

## Countermeasures Research on Credit Constraints of New-type Agricultural Management Entities

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### Abstract

*Credit constraints such as difficult financing and expensive financing are the main reasons that plague the development of new-type agricultural management entities. Based on a questionnaire survey of nearly 500 new-type agricultural management entities in Zhejiang Province and interviews with 105 senior agricultural financial institutions, this paper uses the Probit model to analyze the new-type agricultural management entities from three perspectives: new-type agricultural management entities, financial institutions, and government departments. This study found that factors such as the weak asset strength of new-type agricultural management entities, the large amount of credit demand, the strict requirements of financial institutions for approval, and the lack of supportive government policies and measures have led to signing checks on credit constraints. Therefore, countermeasures such as innovative mortgage guarantee mechanisms to make up for the lack of credit, speeding up the construction of the rural credit system, reducing transaction costs, effectively distinguishing credit subjects from their uses, adopting differentiated credit policies, and improving the production and operation capabilities and management levels of business entities are alleviated credit constraints of new-type agricultural management entities.*

**Keyword:** Credit constraints; transaction costs; information asymmetry; countermeasures

### 1. Introduction

The issue of agriculture, rural areas and farmers is a fundamental issue related to the national economy and people's livelihood. For a long time, there has been a contradiction between small farmers and large markets in China. How to provide adequate financial support for agricultural production to cultivate new-type agricultural management entities to achieve moderate scale operations is the key to solving this contradiction. However, compared with the traditional farmers' credit needs, new-type agricultural management entities have difficulty in meeting their needs due to the high up-front cost input, large scale, and external influences. The current rural financial supply model and service system are challenging to meet their needs. It has become an important "bottleneck" restricting its development.<sup>[1]</sup> On the one hand, in terms of GDP ratio, China's primary industry accounted for 7.2% of GDP in 2018, and the proportion of developed regions and provinces such as Zhejiang was even lower than 5%. The portion of the entire socio-economic organization is deficient, and the agricultural investment cycle is long and productive. Especially after the current tax policy is exempted from agricultural tax. However, local governments at all levels attach great importance to agricultural production, they forced to GDP. The assessment did not invest too much energy and resources to support agricultural development substantially. On the other hand, due to the vastness of rural areas, scattered living, and inconvenient transportation, rural financial institutions need to face a large number of small-scale agricultural management entities. They have low incomes, limited assets, and lack a sound credit record and traditional collateral. The natural environment has a substantial risk and high uncertainty. Besides, agriculture has no running water, no cash deposits, and small contributions to profits. High transaction costs and asymmetric information lead to the inability to identify risks effectively. Only the majority of resources and energy can invest in Industrial areas with large capital flows, and quick returns have led to widespread prudence and even prudent lending in rural financial institutions. Therefore, the way to break the credit constraints of the new-type agricultural management entities, not only increase investment and support for the agricultural industry from the government level, accelerate the construction of agricultural industry systems and supporting financial support policies, but also analyze the credit constraints of the new-type agricultural management entities in the influencing factors and formation mechanism, with agricultural supply-side structural reform as the mainline, solve key issues such as the balance of benefits and risk returns between rural financial institutions and new agricultural operators from the source, so as to find effective targets on this basis. The solution is to comprehensively promote rural financial innovation to support the cultivation of new agricultural business entities to achieve breakthrough development.

## 2. Literature Review

In recent years, many scholars have conducted in-depth research on the credit constraints, causes and countermeasures of new-type agricultural management entities. Lin Lefen and Faning (2015) conducted interviews with 460 new-type agricultural management entities in Yancheng City, Jiangsu Province, and found that they generally have a shortage of funds of large-scale agricultural operations. The funding gap is mostly above 100,000 yuan, and their financing needs cannot meet.<sup>[2]</sup> Regarding the causes of credit constraints, Linina et al. (2016) found that due to the differences in resource endowment, operating capacity, and social capital among different operating entities, their credit needs, credit constraints, and funding gaps are also different. Jiang Lili's (2017) research found that due to insufficient mortgage assets and other credit conditions of new-type agricultural management entities, as well as excessive financing conditions and complex financing procedures set by financial institutions and financial markets, their financing costs were high and financial institutions and financial markets are reluctant to finance them, resulting in financing constraints.<sup>[4]</sup>

