

EVALUATION OF KEY PERFORMANCE INDICATORS OF THE BANKING SECTOR OF THE RUSSIAN FEDERATION

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Abstract. In this article, theoretical foundations of key performance indicators, methods that affect the efficiency of the banking sector of the Russian Federation are considered. Analysis of the effectiveness of the bank in modern conditions is the basis for making managerial decisions in the bank and establishing trustful and mutually beneficial relations between banks and their clients. To date, the transition to more modern forms of assessing the effectiveness of not only a single bank, but also the banking system as a whole is becoming more urgent. Also forecasted is the KPI of the banking sector of the Russian Federation based on the correlation-regression apparatus for the near future on the profitability of the asset. As a result of the analysis, it becomes obvious that the banking sector will develop at a moderate pace.

Key words: key performance indicator, return on assets, capital, asset, profitability, liquidity, interest rate risk, concentration risk.

Introduction. Every day in the financial market, a huge number of difficult tasks are solved: from prompt response to constantly changing market conditions before carrying out complex operations to increase revenues and reduce costs. At all stages of the solution of these tasks, one should not forget about the main thing: ensuring the sustainable growth of the entire bank in the long term, while achieving tangible and sustainable results in financial management, developing a commercial strategy, managing customer relations and managing personnel.

The performance management of any commercial bank or its unit is a set of management processes that enable the institution to identify strategic objectives, and then evaluate and manage activities to achieve these goals, making optimal use of available resources [2].

Key Performance Indicators (KPI) is a system used to achieve the main objectives of a financial company, such as attracting and retaining customers (customers), increasing the professionalism of employees, increasing revenue and reducing costs. All these values are professed by any quality management system in commercial banks.

Method. Evaluation of the efficiency of commercial banks is a difficult task. To solve it, analysts' skills and ability to develop a methodology are required, since there is no single universally recognized methodological development of key performance indicators.

To study the efficiency of the commercial bank, the methodology for developing KPI is systematized on the basis of the Instruction No. 4336-U of the Bank of Russia of 03.04.2017 "On assessing the economic situation of banks". This normative document was distributed by us to several key areas. We will refer to such areas:

- 1) capital;
- 2) asset;
- 3) profitability;
- 4) liquidity;
- 5) interest rate risk;
- 6) concentration risk.

Let's consider in more detail each of these directions.

1) Capital. The valuation of capital is carried out based on the results of assessments of capital adequacy indicators and an indicator of the bank's capital quality assessment.

In accordance with the Instruction of the Bank of Russia N 180-I "On Mandatory Banking Standards", the actual value of the mandatory norm H1.0 "Norm for the adequacy of the bank's own funds (capital)", H1.1 "The capital adequacy ratio of the bank", H1.2 " The capital adequacy ratio of the bank's capital. " The indicator of capital quality

assessment (PC2) is defined as the percentage of own funds (capital) to the bank's assets, the volume of which does not include assets having a zero risk factor [4].

2) Asset. The assessment of the bank's assets is determined by the results of assessments of loan quality indicators, the risk of losses, the share of overdue loans, the amount of provisions for losses on loans and other assets, the concentration of credit risks per borrower or a group of related borrowers, the concentration of credit risks for a person related to the bank with a bank of persons).

3) Profitability. The estimation of profitableness is defined by results of estimations of indicators of profitableness of actives, profitableness of the capital, structure of expenses, a net interest margin and a pure spread from credit operations.

4) Liquidity. The liquidity assessment is determined by the results of assessments of the indicators of total short-term liquidity, instant liquidity, current liquidity, the structure of borrowed funds, dependence on the interbank market, the risk of own promissory notes, non-bank loans, averaging of required reserves, mandatory reserves and risk to large lenders and depositors.

5) Interest rate risk. Calculation and assessment of the concentration risk indicator is carried out as new information is received (received), for example, based on the results of inspections. The interest rate risk (AP) is defined as the percentage of the difference between the sum of weighted open long positions and the sum of weighted open short positions (without taking into account the position symbol) to the value of the bank's own funds (capital).

