

Research on Financial Loan Index Analysis and Risk Evaluation Based on FTA

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Abstract: This paper uses FTA technology to analyze and evaluate the risk index so as to ensure that the credit is not affected, and to establish a scientific credit scheme and enterprise credit evaluation system. The research index system is divided into 9 types and 76 specific indicators. The research methods and results will improve the risk system of the loan and promote the adhesion between the information technology and financial loan, which is of great importance. According to the quantitative indicators, to establish a detailed credit file, determine the different credit grades, check the different loan lines and interest rates, implement the differential management, and gradually establish and improve the risk evaluation system.

1. Research Significance and Background

Credit loan institutions and small and medium-sized banks should collect loan information and conduct credit evaluation in a more personalized way, and credit evaluation should be taken as an important part of loan analysis by credit officers. Whether the general credit evaluation model is suitable for local credit risk assessment, how to improve the accuracy of credit risk assessment by technical means, and how to use the relevant theories consistent with credit risk assessment characteristics of loan companies to carry out risk quantitative analysis are important.

At present, loan companies in financial institutions are an important basis for achieving sustainable economic growth, and their innovation ability is the key to improving their competitiveness, and also an important carrier of technological innovation and industrialization. In the process of development of financial loan enterprises, the risks associated with independent innovation are out of step with the development of enterprises, so credit and risk evaluation are indispensable.

In the business scope of the financial loan company, it is necessary to play its role of bonding with information technology and improve the establishment of a diversified financial loan service system. This topic puts forward scientific and reasonable risk analysis and evaluation methods based on the development status of loan enterprises, which has better theoretical and practical significance. From the organic combination of loan, risk and evaluation, this paper puts forward new techniques and methods to supplement the defects of loan evaluation theory.

This project uses FTA technology to realize risk analysis, evaluation, prevention and prediction. FTA is a common analysis method and is suitable for optimal design, safe production, risk assessment, scientific management, etc.

Research and analyze the different contents of domestic and foreign financial structure and mechanism, financial risk evaluation, and give corresponding countermeasures. Researchers at home and abroad have not studied the performance, uncertainty, risk and security of information technology and financial loans, and need further study. Improve credit rating, reduce risk, enhance the attraction of loan credit, and further improve the innovative ability of loan business. The study of credit risk analysis and evaluation of financial loans based on FTA is a relatively new subject, which is worthy of in-depth study and application.

The loan company is a new type of non-bank financial institution, which faces various risks similar to commercial banks and other financial institutions in the operation of the market economy and belongs to a high-risk industry. Loan companies have certain main body defects, which will

seriously affect the development of financial market and the innovation of formal financial system. The sources of funds of loan companies are strictly limited, and the use of funds also shows a single phenomenon. The business is a basic financial product, characterized by small amount, dispersion and short - term. When loan customers are affected by the economic environment, structural adjustment conditions and loan defaults, loan companies are more likely to encounter credit risks that cannot be recovered due to loan maturity, and the chain of credit funds is interrupted, causing operational risks.

Therefore, it is necessary to analyze and evaluate credit risk, and to study the integration of information technology and loans and risk evaluation.

2. Research content

Although there are many policies and systems for financial support for development, the problem of financial loan risk has not been fundamentally solved, and the credit problem has gradually become a major problem restricting the development of financial enterprises. According to the actual problems of the loan enterprises, the research is carried out from the following three aspects: the loan enterprises themselves, enhance the strength and service technology of loans, and improve the credit level; Using FTA technology to realize risk analysis and evaluation to ensure the credit of loans is not affected; Establish enterprise credit and evaluation system and scientific credit plan.

