



INTERNATIONAL FOOD  
POLICY RESEARCH INSTITUTE  
*sustainable solutions for ending hunger and poverty*

DEVELOPMENT STRATEGY AND GOVERNANCE DIVISION

July 2005

DSGD Discussion Paper No. 21

## Fiscal Decentralization and Political Centralization in China: Implications for Regional Inequality

Xiaobo Zhang

---

2033 K Street, NW, Washington, DC 20006-1002 USA • Tel.: +1-202-862-5600 • Fax: +1-202-467-4439 • [ifpri@cgiar.org](mailto:ifpri@cgiar.org)  
[www.ifpri.org](http://www.ifpri.org)

**IFPRI Division Discussion Papers contain preliminary material and research results. They have not been subject to formal external reviews managed by IFPRI's Publications Review Committee, but have been reviewed by at least one internal or external researcher. They are circulated in order to stimulate discussion and critical comment.**

Copyright 2005, International Food Policy Research Institute. All rights reserved. Sections of this material may be reproduced for personal and not-for-profit use without the express written permission of but with acknowledgment to IFPRI. To reproduce the material contained herein for profit or commercial use requires express written permission. To obtain permission, contact the Communications Division at [ifpri-copyright@cgiar.org](mailto:ifpri-copyright@cgiar.org).



## TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
LISTS OF TABLES & FIGURES.....	ii
ABSTRACT.....	iii
1. INTRODUCTION.....	5
II. THEORETICAL CONSIDERATIONS.....	7
III. EMPIRICAL ANALYSIS.....	10
Descriptive Analysis.....	10
Quantitative Evidence Based on County Data.....	17
IV. CONCLUSIONS AND POLICY IMPLICATIONs.....	21
REFERENCES.....	23
LIST OF DISCUSSION PAPERS.....	26

## LISTS OF TABLES & FIGURES

### TABLES

Table 1.	The Correlations between Local Revenue and Expenditure, 1993 and 2000.....	10
Table 2.	Gini Coefficient of Three Indicators, 1993 and 2000 .....	11
Table 3.	Economic Development, Taxation Structure and Fiscal Burdens, 1993 and 2000.....	12
Table 4.	The Effect of Initial Economic Structure and Government Size on Economic Growth, by Regression .....	18
Table 5.	The Effect of Initial Economic Structure and Government Size on Economic Growth, by Region.....	20

### FIGURES

Figure 1.	The Density Function of Per Capita Gross Industrial and Agricultural Output (log form) .....	11
Figure 2.	Economic Development Level and Effective Industrial Tax Rate .....	14
Figure 3.	Economic Development Level and Rent from Land Development.....	14
Figure 4.	Size of Bureaucracy and Total Population.....	15
Figure 5.	Economic Development and Fiscal Dependent Burden .....	16

## **ABSTRACT**

While, politically speaking, China has a centralized government structure with strong top-down mandates, under the country's current fiscal system, local governments are responsible for providing most local public goods and services. Large differences in economic structures and revenue bases exist, however, causing the implicit tax rate and fiscal burdens in support of local government functions to vary significantly across jurisdictions. Regions initially endowed with a broader nonfarm tax base do not need to rely heavily on new and existing firms to finance public goods provision, which creates a healthy investment environment in support of nonfarm sector growth. In contrast, local governments in regions where agriculture is the major economic activity spend the majority of their resources on their own operating costs, leaving little for public investment. Because of the relatively high transaction costs associated with collecting taxes from the agricultural sector, local governments tend to levy the existing nonfarm sector heavily, thereby greatly inhibiting its growth. As a result, regional differences in economic structures and fiscal dependent burdens may translate into widening gaps in equality.



“All nations have endeavoured, to the best of their judgment, to render their taxes as equal as they could contrive; as certain, as convenient to the contributor, both in the time and in the mode of payment, and in proportion to the revenue which they brought to the prince, as little burdensome to the people.”

**Adam Smith, *Wealth of Nations***

## **FISCAL DECENTRALIZATION AND POLITICAL CENTRALIZATION IN CHINA: IMPLICATIONS FOR REGIONAL INEQUALITY**

**Xiaobo Zhang\***

### **1. INTRODUCTION**

In the past two decades, decentralization has become a global trend; however, empirical evaluation of the impact of decentralization on growth and distribution in developing countries is still in its infancy (Bardhan 2002). Decentralization of government powers is generally thought to improve the effective provision of local public goods and services because local authorities have better and more detailed knowledge of the local conditions and can be better monitored by their constituencies (Dethier 1999; Bardhan 2002). Tiebout (1956) argues that under fiscal decentralization and interjurisdictional competition, individuals are free to move across locations to find the best match with their preferences, which helps to ensure that local public goods are provided efficiently. Qian and Roland (1998) emphasize that, in addition to this “sorting and matching” role, fiscal decentralization can also serve a disciplinary function in preserving market incentives. These theories highlight the positive effects of fiscal decentralization and interjurisdictional competition on the efficiency of public goods provision.

Like many developing countries, China has undergone its own process of fiscal decentralization.<sup>1</sup> The country’s diversity and sheer size provide a rich laboratory for

---

\* Xiaobo Zhang is a Research Fellow in the Development Strategy and Governance Division (DSGD) of the International Food Policy Research Institute (IFPRI).

<sup>1</sup> For detailed description of China’s fiscal decentralization, see Tong (1998), Zhang (1999), and World Bank (2002).

testing the predictions associated with the various theories in the context of development. Using provincial data to 1993, Lin and Liu (2000) provide empirical evidence that decentralization is conducive to growth; Zhang and Zou (1998), on the other hand, report a negative correlation. Jin, Qian, and Weingast (1999) reach the more optimistic finding that decentralization is good not only for growth but also for equity. Using data at more micro levels, a few other studies (West and Wong 1995; Park et al. 1996; Knight and Li 1999) show that decentralization has a negative distributional effect. These studies were all based on data to the early 1990s, and it is quite possible that things have changed since the implementation of more in-depth fiscal reforms in recent years. More recent data are also now publicly available, providing both a longer time series and greater regional disaggregation, so this is an opportune time to revisit this issue.

