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Empirical Analysis on Farmers' Willingness to Accept Compensation Whose Land is Expropriated

——Based on Survey Analysis on Rural Households in 17 Provinces

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Abstract According to the data of survey on farmers' land right from Rural Development Institute (the USA), Renmin University of China and Michigan S ate University, this paper conducts empirical analysis on farmers' willingness to accept compensation ho e land is expropriated and the related influencing factors by adopting Logistic model. The study indicates that the proportion of farmers' non-agricultural income, the level of economic development in the region, participation right and right to vote, exert conspicuous impact on farmers' satisfaction degr whose land is expropriated. In the provinces that are surveyed, most of the expropriated land is used for the public welfare project building, and in the current context of rapid urbanization, the conditions for defining public interests have not yet been put in place; the farmers in developed regions with more non-agricultural job opportunities express higher degree of satisfaction to the compensation for expropriated land; it is required to establish sound land expropriation compensation mechanism and bolster farmers' participation right, so as to offer fair and reasonable compensation for the farmers whose land is expropriated.

Key words Compensation for the expropriated land, Land right, The Law of Land Administration, China

Land right is a basic property right of farmers. In order to promote the reform of rural land system, we have to further ensure the land right of farmers so that they enjoy stable and long-term land right. Chinese Academy of Social Sciences recently released 2011 *China Social Situation Analysis and Prediction Blue Book*, which pointed out that 73% of petitions and disputes in rural areas were related to land, wherein 40% of the petitions involved dispute problems of land expropriation. 87% of dispute problems of land expropriation were related to compensation and resettlement issues of land expropriation. In the petition of presenting the true problems, half of them were collective petition. At the present, the mass incidents triggered by expropriation of farmers' land have accounted for more than 65% of the mass incidents in China's rural areas, posing a great threat to China's social stability and healthy economic development, therefore, the land dispute has become the most important issue affecting rural social stability. How to improve the rural land system and protect farmers' land right is an important link which bears close relation to China's realization of rural economic development and the national economic development.

According to the existing research results on land expropriation at home and abroad, we find that the researches on land expropriation and compensation problems have not yet been conducted from farmers' psychological point of view, neglecting farmers' psychological characteristic of "loss dodge", prone to arouse farmers' aversion. In recent years, with the quickened pace of urbanization and industrialization, the social conflicts occasioned by land expropriation and compensation issues increasingly intensify, which not only exerts an extremely adverse impact on social harmony and stability, but also impedes long-term stable economic development in China. Zhao Yang points out that cognition of agricultural land property rights in China should not only be an economic issue, but a system form of common constraints of formal system and informal system which intertwine grass-roots political culture and social system[1]. Therefore, on the basis of the factors affecting farmers' subjective feelings, this paper attempts to understand the impact of present land expropriation and compensation mechanism on farmers' land right, and the factors influencing farmers' willingness to accept compensation whose farmland is expropriated, in the form of questionnaire survey from the perspective of rural household, so as to provide the appropriate countermeasures for further improving the land system.

1 Data source and research method

1.1 Data source and research hypothesis The data we use is from large-scale sample survey on farmers' land right conducted by Rural Development Institute ((Landesa, formerly known as RDI)), together with Renmin University of China and Michigan State University in the summer of 2010. The survey covers 17 big agricultural province and interviews 1 564 farmers. The population of these 17 provinces accounts for 83% of the total population of China (specifically including Heilongjiang, Jilin, Hebei, Henan, Shandong, Anhui, Fujian, Zhejiang, Jiangsu, Jiangxi, Hunan, Hubei, Sichuan, Yunnan, Guangxi, Guizhou and Shaanxi). In the sample surveyed, 36.9% of the villages, 508 farmers surveyed, after two rounds of contract, experience land expropriation. Excluding questionnaires with errors and omissions, 307 effective questionnaires are obtained.

The content of land expropriation in this rural household

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survey questionnaire mainly includes the following three parts: the first is basic information on rural households, mainly including farmers' age, gender, educational level, income level and sources; the second is the basic situation of land expropriation and its compensation , including the purpose of land expropriation, compensation standards and the mode of compensation and resettlement; the third is the farmers' satisfaction in compensation for land expropriation, including the main reason of farmers' dissatisfaction in compensation for land expropriation, and farmers' right to know, participation right and complaints right in the process of land expropriation.

