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To Reallocate or Not? Reconsidering the Dilemma for China's Agricultural Land Tenure Policy

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To Reallocate or Not? Reconsidering the Dilemma for China's Agricultural Land Tenure Policy

(Draft version)

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Abstract

In China, rural land is collectively owned at the village level. Village officials usually have the power to reallocate land property on an ongoing basis due to demographic changes across families within village.. Realizing that frequent land reallocation and abusive land requisition will threaten economic sustainability as well as social stability, the 'Rural Land Contract Law' passed in 2002 explicitly reads that farm land tenure security must be maintained for at least 30 years since 1998. The frequency and magnitude of land reallocation in Chinese villages was reduced as a whole. However, failure to allocate land to the newly increased population often induced conflicts among village members if the security of land tenure for 30 years was strictly implemented. Administrative land reallocations then still continued in some villages to accommodate demographical changes in these places. Based on an almost nationally representative rural dataset collected in 119 villages of 6 provinces across China in 2008, this paper lays out the stylized facts about the administrative land reallocation after 1998. By analyzing the subjective opinions from over 2300 farmers on the central policy of maintaining agricultural land tenure security, we are able to rationalize why some farmers support the policy while others oppose it. This analysis helps us to better understand the dilemma between efficiency and equity embedded in current agricultural land system in China. It is further shown that social conflicts between village members may easily arise either due to administrative land reallocation or due to lack of it. We argue that this dilemma faced in China's agricultural land system cannot be resolved effectively without coordinated reforms in household registration system which can help hundreds of millions of Chinese rural migrant workers to permanently relocate in cities and release extra land for those who

stay in the countryside. .

To Reallocate or Not? Reconsidering the Dilemma for China's Agricultural Land Tenure Policy

I Introduction

China's rural economic reform, widely regarded as one of the most successful transitional experiences in the world , was initiated 30 years ago with a fundamental reform in the country's agricultural land institution (Johnson, 1996; Lin, 1992). With the introduction of the Household Responsibility System (HRS) and the extension of land-use rights and residual income rights to households, agriculture shifted from a collective-based to a family-based production system (Rozelle et al 2002).

However, rural land in China was, and still is not privatized. Ownership remained "collective", with local governing bodies and officials at the village level exercising a major influence over land use and allocation. Village officials then obtain de facto authorities to reallocate agricultural land by administrative means under the pressure from demographic changes across families within a village. In many cases, reallocation happened on an ongoing basis. In fact, before 1998, a national policy was stated to support long-term lease rights and transfer rights. But in practice, the state provided localities with flexibility in land management and explicitly granted them the right to make periodic adjustments to household land holdings if conditions so require (Kung and Liu, 1997).

Scholars argued that scope for local officials to reallocate land through administrative means was the key weakness for China's agricultural land institutions. Poor incentives related to tenure insecurity, for example, have reportedly discouraged investment and growth in agricultural production (Prosterman, Hansted, and Li, 1996). The perceived incentive problems called for either land privatization or land contract extension to 30

or more years (Chen, 1999). In response to this weakness of agricultural land institutions, Chinese government promulgated the 'Rural Land Contract Law' in 2002 which mandated that farm land tenure security must be maintained for at least 30 years since 1998. The year of 1998 was well known in China as the second round "agricultural land contract" year. Around this year, the land use contract that rural families obtained from the HRS in late 1970s or early 1980s was soon expired and was required by policies to be renewed. In the 3rd Plenary of 17th Congress held in 2008 , the Chinese Communist Party further extended the land tenure contracts from 30 years to a longer, and even unspecified, period. According to a top rural policy maker of the Chinese government, Mr. Chen Xiwen, "longer period" can be understood as permanent (Xinhua, Oct, 27, 2008)

The unique function of the farmland in China, however, is that it provides insurance and food security for rural residents. In other words, land is their safety net (Park, 1996). Unlike residents in cities who have access to government social security programs and payouts, land in the rural area is not only an important source of income, but also, in many cases, the last resort of livelihood for rural residents. Therefore, land not only serves as a production factor that provides economic return to land users, but also operates as a form of insurance in the event of loss of off-farm opportunities. This is particularly true for the millions of rural migrant workers who have already earned most of their income from cities. If they can keep a piece of land in the countryside, they can still return to the farming if they ever get unemployed in cities. In many areas a majority of farmers reportedly oppose privatization (or even extended tenure) because their households enjoy better overall income security under the current form of collective land ownership (Kung, 1995; Kung and Liu, 1997; Dong, 1996). Therefore, whenever there are demographic changes across households within a village, there will be pressure of administrative land reallocation.

This raises a key question about what has really happened in Chinese villages before

and after 1998, the time when the second round “agricultural land contracting” was carried out and when the central policy stipulated that agricultural land tenure shall be stabilized for 30 years. Based on an almost nationally representative rural data set from a survey on over 2,300 farmers in 119 villages across 6 Chinese provinces that we carried out in 2008, this paper compares administrative land reallocation before and after 1998. We also used information about the subjective opinions from over 2,300 farmers about the central policy of tenure security for 30 years to analyze why some farmers support the policy while others oppose it. This helps us to better understand the dilemma between efficiency and equity in China’s agricultural land system. We argue that this dilemma cannot be resolved effectively without coordinated reforms in China’s Household Registration (*Hukou*) system which can help millions of Chinese rural migrant workers to realize permanent migration into cities.

