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Abstract
This paper evaluates the redistributive impacts of rural taxation in China, using the CASS CHIP survey 1995-2002. The main findings can be summarized as follows.First, the major policy target of rural taxation reform--reducing the average rate of taxes and levies--was accomplished between 1995 and 2002, with favorable redistributive results. When the aggregate scene is observed, the disequalizing redistributive impact of taxation declined between 1995 and 2002. Second, despite these positive results from the aggregate perspective, the favorable impact of the reform was severely limited because overall rural taxation remained disequalizing after the reform and regressivity in taxation itself, measured by the Kakwani index and the income elasticity of taxation, increased between 1995 and 2002. The favorable change in the redistributive impact between these years did not occur as a result of a decrease in the degree of regressivity of the tax itself, but because the average rate of taxation and before-tax income inequality declined. Moreover, when the regional picture is observed, the overall redistributive impact of taxation worsened in several provinces following the reform.

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I. Introduction

A. Setting the Agenda

"The agricultural tax has become history" (*People's Daily*, December 31, 2005). The Chinese government announced abolition of agricultural taxes on January 1, 2006.[1] This was a goal of the "rural tax and fee reform" (hereafter referred to as rural taxation reform) initiated in the late 1990s and also an important turning point in rural public policy in China. This paper examines the redistributive impact of rural taxation using the 1995 and 2002 CASS CHIP household surveys and the administrative village survey of 2002.[2] The analytical focus is on changes in tax regressivity between 1995 and 2002.

An empirical study of the redistributive impact of rural taxation is important not only because ad hoc collection of taxes and levies - - so-called "arbitrary charges, fines, and levies" (luan shoufei, luan fakuan, luan tanpai) - - has been one of the hottest issues in rural public policy throughout the 1990s, but also because a critical aspect of the Chinese local politico-economic system, that is, the multilayered and decentralized local administrative/fiscal system, is embodied in the issue. So far, however, few empirical studies, with the exception of a few such as Khan and Riskin (forthcoming), and Tao, Liu, and Zhang (2003), have used nationally representative microdata to examine the redistributive outcomes of rural taxation.[3]

The structure of this paper is as follows. In the latter half of this section, the background of the topic is discussed. Then, Section II summarizes the process of rural taxation reform. Section III presents the definitions of taxes and levies to be employed in the study and introduces measurements of the redistributive impact of taxation. Section IV reports the changes in the amount and rate of taxation between 1995 and 2002 and then draws national and regional pictures of the redistributive impact of rural taxation. Section V concludes the paper. Note that "rural taxation" is used here to refer to both formal state taxation and various kinds of levies and fees collected at the local level. Detailed definitions of the taxes, levies,

and fees mentioned in this paper are provided in Section III.

B. A Decentralized Fiscal System and Its Consequences

China's local administrative/fiscal system can be characterized as a multilayered and decentralized system (Wong et al. 2003). Interregional disparities in the revenue-raising abilities of local governments at all the administrative levels, namely the provincial, subprovincial (city/prefecture, shi/diqu), county (xian/xianjishi), and township (xiang/zhen) levels, are large. Despite the large interregional disparities in local revenue, the provision of most basic public services, such as education, public health, and infrastructure, has been assigned to local governments. For example, from the mid-1980s to the late 1990s, in rural areas most of the fiscal burden of basic education has fallen on township and administrative village authorities. Such a decentralized system of public service delivery has not been accompanied by an effective mechanism of intergovernmental fiscal transfer, especially at the subprovincial and county levels. Three consequences derive from this malfunction of the local fiscal system: first, strong interhousehold/interregional regressivity in rural taxation; second, huge interregional disparities in the quality of small-scale infrastructure and public services; and third, strong characteristics of underinstitutionalized rural taxation. This paper focuses on the first consequence, regressive taxation in rural areas.[4]

Based on the 1995 household data set, Table1 reports the average rate of taxation by income quantile and decile in 1995. Although the average rate of taxation for all households was not particularly high at 5.4 percent of before-tax income, the burden fell very heavily on lower-income households. It should be noted that tax regressivity was stronger for local levies and fees (fei) collected at the township/administrative village level than it was for formal state taxation (shui). Local levies and fees were highly regressive because most of them were poll taxes imposed on a per capita (household) basis or a per arable land basis. Formal state taxation was also regressive due to the unique characteristics of the agricultural tax (nongye

shui) that was universal in rural areas. As described in Sections 3 and 4, the agricultural tax is only partly sensitive to agricultural income and is not sensitive to nonagricultural income. As a result, the tax burden has been heavier for lower-income groups (regions) that depend heavily on agriculture.

Typically, the consequences outlined above have been expressed in situations at the village level, the lowest stratum of the administrative hierarchy. No formal public budget has existed at the administrative village level because it has been regarded as a self-governing community, not a formal governmental apparatus. The administrative village however, has been acting as a de facto governmental apparatus. Throughout the 1990s, administrative village funds for public services were collected mainly through the administrative village levy (cun tiliu) that had a legal basis in the agricultural law of 1993. The levy for rural education (nongcun jiaoyu jizi) introduced in the 1990s was also legal. In addition to these items, many of the villages in lower-income regions have depended on various other levies, fees, fines, and compulsory investments/donations that are of dubious legality. By contrast, villages with their own revenue sources have collected little money from villagers. Moreover, it should be noted that administrative villages have had the responsibility for collecting levies, fees, fines, and compulsory investments/donations imposed by the township government and various government departments at the county level. Conflicts between village cadres and villagers over taxation have been considered to be the main causes of political instability in rural areas (Bernstein and Lü 2003).

II. Overview of Rural Taxation Reform in the 1990s
A. A Brief Chronology

Current rural taxation reform dates back to the beginning of the 1990s. The focus of the policy was to set a limit on the peasants' tax burden (less than 5 percent of the per capita annual net income of the previous year). However, the impact of the policy was limited, and

the overburden of the peasants' taxes and levies remained a crucial problem in rural China. At the end of the 1990s, the Party and the central government began to adopt a more comprehensive approach aimed at reducing the peasants' tax burden. As is summarized in Table 2, the reform process after the end of the 1990s can be divided into two phases: *phase-1* substitution of local levies with formal taxation (feigaishui), and *phase-2* gradual abolition of agricultural taxes.[5]

Phase-1 In 2000, Anhui Province was designated as the national model area (shidian) of the reform (Zhonggong Zhongyang and Guowuyuan 2000). In March 2002, the Party and the central government expanded coverage of the reform. Most of the provinces (and equivalent administrative units) had launched the reform by the end of 2002.

The basic policy arrangement in the phase-1 reform is summarized as "three abolitions, two adjustments, and one reform" (sange quxiao, liangge tiaozheng, yige gaige). The term "three abolitions" refers to the termination of the township levy (xiangzhen tongchou), the levy for rural education, and other levies, fees, and compulsory investments/donations collected directly from peasants by local governments. The term "two adjustments" refers to changes to the agricultural tax and the special agricultural tax (nongye techan shui). The "one reform" indicates reform of the collection and usage of the administrative village levy. In addition, it was announced that the slaughter tax (tuzai shui) would be terminated. Compulsory unpaid labor (yiwugong, laodong jileigong), which is imposed by local governments as an in-kind local levy, was to be abolished gradually.

Adjustment of the agricultural tax had two components. The first component was the upward adjustment of the actual tax rate from approximately 2.5 percent to the maximum rate of 7 percent, intended to compensate for the expected decline in the fiscal revenue of local, mainly township, governments, caused by the reform.[6] The second component was the introduction of an additional levy of agricultural tax and special agricultural tax (liangshui fujia) as a substitute for levies and fees at the administrative village level (hereafter referred to

as the "additional levy on agricultural taxes"). The standard rate of the additional levy on agricultural taxes was 20 percent of the amount of agricultural taxes.