Regarding to how to deal with credit constraints efficiently, Wang Dingxiang (2016), etc. proposed that credit policy guidance should be strengthened, rural sleeping property assets should be appropriately activated, mortgage financing scope should be expanded, innovation in rural financial products and service methods should be strengthened, and credit support should be continuously enhanced. , Standardize the credit environment, optimize credit management processes, and gradually improve agricultural financial socialization services; Lin Lefen et al. (2016) based on a survey of 191 non-pilot villages in Jiangsu Province that family farms have a strong demand for mortgages on farmland management rights.<sup>[5]</sup> It is proposed that the government use the policies reasonably, implement financial support for agricultural funds to family farms, and improve agricultural insurance. Coverage rate, improve the property rights trading market and establish a credit system to solve the problem of difficult financing of new agrarian entities.<sup>[6]</sup>

It can be seen that at this stage, due to high uncertainties, high risks, high transaction costs, and asymmetric information, it is difficult to identify risks, and it is difficult to control risks due to lack of sufficient mortgage guarantees. There are severe credit constraints. However, in the face of the analysis of the causes of credit constraints, scholars at home and abroad are more likely to analyze the new-type agricultural management entities, financial institutions and government policies in one or two aspects, and less systematically analyze the formation mechanism from the results of the tripartite cooperation. It is less necessary to provide overall countermeasures from multiple perspectives, such as strengthening the self-regulation of new-type agricultural management entities to improve their ability to resist risks, increasing credit support for innovative products and services of financial institutions, strengthening credit guidance and support by relevant government departments, and introducing reform and supporting policies suggestions. Therefore, this paper starts with reducing transaction costs and reducing information asymmetry and uses qualitative and quantitative methods such as executive interviews and model tests as the basis for empirical investigations from three perspectives of new-type agricultural management entities, financial institutions and relevant government departments. , In-depth analysis of the reasons leading to the credit constraints of new-type agricultural management entities, and on this basis, explore methods and countermeasures to ease credit constraints.

## 3. Empirical investigation and model construction

### 3.1 Sample selection and parameter setting

#### (1) Sample selection

This article takes the credit sample of Zhejiang Province, where the development of new-type agricultural management entities is relatively mature and rural financial reforms are active. Researchers approved 35 county-level cities under the jurisdiction of 11 prefecture-level cities in Zhejiang Province except for Zhoushan City in 2019. A stratified sampling method was adopted to conduct questionnaire surveys and executive interviews with nearly 500 new-type agricultural management entities and 105 agricultural service financial institutions<sup>1</sup>, and a total of 465 valid questionnaires and 105 interview records were obtained. Among them, the new-type agricultural management entities surveyed in this survey are divided into the following four categories according to the local business scale standards of Zhejiang Province: ① large-scale breeding and breeding households, and the transferred land scale is 50 acres to 100 acres; The scale of the transferred land ranges from 50 mu to 200 mu, 87 households, accounting for 18.7%; ③ professional cooperatives, 78 households, accounting for 16.78%;

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<sup>1</sup>At this stage, local agricultural credit is mainly dominated by local agricultural merchants. Agricultural Bank and Postal Savings Bank are partly involved. Other commercial banks are rarely involved. Therefore, the credit samples of these three banks are mainly used as research objects.

④ agricultural enterprises, the scale of transferred land is more than 300 acres, 15 households, accounting for 3.23%. It can be seen that most of the subjects are mainly large-scale breeding farmers and family farms, and the scale and intensification need to be improved.

(2)Parameter settings

The questionnaires previously designed were sent to six agricultural experts and six financial experts using the Delphi method, and the credit constraint influencing factor parameter tables were sent to the experts. After repeated consultations and feedback from experts, the right to the number of questions on the questionnaire was determined. And selection, to further improve the indicator parameters and questionnaire design, Table 1 for details.