A recent World Bank study (2002) warns that the fiscal decentralization of the mid- to late 1990s could actually exacerbate inequalities in fiscal public spending because of imbalance between revenues and responsibilities of local governments. The finding is based on case studies undertaken in several counties. For this study, we used (nationwide) county-level panel data to more systematically investigate the distributional impact of decentralization. To our knowledge, this study is one of the first to use county-level panel data for China.<sup>2</sup> It also adds to sparse literature on the empirical relationships between micro-level fiscal decentralization and public-sector performance in developing countries (Bardhan 2002).

In the sections that follow, we begin by reviewing the major theoretical arguments on decentralization, then move to a discussion of the empirical analysis undertaken for this study and why our results seemingly contradict the theoretical predictions. We then draw conclusions and implications for policy.

---

<sup>2</sup> Shih and Zhang (2004) examine the issue of transfers and subsidies using the same data set.



## II. THEORETICAL CONSIDERATIONS

Much of the literature on fiscal federalism, represented by Tiebout (1956) and Qian and Roland (1998), focuses on the economic efficiency aspect of market competition. In essence, the Tiebout model assumes full factor mobility. Bardhan (2002) comments that the assumptions underlying the Tiebout model are often too stringent for developing countries. In the case of China, despite the recent lessening of controls over migration, obstacles to labor movement—particularly from rural areas to cities—remain. Another implicit assumption of the Tiebout model is that local governments are responsive to the needs of voters. In China, however, local government officials are not generally elected, and their preferences may be inconsistent with those of their constituents. In addition, the size of local government is largely determined at the central level, based on criteria that have little to do with local needs. All these factors could well disqualify the Tiebout model in the context of China. The Qian and Roland (1998) federalism model makes a crucial assumption that all regions are identical. This assumption may hold within China's more developed coastal areas—such as Zhejiang Province where many counties share similar initial conditions—but regional differences are much larger for China as a whole, especially between inland and coastal regions, making this assumption inappropriate.

These theories also do not take into account the transaction costs associated with tax collection. As the opening quote of this paper illustrates, Adam Smith regarded fairness and economy as fundamental tax collection principles. Regarding collection costs, he states explicitly (page 1044):

*Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible, over and above what it brings into the public treasury of the state.*

In particular, Smith was opposed to levying taxes in cases where the related collection costs, in the form of collection agent salaries, consumed a significant share of the total revenues raised. In a less perfect world, however, labor migration has associated costs, as does tax collection and policy implementation. For all these reasons, the

assumptions that underlie the theoretical models discussed above—and hence their predictions—may not be valid for China.

To illustrate this further, suppose there are two regions, A (the coastal region) and B (the inland region), and government size is in proportion to total population. Prior to fiscal decentralization, Region A is endowed with a larger share of industry, while Region B relies on agriculture as its major revenue source; their governmental structures, however, are the same.<sup>3</sup> In addition, it is much cheaper, on average, to collect a unit of tax from an industrial firm than it is from a rural household, so both regions prefer to levy taxes on industrial firms. After decentralization, both regions become responsible for collecting their own tax revenues, while fulfilling comparable public service mandates.<sup>4</sup>

The local government in Region A is able to obtain the majority of its revenues from firms, given the region's larger industrial base. Moreover, that industrial base creates a high opportunity cost for labor. When there are abundant high paying jobs available, the job of collecting taxes from individual households may not be appealing. If the cost of collecting taxes from rural households outweighs the resulting revenues generated, it is more cost-effective for the local government to forego such taxes and make up the lost revenue from other sources. When a region has many local firms, the implicit taxation burden on each is comparatively lower, which helps to attract more businesses and ultimately increases the region's tax base. And because the size of the government is mainly related to population size rather than economic development, the local government in Region A can generate higher net revenues for productive public investment. Better infrastructure and a lower tax burden can offset the relatively higher labor and land costs in the region, contributing to and enabling a virtuous cycle of investment and revenue collection.

In contrast, in Region B there are few nonfarm enterprises. Because of the lower costs associated with collecting tax from firms relative to rural households, existing firms

---

<sup>3</sup> Xu Yong (2003) documents the evolution of administrative units in rural China, showing how excessive they are.

<sup>4</sup> Liu and Tao (2004) list a set of central mandates and policy burdens.

are prone to be targeted by their local government, leading to excessive taxation and fees. Therefore, the implicit industrial tax rate tends to be high, in turn discouraging the entry of potential investors and driving away existing businesses, which hinders nonfarm sector growth. Moreover, given that in China the size of local governments tends to be inflexible and is not tied to local revenues, local governments in poor regions often have few resources beyond their operating costs to provide public investment. In particular, many local governments in the poor regions have sizable amount of debt (Oi and Zhang 2004). Low levels and quality of public infrastructure and service often result in an unfavorable investment environment. Obviously, it is hard for any businesses to operate in areas where roads are unpaved and power supply is unreliable. Consequently, despite lower wage rates and land rents, Region B may have the worst investment environment. The dominance of agriculture in Region B also increases the average costs of tax collection because of the difficulty to collect taxes directly from households.

All in all, when analyzing fiscal decentralization, the administrative and governance structure should also been taken into account (von Braun and Grote, 2002). The governance structure, economic structure, and the transaction costs of tax collection may influence the effect of fiscal decentralization. Whether the combination of heterogeneous revenue-raising mechanisms and homogenous government structures under fiscal decentralization will affect growth patterns can only be answered empirically.

### III. EMPIRICAL ANALYSIS

#### Descriptive Analysis

Since 1993, the China State Statistical Bureau has published China County Public Finance Statistical Yearbooks which contain detailed data on revenues, expenditures, population, gross value of industrial and agricultural output (GVIAO), and public-sector size at the county level. There are over 2,000 rural counties in China, and between 1993 and 2000 several hundred of them changed their names or boundaries. Efforts were made to match these counties, relying mainly on the official declarations of changes posted at the web site of the Ministry of Civil Affairs. Tibet is excluded from the analysis due to lack of data. In total, the data includes a panel of 1,860 observations for 1993 and 2000.

