

# Survey of Framer Credit Demands in China with Tianjin as an Example

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**Abstract** Giving farmers more rights and interests on land property is the basis of achieving balanced and coordinated economic development between urban and rural areas as well as building a sharing economy during the period of economic transition in China. Based on the survey data of suburban households of Tianjin, in this paper, measurement method was adopted to study factors influencing farmer's willingness on land management right mortgage. The results shows that the willingness of individual farmer on mortgage is not strong, however, their willingness on mortgage is bound to have a significant relationship with farmland right confirmation and land transfer and other factors. Finally, it is concluded that it is necessary to promote land transfer on the basis of land right of confirmation while carrying out farmland mortgage under the premise of large-scale operation in China.

**Key words** Willingness of mortgage, Influencing factors, Right of confirmation, Land transfer

## 1 Introduction

According to the development economics theory, property income deficiency is the main cause for widening income gap. The gap between urban and rural areas in China is mainly due to farmers lacking of property income. Protecting farmers' land property rights and interests is the key to narrow the urban-rural gap. American economists McKinnon and Shaw (1973) thought that, financial repression plays a restraint effect on economic growth. They suggest that financial depending may promote the development of finance system and overcome the constraint of financial repression on economic growth. Currently, it can be seen that China has made various efforts in giving farmers more land property rights and interests in practice, including giving them rights of contracting, use and transfer. However, the issue about farmland property mortgage remains a part of controversial relatively. According to China's existing regulations of *Property Law* and *Guarantee Law*, we can know that contracted land and homestead are not allowed to be mortgaged. The first reason is that contracted land and homestead derive from the membership of a collective economic organization, if used for mortgage, whether the membership of collective economy still exist? The second reason is that in case of a farmer's business fails, if the mortgaged land can be disposed to a non-member of the collective economic organization? Therefore, the problem of contracted land and homestead mortgage is not only a matter of rural finance, but also involves in the rural grass-roots governance. The only way to open land property market is to offer

necessary supporting measures and protection.

With the accelerated process of urbanization and industrialization, the lag development of rural finance limits the development of rural areas, and financing difficulty has become a common problem in the vast rural areas. However, the restrictions on farmland mortgage restricts the mortgage financing function of rural land, thus constricting the financing of agricultural and rural areas, which is an urgent problem needs to be solved. Therefore, exploring the rural financial system innovation, especially amid the mortgage and loan problems of management right on the rural contracted land gradually becomes the focus of academic circles and practice. However, due to the presence of the rural grass-roots governance issues aforesaid also makes the issue of farmland mortgage controversial.

At present, the establishment of management and mortgage market for farmland in China is still in a stage of exploratory. Scholars give their opinions on farmland management right mortgage from a variety of aspects involving institutional change, risk control, sale operation and legal protection. Liu Xinxin<sup>[1]</sup> started from the objectives and principles of the establishment of farmland finance system, and proposed that, in market conditions, the establishment of Chinese farmland finance system shall follow a path of giving priority to secondary institutions and stimulating fundamental system changes to build a farmland finance system conforming to China's actual conditions. Li Yanmin *et al.*<sup>[2]</sup> emphasized the necessity of setting up land banks by comparing the foreign farmland systems. Taking rural credit cooperatives as the main agency of carrying farmland financial services has also been recognized by scholars<sup>[3]</sup>.

On the other hand, due to the strong life-support function and large difficulty of rights redemption of rural land makes the screening and supervision of farmers become much harder for financial

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institutions<sup>[4-5]</sup>. The assessment on farmland mortgage and the liquidity risk of the mortgaged farmland after the borrowing farmer breach of the contract is one of the biggest concerns for the rural financial institutions carrying out farmland mortgage service<sup>[6]</sup>. For this reason, a reasonable security system shall be established between financial institutions and farmers. Scale operation and mature land circulation market is a guarantee for the safety and stability of collateral and smooth realization<sup>[7]</sup>. The maintenance and safeguard of rights and interests of all parties in legal relations of farmland financing is the core for the operation of the farmland financing legal system<sup>[8-10]</sup>.

In this paper, taking Tianjin farmland mortgage pilot as an example, we adopted the modes of questionnaires and interviews to carry out investigation on the willingness of farmer credit demand, land circulation, farmland right confirmation and mortgage experience. The survey in this paper was carried out in late 2014. At that time, farmland mortgage service had not officially launched in Tianjin, so our investigation was conducted around the farmers' willingness on farmland mortgage for financing. We hoped that, under the background of farmland right confirmation, rural land transfer and farmers migrating to cities, to put forward a rational train of thought for carrying out farmland mortgage service.