**Table 1: Factors affecting the credit constraints of new-type agricultural management entities**

variable	Variable meaning	Anticipation symbol
Explained variable: Credit constraints on new-type agricultural management entities	0 = No constraint; 1 = Less constraint; 2 = Normal constraint; 3 = Large constraint; 4 = Large constraint	
Explanatory variables:		
I. Main factors of new-type agricultural management entities		
X1 industry attributes	1 = field crops; 2 = economic crops; 3 = livestock farming; 4 = aquaculture	
X2 body type	1 = big breeder; 2 = family farm; 3 = professional cooperative; 4 = agricultural enterprise	
X3 production scale	1 = within 100; 2 = 100 ~ 200; 3 = 200 ~ 500; 4 = 500 ~ 1000; 5 = 1000 acres or more	Negative
X4 Operator Education Level	1 = elementary school and below; 2 = junior high school; 3 = high school or technical secondary school; 4 = college and above	Negative
X5 operator years	0 = less than 2 years; 1 = 2-5 years; 2 = 5-10 years; 3 = more than 10 years	Negative
X6 have or not business license	0 = None; 1 = Yes	Negative
X7 professionals & technical or not	0 = None; 1 = Yes	Negative
X8 Simple electronic management or not	0 = None; 1 = Yes	Negative
X9 Complete information or not	1 = not available; 2 = partially available; 3 = fully available	Negative
X10 Assets and Liabilities	0 = low; 1 = normal; 2 = high	Positive
X11 Credit Amount Demand	1 = 200,000 and below; 2 = 200,000-300,000;	Positive

	3 = 300,000-500,000; 4 = 500,000 and above	
X12 Credit term requirements	1 = 1-6 months; 2 = 6 months-1 year; 3 = 1-3 years; 4 = more than 3 years	Positive
<b>II. Banking factors</b>		
X13 Rural Credit Liaison or not	0 = None; 1 = Yes	Negative
X14 Credit based on first repayment source or not	0 = None; 1 = Yes	Negative
X15 hostage or not	0 = None; 1 = Yes	Positive
X16 Third party guarantee or not	0 = None; 1 = Yes	Positive
X17 Allow two rights mortgages and other forms of loans or not	1 = all allowed; 2 = partially allowed; 3 = neither allowed	Positive
X18 Allow Mortgage Guaranteed Portfolio Loans or not	1 = all allowed; 2 = partially allowed; 3 = neither allowed	Positive
X19 Innovative credit financing products or not	0 = None; 1 = Yes	Negative
X20 Online financial services or not	0 = None; 1 = Yes	Negative
<b>III. Government factors</b>		
X21 Policy guarantees or risk sharing or not	0 = None; 1 = Yes	Negative
X22 Convenient place for two rights mortgage or not	0 = None; 1 = Yes	Negative
X23 Participate in policy agricultural insurance or not	0 = None; 1 = Yes	Negative
X24 Financial discount or farm machinery subsidy or not	0 = None; 1 = Yes	Negative
X25 Convenient production facility mortgage circulation platform or not	0 = None; 1 = Yes	Negative
X26 Construction of rural credit system or credit village or not	0 = None; 1 = Yes	Negative

### 3.2 Descriptive Statistics

- (1) Characteristics of new-type agricultural management entities and their managers: Basically, no matter what type they are, most of them are male, and their age ranges from 23 to 67, with an average age of 47. Almost all of them are married, their families are stable, their education level is generally not high, most of them have a junior or high school education, and the average age of agricultural employment is 8.96 years; the situation of their family's assets and liabilities is that the average assets are 2.85 million yuan, and the average asset-liability ratio is 25%. The average debt ratio is at the upper-middle level, the average number of outstanding bank loans is 450,000, and the average balance of private loans is 90,000. In terms of operation, the average gross profit margin of sales is 30%, which is inconsistent with the actual situation. It may be that the credit subject deliberately overreports profitability to obtain bank loans. The average value of guarantees for foreign investors is 0.7, which indicates that the warranty is still one of the main methods in the current financing ratio, which is increased to a particular extent credit risk. The average number of insurance purchases is 0.52, it just arrives half of all, indicating that there is not a strong sense of insurance participation. In terms of standardized operations, most entities have single electronic management, the process is relatively standard, but the average value of machinery and automation equipment is 0.6, indicating that there has been improvement. However,

there is still room for more growth. As for the land transfer situation, the common transfer area is 96 acres, and the transfer fee ranges from 500-1200 yuan per acre. The average number of years of turnover is eight years, which indicates that the operation is relatively stable.