In general, the older the farmers whose land is expropriated, the lower level of education the farmers, and the fewer non-agricultural employment opportunities the farmers, the more reluctant to accept land expropriation, so that the farmers whose land is expropriated dissatisfy with the compensation for land expropriation. On the contrary, for the young and the highly educated groups with higher non-agricultural income, there is a decline in social security function of land, and they are more likely to feel satisfaction at compensation for land expropriation.

Similarly, we can predict that when the industrialization degree of regions with developed economy is high and the proportion of non-agricultural income is big, so, relative to the economically backward regions, the regions with developed economy tend to be more satisfied with compensation for land expropriation. In addition, because the land is mandatory, and the farmers generally have a psychological characteristic of " loss aversion" , so we can predict that if we are able to inform the land expropriation in advance, compensate for land expropriation and consult with the farmers, it will greatly enhance the farmers' satisfaction with compensation. Han Jun holds that in the process of land expropriation, as for whether to protect the interests of farmers, we should not only judge according to the sum of compensation for land expropriation, but also, more importantly, have a set of strict and qualified transparent procedures to limit the power of government at all levels[2].

1.2 Model selection and variable In theory, whether the farmers are satisfied with the compensation for land expropriation, hinges in a large measure on the objective environment of farmers whose land is expropriated, and subjective psychological characteristics of farmers. The objective environment concerning farmers, includes their own age, educational level, the proportion of non-agricultural employment income, level of economic development of regions the farmers in, the compensation standard of land expropriation *etc.*; the subjective feelings of farmers whose land is expropriated, depend on whether to receive notice of expropriation of land, whether to have the right to participate in compensation standard of land expropriation. In order to probe into the landless farmers' willingness to accept compensation, this paper regards whether the farmers are satisfied with the compensation for land expropriation as dependent variable, regards landless farmers' age, educational level, the proportion of non-agricultural income, non-agricultural sources of income, farmers' geographical location, land expropriation compensation standard, whether to receive notice of expropriation of land, and whether to have the right to participate in compensation standard of land expropriation as independent variables, and then uses econometric model and the survey data concerning farmers whose farmland is expropriated, to conduct empirical analysis.

As the satisfaction degrees of farmers whose land is expropriated at compensation for land expropriation are two subvariables, namely satisfaction and dissatisfaction; the dependent variable is 1 when in satisfaction, and the dependent variable is 0 when in dissatisfaction. We can choose Logistic regression model to conduct analysis.

Let dependent variable be y_i (the farmers' satisfaction whose land is expropriated), and let the independent variable be X_i, where i is the number of independent variable. Then we establish Logistic model of the satisfaction degree of farmers whose land is expropriated and the influencing factors as follows:

$$\mathrm{Log}\left(\frac{p_i}{1-p_i}\right) = (\alpha + \sum \beta_i X_i) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} \quad (1)$$

If the farmers are satisfied with compensation for land expropriation, we select the dependent variable value of 1; if the farmers are dissatisfied with compensation for land expropriation, we select the dependent variable value of 0. In the model, the independent variables stand for the factors influencing farmers' satisfaction over compensation for land expropriation. The definition of all independent variables in model (1) can be seen in Table 1.

2 Results and analysis

2.1 Descriptive statistical analysis of samples

2.1.1 Basic characteristics of the farmers interviewed. According to the survey results, it shows that the age of farmers interviewed mainly concentrates in 45 – 55, accounting for 40%; the farmers who are aged more than 55 account for 28.34%; the farmers who are aged 35 – 45 account for 23.13%; the farmers who are aged less than 35 account for 8.47%. With regard to the level of education, the majority of farmers have the educational background of junior middle school, accounting for 41.37%; some farmers have the educational background of primary school, accounting for 29.32%; some farmers have the educational background of primary school, accounting for 29.32%; some farmers have the educational background of high school, accounting for 18.24%.

2.1.2 Basic information of compensation for land expropriation. As regards non-agricultural income of farmers whose land is expropriated, according to its share in total income, it is divided into five intervals, and according to its sources, it is divided into six intervals. 79.8% of farmers whose land is expropriated, are located in suburban areas, and 21.2% of farmers whose land is expropriated, are located in rural areas. Visibly, the land of suburban areas is more likely than that of rural areas to be expropriated. The land of suburban areas with distance from the county less than 5 km accounts for 59.61%; the land of suburban areas with distance from the county 6 – 10 km ac-

counts for 21.17%; the land of suburban areas with distance from the county 11 – 20 km accounts for 9.45%. It can be clearly seen that the closer to the county, the greater the likelihood of land expropriation.