Phase-2 The reform policy has accelerated sharply after 2004. It shows that the Chinese leadership began to change the urban-biased institutional arrangements inherited from the planned economy era. It is stressing that "unified institutional and policy arrangements for urban and rural development" (tongchou chengxiang) are critical to sustaining economic development and social stability, not only at the rural level, but also at the national level (see, for example, the decision of the Third Plenum of the Sixteenth CPC Central Committee, *People's Daily*, October 22, 2003). The Party "Document Number One" (yihao wenjian), which was released at the beginning of 2004, declared that the agricultural tax rate should be lowered immediately and abolished gradually (Zhonggong Zhongyang and Guowuyuan 2004). In March, 2004, the State Council announced it would abolish agricultural taxes gradually within the next five years, excluding special agricultural taxes on tobacco and a few other products. The number of provinces that have abolished agricultural taxes was eight in 2004, including Heilongjiang and Jilin, which were chosen as the national model provinces for the reform. By September, 2005, 28 provinces had abolished agricultural taxes. Many counties in three other provinces (Hebei, Shandong, Yunnan) also stopped collecting agricultural taxes in 2005. On December 29, 2005, the Standing Committee of the National People's Congress voted that agricultural taxes should be abolished on January 1, 2006. The abolition of agricultural taxes was thus completed before the original target date.

The 2002 CASS survey illustrates the situation in the phase-1 reform. As reported in the Appendix Table to this paper, of the 122 counties surveyed, 84 counties, or approximately 70 percent of the sample counties, were categorized into counties where the phase-1 reform had already been launched in 2002 (hereafter referred to as post-reform counties). Another 38 counties had not yet started the phase-1 reform (hereafter referred to as pre-reform counties).

Although data limitations do not allow us directly to describe the redistributive impact of abolition of agricultural taxes, we are still able to investigate to what degree rural taxation influences income inequality during the 1990s and for what reason the reform should be launched. We can also extend our discussion to phase-2 and derive implications for rural public policy in the "post-agricultural tax era" (hou nongyeshui shidai).

B. Regional Variation

During the phase-1 reform, considering the complexity of the issue, the Party and the central government took a gradual and rather decentralized approach to rural taxation reform. As a result, considerable regional variations can be seen in the implementation of the reform program. The coverage of reform within particular provinces depended greatly on the policy of the provincial authorities. The unit of policy implementation was the county and the rate of agricultural taxes was set at the county level. A region (a province or county) in good financial condition could lower the tax rate, whereas lower-income regions, or purely agricultural regions, where local governments rely heavily on agricultural taxes, insisted on setting the maximum rate.

This raises the question of what factors affected the provincial governments' decisions regarding the counties in which taxation reform was to be launched. We assume two background factors influenced policy choice: first, the need for reform; and second, the relative ease of reform. Although the two factors overlap, the following working hypothesis can be established.

The need for reform in the counties is indicated by the average rate of taxation. The heavier the peasants' tax burden, the greater the need for reform. Another factor representing the need for reform is the fiscal structure of local governments. The smaller the size of fiscal expenditure for rural public services, the greater the need for reform because more taxation for fewer service deliveries is a potential source of socio-political instability. This factor controls

the average rate of taxation and the level of regional income.

Concerning the relative ease of reform, we take two factors into consideration. One is the revenue-raising ability of each administrative village. Provincial governments will be more confident about conducting reform in a certain county if the administrative villages belonging to that county have the ability to raise funds using methods other than the collection of levies directly from villagers. County officials and village cadres will be able to accept the reform policy more readily when their village budgets can be expanded by the ability to raise funds. The other factor representing the ease of reform is the level of regional income. With other variables remaining the same, a higher regional income makes it easier to conduct reform because local governments in higher-income regions have the potential to exploit new revenue sources.

To test this working hypothesis, a village-based probit estimation was conducted using the administrative village survey and official fiscal statistics at the county level. The dependent variable was the status of reform at the end of 2002, that is, whether the sample villages are post-reform villages (= 1) or pre-reform villages (= 0). Of the 961 administrative villages surveyed, 676 were post-reform villages and 285 were pre-reform villages. With regard to the need for reform, three explanatory variables were employed, all measured in yuan: (a) the log of the per capita amount of local levies and fees, excluding unpaid labor; (b) the log of the per capita amount of a county's budgetary fiscal expenditure for rural public services; and (c) the log of the per capita amount of village expenditure on public services and infrastructure. With regard to the relative ease of reform, we used (d) the log of the per capita amount of revenue from the villages' own revenue sources, and (e) the log of the per capita annual household net income averaged at the county level, both measured in yuan. In addition to these variables, a dummy variable for nationally designated poor counties (pinkunxian) was employed to control policy factors specific to such countries. The reference year was 1998 for all explanatory variables.

Table 3 reports the estimation outcomes, indicating that the above working hypothesis was consistent with the evidence and that both the need for, and the relative ease of, reform underlay the policy choice. The reforms were more likely to be launched where the need for reform was higher, that is, where the level of the tax burden was heavier, but where the amount of public service provision was small compared with the level of the tax burden. Further, assuming the same degree of need for reform, the potential of local governments to absorb the negative impact of reform in their budgets appeared to be important when launching reform. In addition, the presence of a poverty alleviation program sponsored by the national level proved to affect the policy choice.

III. Definitions of Taxes and Measurements of the Redistributive Impact of Taxation
A. Definitions of Taxes and Levies

Table 4 summarizes the definitions of taxes, levies, and fees employed in this paper. Two categories, state taxation and local quasi-tax, are employed.

(a) State taxation

State taxation is classified into two subcategories: taxation on primary industries and taxation on secondary/tertiary industries.[7] The first category includes the agricultural tax, the special agricultural tax, the livestock tax, and the slaughter tax. The second category includes taxation on manufacturing, construction, commerce, and other service industries.

(b) Local quasi-tax

We use the term local quasi-tax as a general term for various local levies, fees, and compulsory investments/donations imposed at the township and administrative village levels. In addition, the term encompasses various fees collected by the county government through township/village officials. Note that in the following empirical analyses, any additional levy on agricultural taxes belongs in the category of local levies rather than the state taxation category because they are employed as substitutes for the administrative village levy. As the

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characteristics of the local quasi-tax vary greatly, it is convenient to classify it into the following two subcategories.

(b-1) The local quasi-tax narrowly defined: the additional levy on agricultural taxes, the village levy, the township levy, the levy for rural education, the "one issue, one discussion levy (yishi yiyi chouzi)" (a newly employed levy at the administrative village level, the amount of which will be set by the villagers on the basis of democratic discussion), and other levies, fees, and compulsory investments/donations.

(b-2) The local quasi-tax broadly defined: the narrowly defined local quasi-tax plus unpaid labor. Unpaid labor (UPL) is calculated as follows:

$$UPL = (w*LD) + C, \tag{1}$$

where w denotes wages per day for temporary labor in each administrative village in which the sample households lived, as calculated from the administrative village survey, LD denotes annual labor days of unpaid labor, and C denotes the total amount of cash paid by households as a substitute for unpaid labor (yiqian daigong). As mentioned below, unpaid labor has a strong impact on the peasants' tax burden.[8] Note that the narrowly defined local quasi-tax is used in the comparison of 1995 and 2002 because data on unpaid labor are not available from the 1995 CASS survey.

B. Measurements of the Redistributive Impact and Regressivity

The basic method of evaluating the total redistributive impact of taxation is to compare the inequality of before-tax income with after-tax income. The total redistributive effect of taxation can be measured as the change in the inequality index, for example, the Gini coefficient, caused by the taxation. The change in inequality can be measured both in absolute and relative terms.

A classical measurement of the change in inequality in absolute terms is the Musgrave and Thin measure (MT) (Musgrave and Thin 1948):

$$MT = G - G^*, \qquad\qquad\qquad (2)$$

where G and G* are the before-tax income and after-tax income Gini coefficients, respectively. A positive (negative) MT indicates a progressive (regressive) taxation and a positive (negative) redistributive impact of taxation (Musgrave and Thin 1948). In relative terms, the redistributive impact can be measured by a redistribution coefficient. The redistribution coefficient (R) is measured as follows:

$$R = MT/G *100(\%). \qquad\qquad\qquad (3)$$

A disadvantage of MT is that it does not reveal changes in the ranking of individuals or households by income after taxation. When MT equals zero, there are two possibilities: either everyone is paying the same tax rate, or the richest and the poorest sections of society have exchanged their rankings because of a very high tax rate for the former. In the latter case, although there is a highly progressive regressive taxation system, it is not reflected in MT.[9] However, this weakness may not be critical in our analysis because of the obvious regressivity of taxation in rural China. A regressive tax would not change the ranking of individuals in terms of the distribution of after-tax income.