6) Concentration risk. The concentration risk factor (PK) is the average weighted value of the responses to the questions.

Theory. In the Russian literature, two versions of the KPI (Key Performance Indicator) translation are indicated: a key performance indicator (CRC) and a key performance indicator (KPI). Often, terms are listed as interchangeable, which is not entirely accurate, since the indicators for evaluating goals and processes are different, respectively, their nature and requirements for them are different. The more correct translation of Key Performance Indicators (KPI) into Russian is the following: "Key Performance Indicators" means the system for assessing the level of achievement of strategic objectives of a commercial bank by tracking the implementation of a set of critical measurable indicators that allow to judge whether the company is approaching to the goals set, and if not, what or who prevents it. It should be noted that in modern scientific literature among scholars and practitioners there is no single view on the essence of KPI. The term is used both for indicators related to the strategic objective of a commercial bank, and for any other indicators that assess the performance of a unit or an individual employee. The main idea of KPI is that with its help it is possible to unambiguously and objectively assess the work and effectiveness of any employee, group of people, department, department, product and bank as a whole. The indicator allows you to reflect the entire picture of the processes taking place in the bank, using numbers. The system of indicators is designed to warn about possible problems of both the current situation and in the long term.

Result. The evaluation of key indicators of the effectiveness of banking activities and their forecasting is traditionally conducted on the basis of correlation-regression analysis. The analysis used the main indicator of the bank's performance - profitability. Since the profitability indicators directly characterize the efficiency of the commercial bank, we will examine the ROA of the banking sector of the Russian Federation for the medium term. To do this, we perform a correlation-regression analysis of the dependence of the profitability of assets of commercial banks on various factors and build a forecast of the return on assets for the banking sector for the period 2019-2021. The use of data is based on 11 observations [1].

- x_1 – the size of banks' own funds (capital), bln. rub.;
- x_2 – loans and other loans - total, bln. rub.;
- x_3 – overdue debt on loans - total, bln. rub.;
- x_4 – investment of a credit institution in securities - total, bln. rub.;
- x_5 – ratio of highly liquid assets to demand liabilities (H2),% per annum;
- x_6 – ratio of liquid assets to short-term liabilities (H3),% per annum;
- x_7 – the ratio of long-term (more than 365 or 366 days) capital requirements, adjusted for the minimum balance for short-term (up to 365 days) customer accounts (H4),% per annum;

- x_8 – the key rate of the Bank of Russia,% per annum;
- x_9 – expenses on operations with foreign currency and precious metals, bln. rub.;
- x_{10} – deductions to reserves for possible losses on assets (claims) and other transactions, bln. rub.;
- x_{11} – correspondent accounts with credit institutions - total, bln. rub.

The sample of the study in this model is presented in Appendix 1 with statistical data for the period from July 2015 to April 2018.

Thus, based on the correlation analysis, three factors were selected: loans and other loans (x_2), expenses on operations with foreign currency and precious metals (x_9), correspondent accounts with credit institutions (x_{11}).

The quantity R - a square, also called a measure of certainty, characterizes the quality of the regression model obtained. According to the analysis results, the R-square value is 0,877. This means that the model constructed explains the influence of the corresponding variables by 87,7%. And the remaining 12,3% are formed under the influence of unaccounted factors.

Multiple R - coefficient of multiple correlation R - expresses the degree of dependence of the independent variables x_2 , x_9 , x_{11} (loans and other loans, foreign exchange and precious metals transactions, correspondent accounts with credit institutions) and the dependent variable Y (return on assets of the banking sector) . Based on the results of calculations, the multiple R is 0,95, that is, the relationship between the variables is high.

The resulting three-factor regression model has the form:

$$Y = 4,15 - 3,33x_2 - 3,58x_9 + 0,000555x_{11}$$

To predict the values of the factors Y, x_2 , x_9 and x_{11} , we calculated the trend values of the change in these indicators for the period from april 2018 to april 2021.