(2) Availability of new-type agricultural management entities credit: the situation of funds is rural commercial banks accounted for 60-70% of the total supply, agricultural banks accounted for 10-20%, postal savings banks accounted for about 10%, others accounted for 5-10%. Availability of credit is 35.85% of the credit support obtained from banks can be "basically satisfied", and 64.15% is "unsatisfied", which 45.78% credit support have "large funding gap", "cannot be met at all satisfied" accounted for 18.37%. According to the breakdown, the "basic satisfaction" among large breeders, family farms, professional cooperatives and agricultural enterprises accounted for 42.62%, 45.38%, 38.35% and 36.52%, which were significantly lower than the proportion of unmet needs, of which the percentage of "large funding gap" in unmet needs was 41.78%, 43.65%, 35.74%, and 38.65%. In contrast, the portion of "not able to meet" was relatively small. It shows that due to the large capital requirements of agricultural enterprises, the ratio that cannot meet is also the highest. In general, the availability of credit for most entities is not very good. Although it is slower than before, many objects still have significant funding gaps and cannot be met at all.

(3) Credit gaps and interest rates of new-type agricultural management entities: As for the number of funds provided, the credit limit provided by rural commercial banks for around 70% customers are below 300,000, and about 20% customers are provided between 300,000 and 500,000, 10% customers are provided more than 500,000. The credit limit provided by Agricultural Bank to about 80% of customers is less than 200,000, and the credit limit provided by Postal Savings Bank to about 70% of customers is less than 200,000. As for the gap in funding, 70% customers cannot get satisfied with the funds of the main body is 100,000-200,000 yuan, 20% of the quota gap is 200,000-300,000 yuan, and the remaining 10% of the quota gap is more than 300,000 yuan. From the perspective of various business entities, Large unspecified households and family farms are the main ones, and family farms and professional cooperatives are the mainstays between 300,000 and 500,000. Most of the gaps are more than 500,000 agricultural enterprises. It shows that for most entities whose credit demand is not met, the large scale of operation, the more considerable capital demand, the more massive gap will be. The interest rate situation, from the perspective of supply, rural commercial banks have the lowest entry barriers and the fastest efficiency, still it has the highest interest rates, the average base goes up about 60-80%. Agricultural Bank has the most top barriers to entry but generally the lowest average benchmark floating around 10-20%. The postal savings bank centered average milestone hovering around 40-60%.

### 3.3 Model Construction

Gaddum and Bliss first proposed the Probit<sup>[7]</sup> model in 1933. They introduced the idea of converting the probability of explanatory variables into corresponding standard deviations, established the relationship between discrete data and continuous normal distribution, and moved from nonlinear to linear. In the book Probit Analysis published by Finney (1947), the Probit model was widely used in the two-category explanatory variables, and multiple explanatory variables could be considered simultaneously. Specifically, suppose there are  $X$  explanatory variables, and  $Y$  is a categorical variable with values of 0 and 1. Generally, the probability of  $Y = 1$  can be considered as a function of  $X$ :

$$P_{\tau}(Y = 1|X) = \pi(X)$$

Assume that  $\pi(X)$  and  $X$  satisfy:

$$\pi(X) = \varphi(\alpha + X'\beta)$$

Among them,  $\alpha$  and  $\beta$  are parameters, and  $\varphi(*)$  represents the standard normal distribution function, then:

$$P(Y = 1|X) = \varphi(\alpha + X'\beta)$$

It is the standard Probit model, which uses the critical probability value (usually 0.5) as the criterion for whether an event occurs. If it is higher than the significant value, the fact is determined to happen, and vice versa. The following is a Probit analysis of the survey data to consider which parameters will have a more significant impact when all parameters are considered comprehensively.

### 3.4 Test results

This research uses EVIEWS10.0 statistical software to perform Probit analysis on 465 samples of useful credit samples of new-type agricultural management entities and intercepts the following key influencing factor analysis results. See Table 2 for details.