The rest of the paper proceeds as follows. Based on our survey data, Part II lays out the institutional background of administrative land allocation in China. In Part III we use our survey data to present the stylized facts of agricultural land reallocation both before and after 1998. On the basis of responses to questions about the central tenure security policy from over 2,300 interviewees, Part IV first shows that farmers are largely divided about whether the current central policy is reasonable. This is followed by a more rigorous regression analysis to examine individual and family characteristics that would affect farmers’ responses. Based on the same survey, Part V shows that a significant number of social conflicts arose from farmers’ discontent about land (re)allocation issues. Part VI concludes with policy implications.

II Institutional Background

The Household Responsibility System (HRS) introduced since the late 1970s extended land-use rights and residual income rights to households. For collective land, peasants cannot own land. What they can hold is only “a contractual right to use

agricultural land”. According to Chinese law or regulations, it is illegal to buy or sell collective land for non-agricultural use “without legal transfer of ownership to the state”. Although rural households do not have land ownership (thus cannot buy and sell land on their own), they have the a contractual right to use agricultural land and a right to claim residual income rights. Both rights offer direct and indirect benefits to rural residents.¹ The HRS extends these benefits to households on a fairly egalitarian basis so that all village members have approximately equal access to use of farm land and residential land.

However, since agricultural land is not privatized, local cadres, particularly those at the village level, still can exert some control over land allocation and reallocation. In most villages, land can be taken back from and then redistributed to some or all village households through administrative means. Households are not typically compensated for the investments in land in this process. Under such a rural land system, land tenure is not fully secured since land use rights may be lost (or gained) in village-wide reallocations. Tenure security is then largely determined by the frequency and magnitude of village-wide reallocations.

Various factors have led to rural land reallocation. The primary one is demographic change across families within a village. Under the HRS, local leaders typically allocated land to households in a fairly egalitarian way based on some combination of family size, demographic composition, and labor supply (Putterman, 1992). In principle, all villagers, both present and future, are entitled *ex ante* to equal access to this common property resource. As the size and composition of households in villages keep changing, it requires village officials to reallocate land on an ongoing basis to maintain equity in agricultural land redistribution across all the households within a

¹ These benefits are four-fold. First, households are entitled to the implicit return to land as a factor of production. Second, in an environment of labor market imperfections and limited off-farm opportunities, land provides households an opportunity to utilize family labor to the fullest (Putterman and Ciacu, 1995). Third, in an environment of grain market imperfections, land serves as a source of food security and a cheap source of calories (Park, 1995). Finally, land also serves as a form of insurance in the event of the loss of off-farm earning opportunities (Giles, 1996).

village. Second, with power entrusted by the state, village leaders could use periodic land reallocation as a way to extract rents or to force village member to comply with the state policies, such as mandatory grain procurement and birth control policies, etc. (Johnson 1995). In this case, village leaders use land as a carrot or a stick, taking away land from villagers who do not fulfill their grain quota and tax obligations, and giving it to those who do, or refusing to allocate land to those who have birth beyond government regulation.² Finally, with the growth of off-farm opportunities, local officials usually have more incentives to reallocate land to those who stay in the countryside to obtain land rent and fulfill state tax and quota obligations. Land reallocation is then used to achieve equity or maximize economic and political benefits which are perceived by village cadre.

Due to these factors, between 1980s and middle 1990s, administrative reallocation of agricultural land was quite common in Chinese villages (Ho, 2001). Based on a survey of 215 villages across 8 provinces in China, Brandt et al (2003) found that between 1982 and 1995, the average number of reallocations per village was 1.7 although there were considerable differences across localities. A quarter of these 215 villages had land reallocated for once; a fifth of them had conducted reallocation for twice. A small number of these villages even had land reallocation almost every year. Only 60 villages had *not* readjusted land since HRS. On average, slightly more than half of all cultivated land in the sample villages (53.4 percent) had been reallocated at least once ³

² In China, a grain procurement policy was implemented in which the state required farmers to sell a share of grain output to state grain sector usually at below market prices. Through the grain quota system and the national agricultural tax system, the state exercises a claim to agricultural output. In practice, local cadres usually deducted the state agricultural taxes and local fee charges before paying farmers for their grain quota delivery. The grain procurement has been gradually removed starting from 2000 and a rural tax reform was initiated in recent years to reduce tax burdens on farmers. China also has a family planning policy that controls birth in cities as well as in rural areas. However, birth quotas are different for urban and rural households. While urban residents can only give birth to one child per household, rural residents can have a second birth after 4-6 years (depending on locality) if the first birth turns out to be a female. Village leaders still have a responsibility for ensuring that family planning targets are met.

³ The survey covers 8 provinces: Zhejiang, Sichuan, Shanxi, Hubei, Hunan, Hebei, Liaoning, and Yunnan. Thirty two villages were sampled in the first five provinces, twenty four villages were sampled in Yunnan, and fifteen and sixteen villages were surveyed in Hebei and Liaoning. Altogether

The impact of insecure land tenure on land use efficiency and income distribution has been studied extensively (see Rozelle et al 2002 for an excellent survey). On the one hand, insecure land tenure may exert negative impacts on agricultural investments in land, thus reduce transactional and allocative benefits that could have been induced by free land turnovers. On the other hand, administrative land reallocation may also help to move land to households that have higher marginal productivity, acting as a substitute for market reallocation in the case where land markets are underdeveloped. This is perhaps why in most empirical studies it was found that unstable land tenure in China had a negative, but relatively modest influence on agricultural efficiency and growth.