Following Jin, Qian, and Weingast (1999), local expenditures were regressed on local revenues for both 1993 and 2000 and the coefficient  $\beta$  for revenues was used to measure the degree of budget constraints. The larger the value, the greater the budget constraint and the more decentralized the fiscal system. The coefficient  $\beta$  increased significantly over the (comparatively) short seven-year timeframe, indicating that China's fiscal system had indeed become more decentralized by 2000 (Table 1). This result is consistent with the findings of Jian, Qian, and Weingast (1999) and World Bank (2002).

**Table 1. The Correlations between Local Revenue and Expenditure, 1993 and 2000**

Regression	1993	2000
$\beta$	0.815** (0.018)	1.144** (0.031)
R <sup>2</sup>	0.808	0.812
Number of observations	1860	1860

*Source: Calculated by author.*

*Note: The figures in the parentheses indicate standard errors. Each regression includes a full set of prefecture dummies. Tibet is excluded due to missing data. \*\* indicates significance at the 1 percent level.*

To examine the dynamics of regional distribution, the Gini coefficient of per capita GVIAO, per capita productive public expenditure (total expenditure minus wage

bills and operating costs), and the share of productive investment in total public expenditure were calculated based on county-level data (Table 2). All three indicators show rising regional disparity. The Gini coefficient of per capita GVIAO rose from 46.47 in 1993 to 48.39 in 2000, and the density distributions of logarithmic per capita GVIAO have clearly expanded over the period (Figure 1). Most noticeably, inequality in the level and share of productive investment increased by 7 and 26 percent, respectively, which is much higher than the increase in per capita GVIAO.

**Table 2. Gini Coefficient of Three Indicators, 1993 and 2000**

Year	Per capita GVIAO	Per capita productive public expenditure	Share of productive investment in total public expenditure
1993	46.47	68.28	33.04
2000	48.39	73.34	41.61
Rate of change (percent)	4.13	7.41	25.94

*Source: Calculated by author from China State Statistical Bureau (various years).*

*Note: GVIAO indicates gross value of industrial and agricultural output.*

**Figure 1. The Density Function of Per Capita Gross Industrial and Agricultural Output (log form)**



*Source: Calculated by the author from China State Statistical Bureau (various years).*

To provide more relevant information for policy debates in China, county- level public finance data were aggregated into coastal and inland regions.<sup>5</sup> Table 3 presents per capita GVIAO, real annual growth of per capita GVIAO, taxation structures, the fiscal dependent burdens for the two regions, and land revenues per capita in 1993 and 2000. The agricultural tax rate in the third column is defined as the ratio of agricultural tax revenues to gross agricultural output value, while the implicit industrial rate is measured as the ratio of tax revenues from the industrial sector relative to the gross industrial output value. The fiscal dependent burden is defined as the number of public employees (*Bianzhi*) per 10,000 yuan (1993 value) of local revenue. Land values increase as a region industrializes and urbanizes, creating room for local governments to capture the rent (Zhang, Mount, and Boisvert 2004). As a result, many local governments use land as a source of revenue (Oi and Zhao 2004). Here we define land revenues as a ratio

**Table 3. Economic Development, Taxation Structure and Fiscal Burdens, 1993 and 2000**

Year/region	Per capita GVIAO (current yuan)	Agricultural tax rate (yuan per 100 yuan)	Industrial tax rate (yuan per 100 yuan)	Fiscal burden (public employee per 10,000 yuan)	Land rent (yuan per capita)
1993					
Coastal region	6,062	0.81	2.74	1.33	4.50
Inland region	2,050	1.15	5.95	2.41	2.60
National total	3,569	0.99	3.67	1.86	3.32
2000					
Coastal region	7,876	1.06	0.80	1.83	8.01
Inland region	2,646	1.72	1.30	3.54	3.89
National total	4,612	1.40	0.94	2.67	5.44
Annual growth rate (percent)					
Coastal region	3.81	3.83	-16.07	4.75	8.60
Inland region	3.71	5.90	-19.48	5.64	5.95
National total	3.73	5.06	-17.63	5.28	7.33

*Source: Calculated by the author from China State Statistical Bureau (various years).*

*Note: GVIAO indicates gross value of industrial and agricultural output. Annual per capita GVIAO growth, per capita land rent, and fiscal burden data were calculated using a comparable national GDP deflator and a base year of 1993.*

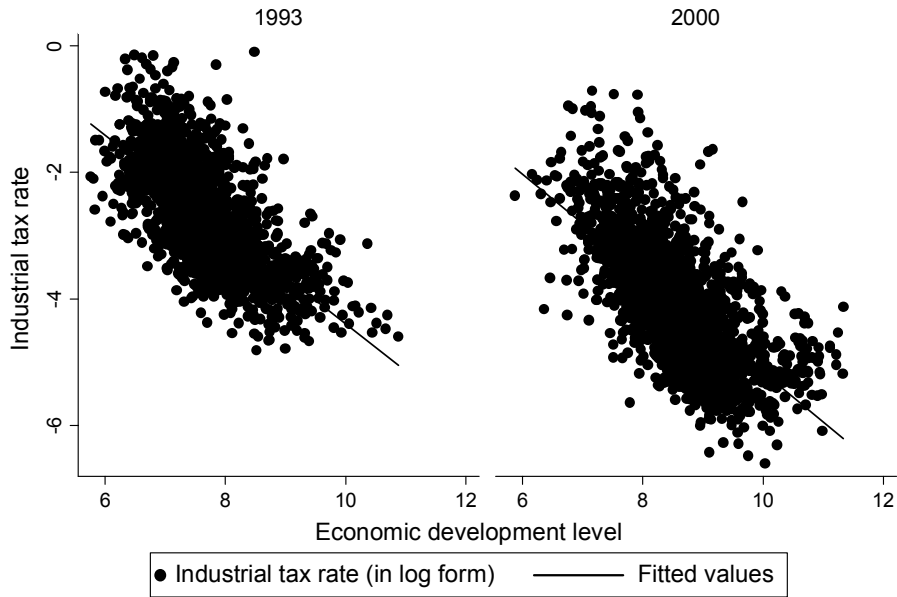
<sup>5</sup> The coastal zone includes the provinces Hebei, Liaoning, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Guangxi and the three directly administered cities, Beijing, Tianjin, and Shanghai; the inland zone comprises the remaining provinces. Kanbur and Zhang (1999, 2005) use the same classification.

of city construction taxes and land user fees relative to total population. We used the national GDP deflator (1.977) to adjust the growth rates of per capita GVIAO, per capita land revenue, and fiscal dependent burden to ensure comparability between the two years.

