

*Full Length Research Paper*

# Evaluation of farmers' insufficient data in income distribution of farmland conversion

Liang J. Cheung\* and Herman Lu Han

Economic College, Hunan Agricultural University, Chang Sha 410128, China.

Accepted 16 January, 2016

In the process of rural land conversion, Chinese farmers always get the unfair treatment. Why Chinese farmer cannot get their deserved part? What is the behavior of that unfair treatment in china? And how to solve the problem? From the rational person hypothesis and profit maximization hypothesis, we use the game theory to probe the situation of different subjects, such as the market demander, the farmers, and the village manager. The conclusion is that: (1) The behavior of that inferior information is whether it is the legal requisition or not, whether there is the intercept policy, and whether to grant the appropriate compensation; (2) The unfair treatment in Chinese farmland conversion to farmers is owing to the inferior information, which includes information acquisition inferior and information distribution inferior; (3) The solution to this problem proposed is a path of coexistence with internal strengthening mechanisms and external optimization mechanism.

**Key words:** Farmland conversion in China, income distribution, information inferiority, game theory, internal strengthening mechanisms, external advantages mechanism.

## INTRODUCTION

The urbanization and rural industrialization has led to the growing demand for land resources in China, and a large number of rural land have been converted to urban land.. Since the implementation of the household contract responsibility system, the spontaneous informal land transfer began to emerge from rural area. The land transfer makes farmland resources centralized to farming experts, in the other hand, it makes some farmers do not want to do farming participate in the construction of industrialization and urbanization. Farmland conversion is the process that farmland involve in land transactions to be value-added, which is by the way of leasing, contracting, transfer, cooperation, and relying on the land financial institutions or other intermediaries. In this process, the land contract disputes and the land compensation disputes among the local government, farmers and market demanders often occurred, which government and market demanders often cut down the rents, force the land transfer as well as the interception and misappropriation of land value-added benefits. These all can attribute to the contradiction in income distribution of farmland conversion, and it is almost the performance on encroachment of farmers' interests. There are different reasons for the contradiction. These vary from restriction

of the natural conditions and farmer's knowledge, separation of land ownership and use right, differences of calculation methods to land price, expropriation mechanism of —one-expropriation and one-rentll (that is collective land must be firstly —expropriated cheaply —by government, then the land just can be rented to the market demanders).<sup>[1]</sup> However, under the condition of China's economic system, the land financial and land monetary make the land problem complex, the land transfer involves a series of interest, including the central government and local government, local government and enterprises, local government and banks, enterprises and banks, farmers and enterprises... Each parti which are derived from the land issue and be related by the interests, all have a strong motivation and desire to care about the land problem, but this motivation and desire of farmers have not been true, particularly, the farmers are in inferior information status when they safeguard their own interests in the game of enterprises and local governments. Therefore, from the view of information

\*Corresponding author. E-mail: [liang\\_7h8@yahoo.com.cn](mailto:liang_7h8@yahoo.com.cn).

economics, the inferior information of farmers is the most fundamental reason.

## LITERATURE REVIEW AND METHODS

Research about the land appreciation in foreign is mainly in the area of urban land, and mainly emphasis on the dynamic changes of the land value, reasons and motivation of agricultural land conversion (Sergio and Douglas, 1999; Cynthia and Lori, 2001; Tracy and Alison, 2011; Plantinga and Miller, 2001; Brabec and Smith, 2002; Libby and Sharp, 2003; Luciano et al, 2007). The deeply study of land income allocation derived from the land conversion to each parties in China is relatively small and focuses on the following aspects: the first is about relationship between inefficient use of farmland and income distribution mechanism in farmland conversion; the second is the insecurity to farmers' interests in farmland conversion; the third is the land valuation to income distribution mechanism in farmland conversion; the fourth is the misconduct of government in the income distribution mechanism in farmland conversion (Shen and Zhu, 2004; Wang and He, 2006; Tan and Qu, 2006; Shi and Wang, 2006; Zou, 2006; Wangyou and Ai, 2009; Liao, 2007; Jiang, 2011; Bao, 2009; Futian and Nico, 1995).

According to the previous research literature, based on the rent theory, the theory of income distribution, the land property rights theory and the unreasonable benefits allocation "facts" in farmland conversion (by multiple constraints), this research is to discuss the main acts in income allocation of farmland conversion, thereby to reveal the income distribution pattern in this stage of China's farmland conversion, and then identified the system root causes of income distribution in farmland conversion. Therefore the first research method used in this paper is behavior analysis method, whose starting point and basis rely to the various stakeholders' value judgments, whose behavior standards is the rational person hypothesis and profit maximization hypothesis. Simultaneously, this behavior theory is as a basis to deal with the issue of income allocation in farmland conversion and the basis for the formulation of economic policy.

