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A Study on Factors Driving Rural Homestead Transfer in the Market Based on the Push and Pull Theory

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Abstract

The Push and Pull Theory was originally used to study human migration, and has since been enriched and refined. Push and Pull Theory holds that the factors which promote population transfer mainly include the push factor, pull factor, intermediate obstacle factor and individual factors. Based on the Push and Pull Theory and field investigation, a Logistic regression model is established, and the forces driving rural homesteads into market circulation are looked at in this study through quantitative investigations. The study finds that better employment opportunities and higher income, quality infrastructure and educational resources, household registration system reform, and better access to education and skills training for farmers in cities have a positively significant impact on the market based rural homestead circulation, while excessively high urban housing prices, poor levels of rural infrastructure and social security, age of farmers, location of homestead and the ways farmers want to be compensated have a significantly negative impact. Some policy suggestions are put forward to optimize policies related to homestead transfer in the market from urbanization, rural infrastructure development, household registration system reform, risk assessment and compensation mode, etc.

Keywords

Rural Homestead, Market Transfer, Push and Pull Theory, Driving Factors, Logistic Regression

1. Introduction

With rapid and steady economic development and accelerating urbanization, the

pattern of urban and rural areas in China has also changed. On the one hand, good infrastructure and numerous employment opportunities in cities draw farmers to cities where they become employed workers. Some choose to settle down as permanent residents in the cities, and others, limited by financial conditions, become migrant workers who shuttle between the city and their rural hometowns like migratory birds. As the scale of cities continues to expand, land supplies have gradually become the bottleneck restricting urbanization, and the potential value of rural homestead becomes highlighted. On the other hand, China's current rural homestead system started its life in the period of the planned economy where land was associated with identity and welfare, and has played a positive effect in maintaining stable development of rural society for a long time. However, with the economic and social transformation in the vast rural areas, homestead system has shown limits because of such inherent factors as free land acquisition, indefinite right to use, incomplete property rights and prohibition of market-oriented transfer, leading to land being under or over-used, or vacant, and not being seen as an asset. At the beginning of 2015, the general office of the CPC Central Committee and the general office of the State Council jointly issued the Central Document No. 1 of The Opinions on Piloting Rural Land Expropriation, Market Circulation of Collectively Operated Construction Land and Homestead System Reform, which signaled that China's reform of rural land system had entered the pilot stage. The Opinions clearly set out that the focus should be on tackling extensive use, and poor circulation and exit mechanisms of the rural homestead, and exploring transfer of or paid exit from the homestead by farmers settled in cities within their rural collectives. At the start of 2018, the CPC Central Committee issued The Opinions of the CPC Central Committee and the State Council on the Implementation of the Rural Revitalization Strategy. After the phased achievements of the "separation of three rights" (ownership, contracting right and operation rights) of the rural homestead, China further explored realization pathways of the separation, and carried out reform on the rural homestead system, providing an institutional basis for circulating homestead in the market. The separation focuses on expanding farmers' property generated income, with homestead transfer being one of the most desirable pathways. The Central Document No. 1 for 2019 emphasized the need to deepen land system reform, balancing long-term use rights with the property nature and protection function of the homestead. The stalemate on homestead circulation was gradually broken thereafter, igniting hope that homestead would no longer be a "sleeping asset" of farmers. In recent years, all localities of China have been exploring fitting approaches to implementing rural homestead transfer, and achieved certain results. However, the majority of farmers still did not understand the policies and are worried that there is no guarantee of "not returning to poverty" after the transfer, resulting in many obstacles to realizing homestead transfer and exit. Therefore, it is necessary to analyze the driving forces and influencing factors of market based homestead transfer against the background of urbanization.

2. Theoretical Introduction and Literature Review

2.1. Push and Pull Theory

The Push and Pull Theory derives from the "laws of migration" proposed by the British economist and sociologist E. G. Ravenstein in the 1880s. From a demographic perspective, he believes that economic factors provide the most important incentive to immigration. In the 1950s, Donald Borg, an American scholar, systematically expounds the theory on the basis of the "laws of migration". Borg argues that population migration is affected by two different forces. On the one hand, a positive force promotes population migration, and on the other hand, a negative force hinders. For a given place, all factors conducive to population inflow are pulls, and factors that drive population away are pushes. Whether population migration will eventually occur depends on the direction and size of the resultant force. For example, in places where people move out, low income, shortage of natural resources, an increase of agricultural production costs and surplus of rural labor force are pushes, while places with net population inflow after their indigenous population existed are usually those that can offer pulls such as more employment opportunities, higher income, better education and infrastructure. The Theory shows that under market economy and with free population flow, people continue to move because they hope to improve the quality of life by changing the living environment. Therefore, factors that improve the living conditions of potential migrants become a pull, and those that reduce are a push. In the 1960s, building on the above two views, British scholar Everett. S. Lee established a complete analytical framework of the Push and Pull Theory. Lee argues what promote population migration are inflow factors, outflow factors, intervening obstacle factors and individual factors. People's rational understanding of advantages and disadvantages of migrating in and out of certain places, subjective and objective obstacle and their own particular conditions will affect their migration choice. Lisec et al. (2008) argue that people's understanding of their current place of living and migration destinations affects their mobility decision-making, and they will encounter obstacles in objective environment and subjective psychology. In the face of obstacles, different people make different decisions. Population migration against the background of urbanization is also subject to such pushes and pulls. In a market economy, circulation of homestead in the market is actually a process of rural land resource reconfiguration and of rural population migrating into cities, during which circulation of homestead in the market is affected by various pulls and pushes from both urban and rural areas. Therefore, selecting this theory in analyzing the driving forces of homestead transfer makes both theoretical and practical sense.

