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Loaning Mechanism through Automated Automatic Scoring System in Commercial Banks

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Annotation: The article provides a detailed analysis of the introduction of credit scoring as a vital necessity in the world of economics, its scientific significance, mechanisms of application in practice and the existing problems in these mechanisms. The impact of automated credit scoring on economic development in different situations is also considered, and a mechanism for lending to businesses through an automated scoring system in banking practice is proposed.

Keywords: bank, banking system, business entity, automated scoring, credit scoring, scoring models, creditworthiness, credit rating.

Introduction.

The radical economic reforms being carried out in modern Uzbekistan have ushered in a new stage in the development of banks. In the current context of global economic development, the market of banking services is characterized by its constant technological improvement and the development of various products, as well as mechanisms for interaction with customers. Today, it is a very important factor to anticipate and know the trends of customer desires for the timely satisfaction of new banking services, which are accepted by banks and appear to them within the framework of the strategy. Therefore, the need to implement innovative activities, including not only the creation of advanced banking products and services, but also the creation of more efficient internal processes of the bank, which reduces bank costs, is on the agenda.

One of the important achievements of economic reforms in Uzbekistan is the formation of a stable banking system, the country's banking system has risen to the level of a stable banking system that can meet the requirements of market relations. During the years of independence, the creation of a full-fledged economic and legal framework for banks, the adoption of a number of laws, regulations, large-scale work to bring banks into line with international standards has laid the foundation for "Banks to become the locomotive of our economy". Today, the banking system of our country is developing and becoming a financially stable banking system that meets international requirements and standards. Banks have a strong capital base and a high level of liquidity and solvency can help them to get out of any risky environment and conditions not only without losses, but also to ensure the efficient operation of other sectors of the economy. In this regard, the issues of protection, prevention and mitigation of risks arising in the activities of banks are among the current issues. The development of market relations requires the capitalization of banks, the improvement of credit relations, changes in approaches to banking. For this reason, in order to further improve the activities

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of banks in our country, to ensure their stability and liquidity, to protect and increase the stability of banks from various losses by conducting stress tests, to pay attention to the widespread use of automated credit scoring in determining creditworthiness. the relevance of financial services in ensuring stability, including the importance of the activity of banks. It is known that the problems and prospects of providing banking services to the population, issues related to their implementation in the market environment are receiving special attention. Currently, many banks provide loans to the population. The need to increase profitability in the emerging competition and consumer credit market is forcing banks to look for more effective ways to manage the profitability of these operations and credit risk. At the same time, the need for credit of low-income people is growing, and this process is intensifying.

At this point, the automated scoring model is entering the scene as a convenient support tool for credit institutions. After all, scoring develops a culture of analysis, encouraging you to consult a database on a regular basis to find useful business data. By analyzing automated scoring models, this article highlights the strengths and weaknesses of scoring and clarifies some misconceptions about this model, in particular the various considerations that the borrowing factor is hidden behind scores and speeds up the lending decision process.

Literature review

It should be noted that a lot of scientific research has been done on the subject while considering the level of study. However, it should also be noted that most of the research belongs to foreign and Russian authors. There are many publications devoted to various aspects of the issue under consideration in the scientific literature of the studied economic direction. For example, analyzing the role of bank loans in the development of the economy, the author M. Antonova said that "an effective developing economy can not be imagined without bank loans. The efficiency of individual enterprises and the region as a whole largely depends on the level of bank lending conditions. [9].

Scoring can be considered as a method of determining the creditworthiness of the borrower based on the characteristics of the client (profitability, age, number of dependents, etc.). In this sense, the researcher E. Glinkina points out that practice (economic processes - A.N.) has confirmed the significant convenience of using the scoring method [10].

"The main task of scoring is not only to determine whether the client can repay the debt, but also the financial reliability and level of responsibility of the client," - writes S. Losevskaya [11].

Researcher M. Kostikova, studying the scoring model of small business lending, notes that "scoring is one of the most active factors in the growth of most local credit institutions through small business and banking products." [12].