In addition, game theory is another analysis tool, it is used to help us understand the interaction phenomenon by the decision-making body. The basic assumptions implied in this theory are the decision-making body pursue affirmatory and rational external goals, and take their knowledge or other decision-making body's behavior expectations into account. So we analyze the different land income distribution situation with game theory. Because of the benefits to be allocated between levels of government, village collective, farmer and the market demander in farmland conversion, each main has different options, and plus taking costs and benefits as a standard, thus there are a variety of game choices and results.

## THE BEHAVIOR OF THE FARMERS' INFERIOR INFORMATION IN INCOME DISTRIBUTION OF CHINESE FARMLAND CONVERSION

According to economic rational person hypothesis and profit maximization hypothesis, take the interested parties into consideration, the contradictions from distribution of land benefits are inevitable, the harmony between them depends on the equilibrium of information. Therefore, farmers' inferior information is the root of the loss of interests in farmland conversion, this inferior information cause the rights - income asymmetry in farmland conversion: the government or collective are the representatives of rural land rights, namely are the actual control of right; the market main players dominate the pattern and process of farmland conversion with liquidity and initiative in the land market, and become the second-level vested interests; while the farmers become the loss parties of benefits due to information inferiority, this inferior information also cause multilayer obstacles to farmland conversion, mainly in a performance between farmers and collective, farmers and the government, as well as farmers and market demander.

### Whether the collective main is legal requisition or not

The relations of land contract and unpaid principal-agent contract show the interest relationship of the farmers and village collective, the ownership of rural collective land belongs to collective in china. The government with land expropriation rights obtain the collective land forcibly and then tend it to state-owned land in the land requisition process with the payment of land requisition compensation fee, hereafter, to supply unified in accordance with the Construction Land Use Planning, which is the general procedures of rural land transfer in china (Wang, 2006). The involving interest factors are: the farmers' cost includes the contracting costs and the abandoned income of farming; the collective income is the contracting cost paid by farmers and the retention rent; the collective cost is the organization cost to organize farmers, the farmers income is the obtainable compensation. Therefore, one of the farmers' risks in farmland conversion is whether the collective take over the land legally or not, that is farmers become the inferior group or not depends on whether the farmers' inferior information hinder its judgment to the legality of land requisition by the collective subject. From Table 1, the collective take over land legally, given appropriate compensation to farmers and farmers are very cooperative, which is the best state to develop the rural economy; the collective take over land illegally and farmers are also cooperative, farmers' income is -1 unit and the collective get the interests of two units; while the collective take over land legally and the farmer counterwork, the farmer eventually get one unit that belongs to them; on the contrary, the collective take over

**Table 1.** The game between farmers and the collective.

		The collective	
		Legal land requisition	Illegal land requisition
The farmer	cooperative	(1,1)	(-1,2)
	counterwork	(1,0)	(0,0)

**Table 2.** The game between farmers and the government.

		The government	
		No- interception policy	Interception policy
The farmer	cooperative	(1,1)	(-1,2)
	counterwork	(1,0)	(0,0)

land illegally and farmers counterwork, there is in two cases: one is both sides give up and income does not change, that is a zero-sum game; the other is the continued counterwork between two parties, the confrontation cost and social negative effects is emerging. But it is difficult for farmers to distinguish the legality of government land requisition owing to their "disinterested" and "unintelligent", that is farmers are simple kindness and disadvantaged; once there is illegal land requisition or unreasonable compensation, the farmer will suffer great loss, which is the loss for the opportunity of land monetization.

#### **Whether the government main intercept the policy or not**

When farmland conversion, the main function of government is to control, protect and develop land resources, then to guide the reasonable transfer of land and to meet the needs of the development of urbanization, industrialization and agricultural modernization through the pursuit of optimal land resources allocation. From the perspective of the market, there is no any interest relationship between farmers and the government in the land transfer; but from the view of the organization governance, the relationship is between the governors and the governed. The involving interest factors are: the government income is part of the rent-seeking income and taxes income, their cost is from the legal and administrative costs; and the farmer' cost is the hidden costs occupied by the government and its cadres, which is the part of government revenue, farmers do not get the income, the government do not pay the cost. Therefore, it does not mean the government will very actively monitor and promote land transfer in any circumstances. That is whether farmers become the inferior group or not depends on whether the farmers' inferior information prompt its judgment to the main function deficiency of the government. As to the govern-