Several features are apparent from Table 3. First, although the data for both regions indicate substantial growth, the coastal region grew faster (3.81 percent compared with 3.71 percent per year in the inland region), confirming a widening regional gap. Second, the tax rates in both the agricultural and rural industrial sectors are regressive, consistent with the finding of Lin et al. (2002), meaning that the more affluent coastal region benefits from lower tax rates compared with the less-developed inland region. Third, the coastal region gains greater benefit from rising land values, such that the local revenues derived from the city construction tax and land development are much higher there than they are in the inland region. In turn, the more developed coastal region attracts greater investment and more migrants because of its lower industrial tax rate, so land values are further enhanced. Fourth, the fiscal burden of supporting the local government is unevenly distributed across regions. The number of people on the public payroll per unit of local revenue in the coastal region is almost twice that of the inland region. Moreover, the ratio increased for all the regions between 1993 and 2000, indicating an expansion of government size. In particular, the enlargement of bureaucracy has been faster in the inland than in the coastal regions.

The implicit industrial tax rate against the logarithmic per capita GVIAO in 1993 and 2000 is presented in Figure 2. The downward straight line in the figure once again clearly demonstrates that the industrial tax rate is regressive. The richer a county is, the lower its industrial tax rate. Further, land revenue is positively correlated with the level of economic development (Figure 3), which is consistent with the results for the two regions shown in Table 2. Wealthier regions are able to capitalize from rising land values to a greater extent than poor regions.

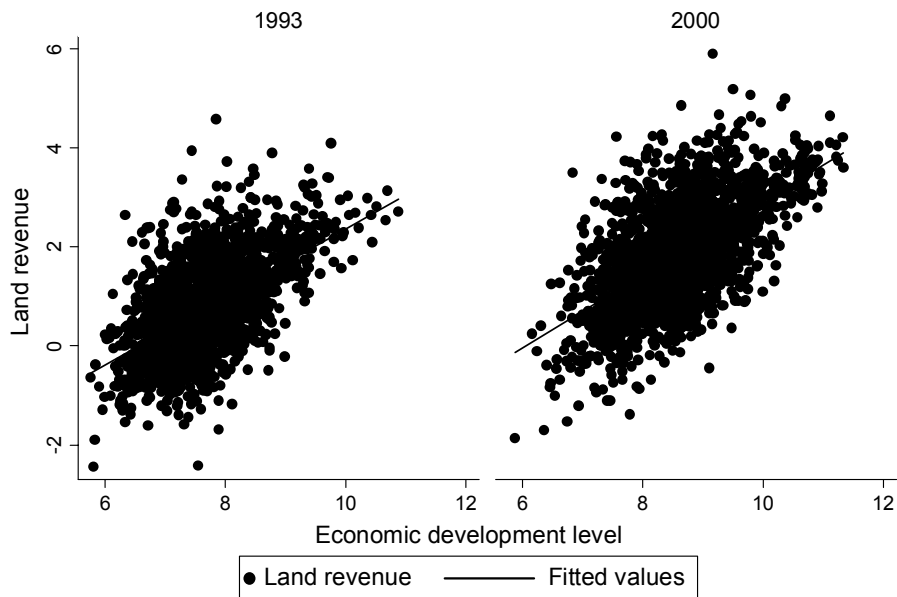
**Figure 2. Economic Development Level and Effective Industrial Tax Rate**



Graphs by year

Source: Calculated by the author from China State Statistical Bureau (various years).

**Figure 3. Economic Development Level and Rent from Land Development**



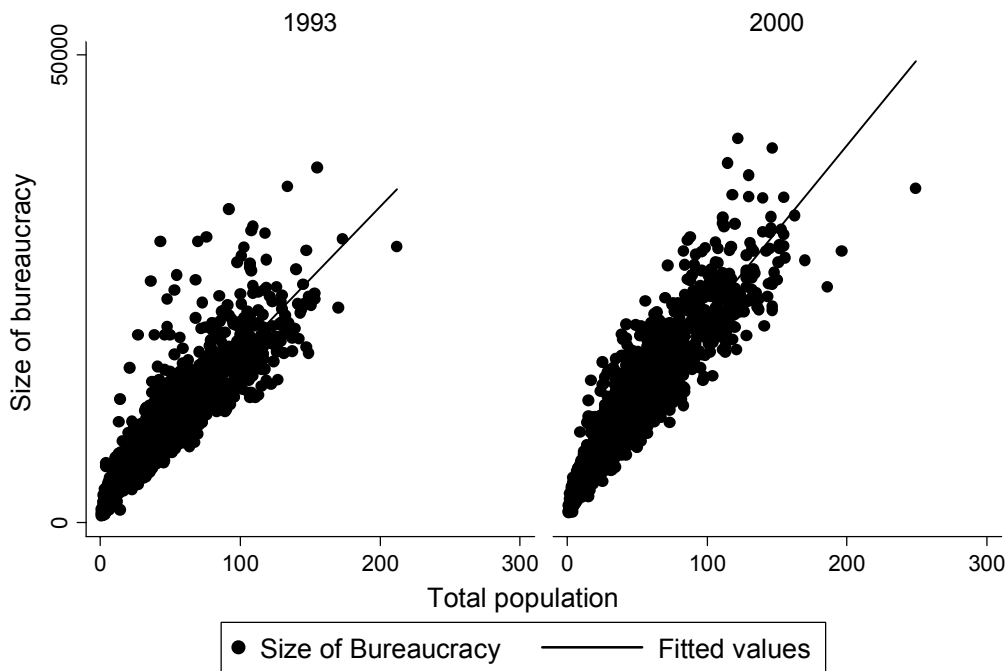
Graphs by year

Source: Calculated by the author from China State Statistical Bureau (various years).