Personal consumption staged loan scoring cards							
Type of information	sequence number	Content of information	Standard score	Percent ages%	Scoring criteria	Customer information (value)	Actual score
Purpose, amount and repayment of loans (10 points)	1	name	2	2.00%	Those who purchase personal consumer goods or services such as mobile phones score 1 point; Two points for the rest.	Small loans	1
	2	Amount paid out (yuan)	3	3.00%	The amount of out-of-pocket payment is 0.5 points of 20 % of the total price of the commodity: 20 % of the total price of the commodity ≤ 1 point of 30 % of the total price of the commodity: 30 % of the total price of the commodity ≤ 2 points of 40 % of the total price of the commodity: 40 % of the total price of the commodity ≤ 2.5 % of the total price of the commodity: 3 points of out-of-pocket amount ≥ 50 % of the total price of the commodity	500	2
	3	Loan amount (yuan)	2	2.00%	The amount ≤ 10,000 yuan, 2 points: The amount of 10,000 yuan is ≤ 20,000 yuan, 1 point: The amount of 20,000 yuan is ≤ 30,000 yuan, 0.5 points	30000	0.5
	4	Period (months)	1	1.00%	9 months ≤ repayment period <UNK> 12 months, 0.5 points: 12 months ≤ repayment period <UNK> 18 months, 1 point: 18 months ≤ 24 months, 0.5 minutes	12	1
	5	Monthly repayments	2	2.00%	The monthly repayment amount ≤ 500 yuan, 2 points: The monthly repayment amount of 500 yuan is ≤ 1000 yuan, 1.5 points: The monthly repayment amount of 1,000 yuan is ≤ 2000 yuan, 1 point: Monthly repayment > 2,000 yuan, 0.5 points	200	2

Fig. 1 Scoring Criteria

Credit grades A, B, C, D and E respectively represent users' credit grades from high to low and loan risks from low to high. Correct decision-making means optimal allocation of resources. To study this subject through establishing a relatively perfect loan risk analysis and evaluation method, we should closely follow the actual situation of the enterprise and find a reasonable loan credit evaluation scheme. Under the influence of subject and object and internal and external factors, credit risk assessment of loan companies has certain particularity. Based on the operating characteristics of the loan company, this paper uses FTA and other methods to correctly assess the credit risk of the loan company's customers.

Credit rating mainly adopts " qualitative analysis" and " quantitative analysis" in FTA, and credit rating is quantified by combining credit characteristics. The index system studied in this topic is divided into 9 types and 76 specific indicators: 1) loan purpose, amount and repayment, including loan name, brand, model, quantity, unit price, total price, self-paid amount, loan application amount, repayment period and monthly repayment amount; 2) My basic information, including the lender's name, gender, nationality, age, educational background, final graduation institution, ID card number, presence or absence of vocational qualification certificate, marital status, name of vocational qualification certificate, professional title and contact phone number; 3) My living conditions, including living with the elderly, renting houses, living in collective dormitories, owning houses without mortgage loans, owning houses without mortgage loans, and current living addresses; 4) My work status, including the name of the current work unit, the address of the unit, the nature of the unit, the fixed telephone number of the unit, the name of the person in charge, the telephone number of the

person in charge, the name of the unit colleague, the telephone number of the colleague, the department in which I work, the position / position and the working hours of the current unit; 5) My financial status, including my financial source, my monthly income, family monthly income, family main assets, total family assets, total family debts, basic household expenses, monthly expenses for supporting the elderly, monthly expenses for education, and other monthly expenses; 6) My reputation status, including whether there are credit cards, issuing banks, whether there are overdrafts, overdrafts, current loans, loan banks, loan balances, whether the loans are overdue, and the amount of external guarantees for me and my family; 7) All kinds of loan approval documents, etc.

Each of the above indicators has a specific score weight. Using the weighting algorithm, the credit score and credit level are obtained. A score is the highest and the risk is the lowest. B, C, D and E credits are gradually reduced and the risk is increased.