2 Survey

**2.1 Data sources** As a relatively well-developed industrial city, Tianjin has a strong capacity of attracting farmers employment transfer, most of local farmers are in a state of both having a job and arable land, so the social security function of farmland there is relatively weakened. Meanwhile, to further accelerate the construction of new urbanization, Tianjin gives farmers more land property rights and interests gradually in accordance with the deployment of the central government, so as to promote the harmonious development between urban and rural areas. Farmland mortgage for financing is one of important contents in rural financial innovation. The survey covers all agricultural regions in Tianjin, involving a total of 10 districts and counties (including Binhai New Area), 157 towns and 3 860 villages. Besides, we also conducted interviews in all districts, counties and towns.

Random sampling and household interview were adopted in survey. The survey consists of three parts: first, basic information; second, household farmland use condition; third, credit and mortgage. From the interview, we can see that practical difficulties of carrying out farmland mortgage services are mainly in the

following aspect: first, since the value of the land management right itself is poor, so the amount of mortgage loans got is limited. Furthermore, the threshold of conducting operation right mortgage is relatively high currently. So far, no banks engage in mortgage services directly, while relevant guarantee firms and insurance companies have not reduced the benchmark, the cost of mortgage loan is still relatively high. Besides, the cost of collective negotiation and bargaining is too much. According to the provisions of the existing laws, the loan of contractor must be agreed by all contractees who may be dozens of farmers, or one or two hundred farmers, so the cost of negotiation and bargaining is relatively high.

Second, once the contractor has loan defaults because of natural disasters or operational errors, the bank recover the mortgaged land according to the contract, and then whether the farmer who owns the land before will become one of members losing land and face enormous political and social governance pressure.

Based on the progress of the current farmland mortgage pilot work, we mainly adopted sampling survey on farmers' land use conditions and credit need.

**2.2 Basic information of samples** The survey began in November 2014, in a way of questionnaire. Surveyed areas contained all agricultural districts and counties in Tianjin. For sample distribution (Table 1), and a total of 615 valid questionnaires were received.

Table 1 Distribution of districts and counties of the questionnaire

Districts and counties	Number of copies
Baodi	49
Beichen	58
Binhai New Area	149
Dongli	50
Jixian County	51
Jinnan	49
Jinghai	51
Ninghe	56
Wuqing	51
Xiqing	51
Total	615

Among these respondents, 79.96% were men and 20.04% were women; 89.37% of them were agricultural household, age ranging from 20–60 years old; most of them accepted compulsory education (Table 2). Local farming was their primary job and 93.4% of them lived in the local towns.

Table 2 Education background of respondents

Education background	Semi-illiterate	Primary school	Junior high school	Senior high school	Junior college and above	Total
Number of respondents	28	91	260	134	97	610
Proportion // %	4.59	14.92	42.62	21.97	15.90	100

**2.3 Land use conditions** According to questionnaire survey statistics, among 615 questionnaires, 378 households participating in the survey have land contract operation certificates, accounting for 61.36% of the total; 150 participating in the survey did not

have land contract operation certificates, accounting for 24.35%; for the remaining 88 questionnaires, the question was not answered. (As the rural land right confirmation certificate had not been carried out in Tianjin during the survey, the land contract op-

eration certificate farmers provided shall be the certificates issued on 2<sup>nd</sup> session of contracting in 1998.)

Among 512 questionnaires on land transfer, 453 households involved in land transfer, accounting for 88.48%; 59 households did not involve in land transfer, accounting for 11.52%.

**2.4 Loan and mortgage** (i) As to the question that are you willing to mortgage your land contract operation right, 113 households did not answer the question. Among 502 respondents answered the question, 75% of them are not willing to mortgage land contract operation right, only 25% of them are willing to mortgage (Fig. 1). (ii) As to the question that have you borrowed money or loans in recent five years. 170 households did not answer the question. Among 445 respondents answered the question, only 14% of them have borrowed money or loans in recent five years.

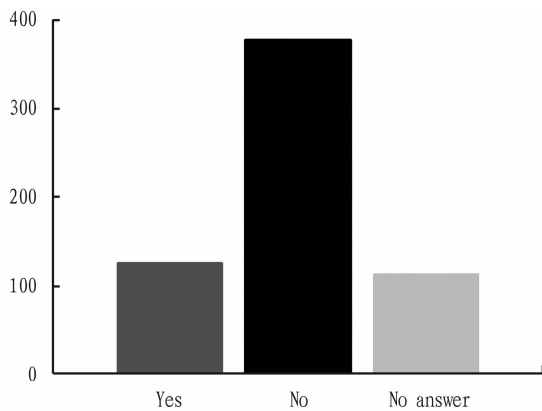


Fig. 1 Attitude of respondents to mortgage

In terms of borrowings or loans, capital sources, 69 copies showed their answers, among the capital sources, the first is relatives and friends, and second is rural credit cooperatives. While only 3% of households choose town banks, small loan companies, private financial institutions and private lenders.

