

The World's Largest Open Access Agricultural & Applied Economics Digital Library

# This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<a href="http://ageconsearch.umn.edu">http://ageconsearch.umn.edu</a>
aesearch@umn.edu

Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

#### **EPTD DISCUSSION PAPER NO. 93**

## LOCAL GOVERNANCE AND PUBLIC GOODS PROVISION IN RURAL CHINA

Xiaobo Zhang, Shenggen Fan, Linxiu Zhang, and Jikun Huang

#### **Environment and Production Technology Division**

International Food Policy Research Institute 2033 K Street, N.W. Washington, D.C. 20006 U.S.A.

and

Center for Chinese Agricultural Policy (CCAP)
Chinese Academy of Sciences

**July 2002** 

EPTD Discussion Papers contain preliminary material and research results, and are circulated prior to a full peer review in order to stimulate discussion and critical comment. It is expected that most Discussion Papers will eventually be published in some other form, and that their content may also be revised.

#### **ACKNOWLEDGMENTS**

The authors would like to thank the Jiangsu Provincial Statistical Bureau, the county statistical bureaus of the surveyed areas, and Liu Chengfang and Zhang Caiping from CCAP for their help in conducting the survey for this study. The authors are also grateful for the comments made at the International Conference on "Rural Investment, Growth, and Poverty Reduction" held in Beijing, November 5-6, 2001.

**ABSTRACT** 

In developing countries, identifying the most effective community-level governance

structure is a key issue and, increasingly, empirical evaluation of the effects of

democratization on the provision of local public goods is needed. Since the early 1990s, tens

of thousands of villages in rural China have held local-government elections, providing a

good opportunity to investigate the effect of democratization on the level of public goods

provision. Using a recent village survey conducted over a significant period of time, this

paper compares governance by elected officials with that of appointed cadres and finds that

elected officials tend to tax constituents less and provide them with higher levels of public

services.

Keywords: Governance, Democracy, Public goods provision, and China.

JEL classification code: D73, H41, P35.

ii

#### **TABLE OF CONTENTS**

1.	Introduction	1
2.	Governance and Provision of Public Goods	. 3
	The Evolution of Village Governance In China	
	Data and Descriptive Statistics	
	Empirical Analysis	
	Conclusions	
Re	eferences	21

### LOCAL GOVERNANCE AND PUBLIC GOODS PROVISION IN RURAL CHINA

Xiaobo Zhang<sup>1</sup>, Shenggen Fan<sup>1</sup>, Linxiu Zhang<sup>2</sup> and Jikun Huang<sup>2</sup>

#### 1. INTRODUCTION

In developing countries, identifying the most effective community-level governance structure is a key issue because vulnerable populations are often unable to access services provided by higher levels of government, and hence rely on local communities for their provision (World Bank 2000). Despite the importance of this issue in developing countries, few studies have quantitatively examined the link between governance and public goods provision at the local level, largely because of lack of detailed information (Dethier 1999).<sup>3</sup>

The recent massive transformation of village governance from an appointed system to an electoral system in rural China provides a good opportunity to empirically test the effect of democratic governance on public goods provision. Before the 1980s, village leaders were generally appointed by the higher levels government, and were more concerned with their superiors' needs than with the needs of local farmers (Fan 2001). In the 1980s, these political strongholds came under siege because of increasing conflicts between cadres and peasants over taxes and fees (He et al. 2001). Since then, tens of thousands of villages nationwide have implemented village elections. Such dramatic institutional shifts over time and large

<sup>&</sup>lt;sup>1</sup> Xiaobo Zhang and Shenggen Fan are Post-Doctoral Fellow and Senior Research Fellow in the Environment and Production Technology Division at IFPRI.

<sup>&</sup>lt;sup>2</sup> Linxiu Zhang and Jikun Huang are Deputy Director and Director of the Center for Chinese Agricultural Policy at CAS. They are also IFPRI Associates.

<sup>&</sup>lt;sup>3</sup> Using India as an example, Besley and Burgess (2001) show that public food distribution and calamity relief expenditures are greater in states with greater electoral accountability. La Porta et al. (1998) discuss the effect of governance on development at the macro-level using cross-country data but these studies were conducted at the macro level rather than the community level. The World Bank (2000) provides anecdotal evidence on the importance of local governance on the poor but lacks quantitative analyses.

variations across regions allow us to quantitatively assess the particular impact of elections on local public goods provision.

Most rural populations in China live in the countryside, relying on villages to provide basic infrastructure such as water supply and roads. Rural residents pay high taxes and fees, yet villages receive little financial redistribution or transfers from the central levels of government (Tsai 2000). The way a village is governed, therefore, can directly influence the effectiveness of public goods provision to the vast rural population.

Although a large body of literature exists on Chinese village elections, few link elections with economic performance. Among the published English papers, O'Brien and Li (2000), Oi and Rozelle (2000), Paster and Tan (2000), and Xiang (2000) have described the evolution and performance of village elections in great detail. The most influential Chinese publication is Xu Yong's book *Zhongguo Nongcun Cunmin Zizhi* (China's Rural Self-Government). With the exception of Tsai (2000), few studies have explored the link between governance and local public goods provision in particular. Based on fieldwork, Tsai provides a vivid description of local cadre behavior and rural governance but her study focuses on several villages for one year only. To our knowledge, no study has empirically quantified the impact of elections on the level of public goods provision using cross-region data for a long period.

Has the institutional shift in village governance caused changes in public goods and services provision? Have the elected village leaders been more responsive to the needs of

unpublished papers in this area. Most of these studies are from the perspectives of sociology, political science, and law.

<sup>&</sup>lt;sup>4</sup> The proceedings of the International Symposium on Villager Self-Government and Rural Social Development in China held in Beijing, China, September 2–5, 2000, contains the most comprehensive collection of

their communities given increased accountability? Under what mode of governance are elected cadres more efficient in providing public provisions?

Answering these questions requires comprehensive data collection ranging from social economic indicators to election practices at the village level. For this purpose, we conducted a village survey in Jiangsu Province in 2000. The data set includes detailed information on village governance, income, production, and public finance. Using this data set, we were able to examine the effects of governance on village revenues and expenditures. To isolate the effect of self-governance (or more specifically elections) on public goods provision, we controlled for village characteristics such as income levels, village size, and the development of township village enterprises (TVEs). Required information is available in the public domain on rural public goods provision and financing at the community level. To our knowledge, this is the first attempt to study the effect of self-governance on public good provision in China.