Another, perhaps no less important, argument for land reallocation is that because lands provide social security in rural areas, some reallocation to accommodate demographical changes can be justified (Li and Yao, 2002). This argument is closely related to the issue of equity in land allocation. Without land redistribution that adapts to inter-family demographic changes within village, the issue of inequality in agricultural land endowment, and the issue of agricultural income inequality across households will inevitably arise. This is particularly important for the farmers who are more dependent on agricultural land to generate income.

Nevertheless, administrative land reallocation is also costly. Compared to the pure market transactions that bring about tenure security, inefficiency is more likely to arise from administrative land reallocation due to the lack of competition and information as well as the high transactions cost to carry out land reallocations.⁴

enumerators interviewed village cadres in 215 villages in 50 counties. The sample of villages was constructed to provide a representative cross-section of villages in each province, while the eight provinces represent every major region of China.

⁴ The process of administrative reallocation itself is costly in terms of effort and entails considerable administrative expense. It may also lead to conflicts between local cadres and farmers and among farmers. According to Rozelle et al (2002), administrative reallocation and a decentralized system of exchange based on land rental among individual households can be viewed as imperfect substitutes to each other because of informational problems and because the high costs of reallocation prevent

Administrative reallocation may also reduce land rental activities with the uncertainties and the short planning horizon it creates. More importantly, as Brandt et al (2003) argued, if local officials reallocate lands to fulfill state policies such as grain quotas (this needs explaining for a reader not familiar with China) and taxes while at the same time seeking rents for themselves, land reallocation may reduce local welfare.

With all these considerations in mind, it is not a surprise that no consensus has been reached in academia about whether China should push forward a policy toward long-term or even permanent tenure security. Though most scholars, in particular a majority of economists, argues that China needs a rural land system that provides long-term tenure security and promotes land use efficiency (Johnson 1995, Kung and Liu, 1997, Li, 1999), there are also quite a number of researchers and policy analysts who believe that at the current stage of development in China, the gain from tenure security, not to mention land privatization, may not be very large. This is because farmers may feel they are enjoying more security under the current collective system of land ownership that reallocates land on an ongoing basis (Kung, 1995; Kung and Liu, 1996; Dong, 1996).

Though there are also different views with regard to agricultural land tenure security, the policy message sent from the central government seems to support secure tenure. In 2002, the Chinese central government, with the promulgation of a new legislation known as “the State Land Contract Law”, required that rural households must be provided with agricultural land security for at least 30 years since 1998. It also stipulates that reallocation is to be permitted only when the village collective economic organization receives the agreement of two-thirds of the members of the villagers’ conference or two-thirds of the villagers’ representatives, as well as the approval of the local government at the appropriate level. The government also

reallocations from being carried out very frequently.

proposed to speed up the establishment of land markets where farmers can “subcontract, lease, exchange or swap” land-use rights or join cooperatives.

Many students of contemporary China have agreed that the biggest challenge to the central rule is policy implementation. There is a saying in Chinese policy circle that reads as “once a policy is out of the Zhongnanhai compound, it is out of the central control.” This statement may be somewhat an exaggeration, but it is indeed a serious issue in evaluating policy effectiveness in China. Is this also the case for rural land administrative reallocation? Or in another word, has the central tenure security policy been effectively followed? Moreover, and perhaps no less important, how do the farmers themselves think of the central tenure security policy? Is there any difference in opinion between farmers in places where the central policy has been followed more rigidly and farmers in places where land reallocation took place despite of central policy? Who are the farmers that support the central policy and who are the ones that oppose it? Based on an almost nationally representative survey data we collected in 2008, the next two sections aim to answer these questions.

III Agricultural Land Reallocation Before and After 1998

In the summer of 2008, the authors carried out a nationally representative survey in rural China. We first divided the country into six large regions and randomly picked one province in each: Shaanxi (Northwest), Sichuan (Southwest), Hebei (North), Jilin (Northeast), Jiangsu (East), and Fujian (Southeast). All counties in each province were ranked and categorized into five quintiles based on their per capita gross value of industrial output. In each quintile one county was randomly selected. Two townships in each county were chosen respectively by ranking all the townships into two groups according to per capita net income for rural residents and randomly selecting one township in each group. Following the same criteria of per capita income for rural residents, two villages in each township was selected. In each of these villages, 20 rural households were randomly selected and surveyed. Due to the earthquake in Sichuan, our survey team was unable to collect information in one target township. As

a result, our data covered 2378 rural households in 119 villages from 30 counties.

This survey collected detailed information about village level administrative land reallocations both before and after 1998. We also have information about the scale of each administrative allocation, i.e., whether they were full-scale reallocation that redistribute land across all households within a village (or village-wide land reallocations) or they were partial reallocations that redistributed land only across a small number of households within a village, while leave the land of all other households unadjusted.

