



Rural taxation and government regulation in China

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Abstract

This paper places the problem of Chinese rural taxation in the context of government regulation and seeks to present an integrated theoretical framework of Chinese rural development in the past two decades. Our theoretical framework reconciles the seemingly contradictory facts that the average level of rural taxation relative to rural net income did not increase quickly from 1990, but rural taxation became a very serious problem in this period. Our findings suggest that this is in large part due to increases in rural income disparity from 1990 and uneven tax distribution among different income groups. We argue that differentiated enforcement of government regulations such as grain procurement and birth control play an important role in the rural taxation problem, and more generally, the problem of local government expansion and rising rural income disparity. The empirical findings support our hypotheses.

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1. Introduction

In recent years, problems of rural taxation in China, especially the increasing local informal charges on farmers, have become acute. The central government has been aware of the problem for a decade, and has been taking various steps to alleviate the problem. Yet

to date, these actions have achieved limited success. In 2002, after a difficult decision-making process, the central government decided to implement rural taxation reform in 20 provinces accompanied by a central transfer of RMB 25 billion and provincial transfers to local governments of about the same size. The nature of the reform can be summarised as ‘fee-tax-swap’, which removes all local informal fees but increases the rates of formal state agricultural taxes and aims to prevent arbitrary charges by the local governments and the ‘quasi-governmental’

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community organisations. Soon after the reform started, great pressure was found on the budgets of local governments. In some regions, a rebound in informal fees seems very possible.

From a historical perspective, what is taking place in rural China at the turn of the 21st century should be seen as a part of a recurrent historical pattern. Through thousands of years of history, this type of ‘fee-tax-swap’ has been a recurrent feature of China’s rural taxation and reform. During the 8th century Tang dynasty, the Emperor implemented the ‘Two-Tax Reform’ (Liang Shui Fa), which essentially was intended to remove all informal charges and to limit taxation to two formal state taxes (land tax and poll tax). In 1581, the Ming Dynasty also implemented a new taxation policy called the ‘One-Whip Rule’ (Yi Tiao Bian Fa, proposed by the famous Prime Minister Zhang Juzheng) to unite the land tax, poll tax and informal taxes into one formal state tax. In 1712, the Qing Dynasty also adopted a new tax rule known as ‘Converting Poll Tax To Land Tax and No Additional Taxes Any More’ (Tang Ding Ru Mu, Yong Bu Jia fu).

Similar to the current rural tax reform, these taxation reforms in ancient China aimed to replace the informal fees imposed by local governments with one or two unified formal state taxes to prevent excessive informal levies and corruption. However, following each reform, an initial reduction or stabilisation of tax burdens was followed by a rebound in fees. According to Huang Zongxi, a famous Confucian in the early Qing Dynasty at the turn of 18th century, the long-run effects of these rural taxation reforms were to increase rather than reduce tax burdens on peasants since with downward rigidity and frequent increases of government expenditures, formal tax revenues after the reform inevitably fell short of expenditures. This gave local governments no alternative but to re-impose informal fees, during which excessive levies and corruption necessarily followed. This tendency for initial taxation reduction after tax unification and following fee rebound to occur repeatedly in Chinese history was first systematically summarised by Huang Zongxi more than 300 years ago, and thus has been called the ‘Huang Zongxi Law’ (Qing, 2001).

Many scholars have paid attention to the problem of rural taxation in China. In attempting to explain

rising fees imposed on farmers, political scientists frequently focus on the political system and argue that promoting rural elections could lead to improved local governance (Bernstein and Lu, 2000). Others have argued that the lack of financial resources and the low shares of local government budget in total fiscal budget revenue are the source of high rural taxation burdens (Cao, 2001). Still others hold that lack of protection of property rights on farmers’ land is key to the problem of rural tax burdens, and more generally, to slower rural income growth (Zhou, 2001). Surprisingly, there has been little systematic research with empirical evidence on this issue, and no explanations are capable of explaining the major stylised facts in one integrated theoretical framework.