**Table 2: Probit Model Results of the Factors Affecting the Credit Constraints of New-type Agricultural Management Entities**

variable	Pr(> Z )
X1 Industry attributes	0.37825
X2 Subject type	0.42178
X3 Production scale	0.00276**
X4 Educational level of the operator	0.00151**
X5 Educational level of the operator	0.00012***
X6 Business License or Qualified or not	0.01387*
X7 professionals & technical or not	0.02132*
X8 Simple electronic management or not	0.01534*
X9 Complete information or not	0.01125*
X10 Assets and Liabilities	0.00001***
X11 Credit Amount Demand	0.00000***
X12 Credit term requirements	0.00001***
X13 Rural Credit Liaison or not	0.00000***
X14 Credit based on first repayment source or not	0.00001***
X15 hostage or not	0.00002***
X16 Third party guarantee or not	0.00149**
X17 Allow two rights mortgages and other forms of loans or not	0.00176**
X18 Allow Mortgage Guaranteed Portfolio Loans or not	0.00000***
X19 Innovative credit financing products or not	0.00002***
X20 Online financial services or not	0.00365**
X21 Policy guarantees or risk sharing or not	0.00001***
X22 Convenient place for two rights mortgage or not	0.00415**
X23 Participate in policy agricultural insurance or not	0.36571
X24 Financial discount or farm machinery subsidy or not	0.57823
X25 Convenient production facility mortgage circulation platform or not	0.00435**
X26 Construction of rural credit system or credit village or not	0.00002***

Note: \*, \*\*, \*\*\* represent significant under the confidence intervals of 10%, 5%, and 1%, respectively

#### 4. Analysis of the Causes of Credit Constraints of new-type agricultural management entities

According to the analysis result of the Probit, the classification and elaboration are respectively carried out from three perspectives which are new-type agricultural management entities, financial institutions and government departments, and combined with the conclusions of interviews with relevant government department leaders and financial institution executives. Finally, it is shown that most of the calculation results are in line with the theoretical analysis. The details show as follows.

##### 4.1 Analysis of new-type agricultural management entities

(1) From the perspectives of industry attributes and business entities, the impact of "industry attributes" and "subject types" on credit constraints failed to pass a significance test, indicating that no matter which industry or type of entity receives more or less varying degrees of credit constraint. The "production scale" passed the 5% significance test and showed a positive correlation, which indicates their capital correspondingly more demands agricultural enterprises with larger production scales, therefore they had a more heavily restrained by credit constraints. The effect of "educational level of the operator" and "employee years of service" on credit constraints passed significant tests of 5% and 1% and showed a negative correlation, and this indicates that the new-type agricultural management entities has a higher educational level of the entity and the longer the number of years of employment, the easier it is recognized by financial institutions, and it has the lower degree of credit constraints.

(2) From the perspective of governance structure and internal management, both of "with or without a business license or qualified certification" and "with or without professional and technical personnel" passed the 10% significance test and showed a negative correlation. It shows that if the new-type agricultural management entities have obtained qualifications such as municipal, provincial, or national level issued or recognized by relevant government

departments, it is easier to obtain bank recognition, meanwhile, if professional technical personnel are hired, it indicates that it is better than normal entities in terms of production operations and anti-risk capabilities. Therefore, its credit constraints are relatively less. Both of "simple electronic management" and "whether complete information can be provided" passed the 10% significance test and also showed a negative correlation.

This means that the more standardized the operation and management, the more information provided, especially the data of financial statements that can effectively reduce the asymmetry information, the more chances new-type agricultural management entities can obtain the trust of the bank, and get the fewer credit constraints.

(3) From the perspective of assets liabilities and credit demand, the "assets and liabilities situation" has passed the 1% significance test and has a positive correlation, it indicated that the weaker of asset strength and the higher the debt ratio of the operating entity, the more it needs to loan from banks or private people. Hence the higher the risk of agglomeration and the more difficult it has to obtain bank's loans. "Credit Amount Demand" and "Credit Term Requirement" passed the 1% significance test on credit constraints, and showed a positive correlation. It shows that banks have a higher requirement for credit funds for business entities to obtain credit, and more difficulty in obtaining credit funding. Meanwhile, a longer production cycle operation project has a higher degree of uncertainty; it caused the higher operating risk. Ordinary banks do not want long time credit terms. The shorter credit terms they are, the more timely they can detect risks.