Table 1 lists the shares of villages in our sample that carried out both full-scale land reallocation and partial land reallocation, full-scale reallocation only, partial land reallocation only, and no reallocation at all. These shares are shown for the two periods we want to compare, i.e., the period between 1998 and 2008 and that between the early 1980s and 1998. As Table 1 indicates, after 1998 there was merely one village (in Shannxi) in our sample that carried out both full-scale reallocation and partial reallocation. Four villages (in Jiangsu) performed only full-scale reallocations. Forty five villages (37.8%) implemented only partial reallocation during this period. And 69 villages (accounted for 58% of total sample) had no land reallocation at all after 1998. Among all the provinces, the most agriculture-based province in our sample, Jilin, has the highest share of villages (14 out of 21 villages) that carried out partial land reallocation. In Jiangsu and Fujian, only 20% of the surveyed villages (4 villages out of 20) had administrative land reallocation, with full-scale land reallocation in 4 villages in Jiangsu, and partial reallocation in 4 villages in Fujian respectively.

Table 1 also shows the share of villages that carried out administrative land reallocation between the early 1980s and 1998. Before 1998, out of 119 villages, 86 villages had administrative land reallocations (72.27%). Within which, 13 villages (10.92%) had both full-scale and partial reallocations; 16 villages (13.45%) had

full-scale reallocation only; and 57 villages had partial reallocations only. There were only 33 villages that did not have any reallocations during this period.

Given the fact that the earlier period (that before 1998) was about 15 years while the later one covered only 10 years, it is difficult to make a direct and obvious comparison. However, Table 1 still tells us that overall speaking, the share of villages that experienced administrative land reallocation, be it a full-scale reallocation or a partial one, was significantly reduced in the second period after 1998. Provincially speaking, it is interesting to observe that in Sichuan no village had full-scale reallocation both before and after 1998. On the contrary, among all the provinces, Jilin had the highest share of villages that carried out land reallocation both before and after 1998.

Table 1 Land Reallocation after and before 1998 (% of villages)

1998-2008					
<i>Province</i>	<i>Sample</i>	<i>both</i>	<i>Full-scale reallocation only</i>	<i>Partial reallocation only</i>	<i>No-reallocation</i>
Jiangsu	20	0.00	20.00	0.00	80.00
Sichuan	18	0.00	0.00	55.56	44.44
Shannxi	20	5.00	0.00	50.00	45.00
Jilin	21	0.00	0.00	66.67	33.33
Hebei	20	0.00	0.00	35.00	65.00
Fujian	20	0.00	0.00	20.00	80.00
National	119	0.84	3.36	37.82	57.98
Before 1998					
Jiangsu	20	15.00	35.00	25.00	25.00
Sichuan	18	0.00	0.00	72.22	27.78
Shannxi	20	15.00	5.00	55.00	25.00
Jilin	21	4.76	4.76	71.43	19.05
Hebei	20	15.00	30.00	25.00	30.00
Fujian	20	15.00	5.00	40.00	40.00
National	119	10.92	13.45	47.90	27.73

Source: Authors' Survey in 2008

Table 2 further shows the average frequency of land reallocation for both periods. The frequencies are presented for the whole sample villages as well as for all the villages

that carried out administrative land reallocations. We can see that on average the frequency of land reallocation before 1998 for all the surveyed villages was 2.58, in which the frequency of full-scale reallocation was 0.44 while that of partial reallocation was 2.14. After 1998, these frequencies dropped to 1.03, 0.08 and 0.95 respectively. Provincially speaking, before 1998 Jilin had the highest frequency (3.66) of land reallocation among all the provinces, while Hebei has the lowest one (1.50). As to full-scale reallocation, Jiangsu claimed the highest frequency (1.30) before 1998 while Sichuan had no full-scale reallocation during this period. Jilin had the highest frequency of partial reallocation (3.52) while the average frequency of land reallocation in Hebei was as low as 0.85.

After 1998 there seems to be an overall reduction of frequency in land reallocation, though significant regional variation still existed. Table shows that Shanxi had highest frequency of land reallocation (1.6), while Fujian had the lowest one (0.35). Jiangsu still had highest frequency of full-scale land reallocation (0.45) followed by Shanxi (0.05), while the other three provinces had not full-scale reallocation. Shanxi had the highest frequency of partial reallocation (1.55) followed by Jilin, Hebei, Sichuan and Fujian. Jiangsu had no partial reallocation after 1998.

Table 2 Average Frequency of Land Reallocation Before and After 1998

Province	sample	Average Frequency of land reallocation before 1998			sample	Average Frequency of land reallocation between 1998-2008		
		Full-scale	Partial	total		Full-scale	Partial	total
Jiangsu	20	1.30	1.55	2.85		0.45	0	0.45
Sichuan	18	0	3.44	3.44		0	1.11	1.11
Shanxi	20	0.20	2.20	2.40		0.05	1.55	1.60
Jilin	21	0.14	3.52	3.66		0	1.43	1.43
Hebei	20	0.65	0.85	1.50		0	1.25	1.25
Fujian	20	0.30	1.35	1.65		0	0.35	0.35
National	119	0.44	2.14	2.58		0.08	0.95	1.03

Source: Authors' Survey in 2008

Table 3 further gives the average frequency of land reallocation conditional on land reallocation. Before 1998, the average frequency of reallocation for 6 provinces conditional on land reallocation were as high as 3.58. The average frequency of full-scale reallocation conditional on full-scale reallocation was 1.79 while that of partial reallocation conditional on partial reallocation was 3.66. After 1998, these frequencies were 2.46, 2.00 and 2.46 respectively. Considering that the second period was shorter than the first one, the frequency of full-scale reallocation conditional on reallocation actually increased after 1998.