China's government structure can be characterized as a replicate hierarchy. The provincial governments replicate the ministerial structure of the central government while the county and prefecture government replicate the provinces. Apart from the rather homogenous governance structure, local governments also share the same central mandates. The main priorities include collecting taxes; maintaining social order; and implementing goals, such as agricultural industrialization and urbanization, determined at higher levels. As a result, the government size has little to do with the local economic development level. Rather, it is more correlated to the need of central mandates and the size of population. Figure 4 plots the relationship between the number of bureaucratic positions and the size of local population in 1993 and 2000. There indeed exists a strong linear correlation between these two. Therefore, the regional fiscal burden to support the bureaucracy is uneven.

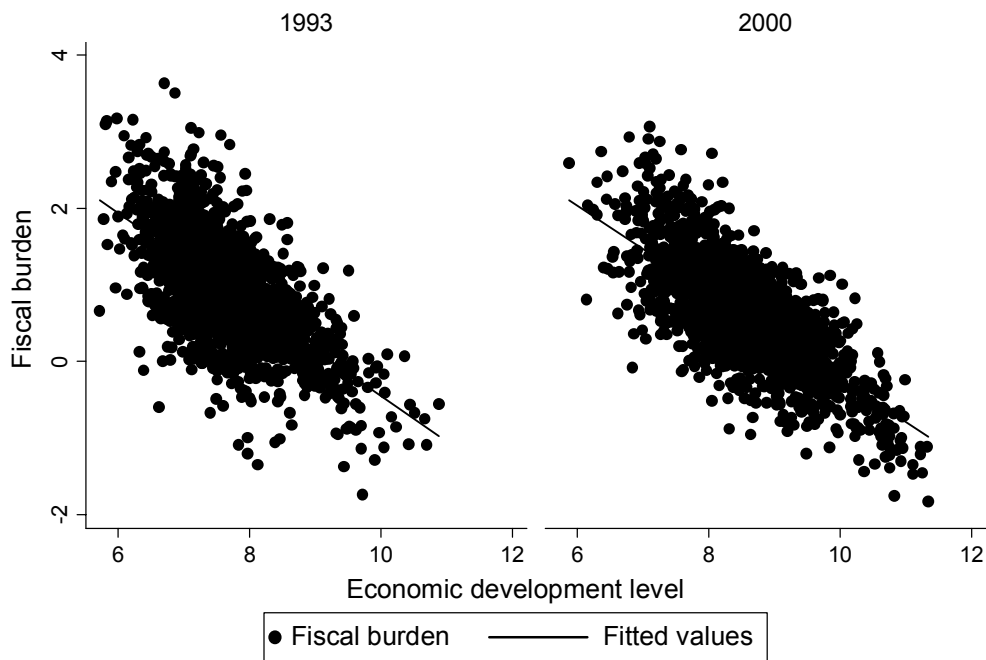
**Figure 4. Size of Bureaucracy and Total Population**



*Source: Calculated by the author from China State Statistical Bureau (various years).*

Figure 5 further highlights a negative correlation between fiscal dependent burdens and economic development, indicating that the revenue capacity in support of the public payroll is much weaker in poor counties than in more developed ones. In poor regions, the local government has few financial resources beyond its operating costs to be able to provide public goods and services.

**Figure 5. Economic Development and Fiscal Dependent Burden**



Graphs by year

*Source: Calculated by the author from China State Statistical Bureau (various years).*

The uneven regional development in nonfarm activities in the rural sector has been cited as the major driver of increased rural inequality (Rozelle 1994; Fan, Zhang, and Zhang 2004). Wan, Lu, and Chen (2003) and Zhang and Fan (2004) further show that the growing regional disparity in public capital significantly contributes to rising regional inequality in nonfarm development, largely because public capital is needed to complement private capital. Without basic infrastructure in place, such as electricity and roads, it is hard for industrial firms to operate. The evidence here offers an additional explanation: regions with higher implicit industrial tax rates have more difficulty

attracting capital inflows than those with lower tax rates, which causes more fragmentation in capital markets and higher regional disparity.

In short, the descriptive analysis shows that along with fiscal decentralization, regional public finance distribution—particularly in terms of productive public spending—has greatly deteriorated, contrary to the observations of Jin, Qian, and Weingast (1999) to 1992. These results appear to be inconsistent with the theoretical predictions of Tiebout (1956) and Qian and Roland (1998); hence, more thorough quantitative examination on the impact of decentralization is considered in the next section.

### **Quantitative Evidence Based on County Data**

A more quantitative method is now used to examine the impact of existing economic structure and fiscal dependent burdens on subsequent local economic growth. Following Barro and Sala-I-Martin (1995) on growth convergence, the growth rate of per capita GVIAO is modeled as a function of its initial value, initial economic structure, and fiscal dependent burdens, along with a set of other variables:

$$\log\left(\frac{y_{it}}{y_{it-1}}\right) = a + \beta \log(y_{it-1}) + \gamma Z + \delta D + \varepsilon_i, \quad (1)$$

where  $y_{it}$  is per capita GVIAO. The subscripts  $t$  and  $t-1$  refer to 2000 and 1993, respectively. The variable on the left-hand side represents the growth rate of per capita GVIAO over the period. The coefficient  $\beta$  stands for the speed of convergence of per capita GVIAO. The coefficient provides useful information as to how initial conditions contribute to long-term growth and whether or not there is convergence. A negative value indicates convergence, while a positive value indicates divergence. Because of diminishing returns to capital, in a perfect market the returns to capital and labor equalize across regions, creating convergence.  $Z$  includes the share of gross value of agricultural output in GVIAO and the ratio of public employee to total local revenue. These two variables are in logarithmic form.  $\gamma$  is the corresponding coefficient for the two variables.  $D$  is a set of dummy variables. If a county is nationally designated as poor, it is assigned a value of 1; otherwise it is assigned a value of zero. In different specifications, prefecture

(an administrative unit between the provincial and country levels in China) and provincial fixed effects are also included.  $\delta$  is a vector of coefficients for these fixed effects.

