

ANALYSIS OF THE UNDERWRITING PROCESS IN COMMERCIAL BANKS OF  
UZBEKISTAN

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**Abstract.** In assessing the credit risks of commercial banks, it is important to analyze underwriting processes in order to reduce the share of problem loans in their loan portfolio and increase the level of profitability. Underwriting is an assessment of the creditworthiness of a borrower, that is, an individual or legal entity, analyze credit risk and make decisions. This article highlights the role and importance of underwriting processes in commercial banks in our republic.

**Keywords:** bank, risk, underwriting, creditworthiness, loan, portfolio.

INTRODUCTION

Commercial banks are one of the main elements of the financial system, they play an important role in the stability and development of the economy. Banks are actively involved in granting loans and accepting deposits. As is known, in banking practice, profit mainly consists of interest received on loans granted.

Establishing quality lending practices in commercial banks requires effective credit risk management and improvement of underwriting processes. Properly organized initial loan monitoring, i.e. the process of reviewing and approving loan applications, will lead to a reduction in the number of problem loans that subsequently arise. Risk management is very important not only at the transaction level (e.g., loan approval, market operations), but also at the portfolio level (development of credit and deposit policies, selection of the optimal loan portfolio, identification of possible losses, insurance).

LITERATURE ANALYSIS ON THE TOPIC

The issue of lending and related risk management has been studied in the scientific works and books of foreign economists O.I. Lavrushin, T.L. Myagkov, I. Tarasov, H. Vann Grüning, and Brayovich Bratanovich [1].

Russian economist Nadezhda Nikulina suggests in her scientific work that underwriting is an integral part of risk management, that bank underwriting is one of the ways to reduce bank risks in lending [2]. – she noted.

Oleg Lovrushin defines: "The main component of any bank's credit risk management is the identification of risk in lending. Credit risk reflects the amount of credit risk that may arise, depending on financial and operational capabilities, growth rates, and profitability prospects of interested parties," [3].

According to another local economist, Sh. Abdullayeva, "The risks that the Single Commercial Bank covers for the economy are related to its specific activities and its ability to effectively manage the cash flows passing through it"[4].

According to economist M. Kulmetov, "the credit risk of banks is the sum of bank requirements in terms of loans, categorized according to certain criteria based on various credit risks." [5].

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Another local economist, F. Kholmamatov, in his scientific research gave a more detailed definition of credit service and credit product, namely, "credit service is the result of a bank's targeted credit activity, which consists in creating favorable conditions for satisfying the client's credit needs when carrying out credit operations in order to make a profit." [6].

### RESEARCH METHODOLOGY

The methodologies used in this research study are several, including comparison, econometrics, grouping, analysis, synthesis, and statistical analysis.

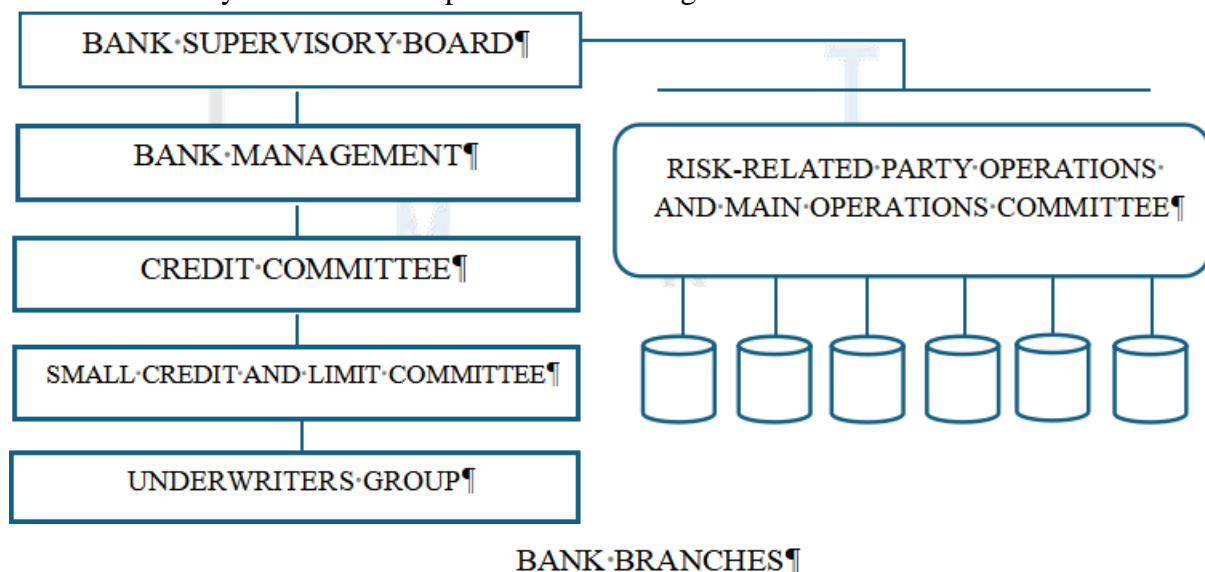
Speaking about the methodologies, of course, mathematical and statistical analysis methods stand out from those widely used in this topic, since the creation of the level of risk requires mathematical calculations and comparative expression. The research also used methods of analysis and synthesis. This is especially noticeable in the process of using various models. In addition, the research widely used the method of factor analysis and used it mainly to determine what affects the final indicators.