Conditional on reallocation, before 1998 Sichuan has the highest frequency of land reallocation (4.77) while Hebei had the lowest one (2.14). Jiangsu had the highest frequency of full-scale land reallocation (2.60) while Sichuan had no such reallocation at all. Conditional on reallocation, Table 3 also shows after 1998 all land reallocations in Sichuan were partial ones while Hebei had the lowest frequency of partial reallocation (on average 2.13 times per village). Compared to the period before 1998, there was an overall reduction of land reallocation frequencies after 1998. Conditional on reallocation, Hebei had the highest frequency of land reallocation (3.57) while Fujian was the lowest (1.75) in post-1998 period. Conditional on full-scale reallocation, villages in Jiangsu reallocated their land 2.25 times on average, followed by villages in Shanxi (1.00). Villages in other provinces had no full-scale reallocation. It is interesting to observe that Hebei now had the highest frequency of partial allocation (3.57) while Jiangsu had no partial reallocation.

Table 3 Average Frequency of Land Reallocation Conditional on Reallocation

Province	village Sample	average frequency of land reallocation before 1998			village sample	average frequency of land reallocation between 1998-2008		
		Full-scale	Partial	total		Full-scale	Partial	total
Jiangsu	15	2.60	3.88	3.80	4	2.25	0	2.25
Sichuan	13	0	4.77	4.77	10	0	2.00	2.00
Shanxi	15	1.00	3.14	3.20	11	1.00	2.82	2.91
Jilin	17	1.50	4.69	4.59	14	0	2.14	2.14

Hebei	14	1.44	2.13	2.14	7	0	3.57	3.57
Fujian	12	1.50	2.45	2.75	4	0	1.75	1.75
National	86	1.79	3.66	3.58	50	2.00	2.46	2.46

Source: Authors' Survey in 2008

IV Farmers' Evaluation on the Central Tenure Policy: Facts and Rationalization

In our 2008 survey, we also raised four questions to each interviewee to examine their attitudes toward the central policy of tenure security. These four questions and the potential choices of answer are shown in Table 4. The first question is designed to elicit interviewee's general attitude toward the central policy of stabilizing tenure for 30 years. The other three questions are raised to find out farmers' evaluation of the same policy under three hypothesized circumstances.

Table 4 Questions about Farmers' Evaluation on Central Land Tenure Policy

Question 1	Do you think the central policy of stabilizing tenure for 30 years is reasonable?		
Question 2	Do you think a policy that requires agricultural land not to be increased in response to population growth in a family is reasonable?		
Question 3	Do you think a policy that requires agricultural land not to be decreased in response to the marriage of a female family member out of the village is reasonable?		
Question 4	Do you think a policy that requires agricultural land not to be decreased in response to the decease of a family member is reasonable?		
Answer Choices	0=reasonable	1=ambiguous	2= unreasonable

For each of the four questions, the interviewees were asked to make one choice out of three potential answers. A positive answer (coded as 0) means that the interviewee thinks the central policy is a reasonable policy while a negative answer (choice code 2) means the opposite. An ambiguous answer (choice code 1) lies in between, which implies the interviewee is either undecided or find it difficult to give a definite answer. These four different but highly related questions can be used to check whether most, if not all, of our interviewees are consistent in understanding land tenure policy. We can then derive a systematic and robust evaluation for this policy based on interviewee's answers for these questions.

Table 5 shows the survey results. We can see that farmers are largely consistent in their answers. For the four related questions, there are 62.83%, 61.98%, 60.09% and 61.06% of interviewees thought the policies are unreasonable. Only around 30% of our interviewees gave positive answers to the central policy of tenure security (31.88%, 29.06%, 30.32% and 29.60% for four questions respectively). As shown in Table 5, there are small shares of farmers (5-10% depending on questions) who gave an ambiguous answer to each question.

Table 5 also provides the shares of the villagers who made one of the three choices in villages both with and without land reallocation after 1998. It shows that the shares of farmers who do not support the central policy in villages with land reallocation are about 3-4 percentage points higher than the shares in the villages without land reallocation. Moreover, the shares of farmers who gave an ambiguous answer in villages with land reallocation are 2-4 percentage points lower than those in villages without land reallocation after 1998. As a result, the shares of farmers who support the central policy are roughly the same between villages with and without land reallocation. Generally speaking, these figures showed that the differences in farmers' attitudes between villages with and without land reallocation are all within a reasonable range. The slightly higher shares of farmers who were not in favor of land tenure policy in villages with reallocations are not surprising since reallocation is more likely to take place in villages where more farmers are in favor of it.

Table 5 Share of Villagers with Different Answers

Share of Villagers in all villages (%)				
	Question 1	Question 2	Question 3	Question 4
Unreasonable	62.83	61.98	60.09	61.06
Ambiguous	5.29	8.96	9.55	9.25
Reasonable	31.88	29.06	30.32	29.60
Share of Villagers in villages with land reallocation(%)				
	Question 1	Question 2	Question 3	Question 4
Unreasonable	64.44	63.91	62.34	62.76
Ambiguous	3.24	7.74	7.43	7.64
Reasonable	32.32	28.35	30.13	29.60
Share of Villagers in villages without land reallocation (%)				

Unreasonable	61.74	60.69	58.58	59.92
Ambiguous	6.68	9.77	10.97	10.34
Reasonable	31.58	29.54	30.54	29.61

Source: Authors' Survey in 2008

With all the analysis above, a natural question to follow is why some farmers are supportive for the central tenure security policy while a great many others oppose it. In other words, who are the farmers that support the central policy and who are the ones that oppose it? To answer this question, a more rigorous regression-based analysis is needed.