2.2. Literature Review

At present, rural homestead transfer has become a hot research field for scholars, who mainly focus on the following aspects:

i) On whether to approve market-based transfer of rural homestead, Cheung

(1992) argues that the circulation of rural collective land in China can greatly promote the flow of such land to highly productive farmers, so as to improve land use efficiency and boost rural economy. Lin & Ho (2003, 2005) from constructing a unified urban-rural land market, argue that homestead transfer can effectively solve problems caused by insufficient supply of urban construction land and a large number of idle rural homesteads, which is conducive to improving farmers' economic conditions and boosting urbanization. Ho (2005) pointed out that the current rural homestead system is no longer in line with the historical trend of functional change of homestead. Wiliamson (2000) analyzes circulation against the status of rural homestead from the perspective of the transferee of rural homestead, arguing that the transfer proceeds is conducive to improving farmers' income, production and living conditions, protecting their rights and interests, and invigorating the rural land market. Alexander (2014) believes that homestead transfer can highlight the capital value of rural land, improve farmers' production and living conditions, and is conducive to the balanced development between urban and rural areas.

ii) On analyzing the driving forces driving market based circulation of rural homestead, Gude et al. (2006) divides them into external and internal factors, and argues that natural disasters, institutional changes, economic development and traffic improvement are external factors, while, resource endowment, family concept psychology on wealth are internal factors. Wasilewski & Krukowski (2004) hold that urbanization trend, awakening financial interests among farmers and dissatisfaction with the urban-rural dual system leads to the transfer of rural idle homestead, but the transfer will only occur as non-mainstream in urban and rural areas. Cho & Newman (2005) classifies farmers into those with deficient asset and those with balanced asset, and argues that the former group has high willingness to transfer, and age and education level of the head of a household are the main driving factors for transfer of homestead, while the share of non-agricultural income and the number of livelihood assets of a household are the main driving factors for transfer by the latter group. Vesterby and Krupa (2002) argue that rural homestead transfer has mainly three driving forces: government-backed expropriation, transfer by rural collective and farmers' spontaneous transfer. Macmillan (2000) identifies such driving forces as improvement of agricultural productivity, low relative income generation ability of agriculture, introduction of social funds and technology from land operators and enterprises, as well as support of government and laws & regulations, while conservatism of farmers, a lack of tangible platform support and unsound legal frameworks are regarded as unfavorable factors, from the perspective of jurisprudence.

iii) In terms of research on the influencing factors of farmers' willingness to transfer, Wang et al. (2012) identify gender, age, family size, homestead area, transportation and whether arable land transfer exists as having a significant impact on transfer intention. Ghatak & Mookherjee (2014) argue that farmers differentiation in occupation and financial health have a significant correlation

with the willingness to homestead transfer. Menon et al. (2014) analyze the impacts of income, education level of household head, distance from the nearest county, arable land area, household labor force and policy awareness on farmers' willingness to enter homestead into the market.

Through literature review, it can be found that debate over whether homestead should be transferred in market arises from the imbalances between supply and demand of urban and rural land and how to effectively protect farmers' rights and interests in the process of urbanization, which has evolved into the analysis of driving forces behind homestead entering into the market. Unfortunately, there are still deficiencies in the comprehensive discussion of this aspect in relevant literature. In view of the shortcomings of existing literature, efforts are made in this study to apply the Push and Pull Theory to identify the driving force of market based homestead circulation, before applying Logistic regression model coupled with field investigation to quantitatively examine subjective and objective factors affecting homestead circulation, in hope to provide a reference for policy-making with relation to reforming the homestead system.

3. Analysis of Driving Factors of Market-Based Homestead Transfer under the Framework of Push and Pull Theory

Based on the theoretical introduction and literature review in the second part, the following definitions are made: A force that is conducive to market transfer of homestead is a pull, and a force that is not is a push.

3.1. Analysis of Driving Factors of Homestead Transfer in the Market: Pulls and Pushes from Cities

The pull force of cities on the homestead transfer mainly includes the shortage of urban construction land, sufficient employment opportunities and good public resources, while the push force mainly includes the high survival cost and high labor skills.

i) Insufficient supply of urban construction land

Land is a non-renewable resource. With the influx of a large number of rural surplus laborers into cities and continuous expansion of city areas, urban land supply has approached the ceiling in terms of intensity and area. Land scarcity has become the primary bottleneck restricting urban development. In recent years, high real estate prices in many cities are largely caused by a serious shortage of urban land supply and strong demand. According to relevant statistics, there are 23 million hectares of construction land in China, including 19 million hectares of rural construction land and 4 million hectares of urban construction land. Rural construction land is five times that of urban areas. However, inefficient utilization of most rural construction land in China is pronounced, especially with rapid urbanization in recent years, and the problem of rural homestead vacancy or abandonment is prominent. Efforts by the government to guide

farmers through relevant policies to willingly transfer homestead in the market will enable the increase of urban construction land supply to coincide with the reduction of rural construction land supply, so as to realize the transfer of homestead land development right, broaden space for urban development and alleviate the imbalance between urban land supply and demand. The shortage of urban construction land supply brought about by urbanization helps to promote the circulation of homestead in the market, which constitutes a pull.

ii) More employment opportunities and higher income offered by cities

Factors such as low production efficiency and added value of products in agriculture, and the "price scissors" between industrial and agricultural products have prompted a large number of rural surplus laborers to seek employment opportunities in cities. With the continuous development of urban secondary and tertiary industries, cities' ability to create jobs, as well as offer higher average wage and minimum wage has been rising. Therefore, compared with hard and laborious agricultural work, more abundant and better paying employment opportunities in cities are more attractive to farmers. Therefore, many farmers abandon their land and begin to engage in non-agricultural production in city. Some scholars attempt to estimate the cost of farmers becoming urban residents in China, arguing that it comprises the cost of housing, employment, education, medical care, social security, etc. This estimate puts the cost at more than RMB 100,000 per capita and RMB 15 trillion if 150 million new migrant workers are involved in the process. Obviously, this is not a small investment, with the government able to offer only a small part of funding and the rest by farmers themselves. In addition to the labor, household property is the main source of income for farmers, which at present accounts for only 3% of the total rural household income because the majority of rural homesteads are basically "sleeping" assets. The reform of homestead transfer will awaken them, and provide financial support for farmers becoming urban residents. Therefore, city-bound rural population migration plays a promoting role indirectly pushing homestead into market circulation, which qualifies it to be a pull.