Another popular measurement is the Kakwani index of tax progressivity. The Kakwani index P is defined as:

$$P = C - G, \qquad\qquad\qquad (4)$$

where C is the concentration index of taxes and G is the Gini coefficient of the before-tax income (Kakwani 1977). A positive value of P implies progressive taxation and a positive redistributive impact on income inequality, and vice versa.

MT can be rewritten as follows, using the Kakwani index (World Bank 2003):

$$MT = P[t/(1 - t)], \qquad\qquad\qquad (5)$$

where t is the average rate of taxation as a proportion of before-tax income. Then, after-tax income inequality is:

$$G^* = G - P[t/(1 - t)]. \qquad\qquad\qquad (6)$$

That is, after-tax income inequality (G*) is a function of the average rate of taxation (t), the Kakwani index (P), and the before-tax income inequality (G). When taxation is regressive (when P has a negative value), the smaller the average rate of taxation, the more equitable is the after-tax income distribution. In other words, the smaller the absolute value of P, the smaller will be the after-tax income inequality.

IV. The Redistributive Impact of Rural Taxation Reform, 1995–2002

A. The Amount and Rate of Taxation

In this section, we evaluate the redistributive impact of rural taxation reform using the 1995 and 2002 CASS household data sets. In the following empirical examination, the sample counties are divided into post-reform counties and pre-reform counties. To ensure comparability between 1995 and 2002, Guizhou, Guangxi, and Xinjiang are not included. This is because all 1995 tax-related data are missing for Guizhou, and Guangxi and Xinjiang are not covered in the 1995 survey. A total of 78 counties fall into the category of post-reform counties, where taxation reform has been launched in the whole area. The post-reform counties are distributed over 18 provinces. A total of 23 counties in which reform has not been launched are categorized as pre-reform counties. Pre-reform counties are distributed over six provinces. (For the distribution of post- and pre-reform counties, see the appendix table to this paper). Changes in the amount and rate of taxation between 1995 and 2002 are summarized in Table 5.

For rural China as a whole, the peasants' total burden, the sum of state taxation and the narrowly defined local quasi-tax, declined from 1995 to 2002 in terms of both the absolute value of taxes and levies and the rate of taxation. (All the figures relating to taxation in 2002 are deflated to 1995 prices using the consumer price index for rural households at the provincial level). Observing the aggregate scene, the major policy target of the taxation reform, which was a reduction in the average rate of taxation, was accomplished.

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A large decline in the average rate of taxation is found in the post-reform counties (Table 5b). The average rate of taxation declined from 6 percent in 1995 to 3.4 percent in 2002. Two trends -- the increase of state taxation and the decrease of local quasi-taxes -- lie behind this change. The average rate of narrowly defined local quasi-tax decreased from 4.2 percent in 1995 to 1 percent in 2002. If the additional 0.4 percent levy for agricultural taxes is excluded, the average rate has dropped to 0.6 percent. The policy framework of "replacing local levies with formal taxation" was accomplished. However, the average rate of the unpaid labor tax was the same as that of the narrowly defined local quasi-tax, excluding the additional levy on agricultural taxes. Unpaid labor remained significant even after the reform.

In contrast to post-reform counties, the absolute level of the peasants' total burden in the pre-reform counties rose by about 10 percent between 1995 and 2002 (Table 5c). The decline in the rate of taxation in the pre-reform area is more a product of income growth than of changes in the level of taxation.

When comparing post- and pre-reform counties as discussed above, the level of taxation in 1995 was higher in the areas that carried out the reforms by 2002 than it was in the areas where reform had not yet taken place by 2002. Notably, this pattern did not change by 2002 after the reform was implemented in some counties (Tables 5b and 5c).

B. Changes in the Redistributive Impact

The rural taxation reform affected the distribution as well as the average rate of taxation. Of particular interest here is whether the reform changed the regressivity of rural taxation. Table 6, which focuses on the post-reform counties, summarizes the changes in regressivity and the redistributive impact of taxation between 1995 and 2002. The following points can be made.

First, concerning the total redistributive impact of taxation, the disequalizing effect has decreased over the period, although a disequalizing redistributive impact remains. As seen in

Table 6a, the Musgrave and Thin measure of the total burden has decreased from –0.016 to –0.009, and the redistribution coefficient has declined from –4.5 percent to –2.6 percent. This is the outcome of two different trends shown in Tables 6b and 6c, namely the alleviation of the unfavorable redistributive impact in local quasi-tax (reflected in the change in the redistributive coefficient from –3.3 percent to –0.8 percent) and the worsening of the negative impact in state taxation (reflected in the change in the redistributive coefficient from –0.9 percent to –1.6 percent).[10]

Second, in spite of some alleviation of the unfavorable redistributive impact of taxation as shown in Table 6, the regressivity of taxation itself increased between 1995 and 2002. For the total tax burden, the concentration index changed from 0.140 to 0.110 and the Kakwani index changed from –0.217 to –0.226. Both these changes indicate a worsening of regressivity. Therefore, the favorable change in the total redistributive impact of taxation between 1995 and 2002 shown in Table 6 was the combined result of a reduction in the average rate of taxation and a more equal before-tax income distribution. Hence, the redistributive impact of the rural taxation reform was mixed.

C. A Comparison of Post- and Pre-reform Counties

Table 7 shows the comparisons of the redistributive effects of taxation in post-reform and pre-reform areas in 2002. The broader definition including unpaid labor is used for local quasi-tax. The table reveals that taxes were less regressive in post-reform counties than in pre-reform counties, but this was offset by a higher average rate of taxation. Consequently, the overall redistributive impact of taxes was more unfavorable in post-reform counties than in pre-reform counties. It is notable that unpaid labor was an important source of tax regressivity in pre-reform counties. Although unpaid labor has not attracted much attention in previous studies, we suggest that it is highly significant because local governments in low-income regions tend to depend greatly on unpaid labor to finance infrastructure construction. Thus, the

abolition of unpaid labor is an important component of the taxation reform.

D. Tax and the Income of Primary Industry

So far, the relationship between total income and taxation has been examined. Another interesting issue is the degree to which the taxation of primary industry is sensitive to primary industry income. Table 8 reports the outcome for the post-reform counties.

First, in 1995, tax regressivity in the case of income from primary industry is even higher than it was in the case of total income (see Tables 6 and 8). This finding reveals that the agricultural tax formula before the reform did not adequately reflect differences in agricultural productivity or the structure of agricultural production. As a result, the agricultural tax rate was lower for regions/households with higher agricultural profitability.

Second, the degree of regressivity measured by the Kakwani index declined between 1995 and 2002, in contrast to the case of total income in relation to total state taxation. The decrease in tax regressivity in 2002 suggests that the newly defined agricultural tax formula reflects agricultural profitability more adequately than did the old formula.

E. Interregional and Intraregional Regressivity

Regressivity in taxation can be separated into interregional regressivity and intraregional regressivity. One way to separate these two types of regressivity is to estimate the income elasticity of taxation with respect to both household and regional average incomes. Taxation is progressive when the income elasticity of taxes is greater than one and regressive when the elasticity is less than one. Negative elasticity indicates stronger regressivity.

Table 9 reports the OLS estimation of intraregional and interregional income elasticity in the post-reform counties. The dependent variables are the log of the per capita amount of total state taxation and the narrowly defined local quasi-tax. The independent variables are: the log of the per capita before-tax household income which is used to capture intraregional

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regressivity, and the log of the per capita before-tax income averaged at the county level, which is used to capture interregional regressivity.

Two points can be made from Table 9. First, both interregional and intraregional regressivities increased after the reform, as income elasticity declined between 1995 and 2002, and in both years it was less than one. Second, interregional regressivity was greater than intraregional regressivity for both state taxation and local quasi-tax. Notably, between 1995 and 2002, the increase in the interregional regressivity of state taxation was remarkable. This finding reflects a basic problem of the taxation reform, which was that the rates of agricultural taxes were decided at the county level, and the variables used for calculating the tax were subject to political manipulation. It is likely that officials of poor counties with small public budgets had strong incentives to set higher tax rates.