In the next section, we review the theory on governance and public goods provision; section three describes the development of rural governance structures in China; section four explains the data sources; section five presents the model and empirical estimations; and section six presents our conclusions.

#### 2. GOVERNANCE AND PROVISION OF PUBLIC GOODS

The major responsibility of a government is to provide public goods and services. The effectiveness of governance directly affects the day-to-day livelihood of vast numbers of people, especially those who rely heavily on public assistance for their survival. Although

emerging literature has examined the determinants and impacts of governance at the country level using cross-country data, studies at the more micro-level are scant, largely because of lack of data (La Porta et al. 1998). Cross-country results generally indicate that good governance is important for economic growth and public goods provision. Despite their usefulness in revealing empirical regularities at the international level, cross-country analyses provide little policy guidance on how to improve current governance structures at community levels—the levels at which change can most feasibly be implemented. In the context of developed countries, some theoretical and empirical evidence has shown that democratic governance does affect public goods provision (Lizzeri and Persico 1999; Besley and Burgess 2001; Besley and Coate 2001), but knowledge of the effect at the local level, in particular in developing countries, is very limited (Dethier 2000).

The key differences between elected representation and appointed representation are the degrees of decentralization, participation, and accountability (Dethier 2000; Yang and Su 2000). Decentralization reflects the fiscal relationship between central and local governments, constituting an incentive mechanism for local governments to mobilize their resources for economic development. Participation and accountability are important democratic functions for monitoring the delivery of public goods and services. In theory, democratic governance alone may not guarantee efficient delivery of public goods and services but it generally increases transparency and therefore reduces corruption.

Democratic governance is, however, more vulnerable to lobbying by special interest groups and difficulties in achieving consensus across heterogeneous groups (Bardhan 2000). For example, although India is one of the most democratic countries at the grassroots level,

the efficiency of public goods provision is poor by international standards (Dahl 1989).

Given the lack of a caste system like India's, this problem may not be as relevant in China.

The grassroots movement toward village elections in China provides a natural setting to test the impact of democratic governance on public goods provision in the context of extensive decentralization. In China, local government bears near complete fiscal responsibility for local public goods provision (Oi 1996; Tsai 2000). As a result, in much of China, local governments are actively involved in the management of local enterprises—the aforementioned township and village enterprises (TVEs). TVEs contribute a significant proportion of their profit to finance local public spending. Villages in poor areas, however, are forced to rely on the extraction of levies and compulsory apportionment; therefore, the relative tax burden is higher in areas with agricultural production as a major means of income than in areas with a more diverse nonfarm economy. To account for this, we controlled for TVE development and other factors such as village size in analyzing the effect of democratic elections.

#### 3. THE EVOLUTION OF VILLAGE GOVERNANCE IN CHINA

Right after the new republic was founded in 1949, China launched a large scale land reform to confiscate lands from landlords and allocate them to landless or small peasant households. By 1952, the land return was successfully complete. Beginning in 1952, some small-scale, peasant farmers voluntarily pooled their land and other resources to form a cooperative. At that time, farmers were free to join or leave these cooperatives without penalty. Soon, the government began to develop large, collective operations, and by 1956

most of China's agricultural production was done on a collective basis (Lin 1990; Putterman 1990). From 1958, the central government promoted an even larger scale of production in agriculture. Advanced cooperatives were merged into communes, with commune leaders responsible for the production and public-investment decisions.

Following the Great Famine, communal sub-units, called "production teams," were formed. Each village normally had several production units and villages were grouped together into what was called "people's communes." Decisions regarding farm operations were made primarily by team leaders (MOA 1989). Until the late 1970s, the higher levels of government (people's communes and county governments) generally appointed rural community leaders. Each village (then called "production brigades") had a communist party branch and an administrative office. The secretary of the party branch had much greater control than the head of the administrative office, and both represented the state in executing government policies such as grain procurement.

In China, the village is the most decentralized community unit. Village leaders have four areas of responsibility: 1) collecting taxes and levying fees; 2) implementing family planning; 3) fulfilling grain procurement quotas; and 4) providing public goods and services (Rozelle 1994; Xu 2000). An appointed cadre was more concerned with the first three responsibilities because they affected his prospects for promotion. As a result, providing public services to local constituents was often a low priority (Xu 1997). Nonetheless, village leaders still played a key role in decisions on public services such as roads, water supply, schools, and health clinics to rural residents, as the central government seldom redistributed funds back to the villages.

Since the 1980s, a dramatic change has occurred.<sup>5</sup> In the late 1970s and early 1980s, farmers initiated an historical rural reform to decentralize agricultural production from the communal system to individual households. In response to the sudden abolition of people's communes, and the shift of production from collective farming to the household system, a new form of governance—the village committee—gradually emerged, beginning in Guangxi province. By 1985, nearly one million village committees were established but their leadership by committee chairmen, in the majority of cases, went uncontested.<sup>6</sup>

During the period 1986–90, reform continued and new laws were enacted. In particular, in November of 1987, the National People's Congress (NPC) approved the influential *Organic Law of Village Committees* (Draft). The law laid out comprehensive provisions on the organization, function, and election of village committees and assemblies.<sup>7</sup> By the end of 1989, experimental village elections took place in 14 provinces, six of which drafted province-specific amendments to the Organic Law.

Based on the results of these experiments, the central government called for widespread implementation of village elections in 1990, and in 1998, NPC officially revised and passed the Organic Law. By the end of 1998, 832,900 villages introduced elections, thanks in large part to the overwhelming participation of farmers (Xiang 2000). The election procedure has been fairly heterogeneous across regions. Some areas, for example, first elect members of village committees, who in turn elect the village committee chairman from their

-

<sup>&</sup>lt;sup>5</sup> This summary is based on the first chapter of CRLSRT (2000).

<sup>&</sup>lt;sup>6</sup> The committee serves as the village administrative office, and its committee chairman is nominally the village head

<sup>&</sup>lt;sup>7</sup> In principle, a village assembly or village representative assembly is the supreme decision making body because it elects village committees but in practice, the village committee is responsible for the village's daily management.

membership, while in other areas, the village committee chairman and village committee members are elected simultaneously.