Table 4 reports regression results under four specifications. The first three regressions include prefecture-, provincial-, and regional-level fixed effects, respectively. The last column excludes any dummy variables. The second-last row presents the Akaike's information criterion (AIC) for model selection. The model with the smallest value is preferred. The AIC criterion suggests that the first regression with the prefecture-level fixed effects dominates the other three. Because county-specific price information is not available, fixed prefecture-level effects serve as a proxy to eliminate the price effect inherent in the nominal growth of per capital GVIAO over the period. Moreover, these fixed effects may capture other shocks common within prefectures in China.

**Table 4. The Effect of Initial Economic Structure and Government Size on Economic Growth, by Regression**

Variables	Regression 1	Regression 2	Regression 3	Regression 4
Initial value, 1993	-0.467** (0.030)	-0.423** (0.027)	-0.384** (0.026)	-0.313** (0.025)
Economic structure, 1993 (Agricultural gross output value/GVIAO)	-0.340** (0.084)	-0.209** (0.083)	-0.211** (0.080)	-0.244** (0.081)
Fiscal dependent burdens, 1993 (number of employees on public the payroll/total local revenue)	-0.125** (0.025)	-0.171** (0.025)	-0.165** (0.023)	-0.161** (0.023)
Nationally designated poor county status, 1993	-0.227** (0.028)	-0.243** (0.028)	-0.233** (0.030)	-0.233** (0.031)
Regional dummies	Prefecture**	Province**	Region**	None
Omission variable test (p-value)	0.336	0.037	0.086	0.046
Akaike's information criterion	1,681.5	2,220.1	2,598.8	2,653.1
Adjusted R <sup>2</sup>	0.536	0.290	0.117	0.090

*Source: Calculated by author.*

*Note: Coefficients for dummies are not reported. Figures in parentheses indicate standard errors. \*\* indicates significance at the 1 percent level.*

The table also presents the  $p$ -values of the regression specification error test (RESET) for omitted variables. Only the first specification with prefecture dummies

accepts the null hypothesis that there are no missing variables. The other three regressions all reject the null hypotheses, so the first specification is preferred.

The coefficient for the initial value of per capita GVIAO in all the regressions is negative, suggesting the existence of a mean convergence. The coefficient for the share of agricultural output in the initial year, 1993, is statistically significant in these regressions, indicating that the heterogeneous economic structure offsets divergence. For a region primarily relying on agricultural revenues, the subsequent growth in productive spending is slower than a region endowed with a large nonfarm tax base.

The negative and significant coefficient for the fiscal dependent variable in 1993 suggests that oversized bureaucracy can encumber local economic growth in poor regions. In an ideal (Tibout) world where local governments are responsive to the needs of constituents, lower revenues mean smaller government. But in China, government size is largely inflexible, creating heavier burdens in the poorer regions relative to the richer ones under the current system of fiscal decentralization.

Table 4 also shows the counties that are nationally designated as poor are growing more slowly than other counties. This is consistent with the findings by Fan, Zhang, and Zhang (2004) on the performance of China's poverty alleviation program. There are several possible explanations for this. First, local governments in poor countries may be more likely to understate their performance indicators so as to retain their poverty status and qualify for transfers. Second, in the presence of central transfers, local officials may spend more time building connections with the higher levels of government rather than developing their local economies.

The coefficients for the dummy variables are not presented in the table to save space, but they are jointly significant in the first three specifications. In the third specification, the coefficient for the inland coefficient is statistically negative. Table 5 lists the separate regression results for the coastal and inland regions indicate that, with the exception of the economic structure variable, the coefficients for other variables can be considered robust (Table 5). Within prefectures in a coastal region, the economic

structure is more homogenous. This is probably why the coefficient for this variable in the first regression is insignificant.

Simply put, fiscal decentralization may erode distributional equity across regions when economic structures differ and local governments are excessively large.

**Table 5. The Effect of Initial Economic Structure and Government Size on Economic Growth, by Region**

<b>Variables</b>	<b>Coastal region</b>	<b>Inland</b>
Initial value, 1993	-0.418** (0.062)	-0.503** (0.036)
Economic structure, 1993 (Agricultural gross output value/GVIAO)	-0.153 (0.160)	0.406** (0.099)
Fiscal dependent burdens, 1993 (number of employees on the public payroll/total local revenue)	-0.198** (0.060)	-0.106** (0.028)
Nationally designated poor county status	-0.229** (0.070)	-0.238** (0.031)
R <sup>2</sup>	0.690	0.580

*Source: Calculated by author.*

*Note: Coefficients for prefecture dummies are not reported. Figures in the parentheses indicate standard errors. \*\* indicates significance at the 1 percent level.*

#### IV. CONCLUSIONS AND POLICY IMPLICATIONS

Considering the sheer size of China, fiscal decentralization is a must in tackling the information and incentive problems inherent in the relationship between central and local governments. Nevertheless, decentralization is a complex process involving not only fiscal aspects but also governance and mandates. When the size of government is largely determined independently of the needs of constituencies, the standard Tiebout sorting model no longer applies. Under the current fiscal arrangements between China's central and local governments, large regional variation in production patterns and revenue structures also makes the underlying assumption of the Qian and Roland (1998) fiscal federalism model invalid. Moreover, the transaction costs of tax collections become a more serious issue under fiscal decentralization. The high collection costs of agricultural taxes combined with the excessive size of local government means that in regions where agricultural production dominates, local governments struggle to provide the minimum level of basic public goods and services. Farmers and firms in poor regions pay heavy tax burdens, while those in the more highly developed (and thereby wealthier) regions benefit from more substantial public service provision and lower tax burdens. The regressive nature of the rural taxation system goes a long way toward explaining the divergent regional growth patterns, even after controlling for the initial value. Overall, fiscal decentralization favors wealthy locations, exacerbating the gap in equity across regions.