In order to clarify the nature of credit scoring, S. Balinina "The peculiarity of this model is that all the information received from the borrower is included in a special program. For each answer in the simplified form, the system identifies a specific point and makes a final decision on whether or not to lend, based on the sum of the points awarded as a result. He concludes [13].

Uzbek economists N.Karimov and M.Tashkhodjaev, in their article on the possibility of developing a scoring method for consumer loans in Uzbekistan, said that "speaking about the prospects for the development and implementation of scoring systems, it should be noted that this area develops in parallel with the credit bureau system. and the scoring system is used not only in express lending, but also in all types of retail lending, including credit risk transactions. [14].

Based on the above, we will try to consider the scientific nature of credit scoring. Apparently, the problem has been sufficiently studied, but more attention has been paid to the study and elucidation of the general features, tasks, and objectives of the scoring system. The scientific significance of the topic, in particular, the need for in-depth study and research on the mechanisms of application of the scoring system and the existing problems in them, is felt, especially in Uzbekistan.

Methodology

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A systematic analysis of the literature was conducted in the study of the scientific and theoretical basis for improving the quality of assets of commercial banks. Also, the scientific results of research conducted by foreign and local scientists in this area were studied and a mechanism for lending to businesses through an automated scoring system in the practice of commercial banks of the country on the basis of independent approaches was proposed..

Data Analysis

Credit scoring, one of the modern methods used in the activities of banks, allows you to prevent losses associated with non-repayment of loans through a more accurate and in-depth assessment of the creditworthiness of the business entity. In-depth analysis of the financial condition of the business entity and its credit history in which case it will be possible to give him a quick loan and reduce the risk associated with the loan.

Scoring - "scoring" is derived from the English word "score", which means the calculation of points or points. In the activities of banks, scoring can be considered as a basis for making decisions on lending, as a method of credit risk assessment system. More specifically, scoring is the process of determining whether a bank is able to repay a loan by assessing the creditworthiness and solvency of the borrower based on a number of complex indicators and statistical methods. Scoring assessment is a set of mathematical models and methods that are performed using a computer program that combines several different classifications that reflect different aspects of a client’s lifestyle and activities. The working principle of scoring is that data is collected based on the questionnaire data completed by the business entity. Each of the business entity's answers to the questionnaire, developed by a bank employee, is evaluated by specific points. Assessment is a mathematical calculation of the probability of repayment of the loan on the basis of credit history and questionnaire statistics of the business entity. And depending on their sum, a decision is made on whether or not to grant a loan to a business entity.

A business entity’s high scores increase its creditworthiness, while conversely, its creditworthiness may be low. While the scoring method for assessing the creditworthiness of the client was used first in the United States, and then in the practice of European banks, today many Russian banks and microfinance institutions from the CIS countries are implementing this method. Scoring is first used to assess the financial condition of individuals, and then in the assessment of legal entities.

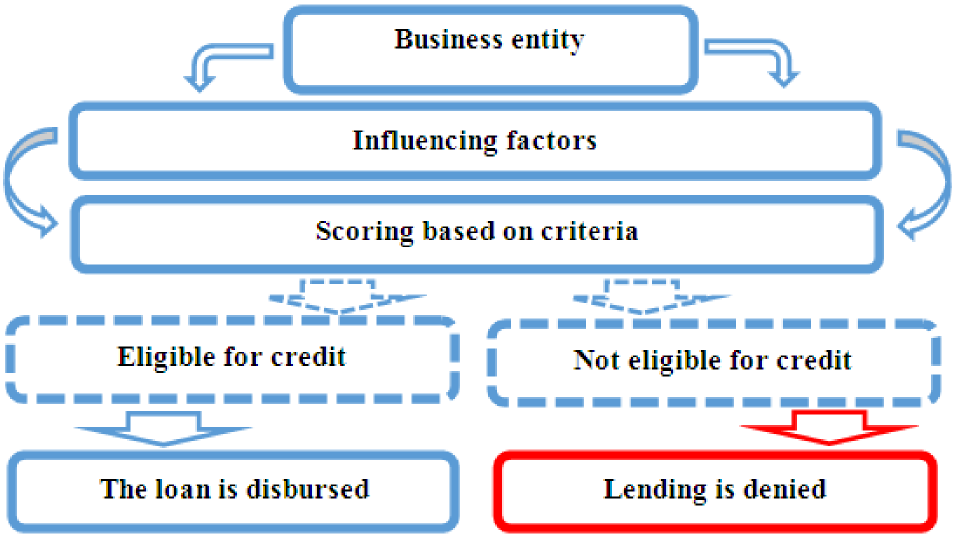

Figure 1. The process of implementing automated credit scoring in lending to businesses