iii) Quality infrastructure, education and health care in cities

The real charm of a city lies in its advanced infrastructure, and educational and health care resources. For a long time, because of the dual structure between urban and rural areas, the latter has always been in a weak position in pursuit of economic and infrastructure development. Development of rural education lags behind as quality of education and schooling that farmers receive are low. Due to the neglect on the part of various parties, children in many rural areas drop out of school or go out to work after graduating from junior and senior high school, rural health and medical facilities are also underdeveloped. In recent years, with joint efforts from central and local governments, rural health care system has been improved, which has eradicated the phenomenon of "unlicensed doctors" offering poor treatment service in the past, but serious diseases still cannot be treated locally. This kind of contrast leaves farmers or migrant

workers a vulnerable group in cities, who are even not welcomed by some urban residents. Farmers struggle to get a foothold, or can only rely on low-end manual labor to make a living in the city. Eager to change this status, migrant workers will buy homes in city after many years of hard work, in order to truly integrate. In recent years, despite constantly improving rural infrastructure, rural areas are still backward, and rural education and medical resources are increasingly insufficient due to the brain drain. New generations of farmers born after the 1980s are longing for city life and have a stronger desire to settle there, promoting the transfer of rural homestead in the market as a way to raise funds, which contributes a pull.

iv) High urban housing prices and living costs

Limited by education level and skill set, farmers can not earn high wages in cities. After paying for all the costs of living there, they get little left. In the face of high housing prices in cities, farmers are unwilling to give up their homesteads, and instead see them as a source of income for when they are old, which makes for a push.

v) Higher requirement for knowledge and skills from urban jobs

Salary and benefits of migrant workers are closely related to the nature of the job. Due to a lack of required skills, farmers are in a disadvantaged position in the labor market, affecting their income and confidence to settle in cities, and in turn restricting the transfer of homestead in the market, which is a push.

3.2. Analysis of the Driving Factors for the Homestead Transfer in the Market: Pulls and Pushes from Rural Areas

The pull force of rural on the homestead transfer mainly includes idle residential land, low income in the agricultural sector, and lack of public resources, while the push force mainly includes the gradual improvement of rural social security system.

i) The level of intensive use of rural homesteads is low, and idle homesteads are a common sight.

Free acquisition and indefinite use of homesteads have resulted in a low level of intensive use, low plot ratios, and undesirable phenomena such as "one household with multiple homesteads" and "occupying but not using". Under the current homestead system in China, each farmer can only own one homestead whose area cannot exceed the requirements set by the local government. However, in reality, the use of rural homesteads is not standardized. In recent years, with the development of rural economy and the increase of farmers' income, rural demand for housing has increased, and there has been an upsurge in building new houses in some rural areas. As farmers go out to work in cities, many homesteads have become unused, which is in sharp contrast with the increasing shortage of urban construction land. In order to raise funds for "migration into the city" or starting a business there, farmers will consider transfer homesteads they own, which is a pull.

ii) Low productivity and limited income generated from agricultural work

Although the household contract responsibility system with remuneration linked to output has mobilized farmers' production enthusiasm, it has limited the economies of scale brought by large-scale mechanized farming. In addition, low price of agricultural products means limited added value being created. The central government has also successively issued a series of policies to incentivize farmers to grow grain with higher efficiency, which has yielded remarkable results. However, as China's grain pricing system now is still based on a combination of national macro-control and market-oriented supply and demand mechanism, the adjustment of grain prices does not reflect shifting costs of agricultural materials and other industrial inputs. Therefore, rising cost of agricultural production limits farmers' income growth. On the other hand, instead of agricultural jobs, rural youth prefer jobs in cities that can provide a more stable income. Therefore, more rural labor forces in their youth or middle age tend to or choose to work in cities, making transfer of homestead possible, which is a pull.

iii) Infrastructure development is backward and education & medical resources are scarce in rural areas.

In sharp contrast with cities, infrastructure development, education and medical resources in rural areas remain backward, and it is difficult to reach levels comparable to cities for a long time. What's more, shrinking population and brain drain in rural areas also add to this vicious circle. Therefore, rural residents, especially the 1980s and 90s generations, have a higher degree of appreciation of urban life style. In addition, an issue that needs to be seriously addressed in rural development is the embarrassing situation facing rural 1980s and 90s generations who cannot go back to the countryside. At present, they are an important part of urban migrant workers, and the most active group in China's social productivity. They have lived in cities for a long time and identify themselves as city dwellers instead of rural migrants. At the same time, compared with older generations, new generations of farmers lack the basic agricultural-producing skills, which makes it difficult for them to engage in agricultural production when they return to the countryside and in the long run creates obstacles to adapting to rural life. These developments force farmers, especially the new generation of farmers, to move out of the countryside and into cities, thereby boosting the circulation of homesteads in the market, which is a pull.

iv) Improvement in rural social security system.

Historically, the state's investment in rural social security has been insufficient, and farmers must rely on themselves or immediate family members for providing care in case of illness, disability, childbirth, and old age. In recent years, governments at all levels have gradually increased investment in rural social security initiatives, such as establishing a new rural cooperative medical system. Although the coverage is limited, they have an immediate effect on the improvement of farmers' quality of life and on encouraging them to return from the city to the countryside, which is a push.