In Jiangsu Province, widespread village elections did not commence until the early 1990s when its people's congress passed implementation amendments to the Organic Law. By 1994, more than 30,000 village committees were established through contested elections, empowering more than one million assembly representatives, or an average of 33 representatives per village (CRLSRT 2000). Because the implementation of elections was largely left to local governments, large variations exist across villages in the timing of their transition to democracy.

The election of village committees and the establishment of a system of representation monitors leadership by local officials and reduces conflicts between cadres and peasants. As previously described, it was anticipated that elected cadres would become more responsive to the needs of their constituents, and therefore improve their provision of public goods and services. The election process and the power structure of governance, however, are far more complex in reality and vary greatly across regions as discussed in Oi and Rozelle (2000). Shang (1999) highlights the major irregularities of elections and their adverse effects. Whether the newfound self-governance has positively affected the provision of public goods remains an important empirical question.

#### 4. DATA AND DESCRIPTIVE STATISTICS

The data set used in this paper comes from a 2000 survey jointly conducted by the Center for Chinese Agricultural Policy (CCAP), Jiangsu Statistical Bureau, and the

International Food Policy Research Institute (IFPRI). The survey covered 60 villages in six counties evenly distributed across Jiangsu province. In Zhangjiagang and Yixing (Southern Jiangsu), TVEs are well developed and the largest shares of family incomes are derived from nonfarm activities. Shuyang and Gangyu are the least developed areas (Northern Jiangsu) where most families continue to rely on agriculture for their living. Dongtai and Xinhua fall between the previous two categories in terms of both economic and social development.

In each county, we randomly selected 10 villages. In each village, we interviewed village leaders and accountants. By examining historical accounting records and checking with village officials, we obtained village information for 1985, 1990, and 1995–99. The survey provides detailed information about village characteristics (such as distance to markets and the county seat), economic activities (such as agricultural production, township and village enterprises, and public finance and spending), as well as the major characteristics of village leaders (such as education and previous work experience).

Among the 60 villages surveyed, two lacked historical records and therefore were dropped from our analysis. Table 1 provides descriptive statistics on public finance at the village level.

Table 1—Village public finance, 1985 prices

	1985	1990	1995	1996	1997	1998	1999	Average
Per Capita Revenues (Yuan, 1985 price)	60.4	57.7	49.8	54.1	59.7	63.3	66.5	58.8
Household (%)	45.0	39.6	41.9	40.0	36.8	37.5	35.8	39.5
Township & village enterprises (TVEs) (%)	24.5	33.7	31.6	33.9	28.4	27.8	26.8	29.5
Upper governments (%)	0.3	3.0	2.0	3.0	5.3	6.1	6.9	3.8
Others (%)	30.3	23.8	24.5	23.1	29.5	28.6	30.4	27.2
Per Capita Expenditure (Yuan)	60. 3	50.5	51.1	54.2	57.9	63.7	65.8	57.7
Public goods provision (%)	34.7	35.9	38.9	39.2	42.8	40.2	38.3	38.6
Irrigation (%)	3.5	10.6	8.6	7.2	7.3	8.6	10.6	8.1
Education (%)	3.3	3.1	2.6	2.3	4.2	2.7	1.9	2.9
Road (%)	3.0	2.0	5.1	5.2	9.8	7.2	7.2	5.6
Power and communication (%)	1.0	1.8	2.0	2.0	1.7	1.0	2.2	1.6
Transfer to the poor (%)	2.4	2.2	2.0	2.3	2.3	2.1	1.9	2.2
Administration expenses (%)	22.2	22.0	23.1	24.1	22.9	22.0	25.6	23.1
Others (%)	43.2	42.1	38.0	36.7	34.4	37.8	36.1	38.3

Taxes and fees collected directly from households accounted for more than one third of village revenues. Another major source of revenue was fees collected from TVEs.

Although the higher levels of government provide higher financial contributions to villages (most as a compensation for land procurement), the share averaged less than four percent over the survey period. Hence, local public goods provision relies primarily on financing from local communities, confirming the findings by Oi and Rozelle (2000) (Table 1).

The average per capita expenditure for the sample period, measured in 1985 constant prices, was 58 yuan, of which 40 percent was spent on public goods provision and over 20 percent on administration, including salaries for village leaders and public relations activities.

Financial transfers to the disabled and poor accounted for only about 2 percent of the average per capita expenditure. Irrigation was the major form of public investment, accounting for about 8 percent on average. Spending on roads, education, and power and communications ranked second, third, and fourth, respectively.

Figure 1 shows the number of villages that adopted the election process; of our 60-village sample, the number holding elections increased from 13 in 1985 to 49 in 2000. Table 2 reports the mode of governance in 1999. Among the 58 villages surveyed, 49 held village elections. The mode of local governance was diverse: in only one village was the committee chairman the major decision maker on public investment. In 17 villages, party secretaries had the final say on village affairs, indicating that the communist party still dominates in rural communities. In nine villages, both party secretaries and village heads made decisions jointly. Fourteen villages reported that village committees played a key role in their village's decision-making process. The diverse governance structure reflects a dramatic change in leadership styles from direct oversight to more instructive consultation.



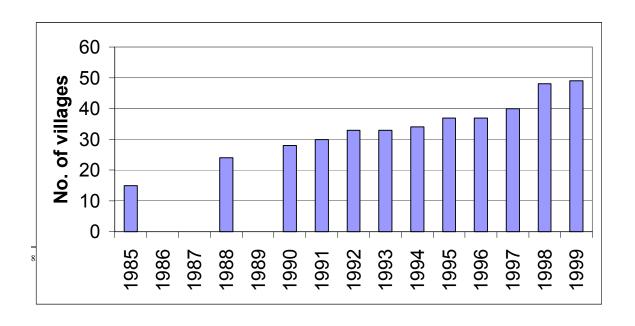


Table 2—The mode of local governance, 1999

Variable	Observations
Whether village leader is elected	
Yes	49
No	9
Who is making decisions in the village?	
Party secretary	17
Village head	1
Both of the above	9
Village committee	14
Others	17

To further evaluate the effect of local self-governance, we compared villages with appointed and elected leaders on the criteria of leader characteristics, levels of economic and social welfare, and levels of public finance (Table 3). In general, no significant difference was evident in either the age and education levels of appointed and elected cadres. Elected village heads were likely to be members of the communist party and were more likely to have worked in TVEs. Among the 58 village leaders, only two identified previous significant employment in the farm sector, while all others reported having held nonfarm positions prior to taking office.

