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Choice of Land Tenure in China: The Case of a County with Quasi-Private Property Rights*

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I. Introduction

A central tenet of the property-rights paradigm is that institutions, of which property rights are the bedrock, are crucial determinants of economic performance.[1] From this perspective, institutions are essentially a choice variable, and, insofar as the correct choice is made, institutions will set an economy onto the trajectory of economic development via the expansion of markets and exchange. It also follows from such logic that rational actors concerned with utility maximization will prefer a property-rights regime that allows them to maximize the benefits they accrue for an unencumbered use and exchange of scarce economic resources.

The individualization of use and income rights that followed the radical dismantling of China's collectivized agriculture around the mid-1980s is seen as an institutional change consistent with the aforementioned lines of reasoning, that is, a change that solved once and for all the free rider problem on collectivized farms.[2] Despite this radical transformation of rights, the right to own land—with all its attendant prerogatives associated with ownership—had not, however, been assigned to the farm households because of ideological and other constraints.[3] Thus, land property rights have to this day remained communal in rural China, mainly because of the highly egalitarian manner in which collective holdings were initially distributed among the farm families.[4] From a narrow efficiency standpoint, what must be worse is the institutional arrangement, based on the principle of equal entitlement, whereby land is periodically reallocated in response to changing family demographics.[5] To the extent that members of succeeding generations are, like their predecessors, entitled to an equal share of a critical village resource, the current property-rights regime degenerates into one of "licensed open access" and, as such, is clearly inefficient in terms of investment and farming efficiency.

Economic analysis would therefore suggest that farmers in China should

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welcome the privatization of land rights, a view that has in fact been shared by the Chinese government, which extended farmers' tenure for 15 years in 1984 and implemented the policy of freezing land reallocations for 30 years in 1993. Contrary to expectations, however, up to 62% of the 800 farm households being surveyed across China have paradoxically indicated a preference for periodic land reallocations over the proposed, seemingly more stable, land tenure institution.[6] Concern for greater economic security and, therefore, the willingness to pay a larger premium for this security in terms of forgone economic efficiency has been suggested as the main cause underlying the tenacious persistence of communal property rights in rural China.[7] Alarmed nonetheless by a dwindling crop output growth around the mid-1980s and the ferocious debate that arose from it (concerning the potential drawbacks of communal property ownership), the Chinese government decided to conduct a social experiment by increasing private land use in a selected county. By essentially halting land reallocation for 20 years, a sufficiently long period of time insofar as tenure security is concerned, the government hoped that farmers would be induced to undertake land-augmenting investments and, simultaneously, to have fewer children, as having an additional child will no longer guarantee access to land.

Drawing on a unique farm survey that I conducted in Meitan County, Guizhou Province, the site of the land tenure experiment, this study has two main objectives. First, it seeks to account for the preferences of the surveyed households regarding land allocation arrangements, thereby setting a benchmark against which policy lessons can be drawn. Specifically, it aims to ascertain the magnitude of support lent by the surveyed households to the experimental regime as well as the socioeconomic and demographic characteristics of the families that represent the divided camps. Second, and more important, it seeks to account for the change in preference over time. As my analyses shall show, preferences are firmly rooted in farmers' calculation of the costs and benefits differentially associated with the two regimes in question. Where households gain from one particular allocation rule, they unambiguously express their support for it, and vice versa. The analyses also show that the change in preferences over time is attributable largely to deterioration in family circumstances, most notably an increase in the number of children and the resulting need for some of these families to rent extra land to feed the new members.

This article is organized around the following themes: Section II provides a background on this important land tenure experiment as well as on the choice of the county selected for it. This is succeeded by a brief description of the data and the main findings in Section III. Section IV provides a number of hypotheses and explanatory variables employed in the regression analyses. Estimation results of the surveyed farmers' current preferences regarding property rights in land are discussed in Section V, and their changing preferences over time are examined in Section VI. The implications of the analytical findings are then summarized and concluded in Section VII.

II. Background on China's Land Tenure Experiment and the Experimental Choice

A salient feature of China's family farming system is that farmers do not legally own the land they are assigned to use.[8] This system of communal property rights had indeed been faulted on a number of grounds since the mid-1980s when the growth spurts of crop output experienced during the initial phase of the rural reforms (ca. 1979–84) could no longer be sustained. First, the anticipation that land is subject to periodic reallocations allegedly discourages farmers from undertaking land-augmenting investments that are considered essential for enhancing long-term soil fertility.[9] Second, given that land reallocation necessitates the partitioning of existing plots, it is feared that farm holdings, over time, will become increasingly fragmented and thus inefficient to farm.[10] Third, depending in part on the rigor with which village authorities enforce family-planning policy, reassigning land to new family members has allegedly the pronatalist effect of encouraging families to have more children.[11] All these concerns combined may have motivated the Meitan land tenure experiment.

The Chinese government had begun stabilizing land tenure relations shortly before the Household Responsibility System became universal in 1984.[12] Ironically enough, it was also a time when farmers were uncertain whether the authorities would allow them to continue with individualized farming. In an endeavor to allay the peasants' fears that family farming was merely a transient arrangement to induce their investment in their contracted plots, the government decreed in 1984 that farmers' tenure or land contracts be extended for 15 years. Under this policy, farm households were allowed, or even encouraged, not to engage in land reassignment for a period of up to 15 years if they so wished, a measure largely intended to alleviate the problem of underinvestment in land.[13] Despite this endeavor, reallocation practices had not abated. Viewing equal land access as a communal right to which they are entitled, many villagers have periodically reassigned land in response to demographic change and have indicated a preference for doing so.[14] Concerned with the insecure tenure problem that farmers may potentially face under such an institutional arrangement, but also constrained by ideology and distributive reasons from outright land privatization, the Meitan experiment was conceived in order to ascertain the effects of a quasi-private land-rights regime on a limited scale.

Under this alternative policy regime, land will not be readjusted to family demographic change for a period of up to 20 years (dubbed "*zengren bu zengdi, jianren bu jiandi*").[15] By halting land reallocation, it was hoped that farmers would find tenure relations more secure from an investment standpoint, that a market for land rental transactions would gradually develop, and that families would have fewer children. The question for the ministry, then, was to decide on the choice of the experimental site. As the provincial authorities of Guizhou, a poor province in southwestern China, had already committed themselves to undertaking such an experiment, a top provincial

TABLE 1

SOCIOECONOMIC AND RESOURCE CHARACTERISTICS OF FARM HOUSEHOLDS IN MEITAN, 1999

Characteristic	Mean
Rice paddy per capita (mu)	.67
Dry land per capita (mu)	.36
Timber land per capita (mu)	.28
Private (vegetable) land (mu)	.05
Number of plots (rice paddy)	6.41
Number of plots (dry land)	6.32
Plot size (rice paddy) (mu)	.60
Plot size (dry land) (mu)	.31
Household size (persons)	4.21
Net income per capita (yuan)	1,415.9
Nonfarm income per capita (%)	44.54
Net income from agriculture per capita (%)	55.46

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

official, who is also the architect of the land tenure experiment, Li Jing, volunteered Meitan County for this experiment.