ment and farmers, the game of each sides as shown in Table 2, the government do not hold back policies and manage the land in strict accordance with the relevant provisions, farmers actively support the government's land requisition work, then the land capital appreciate, the benefits for each party are 1 unit, if the farmer still actively cooperate in the case of government's interception of policies, farmers will get losses, the gains is -1 unit, and then a unit or more revenue to government; But if farmers are counterwork, regardless of the interception or not, because the ownership belongs to the collective, so theoretically the farmer can get the part of revenue their deserved, that is 1 unit. However, the government and the village collective is the same, farmers are at the end of the information channel, which is a weak position of policy, the final result is the damage to farmers' interest.

#### **Whether the market main grant appropriate compensation or not**

The interests relationship of farmers and market players (the demander or assignee) is the contractual relationship based on the lease of land contractual management rights, which involves some interest factors: farmers' costs include the loss of land farming income and the assessment costs to rent; farmers' income include rental income, wages made from non-agricultural industries and so on; the assignee's income include the capital gains from land use and the explicit costs in land transfer; the assignee's costs include rent, agricultural taxes, the intermediation costs and administrative costs paid to the village collective and the government. The cost of collecting land information and the cost to complete the transfer process is actually shared by the farmer and the transferee, which is named to —the common costs<sup>ll</sup>. That is whether the farmer become the inferior group or not depends on whether the farmers' inferior information hinder them to get the reasonable compensation and

**Table 3.** The game between farmers and the marketer.

		The collective	
		Appropriate compensation	Inappropriate compensation
The farmer	cooperative	(1,1)	(-1,2)
	counterwork	(1,0)	(0,0)

benefits. As shown in Table 3, in the case of land supply exceeding demand, the reasonable compensation and farmers' cooperation is the maximize choice, the land value rose by the way of capitalization, each party gets 1 unit benefit; if the market players do not pay reasonable compensation and the farmer still cooperate because of the intervention from the government and the village collective as well as farmers' inferior information, then the final result is the damage to the farmer's interests and it is detrimental for the economy and society to the long-term development as a whole; while due to the emotional factors to land, the dependence on the land or as the livelihood security, the farmer does not participate in the circulation, then regardless of how the market subject behave, the land are unable to be capitalization and value-added, the gains are 0.

### THE CAUSES OF THE UNFAIR TREATMENT IN INCOME DISTRIBUTION OF FARMLAND CONVERSION IN CHINA

The Farmers' inferior information is a social problem that is the weaknesses of information-poor among the rural. There is some distinctive among different social status, level of education and regional characteristics, that lead to the different powers and abilities to obtain and use information, and then bring in information asymmetry and unfair. So, the weaknesses of information-poor in farmland conversion make the farmer's inferior subject, and the inferior information in the farmland transfer was transformed into the inferior interests. But the farmers' inferior information is rather than the other subjects, which is that the government, collective and market subject know more and also get more interests in farmland conversion as the strong subjects. The evaluation of strength to information mainly manifest in two aspects, the acquisition of information resources and the allocation of information resources, so we can put the issue of farmers' inferior information into information acquisition inferiority and information distribution inferiority.

#### Information acquisition inferiority

Farmers' information acquisition inferiority derived from three main aspects: The first is the level of education. The low level of education is the most direct cause of inferior information acquisition to farmers. The cultural

quality and education level of Chinese peasants is relatively low, who do not understand the future earnings from farmland conversion, and then cannot see the kernel and root of the land problem, all that lead to the farmer believe in the director of village collective so blindly that the loss of benefits in the farmland transfer mechanism. The second is the tools to obtain information. The development of the rural economy lag behind as well as the low level of networking and informatization, the slow dissemination of information, the control ability to information tools, all those make the farmers unable to read and get kinds of information. The third is the channels of information source. After the fiscal polarization, the local government can get the land premium and tax revenue through the sale of land, then pull the real estate and infrastructure construction, in the short term this is a —win-winll choose for local government, therefore, the local government often take steps of —coverll and —collectll to conceal some key information in land transactions, to help the land transferee and then to stimulate the land demanders' land purchase behavior; on the other hand, the government is the role of supervisor and executor in land transfer, but many government officials and departments become the interests winner in land transactions relying on administrative power and do not take the responsibility of government, that make the channels of land information blocked. In addition, farmers are in the end of the land information policy, which also make the farmers' information acquisition hysteretic obviously.