The average income in villages with elected leaders was more than 500 yuan higher than those with appointed leaders. The numbers of telephones, refrigerators, and new houses built in the past five years per hundred households—the three major indicators of rural living standard—were also higher in the villages with elected leaders. The structures of public finance also differed between the two types of villages. Taxes and fees levied directly from households in villages governed by appointed cadres averaged 98 yuan, compared with 73 yuan in villages with elected officials, where a significant amount was generated from TVEs.

As a result, in villages holding elections, the tax burden on rural households was lower, measured as the ratio of taxes and fees to income, and per capita public expenditure was higher than in villages with appointed cadres. To quantify the impact of governance on public finance, a more formal analysis controlling for other factors is needed.

Table 3--Major indicators in 1999: A comparison of villages

	Appointed	Elected
Village leader characteristics		
Age	43	42
Years of schooling	8.6	8.9
Party membership (%)	77.8	87.5
Years of working experience in the township village enterprise (TVE)	0.9	1.7
Income and development indicators		
Income per capita (current yuan)	3,196.1	3,752.6
Number of telephones per 100 household	22.0	36.6
Number of refrigerators per 100 household	16.7	21.6
Number of new houses built per 100 household	14.5	21.8
Public Finance		
Tax and fee on households per capita (current yuan)	97.7	72.6
Tax levied on TVE per capita (current yuan)	5.6	67.5
Public spending per capita (current yuan)	59.6	98.26

#### 5. EMPIRICAL ANALYSIS

In the econometric analysis, we compared villages with elected versus appointed leaders on the basis of per capita taxation levels and per capita public spending. In addition to the mode of governance variable, we also considered income, TVE revenues, and village size in our analysis.<sup>9</sup>

\_

<sup>&</sup>lt;sup>9</sup> Public finance and income variables have been deflated to 1985 yuan using provincial consumer price indexes.

As income increases, demand for the provision of public goods is likely to increase, which in turn promotes improved government performance (North 1990). Therefore, in our analysis the level of income is included and excluded as an explanatory variable under different specifications. In addition, taxing TVEs affords lower transaction costs than taxing individuals, particularly when tensions arise between villagers and cadres. It is expected that the level of TVE development affects the villagers' tax burden and the capacity of local public goods provision.

Because economies of scale are commonly inherent in the provision of many public goods, it is highly possible that the unit cost of public goods provision might decrease as the village size increases. We expect the village size, therefore, to be negatively correlated with the per capita tax burden. Because we know the year elections began in each village, we were able to use a dummy variable to capture the institutional shift by setting one for observations with elections and zero for those with appointed cadres.

To control for village-specific fixed effects, such as geographic location, we included village dummies in the regressions. It is highly likely that public finance, income level, and TVE revenue are determined by the same economic process, which could result in endogeneity problems and cause a biased estimation, so for all the specifications, we report both ordinary least square (OLS) regressions and instrumental variable (IV) estimations. We used lagged income levels and TVE revenues, distance to the county seat, village size, and village fixed effects as instruments for income, TVE, and election in the IV estimations. <sup>10</sup>

\_

<sup>&</sup>lt;sup>10</sup> Because the occurrence of village elections is a binary variable (with value of 0 or 1), we first calculate its predicted value using a probit model and then use the predicted value as a regressor in the IV estimations.

Tables 4 and 5 report the regressions on the effects of elections on two aspects of public finance—per capita taxation and per capita public expenditure, respectively. The village dummies are included in all regressions and are jointly statistically significant. In general, the results for the OLS and IV estimations are similar (Tables 4 and 5).

Several features are apparent from the tables. First, elections do affect the level of public financing and spending. The statistically significant and negative coefficients for the election dummy in Table 4 indicate that elected leaders tend to collect less taxes and fees directly from residents than do appointed cadres. The coefficients for the same variable in Table 5 are also statistically significant but positive, signifying a positive impact of elections on the level of public spending.

Table 4—The effect of election on individual's tax burden

Variables	OLS	IV	OLS	IV
Per capita income	3.40	4.60		
	(3.07)	(3.92)		
Township village enterprise (TVE)	-2.19	-7.96	0.84	7.88
revenue per capita (/100)	(5.24)	(13.43)	(5.10)	(17.56)
Village size	-61.57**	-60.94**	-58.86**	-55.47**
	(13.80)	(14.19)	(13.58)	(13.88)
Election	-5.71**	-10.28**	-4.94*	-9.68**
	(2.71)	(3.48)	(2.62)	(3.50)
Adjusted R <sup>2</sup>	0.78	0.78	0.78	0.78

Note: The sample covers 1985, 1990, and 1995–99. Income and village size are in logarithmic forms. The regime dummy is set to one for observations with electoral cadres and to zero for those without electoral leaders. Figures in parentheses are standard errors; \* and \*\* indicate statistical significance at the 10 percent and 5 percent levels, respectively. The results for the fixed village effects, which are jointly statistically significant, are included in the regressions but not reported here.

Table 5—The effect of election on per capita public expenditure

Variables	OLS	IV	OLS	IV
Per capita income	5.23	-3.32		
	(4.70)	(6.43)		
Township village enterprise (TVE)	35.68**	85.10**	37.76**	50.00*
revenue per capita (/1,000)	(8.01)	(22.02)	(7.80)	(26.98)
Village size	-47.14**	-34.51	-42.97**	-41.95**
	(21.09)	(23.26)	(20.76)	(21.33)
Election	10.80**	13.42**	11.98**	14.61**
	(4.14)	(5.70)	(4.01)	(5.38)
Adjusted R <sup>2</sup>	0.79	0.76	0.79	0.79

Note: The dependent variable is the per capita public expenditure of each village, deflated using the rural consumer price index. The sample covers 1985, 1990, and 1995–99. Income and village size are in logarithmic forms. The regime dummy is set to one for observations with electoral cadres and to zero for those without electoral leaders. Figures in parentheses are standard errors; \* and \*\* indicate statistical significance at the 10 percent and 5 percent levels, respectively. The results for the fixed village effects, which are jointly statistically significant, are included in the regressions but are not reported here.