If we look at the history of the scoring evaluation system, scoring was first used in 1936 by Hans Fisher (1881-1945) to classify them into groups by comparing them in the plant world. In the 1940s, the American economist David Duran used this method to classify loans into "good" and "bad" loans, and this method was called credit scoring. Although the first scoring consulting firm, Fair Issac, was established in San Francisco in the early 1950s, scoring system customer performance has evolved since the introduction of credit cards, and has become a method of assessing not only a client's financial condition but also credit risk.

David Duran emphasizes the need to pay attention not only to financial performance, but also to the social life of the client, and shows that there is a correlation between the social life of the borrower, the client's need for credit and responsibility for its timely repayment. In scoring, the evaluation of a client's performance not only on the basis of financial indicators, but also on the basis of social indicators distinguishes credit scoring from other systems of creditworthiness assessment. Social indicators include the age, sex, profession, income and total income of the client, family members, number of children, number of dependents, availability of movable and immovable property, place and term of residence, bank loans, credit cards. , place of work and internship, etc. may be included.

There are several types of scoring that can not only assess a customer's creditworthiness, but also provide information on the status of the loan repayment depending on the customer's financial condition after receiving the loan. As a result, banks may use this or that type of scoring more in their practice.

Table 1: TYPES OF AUTOMATED SCORING MODELS

Application Scoring	Scoring during the initial review of a customer's loan order when granting a loan
Behavioral Scoring	Activity or behavior scoring related to decision making on a loan portfolio or individual loan management
Collection Scoring	Scoring to identify priorities and measures to work with clients with a "bad" client status
Fraud Scoring	Detection of various fraudulent actions committed by borrowers and screening of their prevention processes

Identifying the factors, indicators, secondary indicators, and factors that are very necessary and important in scoring evaluation is the basis of this system. For example, in the UK, the scoring system includes the client's age, family members, number of children, place of work, years of employment, occupation and income, spouse, occupation, place of work and income, home, its value, area of residence and how many years he has lived there, how many years he has been a customer of this bank, the availability of his phone, credit card, checkbooks, etc. Scoring scores developed by FICO (Fair Isaac Corporation) are popular in the United States, with values ranging from 300 to 850 points. In this case, the financial condition of the borrower is assessed by points on the following scale:

- out of 690 points - 760 points and above - excellent;
- Average standard level from 650 points to 690 points;
- From 640 points to 650 points can be assessed as good and credit can be allocated.

The FICO rating is based on the following five main factors: payment history (35%), debt obligations (30%), credit history and maturity (15%), loan order or demand (10%), and bank accounts. and is formed due to the influence of loan types (10%).

The score determined by scoring is not a constant indicator, so its amount varies. It depends on the activity of the client, the bank has new information about the client. The low or high rating given to the client's activity is the basis for assessing the extent of credit risk, whether or not to give him a loan, and whether the client can repay the loan or not. For example, in the practice of foreign banks, there is also the concept of demographic scoring, where customers aged 35-40 create a basis for high scoring. If owning a home increases the scoring rate further, the older the client is, the more children or dependents in the family, the lower the scoring score, and so on.

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As the assessment of customer performance on the scoring system is automated, it reduces operational risks and costs, reduces the time to process a loan application, helps to organize banking activities in accordance with the requirements of credit policy. Along with the pros of scoring, there are also some disadvantages.