#### **4.2 Analysis of Financial Institutions**

(1) From the perspective of the rural financial supply and approval system, "whether there is a rural credit liaison" passed the 1% significance test and has a negative correlation, which indicates that the more branches of banks such as rural commercial banks in rural areas, the more credit liaison officers are in each village, it is easier to understand the production and living information of the operating entity, so it has the lower degree of information asymmetry and the less of credit constraints. However, the large financial institutions such as Agricultural Bank are relatively weak in this regard. "Whether credit based on the first repayment source" passed the 1% significance test and has a negative correlation, which indicates that most of the existing bank's credit products are based on the second repayment sources like mortgages or guarantees. The design of the repayment source can greatly ease the credit constraints if the credit can be granted based on the first repayment source. However, according to the actual investigation, only some rural commercial banks can fully suffice because of their large business outlets and credit liaison officers who have penetrated the front line. Only when the bank has the information about the first repayment source can they dare to lend, while other banks are currently difficult to breakthrough.

(2) From the perspective of credit enhancement measures such as mortgages and guarantees, "whether collateral is required" and "whether third-party guarantees are required" have passed the significance tests of 1% and 5%, respectively, and have a positive correlation, indicating that mortgage guarantees is the simplest and most effective risk control method for banks. Although they know that most of the entities are generally lacking, ordinary banks will give priority to it. It is the main reason for current credit constraints. On the other hand, due to the restrictions of the existing rural property rights system, the ownership of core assets such as production and residential land, agricultural production infrastructure, etc. has certain flaws, it has large uncertainties, and it lacks mature trading and circulation markets. Once the risk debt settlement occurs, there will be major problems. It cannot really play the role of risk compensation, hence "whether two forms of mortgage loans and other forms of allowance" and "allow mortgage guarantee combination loans" passed the significance test of 5% and 1%, respectively, and showed a positive correlation, this shows that at this stage many banks do not recognize the effectiveness of mortgages of assets such as two rights and agricultural production infrastructure. It is also not be recognized to expand the line of credit through a mortgage loan portfolio + guarantees and other forms.

(3) From the perspective of product and service innovation, due to the relative rigidity of the existing financial product design and innovation system, in addition to the short approval radius of the local head office and the relatively flexible system of local commercial banks, such as Agricultural Bank and Postal Savings Bank, all of products, conditions and standards are in the management department at or above the provincial branch level. Therefore, "whether there is an innovative credit financing product" passed the 1% significance test and showed a negative correlation, which indicates that most of the grass-roots branches of the bank simply cannot have product innovation. The impact of "whether online financial services are available" on credit constraints passed a 5% significance test and showed a negative correlation, which indicates that the more fully of the bank's online financial services are deployed, the majority of business entities can be understand relevant products and policies conveniently and transparently, it can decrease the transaction costs and information asymmetry of both parties, the more credit constraints can be eased.

#### **4.3 Analysis from the Perspective of Relevant Government Departments**

(1)From the perspective of supporting government policies, "whether enjoying policy guarantees or risk sharing" and "is there a place to facilitate the mortgage of two rights" passed the significance tests of 1% and 5% and showed a negative correlation, indicating that the bank has a high recognition of policy guarantees, such as agricultural guarantee companies established by the provincial financial funds, which effectively makes up for the lack of guarantees of the operating entities.

In addition, the survey found that those two rights mortgage pilots are in the forefront and handle related business locally, the number and activity of the business are also very high, which greatly eased the phenomenon of credit constraints due to lack of collateral.

(2)From the perspectives of agricultural insurance and financial subsidies, "whether participate in policy agricultural insurance" and "whether enjoying financial discounts or agricultural machinery subsidies" failed to pass the significance test, which is inconsistent with that has a greater impact on the credit constraints than expected and the negative correlations. It shows that on the one hand, China's agricultural insurance has problems such as low coverage, low compensation standards and narrow coverage. According to the survey, it is found that only food cultivation and other protections are relatively good. Other industries are basically as cash crops, there is no insurance, or it is difficult to make up for the loss of production and operation risks due to high compensation conditions and small amounts in the aquaculture industry. On the other hand, fiscal discounts or subsidies for agricultural machinery have not formed a complete system. It is popular in a small range. The coverage of discounts and subsidies is extensive and high in the areas where it has a strong financial strength. But it is also mainly limited to those new-type agricultural management entities with outstanding production and operation performance, demonstration effects, and packaging operations. Most of them still have difficulty in enjoying these benefits or subsidies.