Data on the forecasted return on assets of the banking sector of the Russian Federation are presented in figure

3.1.

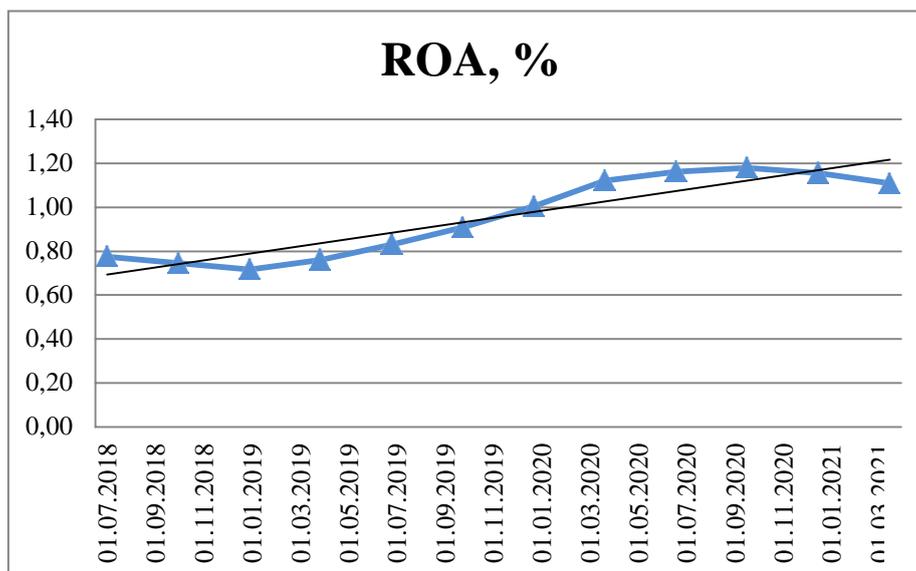


Fig. 3.1. Forecast values of return on assets of the banking sector of the Russian Federation to 01.03.2021,%

On the basis of these data, it can be concluded that the profitability of assets is expected to decline by the end of 2018 and, according to the forecast, the return on assets should be 0,75%. However, in general, with other stable conditions, we can conclude that the profitability of the banking sector of the Russian Federation will continue to grow.

The conducted correlation-regression analysis showed that there is a close correlation between the dependent variable Y - the return on assets (ROA) of the banking sector and the selected 3 factors: loans and other loans (x_2), expenses on operations with foreign currency and precious metals (x_9), correspondent accounts with credit institutions (x_{11}). The lack of autocorrelation of the residuals indicates that the constructed regression model is qualitative. Analysis of the regression model leads to the following conclusions. The multiple regression coefficient b_j shows how much the resultant attribute Y will change on average if the variable x_j is increased by a unit of measurement. In our case, this means that as the variables x_2 , x_9 increase by one unit, the average value of the variable Y decreases by 3, 33 and 3.58 units respectively (since the coefficients before the factors are negative), and as the variable x_{11} is incremented by one, the average value of the variable Y will increase by 0.000555. In other words, an increase in correspondent accounts with credit institutions will lead to an increase in the ROA of the banking sector by 555 thousand rubles. At the same time, an increase in the volume of loans and loans issued, as well as expenses related to operations with foreign currency and precious securities, will lead to a decrease in the profitability of the assets of the banking sector of the Russian Federation by 3.33 billion rubles and 3.58 billion rubles. respectively. Such a slope of the trend line suggests that the development of banking business is limited by the deficit of quality borrowers and the level of capital to cover the growing risks. These factors have led to an excess of low-yield liquid assets, which increase the pressure on the profitability of a significant number of banks. Excess liquidity, formed due to a lack of quality borrowers, increases the pressure on the profitability of the banking business. Due to the limited base of quality borrowers, more and more banks are forced to place expensive client funds in highly reliable, but low-yield assets. In addition, there has been a drop in marginal lending in the banking sector. For a decade, the profitability of the banking sector has almost halved. Over a quarter of banks are currently unprofitable.