Table 1 Explanation of related variables in the model

Variable	Value	Definition of variable
Age	1 – 4	Smaller than 35 = 1; 35 – 45 = 2; 45 – 55 = 3; bigger than 55 = 4
Educational background	1 – 6	Illiteracy = 1; primary school = 2; junior high school = 3; senior high school = 4; junior college = 5; above junior college = 6
Geographic location	0 – 1	Suburb = 1; village = 0
Distance from county	1 – 4	Within 5 kilometers = 1; 6 – 10 kilometers = 2; 11 – 20 kilometers = 3; over 20 kilometers = 4
The proportion of non-agricultural income	1 – 5	Smaller than 20% = 1; 20% – 40% = 2; 40% – 60% = 3; 60% – 80% = 4; 80% – 100% = 5
Sources of non-agricultural income	1 – 6	Work in other provinces = 1; work in the province = 2; work in the county = 3; work in the local areas = 4; non-agricultural business in the local areas = 5; others = 6
Compensation standard	1 – 5	less than 15×10^4 yuan/hm^2 = 1; $(15-30) \times 10^4$ yuan/hm^2 = 2; $(30-45) \times 10^4$ yuan/hm^2 = 3; $(45-75) \times 10^4$ yuan/hm^2 = 4; more than 75×10^4 yuan/hm^2 = 5
Other benefits	0 – 1	Yes = 1; No = 0
Whether to receive the notice or not	0 – 1	Yes = 1; No = 0
Whether to invite suggestions or not	0 – 1	Yes = 1; No = 0
Regional variables	1 – 3	Eastern regions = 1; Central regions = 2; Western regions = 3

The survey finds that the average compensation sum farmers get from land expropriation is 195 000 yuan/hm^2. Most of the farmers whose land is expropriated get compensation below 150 000 yuan/hm^2, accounting for 43.97%; the farmers whose land is expropriated get compensation of 150 000 – 300 000 yuan/hm^2, accounting for 19.54%; the farmers whose land is expropriated get compensation of 300 000 – 450 000 yuan/hm^2, accounting for 21.5%; the farmers whose land is expropriated get compensation above 450 000 yuan/hm^2, only accounting for 8%. In addition, there are some farmers getting other benefits: 11.3% of farmers get social insurance; 8.7% of farmers get food subsidy; 4.2% of farmers get non-agricultural jobs; 3.6% of farmers get vocational skills training.

2.1.3 The farmers' subjective feeling whose land is expropriated. In all the land that is expropriated, farmers do not receive any notice in advance from 28.8% of land, and as for the compensation of 58.2% of land, it does not seek any advice from farmers. Our data analysis shows that farmers' satisfaction with the final compensation has a strong positive correlation with whether they are informed in advance, and whether the government takes counsel; if the farmers are informed in advance when the land is expropriated, 52% of farmers will express satisfaction with compensation; if the farmers are not informed in advance when the land is expropriated, only 16% of farmers express satisfaction. In other words, as for the farmers who are informed in advance, the probability of their satisfaction with the compensation three times that of the farmers who are not informed. If the government has sought the views of farmers on the compensation sum, 59% of farmers will express satisfaction with the compensation; if the government has not sought the views of farmers on the compensation sum, only 27% of farmers will express satisfaction with the compensation. In other words, if the government seeks advice from the farmers on compensation, the probability of farmers' satisfaction with the compensation two times that of the farmers who are not sought advice by the government.

2.1.4 Characteristics of land expropriation problems in the survey sample. First, in terms of a recent land expropriation reported regarding the survey sample of villages in 17 provinces, the scale of national land expropriation has a growing trend. Fig. 1 shows the annual number of occurrences of land expropriation (half year of the data is converted into whole year of data in 2010).