The resource characteristics of Meitan County (or other neighboring counties sharing broadly similar endowments), summarized in table 1, are arguably what makes it (or nearby counties) a natural candidate for the experiment. Located in the northeastern part of the Guizhou highlands, Meitan has a complex geomorphology that is made up primarily of a chain of undulating hills and fluvial plains: only about one-third of its arable land lies on the well-irrigated lowlands. While the county has a wide array of natural resources, including nonarable ones, paddy rice fields account for over 60% of the county's arable resources.[16] Rice cultivation provides the main source of net income for the average Meitan farm families.[17] This income source is arguably of immense value to the households there, whose members are well aware that ecological constraints limit their cropping pattern to just one cycle per year. Together with dry land, most of which is located farther away from the farm homestead than rice paddies—and on the hilly slopes—our surveyed households have only roughly one mu or 0.0667 hectare of cultivable land per person (see table 1). This compares not only unfavorably with the county average of 1.2 mu, it amounts to less than half of the national (rural) average of 2.24 mu.[18]

Having an unfavorable size endowment of land, however, is by no means a sufficient condition for choosing Meitan or any other southwestern county for conducting the land tenure experiment. Land was divided more or less equally during decollectivization, and the number of plots assigned to a farm household tends to increase with the complexity of the topographical terrain.[19] Therefore, land holdings in Meitan are considered "too scattered and fragmented."[20] To the extent that many of the county's rice paddies are small and

TABLE 2

LAND READJUSTMENTS IN THE MEITAN VILLAGES BEFORE 1987 AND THE YEAR WHEN THE POLICY OF HALTING LAND REALLOCATIONS WAS ADOPTED

	Yes	No
Land readjustment:		
Has land been readjusted in your village–small group since the switch to the Household Responsibility System? (N = 252; %)	29.4	70.6
Land reallocations:		
Year when the policy of freezing land reallocations was implemented, by whether land has been readjusted (N = 252; %)		
1979	12.4	…
1980	11.2	…
1981	5.6	…
1982	9.0	…
1983	2.2	23.0
1984	36.5	77.0
1987	23.0	…
Total	100.0	100.0

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

terraced, the scope of further subdivision of such irregular sized and shaped plots must be limited, at least when compared with slicing up a large tract of flat, consolidated holding.[21] These endowment characteristics of the Meitan economy (or its neighboring counties) must be viewed as conditions conducive to the adoption of a practice of halting land reallocations.[22]

Our survey results do confirm such an intuition. When asked how many times they have reassigned land since the agricultural decollectivization, 70% of the surveyed farmers said that they had not readjusted their plot holdings ever since (table 2). No less consistent is the finding that, regardless of previous land readjustment, the majority reportedly began to halt land reallocations as early as 1983 or 1984, not 1987 (table 2).[23] These findings, taken together, help explain in an important sense the choice of location of the experiment: the southwest was chosen, in part, because the resource characteristics there are conducive to the implementation of this particular land tenure arrangement.

We may summarize the motivations behind the central government's approval of Meitan for this alternative land tenure arrangement experiment.[24] First, Meitan represents a typical rural village community in southwestern China. Insofar as the experiment is successful, it can be generalized for other areas with similar endowment characteristics. Second, as Meitan is located in a hilly, isolated, and remote region, any possible adverse effects, in particular the ideological implications that private property rights may have been quietly sanctioned, could be better controlled.[25] Third, the choice of Meitan, or more generally Guizhou, reflects the authorities' concern in regard to the ease with which such a policy could be implemented. After all, while such a practice

may be typical of villages in this southwestern part of China, it is certainly far from commonplace for the country as a whole. In this context, it is also worth pointing out that while Guizhou satisfies this criterion, the choice of Meitan itself was not self-evident. In fact, Meitan became the final candidate largely because its county officials had zealously lobbied for it to be the experimental site.[26]

III. The Data and the Main Findings

The data underlying this study were obtained from a farm survey organized during the late summer of 1999, with the assistance of personnel from the Development Research Center and from the State Council of the People's Republic of China, after 2 years of planning and initial field research. Of the 15 townships in Meitan, two, Chaole and Yuquan, were selected for conducting the survey. These two townships were chosen primarily for two reasons. First, located on the fluvial plains, they are representative of the resource characteristics of Meitan. Second, with a standard of living in terms of per capita net income ranging from average to slightly above average, these two townships well represent the level of economic development in this county. Two villages were, in turn, chosen from each of the two selected townships for conducting the survey, with 75 households being drawn from each village. Altogether, 299 households were selected for interviewing.

A basic questionnaire was designed to obtain detailed information on the socioeconomic characteristics of all individual members of the surveyed family, the household resource endowments, and production conditions, including costs and revenues. With regard to the set of questions on preferences, the questionnaire first asked the household head what his specific preference was at the time when the policy of halting land reallocation was adopted in his village. In view of the more important objective of comparing preferences over time, the questionnaire also inquired after his current preference; that is, would he prefer the same stable tenure arrangement (the Meitan alternative) or would he rather have it revert to the regime of periodic reallocations (the national practice). As far as past preferences are concerned, support for the Meitan experiment could be regarded as strong, as a good majority (60%) indicated support of such a decision, with another 24% being indifferent, or at least not strongly opposing it. Only 16% indicated an outright opposition (table 3). Support for this alternative land allocation rule has, however, clearly waned over time, as only 32% continue to favor the same regime.[27] By contrast, close to half (48%, as opposed to only 16%) now indicate a preference for land reassignment, a three-fold increase in magnitude (table 3).

This contrast in preferences between the past and the present can also be gleaned from another perspective, namely, by cross-analyzing preferences at the two time points (table 4). At the one extreme, those who previously preferred halting land reallocations, fewer than half continue to prefer this institutional arrangement (48%): as much as 33% have unambiguously

TABLE 3

ATTITUDES AND PREFERENCES OF MEITAN FARMERS REGARDING LAND REALLOCATION PRACTICES PAST AND PRESENT

	I Supported It	I Opposed It	Either Way Is Fine
Your attitude when the policy of freezing land adjustments was implemented ($N = 250$; %)	60.0	16.0	24.0
	I Prefer Land Reallocations	I Do Not Prefer Land Reallocations	I'm Indifferent to It
Your preference regarding land reallocations ($N = 256$; %)	48.4	32.4	19.2

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

changed their minds, whereas support from the other 20% may also be considered to have weakened. Conversely, while they clearly belong to the minority, nearly all of those who opposed the policy in the past continue to oppose it now (95%). In light of these findings, the issues of overriding analytical importance are, therefore, first, what has caused the radical shift in preference (for the Meitan experiment) over time and, second, why has the preference for land reallocations been so tenacious for some households? These are the questions to which I shall return in subsequent sections.

TABLE 4

A COMPARISON OF FARMERS' PREFERENCES REGARDING LAND REALLOCATION PRACTICES OVER TIME

ATTITUDE TOWARD POLICY OF FREEZING LAND ADJUSTMENTS WHEN IT WAS IMPLEMENTED	PRESENT PREFERENCE REGARDING LAND REALLOCATIONS (%)			NUMBER OF (ROW) OBSERVATIONS ($N = 249$)
	Prefer Land Adjustment	Prefer No Land Adjustment	Does Not Matter	
Support	32.9	47.7	19.5	149
Oppose	95.0	2.5	2.5	40
Indifferent	51.6	18.3	30.0	60

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

TABLE 5

SUMMARY STATISTICS OF THE EXPLANATORY VARIABLES

Variable	Number of Observations	Mean	SD	Minimum	Maximum
Rent_in	258	.38	.49	0	1
Rent_out	258	.20	.40	0	1
Edu	258	2.07	.72	.75	4.5
Hh_size	258	4.21	1.37	1	8
Age	258	43.39	11.73	24	74
Age^2	258	2,019.86	1,078.39	576	5,476
Assign_ld	258	.62	.28	.2	1
Dp_ratio	258	.33	.22	0	1
Shy_nfs	258	.43	1.58	0	24.6
Cadre	257	.13	.34	0	1
Housing	258	3,192.11	2,901.08	60	17,500
Main_boy	258	.43	.50	0	1

IV. Hypotheses Testing: Current and Intertemporal Preferences

The estimations of preferences regarding land tenure arrangements, both current and intertemporal, include a number of key explanatory variables corresponding to different levels of the observations. First, individual-level characteristics pertaining to the household head, such as age, education, and whether he is a cadre, are included. Second, to account for the possible effects attributable to differences in the socioeconomic and demographic structure of the surveyed households, characteristics such as family size, dependency ratio, wealth, and the degree to which a family derives its income from off-farm employment are included. In addition, in order to account for the facts that (1) households in Meitan have differential access to land and (2) households there are allowed to engage in land rental market transactions for smoothing out the mismatch between land and labor, I include these two variables in the estimations. The rationale behind the use of each of these variables, followed by a description of their summary statistics in table 5, is spelled out in greater detail below.