Since we have three potential answer choices for each of the four questions, we employ an ordered probit model to examine this issue. In statistical analysis, ordered probit is a generalization of the popular probit analysis and is used for ordinal multinomial dependent variables. It is applied in case when the dependent variables are ordinal, but are not continuous in the sense that the metric used to code them is substantively meaningful. The central idea of the model is that there is a latent continuous metric underlying the ordinal responses. Thresholds partition the real line into a series of regions corresponding to the various ordinal categories. The latent continuous variable, y^* is a linear combination of some predictors, $\mathbf{x}$, plus a disturbance term that has a standard normal distribution. Like the models for binary data, we are concerned with how changes in the predictors are translated into the probability of observing a particular ordinal outcome.

Following the notation in Wooldridge (2002), the ordered probit model is expressed as:

$$\text{Prob}(y_i = 0|\mathbf{x}) = \Pi(\alpha_1 - \mathbf{x}\beta) \quad (1)$$

$$\text{Prob}(y_i = 1|\mathbf{x}) = \Pi(\alpha_2 - \mathbf{x}\beta) - \Pi(\alpha_1 - \mathbf{x}\beta), \quad (2)$$

$$\text{Prob}(y_i = 2|\mathbf{x}) = 1 - \Pi(\alpha_2 - \mathbf{x}\beta) \quad , \quad (3)$$

where Π is the cumulative standard normal distribution function.

In our case, y_i^* is the latent unobserved probabilities of giving an answer for the i th farmer and y_i as the actual answer with value taking 0 (reasonable), 1(ambiguous), or 2(unreasonable).

We further define:

$y_i = 0$ if $y_i^* < \mu_1$, indicating an answer that is in favor of the central policy,

$y_i = 1$ if $\mu_1 \leq y_i^* < \mu_2$, indicating an answer that is ambiguous

$y_i = 2$ if $\mu_2 \leq y_i^*$, indicating the farmer believes the central policy is unreasonable.

Here μ_1 and μ_2 are jointly estimated threshold values in ordered probit regressions which are used to determine which answer that a farmer is expected to give conditional on a set of explanatory variables. The explanatory variables that are used in the model to predict the probabilities of different answers are shown in equation (4).

$$y_i^* = \beta_0 + \beta_1 \text{Popchange}_i + \beta_2 \text{Agrincshare}_i + \beta_3 \text{Age}_i + \beta_4 \text{Gender}_i + \beta_5 \text{Expedu}_i + \beta_6 \text{Fampop}_i + \beta_7 \text{Landpc}_i + \beta_8 \text{Incpc}_i + \beta_9 \text{CCP} + \beta_{10} \text{Cadre}_i + \beta_{11} V_j + e \quad (4)$$

In which, *Popchange* is a dummy indicating whether a family experienced a net increase of population since 1998. It takes a value of one if it has a net increase, otherwise the value is zero. *Agrincshare* is the share of agricultural income in total family income. *Age*, *Gender*, and *Exped* represent the age, gender and the education level of the interviewee respectively. We also controll current family population (*Fampop*), area of agricultural land per family member (*Landpc*) and family income (*Incpc*) as family level control variables. *CCP* and *Cadre* are two dummy variables, indicating respectively whether the interviewee is a Chinese Communist Party member and whether he or she is currently serving as a village

cadre. e_i is a normally distributed error term with a mean of zero and standard deviation of one. In our regressions we also controlled the village dummy V_j .

Table 6 has the summary statistics for all of our independent variables. We originally collected data for 2378 interviewees. Due to missing data, we are able to have full information for 2350 farmers. As shown in the Table, about 33% of sample families experienced net population growth. On average, 34% of our sample families' income comes from agriculture. The minimum and maximum values for *Agrinshare* are -2.35 and 3.00 respectively, because farmer's income, both from agricultural and non-agricultural sources, could be negative. It is interesting to note that the average age of our interviewees is as high as 50. This reflects the fact that in rural China a lot of younger people migrated to cities for non-agricultural opportunities in urban area.

Table 6: Summary Statistics of Variables

Variable	Observations	Mean	Standard deviation	Min	Max
Popchange	2350	0.33	0.47	0	1
Agrinshare (%)	2350	0.34	0.36	-2.35	3.00
Age (year)	2350	50.04	11.44	18	86
Expedu (year)	2350	6.20	3.35	0	16
Gender (Male=1, Female=0)	2350	0.63	0.48	0	1
Fampop (person)	2350	4.25	1.65	1	18
Landpc (mu)	2350	1.55	1.94	0	33
Inpc (RMB 1,000 Yuan)	2350	6.707	9.931	-12.797	180.060
CCP (Yes=1, No=0)	2350	0.13	0.33	0	1
Cadre (Yes=1, No=0)	2350	0.10	0.30	0	1

Source: Authors' Survey in 2008

Table 7 reports the regression results of our ordered probit model with all village dummies controlled. For all the four regressions corresponding to the four questions raised to interviewees, the coefficients for *Popchange* are positive and statistically significant. This implies that compared to an interviewee whose family had no population change or experienced a net decrease in population from 1998, an interviewee whose family had net population increase since 1998 is more likely to

have negative view on land tenure policy. On the contrary, the significant and negative coefficients for *Landpc* in these models indicate that families with higher landholding tend to be more reluctant to give up their land and be more supportive for land tenure policy. Likewise, the coefficients for *Popnow* are all significantly negative, indicating larger families are more likely to support the central policy. This happens either because larger families have more to gain and less to lose in land reallocation, or because smaller families may have more potential to experience population growth.