AUTOMATED CREDIT SCORING	
Positive aspects of scoring	**Disadvantages of scoring**
- the implementation of credit policy objectives will be followed and credit policy will be conducted in a centralized manner; - the data is processed in an automated system; - the weight of operational risk is low because decision-making is automated; - The credit risk is low because the scoring system is less likely to cheat; - the effect of the human factor is reduced; - current costs are reduced, it is convenient for the customer, credit opportunities are wide; - the interest rate on a loan in a scoring system will be low; - protects banking activities from various frauds; - out of a large number of customers, customers with a high rating are quickly distinguished; - loan application review and lending process will be accelerated, etc.	- is based solely on the information provided by the customer about himself; - the criteria of the evaluation system are influenced by changes in the socio-economic situation; - it is necessary to change the system indicators; - priority is given to the client's previous activities and financial condition; - a customer who cannot get a loan from one bank can get a loan from another bank; - small customers are more likely to be unable to meet the requirements; - reduces the demand for the qualifications of the bank employee, etc.

Figure 2. Pros and cons of automated credit scoring

From the above data, it can be seen that the scoring method has more advantages and disadvantages than its disadvantages in allocating credit.

In foreign countries, each bank develops its own scoring based on the client's financial condition, creditworthiness, ability to pay its obligations, the level of risks that may arise in its activities, the ability to cover them and other evaluation indicators. Each bank also has stop signals, which reduce the scoring points and, consequently, reduce the likelihood of obtaining a loan. These are:

- frequent changes of workplace;
- families with many children or many dependents;
- very young or elderly customers;
- frequent customer visits to banks;
- certain types of customer activities, such as taxi drivers, realtors, social workers, managers whose salaries depend on sales volume;
- people who do not pay attention to their appearance, do not behave at the level of demand, etc.

Table 2: Automated credit scoring model for business entities

Factors	Ball
Credit security	
Supplies are available	*1*
Supply not available	*0*
Accommodation of the business entity	
House-yard	*3*
Private apartment	*2*

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His parents' house	*1*
Rent	*0*
The level of leadership knowledge	
DSc	*4*
Master	*3*
Bachelor	*2*
He is studying for a bachelor's degree	*1*
Secondary education	*0*
Proximity to a bank branch	
Bank branch, in conjunction with a business entity	*2*
The bank branch is not in the same district as the business entity	*0*
The marital status of the leader	
married	*3*
Not married	*1*
The age of the leader	
Between 20 and 30	*4*
Between 30 and 40	*3*
Between 40 and 50	*2*
Between 50 and 60	*1*
Above 60	*0*

The above automated scoring assessment is a useful system for both the bank and the client of both subjects of credit relations. If the bank avoids credit-related losses, the customer will be able to get, use and repay a quick loan without any hassle. In our opinion, the use of an automated credit scoring system in the allocation of loans to businesses by commercial banks of the country can give positive results. It would be expedient to create a regulatory framework for the application of this system. For this purpose, we have presented a credit scoring model that can be used in lending to businesses.

Conclusions and suggestions.

Summarizing the above analysis, we propose the following model, which can be further improved by analyzing the internal capacity of commercial banks, expanding and changing factors based on the requirements and characteristics of regions and businesses.

Implementation of measures to introduce an automated credit scoring system in the practice of domestic banks, followed by the introduction of this system for lending to legal entities, in which credit scoring factors include customer financial condition, credit history, income stability, market position, product demand, It is important to prioritize such indicators as the share of funds, receivables and payables.

Table 3: Automated scoring of business entities system scale

Credit scoring %	Credit scoring range	Quality	Risk class
91% - 100 %	44 – 49	The highest	**A**
76% - 90%	37 – 43	Good	**B**
50% - 75%	25 – 36	Medium	**C**
<50%	< 25	Below average	**D**

Therefore, the introduction of automated credit scoring practices in the allocation of loans to businesses will increase the volume of credit investments in the future, increase production capacity and efficiency, as well as prevent potential risks and risks, coordinate banking risk management strategies based on scoring results. allows Therefore, in our opinion, the development and implementation of a program of measures to introduce an automated credit scoring system for business entities in the banking practice of our country will serve to ensure the financial stability and liquidity of commercial banks, as well as raise their performance to international standards. we think.

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