In his famous article, Oates (1968) argued that to ensure the functioning of fiscal federalism, the central government should maintain oversight of stabilization and distribution, while the local government's predominant role should be allocation, that is, the more efficient provision of public goods and services. In the case of China, however, the local government performs the functions of both distribution and allocation, such that achieving fiscal equality across regions is virtually impossible given the country's diversity.

The rigid structure and size of local governments in China is another major impediment. Without significant reductions to the size of local government— especially

in areas where agriculture is the major revenue source—fiscal decentralization alone will be insufficient to address the distributional problem associated with decentralization. Most theories on federalism assume that local government size and the services provided are determined in response to the needs of local residents. In a democratic society, voters endogenously determine local government size. Under the current system in China, however, local governments in less-developed regions are more likely to expand if they are given authority to determine staffing levels. Public employment is a particularly attractive option in regions where job opportunities in the nonfarm sector are scarce, and this could encourage rent-seeking behavior on the part of officials in terms of their hiring relatives and friends. This is even more likely when constituents have little say in local affairs. Therefore, reducing and controlling the size of local government under the current political system poses a dilemma for policymakers. Economic decentralization during the reform period undoubtedly contributed to China's growth, but given the central political regime, regional disparities have widened significantly. Hence, successfully achieving balanced regional growth under these conditions is a delicate undertaking. Considering China's past successes in engineering institutional innovations, it is hoped that this new challenge will induce further innovations related to fiscal decentralization and governance.



## REFERENCES

- Bardhan, Pranab. 2002. "Decentralization of Governance and Development," *Journal of Economic Perspective* 16 (4): 185–205.
- Barro, Robert, and Xavier Sala-I-Martin. 1995. *Economic Growth*. Cambridge, Massachusetts: McGraw-Hill.
- China State Statistical Bureau. Various years. *China County Public Finance Statistical Yearbook*. Beijing: China Statistical Publishing House.
- Dethier, Jean-Jacques. 1999. "Governance and Economic Performance: A Survey," ZEF Discussion Paper on Development Policy. Bonn: Centre for Development Research (ZEF).
- Fan, Shenggen, Linxiu Zhang, and Xiaobo Zhang. 2004. "Reform, Investment and Poverty in Rural China," *Economic Development and Cultural Change* 52 (2): 395–422.
- Jin, Hehui, Yingyi Qian, and Barry R. Weingast. 1999. "Regional decentralization and fiscal incentives: Federalism, Chinese style." Memo, Stanford University.
- Kanbur, Ravi, and Xiaobo Zhang. 1999. "Which Regional Inequality: Rural-Urban or Coast-Inland? An Application to China," *Journal of Comparative Economics* 27: 686–701.
- \_\_\_\_\_. 2005. "Fifty Years of Regional Inequality in China: A Journey Through Central Planning, Reform and Openness." *Review of Development Economics* 9(1): 87-106, January 2005.
- Knight, John, and Shi Li. 1999. "Fiscal Decentralization: Incentives, Redistribution and Reform in China" *Oxford Development Studies* 27 (1): 5–32.
- Lin, Justin Yifu, and Zhiqiang Liu. 2000. "Fiscal Decentralization and Economic Growth in China." *Economic Development and Cultural Change* 49 (1): 1–21.
- Lin, Justin Yifu, Ran Tao, Mingxing Liu, and Qi Zhang. 2002. *Urban and Rural Household Taxation in China: Measurement and Stylized Facts*. China Center for Economic Research Working Paper, Beijing University, China.
- Liu, Mingxing, and Ran Tao. 2004. "Regional Competition, Fiscal Reform and Local Governance in China." Paper presented at the conference, "Paying for Progress. Public Finance, Human Welfare, and Inequality in China," held at the Institute for Chinese Studies, May 21–23, 2004, Oxford, U.K.
- Oates, Wallace. 1968. "The Theory of Public Finance in a Federal System." *Canadian Journal of Economics* 1 (1): 37–54.
- Oi, Jean C., and Shukai Zhao. 2004. "Fiscal Crisis in China's Townships: Causes and Consequences." Paper presented at the conference, "Grassroots Political Reform,"

- held at Fairbank Center for East Asia Research, Harvard University, October 29-31, 2004, Cambridge, MA.
- Park, Albert, Scott Rozelle, Christine Wong, and Changqing Ren. 1996. "Distributional Consequences of Reforming Local Public Finance in China." *China Quarterly* 147 (September): 751–778.
- Qian, Yingyi, and Gerard Roland. 1998. "Federalism and the Soft Budget Constraint." *Economic Review* 88 (5): 1143–1162.
- Rozelle, Scott. 1994. "Rural Industrialization and Increasing Inequality: Emerging Patterns in China's Reforming Economy." *Journal of Comparative Economics* 19: 362–391
- Shih, Victor, and Qi Zhang. 2004. "Who Receives Subsidies: A Look at the County-Level Before and After the 1994 Tax Reform." Paper presented at the conference, "Paying for Progress: Public finance, Human Welfare, and Inequality in China," held at the Institute for Chinese Studies, May 21–23, 2004, Oxford, U.K.
- Smith, Adam. 1776. *The Wealth of Nations*. Bantam Classic Edition, March 2003. New York: Bantam Dell.
- Tiebout, Charles. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy* 64: 416–424.
- Tong, James. 1998. "Fiscal Regimes in China, 1971–1998." *Chinese Economy* 31 (3): 5–21.
- Von Braun, Joachim, and Ulrike, Grote. 2002. "Does Decentralization Serve the Poor?" in Ehtisham Ahmad and Vito Tanzi (eds). *Managing Fiscal Decentralization*. London: Routledge.
- Wan, Guanghua, Ming Lu, and Zhao Chen. 2003. "Globalization and Regional Inequality in China." WIDER working paper. <<http://www.wider.unu.edu/conference/conference-2003-3/conference-2003-3-papers/wan-chen-3-9-03.pdf>>. Helsinki: United Nations World Institute of Development Economic Research.
- West, Loraine A., and Christine Wong. 1995. "Fiscal Decentralization and Growing Regional Disparities in Rural China: Some Evidence in the Provision of Social Services." *Oxford Review of Economic Policy* 11 (4): 70–84.
- World Bank. 2002. *China National Development and Sub-national Finance: A Review of Provincial Expenditures*. Washington, D.C.
- Xu Yong. 2003. "Xiangcun Zhili Jiegou Gaige de Zouxian" ["Direction of Reforms on Rural Governance"]. *Zhanlue Yu Guanli [Strategy and Management]* 4: 90–97.
- Zhang, Le-Yin. 1999. "Chinese Central-Provincial Fiscal Relationships, Budgetary Decline and the Impact of the 1994 Fiscal Reform: An Evaluation." *China Quarterly* 157: 115–41.