Application for Personal Loan					
Purpose of loan(purchase of goods or services), amount and repayment					
1. Name	2. brand	3. model	4. number	5. univalent	6. total
Purchase of household appliances	Famous brand	cn001	1	20000	20000
7. Amount paid out	8. Amount of loan applied		9. Period(months)	10. Monthly repayment amount	
¥ 0	¥20000		10	¥200	
Basic information about myself					
11. name	zhangsan	12. sex	male	13. ethnic	the Han nationality
14. year old	35	15. educational background	undergraduate course	16. Final graduate school	A university in Beijing

Fig. 2 Application for Personal Loan

We will further improve the credit database of lending institutions and study credit evaluation techniques. According to the quantitative indicators, detailed credit files will be established, different credit grades will be determined, different loan quotas and interest rates will be approved, and a differential management system will be implemented. According to the credit status, the credit rating will be re - determined, the credit rating will be raised for users who keep their promises and repay their loans in a timely manner, and the credit rating will be lowered for users who do not keep their promises and repay their loans late.

3. Features and Innovation

(1) Build a loan index analysis scheme with theoretical and practical significance, and study loan analysis reports and evaluation techniques.

(2) Establish a service-oriented architecture (SOA) loan credit evaluation platform to enhance the integration of information technology and financial loans.

Service Oriented Architecture (SOA) loan platform includes loan information management platform, loan marketing platform and loan risk evaluation platform. The loan information platform provides decision support for the cooperative management of loans through the information of the system, and establishes the basis for cooperative operation of loans.

(3) To analyze and study the indicators of financial loan enterprises, realize the integration and innovation of technology and finance, and establish a loan system coordination and incentive mechanism scheme based on information technology.

(4) It has various statistical functions and is convenient and fast.

Research the loan information cooperative management module, ensure the maximum loan efficiency, research the construction of decision support platform, discuss the evaluation and detection from the aspects of demand and market, and realize the safety warning of loan credit.

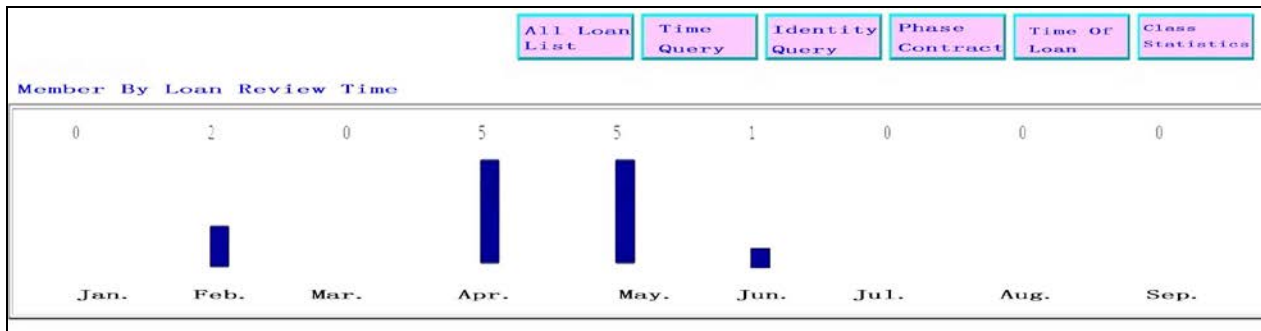


Fig. 3 Member By Loan Review Time

Features and innovation: Introduce FTA technology into the loan system, analyze the current shortage of the loan system in depth, and build a service-oriented architecture (SOA) loan information platform, loan marketing platform, loan risk evaluation platform, etc. from the aspects of information management, risk analysis, decision support, etc. Combining computer technology with financial loans, planning and designing a service-oriented architecture (SOA) loan architecture; Based on the construction of information platform, the loan process is collected and analyzed to realize scientific and efficient cooperative management. The operation mode of risk analysis using FTA evaluation technology and the establishment of financial loan risk evaluation mechanism etc.

4. Research methods and feasibility

Research methods:

(1) Data acquisition and action research method: Analyzing and investigating the situation of financial loan companies through data collection, etc., and mastering the original materials to provide sufficient factual basis for the research of the subject; Adjust the research plan appropriately, find a foothold in the actual work, and commit to the real and effective solution of practical problems.