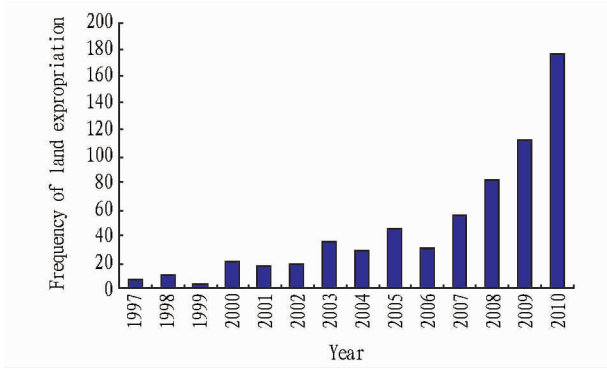

Fig. 1 Frequency of land expropriation annually from 1997 to 2010

Moreover, according to the survey data, the distribution of national land expropriation intention in the survey sample can be shown in Fig. 2. Obviously, in samples surveyed, in most cases, the national land expropriation is out of public welfare intention. This shows that the amendment to *Land Management Law*, will limit national land expropriation to within the scope of public welfare purpose, which is not very difficult. So, from the current situation, the spontaneous transfer of collective construction land may cause more damage to the peasants' land right. Therefore, prior to the regulation of collective construction land transfer, limiting national land expropriation within scope of public welfare purpose, and allowing the collective construction land to have "the same price, rights" as state-owned construction land, may result in adverse effects on

farmers' land right.

2.2 The estimated results of model We use STATA11 statistical software to conduct Logistic regression analysis on the relevant data concerning the farmers surveyed whose land is expropriated. We get model Ⅰ and model Ⅱ reflected in the following table.

From ModelⅠ, age, geographic location and compensation standard fail to pass the significance test, indicating that the impact of these hypothesis factors on farmers' willingness to accept compensation is not significant. According to ModelⅠ, after gradually removing the least significant variables, we get Model Ⅱ. According to the results of Model Ⅱ, the impact of non-agricultural income, farmers' participation right and regional economic development level, on farmers' willingness to accept compensation has passed 0.01 level of significance test or below.

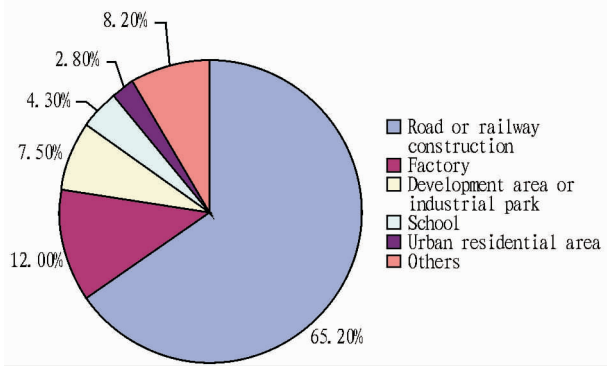

Fig. 2 Distribution of national land expropriation intention in the survey sample

Table 2 The estimated results of Logit model on factors influencing the farmers' willingness to accept compensation whose land is expropriated

Variable	Model Ⅰ		Model Ⅱ	
	Coefficient	*z* value	Coefficient	*z* value
Age	−0.014 016	−0.09	–	–
Educational background	0.243 983*	1.58	0.250 501*	1.77
Geographic location	0.142 412	0.40	–	–
Distance from county	0.162 861	1.15	0.150 711	1.15
The proportion of non-agricultural income	0.400 340***	3.18	0.392 546***	3.16
Sources of non-agricultural income	0.053 121	0.62	0.057 956	0.68
Compensation standard	0.022 899	0.24	–	–
Other benefits	0.308 508	1.36	0.405 427	1.41
Whether to receive the notice or not	1.157 014***	3.54	1.151 250***	3.54
Whether to invite suggestions or not	0.935 692***	3.45	0.946 803***	3.52
Regional variable	0.783 434***	2.68	0.742 510***	2.68
Constant C	−3.674 722	−3.87	−3.724 823	−5.31
Log likelihood	−180.283 740		−180.390 610	

Note: *, ** and *** mean significance at the level of 0.1, 0.05 and 0.01 respectively.