Education (edu).—While educational attainment is usually employed to serve as a proxy for returns to human capital, it may also affect preferences. The hypothesized reasoning is simply that education makes one better aware of the costs of land reallocations. The more-educated farmer, going by this reasoning, is thus more predisposed to supporting the regime of halting land reallocation (i.e., $f_{edu} > 0$).

Age (age, age^2).—The demographic cycle is expected to have an effect on preference. Specifically, younger household heads, whose spouses and children have not been allocated land, are hypothesized to favor a land tenure policy that periodically readjusts land, whereas their older counterparts would vote for the alternative. (The square of age is employed to capture the life-cycle effect of this variable on preference.) Thus, we have $f_{age} < 0$, $f_{age^2} > 0$.

Household head is a cadre (cadre).—It is suggested that local officials

and cadres prefer communal property rights and the periodic reallocation of land, as that allows them "to exercise significant control over the lives of individuals."[28] There are a number of reasons why cadres may desire such control apart from the sheer motive of seeking private benefits. For example, local cadres are relied on by the central government to ensure that farmers will honor grain quota sales and comply with family-planning policy. By the same token, where local authorities do not have nonagricultural undertakings from which to derive local tax income, they may resort to the alternative of exacting a levy on the farm households for financing local expenditures. In short, without the power gained from administering land reallocations, local officials may find it formidable to make certain households comply with these obligations.[29] For this reason, we thus expect households headed by a cadre to have a clear preference for reallocating land (i.e., $f_{\text{cadre}} < 0$).

Household size (hh_size).—This assumes that there are certain inherent size economies in agriculture and that farmers prefer to work with more rather than less land.[30] Holding constant the proportion of members being assigned land, larger families would thus more likely support the regime of freezing land reallocations. It is thus expected that $f_{\text{hh\_size}} > 0$.

Family dependency ratio (dp_ratio).—Defined as the ratio of those ages under 16 and above 60 to those between these two limits, this variable serves as a proxy for measuring the burden placed by the "consumers" of a household on the adult family workers. Other factors being equal, a family with a higher dependency ratio, in particular one in which most if not all of the dependents are children,[31] is likely to prefer a policy regime that periodically reassigns land in response to demographic change, or $f_{\text{dp\_ratio}} < 0$.

Share of income from nonfarm sources (shy_nfs).—In principle, a family with one or more members engaged in employment off the farm would likely have a higher income than one without such income sources. As the income obtained from land or agricultural production goes down, the security-cum-insurance function provided by land goes down accordingly, thereby predisposing families to shift toward the preference for not reallocating land,[32] that is, $f_{\text{shy\_nfs}} > 0$.

Housing expenditure (housing).—In view of the large share of household investment in housing construction after the reform,[33] this variable is a proxy employed to gauge if differences in the standard of living may have any discernible effect on preference. In this context, the surveyed households were asked to report whether they had constructed any new houses since agricultural decollectivization and, if so, the amount that was incurred. As with the case of nonfarm income, households with a higher standard of living were expected to exhibit a stronger preference for a policy of periodic nonadjustment of land, that is, $f_{\text{wealth}} > 0$.

Land entitlement (assign_ld).—Unlike elsewhere in China, where access to land is naturally acquired through marriage if not by birth, in Meitan this entitlement is strictly denied to those who become members of the village community after the policy of halting land reallocations came into effect. In

fact, of the 1,060 individuals covered in our survey, only 60% have been assigned land. In such a context, preference regarding land tenure is likely conditional on the receipt of the entitled land. The larger the proportion of those assigned land in a family, it is hypothesized, the greater would be their support for the no-land-adjustment policy, and vice versa, that is, $f_{\text{assign\_ld}} > 0$.

Renting in land (rent_in).—A family that has experienced an increase in dependency ratio (such as having an additional child) but is unable to augment income from off-farm employment may be forced to rent land under the present policy of freezing land adjustments. This family is likely to oppose such a policy, that is, $f_{\text{rent\_in}} < 0$.

Renting out land (rent_out).—To the contrary, a family that has rented out part or all of its land is likely to support the policy of freezing land readjustments, as the current policy arrangement (of freezing land reallocation) allows it to collect the scarcity rents. Its effect is, therefore, likely positive, or $f_{\text{rent\_out}} > 0$.

Gender structure (main_boys).—It may be argued that the land reallocation pressure implication of having daughters is very different from that of having sons. Daughters usually move away to other villages after getting married, leaving their land to their parents or brothers, whereas sons typically marry girls from other villages and stay. In villages where land reallocation is halted, sons and their wives and children will be worse off since the wives and children may be unable to get land from the village authorities.[34] Holding other factors equal, households with higher sex ratios (or a higher percentage of boys) may have a preference distinctly different from those with more girls. Specifically, the hypothesis holds that households with more boys, proportionately, would more likely oppose the freezing land reallocation regime, or $f_{\text{main\_boys}} < 0$.[35]

The estimation may be summarized as follows:

$$\begin{aligned}\text{Prefadjust} = {} & \alpha_0 + \alpha_1 \text{edu} + \alpha_2 \text{age} + \alpha_3 \text{age}^2 + \alpha_4 \text{cadre} \\ & + \alpha_5 \text{hh\_size} + \alpha_6 \text{dp\_ratio} \\ & + \alpha_7 \text{shy\_nfs} + \alpha_8 \text{housing} + \alpha_9 \text{assign\_ld} \\ & + \alpha_{10} \text{rent\_in} + \alpha_{11} \text{rent\_out} \\ & + \alpha_{12} \text{main\_boys} + \alpha_{13} \text{village} + \epsilon,\end{aligned}$$

where

pref_adjust: preference regarding land reallocations;
edu: average level of education of household members aged 16 or above;
age: age of household head;
age^2: square of age of household head;
cadre: whether household head is a cadre;
hh_size: household size;
dp_ratio: dependency ratio;

TABLE 6

CURRENT PREFERENCE REGARDING LAND REALLOCATIONS (Adjustment Is Preferred = 1; No Adjustment Is Preferred = 0)

	SPECIFICATION 1		SPECIFICATION 2	
VARIABLE	Coefficient	z value	Coefficient	z value
Rent_in	.978**	2.989	.955**	2.851
Rent_out	−1.064*	−2.465	−1.183**	−2.639
Edu	−.184	−.742	−.069	−.264
Hh_size	−.411**	−3.093	−.376**	−2.765
Age	.078	.630	.070	.568
Age^2	−.001	−.735	−.001	−.665
Assign_ld	−1.960**	−2.820	−1.979**	−2.820
Dp_ratio	1.895*	2.160	2.272*	2.511
Shy_nfs	.215	.535	.410	.981
Cadre	.428	.958	.451	.987
Housing	.000	.875	.000	1.138
Main_boy	.420	1.281	.467	1.394
Village dummies:				
du_v1	…	…	.366	.757
du_v2	…	…	.829+	1.696
du_v3	…	…	1.118*	2.395
Constant	.565	.216	−.518	−.192
Number of observations	246		246	
Pseudo R^2	.205		.225	
Model χ^2 statistics	69.63		76.45	

+ Significant at 10% level.
* Significant at 5% level.
** Significant at 1% level.

shy_nfs: share of income from nonfarm source;
housing: housing expenditure incurred by a family;
assign_ld: proportion of family members who have been (re)assigned land;
rent_in: households that have rented land;
rent_out: households that have rented out land;
main_boys: gender structure of a family;
village: village dummies; and
ϵ: is the error term.

