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# Enterprise credit evaluation mechanism

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## 1.Establishment of enterprise credit rating system

### 1.1 Principle of index design

In order to measure the credit risk of SME objectively, comprehensively and scientifically, the following principles should be followed when studying and determining the credit risk evaluation index system and its evaluation methods.

#### (1) Principle of objective

The establishment of any evaluation index system and the choice of evaluation method are based on certain practice or research, so the first consideration of the construction of SME credit risk evaluation index system is to evaluate the target of its loan credit.

#### (2) Scientific principle

Whether the evaluation index system of credit risk of SME is scientific, whether the index system should be considered is consistent with the status of SME in China, etc., the determination of index weight coefficient, data selection, calculation and so on should be based on science.

#### (3) Principle of comprehensiveness and independence

The design of the index system should consider the internal relations of different indexes on the whole, so as to make the indexes more comprehensive; at the same time, not only simplifying the index system, but also keeping the independence of each index, so as to explain the nature of the research problems from different sides.





#### (4) Principle of feasibility and operability

The index data of the index system is relatively easy to be obtained and calculated, and has a good feasibility. And the index can be used effectively in the actual work while meeting the needs of the problem research, and has good index and reference function to the actual problem.

#### (5) Comparability principle

The design of credit risk evaluation index system of small and medium-sized enterprises should not only reflect the credit status of SME comprehensively, objectively and accurately , but also have good comparability between different SME.





## 2. The construction of enterprise credit evaluation index system

### 2.1 Construction and grading of indicators

Under the construction principles of the above index system, combining with the actual situation of small and medium-sized enterprises in our country, we start from the solvency of enterprises, and put emphasis on the real problems such as the financial statements of small and medium-sized enterprises always be nonstandard etc., putting forward that the enterprise credit evaluation system is initially set as the following indicators, with the registration information and historical information of small and medium-sized enterprises, we should have the scoring system as shown in the following figure:

Level - I indicators	Level - II indicators	Level - III indicators
Enterprise registration information index	Enterprise information integrity score	Enterprise registration information score
		Enterprise qualification audit score
		Enterprise additional information score
	Enterprise intrinsic attribute score	Enterprise survival time
		Enterprise scale factor
		Enterprise credit record
Enterprise historical record index	Basic score	
	Addition and subtraction of historical records	Bonus points for good historical records
		Deduction for breach of contract





## 2.2 Enterprise registration information index

Enterprise registration information indicators reflect the enterprise credit information provided by the enterprise registration, which is conducive to our judgment of the true and reliable degree of the enterprise, mainly including the enterprise information integrity score and the enterprise qualification audit part, enterprise information integrity accounting for 40 % of the enterprise credit rating score, the enterprise intrinsic attribute score accounting for 20 % of the enterprise credit rating score. These two parts need the information provided by the enterprise to take care of the small and medium-sized enterprises who often can not provide more standardized financial information, so only to provide relatively simple information, in addition to the additional enterprise additional information score, encouraging enterprises to provide more valuable information.

### (1) Enterprise registration information integrity

The information integrity of the enterprise accounts for 40 % of the enterprise credit rating, and the information integrity score includes the enterprise registration information score, the enterprise qualification audit score and the enterprise additional information score.

Enterprise registration information score, including 25 pieces of enterprise effective registration information , 14 of which is required, the more complete the enterprise registration information, the higher score of the registration information integrity part will get.

The score of enterprise qualification examination includes the confirmation of multiple enterprise qualification examination documents, including 8 items of audit information, 5 of which are the necessary audit items, such as ① the license of legal person unit ② bank account opening license ③ enterprise business license ④ organization organization code certificate ⑤ country local tax certificate. The platform through the audit of enterprise documents, to ensure the control of risk; the more effective qualification audit documents enterprise provide , the higher score it will get.





The additional information score section includes other non - audit documents and specific enterprise business indicators and supporting documents of the enterprise. Other non - audit documents of the enterprise will increase the score of the enterprise information integrity. The additional non - required audit documents provided by the enterprise include: the enterprise's capital flowing water for more than half a year, the enterprise mortgage asset appraisal document, and the third party credit audit document of the enterprise; the additional indicators can be provided as shown in the following table, the relevant documents are the financial statement information disclosed by the enterprise.