Second, revenues from TVEs are an important source of local public finance. The coefficients for the TVE variables in the regressions on public expenditure in Table 5 are statistically significant. Villages with highly developed TVEs also tend to exhibit higher public expenditures. The more highly developed the TVEs, the greater the levels of financial resources available for public spending.

Third, the coefficient for village size is statistically significant and negative in the regressions on tax levels and public expenditures. This finding supports the hypothesis that the unit cost of public goods provision in larger villages is lower than in smaller villages given the scale effect. Interestingly, the coefficients for the income variable are not statistically significant although their signs are consistent with theoretical predictions. When the income variable is dropped from the regressions, the other coefficients change little.

Table 6 further examines the role of decision making on public finance for the most recent term of village management, for which we know the mode of decision-making. In addition to per capita tax levels and public expenditures, we also used the efficiency of public investment (represented as the ratio of public expenditure to tax levels) as an independent variable. For each dependant variable, we present two sets of regressions, OLS and IV estimations. Similar to the IV regressions in Tables 4 and 5, we used lagged income levels and TVE revenues, distance to the county seat, village size, and county fixed effects as instruments for income and TVE revenue in the IV estimations (Table 6).

Since the data cover only the most recent years, inclusion of village dummies would lead to a serious multicollinearity problem; therefore, we replaced the village dummies with six county dummies. To reduce a possible heteroskedasticity problem across villages, we also used robust regressions to adjust standard errors. The mode of decision making is categorized by the degree of democratization: mode 1 indicates the party secretary or village head makes decisions; mode 2 indicates the party secretary and village head make decisions jointly; and mode 3 indicates that the village committee, rather than individual leaders, makes decisions. Setting the first governance mode as the default and other two modes as dummy variables, we are able to investigate the effects the three modes of decision-making.

Table 6—The mode of decision-making and local public finance

Variables	Per capita tax burden (OLS)	Per capita tax burden (IV)	Per capita public expenditure (OLS)	Per capita public Per capita public expenditure expenditure (OLS) (IV)	Public expenditure/ tax burden (OLS)	Public expenditure/ tax burden (IV)
Per capita income	22.80** (8.33)	26.15**	57.77** (21.49)	53.82* (22.26)	3.37** (1.53)	3.12** (1.53)
Township village enterprise (TVE) revenue per capita (100 yuan)	-3.58 (3.90)	-1.72 (5.55)	7.11 (18.63)	17.73 (28.10)	0.14 (1.49)	0.23 (2.43)
Village size	-20.91** (4.94)	-20.66** (4.98)	-7.63 (8.16)	-6.47 (9.30)	-0.16 (0.54)	-0.19 (0.61)
Mode of decision making						
Party secretary and village leader	18.64** (7.23)	19.72** (7.36)	11.88 (8.88)	11.46 (9.37)	0.52 (0.46)	0.49 (0.49)
Village committee	-3.46 (5.38)	-3.98 (5.21)	11.36 (12.67)	9.90 (13.86)	1.90** (0.92)	1.93* (1.02)
$\mathbb{R}^2$	0.295	0.309	0.429	0.426	0.515	0.515

Note: Because we only know the decision-making mode for the most recent term of management, the regressions are based on the most recent terms of village leaders. In view of the possibility of endogeneity problems inherent in income and TVE revenue variables, we use lagged per capita income and TVE revenue, distance to the county seat, village size, mode of decision making, and county dummies in the instrument variable (IV) estimations. Figures in parentheses are standard errors; \* and \*\* indicate statistical significance at the 10 percent and 5 percent levels, respectively

In the two regressions on per capita taxation levels, shared power between the party secretary and village head (mode 2) has a larger effect than centralized governance (the default). Under the governance of the village committee (mode 3), the per capita taxation levels are lower, but not statistically significant, than the joint decision making by the party secretary or village head (mode 2). In regressions on per capita expenditures, the coefficients for the two modes of decision-making are positive but insignificant. When public investment efficiency is considered, decision-making by village committee is significantly positive, while power sharing has a small, insignificant, and positive effect compared with the default mode. The results suggest that when decisions are made by a group of people rather by one or two individuals, the efficiency of public spending is higher, perhaps because of the reduction in profligate spending by village leaders.

#### 6. CONCLUSIONS

Grassroots village elections have been shaping both political and economic landscapes in rural China. This paper examines the effect of village self-governance on the provision of public goods using a recent village survey. The study finds that elected local leaders tend to tax farm households less and spend more on local public goods, probably as a result of the increased transparency of the budget. Elections have provided the villagers with the ability to monitor the prospective excesses of their leaders and have improved the accountability of decision-making. In villages where power is shared, the level of public spending is higher.

20

In sum, the mode of governance does affect the efficiency of public goods provision. In view of the current reform of fee collection to unified tax, one should be aware of possible adverse effects if villages lose control of fiscal revenues. Currently, village revenues are collected under various categories of fees. With the new standard taxation system, a fiscal arrangement between villages and the central levels of government must be designed to ensure that village communities continue to play a major role in providing public services.

TVEs have been a major source of local public finance, especially in villages governed by elected cadres. Large villages are more cost-effective in providing public services than are small villages, given the scale and externality effects inherent in many forms of local public goods. Considering the low efficiency of small villages in providing public services, merging small villages into large ones, and promoting the urbanization of rural areas could be a good strategy.

Given the short history of village elections in China, we are unable to evaluate their long-term effects on social and economic welfare. Follow-up studies will be necessary to develop an in-depth understanding. The interactions between village committees and other governing organizations at the community level will be an emerging area for further study, along with the prospect of broadening the current election process to the township level in the hope of achieving similar gains to those seen at the village level.