- Zhang, Tao, and Heng-fu Zou. 1998. "Fiscal Decentralization, Public Spending and Economic Growth in China." *Journal of Public Economics* 67: 221–240.
- Zhang, Xiaobo, and Shenggen Fan. 2004. "Public Investment and Regional Inequality in Rural China." *Agricultural Economics* 30 (2): 89–100.
- Zhang, Xiaobo, Tim Mount, and Richard Boisvert. 2004. "Industrialization, Urbanization, and Land Use in China." *Journal of Chinese Economic and Business Studies*, 2(3): 207-224.

## LIST OF DISCUSSION PAPERS

- No. 01 “Market Opportunities for African Agriculture: An Examination of Demand-Side Constraints on Agricultural Growth” by Xinshen Diao, Paul Dorosh, and Shaikh Mahfuzur Rahman with Siet Meijer, Mark Rosegrant, Yukitsugu Yanoma, and Weibo Li (September 2003)
- No. 02 “Exploring Regional Dynamics in Sub-Saharan African Agriculture” by Xinshen Diao and Yukitsugu Yanoma (October 2003)
- No. 03 “The Effect of WTO and FTAA on Agriculture and the Rural Sector in Latin America” by Samuel Morley and Valeria Piñeiro (February 2004)
- No. 04 “Public Expenditure, Growth, and Poverty Reduction in Rural Uganda” by Shenggen Fan, Xiaobo Zhang, and Neetha Rao (March 2004)
- No. 05 “Food Aid for Market Development in Sub-Saharan Africa” by Awudu Abdulai, Christopher B. Barrett, and Peter Hazell (April 2004)
- No. 06 “Security Is Like Oxygen: Evidence from Uganda” by Xiaobo Zhang (May 2004)
- No. 07 “The Importance of Public Investment for Reducing Rural Poverty in Middle-income Countries: The Case of Thailand” by Shenggen Fan, Somchai Jitsuchon, and Nuntaporn Methakunnavut (June 2004)
- No. 08 “Cross-Country Typologies and Development Strategies to End Hunger in Africa” by Xiaobo Zhang, Michael Johnson, Danielle Resnick, and Sherman Robinson (June 2004)
- No. 09 “Smallholder African Agriculture: Progress and Problems in Confronting Hunger and Poverty” by Danielle Resnick (July 2004)
- No. 10 “Bridging Research, Policy, and Practice in African Agriculture” by Steven Were Omamo (July 2004)
- No. 11 “Prospects for Growth and Poverty Reduction in Zambia, 2001-2015” by Hans Lofgren, James Thurlow, and Sherman Robinson (August 2004)
- No. 12 “Road Development, Economic Growth, and Poverty Reduction in China” by Shenggen Fan and Connie Chan-Kang (August 2004)
- No. 13 “Blunt to Sharpened Razor: Incremental Reform and Distortions in the Product and Capital Markets in China” by Xiaobo Zhang and Kong-Yam Tan (August 2004)

- No. 14 “Strategic Analysis and Knowledge Support Systems for Rural Development Strategies in Sub-Saharan Africa” by Michael Johnson and Danielle Resnick, with Simon Bolwig, Jordan Chamberlin, Liangzhi You, Stanley Wood, and Peter Hazell (October 2004)
- No. 15 “Institutions and Economic Policies for Pro-poor Agricultural Growth” by Andrew Dorward, Shenggen Fan, Jonathan Kydd, Hans Lofgren, Jamie Morrison, Colin Poulton, Neetha Rao, Laurence Smith, Hardwick Tchale, Sukhadeo Thorat, Ian Urey, and Peter Wobst (November 2004)
- No. 16 “The Road to Pro-poor Growth in Zambia: Past Lessons and Future Challenges” by James Thurlow and Peter Wobst (December 2004)
- No. 17 “Achieving Regional Growth Dynamics in African Agriculture” by Awudu Abdulai, Xinshen Diao and Michael Johnson (January 2005)
- No. 18 “Public Investment and Poverty Reduction in Tanzania: Evidence from Household Survey Data” by Shenggen Fan, David Nyange and Neetha Rao (April 2005)
- No. 19 “Identifying the Drivers of Sustainable Rural Growth and Poverty Reduction in Honduras” by Hans G.P. Jansen, Paul B. Siegel and Francisco Pichón (April 2005)
- No. 20 “Growth Options and Poverty Reduction in Ethiopia: A Spatial, Economywide Model Analysis for 2004-15” by Xinshen Diao and Alejandro Nin Pratt with Madhur Gautam, James Keough, Jordan Chamberlin, Liangzhi You, Detlev Puetz, Danille Resnick and Bingxi Yu (May 2005)