F. Regional Variation in the Changes in Tax Regressivity

So far, we have provided a general picture of the redistributive impact of rural taxation reform. Given the huge regional imbalance in local public finance and the decentralized manner of taxation reform, it is useful to examine the regional variation in the redistributive impact of this reform.

Table 10 reports the redistributive impact of the reform at provincial level, focusing on provinces in which all counties have undergone reform. Changes in the redistributive impact of taxation varied considerably. Five of the 11 post-reform provinces covered in the study -- Hebei, Jiangxi, Hunan, Shaanxi, and Gansu -- experienced unfavorable changes in the redistributive impact between 1995 and 2002, whereas six other provinces -- Jilin, Jiangsu, Anhui, Shandong, Henan, and Hubei -- had favorable changes during the same period.

Table 11 shows the changes in the average rate of taxation by income decile groups between 1995 and 2002, focusing on four provinces that experienced unfavorable changes in the redistributive impact of taxation. The table confirms that the total taxation burden

increased for the bottom 10 percent income decile group between 1995 and 2002 in all four provinces. Ironically, given its aims, the reform disadvantaged lower-income groups and regions in these provinces.

In conclusion, the decentralized manner of taxation reform has resulted in considerable regional disparity in the redistributive impact of taxation reform. The focus on decreasing the average rate of taxation has resulted in neglect of the unfavorable redistributive impact of taxation reform at the local level.

V. Conclusion

This paper has evaluated the redistributive impacts of rural taxation. The main findings of this paper can be summarized as follows. First, the major policy target of rural taxation reform - - reducing the average rate of taxes and levies - - was accomplished between 1995 and 2002, with favorable redistributive results (see also Chapter 3 in Gustafsson, Li, and Sicular forthcoming). When the aggregate scene is observed, the disequalizing redistributive impact of taxation declined between 1995 and 2002. Second, despite these positive results from the aggregate perspective, the favorable impact of the reform was severely limited because overall rural taxation remained disequalizing after the reform and regressivity in taxation itself, measured by the Kakwani index and the income elasticity of taxation, increased between 1995 and 2002. The favorable change in the redistributive impact between these years did not occur as a result of a decrease in the degree of regressivity of the tax itself, but because the average rate of taxation and before-tax income inequality declined. Moreover, when the regional picture is observed, the overall redistributive impact of taxation worsened in several provinces following the reform.

These empirical findings reflect that, under the decentralized fiscal/administrative system, a public policy launched by the central government can bring about considerable regional disparity in its outcomes. In the case of the rural taxation reform, confining policy

attention to the average rate of taxation (or the per capita tax burden), the only operational and monitorable policy target for the central government, has not achieved a favorable impact at the local level. In this context, the abolition of agricultural taxes is a natural and necessary extension of the reform policy. We should not, however, be overly optimistic about the policy outcomes of the reform. If the abolition of agricultural tax is not accompanied by a fiscal transfer to local governments and other fiscal policy adjustments, deterioration in public service delivery could occur. As is discussed in Sato (forthcoming), our empirical study provides evidence for such unfavorable consequences. Tao, Liu, and Zhang (2003) also argue that the decrease of the peasants' tax burden has not been accompanied by a systematic policy framework for public service provision at the local level. Although the abolition of agricultural taxes and quasi-taxes will have an equalizing impact for rural income inequality in the short run, if it brings about a cutback of basic public services, it may harm regional economic growth and have disequalizing effects in the long run.[11] Moreover, if the township- and village-level governmental apparatuses are not financed adequately, they will continue to collect money from peasants informally and rural taxation may be driven underground once again.

As the next step, empirical studies should focus on the flow of local public finance following the reform and investigate the degree to which the reform has influenced the delivery of local public goods. Moreover, this question should be examined from the standpoint of long-term institution building in rural areas. That is, we should investigate the relationship between tax policy and other complementary reform policies such as the restructuring of local administrative systems, the promotion of "village democracy", and the introduction of social security programs for the rural population.

References

Bernstein, Thomas and Xiaobo Lü, (2003), *Taxation without Representation in Contemporary Rural China*, Cambridge: Cambridge University Press.

"Caijing" Bianjibu, ed., (2003), *Zhuanxing Zhongguo*, Beijing: Shehui Kexue Chubanshe.

Caizhengbu, Yusuansi, ed., (1999), *1998 Nian Quanguo Di Shi Xian Caizheng Tongji Ziliao*, Beijing: Zhongguo Caizheng Jingji Chubanshe.

Chen, Xiwen, (2003), *Zhongguo Xianxiang yu Nongmin Zengshou Wenti Yanjiu*, Taiyuan: Shanxi Jingji Chubanshe.

Guo, Feng, (2003), *Nongcun Shuifu yu Nongmin Fudan*, Beijing: Jingji Ribao Chubanshe.

Guowuyuan Nongcun Shuifei Gaige Gongzuoxiaozu Bangongshi, ed., (2002), *Nongcun Shuifei Gaige Zhishi Wenda*, Beijing: Dangjian Duwu Chubanshe.

Gustafsson, Björn, Li, Shi, and Sicular, Terry (eds.) *Inequality and Public Policy in China*, New York: Cambridge University Press, forthcoming in 2007.

He, Kaiyin, and Sun Li, eds., (2000), *Zhongguo Nongcun Shuifei Gaige Chutan*, Beijing: Zhongguo Zhigong Chubanshe.

Kakwani, Nanak C., (1977), "Measurement of Tax Progressivity: An International Comparison," *The Economic Journal*, 87(345), 71-80.

Ma, Xiaohe, ed., (2002), *Woguo Nongcun Shuifei Gaige Yanjiu*, Beijing: Zhongguo Jihua Chubanshe.

Musgrave, Richard A. and Tun Thin, (1948), "Income Tax Progression, 1929--48," *The Journal of Political Economy,* 56(6), 498-514.

Sato, Hiroshi, Li, SHi, and Yue, Ximing (2006), "Nongcun Shuifu de Zaifenpei Xiaoying 1995-2002: Shiji zhi jiao Nongcun Shuifei Gaige de Pinggu," *Jingji Xuebao* (Department of Economics, School of Business Administration, Qinghua University) 2(1), 153-173.

Tao, Ran, Liu Mingxing and Zhang Qi, (2003), "Nongmin Fudan yu Caizheng Tizhi Gaige,"

Working Paper Series, the China Center for Economic Research at Peking University.

Teng, Xiaguang, (2003), *Nongcun Shuifei Gaige yu Difang Caizheng Tizhi Jianshe*, Beijing: Jingji Kexue Chubanshe.

Wong, Christine (Huang, Peihua), Deepak Bhattasali, et al., (2003), *Zhonguo: Guojia Fazhan yu Difang Caizheng*, Beijing: Zhongxin Chubanshe (Chinese version of World Bank, National Development and Subnational Finance, Washington, D.C.: World Bank, 2002).

World Bank, (2003), "Quantitative Techniques for Health Equity Analysis - Technical Note No. 17," www.worldbank.org/poverty/health/wbact/health_eq_tn17.pdf.

Zhejiang Sheng Caizhengting Ketizu, (2003), "Zhejiang Sheng Nongcun Shuifei Gaige de Shijian yu Tansuo," *Zhongguo Nongcun Jingji*, 7, 30-34.

Zhonggong Zhongyang and Guowuyuan, (2000), "Guanyu Jinxing Nongcun Shuifei Gaige Shidian Gongzuo de Tongzhi," Agricultural Information Network (Zhongguo Nongye Xinxiwang), Ministry of Agriculture (http://www.agri.gov.cn/zcfg/)

Zhonggong Zhongyang and Guowuyuan, (2004), "Zhonggong Zhongyang Guowuyuan guanyu Cujin Nongmin Zengjia Shouru Ruogan Zhengce de Yijian (2004 Nian Yihao Wenjian)," *People's Daily* [*Renmin Ribao*], February 8.