Among 63 households had borrowings or loans, 54 households answered if mortgage is needed in borrowings. The results showed that 59% of borrowings need mortgage (Fig. 2).

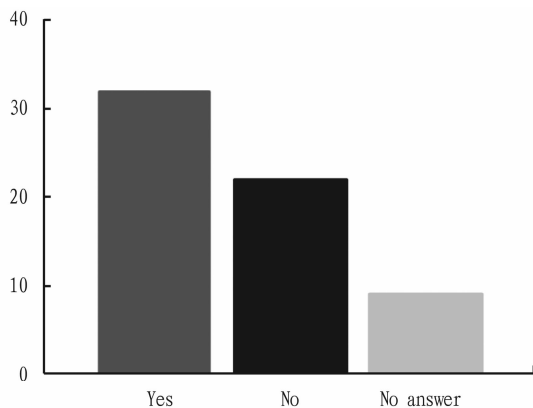


Fig. 2 If the mortgage is needed

From the data above, it can be seen that the desire of ordinary farmers on land contract operation right mortgage is not very significant, however, farmers who have land contract certificates or

land transfer experiences are more willing to mortgage their land contract operation right for financial support.

**2.5 Empirical analysis of farmland credit demand** Through the survey on Tianjin rural areas, we can find that, over 75% of farmers have no desire to farmland mortgage. Only a few of farmers need farmland mortgage loans because of investment production or other larger consumption needs. Overall, their farmland mortgage desire is not strong. Meanwhile, in terms of loan sources, most capital sources are from relatives and friends, which remind us that, if a single small-scale farmland can only get limited money from mortgage loans, so farmers do not need to get money through bank loans.

**2.5.1 Establishment of econometric models.** Assumption 1: generally, the higher level of the household income in the village, the more legal knowledge and relevant land policies they contracted, and better understand the value of the land. So, in the process of farmland mortgage, they tend to accept the way of raising funds. The less non-agricultural member of the household, the larger demand for farmland mortgage when tends to conducting land transfer and having capital demand.

Assumption 2: the better protection of farmers' land rights and interest, such as the smooth implementation of farmland right confirmation and farmland circulation, farmers have learned relevant land policies when it comes to farmland mortgage, and then they will accept the way of raising money through farmland mortgage when in need of money and have the awareness of safeguarding their rights and interests.

Assumption 3: farmers' desire to farmland mortgage is affected by overall environment, such as employment status, social security measures and others. The more the farmer satisfied with his employment status and the environment, the stronger desire to farmland mortgage; The more the farmer satisfied with social security measures, the less concerns about farmland mortgage.

**2.5.2 Model specification and variable selection.** To analyze various factors affecting farmers' desire to mortgage, we take the following measurement method for test, specific model specification is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

where  $Y$  represents farmer's desire to mortgage (1 = willing to mortgage, 0 = not willing to mortgage),  $X_1$  stands for farmers' dependence on social security functions the land provided, including household registration and place of residence.  $X_2$  represents household income, expressed by household gross income (to make estimation more efficient, logarithmic is taken).  $X_3$  stands for land conditions, including total area of land farmers owned and land right confirmation conditions.  $X_4$  represents mortgage experience.

According to the data characteristics, in this paper, we adopt the following estimation methods. First, we used Probit model to estimate the equation. Second, we estimated the effect of the nature of household registration and place of residence variables on overall model in the paper, so as to make the results more reliable. Third, to better control the different features of every suburban county, such as the availability of land, off-farm employment opportunities and other factors, we added regional dummy variable to equation estimation.

**2.5.3 Measurement results and analysis.** From Table 3 we can find that, the overall operation result of the model is good, explanatory variables are kept being combined and significant in various estimation methods, concrete analysis is as follows:

**Table 3 Model operation results**

	Probit (1)	Probit (2)	Probit (adding dummy variable)
Nature of household registration	-0.13 (0.191)		-0.12 (0.197)
Place of residence		0.13 (0.156)	
Total income (taking logarithm)	0.11 ** (0.049)	0.11 ** (0.048)	0.12 *** (0.047)
Total area of land	0.004 (0.007)	0.005 (0.007)	0.003 (0.007)
Land right confirmation	0.43 *** (0.145)	0.42 *** (0.143)	0.34 ** (0.151)
Mortgage experience	0.57 * (0.341)	0.53 (0.346)	0.69 * (0.376)
Observed value	438	438	438

**NOTE** all remark errors in parentheses are robust standard errors; \*\*\*, \*\* and \* represent the significance on different significant levels of 1%, 5% and 10%, respectively; parameters in Probit model are standardized marginal effect; to save space, regional dummy variables in model were omitted.