3.3. Intervening Obstacle Factors

Intervening obstacle factors refer to those that are independent of place of population inflow (city) and place of outflow (countryside), but have an impact on flow of population between the two. Lee (1966) adds intervening obstacle factors and personal factors into the Push and Pull Theory, and believed that there are four types of driving forces for population migration, including emigration factors (push-pull), immigration factors (push-pull), intervening obstacle factors (i.e. migration distance and cost, policies, etc.), and personal factors (i.e. gender, age, education, knowledge and inertial thinking, etc.). In China, the household registration system is one of the important arrangements for population management with such features that households are divided into agricultural households and non-agricultural household according to region and relationship between family members, which has played a positive role in promoting economic and social development. However, with advancement of urbanization, the system has obviously become an important factor in restricting population migration. At present, China is the only country that still implements a strict household registration system. The system is generally believed to have three disadvantages: dual management of urban and rural households, a lack of freedom of migration, and household registration being tied to added value like social benefits and welfare resources. This unscientific dual system of population management has erected a barrier between urban and rural areas in China as it is unfair and discriminatory to compartmentalize households. Therefore, reform of the system is inevitable if urbanization is to be sped up. Cheng & Selden (1994) point out that the household registration system is a management system established and developed under the planned economic era with various attached rights to social resource allocation and distribution, which seriously hinders the free circulation of rural land. Behind the household registration system are a series of "hidden benefits" such as education, medical care, public welfare, social security, and even access to housing and car ownership. Under the current household registration system, reforms oriented towards restoring economic freedom in a large area of rural areas have not been successfully implemented. If a farmer wants to become a permanent resident by leaving the homestead and rural collective, there is no alternative source of stable social security. Therefore, farmers in China still need to rely on homesteads for basic living, instead of exploring more opportunities for development as city dweller. The dual urban-rural household registration system has undermined the feasibility and effectiveness of efforts to transfer rural homesteads to the market to a certain extent, leading to a combination of incomplete urbanization and inefficient reform of the rural homestead system in China.

In recent years, although many cities have relaxed their household registration controls, the impact of the restrictions on movement of people still cannot be underestimated. Reform of the household registration system is related to the driving factors for urbanization in the future. At present, the main trend is to-

wards establishing a unified household registration system, which means households are not confined by urban or rural areas with no distinction made in the protection of rights between urban and rural residents anymore, and free population movement. However, most of the existing studies are focused solely on population or land urbanization, with few on linking reform of the household registration system with homesteads. Although Kam & Zhang (1999) propose a joint reform of "household registration system, land system, and fiscal and taxation system", its feasibility needs further discussion under the current environment. Definition wise, urbanization can be divided into population urbanization and land urbanization. Population urbanization is the transformation of agricultural population into non-agricultural population, and this undoubtedly involves household registration management as the household registration system is set up to regulate urbanization. Land urbanization is the process of transforming agricultural areas into non-agricultural areas. With the expansion of cities, the space or area they occupy spreads outwardly. Therefore, land system is also a sub-management system in urbanization. Today, both the household registration system and the land system have become a bottleneck for the progress of urbanization, with the former having fundamentally dashed the hope of most farmers to integrate into urban life and the latter having effects on the expropriation of, existing from, and market transfer of rural homesteads, which has become a vicious circle that slows down the process of urbanization.

3.4. Personal Factors of Farmers

i) Age

According to relevant literature, most studies show that there is a negative correlation between the age of farmers and their willingness of entering homestead into the market. Older farmers are conservative and tend to have a strong homesickness complex, and they basically have no stable source of income and mainly rely on their children for elderly care and rural land transfer for income, which is not conducive to the transfer of homestead into the market, if farmers are still young, more open to new things and better at taking risks, they are more inclined to become migrant workers and accept urban life. They prefer to enter their idle rural homesteads into the market and earn a profit, which is conducive to the transfer of homestead into the market.

ii) Education

The more educated farmers are, the better they are at establishing themselves in cities with their knowledge and skills, the more open they are to ideas and concepts, and the more likely they are to accept emerging concepts and policies such as the transfer of homestead in the market, and therefore the more likely they are to work and eventually settle down in cities, which is conducive to transfer of homestead in the market.

iii) Household income and share of non-agricultural income

If farmers' working skills are low, they will be more reliant on homesteads,

which highlights the social security function of homestead, if their household income increases with a higher share coming from non-agricultural sources, they become more risk resistant, and may have higher demand for housing and purchasing power, which is more conducive for them to settle in cities, and consider transferring homestead in the market.

iv) Homestead location

The most significant difference between land and other assets is the immobility, and the geographical location of homestead determines the value of it. Land value is greatly affected by the externality of urban development. For example, homesteads close to the urban area have greater value and arouse stronger willingness on the part of farmers to transfer; homesteads far away from the urban area lack attention and are difficult to be circulated.

v) Definition and awareness of property rights

On the theory of property rights, western scholars have conducted systematic studies. From the perspective of resource allocation and utility of property rights, Šumrada et al. (2013) argue that the purpose of resource allocation is to enable owners to make reasonable use of their own resources to the best possible outcome. Holcombe (2004) offers another point of view by conducting research on property right definition, and argues appropriate property right definition can optimize allocation and raise the value of resources. However, in China, many primary level governments fail to conduct on-site survey and property rights registration of homestead, and are not doing enough to raise public awareness of homestead policy, which limits farmers' understanding of their ownership of homestead and thus restricts the effective protection of their rights and interests. Brandt et al. (2002), Ho & Lin (2003) find that although Chinese law stipulates clearly rural land belongs to rural collectives, most farmers still think land is owned by individuals, leading to collective ownership of land and empty shell. As a result, contradictory understanding of explicit property rights and implicit property rights is likely to cause a conflict between owners and actual users of homesteads, which will hinder the realization of circulating homesteads into the market.

To summarize, under the Push-Pull framework, circulation of homesteads into the market is driven by the following factors as shown in **Table 1**.

4. Empirical Analysis of Driving Factors of Rural Homestead Transfer in the Market

4.1. Sample Data Collection

From July to August 2018, the project team conducted a special survey on the driving factors of homesteads entering into the market, among undergraduates from the College of Urban Development and Planning, Yancheng Normal University. As coastal cities in Jiangsu Province, Yancheng and Nantong, constrained by historical and geographic factors, have seen their economic and social development lagging behind that of southern Jiangsu. However, having

Table 1. Driving factors of transfer of rural homesteads in the market.