This paper is the first step in a systematic study on the problem of rural taxation, and more generally, the problem of the relationships between government regulations and rural taxation, rural factor mobility, and rural income growth and disparity. In the following section the stylised facts on rural taxation are described using a large panel data set on rural China. This is followed by a brief theoretical framework to explain mechanisms behind the rural taxation problem in terms of testable hypotheses. Empirical evidence is subsequently provided, as is a concluding section.

2. Stylised facts

A unique characteristic of rural taxation in China is that besides formal government taxes, Chinese farmers are also required to pay various informal fees to local governments (mainly the township government) and village community organisations (Ran, 2002; Lin et al., 2002a, 2002b). Our data set is from the Fixed Point Rural Survey carried out by the Fixed Point Rural Survey Office, which is the Survey Department of the Research Center on the Rural Economy (RCRE), at the Ministry of Agriculture in Beijing. Based on this large panel data set, covering over 6000 households and 120 villages in 10 provinces across China from 1986 to 1999, we are able to describe the stylised facts of rural taxation for more than a decade. The most interesting finding is that, on average, there has been no significant increase in rural taxation as a share of rural net income in this period. In most

provinces, total tax burdens on rural households (both formal taxation and informal fee charges) increased by only 1–4 percentage points as a share of rural net incomes from 1986 to 1999, increasing more slowly in the 1990s. In some of the more developed coastal provinces, such as Guangdong and Zhejiang, there has even been some reduction of taxation rates during the survey period. This is contrary to the general belief that rural taxation, and especially the excessive informal fee charges, increased at a very fast pace in the past 15 years, especially in the 1990s.

How can we reconcile these dynamics of rural taxation with the fact that problems of rural taxation became more acute during the 1990s? Further investigation shows that the reasons for rural taxation becoming an acute problem are the increase in rural income disparity from 1990 and the uneven tax and fee distribution among different income groups (Ran, 2002). According to our estimates, the rural Gini index in the 10 surveyed provinces increased from 0.40 to 0.47 from 1986 to 1999, whilst during the same period, rural taxation incidence among different income groups did not change accordingly. For example, if we include all formal taxes and informal fees paid by rural households, the share of taxes to the net income of the lowest income group in 1986 (annual per capita income less than RMB 200 Yuan) was 10.5%, while that of the highest income group (annual per capita income larger than RMB 4000 Yuan) was 9.5%. However, in 1999, the share of taxes of the lowest income group (annual per capita income less than RMB 400 Yuan) to net income was 10.5%, while that of the highest income group (annual per capita income larger than RMB 8000 Yuan) was 4.4%. Relative to their income level, higher taxation rates of low-income groups reduced their income significantly and further aggravated their poverty. The increasingly regressive nature of rural taxation and the heavier tax burden on poor farmers, rather than the increase of average rural taxation level, has caused problems of rural taxation in China.

The reason that the poor farmers pay much higher shares of their incomes for taxes and fees is connected to the agriculture-dependent nature of rural taxation in China. Taxation on Chinese rural households used to largely consist of agricultural taxes levied on arable lands. However, since the middle 1980s, an increasing share of rural income has come from non-agricultural

sources such as township and village enterprises and migration remittances, which are not subject to state tax administration given the ineffectiveness of the Chinese tax system. Since the poor are usually the group of people with the lowest proportion of income from non-agricultural sources, they are more vulnerable to rural direct taxation.

However, the income disparity explanation is only partial for at least two reasons. First, the fact that rural income disparity became much higher in the 1990s needs to be explained in any general theoretical framework that takes rural taxation into account. Second, the degree of rural income growth, disparity and factor mobility, and the size of local government expansion measured by the level of local government expenditures are also differentiated significantly across regions (Zhu, 2001). A more general theoretical framework is needed to systematically explain these major stylised facts.

3. A general theoretical framework for rural taxation

3.1. Higher-level government regulations play a key role

We hold that the difficulties in reducing rural tax burdens and the problems encountered in the current rural taxation reform in China can be ascribed to the lack of a general theoretical framework supported by empirical evidence. No systematic policy recommendations and reform measures can be proposed without an in-depth understanding of the nature of the problem.