### ANALYSIS AND DISCUSSION OF RESULTS

Underwriting processes in commercial banks of Uzbekistan began to take shape after 2017, including the transformation of state-owned banks and their transfer to a centralized lending system over the past 5 years, with a number of efforts being made to sell them to foreign investors. These processes and econometric analyses were examined in the study using the example of the joint-stock commercial mortgage bank "Ipoteka-bank".

Commercial banks, the underwriting department has its own hierarchy, independent of other departments and direct management of underwriting should not overlap in any way with the heads of other credit departments (or business units), and any means of exerting pressure on underwriters, for example, by front office staff, governing bodies, customers, etc., to influence decision-making, are minimized.

Ways to improve the credit risk control system in the banking system. The development of a model for organizing a credit risk management system in banking practices should be carried out using the structure of bank branches based on the modular principle. In particular, the credit risk management structure in the system of JSCB "Ipoteka-bank" is organized as follows.



**Figure 1. The main structure of risk management bodies established at "Ipoteka-bank" [7].**  
Interaction of commercial bank departments directly affects the management of bank risks . To

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increase the effectiveness of their interaction, a specialized Risk Management Committee, depicted as a “bus” in the organizational chart, has been introduced to coordinate goals within the bank's structure, manage and control the level of bank activity, including credit risks. This committee itself must be accountable and directly subordinate to the Bank's Supervisory Board.

At the bank we can see conflicting goals between business staff and underwriters, which in any case, leads to many applications being rejected while trying to fulfill the lending plan.

In this regard, the Credit Committee is the arbiter for resolving conflict situations, and the final acceptance or rejection of the loan is made by all authorized persons of the Credit Committee. The decision of the Credit Committee must confirm the correspondence between the level of lending risk and the expected profitability of the transaction, that is, the repayment of this loan must be higher than significant risks. Credit limits are determined by the Bank's Credit Policy in accordance with the powers. The final decision is made in accordance with the powers (limits) specified below, as of the date of the decision to provide credit services in the system of JSMB “Ipoteka-bank”.

If we look at the structure of assets of JSCB “Ipoteka-bank” in Uzbekistan for 2021-2025, we can see that the level of diversification is negative. The share of loans in the bank's assets was 82.6 percent in 2020, while in 2024 this indicator decreased by 18.5 points and amounted to 64.1 percent. Taking into account the above circumstances, we found it necessary to develop appropriate scientific proposals and practical recommendations based on econometric analysis of these operations and the factors affecting them, regardless of the level of development of underwriting processes and operations in commercial banks. Based on this, in this paragraph of the dissertation work, we will conduct an econometric analysis on the example of the credit portfolio of one of the commercial banks of our country, JSMB “Ipoteka-bank”, and formulate appropriate developments.

