index that characterizes the size of the profits from bank credit activity for every hryvnia of earning assets (K_{10}).

The effectiveness of bank credit activity is estimated also as the bank net spread (K_{11}). As a rule, with exacerbation competition fights the net spread is reduced and bank managers are forced to find other ways of obtaining income.

Identified indicators of evaluation of the effectiveness of the bank lending activity are not exhaustive.

The important aspect in evaluation of the effectiveness of bank lending activity is an index that characterizes interest income per unit of bank equity capital (K_{13}).

For a comparative effectiveness' analysis of the performance of the credit department employees in different banks or branches, the labour productivity index (K_{14}) can be calculated at the ratio as the ratio of income that is received from credit operations to the average number of employees of credit department.

$$K_{14} = \frac{\text{Income from credit operations}}{\text{Average number of employees of credit department}} . \quad (15)$$

This index is not useful for comparative analysis of effectiveness of various divisions and departments within one bank because productivity of workers of different structural units of one bank is not comparable and usually does not depend on the efforts of individual employees and the efficiency of certain operations and bank business activities.

Because one of the calculated values of these indexes should characterize the credit activities as effective, and others as ineffective, it is necessary to define an integrated index for its evaluation. We assume that the integrated assessment of the effectiveness of bank credit should be done according to these methods.

1. First of all, determine the indexes of evaluation of bank credit effectiveness. In our case indexes $K_1 - K_{14}$.

2. Then determine the system of indexes for each of the above mentioned groups and enter the explanation of symbols:

Group 1 «Income from credit operations»:

$X1_i$ – relevant index of group 1.

Group 2 «Profitability of credit activity»:

$X2_i$ – relevant index of group 2.

Group 3. «Revenue per employee of bank credit department»:

$X3_i$ – relevant index of group 3.

3. Then determine the number of points according to the level of correspondence of each index value to criteria value or positive assessment of comparative value of certain indicator to comparative index according to:

- value of index corresponds to the minimum criteria requirements or exceeds it; the proportions between index and comparative index provide grounds for a positive assessment of the effectiveness of bank credit activity - 1.0 point;

- value of index does not correspond to the minimum criteria requirements or exceed it; the proportions between index and comparative index provide grounds for a negative assessment of the effectiveness of bank credit activity - 0.0 point.

4. Determine the weight and conventional definition to each index in the group:

Group 1. «Income from credit operations»:

$J1_i$ – weight of relevant index of group 1.

Group 2. «Profitability of credit activity»:

$J2_i$ – weight of relevant index of group 2.

Group 3. «Revenue per employee of bank credit department»:

$J3_i$ – weight of relevant index of group 3.

5. Then integrated index of effectiveness of bank credit activity for each of the 3 groups is calculated as:

Group 1. «Income from credit operations»:

$$Ind_1 = \sum_{i=1}^n \frac{X1_i \times J1_i}{100} . \quad (16)$$

Group 2. «Profitability of credit activity»:

$$Ind_2 = \sum_{i=1}^n \frac{X2_i \times J2_i}{100} . \quad (17)$$

Group 3. «Revenue per employee of bank credit department»:

$$Ind_3 = \sum_{i=1}^n \frac{X3_i \times J3_i}{100} . \quad (18)$$

6. For each group of indexes determine its weight in total assessment of the effectiveness of bank credit activity:

Group 1. «Income from credit operations»:

$Q1$ – weight of group 1 in total assessment of the effectiveness of bank credit activity.

Group 2. «Profitability of credit activity»:

Q_2 – weight of group 2 in total assessment of the effectiveness of bank credit activity.

Group 3. «Revenue per employee of bank credit department»:

Q_3 – weight of group 3 in total assessment of the effectiveness of bank credit activity.

7. Taking into account symbols that were mentioned, the integral index of efficiency of bank credit activity is calculated as:

$$Ind_{KD} = \sum_{i=1}^n \frac{Ind_1 \times q_1 + Ind_2 \times q_2 + Ind_3 \times q_3}{100} \quad (19)$$

The information base for calculation of this index is financial data and balance sheet data of analyzing bank, which is posted on its corporate web-site; data from official web-site of the National Bank of Ukraine in the «Statistics»; data of audit report of bank's financial results for the period.

Conclusion. The credit activity is keeping one of the first position in the most important field of entrepreneurship of modern bank nowadays, which brings banks a significant income and profits. Therefore, it is important to determine the effectiveness of bank credit activity. There is no unity of views among scientists regarding the approach in the definitions of indexes. Some scientists develop system of indexes that characterize bank credit activity as effective, while another as ineffective. The method of calculating integral index of efficiency of bank credit activity, which is suggested in this research, does not possess these deficiencies.

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Herasymenko Raisa Andriivna, PhD, Associate Professor. **Herasymenko Vira Vasylivna**, PhD, Associate Professor. Donetsk National University. **Methodological and methodical evaluation's aspects of bank credit activity effectiveness.** The authors describe that reasonably necessity of evaluating the effectiveness of bank credit activity as a necessary condition for development of measures for further improvement of credit activity for economic agent in period of economic instability. In the article it is expressed methodological approaches and formed a system of indicators evaluating the effectiveness of bank credit activity. Suggested the methods of calculating the integral index of evaluating of the bank credit

activity effectiveness, that take into account its profitability, efficiency, lending profitability and revenue per employee of bank credit department.

Keywords: bank, effectiveness of credit activity, lending profitability, efficiency of lending activities.

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Герасименко Раїса Андріївна, кандидат економічних наук, доцент **Герасименко Віра Василівна**, кандидат економічних наук, доцент. Донецький національний університет ім. В. Стуса. **Методологічні та методичні аспекти оцінювання ефективності кредитної діяльності банку.** Обґрунтовано актуальність оцінювання ефективності кредитної діяльності банків як необхідної умови розроблення заходів щодо подальшого вдосконалення кредитування економічних суб'єктів в умовах економічної нестабільності. Сформульовано методологічні підходи та систему показників оцінювання ефективності кредитної діяльності банку. Запропоновано методику розрахунку інтегрального показника оцінювання ефективності кредитної діяльності банку, що враховує її прибутковість і рентабельність, дохідність кредитних операцій та дохід на одного працівника кредитного відділу банку.

Ключові слова: банк, ефективність кредитної діяльності, дохідність кредитної діяльності, прибутковість кредитної діяльності.

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Герасименко Раиса Андреевна, кандидат экономических наук, доцент. **Герасименко Вера Васильевна**, кандидат экономических наук, доцент. Донецкий национальный университет им. В. Стуса. **Методологические и методические аспекты оценивания эффективности кредитной деятельности банка.** Обоснована актуальность оценивания эффективности кредитной деятельности банков как необходимого условия разработки мероприятий по дальнейшему совершенствованию кредитования экономических субъектов в условиях экономической нестабильности. Сформулированы методологические подходы и система показателей оценивания эффективности кредитной деятельности банка. Предложена методика расчета интегрального показателя оценивания эффективности кредитной деятельности банка, которая учитывает ее прибыльность и рентабельность, доходность кредитных операций и доход на одного работника кредитного отдела банка.

Ключевые слова: банк, эффективность кредитной деятельности, доходность кредитной деятельности, прибыльность кредитной деятельности.