Other independent variables that have statistically significant coefficients include the age and the gender of the interviewee, as well as the share of agricultural income in family income for the interviewee's family. Interviewees whose families are more dependent on agriculture for income generation are more likely to support the central policy of tenure security probably because this policy could provide better security and stronger incentives for them to make long term investment on agricultural land. Female and older farmers also tend to support the central policy for two possible reasons: first, they are the ones in the countryside that are more likely to lose their land if there is land reallocation in the village (due to marriage or decease respectively); secondly, in a fast urbanizing society like China, female or old people have less chances to leave their villages to work in the cities. For these people, a stable holding of the farmland would be a reliable source for their livelihood.

The results shown in Table 7 also indicate that overall speaking, the interviewees answered four questions in a consistent and rational way. Their responses are consistent since they give more or less similar answers to the four related questions. Their responses are rational in the sense that they support policies that can maximize the interest for themselves and for their families.

The findings we have discussed so far reflect the complicated and difficult trade-offs between efficiency and equity involved with China's agricultural land tenure security. On the one hand, farmers whose family experienced growth in population tend to

support land reallocation. As discussed in section 2, land reallocation may not only help to equalize land allocation across households, but also, under circumstances of imperfect labor market and land rental market, help to improve land use efficiency. On the other hand, land reallocation may also reduce dynamic land use efficiency by lowering incentives of long term investment on agricultural land. That is why interviewees whose families are more dependent on agriculture tend to oppose land reallocation. This also partly accounts for the fact the older and the female interviewees tend to support tenure security policy since they are more likely to engage in agriculture though these two groups of farmers may also support the tenure security policies out of concern that their own land may be taken away in land reallocation due to family demographic changes.

Table 7 Ordered Probit Regressions with Village Dummies Controlled

	Que 1	Que2	Que 3	Que 4
Popchange	0.113 (1.79)*	0.126 (1.94)*	0.116 (1.82)*	0.122 (1.90)*
Agrincshare	-0.153 (1.69)*	-0.248 (2.76)***	-0.219 (2.48)**	-0.215 (2.42)**
Age	-0.008 (2.89)***	-0.005 (1.81)*	-0.004 (1.38)	-0.004 (1.44)
Expedu	-0.028 (3.03)***	-0.029 (3.04)***	-0.026 (2.77)***	-0.028 (2.90)***
Gender	-0.040 (0.65)	-0.142 (2.26)**	-0.121 (1.94)*	-0.141 (2.24)**
Fampop	-0.045 (2.34)**	-0.041 (2.11)**	-0.033 (1.73)*	-0.036 (1.87)*
Landpc	-0.039 (1.47)	-0.043 (1.83)*	-0.048 (1.88)*	-0.046 (1.82)*
Incpc	-0.001 (0.10)	0.001 (0.23)	0.003 (0.89)	0.002 (0.67)
CCP	0.086 (0.97)	0.019 (0.22)	0.074 (0.84)	0.053 (0.60)
Cadre	0.073 (0.76)	-0.020 (0.21)	0.010 (0.10)	0.012 (0.12)
Cutoff point 1 (μ_1)	-1.635 (4.60)***	-1.792 (5.02)***	-1.772 (4.66)***	-1.813 (4.76)***
Cutoff point 2 (μ_2)	-1.384	-1.523	-1.490	-1.537

	(3.90)***	(4.27)***	(3.93)***	(4.04)***
Observations	2350	2350	2350	2350

Note: The numbers in parentheses are t-ratios based on robust standard errors. The significance levels of 1%, 5%, and 10% are noted by ***, **, and *. Village dummies are controlled

V Social Conflicts from Agricultural Land (Re)allocation

As different farmers have different views on agricultural land tenure, disputes on land distribution inevitably emerge. According to the Chinese State Council (2007), Among the two most common and serious types of land disputes in China, one is related to the violations of land contracting rights and the other related to illegal land takings by local government in urban and industrial development. A significant number of social conflicts related to land reallocation is indeed reflected in our survey data.

In Table 8, we listed the number of public order incidents and petitions related to rural land issues as a whole and that related to land allocation issues in the 119 villages between year 2005 and 2008. Here public order incidents are defined as various collective actions by village members to block public transportation, or to prevent the establishment of state or commercial project, to confront police force sent by local government agencies, or to engage in collective fight against other farmers in public et al. Public order incidents are usually used by village members as a way against local governments or other stakeholders who sacrificed farmers' livelihood in favor of their own economic or political interests. Petitions include all the actions taken by individual farmers or a group of farmers who lodge a formal complaint with authorities above the village level.