#### REFERENCES

- Bardhan, P. 2000. Local governance and delivery of public goods. In *Governance, decentralization and reforms in China, India, and Russia,* ed. Jean-Jacques Dethier. Boston: Kluwer Academic Publishers.
- Barro, R. 1996. Democracy and growth. *Journal of Economic Growth* 1: 1–27.
- Besley, T. and R. Burgess. 2001. *The political economy of government responsiveness: Theory and evidence from India*. Working Paper, London School of Economics.
- Besley, T. and S. Coate. 2001. *Elected versus appointed regulators: Theory and evidence*. Working Paper, London School of Economics.
- China Rural Local Self-Governance Research Team (CRLSRT). 2000. *Study on China's rural self-governance* (in Chinese). Beijing: China Agriculture Publishing House.
- Dahl, R. 1989. *Democracy and its critics*. New Haven, Conn., U.S.A.: Yale University Press.
- Dethier, J. 1999. *Governance and economic performance: A survey.* ZEF Discussion Paper on Development Policy.
- Dethier, J., ed. 2000. *Governance, decentralization and reforms in China, India, and Russia*. Boston: Kluwer Academic Publishers.
- Fan, Y. 2001. Evolution and features of village committee election. *China rural survey No* 1 (2001): 54–63.
- He, Y. Kejian X. and G. Zhou. 2001 A survey and thinking on re-election of village committee. *Chinese Rural Economy* 4 (2001): 73–75.
- North, D. 1990. *Institutions, institutional change, and economic performance*. Cambridge, U.K.: Cambridge University Press.
- La Porta, R., F. Lopz-de-Silanes, A. Shleifer, and R. Vishny. 1998. *The quality of government*. NBER Working Paper No. 6727, September.
- Lin, J.Y. 1990. Collectivization and China's agricultural crisis in 1959–1961. *Journal of Political Economy* 98 (6): 1228–1252.
- Lizzeri, A. and N. Persico. 1999. *The provision of public goods under alternative electoral incentives*. Working Papers in Economics Theory, No. 99F4, Princeton University.

- Ministry of Agriculture (MOA). 1989. Forty years of rural China. Zhengzhou: Zhongyuan Farmers' Publishing House.
- O'Brien, K.J. and L. Li. 2000. Accommodating "democracy" in a one-party state: Introducing village elections in China. *China Quarterly* June: 465-489.
- Oi, J. 1996. Economic development, stability and democratic village self-governance. In. *China Review*, ed. M. Brosseau, S. Pepper, and T. Shu-ki. Hong Kong: Chinese University of Hong Kong.
- Oi, J.O., and S. Rozelle. 2000. Elections and power: The locus of decision-making in Chinese villages. *China Quarterly* June: 513–539.
- Paster, R. A. and Q. Tan. 2000. The meaning of China's village elections *China Quarterly* June: 465–489.
- Putterman, L. 1990. Effort, productivity, and incentives in a 1970s Chinese people's commune. *Journal of Comparative Economics* 14: 88–104.
- Rozelle, S. 1994. Decision-making in China's rural economy: The linkage between village leaders and farm households. *China Quarterly* 137: 99–124.
- Shang, Y. 1999. Myth and reality: The Chinese village elections. *Perspective* 1 (2). (http://www.oycf.org/Perspectives/2\_110299/society\_and\_culture\_A.htm)
- Tsai, L. 2000. Strategies of rule or ruin? Governance and public good provisions in rural China. Paper presented at the international symposium "Villager Self-Government and Rural Social Development in China," September 2–5, Beijing.
- Xiang, J. 2000. Self-government in Chinese villages: An evaluation. *Perspective* 1 (4) (http://www.oycf.org/Perspectives/4 022900/self government.htm).
- Xu, Y. 1997. Zhongguo nongcun cunmin zizhi (China's rural self-government). Wuhan: Central China Normal University Press.
- World Bank. 2000. World Development Report 2000/2001: Attacking Poverty. Washington, D.C.: World Bank.

#### LIST OF EPTD DISCUSSION PAPERS

- O1 Sustainable Agricultural Development Strategies in Fragile Lands, by Sara J. Scherr and Peter B.R. Hazell, June 1994.
- O2 Confronting the Environmental Consequences of the Green Revolution in Asia, by Prabhu L. Pingali and Mark W. Rosegrant, August 1994.
- *Infrastructure and Technology Constraints to Agricultural Development in the Humid and Subhumid Tropics of Africa*, by Dunstan S.C. Spencer, August 1994.
- 04 Water Markets in Pakistan: Participation and Productivity, by Ruth Meinzen-Dick and Martha Sullins, September 1994.
- The Impact of Technical Change in Agriculture on Human Fertility: District-level Evidence From India, by Stephen A. Vosti, Julie Witcover, and Michael Lipton, October 1994.
- 06 Reforming Water Allocation Policy Through Markets in Tradable Water Rights: Lessons from Chile, Mexico, and California, by Mark W. Rosegrant and Renato Gazri S, October 1994.
- 707 Total Factor Productivity and Sources of Long-Term Growth in Indian Agriculture, by Mark W. Rosegrant and Robert E. Evenson, April 1995.
- 08 Farm-Nonfarm Growth Linkages in Zambia, by Peter B.R. Hazell and Behjat Hoijati, April 1995.
- 09 Livestock and Deforestation in Central America in the 1980s and 1990s: A Policy Perspective, by David Kaimowitz (Interamerican Institute for Cooperation on Agriculture), June 1995.
- 10 Effects of the Structural Adjustment Program on Agricultural Production and Resource Use in Egypt, by Peter B.R. Hazell, Nicostrato Perez, Gamal Siam, and Ibrahim Soliman, August 1995.
- 11 Local Organizations for Natural Resource Management: Lessons from Theoretical and Empirical Literature, by Lise Nordvig Rasmussen and Ruth Meinzen-Dick, August 1995.

- 12 Quality-Equivalent and Cost-Adjusted Measurement of International Competitiveness in Japanese Rice Markets, by Shoichi Ito, Mark W. Rosegrant, and Mercedita C. Agcaoili-Sombilla, August 1995.
- Role of Inputs, Institutions, and Technical Innovations in Stimulating Growth in Chinese Agriculture, by Shenggen Fan and Philip G. Pardey, September 1995.
- 14 Investments in African Agricultural Research, by Philip G. Pardey, Johannes Roseboom, and Nienke Beintema, October 1995.
- Role of Terms of Trade in Indian Agricultural Growth: A National and State Level Analysis, by Peter B.R. Hazell, V.N. Misra, and Behjat Hoijati, December 1995.
- 16 Policies and Markets for Non-Timber Tree Products, by Peter A. Dewees and Sara J. Scherr, March 1996.
- 17 Determinants of Farmers' Indigenous Soil and Water Conservation Investments in India's Semi-Arid Tropics, by John Pender and John Kerr, August 1996.
- Summary of a Productive Partnership: The Benefits from U.S. Participation in the CGIAR, by Philip G. Pardey, Julian M. Alston, Jason E. Christian, and Shenggen Fan, October 1996.
- 19 Crop Genetic Resource Policy: Towards a Research Agenda, by Brian D. Wright, October 1996.
- 20 Sustainable Development of Rainfed Agriculture in India, by John M. Kerr, November 1996.
- 21 Impact of Market and Population Pressure on Production, Incomes and Natural Resources in the Dryland Savannas of West Africa: Bioeconomic Modeling at the Village Level, by Bruno Barbier, November 1996.
- Why Do Projections on China's Future Food Supply and Demand Differ? by Shenggen Fan and Mercedita Agcaoili-Sombilla, March 1997.
- 23 Agroecological Aspects of Evaluating Agricultural R&D, by Stanley Wood and Philip G. Pardey, March 1997.
- 24 Population Pressure, Land Tenure, and Tree Resource Management in Uganda, by Frank Place and Keijiro Otsuka, March 1997.