V. Estimation Results on Current Preferences

Regression results on farmers' preference regarding land reallocation practices are summarized in table 6.[36] First, both individual and household characteristics, be they age, educational level, or whether the household head is a cadre, have no significant bearing on the dependent variable. Likewise, the effect of income or wealth, whether it is measured in terms of housing expenditure (wealth) or off-farm income, is also not significant. As can be seen from table 6, the significant variables are those that have a direct bearing on a household's economic well-being. As hypothesized, the larger households, households with proportionately more members having benefited under the previous land as-

TABLE 7

RELATIONSHIP OF THE SURVEYED HOUSEHOLD MEMBERS TO THE HOUSEHOLD HEAD

Relationship to the Household Head	The *N* Family Member in a Household[a]	This Member Is (%):	Mean Age	Number of Observations
Spouse	2	92.2	40.9	236
Sons and daughters	3	87.0	16.2	208
Sons and daughters	4	74.6	13.0	135
Sons and daughters	5	70.9	16.0	61
Sons and daughters	6	48.7	16.5	19
Grandchildren	6	33.3	3.8	13
Sons and daughters	7	42.1	15.0	8
Grandchildren	7	47.4	4.9	9
Grandchildren	8	57.1	2.5	4

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

[a] The first family member is usually the household head. In each interview, the household head was asked to provide detailed information on the sociodemographic characteristics of each household member.

signment rule, and those that have surplus land relative either to their willingness or capacity to farm, prefer not to reallocate land. Conversely, households resorting to renting in land, presumably because of an increase in the dependency ratio, prefer land reallocation.[37] It is interesting to note, however, that gender structure does not have a significant effect on farmers' current preference regarding land reallocation, although the sign of the coefficient certainly points to the right direction, that is, families with mainly boys are more likely to prefer land reallocations.

The variable assign_ld is significant for an obvious reason: controlling for other factors, a family with proportionately more members being assigned land is more likely to support the status quo, that is, halting land reallocation. We find the same expected effect with the variable household size (hh_size): controlling especially for variations in assign_ld between different-sized households, larger families also prefer the regime of halting land reallocation. It is, of course, not invariably the case for larger households to prefer the status quo of not reallocating land; much depends on household demographic structures. If large households were essentially extended families with more than one grandchild not being assigned any land, chances would be more likely for these households to demand a reassignment of land. Fortunately, this can be verified by examining the relationship of individual family members to the household head, as summarized in table 7. Two findings are especially pertinent to our analysis. First, with few exceptions, most families have six or fewer members, including the household head. Most important, most are nuclear families, although some have three or more children. Second, with the exception of the fourth family member, the mean age of these children

was 16 years old in the surveyed year (1999); this implies that the "representative" child was born in 1983. In view of the earlier finding that the practice of halting land reallocation was adopted in the majority of instances (60%) either in 1984 or 1987, chances for the "representative" child of larger families (those with five or six members) to have been assigned land were rather good. Insofar as larger families are not particularly disadvantaged in respect to land assignment, the preference of these families for avoiding farm plots' diseconomies of size and the worsening fragmentation of land should provide them with strong incentives for upholding the status quo.

Support for the policy of freezing land reallocations also comes from those households that, because of insufficient labor or having household members in their prime age engaged in nonfarm work, including those who normally work outside their village, have rented out their surplus land for an income.[38] Given that rental payment net of agricultural tax and other local levies is positive, an issue to be examined next, it is easy to understand why households with surplus land and benefits from that land do not want a reversion to the policy of periodic land readjustment.

Turning now to those who favor the practice of periodic land reallocations, two factors are worth detailed discussion. The first pertains to family demographic structures (dp_ratio), whereas the second has to do with land rental market transactions; only this time, it is the households that have rented land (rent_in) that tend to favor the alternative land tenure regime. Controlling for other factors, in particular the effect of off-farm income, families burdened with proportionately more consumers (high dp_ratio) more likely prefer land reallocations, as they benefit from such a scheme by having more land without paying rent. It is maintained, however, that a higher-than-average dependency ratio is only a necessary condition for shaping preferences; much depends on the sufficient condition, namely, off-farm income (shy_nfs). Depending on their ability to generate off-farm income, households with high dependency ratios need not invariably get stuck with farming, hence, the need to rent land as well as the preference for land reallocations. In the attempt to unveil the characteristics of those households that have a higher incidence of renting in land, shy_nfs is not significant in the regression.[39] However, a significantly negative relationship is found between land renting (in) activities and off-farm income.[40]

This may indeed provide the underlying rationale for the significance of the rent_in variable in the estimation of current preference. Regardless of whether the disadvantaged households in Meitan may find the experimental tenure regime unfair, there are clearly real welfare implications associated with the two alternative land tenure regimes. Under the regime in which land is not reallocated, households deficient in land and, additionally, unable to obtain alternative sources of income for purchasing food grain in the market are forced to rent land and pay rent. This easily explains why those households oppose the institutional arrangement of freezing land readjustments. Our computation of the rental rates indeed reveals that gross rents incurred by the

tenant farmers are about 35% of the gross output, including a 16% agricultural tax and collective levy.[41] Given that the tax and levy represent lump-sum expenses that will have to be incurred even when a household is assigned additional land free of charge, net rental payment is probably slightly less than 20%, which still represents a positive transfer between households that are differentially endowed with land and labor. The disadvantaged families whose perceived institutional alternative is the equal land access rule may also have seen suppressing land reallocations as a serious violation of the norm of fairness that is deeply embedded in peasant ideology.

What is harder to account for, on the other hand, is the insignificant effect of a family's gender structure on preference. The hypothesized reasoning is that families with more sons will suffer because the spouses (and later children) will be denied land when these sons get married, so the families should, therefore, oppose the freezing land reallocation regime. One possible explanation may be that this variable fails to differentiate households according to their fertility cycle. Holding constant the gender ratio, it is only the younger families whose spouses and children were not assigned any land that suffer; those that already had children prior to the time that the new regime became effective were unlikely to be adversely affected. A subsequent section should evince this fact if it is indeed a plausible reason.