Table 8 Public Order Incidents and Petition related to Land and Land Allocation

Province	Public Order incident related to land		Petition related to land	
	all	In which over land allocation	all	In which over land allocation
Jiangsu	1	1	6	1
Sichuan	0	0	2	2

Shannxi	0	0	0	0
Jilin	3	2	4	4
Hebei	1	0	5	3
Fujian	1	0	1	0
Total	6	3	18	12

Source: Authors' Survey in 2008

Table 8 shows among all the 6 public order incidents in the six provinces, 3 were related to land (re)allocation. For example, the Jiangsu case occurred in a village of Danyang County, where 20 farmers in the village believed that land allocation was unfair. They went to the village leader to request a fair land reallocation. In the two public order incidents related to land allocation in Jilin, the village cadres leased out village's circulating land (usually reserved to accommodate demographic changes in villages) to people from outside to plant trees for commercial gain. Sixty farmers in this village went out collectively to stop planting trees. Both cases led to direct conflicts between villagers and village cadres.

Table 8 also indicates between 2005 and 2008 there were 18 petitions in the 119 villages, among which 12 were directly related to land (re)allocation. The Jiangsu case was in Sheyang County due to farmers' complaint against village cadres over land reallocation. In 2005, 20 farmers appealed this case to the township government and the country government. In the two petitions in Sichuan, there were 15 and 6 farmers respectively appealed to the upper level governments in 2005 and 2007 to complain unfair land (re)allocation. The four petition cases in Jilin happened either because farmers are unhappy with the present land allocation or because village cadres allocated the village's circulating land to their relatives so that other farmers had no access to the public resources. In one case of Jilin, a farmer who was deprived of land went to all levels of governments including the central government until he finally got the land back. In the three petition cases occurred in Hebei, two were related to farmers' complaints against frequent land reallocation. And the other happened because two farmers who had leased the village circulating land prior to an administrative allocation were unhappy with the arrangement after the land

reallocation.

Social conflicts over land allocation became an increasingly serious issue in the late 2008 and the early 2009 with the hit of world financial crisis. This has led to a lot of return migrants who lost their jobs in cities. Based on a survey covering 165 villages across 15 major migrant-sending provinces, a recent report by the Rural Center for Agricultural Research showed that by middle January 2009, 15.3% of the rural migrants returned to their villages due to unemployment. Among all the rural migrant workers in cities, 8.3% had no agricultural land at all either because they gave up their land in the late 1990s or the early 2000s when farming was not a profitable business at that time, or because they already leased their land to other farmers, or because they were not allocated any land in the first place due to the central policy of tenure security. Considering the fact that China has about 130 million rural migrants, this implies there are up to 10 million migrant workers in China who had no agricultural land at all. Indeed, the RCRE report showed that 55 out of the 165 villages had 246 disputes over agricultural land allocation in 2008. 20 out of the 55 villages had 45 disputes over agricultural land allocation due to returned migrants, a 125% growth compared to the incidents of such disputes in 2008 (Caijing, 2009).

To sum it up, though the intention of the central tenure security policy is good, it is inevitably a controversial policy in implementation. Under any circumstance, farmers will be largely divided with respect to administrative land reallocation. Any policy will have their supporters and opponents in village since different interviewees and families have different interests depending on their characteristics. This dilemma will always be present if different families in village have different population dynamics. With a significant number of farmers taking both sides with regard to land reallocation, either complying with the central tenure security policy or failing to do so will easily result in social conflicts between farmers and village cadres and between farmers themselves.

VI Conclusions and Policy Implications

Based on a large sample rural survey in 2008, this paper finds that overall speaking the frequencies of agricultural land reallocation has indeed been reduced in Chinese villages since 1998 with the central policy of stabilizing tenure security. But despite of the central policy, a significant number of villages still continued agricultural land reallocation, either in full scale or partial scale.

This research also finds over 60% of farmers are not supportive of the central tenure policy. Farmers are largely divided because there are significant differences across families within village with regard to population change and the degree of dependence on agricultural production. On the one hand, though reallocating land by administrative approach may help to realize equity across rural families, it may also dampen the incentives for long term agricultural investment. On the other hand, not allowing for land redistribution may also have serious consequences in terms of income distribution. This is because rural laborers that are more dependent on agricultural production and thus on land on average earned much less income than those that can obtain most of their incomes from off-farm employment. Therefore, providing equal access to land for all villagers may bias against the poor in the countryside. Whatever the actual policy is, social conflicts may easily arise both between farmers themselves and between farmers and local cadres. Therefore, there is indeed a great dilemma in China's agricultural land tenure policy.

The authors believe that there is no solution to this dilemma if Chinese policy makers limit themselves to reforms to agricultural land itself. Coordinated reforms in the Household Registration System (Hukou) should be seriously considered as this reform can be essential to gradually move people out of the countryside, so that the pressure from population changes on land reallocation can be effectively relieved. In China, a large number of rural migrants are already primarily engaged in urban jobs. As Tao and Xu (2005, 2007) suggested, if real progress in the Hukou Reform can be achieved

so that rural migrants can move to cities and can have equal access to social benefits as urban residents have, and if any migrant who gained this urban status is required to give up his agricultural land, some extra land would then be released in the villages where migrants come from, which in turn, would make it easier for villages to accommodate inter-family demographical changes. To make this happen, in Hukou reform, city governments in migrant-receiving regions need to provide social assistance, public housing as well as school services to migrants to induce the latter to give up their agricultural land on a voluntary basis. In another word, coordinating Hukou reform and agricultural land reform in this way would free up some extra-land to the villages and would make it less necessary or less controversial for the villages to carry out administrative land reallocation.

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