*List of References in Chinese

《财经》杂志编辑部，2003：《转型中国》，北京: 社会科学出版社。

财政部农业司《公共财政覆盖农村问题研究》课题组，2004：《公共财政覆盖农村问题研究报告》，《农业经济问题》2004 年第 7 期。

财政部预算司，1999：《1998 年全国地市县财政统计资料》，北京: 中国财政经济出版社。

财政部预算司，2002：《2001 年全国地市县财政统计资料》，北京: 中国财政经济出版

社。

陈锡文，2003：《 中国县乡与农民增收问题研究》，太原: 山西经济出版社。

国风，2003：《农村税赋与农民负担》，北京: 经济日报出版社。

国家统计局，2001：《国家统计调查制度 2001》，北京: 中国统计出版社。

国家统计局农村社会经济调查总队，2000：《中国县（市）社会经济统计概要 2000》，

　　　北京: 中国统计出版社。

国家统计局农村社会经济调查总队，2000－3：《中国农村住户调查年鉴 2000－3》，

　　　北京: 中国统计出版社。

国务院，2003："关于全面推进农村税费改革试点的意见"，中国农业信息网，农业

　　　部（http://www.agri.gov.cn/zcfg/）。

国务院农村税费改革工作小组办公室，2002a：《农村税费改革知识问答》，北京: 党

　　　建读物出版社。

国务院农村税费改革工作小组办公室，2002b："农村税费改革的基本原则是什么"，

　　　《经济日报》8 月 13 日。

国务院农村税费改革工作小组办公室，2002c："农村税费改革转移支付等方面有哪些

　　　规定"，《人民日报》8 月 15 日。

何开荫，孙力，2000：《中国农村税费改革初探》，北京: 中国致公出版社。

湖北省农民减负调查组，2004：《湖北省 6 县市农村税费改革后农民减负情况调查》

　　　《农业经济导刊》2004 年第 1 期(原载《湖北社会科学》2003 年第 10 期)。

胡书东，2001：《经济发展中的中央与地方关系：中国财政制度变迁研究》，上海: 上

　　　海三联出版社和上海人民出版社。

黄佩华，迪帕克等, 2003.《中国: 国家发展与地方财政》, 北京: 中信出版社。

马晓河，2002：《我国农村税费改革研究》，北京: 中国计划出版社。

綦浩东、赵伟、袁建华，2003：《税费改革、村级财务及公共品融资：一项实证研究》，

　　　《中国农村经济》第 7 期。

孙谭镇，1995：《现代中国农村财政问题研究》，北京: 经济科学出版社。

陶然，刘明星和张奇，2003：《农民负担、政府管制与财政体制改革》，《经济研究》
　　　2003 年第 4 期。

滕霞光，2003：《农村税费改革与地方财政体制建设》，北京: 经济科学出版社。

田秀娟、周飞舟，2003：《税费改革与农民负担:效果、分布和征收方式》，《中国农村
　　　经济》2003 年第 9 期。

伍世安等，1997：《中国收费研究》，北京: 中国财政经济出版社。

张德元,2004 :《税费改革中"逼税效应"的制度经济学解释:基于安徽农村的实地调查》,
　　　《农业经济导刊》2004 年第 12 期(原载《社会科学论坛(石家庄)》2004 年第 9 期)。

赵阳,2001：《农村税费改革:包干到户以来又一重大制度创新》,《中国农村经济》2001
　　　年第 6 期。

浙江省财政税务科学研究所，三门县人民政府，2003：《农村税费改革的实践与思考》,
　　　北京: 经济科学出版社。

浙江省财政厅课题组，2003：《浙江省农村税费改革的实践与探索》，《中国农村经
　　　济》第 7 期。

中共中央，国务院，2000：《关于进行农村税费改革试点工作的通知》，中国农业信
　　　息网，农业部(http://www.agri.gov.cn/zcfg/)。

中共中央，国务院，2004：《关于促进农民增加收入若干政策的意见》，《人民日报》
　　　2004 年 2 月 8 日。

中共中央政策研究室，农业部农村固定观察点办公室，2000：《全国农村社会经济典
　　　型调查数据汇编（1986－99）》，北京: 中国农业出版社。

中国农业会计学会重庆分会，重庆市财政局政策研究所，1987：《县镇财政手册》，
　　　成都: 四川科学技术出版社。

朱钢，张渊宏，张军，2000：《聚焦中国农村财政》，太原: 山西经济出版社。

朱钢，2002：《农村税费改革与乡镇财政缺口》，《中国农村观察》第 2 期。

朱守银，张海阳，阎辉，2003：《农村税费改革试点和乡村管理体制改革跟踪研究报
　　　告》，农业部农村经济研究中心研究论文系列。

佐藤宏、李实、岳希明 2006: 《中国农村税赋的再分配效应 1995－2002——世纪之交农村税费改革的评估》,《   》(   ) 第 2 期第 1 期。

Table 1 The Average Rate of Taxation by Income Group, 1995

	State taxation [1] (%)	Local levies and fees (local quasi-tax in the narrow sense) (%)	Total tax burden (%)
Bottom 10%	3.5	10.3	13.7
Bottom 25%	2.9	7.3	10.2
2nd quartile	2.1	4.9	7.0
3rd quartile	1.8	4.1	5.8
Top 25%	1.3	2.2	3.5
Top 10%	1.1	1.7	2.8
Total	1.7	3.7	5.4

Number of observations (households) = 7, 668 [2]

Notes:
1. See Table 3 for definitions of state taxation and local quasi-tax narrowly defined. The average rate of taxation is calculated as (the sum of taxes, levies and fees)/(before-tax household income)*100.
2. Eighteen of the 19 provinces covered by the 1995 CASS survey are used in the calculation. Guizhou is not included because data for taxes and levies are missing. For a description of provinces covered in this paper, see Appendix Table A.

Table 2 The Structure of Taxation Reform

	Phase-1 (2000–2003)	Phase-2 (2004–)
Reform policy	Substitution of local levies with formal taxation	Gradual abolition of agricultural taxes
Agricultural taxes	To raise rate of taxation to cover the decline in fiscal revenue of local governments caused by the abolition of local levies (maximum tax rate: 7%). To employ an additional levy on agricultural taxes as a substitute for the administrative village levy (maximum rate: 20% of agricultural tax/special agricultural tax). To abolish the slaughter tax and other related fees.	To abolish the agricultural tax, special agricultural tax (excluding taxation on tobacco), and livestock land tax.
Administrative village levy	To be replaced by the additional levy on agricultural taxes.	To be abolished.
Township levy	To be abolished.	
Levy for rural education	To be abolished.	
Other levies and fees	To be abolished.	
Compulsory unpaid labor	To be abolished.	
"One issue one discussion" levy	To be employed as a substitute for unpaid labor and other local levies. To be collected based on democratic discussion by villagers.	

Source: see the text.

Table 3 Determinants of Reform Status (Village-Based Probit Estimation)

	(1) Need for reform	(2) Need for, and relative ease of, reform
Log of the per capita amount of narrowly defined local quasi-tax, 1998 (yuan, per capita)	0.292*** (5.90)	0.304*** (6.08)
Log of a county's budgetary fiscal expenditures for rural public services, 1998 (yuan, per capita)	–1.417*** (11.18)	–1.456*** (11.27)
Log of the per capita amount of village expenditure on public services and infrastructure, 1998 (yuan, per capita)	–0.070* (1.85)	–0.092** (2.31)
Log of the revenue from a village's own revenue source, 1998 (yuan, per capita)		0.063* (1.86)
Log of regional income, 1998 (per capita annual net income averaged at the county level, yuan)	0.674*** (4.58)	0.594*** (3.88)
Designated poor county at the national level (dummy)	0.495*** (3.27)	0.491*** (3.24)
Constant	0.832 (0.75)	1.535 (1.31)
Observations	781	781
Pseudo R-squared	0.229	0.232

Source: County budget statistics are compiled from Caizhengbu Yusuansi (1999).

Note:
The dependent variable represents the status of the taxation reform, where 1 = post-reform villages, 0 = pre-reform villages. The absolute value of the z statistics are provided in parentheses. The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4 Definitions of Taxes and Quasi-Taxes in this Study

Categories of taxes and quasi-taxes	1995	2002	
		Pre-reform area	Post-reform area
1. State taxation on primary industry (agricultural taxes, slaughter tax etc.)	*	*	*
2. State taxation on secondary and tertiary industries	*	*	*
3. Total of state taxation (1+2)	*	*	*
4. Additional levy on agricultural taxes	--	--	*
5. Village levy, township levy, levy for rural education, "one issue, one discussion" levy, and other levies	*	*	*
6. Local quasi-tax in the narrow sense (4+5)	*	*	*
7. Unpaid labor	NA	*	*
8. Local quasi-tax in the broader sense (6+7)	NA	*	*

Note: *denotes the fact that data are available for the specific year or area. NA denotes the fact that the relevant data are not available. -- denotes the fact that the tax or quasi-tax was not applicable for the specific year or area. Fines are not included.