In our next estimation, where village fixed effects are included (specification 2, table 6), the results remain basically unchanged; in particular, the variable dependency ratio (dp_ratio) remains significant, which reinforces our earlier analysis concerning the importance of household demographics in determining preference. In an economy in which economic returns are determined primarily by one's capacity for physical labor, a family's welfare is intimately tied to its demographic structure. The more its members are able to work and earn, the better off it will be. A household would, however, reach a stage at which either its children are too small to work or its elderly members are too old and feeble to labor, thereby leaving the responsibility of feeding all family members disproportionately to the few working adults. In a subsistence economy like Meitan, the primary concern of a disadvantaged peasant household is to satisfy its minimum consumption needs, the fulfillment of which is better facilitated under an egalitarian land reallocation regime. The dummy variable village 3 (and to a lesser extent village 2) is also significant, suggesting that households in this village are more likely to oppose the no-land-adjustment policy. To check if there may be any significant differences in the dependency ratio between villages, Barlett's test was carried out for equal variances. The results obtained show that there is no significant difference, which suggests that the variables of dependency ratio and rent-in land, respectively, have separate effects on farmers' preference when we control for the village effect. In any case, the results of this estimation do not differ markedly from the conclusions reached previously.

VI. Changing versus Stable Preference

As noted earlier, support for the policy of freezing land reallocations has waned considerably over time; nonetheless, a small number of households have steadfastly held on to their preference of periodic land reassignment to adjust for changes in family demographics. The goal now, therefore, is to account for these observed changes and stability in preferences, respectively, by means of a multinomial regression analysis. The first task is to group our subjects according to the answers they choose in response to two questions.[42] Altogether there should be four groups: two groups with consistent preferences (one consistently prefers no readjustment, whereas the other does) and two other groups with inconsistent preferences (one preferred no land adjustments in the past, e.g., but now prefers to reallocate land). However, as there is only one respondent who originally disagreed with the policy of freezing land adjustment but has lately changed his mind and supported it, the following multinomial regression analysis drops this category and ends up with three categories instead.[43]

In multinomial regression analysis, the change in preference (or the lack of it) is the dependent variable to be explained. As there are three behavioral categories in this analysis (NO ADJUSTMENT → NO ADJUSTMENT, ADJUSTMENT → ADJUSTMENT, and NO ADJUSTMENT → ADJUSTMENT), we have to choose one as the base comparison group to ascertain the probability of one of these possibilities occurring. In the exercise that follows, the NO ADJUSTMENT → NO ADJUSTMENT category is chosen as the base comparison group against which the other two behavioral outcomes are compared.[44] As in the previous analysis, we employ the same set of explanatory variables. Similarly, two estimations are performed, one without village fixed effects (specification 1) and the other with such effects (specification 2). The results are summarized in table 8. In multinomial regression analysis, a smaller-than-unity coefficient, the *rrr,* indicates a preference for choosing the base group, whereas a value larger than one indicates the opposite choice under comparison. The *z* value in parentheses indicates the level of significance.

We begin our analysis by comparing the group of households with consistent preference for halting land reallocations (the base group) with the group of households that have changed their minds from being initially supportive of such a policy to opposing it currently. Similar to the previous finding underlying the preference for a stable land tenure regime, it is households that have benefited from the specific land-assignment rule in Meitan (assign_ld) and corresponding land rental market transactions (rent_out), and the larger families (hh_size), that have remained consistent with their preference. Conversely, households that have rented land (rent_in) used to support the policy of freezing land reallocations in the 1980s but have now changed their preferences. Deterioration in family conditions, specifically an increase in the dependency ratio and an inability to earn higher incomes by means of off-farm employment, have altered their preference in favor of adjusting land in

TABLE 8

MULTINOMIAL REGRESSION ANALYSIS OF FARMERS' PREFERENCE REGARDING LAND REALLOCATION RULES PAST AND PRESENT

	SPECIFICATION 1		SPECIFICATION 2	
VARIABLES	Preference Changed: Prefer Land Adjustment Now (*rrr*) (*z* Statistics)	Always Prefer Land Reallocations (*rrr*) (*z* Statistics)	Preference Changed: Prefer Land Adjustment Now (*rrr*) (*z* Statistics)	Always Prefer Land Reallocations (*rrr*) (*z* Statistics)
Rent_in	2.212*	4.070**	2.098*	4.277**
	(2.241)	(2.816)	(2.044)	(2.746)
Rent_out	.357*	.231^{+}	.328*	.158*
	(−2.167)	(−1.732)	(−2.276)	(−2.046)
Edu	.984	.430*	1.052	.557
	(−.063)	(−2.167)	(.183)	(−1.382)
Hh_size	.701*	.526**	.734*	.511**
	(−2.484)	(−2.816)	(−2.113)	(−2.763)
Age	.975	1.838*	.976	1.736*
	(−.187)	(2.547)	(−.170)	(2.188)
Age^2	1.000	.993**	1.000	.994*
	(.144)	(−2.620)	(.151)	(−2.312)
Assign_ld	.162*	.103*	.163*	.103*
	(−2.434)	(−2.167)	(−2.422)	(−2.033)
Dp_ratio	3.622	45.925**	5.318^{+}	75.175**
	(1.349)	(2.616)	(1.710)	(2.818)
Shy_nfs	1.210	1.322	1.502	1.584
	(.432)	(.445)	(.875)	(.703)
Cadre	1.278	3.376^{+}	1.331	3.357^{+}
	(.486)	(1.872)	(.553)	(1.813)
Housing	1.000	1.000	1.000	1.000
	(.691)	(1.457)	(1.250)	(.908)
Main_boy	1.212	3.334*	1.285	3.305*
	(.539)	(2.353)	(.691)	(2.226)
Village dummies:				
du_v1	…	…	1.781	.746
			(1.095)	(−.390)
du_v2	…	…	3.034*	.783
			(2.088)	(−.321)
du_v3	…	…	2.646^{+}	4.764*
			(1.830)	(2.452)
Number of observations	239		239	
Model χ^2 statistics	84.69		103.17	
Level of significance	.000		.000	
Pseudo R^2	.179		.218	

NOTE.—The base comparing group is those who supported the policy of freezing land reallocations when it was implemented and, consistently, prefer no land readjustments now.

$^{+}$ Significant at 10% level.

* Significant at 5% level.

** Significant at 1% level.

response to family demographic change. While the sign of the variable dependency ratio (dp_ratio) turns out to be expected, it is not statistically significant (although close, especially in the specification with village fixed effects [specification 2, table 8]). Likewise, differences among families in respect to gender structure also have no significant effect in this comparison.

Now those who have always preferred the institution of freezing land reallocation can be compared with the ones consistently choosing the opposite, namely, periodically readjusting land. Who are the ones most likely to have preferred consistently a more stable land tenure regime of freezing land reallocations? Consistent with previous observations, the larger families (hh_size), families with proportionately more members being assigned land (assign_ld) and families that have rented out land (rent_out) are supporters of a more stable land tenure regime. While education of the household head is not significant in accounting for a farmer's current preference, the more educated household heads have consistently preferred the institution of land nonreadjustment; it appears, after all, that education may have a bearing on institutional choice.[45] However, after controlling for village fixed effects, education (edu) drops in significance (specification 2, table 8).

To the contrary, households with higher dependency ratios (dp_ratio) and families headed by younger males, such as men between the ages of 31 and 40, are more likely to have consistently preferred the periodic land reallocations practice. This is not surprising, considering the fact that 15 years ago the people in this age bracket were only 16–25 years old; they were certainly too young, especially for those at the lower end of the bracket, to have been married, let alone to have had any children. By the time that these people had formed families, however, the village authorities had already ceased reassigning land to their spouses and children, in which circumstance the preference of these young households for land reallocations is clearly a rational response. The results in table 9 do in fact lend some support to this conjecture. The younger families (24–30, 31–40 years of age) do have a much smaller percentage of their members having received land assignment; correspondingly, a significantly higher percentage of these families have voted in favor of the regime of periodic land reallocation.