We argue that higher-level government regulations and interventions, such as grain procurement, birth control, and many other un-funded development mandates such as the nine-year compulsory education scheme, have essentially placed local governments in a dilemma. The problem starts from the fact that local governments are required by the higher-level government to implement regulations without sufficient funding being provided. Since there is information asymmetry in regulation enforcement, i.e. higher-level governments cannot perfectly monitor the implementation of regulations, local governments may readily expand the local bureaucracy and engage in rent-

seeking activities in the name of implementing higher-level government regulations. Given that local government expansion encourages rent seeking, crowds out private investment, and reduces farmer consumption, such expansion will aggravate rural tax burdens and lower rural income growth. It naturally follows that differentiated enforced regulation results in differentiated bureaucratic expansion, and further leads to differentiated impacts on tax burdens and income growth. Government regulations may also negatively affect rural income growth through influence on the markets for rural factors (such as land, labour and capital).

3.2. Central regulation with heterogeneous enforcement

An important aspect of our regulation argument is that while implemented nationally, the regulations are subject to heterogeneous enforcement, which leads to differential impacts across regions and even households. For example, the central government implemented the grain procurement policy in almost all provinces. However, the quantities of government grain procured (and the ratio of government procurement to total grain output) displays significant variation between different provinces, counties, townships, and villages and even between different households. The quantity of grain procurement (and its ratio to total grain output) for every province, county, township and village is determined by higher-level governments according to a set of rules in consideration of natural conditions, historical factors and even political concerns, such as local food self-sufficiency. This leads to the fact that there is significant differentiation in grain procurement regulation enforcement across regions and even across households. Regarding birth control regulation, central government policy is much more homogeneous across regions. However, the difficulties in implementing relatively homogeneous regulation also vary across regions. In areas where income is low, non-agricultural employment limited and female education underdeveloped, farmers usually want to have more children than their counterparts in richer regions. Therefore, the difficulties in implementing the relatively homogeneous birth control policy in poorer regions are much higher, entailing higher

administrative costs and more staffing, and consequently further exacerbating the regulation dilemma.

3.3. Theoretical hypothesis from the regulation framework

From the concept of ‘homogeneous regulation with heterogeneous enforcement’, we can build an integrated theoretical framework with the following set of logically consistent hypotheses (due to a lack of data, we advance these hypotheses only from the perspective of government grain procurement regulation).

3.3.1. Grain procurement regulation and rural taxation hypothesis

Other factors being equal, the higher the degree of government regulation enforcement (represented by government grain procurement per capita at village levels), the higher is the rural taxation per capita.

3.3.2. Grain procurement regulation and local government size and corruption hypothesis

Controlling for other factors, the higher the degree of government regulation enforcement, the larger the local government size (represented by local government expenditures per capita), and the higher is the likelihood of local illegitimate fund-raising and corruption.

3.3.3. Grain procurement regulation and factor mobility hypothesis

Grain procurement regulation tends to limit the mobility of production factors such as land and labour. Controlling for other factors, the higher the government grain procurement per capita (or as a percentage of total grain output) in a rural household, the less mobile are household production factors, i.e. the less likely that land will be leased out or that labour will migrate.

3.3.4. Grain procurement regulation and income growth hypothesis

By imposing a heavy tax burden on farmers and making little contribution to local public good provision, as well as by limiting factor mobility and preventing local and household level comparative advantages from being brought into full play, grain procurement regulations also have negative effects on rural income growth. Controlling for other factors, the

higher the government grain procurement per capita (or as a ratio of total grain output) in a rural village, the lower is the income growth.

If the abovementioned hypotheses hold true, it follows that with differential enforcement of grain procurement regulation across regions (and also across households), regions (and households) that are more heavily regulated have heavier rural taxation, are more vulnerable to local bureaucracy expansion and serious corruption, and display lower factor mobility and thus lower income growth. The more heavily regulated regions (and households) will then be more locked into agricultural production, which will further lead to heavier rural taxation burdens and even lower income growth. This constitutes a vicious cycle for the heavily regulated regions (and households), while the opposite occurs for the less regulated regions (and households). Thus, differential regulation enforcement leads to higher rural income disparity and differentiated rural tax burdens.