Since 2020, there has been a trend towards an increase in the profitability of assets in the banking sector of the Russian Federation. We believe that, first of all, banks will actively increase non-interest income to compensate for the decline in lending margins and its weak growth. In addition, retail lending will remain the driver of the credit market.

Initial data of the banking sector of the Russian Federation

Period	ROA (%) (Y)	The size of banks' own funds (capital), bln. rub. (x1)	Loans and other loans - total, bln. rub. (x2)	Overdue debt on loans - total, bln. rub. (x3)	Investment of a credit institution in securities - total, bln. rub. (x4)	H2, % (x5)	H3, % (x6)	H4, % (x7)	Key rate, % (x8)	Expenses on operations with foreign currency and precious metals, bln. rub. (x9)	Deductions to reserves for possible losses on assets (claims) and other transactions, bln. rub.(x10)	Correspondent accounts with credit institutions - total, bln. rub. (x11)
01.07.2015	0,4	8166,4	51 223,20	2 590,40	9 696,10	86,1	132,3	60,5	11,5	87 881,20	4 786,70	2 672,30
01.10.2015	0,1	8735,4	55 319,30	2 809,00	10 951,50	91,4	136,6	60,5	11	129 415,40	7 686,60	2 770,90
01.01.2016	0,1	9008,6	57 511,40	3 046,60	11 777,40	97,5	139,3	59	11	168 553,40	11 080,50	2 536,30
01.04.2016	0,4	8952,7	56 276,10	3 122,70	11 836,50	86,5	121,8	59,4	11	67 040,00	2 799,20	2 299,80
01.07.2016	0,5	8948,3	55 301,40	3 154,50	11 626,60	87,4	125	57,2	10,5	107 828,40	5 511,20	2 080,00
01.10.2016	0,8	9097,8	55 171,40	3 167,20	11 305,30	100,4	141,8	54,9	10	133 595,50	8 339,70	1 823,00
01.01.2017	0,9	9387,1	55 622,00	2 891,50	11 450,10	106,6	144,9	52,3	10	161 758,00	11 481,00	1 734,40
01.04.2017	1,3	9479	55 186,70	3 156,60	11 100,20	114,9	169,2	50,9	9,75	22 597,90	2 247,50	1 993,00
01.07.2017	1,7	9613,9	56 442,70	3 061,60	11 703,70	109,7	170,7	52	9	49 040,00	4 434,50	1 888,20
01.10.2017	1,2	9332	56 675,60	3 084,80	12 006,70	125,5	180,7	54	8,5	71 712,50	6 602,90	1 589,00
01.01.2018	1,3	9397,3	58 122,30	2 993,50	12 310,90	118,5	167,4	55,4	7,75	87 793,80	9 327,80	1 524,10
01.04.2018	0,9	9328,3	56 257,00	3 151,10	12 505,30	120,6	174,5	53,5	7,25	19 359,70	2 400,50	1 450,10

Conclusion

One of the most known methods for assessing the effectiveness of the bank is the KPI method. It consists in researching the banking business from the standpoint of matching the achieved results of the bank's activities to its strategic goals and objectives. KPI allows for an in-depth analysis of all aspects of the bank's business from the point of view of their subordination to the development strategy of the banking business, the interests of shareholders, managers and other related groups, and the consistency of the results, financial and non-financial, to the goals and objectives, and the available development potential. The conducted correlation-regression analysis showed that the banking sector will develop at a moderate pace and, in general, the profitability of assets is forecasted to increase by 2021. The concept of the efficiency of a commercial bank is multifaceted, and the bank's financial performance, as well as its performance, as well as the totality of the financial performance indicators achieved by the bank, taking into account their value or purpose, can be considered as criteria for the bank's effectiveness. Therefore, the efficiency of a commercial bank is not only the results of its activities, but also a management system built on the formation of a scientifically sound strategy for the bank's activities and control over its implementation.

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