While differences in gender structure do not bear any significance on the current preference of farmers regarding the choice of a land reallocation rule, they do significantly influence the choice of such an institution over time. Compared with those who consistently prefer a stable land tenure regime, younger families with higher sex ratios or proportionately more sons have consistently opposed the practice of freezing the land reallocation rule, a result that is robust regardless of whether we control for village fixed effects (see table 8).

An intriguing finding of this exercise is the significance of the cadre variable; the positive sign of the coefficient suggests that cadres do in fact have a predilection for periodic land adjustments. Whether this preference is predicated primarily on self-serving, rent-seeking motives or for the purpose

TABLE 9

PREFERENCE REGARDING LAND REALLOCATIONS, BY PERCENTAGE OF FAMILY MEMBERS WHO HAVE BEEN ASSIGNED LAND

AGE GROUP	NUMBER OF OBSERVATIONS	PREFERRING LAND REALLOCATION?			MEMBERS WHO WERE ASSIGNED LAND (%)
		Yes (%)	No (%)	It Does Not Matter (%)	
24–30	40	60.0	22.5	17.5	42.1
31–40	77	68.8	13.0	18.2	40.0
41–50	69	39.1	47.8	13.0	78.6
51–60	46	21.7	41.3	37.0	74.8
61–74	24	4.7	50.0	8.3	79.8
Total	256	48.4	32.4	19.2	

SOURCE.—Meitan Household Survey (Development Research Center, State Council, People's Republic of China, Beijing, 1999).

of achieving certain policy objectives, such as family planning, cannot, however, be ascertained, although cadres do indicate that they have experienced difficulties in this respect.[46]

What needs further explanation in light of the previous findings is the reversal in support for a more private and seemingly more efficient system of land tenure and the steadfast preference on the part of (albeit only a small number of) farm households for an egalitarian system of property rights. A plausible answer could be that in China land is not only a means of production but also a means (in fact, the only means) of social security. This is especially the case at prevailing levels of development, where the majority of farmers would still arguably assign greater weight to the security-cum-insurance role provided by equal land access than to economic efficiency, most notably investment certainty and other benefits accrued under a more private ownership regime.[47] In this regard, families disadvantaged both in terms of their demographic composition and human capital endowments are naturally more predisposed toward preferring a less private or individualized regime of property rights.

By the same analysis, land also serves as a substitute for unemployment insurance in the event a villager is dismissed from, or unable to find, off-farm employment. In this connection, the institution of periodic land reassignment affords protection, especially to families whose share of off-farm income in their overall income is not only negligible, but also unstable.[48] In short, to the extent that a land tenure system has not only efficiency but also equity-cum-distributive properties and implications, the choice of institutions reflects as much a preference for economic security as for economic efficiency. Typically, where the certainty of income is low, a farmer is likely to assign greater weight to the economic security provided by access to land-use rights. This study shows, the unique resource characteristics of Meitan (or the entire

southwestern China) notwithstanding, that this area is no exception to this "hierarchy of preferences."

VII. Summary and Conclusions

To this day, China's rural reforms have remained unfinished in a number of respects, chief among them the persistence of a communal-property-rights system and, accordingly, the periodic reassignment of land in response to changing family demographics. Land reallocation has a number of inefficiencies; most notably, it leads to tenure insecurity and provides incentives for families to have more children. Constrained by ideology and concerned with a potentially adverse distributive consequence, the Chinese government remains reluctant to privatize land rights in the rural areas. On the other hand, it has been equally concerned that a communal-property regime may retard long-term productivity and output growth in agriculture. As a compromise, it conducted what is essentially a social experiment of halting land reallocations in a typical village in southwestern China in order to ascertain the effects of this quasi-private regime on investment and fertility incentives. The goal of this article has been not to examine these effects but rather to understand and gauge the preferences of villagers in this experimental zone with regard to land property rights.

First, farmers' preferences (or the choice of institutions) are determined by whether they could obtain benefits under a particular land tenure regime, which, in turn, is determined by a number of household characteristics. For instance, supporters of the Meitan experimental land tenure rule are invariably those who have benefited from the stable tenure relations conferred by such a regime: families with a greater proportion of their members having been assigned land and familes that have had more land because of their (larger) sizes. Above all, these households have surplus farmland to rent—a market transaction that enables them to collect scarcity rents. By contrast, households with high dependency ratios, specifically younger cohort families whose spouses and children had previously not received any land assignment, prefer the institution of periodic land reallocation practices. Likewise, households previously forced to rent land to produce enough food for family consumption similarly prefer land reallocations to its alternative, just so that they do not have to incur an extra rental payment.

The second interesting finding arises from comparing preferences among different groups of villagers over time. Three observations are worth noting in this regard. First, compared with the support that the land-halting rule received when it was initially adopted, some have currently reversed their prior support for the experimental land tenure regime and have indicated a preference for land reallocations instead. Once again, families that have rented land and, to a lesser extent, those with an above-average dependency ratio are the ones who have changed their minds. While preferences are likely subject to change in response to changing economic and household demographic conditions, the fact that the change has occurred in only one direction, namely, from one of originally

supporting the freezing of land reallocations to opposing it, is not encouraging from the standpoint of private property rights development.

Second, although they belong to the minority, a small constituent of households has nonetheless consistently opposed the rule of halting land reallocations. What underlies the consistent preference of this small group of villagers? In addition to the rehearsed disadvantages pertaining to high dependency ratios and to renting in land, the deprivation of land assigned to the spouses and children of the younger households is also a significant factor predisposing these families' preference for land reallocation practices. As with the former observation, the consistent and persistent opposition to an essentially more private property rights regime is likely to remain a hurdle to property rights development in the near term. Finally, that cadres prefer land reallocations is worth the attention of future research efforts. Is political rent-seeking the underlying motivation responsible for such a finding, or does it reflect some broader problems pertaining to the enforcement of a variety of obligations that the villagers are required to fulfill?

What, if any, policy implications might this analysis have for institutional design in regard to land property rights in rural China? Specifically, how might China's policy makers persuade those who currently prefer the less exclusive property rights regime to shift toward endorsing a more exclusive and hence private one? To the extent that those preferring land reallocations rely heavily on subsistence farming for a livelihood, reducing such reliance, which, in turn, requires the development of a robust nonfarm sector, seems to be the obvious answer. Equally important would be a reduction in the variance of nonfarm income, for only when this source of income becomes more stable would the security-cum-insurance function provided by equal land access become redundant. For the majority of the rural people in China whose prospects of obtaining such off-farm employment and income opportunities entail leaving their home village and families behind, the government could arguably reduce their costs by removing the existing restrictions placed on migration.[49] Unless farmers in China no longer place a premium on economic security, which in the specific Chinese rural context is obtained via equal land access, there remain severe hurdles in the development of a more private and exclusive set of rights in land in the foreseeable future.

Notes

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1. Armen Alchian and Harold Demsetz, "Production, Information Costs, and Economic Organization," *American Economic Review* 62 (December 1972): 777–95;

Ronald H. Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3 (October 1960): 1–44; Douglas C. North, *Structure and Change in Economic History* (New York: Norton, 1981).

2. D. Gale Johnson, "Property Rights in Rural China" (University of Chicago, Chicago, 1995, mimeographed); Justin Y. Lin, "The Household Responsibility System in China's Agricultural Reform: A Theoretical and Empirical Study," *Economic Development and Cultural Change* 36, suppl., no. 3 (1988): S199–S225.