4. Empirical analysis

Based on the large panel data set, we carry out empirical tests on the hypotheses drawn from the theoretical framework.

4.1. Grain procurement regulation and rural taxation hypothesis

The variable list is presented in Table 1. In Tables 2 and 3, we report the results from the panel data of fixed effect models that apply both provincial and year dummy variables as is the usual practice. Table 2 shows the result of regressing taxes as a share of household income on grain quota as a share of total grain output, while Table 3 shows estimations of per capita taxes on per capita grain quota.

As Tables 2 and 3 indicates, from regressions of $Lfee1$, $Lfee2$ and $Lfee3$, the coefficients on grain quota are all positive and significant at the 1% level, strongly supporting our hypothesis. The coefficients for $Lavland$ are always positive, indicating that the larger the land per capita cultivated by rural households, the higher is the taxation burden. The coefficients on $Lpublic$ and $Lind$ are all negative and significant, suggesting that a higher level of public ownership and industrialisation may increase local revenue, lowering rural household taxation; $Lhincome$ has positive coefficients but these are all less than one, indicating that the richer pay more taxes but the taxation regime is regressive in nature. Coefficients on $Lvsiz$ demonstrate that there are significant economies of scale as village population grows.

Table 1
Variable list for rural taxation hypothesis

Variables	Definitions
Dependent	$fee1_{ij}$ is defined as all formal state agricultural taxes plus all local levies per capita or as a share of household income, where j denotes village, i denotes household $fee2_{ij}$ is defined as local levies per capita or as a share of household income $fee3_{ij}$ is defined as those various local levies not legitimated by national government policy but imposed by local (county or township) government and village community organisations per capita or as a share of household income
Independent	$grainquota_j$ is defined as government grain procurement quota (kg) per capita at village level or as a share of village grain output (both can be viewed as exogenous). Village level grain quota is used as an independent variable to avoid endogeneity $avland_{ij}$ is the area of operating arable land for a household ind_j is a variable that denotes the degree of industrialisation, as the percentage of operating income of industrial enterprises in the gross operating income of the village. Lagged values control for endogeneity $public_j$ is the degree of township and village enterprise public ownership, as operating income for of collective enterprises as a percentage of gross operating income of a village. Lagged values control for endogeneity $hinc_{ij}$ is the per capita household net income. To control for problems of endogeneity, the education level of the household head and the ratio of the number of family members engaged in labour to the total number of family members are used as instruments with fitted values in the second stage regressions $vsiz_j$ is the total population size of a village Variables are logged if a prefix 'L' is added. Other control variables such as dummy variables indicating whether the household contains a member in the military, township and village government, and the Communist Party are also included but omitted here due to space limitations

Table 2

Grain procurement regulation and rural taxation Test I (regressing tax as a share of income at household level on village level grain quota as a share of total village grain output, 1986–1999)

	Lfee1 (share)	Lfee2 (share)	Lfee3 (share)
Lgrainquota (share)	0.100 (16.48) ^{***}	0.068 (13.23) ^{***}	0.013 (5.06) ^{***}
Lhinc-fitted value	−0.031 (9.14) ^{***}	−0.029 (9.52) ^{***}	−0.013 (7.46) ^{***}
Lavland	0.023 (15.59) ^{***}	0.023 (18.00) ^{***}	0.005 (6.80) ^{***}
Lvsize	−0.001 (0.94)	−0.001 (1.92) [*]	−0.003 (7.85) ^{***}
Lpublic	−0.024 (11.39) ^{***}	−0.017 (9.96) ^{***}	−0.002 (3.36) ^{***}
Lind	−0.024 (11.03) ^{***}	−0.018 (10.01) ^{***}	−0.004 (3.99) ^{***}
Constant	0.217 (11.85) ^{***}	0.194 (11.79) ^{***}	0.105 (11.14) ^{***}
Observations	73421	73421	73420
R ²	0.11	0.12	0.05

Note: Robust *t* statistics in parentheses; village and year dummies controlled.

^{*} Significant at 10%.

^{**} Significant at 5%.

^{***} Significant at 1%.