Debt paying ability	Current Ratio
	Speed ratio
	Asset-liability ratio
Profitability	Rate of return on total assets
	Rate of return on net assets
Development capacity	Sales growth rate
	Total assets growth rate
	Operating income

## (2) Enterprise intrinsic attribute score

The intrinsic attribute score of the enterprise accounts for 20 % of the credit rating score of the enterprise, containing some basic characteristic information of the enterprise, and it is used to measure the credit situation and operation ability of the enterprise, including the establishment time of the enterprise, the level of enterprise scale, the score of enterprise credit record, and so on.







It focuses on the enterprise credit reporting scoring system, and the main reference indicators of credit reporting score are as shown in the following table:

Credit record information	Repayment of the bank or other creditors by the enterprise
	The possibility of concealing facts and taking loans
	The degree of honesty and trustworthiness of the enterprise legal person
	Do the enterprise legal person have the malicious overdraft behavior
	Ratio of loan to deposit

### 2.3 Enterprise history score

The enterprise history score reflects the enterprise credit information reflected in the history of the platform, which is conducive to improve the enthusiasm and loyalty of the enterprise for the use of the platform, but also can monitor the credit level of the enterprise dynamically. The history score accounted for 40 % of the corporate credit rating. The scores of historical records mainly include the basic fraction and the addition and subtraction of historical records.

#### (1) Base fraction

The historical score of the enterprise will have a basic score, accounting for 60 % of the history score, the total score of the enterprise's history will be added and modified on this base score.







## ( 2 ) Addition and subtraction of historical records

The addition and subtraction of the historical records of the enterprise include good historical record points and default deduction: when the enterprise has a good record on the platform, the enterprise will gain the marks of the historical record part; when the enterprise does not behave in good faith, such as delaying repayment, refusing to perform the contractual obligations, loan default, concealing the true lending and other behaviors, the enterprise will deduct the historical records of the enterprise according to the seriousness.

## 2.4 Corporate credit scoring mechanism

The overall credit score of the enterprise is as follows:

Total credit score = Enterprise information integrity  $\times$  0.4 + Enterprise intrinsic attribute score  $\times$  0.2 + Historical records of enterprises  $\times$  0.4





### 3.The influence of enterprise credit index system on loan quota

#### 3.1 Related parameter settings

$Y_i$ : After the loan enterprise passes the platform audit and the system rating, finally the enterprise on the platform recommend the maximum loan limit;

$C_i$ : The overall credit score of the loan enterprise, the score is from 0 - 100;

$X_{i1}$ : The value of the enterprise's registered capital or collateral provided by the loan enterprise;

$X_{i2}$ : The enterprise business line of the loan enterprise is discounted, and the income level is subject to the daily running account of the half year;

$X_{i3}$ : The guarantee quota of the guarantor for the loan enterprise;

b1: Coefficient of  $X_{i1}$ ;

b2: Coefficient of  $X_{i2}$ ;

b3: Coefficient of  $X_{i3}$ .

The corresponding coefficients are constant parameters, respectively controlling the proportion of enterprise income, mortgage and guarantee in the loan quota, the three coefficients are relatively conservative initially, later platform can be adjusted according to the actual situation.

#### 3.2 The total recommended maximum loan quota model for enterprises

In the loan quota model, the registered capital of the loan enterprise ,the value of the collateral provided, the turnover of the enterprise of the loan enterprise and the amount guaranteed by the guarantor are positively related to the loan amount of the loan enterprise. In addition, in the case of other conditions, the credit line of the loan enterprise is directly related to the loan line, in direct proportion.





The maximum loan line recommended by enterprise is shown in the following formula.

$$Y_i = \frac{1.5 \times C_i}{100} \times (b1X_{i1} + b2 \times X_{i2} + b3 \times X_{i3})$$

When the enterprise signs a contract on the platform to become a guarantor of other user loans, the loan amount will be reduced according to a certain ratio until the insured performs the repayment obligation and complete the transaction.