Table 5a Changes in the Amount and Rate of Taxation, 1995–2002,

The Whole Area

	1995		2002	
	Per capita amount (yuan)	Rate (%)	Per capita amount (yuan)	Rate (%)
1. State taxation on primary industry	24.5	1.5	43.2	1.7
2. State taxation (total)	28.1	1.7	47.4	1.8
3. Local quasi-tax narrowly defined	60.9	3.7	23.4	0.9
4. Total burden (2 + 3)	89.0	5.4	79.0	3.1
5. Unpaid labor	U	U	16.5	0.7
6. Total burden (4 + 5)	U	U	95.6	3.8
Number of sample counties (households)	106 (7,668)		103 (8,000)	

Table 5b The Post-reform Counties

	1995		2002	
	Per capita amount (yuan)	Rate (%)	Per capita amount (yuan)	Rate (%)
1. State taxation on primary industry	26.2	1.6	49.2	2.0
2. State taxation (total)	29.3	1.8	51.6	2.1
3. Local quasi-tax narrowly defined	69.6	4.2	24.0	1.0
4. Total burden (2 + 3)	98.9	6.0	83.7	3.4
5. Unpaid labor	U	U	15.1	0.6
6. Total burden (4 + 5)	U	U	98.8	4.0
Number of sample counties (households)	78 (6,113)		78 (6,210)	

Table 5c The Pre-reform Counties

	1995		2002	
	Per capita amount (yuan)	Rate (%)	Per capita amount (yuan)	Rate (%)
1. State taxation on primary industry	17.6	1.0	22.4	0.8
2. State taxation (total)	24.3	1.4	32.9	1.1
3. Local quasi-tax narrowly defined	26.3	1.6	16.3	0.6
4. Total burden (2 + 3)	50.6	3.0	56.0	1.9
5. Unpaid labor	U	U	23.3	0.8
6. Total burden (4 + 5)	U	U	85.4	2.7
Number of sample counties (households)	23 (1,246)		23 (1,620)	

Notes:
1. The rate of taxation is calculated as (the sum of taxes, levies, and fees/the sum of before-tax household income)*100. All the figures relating to taxation in 2002 are deflated to 1995 prices using the consumer price index for rural households (*nongcun jumin xiaofei jiage zhishu*) at the provincial level.
2. Guizhou, Guangxi, and Xinjiang are not included. This is because all tax-related data for 1995 are missing for Guizhou and because Guangxi and Xinjiang are not covered in the 1995 survey. The whole area of 2002 includes two counties (170 households) that contain both pre- and post-reform villages. The whole area of 1995 includes counties that are not covered in the 2002 survey because of changes in administrative units and other changes.
3. Figures for the total burden in 2002 (line 4) are larger than the sum of state taxation and narrowly defined local quasi-tax because small portions of the burden cannot be categorized properly into state taxation or local quasi-tax.
4. U indicates that the relevant data are not available for 1995. NA indicates that the relevant tax item is not applicable for 1995.

Table 6a The Redistributive Effect of Taxation in the Post-reform Counties, 1995–2002,

Total Burden (State Taxation Plus Local Quasi-Tax Narrowly Defined)

Years		1995	2002
Gini coefficient for before-tax income (initial income)	G	0.357	0.336
Gini coefficient for after-tax income (redistribution income)	G*	0.373	0.345
Musgrave and Thin measure	MT (G – G*)	–0.016	–0.009
Redistribution coefficient (%)	MT/G *100	–4.5	–2.6
Kakwani index	P (C – G)	–0.217	–0.226
Concentration index of taxes	C	0.140	0.110
Average rate of taxation of the bottom income decile group (%)	t1	10.1	8.3
Average rate of taxation of the top income decile group (%)	t10	3.4	1.8

Table 6b Total State Taxation

Years		1995	2002
Gini coefficient of before-tax income	G	0.357	0.336
Gini coefficient of after-tax income	G*	0.360	0.341
Musgrave and Thin measure	MT (G – G*)	–0.003	–0.005
Redistribution coefficient (%)	MT/G *100	–0.9	–1.6
Kakwani index	P (C – G)	–0.170	–0.238
Concentration index of taxes	C	0.187	0.098
Average rate of taxation of the bottom income decile group (%)	t1	2.3	5.4
Average rate of taxation of the top income decile group (%)	t10	1.3	1.0

Table 6c Local Quasi-Tax Narrowly Defined

Years		1995	2002
Gini coefficient of before-tax income	G	0.357	0.336
Gini coefficient of after-tax income	G*	0.369	0.339
Musgrave and Thin measure	MT (G – G*)	–0.012	–0.003
Redistribution coefficient (%)	MT/G *100	–3.3	–0.8
Kakwani index	P (C – G)	–0.237	–0.265
Concentration index of taxes	C	0.120	0.071
Average rate of taxation of the bottom income decile group (%)	t1	7.9	2.3
Average rate of taxation of the top income decile group (%)	t10	2.1	0.4

Note: All the figures are based on Table 5.

Table 7 A Comparison of the Redistributive Effect of Taxation in Post- and Pre- reform Counties,

2002 (State Taxation Plus Local Quasi-Tax Broadly Defined, Including Unpaid Labor)

	Post-reform counties	Pre-reform counties	The whole area
Gini coefficient of before-tax income (initial income)	0.335	0.384	0.355
Total burden (state taxation plus local quasi-tax broadly defined)			
Gini coefficient of after-tax income (redistribution income)	0.345	0.393	0.365
Redistribution coefficient (%)	–2.9	–2.2	–2.7
Kakwani index	–0.217	–0.294	–0.238
Local quasi-tax broadly defined			
Gini coefficient of after-tax income	0.339	0.392	0.360
Redistribution coefficient (%)	–1.2	–1.9	–1.3
Kakwani index	–0.233	–0.507	–0.282
Unpaid labor			
Gini coefficient of after-tax income	0.336	0.389	0.357
Redistribution coefficient (%)	–0.4	–1.3	–0.6
Kakwani index	–0.193	–0.604	–0.327

Note: All the figures are based on Table 5.

Table 8 The Redistributive Impact of Primary Industry Taxes on Agricultural Income in the

Post-reform Counties, 1995–2002

Years		1995	2002
Gini coefficient for before-tax agricultural income	G	0.386	0.430
Gini coefficient for after-tax agricultural income	G*	0.391	0.438
Musgrave and Thin measure	MT (G – G*)	–0.006	–0.008
Redistribution coefficient (%)	MT/G *100	–1.5	–2.0
Kakwani index	P (C – G)	–0.219	–0.194
Concentration index of taxes*	C	0.167	0.236
Average rate of taxation of the bottom income decile group (%)	t1	11.3	18.9
Average rate of taxation of the top income decile group (%)	t10	1.4	2.4

Note: All the figures are based on Table 5.

Table 9 Intraregional and Interregional Income Elasticity of Taxation in the Post-reform Counties,

1995–2002

	1995		2002	
	Total state taxation	Local quasi-tax narrowly defined	Total state taxation	Local quasi-tax narrowly defined
Log of household income (per capita before-tax income)	0.264 (6.98)**	0.370 (8.62)**	0.157 (4.26)**	0.126 (4.04)**
Log of regional income (per capita before-tax income, averaged at the county level)	0.220 (3.56)**	–0.234 (–3.34)**	–0.350 (–3.90)**	–0.451 (–5.93)**
Log of per capita land holding (mu)	0.342 (7.44)**	0.557 (10.71)**	0.659 (15.30)**	0.592 (16.22)**
Observations	6,113	6,113	6,209	6,209
Adjusted R-squared	0.211	0.261	0.215	0.189

Note:
Dependent variables are the logs of the per capita amount of state taxation and narrowly defined local quasi-tax. The province dummy and the constant are not reported. The absolute values of t statistics are provided in parentheses. The symbols * and ** denote statistical significance at the 5% and the 1% levels, respectively.