(2) Theoretical induction and case study methods: collecting, collating, mastering related financial loans and credit evaluation papers, etc., scientifically explaining and summarizing relevant contents, and providing a solid and reliable theoretical basis for research on the subject; The research scope of the subject to carry out in-depth and comprehensive analysis and research, reveal its laws and nature.

(3) Practical analysis and evaluation method(qualitative and quantitative): According to the purpose of research, reasonably create conditions, conduct practical operations according to experimental requirements, discuss research methods for credit analysis and evaluation of loan companies, and use FTA technology for qualitative and quantitative analysis.

Technical Route: Theoretical Research on Loan and Risk Evaluation → Comparison of Loan Credit and Risk Situation and Statistics → Analysis of the Status and Problems of Loan Enterprises → Analysis and Research of Loan Indicator Status → Construction of a Service Oriented(SOA) Loan Information Platform, Loan Marketing platform, loan risk evaluation platform construction → technical analysis and summary → writing research reports and papers → project conclusion and appraisal → project implementation, promotion, and improvement.

After collecting financial information(loan name, brand, model, quantity, unit price, total price, out-of-pocket payment amount, loan amount, repayment period, monthly repayment amount, etc.), FTA is used for qualitative and quantitative analysis. Using the BP algorithm to obtain the evaluation conclusion including the financial evaluation level, comprehensive index and other parameters, complete the financial information management and evaluation system, and test, optimize and perfect it. The route can be summarized as follows: financial data acquisition → financial data analysis → multi-technical integration → comparison of algorithms → platform functional integration → data and platform on-site testing → platform application promotion → platform improvement.

The experimental solution is feasible. This paper mainly adopts financial data acquisition and processing, technical method optimization analysis, information processing and curve fitting, field experiments and other methods. First, by collecting financial data and manual input into the original

financial database, the data are classified, managed, and repaired, and a standard financial database is established for the analysis and processing of other modules. This paper is feasible in financial data acquisition, technology method optimization, financial platform module development, forecast evaluation, data testing and so on.

5. Expected objectives

Taking information technology as the foundation of research and development, the author studies the risk and credit problem of current financial loans, explores the scientific and reasonable loan credit evaluation system, and carries on the empirical analysis to the loan enterprises to provide a certain theoretical and practical basis for the decision-making plan of the competent Department of the loan enterprises. After the implementation of this topic is completed, the research department and the company are organized to conduct research and design various demonstration programs, project research plans, and research papers during the research process. To analyze and study credit evaluation of financial loans, the research results are of great reference significance to improve the risk system of financial loans, promote the adhesion of information technology and financial loans, and help to promote the construction of risk credit evaluation system. The research results can effectively solve the problem of financial loan risk, provide scientific solutions for it, and provide decision-making basis for local governments to promote the integration of computer technology and financial loan. Using FTA technology to realize risk analysis, evaluation, prevention and prediction.

6. Conclusions

This article establishes a relatively perfect loan risk analysis and evaluation method, closely adheres to the actual situation of the enterprise, and makes a scientific and reasonable loan credit evaluation plan. Affected by the host, object, and internal and external factors, the credit risk evaluation of the loan company has certain particularity. Based on the characteristics of the loan company, this paper uses FTA and other methods to correctly evaluate the credit risk of the loan company's customers, and constructs a credit risk assessment platform that is consistent with the characteristics of the loan company's operation at different stages. The application of FTA method in financial industry was studied, and MATLAB was applied to the processing of financial data. It involves the use of FTA and other methods in the classification and qualitative quantitative analysis of financial data, and the drawing of accident trees; Using BP neural network to study financial data. In short, the research content of this article is relatively novel. The research ideas and application results are required by many industries, and they are practical and promising, and they are worth promoting and applying.

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