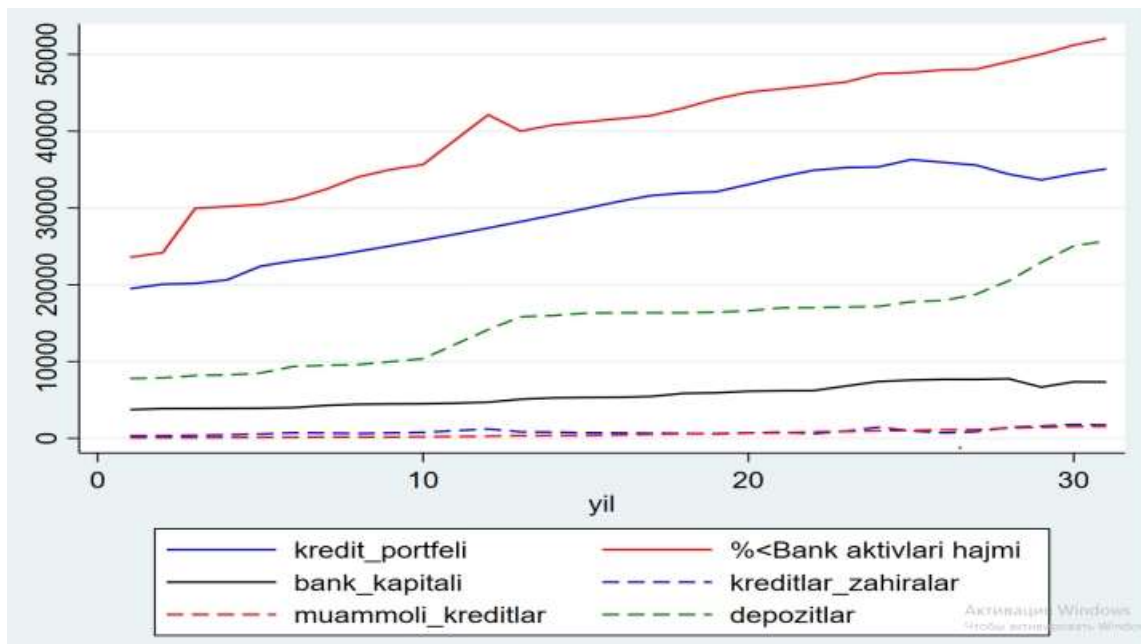
In the study, a regression model was built based on a time series in order to empirically analyze the factors that characterize the dynamics of changes in the loan portfolio of JSCIB “Ipoteka-bank”. For the analysis, a statistical database was formed based on economic indicators covering the period of 31 dates (2019:2024). Their descriptive statistics are presented in the table below.

**Table 1. Descriptive statistics of indicators [9]**

Variables	Observations	Median	Std. Dev.	Minimum	Minimum
Loan portfolio	31	29366.86	5553,644	19486.17	36298.19
Assets	31	40546.45	7928,301	23587.8	52069.43
Bank capital	31	5585,762	1366,274	3730,261	7754,783
Credit reserve	31	842.6678	386.9464	306.5893	1779,112
Problem loan	31	586.5417	472.5784	73.65977	1550,551
Deposits	31	14931.3	5011,721	7787.31	25691.69

If we pay attention to the descriptive statistics of the selected statistical indicators, then the average loan portfolio is 29,366.86 billion soums, with a minimum value of 19,486.17 billion soums, and the maximum value was 36298.19 billion soums. The standard deviation is 5553.644, which indicates that the loan portfolio moves in a relatively stable range. A high loan portfolio increases the cost of obtaining a loan, which may negatively affect the loan volume.





**Figure 2. Graphical representation of indicators [10]**

The graph above shows that over time, a steady growth trend is observed, that is, the volume of loans issued by the bank is increasing year by year. This indicates the active credit policy of the bank and the growing demand for loans in the economy.

**Table 2. Regression of factors affecting the loan portfolio model [11]**

. reg kredit\_portfeli aktivi\_hajmi bank\_kapitali kreditlar\_zahiralar

Source	SS	df	MS	Number of obs	=	31
Model	904239790	3	301413263	F(3, 27)	=	386.63
Residual	21049091.2	27	779595.972	Prob > F	=	0.0000
Total	925288881	30	30842962.7	R-squared	=	0.9773
				Adj R-squared	=	0.9747
				Root MSE	=	882.95

kredit_portfeli	Coefficient	Std. err.	t	P> t	[95% conf. interval]
aktivi_hajmi	.5673346	.0588406	9.64	0.000	.4466036 .6880655
bank_kapitali	1.420871	.3080264	4.61	0.000	.7888529 2.052889
kreditlar_zahiralar	-3.267721	.6152278	-5.31	0.000	-4.530064 -2.005377
_cons	1180.414	965.2266	1.22	0.232	-800.0676 3160.895

The equation of a multivariate regression model assessing the impact of asset size, bank capital, and credit reserves on the size of the loan portfolio:

$$kredit\_portfeli = 1180,414 + 0,567 \cdot aktivi\_hajmi + 1,420 \cdot bank\_kapitali - 3,267 \cdot kreditlar\_zahiralar + \varepsilon$$

Here:

*kredit\_portfeli* – size of bank loan portfolio

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*aktivi \_ hajmi* – bank's asset size

*bank \_ kapitali* – authorized capital

*kreditlar \_ zv* – loan reserves

$\varepsilon$  – random error

The econometric model  $R^2 = 0,9773$  is forming. This means that the variables selected in the model explain 97.7 percent of the changes in the size of the bank's loan portfolio. On this basis, this model has high explanatory power and is considered reliable for analysis.