Table 10 The Redistributive Impact of Taxation in Post-reform Provinces, 1995–2002

Province	Gini coefficient for before-tax income		Redistribution coefficient for state taxation on primary industry (%)		Redistribution coefficient for total amount of state taxation (%)		Redistribution coefficient for local quasi-tax narrowly defined (%)		Redistribution coefficient for total burden (total state taxation plus local quasi-tax narrowly defined) (%)	
	1995	2002	1995	2002	1995	2002	1995	2002	1995	2002
Hebei	0.316	0.298	–0.2	–2.1	–0.04	–1.6	–2.9	–1.2	–3.0	–3.1
Jilin	0.343	0.302	–2.5	–3.1	–2.7	–3.1	–7.1	–1.2	–10.3	–4.7
Jiangsu	0.312	0.306	–0.4	–1.3	–0.4	–1.4	–3.0	–0.4	–3.4	–2.2
Anhui	0.216	0.266	–1.6	–2.1	–1.5	–1.7	–3.3	–0.7	–4.9	–2.5
Jiangxi	0.236	0.282	0.3	–1.1	1.2	–1.1	0.1	–0.7	1.1	–1.7
Shandong	0.453	0.340	–1.0	–1.9	–1.1	–1.9	–7.4	–1.3	–8.9	–3.3
Henan	0.245	0.267	–1.0	–3.0	–0.8	–3.0	–3.4	–0.9	–4.3	–4.2
Hubei	0.281	0.287	–2.8	–1.4	–2.9	–1.4	–10.4	–1.4	–14.3	–2.8
Hunan	0.256	0.317	–0.8	–1.0	–0.6	–1.0	0.6	–0.6	–0.2	–1.5
Shaanxi	0.270	0.304	–0.2	–2.8	–0.1	–2.8	–1.0	–1.4	–1.3	–4.7
Gansu	0.314	0.339	–1.1	–0.5	–1.2	–0.6	0.1	–0.4	–1.1	–1.2

Table 11 Changes in the Rate of Taxation in Selected Post-reform Provinces, 1995–2002

	Hebei		Hunan		Shaanxi		Jiangxi	
Average rate of taxation (%)	1995	2002	1995	2002	1995	2002	1995	2002
Total burden								
The bottom 10% income decile group	10.4	11.7	3.4	4.3	5.4	13.5	4.6	4.7
The top 10% income decile group	4.4	2.0	6.9	2.4	6.3	2.0	8.8	1.8
Total average	4.2	2.9	6.6	3.5	5.6	4.3	5.4	3.0
Local quasi-tax narrowly defined								
The bottom 10% income decile group	9.6	3.5	1.6	1.2	2.7	3.2	3.2	1.3
The top 10% income decile group	3.1	0.2	5.1	0.6	3.2	0.6	5.0	0.6
Total average	3.5	0.7	4.5	1.1	3.1	1.2	3.4	1.0

Appendix A The Distribution of Sample Villages and Counties by the Status of Taxation Reform, in the 2002 Data Set

Reform status	Province	Number of counties		
		Pre-reform	Post-reform	Total
C	Beijing	1	1	2
A	Hebei	0	5	5
C	Shanxi	5	1	6
C	Liaoning	5	1	6
A	Jilin	0	6	6
B	Jiangsu	0	5	5
B	Zhejiang	4	2	6
A	Anhui	0	5	5
A	Jiangxi	0	6	6
A	Shandong	1	6	7
A	Henan	0	7	7
A	Hubei	0	6	6
A	Hunan	0	5	5
B	Guangdong	4	3	7
C	Guangxi	5	0	5
A	Chongqing	0	2	2
A	Sichuan	0	6	6
A	Guizhou	0	6	6
C	Yunnan	5	0	5
A	Shaanxi	0	6	6
A	Gansu	0	5	5
C	Xinjiang	8	0	8
	Total	38	84	122

Note: The first column ("Reform status") indicates the status of the rural taxation reform in 2002. A and B denote post-reform provinces. Status A provinces have implemented the reform in all or most of the counties after receiving subsidies from the central budget. Status B provinces have implemented the reform in all or most of the counties without receiving subsidies from the central budget. Status C denotes pre-reform provinces, that is, provinces where the reform has been implemented only in parts of the counties with or without subsidies from central budget. Provinces not included in the sampling frame are Tianjin (status C), Inner Mongolia (status A), Heilongjiang (status A), Shanghai (status B), Fujian (status C), Hainan (status C), Ningxia (status A), Qinghai (status A), and Tibet (not included in the scheme of rural taxation reform). Based on the administrative village survey, three counties contain both pre-reform and post-reform villages. They are Xiaoshan County in Zhejiang (official administrative unit code: 330121), Licheng district in Shandong (370112), and Akesu County in Xinjiang (652901). As the reform status of each village is consistent with the other information in the administrative village questionnaire, we placed the three counties in pre-reform category.

1980   • The fiscal contract (*shouzhi qufen fenji baogan*) system is introduced.

1985   • The Ministry of Finance issued the "township budget administration act" (*Xiangzhen caizheng guanli zanxing banfa*)." The township government budget as the lowest public budget was basically established throughout the rural area by the mid-1990s.

            • The party (Communist party of China) distributed a directive on the reform of the education system ("*Guanyu jiaoyu tizhi gaige de jueding*"), which gave main responsibility for basic education to local governments and allowed it to collect a local levy for education.

1990   •The state council distributed instructions to alleviate peasants' tax and fee burden (*Guanyu qieshi jianqing nongmin fudan de tongzhi*) (February).

1991   •The state council laid down a new regulation of the highest limit of township and village levies, that is, less than 5% of the per capita net income of the previous year (December).

1993   •The party and the state council distributed urgent instructions on the alleviation of peasants' tax and fee burden (*Guanyu qieshi jianqing nongmin fudan de jinji tongzhi*)(March).

            •The state council held a conference on the alleviation of peasants' burden and abolished thirty-seven fees/compulsory investments imposed by central/local governments.

            •The "agricultural law" (*nongye fa*), which classified legal taxes and fees, was enacted. Taxes and fees designated by the law are state taxes, village levy (*cun tiliu*), township levy (*xiangzhen tongchou*), and unpaid labor (*yiwugong, laodong jileigong*). The law declared peasants have the right to reject other fees, donations, or penalties forced by village, township, or other governmental agencies (July).

            •An experiment of rural taxation reform was started in Anhui. The point of the reform was to make substantive enactments on legal local quasi-taxes and fees.

1994   •"Tax sharing system" (*fenshuizhi*), a sweeping reform of the tax system, was initiated. Agricultural tax was classified into local tax mainly used for financing county and township budgets.

1996   •The party and the state council issued the "Decision on completing the work in earnest to alleviate the peasants' burden" (*Guanyu qieshi zuohao jianqing nongmin fudan gongzuo de jueding*) (December).

1997	•The party and the state council served an injunction that the level of township/village levies for 1998–2000 should not exceed the level of 1997.
1998	•The Leading Small-group (*lingdao xiaozu*) for rural taxation reform headed by the minister of finance was established in the party (September).
	•The third plenum of the Fifteenth Communist Party Central Committee deliberated on the "decision on several critical issues on agriculture and rural works" (*Zhonggong zhongyang guanyu nongye he nongcun gongzuo ruogan zhongda wenti de jueding*). The committee decided to alleviate the peasants' tax and fee burden through the gradual reform of the rural tax system (October).
1999	• The state council issued a directive to inspect the government's work for alleviation of the peasants' burden.
2000	• The state council endorsed the report of the Leading Small-group (*lindao xiaozu*) for the rural taxation reform and decided the rate of agricultural tax (7%) and the additional levy for agricultural tax (maximum of 20% of the agricultural tax) (January).
	•The party and the state council served an injunction that the level of township/village levies until 2002 should not exceed the level of 1997. The Ministry of Agriculture and Ministry of Finance submitted a report on the alleviation of peasants' burden jointly with the other central government departments.
	• The party and the state council issued the "Instruction on conducting the rural tax and fee reform in designated model areas" (*Guanyu Jinxing Nongcun Shuifei Gaige Shidian Gongzuo de Tongzhi*). According to this instruction, the entire Anhui province was designated as the national model area (*shidian*) of rural taxation reform. Several counties in other provinces were also designated as model areas of the reform by the provincial governments (March).
2001	• The state council held a conference to summarize the experiences in model areas of rural taxation reform (February).
	• The state council distributed two instructions on rural taxation reform in 2001, which emphasized that the reform should implement gradually and cautiously (*wenbu shishi*) and that the model area should not be expanded without the approval of the state council. The instructions also detailed that the reform program should be formulated by provincial governments, not by the central government (March–April).
	• The state council introduced a new county-based administration system of basic education, which requires the county budget to take responsibility for ensuring teachers' wages (May).