	Push and Pull framework	Driving factors	Push or pull
A study on factors driving rural homestead transfer	Urban areas (inflow)	Insufficient urban construction land	Pull
		More job opportunities and higher income	Pull
		Sound infrastructure and rich medical and education resources	Pull
		High housing price	Push
		High requirement for knowledge and skills from workers	Push
	Rural areas (outflow)	Low level of intensive use homesteads	Pull
		Low efficiency and income from agricultural work	Pull
		Backward infrastructure and scare education and health care resources	Pull
		Gradual improvement on rural social security	Push
	Intervening obstacle factors	Household registration system	Household registration restraints in large cities are a push; A unified household registration system in small and medium sized cities is a pull.
	Personal factors	Age	Young age is a pull; Old age is a push.
		Education	Higher level of education is a pull Lower level of education is a push.
		Household income and share of income from non-agricultural sources	High is a pull; Low is a push.
		Location of rural homestead	Closeness to urban areas is a pull; Being distant from urban areas is a push.
		Definition and farmers' awareness of property rights	Clearly defined property rights and farmers' high awareness of property rights is a pull; The opposite is a push.

already been designated as a part of the Yangtze River Delta by the State Council of China in 2016, Yancheng and Nantong's economic and social development is still at a relatively high level relative to other cities in the country, every year attracting large numbers of incoming rural migrant workers from all over the country, most of whom work in industries like construction, delivery services, catering, and housekeeping. The investigators randomly were selected as respondent workers at several companies in Yancheng and Nantong who were asked to fill in a questionnaire on whether they would like to transfer their homesteads in the market and what factors influenced their decisions. A total of

300 questionnaires were issued in Yancheng, with 278 retrieved and an effective rate of 92.7%. In Nantong, they issue a total of 400 questionnaires, with 387 retrieved and an effective rate of 96.8%. Between the two cities, a total of 700 questionnaires were issued with 665 retrieved and an effective rate of 95%, which meets the sampling size requirement of the measurement model.

A preliminary analysis of sample data reveals that respondent willingness to transfer their homesteads is not particularly strong, with 65.7% of them indicating that they are unwilling to transfer their homesteads under the current circumstances. Most or 72%of the respondents are between 30 and 50 years of age, 60.5% of them are with a junior and senior high school education, their household income and non-agricultural income are at low to middle levels, and their perceptions of homestead ownership are generally biased. Nearly 50% of the respondents believe that homestead belongs to individuals, and 27.4% of them are not quite clear about ownership. 42.7% of the surveyed hope to receive the proceeds from homestead transfer in cash, and another 23.5% of the surveyed hope to be offered housing in the city as compensation for the transfer of homestead. Features of the samples are demonstrated in **Table 2**.

4.2. Variable Selection and Descriptive Statistical Analysis

i) Dependent variables: Y represents the willingness of farmers to transfer their homestead into the market, with Y = 1 representing willingness and Y = 0 representing unwillingness.

ii) Independent variables: In light of the above analysis of driving factors of homesteads transfer and in consideration of features and cognitive ability of respondents, the following independent variables are selected, as shown in **Table 3**.

4.3. Construction of Econometric Model

Respondents' attitude toward market based homestead transfer (dependent variable) is binary: willing (0) or unwilling (1). And since various influencing factors (independent variables) are discrete, which can be assigned value using the Likert Scale, there is no direct linear relationship between dependent variable and independent variable of the measurement model, and hence Ordinary Least Square (OLS) cannot be used to conduct equation estimate. Considering that Logistic regression model has no assumptions about the distribution of variables, nor there is a need to assume that there is a multivariate normal distribution between variables, the form of probability of an event happening is taken as the result, and Maximum Likelihood (ML) is used to derive the regression model parameters, this study employs a two-category Logistic regression model to look at the relationship between the willingness of farmers to transfer their homesteads in the market and the influencing factors thereof.

Let P be the occurrence probability of an event and its value range is 0 - 1, then (1 − P) is the non-occurrence probability of it. Take the natural logarithm of

Table 2. Features of the samples.

Features	Sub-features	Sample size	Frequency	Ratio
Willingness to transfer	Yes	665	228	34.3%
	No		437	65.7%
Age	30 and younger		98	14.7%
	30 - 40		283	42.6%
	40 - 50		196	29.4%
	50 - 60		67	10.1%
	Older than 60		21	3.2%
Education	Illiterate		33	5.0%
	Primary school		142	21.4%
	Junior high		238	35.8%
	Senior high		165	24.7%
	Junior college and above		87	13.1%
Household income (RMB)	Below 10,000		43	6.5%
	10,000 - 30,000		243	36.5%
	30,000 - 60,000		206	31.0%
	60,000 - 100,000		116	17.4%
	Above 100,000		57	8.6%
Share of income from non-agricultural sources	Below 20%		67	10.1%
	20% - 40%		193	29.0%
	Around 50%		285	42.9%
	60% - 80%		81	12.2%
	Above 80%		39	5.8%
Understanding of homestead ownership	Not clear		182	27.4%
	Belongs to government		94	14.1%
	Belongs to rural collectives		57	8.6%
	Belongs to individuals		332	49.9%
Preferred form of compensation	Cash		284	42.7%
	Urban housing		156	23.5%
	Continued dividend payment		123	18.5%
	Swap homestead for social security coverage		102	15.3%

Table 3. Definition, value assignment and descriptive statistics of independent variables.

Category	Name	Symbol	Value assigned	Expected impact	Average value	Standard deviation
Urban pulls and pushes	Tightness of land supply	x_1	No shortage at all = 1; slight shortage = 2; balance of supply and demand = 3; relative shortage = 4; extreme shortage = 5	Positive	2.374	0.473
	Employment opportunities and income	x_2	No difference from rural areas = 1; slightly better than rural areas = 3; much better than rural areas = 5	Positive	4.162	0.382
	Infrastructure, education and health care resources	x_3	No difference from rural areas = 1; slightly better than rural areas = 3; much better than rural areas = 5	Positive	3.981	0.735
	Housing price	x_4	Housing price is too low = 1; housing price is low = 2; housing price is medium = 3; housing price is too high = 4; housing price is too high = 5	Negative	4.251	0.203
	Requirement of workers' knowledge and skills	x_5	Low requirement = 1; medium requirement = 3; high requirement = 5	Negative	4.132	0.041
Rural pulls and pushes	Vacancy rate of homesteads	x_6	No vacancy = 1; sporadic vacancy = 2; vacancy for good reasons = 3; widespread vacancy = 4; hollowed-out village = 5	Positive	3.548	0.752
	Agricultural income	x_7	Low agricultural income = 1; medium agricultural income = 3; high agricultural income = 5	Negative	2.736	0.387
	Infrastructure, education and health care resources	x_8	Poor infrastructure and lack of resources = 1; average, but worse than the city = 2; the same as in the city = 3; better than the city = 4	Negative	2.743	0.505
	Social security in rural	x_9	Lack of coverage = 1; average level of coverage = 3; complete coverage = 5	Negative	2.894	0.478
Intermediary obstacle factors	Household registration system	x_{10}	Strict restrictions on urban household registration = 1; relatively ease in obtaining urban household registration = 3; household registration is not a problem, I have never worried about it = 5	Positive	2.782	0.876