#### Information distribution inferiority

The main reason of information distribution constraints is the monopolization in land market. In China, the right of eminent domain of land is national administrative power and take the objective public interest for a prerequisite, therefore, the government or village collective have the absolute advantage to the information of land market; the land transferee as the pursuer of their own maximized benefit, who always do the scientific assessment to land application and the rise in value, but farmers do not understand the income from land transfer. The information asymmetry between the land assignee and farmers leads to the unfair in benefits distribution of land transfer, the government is in a supervisory status but no obligation to inform farmers, then exacerbating the opportunism behavior from economic entities with much

land information, which is the government rent-seeking or market intermediaries rent-seeking. Therefore, the lack of legislation to information disclosure in the process of land transfer and the lack of authoritative, the blank of some procedures, relief measures and so on, all make the disclosed information from the assignee defective, and lead to information distribution imbalance. The second is the weakening of the farmers' dominant position. The weakening of the farmers' dominant position and the weakness of farmers' discourse right are closely related. The dominant position of the farmer gives the way to the dominant position of government or village collective, plus the weakness of farmers' discourse right and the virtual of bargaining power in land transactions, the farmer are in a passive position in the land benefits distribution. In addition, the lack of effective supervision and the only inner supervision system are both the information inferiority in income distribution of farmland conversion.

## RESULTS AND DISCUSSION

According to the analysis of the behavior and causes of farmers' inferior information in farmland conversion, the farmer's inferior information blocked the land transfer and easily intensify contradiction of each parties. To defuse the various contradictions in farmland conversion, we must change the inferior position of farmers in the land transfer, enhanced the farmers' ability to obtain land transfer information. In the context of China's special economic and social circumstance, for the purpose of facilitating the multilateral cooperation and continuously improving the distribution system of land revenue, we may be able to formulate a sound policy from the micro to the macro, and from the internal to external, that is to stand-by the internal strengthening mechanisms and external optimization mechanism. So as to change the inferior position of information in farmland conversion in China, the following recommendations may be effectively:

### Internal strengthening mechanisms

The root of the contraction in the land conversion is the interest loss of farmers from the farmers' inferior information. To solve this problem is to actively perfect the land market and to make farmers have the ability to be self-decision by improving the level of their knowledge and cultivating the market economy awareness of the farmers. In addition, the core of the problem lies in strengthening the dominant position of the farmers in the benefits distribution of farmland conversion. Only change the passive situation and make the farmer be actual host, the inferior information position can be truly disappeared.

Therefore, it is necessary to clear farmers' several major rights as the main part in the farmland conversion: The first is the right of participation, and this is the basic premise of the farmers to participate in farmland

conversion. The land plays a role in the economic functions and social security, and any relevant land policy will affect the present and future life of farmers, therefore, the introduction of any land system must get the consent of the farmers, and carry out on the principle of the voluntary. The second is the right of information. Farmers have the right to require the government and the relevant rights holders to disclosure the information of land use, land control, etc. The relevant departments and personnel shall not conceal it. The third is the right of supervision to the implementation of major projects. The right of supervision can prevent the collusion between the government and land assignee from the interests of rent-seeking. In addition, the channels to expression should be rich, meanwhile, set up specialized agencies to coordinate the interests of land, set up relevant laws and regulations to guide the distribution of benefits, and then to realize the appreciation of land-value, the increasing of farmers' income and agricultural output.

### External optimization mechanism

Based on the perfect internal mechanism, the fair distribution mechanism of benefits in farmland conversion also depends on a sound external mechanisms, which relates to many stakeholders: the local governments, the departments of land valuation and management, the network media agency, the intermediaries, the information service agencies, the education and training institutions, whose role are to provide the assistances about the farmland information policy, farmland information education, farmland information services, farmland information resources and farmland information technology.

Specifically, (1) responsibility of land information policy assistance belongs to the central and local government agencies, who should open and explain the purpose and content of the land system in a timely manner so that the farmer can know the change of the land policy better, and this systems involve the registration system, the control land use system, the land transactions system, the land requisition system, the land financing system, the compensation system of land requisition and the land monitoring system. (2)The responsibilities of information technical assistance of land belongs to the departments of land valuation and management, which include giving explain to the specific accounting approach of land prices, and then make farmers truly understand the structure of land price and obtain their own reasonable part. (3)The responsibility of land information resource assistance belongs to the network media and the intermediaries; they should play its social effects and timely make the information resources of the land publicity and popularization as shared resource. (4)The responsibility of land information educational assistance should do by the relevant educational institutions.