- 25 Should India Invest More in Less-favored Areas? by Shenggen Fan and Peter Hazell, April 1997.
- 26 Population Pressure and the Microeconomy of Land Management in Hills and Mountains of Developing Countries, by Scott R. Templeton and Sara J. Scherr, April 1997.
- 27 Population Land Tenure and Natural Resource Management: The Case of Customary Land Area in Malawi, by Frank Place and Keijiro Otsuka, April 1997.
- Water Resources Development in Africa: A Review and Synthesis of Issues, Potentials, and Strategies for the Future, by Mark W. Rosegrant and Nicostrato D. Perez, September 1997.
- Financing Agricultural R&D in Rich Countries: What's Happening and Why? by Julian M. Alston, Philip G. Pardey, and Vincent H. Smith, September 1997.
- 30 How Fast Have China's Agricultural Production and Productivity Really Been Growing? by Shenggen Fan, September 1997.
- Does Land Tenure Insecurity Discourage Tree Planting? Evolution of Customary Land Tenure and Agroforestry management in Sumatra, by Keijiro Otsuka, S. Suyanto, and Thomas P. Tomich, December 1997.
- Natural Resource Management in the Hillsides of Honduras: Bioeconomic Modeling at the Micro-Watershed Level, by Bruno Barbier and Gilles Bergeron, January 1998.
- 33 Government Spending, Growth, and Poverty: An Analysis of Interlinkages in Rural India, by Shenggen Fan, Peter Hazell, and Sukhadeo Thorat, March 1998. Revised December 1998.
- 34 Coalitions and the Organization of Multiple-Stakeholder Action: A Case Study of Agricultural Research and Extension in Rajasthan, India, by Ruth Alsop, April 1998.
- Dynamics in the Creation and Depreciation of Knowledge and the Returns to Research, by Julian Alston, Barbara Craig, and Philip Pardey, July, 1998.
- 36 Educating Agricultural Researchers: A Review of the Role of African Universities, by Nienke M. Beintema, Philip G. Pardey, and Johannes Roseboom, August 1998.

- 37 *The Changing Organizational Basis of African Agricultural Research,* by Johannes Roseboom, Philip G. Pardey, and Nienke M. Beintema, November 1998.
- 38 Research Returns Redux: A Meta-Analysis of the Returns to Agricultural R&D, by Julian M. Alston, Michele C. Marra, Philip G. Pardey, and T.J. Wyatt, November 1998.
- 39 Technological Change, Technical and Allocative Efficiency in Chinese Agriculture: The Case of Rice Production in Jiangsu, by Shenggen Fan, January 1999.
- 40 The Substance of Interaction: Design and Policy Implications of NGO-Government Projects in India, by Ruth Alsop with Ved Arya, January 1999.
- 41 Strategies for Sustainable Agricultural Development in the East African Highlands, by John Pender, Frank Place, and Simeon Ehui, April 1999.
- 42 Cost Aspects of African Agricultural Research, by Philip G. Pardey, Johannes Roseboom, Nienke M. Beintema, and Connie Chan-Kang, April 1999.
- 43 Are Returns to Public Investment Lower in Less-favored Rural Areas? An Empirical Analysis of India, by Shenggen Fan and Peter Hazell, May 1999.
- 44 Spatial Aspects of the Design and Targeting of Agricultural Development Strategies, by Stanley Wood, Kate Sebastian, Freddy Nachtergaele, Daniel Nielsen, and Aiguo Dai, May 1999.
- 45 Pathways of Development in the Hillsides of Honduras: Causes and Implications for Agricultural Production, Poverty, and Sustainable Resource Use, by John Pender, Sara J. Scherr, and Guadalupe Durón, May 1999.
- Determinants of Land Use Change: Evidence from a Community Study in Honduras, by Gilles Bergeron and John Pender, July 1999.
- 47 Impact on Food Security and Rural Development of Reallocating Water from Agriculture, by Mark W. Rosegrant and Claudia Ringler, August 1999.
- 48 Rural Population Growth, Agricultural Change and Natural Resource Management in Developing Countries: A Review of Hypotheses and Some Evidence from Honduras, by John Pender, August 1999.

- 49 Organizational Development and Natural Resource Management: Evidence from Central Honduras, by John Pender and Sara J. Scherr, November 1999.
- 50 Estimating Crop-Specific Production Technologies in Chinese Agriculture: A Generalized Maximum Entropy Approach, by Xiaobo Zhang and Shenggen Fan, September 1999.
- 51 *Dynamic Implications of Patenting for Crop Genetic Resources*, by Bonwoo Koo and Brian D. Wright, October 1999.
- 52 Costing the Ex Situ Conservation of Genetic Resources: Maize and Wheat at CIMMYT, by Philip G. Pardey, Bonwoo Koo, Brian D. Wright, M. Eric van Dusen, Bent Skovmand, and Suketoshi Taba, October 1999.
- Past and Future Sources of Growth for China, by Shenggen Fan, Xiaobo Zhang, and Sherman Robinson, October 1999.
- 54 The Timing of Evaluation of Genebank Accessions and the Effects of Biotechnology, by Bonwoo Koo and Brian D. Wright, October 1999.
- New Approaches to Crop Yield Insurance in Developing Countries, by Jerry Skees, Peter Hazell, and Mario Miranda, November 1999.
- 56 Impact of Agricultural Research on Poverty Alleviation: Conceptual Framework with Illustrations from the Literature, by John Kerr and Shashi Kolavalli, December 1999.
- 57 Could Futures Markets Help Growers Better Manage Coffee Price Risks in Costa Rica? by Peter Hazell, January 2000.
- 58 *Industrialization, Urbanization, and Land Use in China,* by Xiaobo Zhang, Tim Mount, and Richard Boisvert, January 2000.
- Water Rights and Multiple Water Uses: Framework and Application to Kirindi Oya Irrigation System, Sri Lanka, by Ruth Meinzen-Dick and Margaretha Bakker, March 2000.
- 60 Community natural Resource Management: The Case of Woodlots in Northern Ethiopia, by Berhanu Gebremedhin, John Pender and Girmay Tesfaye, April 2000.