Continued

Personal factors	Age	x_{11}	Under 30 = 1; 30 to 40 = 2; 40 to 50 = 3; 50 to 60 = 4; over 60 = 5	Negative	3.273	0.898
	Education	x_{12}	Illiterate = 1; elementary school = 2; junior high = 3; senior high = 4; junior college and above = 5	Positive	3.897	0.761
	Annual household income (RMB)	x_{13}	Below 10,000 = 1; 10,000 to 30,000 = 2; 30,000 to 60,000 = 3; 60,000 to 100,000 = 4; Above 100,000 = 5	Positive	3.568	0.496
	Income from non-agricultural sources	x_{14}	Below 20% = 1; 20% - 40% = 2; about 50% = 3; 60% - 80% = 4; above 80% = 5	Positive	2.792	0.274
	Homestead location	x_{15}	Far from the city = 1; moderate distance from the city = 3; outskirts of the city = 5	Positive	2.461	0.385
	Certificate of homestead property rights	x_{16}	yes = 1; no = 0	Positive	0.621	0.271
	Understanding of homestead ownership	x_{17}	Not clear = 1; belongs to the government = 2; belongs to a rural collective = 3; belongs to individuals = 4	Uncertain	3.584	0.754
	Preferred ways of compensation	x_{18}	Cash = 1; urban housing = 2; continued dividend payments = 3; swap homestead for social security coverage = 4	Uncertain	1.836	0.236

$P/(1-P)$ to obtain $\ln[P/(1-P)]$, which is the Logit transformation of P (denoted as Logit P), whose value range is $(-\infty,+\infty)$. Taking Logit P as the dependent variable, the regression equation is established as follows:

$$Y = \text{Logit } P = \ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k + \varepsilon \quad (1)$$

By transforming the above equation, the correlation between P and independent variables can be obtained:

$$p = \frac{e^Y}{1+e^Y} = \frac{e^{\beta_0+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_k x_k}}{1+e^{\beta_0+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_k x_k}} \quad (2)$$

where Y represents the farmers' intention to transfer homestead in market, x_i represents various influencing factors on farmers' willingness to transfer; β_0 is equation constant, β_k is regression coefficient of the equation, and ε is random disturbance.

4.4. Analysis of Sample Data Using Econometric Model

The Binary Logistic functionality in SPSS17.0 is used to calculate the data from 665 samples. The results show the Hosmer & Lemeshow (H-L) value is 8.614 with P = 0.238 > 0.05, below significance level, indicating that the fitting degree of the model is well. Under such circumstances, if the regression coefficient is positive, there will be a positive relationship between the dependent variable and the independent variable, which means an increase in the value of independent variable will lead to farmers' preference for homestead transfer in the market; if the regression coefficient is negative, a positive relationship exists between the dependent variable and the independent variable, which means an increase in the value of independent variable will lead to farmers turning conservative in terms of homestead transfer in the market. Specific results of model estimation are shown in Table 4.

Table 4 shows that factors having a significant impact on the willingness of farmers to transfer homesteads in the market are x_2—Urban employment opportunities and income, x_3—Urban infrastructure, education and health care resources, x_4—Urban housing price, x_8—Rural infrastructure, education and health care resources, x_9—Rural social security, x_{10}—Household registration system, x_{11}—Age, x_{12}—Education, x_{15}—Homestead location, and x_{18}—Preferred ways of compensation, among which x_2, x_3, x_{10}, x_{12} are positive pulls, and x_4, x_8, x_9, x_{11}, x_{15}, and x_{18} are negative pushes. Detailed analyses are as follows:

i) More job opportunities, higher income, sound infrastructure, education and health care resources in cities all have a positive effect on farmers' willingness to transfer homesteads in the market, which is consistent with expectations. Urbanization is an inevitable trend in China's economic and social development as cities are huge magnets that bring together economic activities and populations. Survey reveals that many farmers are satisfied with the diversified and convenient infrastructure in the city, and are confident that they can find a job that offers a higher income, which will boost their willingness to settle in the city and thus be conducive to market circulation of homesteads. However, high housing prices in cities have become a barrier for farmers to settle. The past ten years have seen ever rising real estate price in many Chinese cities, whose reasons are complicated. However, excessively high housing prices have undoubtedly restricted urbanization to a certain extent. Many farmers' pessimism about the high housing prices is undermining their willingness to transfer homesteads. At the same time, tight urban land supply and cities' higher requirements for workers' knowledge and skills have no significant impact on farmers' willingness to transfer homesteads, which may be due to the fact that farmers are limited by

Table 4. Output of measurement model with sample data as input.

Independent variable	Coefficient	Significance
Constant	−1.578	0.0437**
x_1—Tightness of land supply	0.2236	0.5074
x_2—Urban employment opportunities and income	2.1574	0.0016***
x_3—Urban infrastructure, education and health care resources	1.0862	0.0325**
x_4—Urban housing price	−2.4260	0.0270**
x_5—Urban requirement of workers' knowledge and skills	−0.5824	0.4656
x_6—Rural vacancy rate of homesteads	0.0258	0.8790
x_7—Agricultural income	−0.7195	0.3826
x_8—Rural infrastructure, education and health care resources	−1.8240	0.0052***
x_9—Rural social security	−2.0262	0.0328**
x_{10}—Household registration system	1.3241	0.0635*
x_{11}—Age	−1.4654	0.0293**
x_{12}—Education	0.6852	0.0625*
x_{13}—Annual household income	−0.1475	0.3627
x_{14}—Income from non-agricultural sources	−0.0493	0.5831
x_{15}—Homestead location	−0.5862	0.0723*
x_{16}—Certificate of homestead property rights	0.0365	0.8920
x_{17}—Understanding of homestead ownership	0.0217	0.8028
x_{18}—Preferred ways of compensation	−1.6831	0.0274**