3. The Chinese government may be regarded as reluctant to privatize land rights altogether because a private land ownership system is still seen as incompatible with the socialist ideology that China continues to uphold. There is, in addition, an institutional constraint: by imposing mandatory grain quotas on the farm households, the Chinese government since the early 1950s has assumed the important role of guaranteeing food supply to the population not directly engaged in food grain production. While China indeed has accumulated an enormous stockpile of grain today from a number of bumper harvests in recent years, the fact that its procurement system has remained firmly in place continues to pose a constraint on the privatization of land ownership. Furthermore, there is the concern that a system of private ownership will likely widen income inequality (a senior official from the Development Research Center, the State Council, People's Republic of China, Beijing, private communication with author, 1996).

4. Joseph C. Chai, "Property Rights and Income Distribution under China's Agricultural Household Responsibility System," *Development and Change in China: Selected Seminar Papers on Contemporary China*, vol. 6, ed. C. K. Leung and J. H. Chai (Hong Kong: University of Hong Kong, Center for Asian Studies, 1985); James K. Kung, "Egalitarianism, Subsistence Provision, and Work Incentives in China's Agricultural Collectives," *World Development* 22 (February 1994): 175–88; S. Liu, M. Carter, and Y. Yao, "Dimensions and Diversity of Property Rights in Rural China: Dilemmas on the Road to Further Reform," *World Development* 26 (October 1998): 1789–1806; Jean C. Oi, *State and Peasant in Contemporary China: The Political Economy of Village Government* (Berkeley: University of California Press, 1989); Jonathan Unger, "The Decollectivization of the Chinese Countryside: A Survey of Twenty-Eight Villages," *Pacific Affairs* 58 (1985): 585–606.

5. James K. Kung, "Egalitarianism, Subsistence Provision, and Work Incentives in China's Agricultural Collectives," and "Equal Entitlement versus Tenure Security under a Regime of Collective Property Rights: Peasants' Preference for Institutions in Post-Reform Chinese Agriculture," *Journal of Comparative Economics* 21 (1995): 82–111.

6. Available evidence suggests that the adoption rate of such a policy has generally been low. See James K. Kung and Shouying Liu, "Farmers' Preferences regarding Ownership and Land Tenure in Post-Mao China: Unexpected Evidence from Eight Counties," *China Journal* 38 (1997): 33–63, esp. p. 54. To be fair, though, where off-farm income has become a primary and stable source of livelihood for the villagers, they tend to favor a more stable land tenure system (see also Liu, Carter, and Yao).

7. Kung and Liu; Liu, Carter, and Yao. According to a classic framework employed to analyze changes in property rights, private property rights will emerge only when the expected benefits of the new institutional arrangements are sufficiently large that they justify the efforts required to bring about such a change. See Harold Demsetz, "Towards a Theory of Property Rights," *American Economic Review* 57 (1967): 347–59. In a more recent article by H. Demsetz, the idea that property rights are in fact endogenous to economic progress is further brought to the fore ("Dogs and Tails in the Economic Development Story" [paper presented at the second annual Conference of the International Society for the New Institutional Economics, Paris, 1998]). Drawing on the historical evidence marshaled by Jared Diamond (*Guns, Germs, and Steel: The Fates of Human Societies* [New York: Norton, 1997]), Demsetz attributes the

weak property rights in hunter-gatherer societies to their highly mobile life and the constraint that this poses for maintaining a sizable food inventory—a constraint that in turn gave rise to weak incentives in defending food. To the contrary, the ability to produce supplies of food in excess of subsistence consumption in settled agriculture resulted in strong incentives to create and extend markets for traded goods—a development that required the establishment of a more efficient system of (private) property rights in the first place.

8. While there may be some ambiguity as to who the actual owner is—with some pointing to the state and others to the village authorities, only 2.5% of the 800 surveyed households see the contracted plots as theirs (Kung and Liu, esp. pp. 38–39). This survey finds, similarly, that only 2% of the households think the land they currently cultivate belongs to them; the majority, close to 80%, regard the state as the de jure owner.

9. R. Prosterman, P. Li, and T. Hanstaad, "Can China Feed Itself?" *Scientific American* (November 1996), pp. 90–96; G. James Wen, "The Land Tenure System and Its Saving and Investment Mechanism: The Case of Modern China," *Asian Economic Journal* 9 (1995): 223–59. The disproportionate use of chemical fertilizer relative to its organic counterpart during the initial reform period, e.g., was invoked as an unmistakable sign reflecting farmers' myopia for short-term benefits vis-à-vis long-term sustainable growth. For an alternate view, see James K. Kung and Yongshun Cai, "Property Rights and Fertilizing Practices in Rural China: Evidence from Northern Jiangsu," *Modern China* 26 (July 2000): 276–308.

10. Bolton M. Fleisher and Yunhua Liu, "Economies of Scale, Plot Size, Human Capital and Productivity in Chinese Agriculture," *Quarterly Review of Economics and Finance* 32, no. 3 (1992): 112–23; Qiren Zhou and Shouying Liu, "Meitan: Yige chuantong congqu de cudi zhidu bianqian" (Meitan: Changes in the land tenure system of a traditional agrarian community), in *Nongcun biange yu zhongguo fazhan, 1978–89* (Villages' transformation and China's development, 1979–89), vol. 2, ed. Zhou Qiren (Hong Kong: Oxford University Press, 1994).

11. D. Gale Johnson, "Effects of Institutions and Policies on Rural Population Growth: The Case of China," *Population and Development Review* 20 (1994): 503–32.

12. By the end of 1984, 99% of the Chinese rural households were regarded to be farming on an individualized basis.

13. Yak-Yeow Kueh, "The Economics of the 'Second Land Reform' in China," *China Quarterly* 101 (March 1985): 122–31.

14. Kung, "Equal Entitlement versus Tenure Security under a Regime of Collective Property Rights"; Kung and Liu.

15. Li Jing and Ding Yuankang, "Stabilizing Land Tenure Relations: Implementing the Policy of Halting Land Reallocations in the Face of Population Growth," *Zhanlue yu guianli* (Strategy and management), no. 2 (1994): 13–17. The Guizhou authorities added 5 more years to the central government's stipulation of only 15 years, thereby resulting in 20 years. More recently, they have extended the policy for another 50 years, an extra 20 years more than that recommended by the central government, and covered the entire Guizhou Province.

16. The county average is 63%. The figure for our surveyed households is slightly higher: 67% (see table 1).

17. In a subsistence economy such as Meitan, a considerable proportion of household income assumes the form of self-consumption; income obtained from marketing cash crops plays merely a supplementary role. Rice provides a good case in point. While it is by no means a major cash crop, rice production accounts for a significant share, 34%, of a surveyed household's overall net income, counting also self-consumption.

18. *Zhongguo Tongji Nianjian* (Statistical yearbook of China) (Beijing: Zhongguo Tongji Chubanshe, 2000), pp. 5, 95.

19. Being hilly arguably adds to a terrain's complexity.

20. See Zhou and Liu (n. 10 above). Our sampled families have an average of 12 plots (see table 1).

21. The hilly terrain in Guizhou cannot be more graphically portrayed than the following description in Dexter Roberts, "China's Wealth Gap," *Business Week* (May 8, 2000), p. 26: "Even the rice paddies grow tiny as they fight for the last patches of level ground."