From the results of Model Ⅱ, we can find that if there are more non-agricultural employment opportunities, the farmers will be more easily satisfied with the compensation from land expropriation. In the mean time, farmers' educational background, has a positive correlation with whether to feel satisfaction with compensation from land expropriation. This is to some extent, explain that in the case of more non-agricultural employment opportunities, the land is no longer regarded as the main source of farmers' living guarantee and social security, then the farmers will entertain moderate attitude toward land expropriation, and thus they are more likely to feel satisfaction with the compensation from land expropriation. However, under the circumstance that the basic security function of land for farmers' survival does not change, farmers are more easily satisfied with the results of the compensation. In addition, the more developed the regions, the more likely for the farmers to be satisfied with the results of compensation. It is because that economically developed regions can offer more non-agricultural employment opportunities, so as to dilute the social security function of land, therefore the farmers are more easily satisfied with the results of compensation from land expropriation.

From Model Ⅱ, we know that whether to receive the notice of land expropriation or not and whether to invite suggestions or not regarding the standard of compensation from land expropriation, directly affect farmers' satisfaction with the compensation. This shows that, although there is the problem of land expropriation in many countries, the land expropriation compensation disputes in China at present are manifold, so purely improving the compensation standard of land expropriation may not be only key to solving the problem. As noted above, the land problem in China is not only the economic issue, but also unity of society, politics, custom and culture, therefore, we must take into full account the farmers' psychological experience whose land is expropriated, strengthen the bargaining position of farmers, and giving them full participation rights, voting rights and appeal rights.

3 Conclusion and policy enlightenment

First, as the pace of China's industrialization and urbanization quickens, there is an increasing demand for urban construction land, while gradually narrowing the scope of land expropriation is the direction of China's land expropriation system reform.

According to the findings regarding 17 provinces, in provinces surveyed, most of the land expropriated is used for the building of public welfare projects. However, the spontaneous transfer of collective land for construction has already become a fact in many places. In this case, to achieve the goal of protec-

ting farmers' land right, we should formulate reasonable land expropriation compensation standard and timely regulate the transfer of collective construction land. Under the circumstance of having not carried out strict regulation on the transfer of collective construction land and the corresponding tax system, if we limit national land expropriation completely within the scope of public welfare by one step, it is likely to exert negative impact on farmers' land right. Therefore, we believe that in the context of current rapid urbanization, we do not have the conditions for defining the public interests. After the pace of urbanization is relatively stable, it is equipped with the system basis for replacing the ownership control by planning control and use control. At that time, the public interest can be defined, so as to more effectively guarantee farmers' land right.

Second, the farmers with more non-agricultural employment opportunities in economically developed areas, express more satisfaction for compensation from land expropriation. This shows that the necessity of coordinated development of urbanization and industrialization, needs corresponding industrial development as support in the process of urbanization. When the social security function of land gradually disappears, and its property function gradually looms, the farmers will gradually enjoy the right to turn the land assets into cash.

However, the current reality is that many less developed regions are also trying to build large-scale industrial development zones, and the local government takes land as collateral to loan for building development zones, and hopes to increase local revenue through inviting investments to pay off loans. Therefore, in China's many places, the industrial land is basically transferred at zero or negative land price, leading to idling of development zones or risk of surplus producing capacity. Once the bubble bursts, a large number of landless farmers will exert adverse effect on economic and social stability and development.

Finally, we should establish sound land expropriation compensation mechanism, and strengthen the participation right of farmers, so as to give fair and reasonable compensation from land expropriation to farmers. Due to great differences between regions, between projects, it will make fair and reasonable compensation become a very complex issue. Therefore, the policy design also needs to study carefully how to achieve reasonable and fair compensation. The study data shows that in the process of land expropriation, there is strong correlation between whether the farmers have the right to participate, and farmers' satisfaction with land expropriation compensation. This shows that in the process of amendment to *Land Management Law*, we should strengthen the participation rights of farmers, reinforce consultation and mediation mechanism, improve procedures of land expropriation compensation, and strengthen the bargaining position of farmers, so that farmers can fully express their will, which is the basis for building a harmonious society.

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interactive development of universities and enterprises. Through the establishment of science and technology base, industrial base, and constructing network system of division of labor and synergy, we should transform regional resource advantages into comprehensive economic advantages, rapidly promote technological content of enterprise products, constantly develop leading industries, and form strong industry cluster. Meanwhile, we should continue to expand the influence of the leading business groups, and give priority to the development of advanced manufacturing, so as to stimulate development of other industries, ultimately form high-tech industrial clusters economic belt with powerful strength, and make high-tech industry cluster become catalyst for rise of Central China.

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