(i) No matter what kind of estimation methods is used, the nature of household registration and place of residence have no significant influence on farmers' willingness on land operation right. The result shows that farmers' dependence on social security function of land is not as important as we imagined. One possible explanation is that as a municipality, land function of social security in Tianjin has been replaced by the new system with the complete coverage of new rural cooperative medical system (NCMS) and new pattern of rural and social old-age insurance as well as the establishment of social security system for farmers. It also provides an idea for the development of farmland finance from the side aspect: the establishment of reasonable farmer security system is conducive to help farmers engaging in land management right mortgage actively.

(ii) Under the condition of maintaining other variables unchanged, the household gross income has a significant effect on farmers' willingness on land operation right, that is, the higher income of the household, the more desire to mortgage their land operation right, which shows that the improvement of farmers' income level giving them more broad space for capital use. On the one hand, the proportion of land income decreases, farmers' demand for land operation right also reduced accordingly; on the other hand, it reflects that this kind of residents are more willing to choose the way of inter-temporal consumption to manage their consumption and investment on land. From this perspective, it shows that the mortgage of land management right conforms to the fundamental interests of farmers. Therefore, effectively raising the farmers' income and providing various consumption portfolio and wider investment channels for farmers are the inherent requirement

of the development of farmland finance.

(iii) The confirmation of land right has an obvious influence on mortgage willingness. Through probit model estimation, we can know that the viable has a larger marginal effect. Through the issuance of land property certificate and contracting land to farmers in forms of contract and certificate to safeguard farmers' rights legally, and provide legitimacy for farmers mortgaging farmland operation right. This shows that, a clear legal system building in very necessary in carrying out farmland finance work. From the view of farmer, this provides a legal ground for farmers safeguard their rights and disposal of their land legally, which promotes farmers to mortgage their operation rights and safeguard their maximum earnings. Similarly, it also represents the legitimacy for financial institutions to provide farmers with loans, which makes loan issuance much easier for farmers. It can be said that, the confirmation of land right effectively reduce the transaction cost of both parties in mortgage loan process and improve farmers' willingness on loans.

(iv) Mortgage experience also plays an important role in the influence on mortgage willingness in the model, especially after adding the regional dummy variable, the coefficient is increased to 0.69. It shows that after controlling the factures of different regions, if a household has a "good" mortgage experience will increase its mortgage willingness greatly.

**3 Conclusions**

Firstly, from the research, we can find that the willingness of individual household on farmland mortgage is not obvious; however, the confirmation of land right and land transfer could improve their willingness on farmland mortgage greatly. While the realization of farmland transfer and the confirmation of land right is the premise. Therefore, on the one hand, Chinese government shall make more detailed laws to protect the implementation of the farmland right confirmation and transfer, and promote the progress of farmland transfer on the basis of the confirmation of farmland right, to guarantee the smooth progress of farmland mortgage matters. It is not only in favor of alleviating rural financing problem, but also helps narrowing urban-rural gap. On the other hand, the government shall participate in and improve the service system for farmland market actively, to establish farmland financial institutions and provide financial services for land use right mortgage loan. For example, explore the establishment of land banks. In China, once the land bank is eventually established, the government may allow this kind of bank account conducting minimum risk hedging investment as pension accounts. Only creating a variety of basic conditions, farmland mortgage can be carried out smoothly.

Secondly, the level of household income will also affect their willingness on farmland mortgage. According to empirical findings, we can conclude that, household of low income has no significant willingness on farmland mortgage financing. It is probably because that the mode of farmland mortgage financing has not access to farmers' concept of financing, worrying the risk. At the same time, it also shows that, social security system in Chinese rural areas is still inefficient, farmers' dependence on land remains

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relatively high, and therefore, speeding up the establishment of a social security system in full coverage of rural economy involving medical care, unemployment and pension is very necessary. By doing so, a vast majority of farmers can be treated in illness and taken care of in old age.

Thirdly, it is necessary to safeguard farmers; further transfer to the secondary and tertiary industries, stable contracting rights, invigorate operation right, and protect the right of return. In this way, we can remove worries of farmers about losing land because of leaving, to avoid or reduce farmers' disputes arising from land interests, so that farmers can enjoy their job and gain earnings regardless of land transfer or contracting. Only after such protection mechanism is established, farmers can reduce their concerns and tend to mortgage their land in need of money.

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