4.2. Grain procurement regulation and local government size hypothesis

The variable list is in Table 4 and results are in Tables 5 and 6. They strongly support our hypothesis. The coefficients on grain quota are positive at the 1% confidence level in all regressions, indicating that a higher government grain procurement leads to higher total local government expenditure, higher administrative fees and cadre expenses, and the possibility of higher corruption in that local officials can spend more for unspecified purposes.

The coefficients of lagged *public* and *ind* are also positive and significant in most cases in these regressions, indicating that higher levels of public ownership and industrialisation are associated with higher village-level expenditures, manifesting that

local cadres may also spend through township and village enterprises (TVEs).

4.3. Grain procurement regulation and factor mobility hypothesis

We also implement empirical analysis to test the impacts of grain procurement regulation on factor mobility using Probit and Tobit models. We find food regulation (represented by the amount of grain quota as a share of total grain output or per capita grain quota), to have a negative impact on the probability of land lease-out. These results hold after we control the household's agricultural technical efficiency, tax as a share of household income, the share of labour in a household, the amount of capital and land per capita in a household, the education level and age of the household head,

Table 3

Grain procurement regulation and rural taxation Test II (regressing household per capita tax on village per capita grain quota, 1986–1999)

	Lfee1 (per capita)	Lfee2 (per capita)	Lfee3 (per capita)
Lgrainquota (per capita)	0.128 (38.11) ^{***}	0.122 (41.80) ^{***}	0.043 (15.94) ^{***}
Lhinc-fitted	0.341 (6.93) ^{***}	0.061 (1.80) [*]	−0.105 (3.72) ^{***}
Lavland	0.646 (45.11) ^{***}	0.751 (54.23) ^{***}	0.245 (19.34) ^{***}
Lvsize	−0.132 (16.38) ^{***}	−0.104 (12.16) ^{***}	−0.035 (4.38) ^{***}
Lagged-public	−0.738 (25.28) ^{***}	−0.689 (24.66) ^{***}	−0.301 (24.66) ^{***}
Lagged-ind	−0.418 (13.82) ^{***}	−0.505 (20.52) ^{***}	−0.307 (13.41) ^{***}
Constant	0.709 (2.76) ^{***}	1.439 (7.92) ^{***}	1.828 (11.70) ^{***}
Observations	73423	73423	73422
R ²	0.30	0.42	0.17

Note: Robust *t* statistics in parentheses; village and year dummies controlled.

^{*} Significant at 10%.

^{**} Significant at 5%.

^{***} Significant at 1%.

Table 4
Variable list for government size hypothesis

Variable	Definitions
Dependent	<p><i>Exptotal</i> is all village expenditure (including those submitted to upper level government) per capita within a village or as a share of total village net income</p> <p><i>Exptown</i> is funds submitted to upper-level governments plus village administrative fees, plus 'other expenditures with unspecified purposes' per capita within a village or those expenditures as a share of total village net income</p> <p><i>Expvadmin</i> is the administration expenditure, plus village cadre subsidies and expenses per capita or as a share of total village net income</p> <p><i>Expvother</i> is defined as the per capita 'other expenditures with unspecified purposes' within a village. The 'other expenditures with unspecified purposes' can be understood as expenditures village cadres used for purposes that are hard to report when surveyed, which therefore can be viewed as expenditures for local cadres' own benefit</p>
Independent	<p><i>Grainquota</i>, <i>vsize</i>, <i>ind</i>, <i>public</i> are defined as in Table 1. <i>Lvinc</i> is the per capita net income for the village. To control for endogeneity, the number of illiterate labourers as the share of total labours in the village are used as the instrument variable with fitted values in the second stage regression</p>

Table 5
Grain procurement regulation and government size regressions Test I (regressing government expenditure as a share of total village income on grain quota as a share of total grain output at village level, 1995–1999)