$R^2 = 0,9773$  The model, which is equal to , explains 97.7% of the changes in the size of the bank's loan portfolio.  $F(3,27) = 386,63$  ;  $Pr ob > F = 0,000$  - The model is generally significant. The bank's assets and authorized capital  $P$  – are 0.000 - these factors are significant. The loan loss provision ratio is negative and significant - this factor is negatively affecting the loan portfolio.

According to the results of the regression model, bank assets and capital have a statistically significant and positive impact on the size of the loan portfolio. In particular, an increase in the size of assets by one unit can increase the loan portfolio by an average of 0.5673 units, and a one-unit increase in capital by 1.4208 units. At the same time, an increase in the size of loan reserves has a negative impact on the size of the loan portfolio, that is, when this factor increases by 1 unit, the loan portfolio is likely to decrease by an average of 3.2677 units.

**Table 4 Results of the ARIMA(1,1,1) model of the credit portfolio indicator[12]**

ARIMA regression

Sample: 2020m1 thru 2024m11

Log likelihood = -411.8491

Number of obs = 59

Wald chi2(2) = 9914.44

Prob > chi2 = 0.0000

kredit_portfeli_filled	OPG					
	Coefficient	std. err.	z	P> z	[95% conf. interval]	
kredit_portfeli_filled _cons	27056.93	7186.099	3.77	0.000	12972.43	41141.43

ARMA

ar L1.	.9980608	.0143899	69.36	0.000	.9698571	1.026264
ma L1.	.9031608	.0762906	11.84	0.000	.7536339	1.052688
/sigma	242.0818	24.17837	10.01	0.000	194.693	289.4705

Note: The test of the variance against zero is one sided, and the two-sided confidence interval is truncated at zero.

**the ARIMA(1,1,1) model** of the loan portfolio variable based on 59 observations from January 2020 to November 2024. The overall significance level of the model is high ( $\chi^2(2) = 9914$ ;  $p < 0,01$ ) , indicating that the model is statistically reliable.

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The coefficient of variation is 27,056.93, which is significant at the 1 percent level ( $p = 0,000$ ). This represents the overall growth trend in the loan portfolio, meaning that the growth rate in the system is stable.

**AR(1)** The value of the parameter is 0.9981, which is very close to 1. This indicates that the time series in the loan portfolio is strongly correlated with past values. This means that changes in loan volume are formed in almost complete harmony with the results of previous months.

**MA(1)** The positive and significant coefficient of (0,9032,  $p < 0,01$ ), however, indicates that credit activity is subject to random shocks and short-term changes. This suggests that short-term political or macroeconomic changes in the banking system can also affect the size of the loan portfolio.

The standard error  $\sigma = 242,08$  indicates the average deviation of the random errors in the model. This value confirms that the accuracy of the model is high enough.

### Forecasting Ipoteka bank's loan portfolio

Developed for the monthly periods from January 1, 2026 to January 1, 2030.

The stability and stationarity of the ARIMA (1,0,1) model were tested in accordance with the required conditions, and it was recommended that this model could be used as the most optimal option for forecasting future growth rates of the loan portfolio.

### Ipoteka bank's loan portfolio until 2030 forecast billion soums [13]

January 1, 2026	35712
January 1, 2027	38213
January 1, 2028	40887
January 1, 2029	43749
January 1, 2030	46812

Ipoteka bank of Uzbekistan credit settings according to the forecast by 2030, it is expected to reach 46 812 billion soums. As of January 1, 2025, the total volume was 33 376 billion soums.

Underwriting processes in commercial banks have a number of specific significance and roles in the bank's activities and the formation of a healthy loan portfolio. First of all, commercial banks pay great attention to maintaining liquidity and managing risks through underwriting in lending practices. Banks seek to diversify their loan portfolio and increase profitability through this process. In this, it plays an important role in ensuring the financial stability of banks by reducing potential risks and allocating high-yielding, low-risk loans.

### CONCLUSION

Based on research conducted on the analysis of the formation and development of underwriting processes in commercial banks, the following conclusions were drawn:

It was argued that underwriting processes in commercial banks are not fully developed, and they are not effectively using the opportunities to reduce credit risks through these processes;

It was noted that the country still has a hidden economy in entrepreneurship, loans are issued to borrowers who do not have sufficient income under state programs, underdeveloped underwriting methodology, lack of independence of banks, and lack of formation of qualified underwriter groups;



Commercial banks of Uzbekistan are not sufficiently automated, scoring models have not been sufficiently developed, and new models have not been developed.

The financial market of our country has not been formed and developed sufficiently as an important financial link of a market economy. This can be explained by the lack of transparent and complete implementation of market principles and rules .

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