2002 •The administrative offices of the state council distributed an instruction as to the rural taxation reform in 2002, which declared the expansion of coverage of reform into twenty provinces (*Guanyu zuohao 2002 nian kuoda nongcun shuifei gaige shidian gongzuo de tongzhi*). The instruction stressed "three important things" (*sange quebao*) needed to take place after the reform, that is, to make sure the peasants' burden was alleviated (and to prevent reactional increase of burden in the forthcoming years), to make sure the normal operation of township and village level governmental apparatus continued, and to make sure that sufficient funds for rural education were available. It also promised central budget's subsidy to provincial and county governments for the decrease in local budgets (March).

2003 •The state council distributed a directive on rural taxation reform that recognizes the difficulty of "making sure that three important things" (*sange quebao*) take place (*Guanyu quanmian tuijin nongcun shuifei gaige shidian de yijian*). The directive emphasized that the reform should not be implemented in a hasty manner. At the same time, the directive required the gradual abolishment of the special agricultural tax in the model areas of taxation reform (June).

 • The third plenum of the sixteenth CPC central committee issued a communique on "the improvement of the socialist market economic system" (*Zhonggong zhongyang guanyu wanshan shehuizhuyi shichang jingji tizhi ruogan wenti de jueding*). It required the promotion of comprehensive taxation reform programs—the abolishment of a special agricultural tax, the restructuring of county/township administrative apparatus, and reform of the rural compulsory education system—in model areas of taxation reform. It also declared gradual reduction of agricultural tax rate (October).

2004 The party distributed the "Central document Number One (*Zhonggong Zhongyang Yihao Wenjian*)", which stated that the rate of agricultural taxes should be gradually reduced (one percent in national average for 2004) and declared that special agricultural tax excluding special tax for tobacco should be abolished (January).

 The prime minister Wen Jiabao declared in the annual report on central government activities that the agricultural tax rate should be gradually reduced by one percent every year and that agricultural taxes should be abolished within the next five years (March).

 The party decided to stop collecting agricultural taxes in Heilongjiang and Jilin. The party also declared that the agricultural tax rate should be reduced by 3 percent in 11 major grain producing provinces (Hebei, Neimenggu, Liaoning, Jiangsu, Anhui, Jiangxi, Shandong, Henan, Hubei, Hunan, and Sichuan) and 1 percent in other provinces. The additional levy for agricultural taxes is also to be reduced gradually.
 In 2004, agricultural taxes are basically stopped to collect in 8 provinces (Shanghai, Xizang, Heilongjiang, Jilin, Beijing, Tianjin, Zhejiang, and Fujian).

According to the official household survey by NBS, per capita annual tax burden of rural household in 2004 is 38 yuan (30 yuan less than the previous year, decreased by 44.3 percent). The proportion of tax burden to net annual household income is 1.3 percent (2.6 percent in the previous year).

2005   •The party and the state council distributed a document on rural works (*Zhonggong zhongyang guowuyuan guanyu jinyibu jiaqiang nongcun gongzuo tigao nongye zonghe shengchan nengli ruogan zhengce de yijian*) It declared to continue "two exemptions and three subsidies ("两减免、三补贴)" (*liang jianmian san butie*) policy: Exemption and reduction of agricultural tax and abolition of special agricultural tax excluding taxation on tobacco; introduction of direct subsidy for grain farming, subsidy for high quality seeds, and subsidy for purchase of agricultural machinery (January).

According to the official household survey by NBS, per capita annual tax burden of rural household in the first half of 2005 is six yuan (six yuan less than the previous year, decreased by 50 percent). The proportion of tax burden to net annual household income is 1.3 percent (2.6 percent in the previous year).

By September 2005, 28 provinces had abolished agricultural taxes. Many counties in three other provinces (Hebei, Shandong, Yunnan) also stopped collecting agricultural taxes in 2005.

On December 24 the State Council distributed the directive on the financing of rural compulsory education (*Guanyu Shenhua Nongcun Yiwu Jiaoyu Jingfei Baozhang Jizhi de Tongzhi*). The directive declared that the central government will invest 218,200 million yuan for rural compulsory education to make sure that "all children of peasants can attend school".

On December 29, 2005, the Standing Committee of the National Peoples Congress voted that agricultural taxes should be abolished on January 1, 2006.

"Agricultural tax has become history (People's Daily, December 31, 2005). The post agricultural tax (后农业税) era has started.

Endnotes

[1] "Agricultural taxes" is used as the general term for state taxation on agriculture such as the agricultural tax (nongye shui), the special agricultural tax (nongye techan shui), and the livestock tax (muye shui).

[2] See Gustafsson, Li, and Terry (forthcoming) for the detailed illustration of the household survey. As for the description of the village survey, see Sato (forthcoming). The surveys on which this paper based on were funded by the Ford Foundation, Swedish International Development Cooperation Agency, Asian Development Bank, Masayoshi Ohira Memorial Foundation, the Grant in Aid for Scientific Research of the Japan Society of the Promotion of Science (JSPS), and Hitotsubashi University. The authors are grateful for their generous support.

[3] Tao, Liu, and Zhang (2003) have used panel data for rural households compiled from the Fixed Observation Points of Rural Economy of the Ministry of Agriculture.

[4] Other issues will be investigated in our ongoing research.

[5] In our discussion of the process of the reform, we draw on the following references: "Caijing" Bianjibu (2003); Chen (2003); Guowuyuan Nongcun Shuifei Gaige Gongzuoxiaozu Bangongshi, ed. (2002); Guo (2003); He and Sun (2000); Ma (2002); Teng (2003); Zhejiang Sheng Caizhengting Ketizu (2003); Electronic Archive of the Ministry of Agriculture (Zhongguo Nongye Xinxiwang) (http://www.agri.gov.cn/zcfg/); *People's Daily* [Renmin Ribao] and *Economic Daily* [Jingji Ribao], various volumes. See Appendix B for detailed chronology of taxation reform.

[6] The newly defined taxation formula for the agricultural tax (T) is as follows: T = A*Y*p*r. A denotes taxable acreage (jishui mianji), based on the acreage of cultivated land fixed in the second round of the household responsibility contract in the 1990s, Y denotes the normal yield (changnian chanliang) per unit land of

agricultural products, based on average yields over the five years before 1998, p denotes the taxable price of agricultural products (jishui jiage), based on a mix of the market price and the government's protected price, and r denotes the tax rate.

[7] Note that state taxation here refers to formal taxes collected by either the central government or local governments. The agricultural taxes are categorized under "local taxes" (difangshui), rather than "national taxes" (guoshui), as the funds collected belong to local governments under the current tax-sharing system.

[8] Fines for violations of family planning and other policies are not included because their redistributive impact is not large.

[9] For instance, the before-tax income of two persons, A and B, is 100 and 50, respectively. If A pays 75 for income tax and B pays nothing, the after-tax income for A and B is 25 and 50, respectively, and the Gini coefficient is the same for before-tax income. In this case, MT is 0, from which it is concluded that the tax is neutral. However, in reality, a highly progressive taxation system exists. We will elaborate on the measurement of tax regressivity in forthcoming papers.

[10] This outcome does not change significantly when the sum of taxes and levies minus the sum of public transfers (cash or in-kind incomes from villages, townships, and upper governments) is used. Measurements of the redistributive impact for the net peasant burden are as follows. The redistribution coefficient was –4.3 percent in 1995 and –2.5 percent in 2002. The Kakwani index was –0.218 in 1995 and –0.226 in 2002.

[11] In a forthcoming paper, we conduct a simulation of the redistributive impact of the abolition of agricultural taxes.