22. In their analysis of a farm survey covering some 800 households in eight counties, Kung and Liu (n. 6 above) find that the number of plots a family has—a variable employed to proxy for the degree of land fragmentation—importantly determines one's preference regarding land reallocation rules. In a county where the topographical terrain is strikingly similar to that of Meitan, a much higher proportion of the farm families favors the institution of freezing land reallocations.

23. Consistently, even among those who had readjusted land, only 23%, or 14 households, indicate that the policy was implemented in 1987; the remainder all indicate 1984 or earlier.

24. I am grateful to an anonymous referee for suggesting the first two plausible reasons to me.

25. This is arguably analogous to the evolution of the Household Responsibility System during the late 1970s, a time when the variant of contracting output responsibility to the farm households (dubbed *baochan daohu*) was sanctioned only for the poor and remote regions.

26. The enthusiasm displayed by county officials in Meitan can be attributed to their aspirations for promotion should the experiment turn out to be successful. That said, if not for the fact that a number of villages in Meitan had already voluntarily adopted the practice of halting land reallocations, it is highly questionable that Meitan county officials would be so eager in pushing the experiment (Li Jing, interview with author, 1998).

27. Such a conclusion remains fundamentally unchallenged even if we include the 19% who say that they are "indifferent" one way or another about having had a weak preference for not reallocating land.

28. Johnson, "Property Rights in Rural China" (n. 2 above), esp. p. 2.

29. According to local officials in Meitan, their most formidable responsibility lies in the enforcement of family-planning policy (Ding Yuankang, Li Jing, and a number of county- and village-level officials, interviews with author, 1998).

30. Such a preference is arguably stronger in Meitan, where arable land resources are not only scarce but also highly fragmented.

31. A family in which most dependents are elderly is, conversely, more likely to support the practice of freezing land reallocations, as it does not have to surrender the land to the village authorities when an elderly member passes away.

32. See, e.g., Kung and Liu.

33. James Wen, cited in Johnson, "Property Rights in Rural China," esp. p. 5.

34. By assigning households based on the timing of their fertility cycle, a larger proportion of the wives of the youngest cohort had indeed not been assigned land when they married into the village (see below).

35. We construct a dummy variable based on the sex composition of children in a household. We assign a value of one to families whose male children as a percentage of all the children exceed 50% (42.64% of the households fall into this category), whereas those whose percentage of male children is smaller than 50% are assigned a value of zero (57.36%).

36. We have estimated this regression twice. First, we used only the 200 observations with clear indications of preferences one way or another (not shown). In the second estimation (table 6), we grouped the 46 respondents who do not indicate a clear preference for a particular land reallocation rule with those strictly preferring not

to reallocate land. Our rationale is that the ones with an opposing interest would have explicitly revealed their preference. Doing so boosted the number of observations for the analysis but did not fundamentally alter the regression results.

37. As much as 61% of the 77 farm households that have rented land indicate that the land assigned to them is inadequate for feeding all the family members—the primary reason why they rented land.

38. According to our survey, of the households that have rented out land ($n = 51$), 52% do so because of insufficient family labor, whereas 38% have members in their prime age who have either migrated out of the county or engaged in off-farm work.

39. In this regression (not shown), the dependent variable rent_in is a dummy variable (with households that have rented land receiving the value of one and those without the value of zero). The set of independent variables is the same as those previously employed in accounting for preference.

40. Altogether, there are only two variables that are significantly correlated with renting in activities: shy_nfs is significant at the 5% level, whereas the other significant variable—cadre—is significant at only the 10% level. The signs of both coefficients are negative, implying that households capable of obtaining a significant share of their income from off-farm sources and cadre households are unlikely to have rented land.

41. While the estimated rents are less than 50%, as are, e.g., the share rents in the Corn Belt in the United States, actual rents are in fact much lower, as the landlord pays half the costs of fertilizer, pesticides, and high-priced seeds. In addition, the landlord also typically pays the land taxes out of the rental receipts. A rent of 35% on irrigated land (rice paddies), with the tenant paying for purchased inputs, may thus be a reasonable estimate of the marginal product of land in China. I owe this observation to D. Gale Johnson.

42. Once again, our analysis includes those respondents who chose the "indifferent" answer to the questions, respectively, of (1) whether they were supportive of the policy when it was implemented and (2) whether they prefer land reallocations now. For the first question, the "indifferent" ones are regarded as mildly supportive of the policy (otherwise they would have explicitly opposed it). As with the second question, a seemingly indifferent attitude is, as noted earlier, interpreted as having a weak preference for not reallocating land. Doing so boosts the sample size from 155 to 239 but does not fundamentally alter the regression results.

43. We now have a total of 129, or 52.23%, of the households consistently preferring the policy of freezing land reallocations; 80, or 32.39%, have changed their minds and currently prefer land reallocations; and 38, or 15%, belong to those who have always wanted land reallocations.

44. Typically, the category-answer chosen by the largest number of respondents is used as the base comparison group.

45. It is likely, however, that education may be correlated with income, particularly income from nonfarm sources, in which case these households may prefer a more stabilized tenure pattern so that they could concentrate on their off-farm pursuits.

46. Ding Yuankang, Li Jing, and a number of county- and village-level officials, interviews with author, 1998. Suppose rural couples in Meitan County are allowed to have a second child if the first one is a girl. In view of the Chinese norm of having two children, it may be safe to assume that couples would want a second child regardless of the sex of the first one—a behavioral disposition that would render the enforcement of this particular family-planning rule formidable. It may be argued, however, that enforcement of this second-child-first-girl rule may be facilitated under the regime whereby land would be assigned to the child insofar as he or she is "inside the plan." In the event of a couple whose first child is a son, e.g., local cadres could threaten to take away the land previously assigned to their son should they ignore the family-planning rule and insist on having the second child. Under the current regime

where land reallocations are halted, however, the opportunity cost of this couple having a second child is zero. Clearly, enforcement of family planning is much more difficult in the latter instance.

47. The most obvious benefit is the right to transfer and transform one's asset type from landed property into, say, cash, as a household with a low utility in land can choose to sell its land to one that wants to expand its farm operations. This cash income is especially useful for those who want to migrate into cities and towns (Johnson [n. 2 above]). Villagers in Meitan may fail to see such benefits because the aforementioned option does not appear a viable option to them in the near term; to many of them, land sales may instead convey the impression and, therefore, the possibility of a bankruptcy instead. Indeed, experiences from other developing countries suggest that land sales in low-income economies are typically of a "distress" type; that is, poor households only sell their land when they are forced to do so, such as when crop failure is the cause. See Hans Binswanger and M. Rosenzweig, "Behavioural and Material Determinants of Production Relations in Agriculture," *Journal of Development Studies* 22 (April 1986): 503–39.

48. There is indeed empirical evidence to substantiate this point. A larger percentage of the villagers in the highly industrialized Zhejiang Province are more supportive of the policy of freezing land reallocations, as opposed to those in Henan and Jiangxi, where off-farm employment and income opportunities are lacking. However, since arable land resources in the latter are relatively more abundant to make land reallocations profitable for the disadvantaged households, land reallocations there are thus more frequent. See Kung and Liu (n. 6 above); James K. Kung, "Common Property Rights and Land Reallocations in Rural China: Evidence from a Village Survey," *World Development* 28 (April 2000): 701–19; Liu, Carter, and Yao (n. 4 above).

49. According to D. Gale Johnson, "Agricultural Adjustment in China: Problems and Prospects," *Population and Development Review* 26 (June 2000): 319–34, such restrictions, when coupled with poor and limited schooling in the rural areas, have the effect of lowering the returns to the farm people.