- What Affects Organization and Collective Action for Managing Resources? Evidence from Canal Irrigation Systems in India, by Ruth Meinzen-Dick, K.V. Raju, and Ashok Gulati, June 2000.
- 62 The Effects of the U.S. Plant Variety Protection Act on Wheat Genetic Improvement, by Julian M. Alston and Raymond J. Venner, May 2000.
- Integrated Economic-Hydrologic Water Modeling at the Basin Scale: The Maipo River Basin, by M. W. Rosegrant, C. Ringler, D.C. McKinney, X. Cai, A. Keller, and G. Donoso, May 2000.
- 64 Irrigation and Water Resources in Latin America and he Caribbean: Challenges and Strategies, by Claudia Ringler, Mark W. Rosegrant, and Michael S. Paisner, June 2000.
- 65 The Role of Trees for Sustainable Management of Less-favored Lands: The Case of Eucalyptus in Ethiopia, by Pamela Jagger & John Pender, June 2000.
- 66 *Growth and Poverty in Rural China: The Role of Public Investments*, by Shenggen Fan, Linxiu Zhang, and Xiaobo Zhang, June 2000.
- 67 Small-Scale Farms in the Western Brazilian Amazon: Can They Benefit from Carbon Trade? by Chantal Carpentier, Steve Vosti, and Julie Witcover, September 2000.
- 68 An Evaluation of Dryland Watershed Development Projects in India, by John Kerr, Ganesh Pangare, Vasudha Lokur Pangare, and P.J. George, October 2000.
- 69 Consumption Effects of Genetic Modification: What If Consumers Are Right? by Konstantinos Giannakas and Murray Fulton, November 2000.
- 70 South-North Trade, Intellectual Property Jurisdictions, and Freedom to Operate in Agricultural Research on Staple Crops, by Eran Binenbaum, Carol Nottenburg, Philip G. Pardey, Brian D. Wright, and Patricia Zambrano, December 2000.
- 71 Public Investment and Regional Inequality in Rural China, by Xiaobo Zhang and Shenggen Fan, December 2000.
- 72 Does Efficient Water Management Matter? Physical and Economic Efficiency of Water Use in the River Basin, by Ximing Cai, Claudia Ringler, and Mark W. Rosegrant, March 2001.

- Monitoring Systems for Managing Natural Resources: Economics, Indicators and Environmental Externalities in a Costa Rican Watershed, by Peter Hazell, Ujjayant Chakravorty, John Dixon, and Rafael Celis, March 2001.
- 74 Does Quanxi Matter to NonFarm Employment? by Xiaobo Zhang and Guo Li, June 2001.
- The Effect of Environmental Variability on Livestock and Land-Use Management: The Borana Plateau, Southern Ethiopia, by Nancy McCarthy, Abdul Kamara, and Michael Kirk, June 2001.
- Market Imperfections and Land Productivity in the Ethiopian Highlands, by Stein Holden, Bekele Shiferaw, and John Pender, August 2001.
- 77 Strategies for Sustainable Agricultural Development in the Ethiopian Highlands, by John Pender, Berhanu Gebremedhin, Samuel Benin, and Simeon Ehui, August 2001.
- 78 Managing Droughts in the Low-Rainfall Areas of the Middle East and North Africa: Policy Issues, by Peter Hazell, Peter Oram, Nabil Chaherli, September 2001.
- 79 Accessing Other People's Technology: Do Non-Profit Agencies Need It? How To Obtain It, by Carol Nottenburg, Philip G. Pardey, and Brian D. Wright, September 2001.
- The Economics of Intellectual Property Rights Under Imperfect Enforcement:

  Developing Countries, Biotechnology, and the TRIPS Agreement, by Konstantinos Giannakas, September 2001.
- 81 Land Lease Markets and Agricultural Efficiency: Theory and Evidence from Ethiopia, by John Pender and Marcel Fafchamps, October 2001.
- 82 The Demand for Crop Genetic Resources: International Use of the U.S. National Plant Germplasm System, by M. Smale, K. Day-Rubenstein, A. Zohrabian, and T. Hodgkin, October 2001.
- 83 How Agricultural Research Affects Urban Poverty in Developing Countries: The Case of China, by Shenggen Fan, Cheng Fang, and Xiaobo Zhang, October 2001.
- 84 *How Productive is Infrastructure? New Approach and Evidence From Rural India*, by Xiaobo Zhang and Shenggen Fan, October 2001.

- 85 Development Pathways and Land Management in Uganda: Causes and Implications, by John Pender, Pamela Jagger, Ephraim Nkonya, and Dick Sserunkuuma, December 2001.
- Sustainability Analysis for Irrigation Water Management: Concepts, Methodology, and Application to the Aral Sea Region, by Ximing Cai, Daene C. McKinney, and Mark W. Rosegrant, December 2001.
- 87 The Payoffs to Agricultural Biotechnology: An Assessment of the Evidence, by Michele C. Marra, Philip G. Pardey, and Julian M. Alston, January 2002.
- 88 Economics of Patenting a Research Tool, by Bonwoo Koo and Brian D. Wright, January 2002.
- Assessing the Impact of Agricultural Research On Poverty Using the Sustainable Livelihoods Framework, by Michelle Adato and Ruth Meinzen-Dick, March 2002.
- 70 The Role of Rainfed Agriculture in the Future of Global Food Production, by Mark Rosegrant, Ximing Cai, Sarah Cline, and Naoko Nakagawa, March 2002.
- 91 Why TVEs Have Contributed to Interregional Imbalances in China, by Junichi Ito, March 2002.
- 92 Strategies for Stimulating Poverty Alleviating Growth in the Rural Nonfarm Economy in Developing Countries, by Steven Haggblade, Peter Hazell, and Thomas Reardon, July 2002.