Note: *, **, *** represents significance at 10%, 5%, 1%, respectively.

their own knowledge and fail to realize that land is a resource in short supply. What's more, most migrant workers are engaged in repetitive and labor-intensive jobs in the cities, and have no keen desire to improve their knowledge and working skills.

ii) Among pulls or pushes in rural areas, infrastructure, educational and health care resources, and social security have a negative effect on farmers' willingness to transfer homestead, which is in stark contrast to the situation in cities but consistent with the previous expectations. China's rural areas are vast with scattered population and the government has been under-investing in rural areas for a long time, resulting in widespread backwardness of rural infrastructure and poor support. Since the launch of reform and opening up, and with gradual liberalization of population movement, China's farmers have been working in cities to make a living, but significant contrast between urban and rural life has

shocked farmers and prompted them to eagerly escape from the countryside. However, with the increasing investment and support of the state and local governments at all levels to rural areas in recent years, especially since the cancellation of agricultural tax and with the implementation of a series of policies to strengthen agriculture and benefit farmers, such as the development of a new socialist countryside and the new rural cooperative medical insurance, farmers are returning to their home countryside. Nevertheless, vacancy rate of rural homestead and agricultural income have no obvious influence on farmers' willingness to transfer homestead. The survey shows that farmers regard agricultural production and homestead as the last resort to fall back on and will not give them up easily even if agricultural income is meager and homestead is temporarily idle, which is closely related to the underdeveloped status of the rural social security system.

iii) The household registration system, as an intervening obstacle factor, undoubtedly limits the urban-rural mobility and trans-regional migration to a great extent. The system is linked to a series of social benefits. Survey finds that while contributing to urban development, due to the strict restrictions on household registration, migrant workers do not have access to local education, health care, employment, or social security. They also face limits when it comes to buying a home or a car and when they get old they have to return to their rural home, relying on savings or young children to provide elderly care, which is obviously not conducive to accelerating urbanization and is unfair to farmers. In recent years, despite the fact that some megacities still implement strict household registration control, many small and medium-sized cities have gradually eased the control, which will help promote farmers to migrate to cities and thus accelerate the transfer of homestead in the market.

iv) As for personal factors, education level of farmers has a positive effect on their willingness of transferring homestead in the market. Although few farmers have received a college education or above, those that have all choose to settle in the city and transfer their homestead without exception. A considerable number of farmers with junior high education or below are not keen on homestead transfer, which may be related to the fact that they are mainly engaged in repetitive and labor intensive work in the city and earn low income, and thus think they have insufficient education and skills to gain a foothold in the city. What's more, age, homestead location and preferred ways of being compensated have a negative effect on farmers' willingness to transfer to homestead. With aging, many farmers hope to return to the countryside and renovate old home on homestead where they will spend the rest of life increases. However, farmers born in the 1980s and later are more inclined to settle in the city and transfer their homestead to others, which is consistent with the prediction. As a real estate, homestead is immobile. The survey finds that homesteads close to the urban area and with convenient transportation conditions have higher value due to improved livability and farmers prefer to rent rather than sell them. In compar-

ison, homesteads far away from the urban area and with poor transportation conditions are lower valued and are more likely to be transferred by farmers, which is opposite to the prediction. In terms of preferred ways of compensation, the survey finds that farmers prefer cash compensation rather than continuous dividend or swapping homestead for social insurance coverage, which is related to their own understanding. Farmers generally believe that cash is more reassuring, which is also related to the current social issue of tight land supplies. Annual household income and the share of non-agricultural income have no significant impact on the willingness to transfer homestead. The survey also finds that farmers with high annual household income and a high share of non-agricultural income are more reluctant to transfer homestead, which has something to do with their "financial situation", that is, they can afford to buy a home and live in the city, while at the same time choose to retain the homestead as a way to soothe homesickness. In comparison, farmers who have low household income and a low share of non-agricultural income are eager to "cash in" on and "hastily" transfer homestead in order to settle in the city. Their own economic conditions are poor, and may encounter failure when attempting to "settle in the city". With no homestead left in the countryside, they might threaten social instability. At the same time, homestead property rights certificate and understanding of homestead ownership have no significant impact on farmers' transfer intention, which is related to farmers' poor understanding on laws and policies, as well as inadequate land management and policy publicity of primary level governments.

5. Conclusion and Suggestions

Forty years of reform and opening up have proved that the "two-wheel drive" development mode of promoting urbanization and developing a new socialist countryside is the best choice under China's current economic and social conditions. Homestead, as an important part of rural land, is intimately related to the farmers' basic subsistence rights and social security. Therefore, studies on market transfer of rural homestead will contribute to addressing rural social conflicts and disputes, providing added value to homestead, balancing development between urban and rural areas, alleviating pressures on rural migrants who choose to work or plan to buy a home in the city, and upholding social fairness. Based on the Push and Pull Theory, this study first identifies the factors driving the transfer of homestead in the market before using a binary Logistic regression model to process the data through field investigation in Yancheng and Nantong, China, which reveals that factors ranging from urban employment opportunities and income level, urban infrastructure and educational and health care resources, reform of household registration system, to farmers' educational level, play a significant positive role. However, high housing prices, rural infrastructure and social security status, age of farmers, location of homestead and preferred ways of compensation of farmers have a significantly negative effect on

the transfer of homestead in the market, with other influencing factors being not significant. The survey demonstrates that only 34.3% of farmers have the intention to transfer homestead in the market, while 65.7% of farmers are reluctant, indicating that various constraints on homestead transfer still exist and appropriate measures should be taken in response.