	Lexptotal	Lexptown	Expvadmin	Expvother
Lgrainquota (share)	0.168 (2.115)**	0.123 (2.738)***	0.087 (2.463)***	0.080 (2.811)***
Lvsize	−0.012 (−1.091)	−0.013 (−2.162)**	−0.014 (−2.915)***	−0.007 (−1.906)
Lagged_Ind	0.062 (1.767)*	0.022 (1.144)	0.031 (2.038)**	0.026 (2.102)**
Lagged_public	0.219 (4.728)***	0.096 (3.662)***	3.920 (3.920)***	0.059 (3.546)***
Lvinc-fitted	−0.067 (−1.907)*	−0.028 (−1.404)	−0.007 (−0.427)	−0.001 (−0.073)
Constant	0.621 (2.779)***	0.327 (2.584)***	0.152 (1.532)	0.052 (0.647)
R ²	0.071	0.086	0.097	0.087
Observations	485	485	485	485

Note: Robust *t* statistics in parentheses; village and year dummies controlled.

- * Significant at 10%.
- ** Significant at 5%.
- *** Significant at 1%.

Table 6
Grain procurement regulation and government size regressions Test II (regressing per capita government expenditure on per capital grain quota at village levels, 1995–1999)

	Lexptotal	Lexptown	Expvadmin	Expvother
Lgrainquota	0.094 (3.516)***	0.087 (3.668)***	0.059 (2.126)**	0.076 (2.126)**
Lvsize	−0.170 (−1.979)**	−0.129 (−1.690)*	−0.270 (−3.043)***	0.042 (0.301)
Lagged_ind	0.590 (2.011)**	0.332 (1.272)	0.652 (2.144)**	0.907 (1.915)**
Lagged_public	1.850 (4.785)***	1.273 (3.703)***	1.728 (4.314)***	1.834 (2.939)***
Lvinc-fitted	0.641 (2.216)***	0.550 (2.137)**	0.941 (3.140)***	0.264 (0.566)
Constant	0.565 (0.304)	0.584 (0.353)	−2.188 (−1.136)	−0.899 (−0.300)
R ²	0.377	0.357	0.466	0.273
Observations	485	485	485	485

Note: Robust *t* statistics in parentheses; village and year dummies controlled.

- * Significant at 10%.
- ** Significant at 5%.
- *** Significant at 1%.

village industrialisation level, degree of village public ownership, and off-farm opportunity. For labour mobility, similar empirical tests are carried out with the finding that in all cases, grain procurement regulation has a negative impact on the probability of labour migration for a household, after controlling for tax as a share of household income, the share of labour in a household, per capita land in a household, the education level and age of household head, village industrialisation level, degree of village public ownership, and off-farm opportunity. In conclusion, the regression results support our hypothesis of the negative impact of grain procurement regulation on factor mobility. Detailed results are available from the authors.

4.4. Grain procurement regulation and income growth hypothesis

In a further set of empirical analyses, we find that the food procurement index always has negative and statistically significant impacts on income growth. The impacts of labour growth and education attainment are not significant, but the investment rate has positive effects on growth. In addition, government expenditure (as a percentage of total village income) has a negative impact on income growth. These results support our argument that local expenditure is not used mainly to provide local public goods that can promote local productivity and income growth. Detailed results are available from the authors.

5. Conclusion

In this paper, we try to reconcile, in a general theoretical framework, the stylised facts that the average level of rural taxation relative to rural net income did not increase very fast after 1990, although rural taxation became a very serious problem in this period. We conclude that this is in large part due to increasing rural income disparity from 1990 and the uneven distribution of taxes and fees among different income groups. We argue that differentiated enforcement of government regulations, such as grain procurement and birth control, play an important role in causing the rural taxation problem and, more generally, the problem of expanding government size and rising rural income disparity. The empirical findings support our hypotheses.

If our theory holds, a solution to the problem of heavy rural taxation and rising income disparity should remove or at least relax the economic and social regulations of the central government in rural areas. If government regulations, such as grain procurement, lower rural income growth of heavily regulated regions and households by increasing rural tax burdens and limiting labour and land mobility, removing or relaxing these regulations will not only reduce the rural tax burden, but also promote rural factor mobility, and thus increase rural income growth. Without removing the un-funded mandates and government regulations, it will not be possible to break out of the ‘Huang Zongxi Law’ that has daunted China for thousands of years or to establish a modern system of public finance and local governance.

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