(3)From the perspective of rural asset circulation and credit system construction, the construction of China's rural financial ecosystem is lagging, and the socialized service mechanism is seriously lacking. Not only does it lack socialized intermediary services and rural property rights trading markets, but also it lacks a sound financing guarantee system and lacks a unified and standardized Agricultural credit rating assessment and information sharing mechanism, which makes the circulation and disposal of agricultural assets difficult and the cost of credit transactions too high, hence "whether there is a platform to facilitate the circulation of production facilities and mortgages" and "whether to carry out the construction of rural credit systems or credit villages" passed the significance test of 5% and 1%, and showed a negative correlation, which shows that the agricultural asset mortgage circulation platform led by the relevant government departments and industry associations has played a critical role in solving related assets that banks cannot identify, evaluate and dispose.<sup>2</sup> With the more perfect of rural credit system construction, the lower information asymmetry and transaction costs of financial institutions, and the fewer credit constraints on operating entities.

## **5. Suggestions on Credit Constraints of New-Type Agricultural Management Entities**

Aiming at the existing credit constraints and dilemmas of new-type agricultural management entities, it must be worked together from three aspects: government, banks and new-type agricultural management entities. Through policy support from government-level, product and service innovation from bank-level and Standardize management to jointly resolve the various obstacles that currently hinder the development of new-type agricultural management entities.

(1)Government level: First of all, governments at all levels must attach great importance to the basic role of the primary industry in the national economy, not only increasing agricultural infrastructure investment and increasing the coverage of policy insurance, but also further increasing agricultural policy support and subsidies. Efforts to enhance the anti-risk capability of agricultural production. Secondly, under the leadership of relevant government departments, jointly with rating agencies and agricultural credit banks to accelerate the construction of rural credit systems and credit systems, and effectively solve the information asymmetry and information collection in the agricultural credit process with high transaction costs. Besides, innovate the mechanism of asset transfer and trading platforms such as land and agricultural facilities, revitalize the existing assets of new-type agricultural management entities and improve their asset realization capabilities, and fundamentally solve the problem of lack of collateral. Finally, further improve the coverage and strength of policies agricultural guarantee companies, the establishment of a sound agricultural credit guarantee system, and effective compensation for the lack of credit and lack of guarantees for agricultural credit subjects.

(2)Bank-level: First of all, based on effectively distinguishing credit subjects and credit uses, further distinguish credit entry thresholds, approval conditions, capital prices and guarantee measures, etc. and adopt differentiated credit

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<sup>2</sup>At present, only some developed regions with distinctive agricultural industry launched the pilots. The most typical domestic market is a mortgage circulation platform for agricultural facilities such as Shandong Shouguang vegetable planting greenhouses.



policies. Even qualified banks must Breakthroughs in tolerate risks, assessment incentives and business synergy. Second, leverage the advantages of collecting social capital information such as industry associations, cooperatives, and village collectives, and use fintech methods to obtain the information of fragmented farmers' production, living, and supplying, especially focus on character, product and collateral. cross-validation of multi-channel information to reduce information asymmetry.

Furthermore, relying on leading enterprises in the agricultural supply chain, upstream and downstream enterprises, comprehensively evaluate agricultural credit subjects based on historical production data to improve the credit risk assessment index system in an all-round way.

Finally, change the thinking and change the focus from the second source of repayment such as mortgage guarantees to the first to focus on production and operating income during the credit approval process. Start with repayment sources to innovate Asia credit risk evaluation index system, and then combine the mortgage and credit conditions, really captures the essence of agriculture to reduce the difficulty of credit risk identification, and ultimately improve risk control.

(3) Main body level of new-type agricultural management entities: First of all, it must continuously improve the cultural literacy and professional skills of the operators. The products produced and operated areas industrially oriented as possible and preferably famous local products. It must fully rely on the upstream and downstream industrial chains and agricultural insurance to effectively avoid market risk. Secondly, it must continuously improve the production and operation capabilities and standardized management levels of business entities, not only improve internal governance through the establishment of standardized financial accounting systems, but also improve the quality and efficiency of product production through large-scale, intensive, and branded operations. It should continuously improve information transparency to reduce information asymmetry. Finally, it needs to moderately control the scale of production and credit, not only according to the operator's own ability level and changes in market conditions, but cannot blindly expand the scale, especially blindly cross-border operations. The production and operation of the industry must be controlled according to the level of revenue and capital flow, and the level of production inputs and assets and liabilities should be controlled to maximize the bank's recognition of its ability to resist risks.

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