Policy recommendations and suggestions are as follows:

i) Urbanization is an inevitable trend in China's economic and social development. Therefore, efforts should be maintained to boost urban infrastructure development, industrial transformation and upgrading, as well as improve and extend the coverage of low-income housing, basic education and medical care services, to develop the service industry and offer skill training to migrant workers in order to enhance their employability, and to prevent the "pricing out" effect of rapidly rising of urban real estate prices on urbanization, so as to make cities more attractive to surplus rural labor forces.

ii) In view of China's economic and social development and issues concerning, i.e., agriculture, rural areas and farmers, the drive to develop the countryside in new ways has profound practical significance. Continued efforts should be made to improve infrastructure in rural areas, especially in terms of speeding up the development of transportation, education, medical care, sanitation and other public resources related to the vital interests of farmers; farmers' income should be boosted in various ways, and policies that benefit farmers, including exemption of agricultural tax and the new rural cooperative medical care system, should be implemented; innovative models should be explored for improving social security system in rural areas and old-age care services for farmers.

iii) Conflict between insufficient land supply for urban development and idle rural homesteads should be addressed, and the household registration system that restricts the migration of farmers should be eased as soon as possible; efforts are needed to establish a unified household registration system for urban and rural areas, accelerate the on-site survey and registration of rural homesteads, and improve publicity of homestead policies; a sound and science based homestead listing and transfer system needs to be established, and a compensation arrangement featuring cash payment as the core, supplemented by relocation, continuous dividends, and "swap homestead for social insurance coverage" is to be launched, so as to maximize the protection for farmers and resolve social conflicts in a timely manner; specific risk assessments should be carried out for the listing and transfer of homesteads, and prediction of the impacts on the government, rural collectives and individual farmers should be made, and close attention is to be paid to preventing and mitigating emerging social conflicts as a result of irrational transfer of homesteads of some farmers.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Alexander, E. R. (2014). Land-Property Markets and Planning: A Special Case. *Land Use Policy, 41,* 533-540. https://doi.org/10.1016/j.landusepol.2014.04.009

Brandt, L., Huang, J. K., Li, G., & Rozelle, S. (2002). Land Rights in China: Facts, Fictions, and Issues. *The China Journal, 47,* 67-97. https://doi.org/10.2307/3182074

Cheng, T. J., & Selden, M. (1994). The Origins and Social Consequences of China's Hukou System. *The China Quarterly, 139,* 644-668. https://doi.org/10.1017/S0305741000043083

Cheung, T. (1992). Recent Development in the Market for Rural Land in China. *Land Economics, No. 2,* 39-162.

Cho, S.-H., & Newman, D. H. (2005). Spatial Analysis of Rural Land Development. *Forest Policy and Economics, 7,* 732-744. https://doi.org/10.1016/j.forpol.2005.03.008

Ghatak, M., & Mookherjee, D. (2014). Land Acquisition for Industrialization and Compensation of Displaced Farmers. *Journal of Development Economics, 100,* 33-42.

Gude, P. H., Hansen, A. J., Rasker, R., & Maxwell, B. (2006). Rates and Drivers of Rural Residential Development in the Greater Yellowstone. *Landscape and Urban Planning, 77,* 131-135. https://doi.org/10.1016/j.landurbplan.2005.02.004

Ho, S. P. S. (2005). *Institutions in Transition: Land Ownership, Property Rights, and Social Conflict in China.* Oxford University Press.

Ho, S. P. S., & Lin, G. C. S. (2003). Emerging Land Markets in Rural and Urban China: Policies and Practices. *The China Quarterly, 175,* 681-707. https://doi.org/10.1017/S0305741003000407

Holcombe, R. G. (2004). The New Urbanism versus the Market Process. *The Review of Austrian Economics, 17,* 285-300. https://doi.org/10.1023/B:RAEC.0000026836.66261.c1

Kam, W. C., & Zhang, L. (1999). The Hukou System and Rural-Urban Migration in China: Processes and Changes. *The China Quarterly, 160,* 818-855. https://doi.org/10.1017/S0305741000001351

Lee, E. S. (1966). A Theory of Migration. *Demography, 3,* 47-57. https://doi.org/10.2307/2060063

Lin, G. C. S., & Ho, S. P. S. (2003). China's Land Resources and Land-Use Change: Insights from the 1996 Land Survey. *Land Use Policy, 20,* 87-107. https://doi.org/10.1016/S0264-8377(03)00007-3

Lin, G. C. S., & Ho, S. P. S. (2005). The State, Land System, and Land Development Processes in Contemporary China. *Annals of the Association of American Geographers, 95,* 411-436. https://doi.org/10.1111/j.1467-8306.2005.00467.x

Lisec, A., Ferlan, M., Lobnik, F., & Šumrada, R. (2008). Modelling the Rural Land Transaction Procedure. *Land Use Policy, 25,* 286-297. https://doi.org/10.1016/j.landusepol.2007.08.003

Macmillan, D. C. (2000). An Economic Case for Land Reform. *Land Use Policy, 17,* 49-57. https://doi.org/10.1016/S0264-8377(99)00034-4

Menon, N., Rodgers, Y., & Nguyen, H. (2014). Women's Land Rights and Children's

Human Capital in Vietnam. *World Development, 54,* 18-31. https://doi.org/10.1016/j.worlddev.2013.07.005

Šumrada, R., Ferlan, M., & Lisec, A. (2013). Acquisition and Expropriation of Real Property for the Public Benefit in Slovenia. *Land Use Policy, 32,* 14-22. https://doi.org/10.1016/j.landusepol.2012.10.004

Vesterby, M., & Krupa, K. S. (2002). Rural Residential Land Use: Tracking Its Grows. *Agricultural Outlook, No. 8,* 14-17.

Wang, H., Wang, L. L., Su, F. B., & Tao, R. (2012). Rural Residential Properties in China: Land Use Patterns, Efficiency and Prospects for Reform. *Habitat International, 62,* 201-209. https://doi.org/10.1016/j.habitatint.2011.06.004

Wasilewski, A., & Krukowski, K. (2004). Land Conversion for Suburban Housing: A Study of Urbanization around Warsaw and Olsztyn, Poland. *Environmental Management, 34,* 291-303. https://doi.org/10.1007/s00267-003-3010-x

Wiliamson, O. E. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature, 38,* 595-613. https://doi.org/10.1257/jel.38.3.595