Through the supplement of farmers' land market

knowledge by means of education, the farmer can understand the advantages and disadvantages of the various parties in the land market, the land valuation methods, the land operation mode, the operation mode of land capitalization, then they can involve in the distribution of land interests better and to protect their own interests. (5) In the last, because the farmer main is large amount and scattered with limited knowledge, the institutions and professional information services centers should collect a large amount of information of land buyer and seller through specialized means in order to provide professional land information services assistance to farmers, from then the width and depth of the information to land can be extended.

### Conclusion

In this paper, we discuss the on the issues of farmers' inferior information in the farmland conversion based on the current political, economic background in China. The behavior of farmers' inferior information in farmland conversion is whether it is the legal requisition or not, whether there is the intercept policy, and whether to grant the appropriate compensation. And there is two reasons to the current situation: one is the information acquisition inferiority and the other is the information distribution inferiority, the inferiority of these two aspects is owing to the education level of farmers, the transmission restrictions on the information channels, the defect of disclosure legislation to information and the missing of farmers' main political status. Meanwhile, these information inferiority problem also restrict the deepening and reform of China's land system, and at last we proposed recommendations of the coexist path: stand-by the internal strengthening mechanisms and external optimization mechanisms.

### REFERENCES

- Bao H (2009). The value-added distribution of income in urban and rural land acquisition: the reaction of farmers and equilibrium path. *J. China Land Sci.*, 7: 32-36.
- Brabec E, Smith C (2002). Agricultural land fragmentation: The spatial effects of three land protection strategies in the eastern United States. *J. Landscape Urban Plann.*, 58(2): 255-258.
- Cynthia JN, Lynch L (2001). The Effect of Farmland Preservation Programs on Farmland Prices. *Am. J. Agric. Econ.*, 83( 2): 341-351
- Futian Qu, Nico H, Wanmao W (1995). Land administration reform in China. *J. Land Use Policy.*, 12(3): 193-203.
- Jiang H (2011). The co-ordination of construction land in urban and rural areas and land income distribution: efficiency and fairness. *J. Rural Econ.*, 4: 44-48.
- Liao H (2007). The distribution of value-added income in the rural collective land requisition-Take RA City in Zhejiang Province for an example. *J. Agric. Econ. Prob.*, 11: 8-12.
- Libby LW, Sharp JS (2003). Land-use compatibility, change, and policy at the rural-urban fringe: Insights from social capital. *Am. J. Agric. Econ.*, 85( 5): 1194-1200.
- Luciano G, Joakim W, Kenneth E (2007). Farmland prices, structural breaks and panel data. *J. Euro. Rev. Agric. Econ.*, 34(2): 161-179.
- Plantinga AJ, Miller DJ (2001). Agricultural land values and the value of rights to future land development. *J. Land Econ.*, 77(1): 56-67.
- Sergio HL, Douglas J (1999). Transaction Costs and the Present Value model of farmland: Iowa, 1900-1994. *Am. J. Agric. Econ.* 81: 57-272.
- Shen F, Zhu D (2004). The empirical research on the relationship of revenue allocation between government and the village. *J. Res. Ind. Econ.*, 8: 17-19.
- Shi T, Wang D (2006). Moderate agricultural land Conversion in urbanization: the institutional barriers and policy research. *J. Agric. Econ. Prob.*, 3: 60-65.
- Tan R, Qu F (2006). The agricultural land conversion and protection of agricultural land resources in China: from dilemma to a win-win. *J. Manage. World*, 12: 50-59.
- Tracy ES, Alison JE, Geerte C, Cornelis van Kooten G (2011). Farmland Preservation Verdicts—Rezoning Agricultural Land in British Columbia. *Canadian J. Agric. Econ.*, 59: 555-572.
- Wang Y, He M, Gao Y (2006). The empirical study of the land revenue allocation in agricultural land transfer - based on a sample survey of the three places in Kunshan, Tongcheng, Xindu. *J. Manage. World*, 5: 62 - 68.
- Wangyou H, Ai J (2009). The land premium system and value-added revenue allocation in Farmland conversion. *J. Huazhong Normal University (Humanities and Social Sciences)*. 7: 52-58.
- Zou X (2006). Farmland conversion: Compensation standard with efficiency and fairness. *J. Agric. Technol. Econ.*, 4: 2-14.