

PLC Working Paper

w026

2009.07



北京大学-林肯研究院 城市发展与土地政策研究中心

PEKING UNIVERSITY - LINCOLN INSTITUTE

Center for Urban Development and Land Policy

Land Leasing and Local Public Finance in China's Regional Development: Evidence from Prefecture-Level Cities

PLC WORKING PAPER SERIES NO.026

http://www.plc.pku.edu.cn/en_publications.aspx

2009.07

Ran Tao

Center for Chinese Agricultural Policy, Chinese Academy of Sciences
Peking University – Lincoln Center

Fubing Su

Vassar College
Peking University – Lincoln Center

Mingxing Liu

China Institute for Education Finance Research, Peking University

Guangzhong Cao

China Institute for Education Finance Research, Peking University

Leo KoGuan Building, Suite 508, Peking University, Beijing 100871, China

The views expressed herein are those of the author(s) and do not necessarily reflect the views of the Peking University – Lincoln Center or any other associated institution. The author(s) and the Peking University – Lincoln Center jointly own all rights to this working paper. This working paper, its content, and any associated data may not be used without the express written consent of the author(s) or the Peking University – Lincoln Center, and any reference must provide full credit to both the author(s) and the Peking University – Lincoln Center.

Land Leasing and Local Public Finance in China's Regional Development: Evidence from Prefecture-Level Cities

Formally Accepted by *Urban Studies and forthcoming 2009*

Ran Tao ^a Fubing Su ^b Mingxing Liu ^c Guangzhong Cao ^c

a Center for Chinese Agricultural Policy, Chinese Academy of Sciences, Beijing,

b Vassar College, the United States

c China Institute for Education Finance Research, Peking University Beijing

d School of Urban and Environmental Sciences, Peking University, Beijing, China,

Abstract: By analyzing the evolution of local governments' roles in different periods of China's growth in transition, this paper explores local fiscal incentives to use subsidized land and infrastructure as a key instrument in regional competition for manufacturing investment after the mid- 1990s. We relate local land development behavior to China's current land use institutions and inter-governmental arrangements. On the basis of a panel data covering prefectural-level city from 1999 to 2003, we empirically identify and compare the fiscal impacts of different forms of land leasing (by negotiation versus by auction/tender). Policy implications are drawn from this analysis to further reform China's urban land system and fiscal institutions.

JEL codes: H2, H7, R5

Keywords: race to bottom competition, land leasing by negotiation, tax haring system, local fiscal incentives

We would like to recognize the China National Science Foundation (70633002), the Chinese Ministry of Science and Technology Key Technologies R&D Program (2006BAJ11B06), the Chinese Academy of Science Innovation project (KSCX2-YW-N-039) and the Lincoln Institute of Land Policy for generous financial support. We also want to thank Hui Wang and Fei Yuan for helpful comments. All faults are solely ours. Corresponding author: caogzh@urban.pku.edu.cn Tel: 008613701300617.

Land Leasing and Local Public Finance in China's Regional Development: Evidence from Prefecture-Level Cities

1. Introduction

The market-oriented reform has fundamentally transformed China and its economy has been growing more than nine percent a year for the past thirty years. Political economists argue that local governments have played an active role in this development process. Local officials, for example, are believed to have constructed pro-business and pro-growth environments by building infrastructures, offering tax incentives, and simplifying administrative and regulatory rules in their jurisdictions. These measures have attracted outside businesses (both foreign and domestic) to invest in local economies. Much of the literature on the causes of China's economic development in the 1980s and the early 1990s has emphasized the importance of fiscal decentralization in providing revenue incentives for local authorities (Oi, 1992 and 1999; Shirk, 1993; Lin and Liu, 2000). Some scholars analyze the high-powered inter-governmental fiscal revenue-sharing contracts and coin a new phrase of "market-preserving federalism with Chinese characteristics" (Montinola *et al.*, 1995; Qian and Weingast, 1997).

Since the second half of the 1990s, Chinese regional economies have entered a new phase. Local officials continued to promote economic development. In many ways, they have become more aggressive in pursuing industrialization and urbanization. Fervor of "industrial parks", "development zones", as well as residential complexes rampaged through China's urban and rural landscapes. By the end of 2003, the total number of industrial zones and parks had reached 3,837. Among them, only six percent (232) had received approval from the central government. Provincial governments approved twenty-seven percent of them (1,019). Various city, county, and township governments had taken their own initiatives to get the vast majority of these zones (2,586) up and running. By 2006, the figure further jumped to 6,015 (Zhai and Xiang, 2007). Developing and managing land has become a major business for many local governments. Their strategy of leasing land raises some interesting puzzles. Under the current regime, land belongs to the state (in urban areas) and village collectives (in rural areas). Land can be transacted in the market as long as it is mediated through the state. After acquiring the land, local governments can lease it for various purposes through either one-on-one negotiations or more open auctions. Since public auctions include multiple bidders, they usually garner higher prices for the government. According to official statistics, local governments raked in 1.69 million Yuan per hectare through negotiated land

leasing while public auction raised that number to 5.67 million Yuan in 2003.¹ Despite this huge price advantage, only a small percentage of land was actually traded in the more competitive fashion. In 1999, public auctions accounted for only fifteen percent of all land leasing deals in the country. Since then, the central government has demanded more transparency in this process. Four years later, still only twenty-seven percent of land leases were awarded through auctions. Why did local governments exhibit such a strong preference for a less revenue-yielding strategy? Were they not driven by maximizing local fiscal revenues as commonly assumed by many political economists?

One may find an answer in the self-interest of local officials. One-on-one negotiations afford officials the opportunity to exact bribes and line their own pockets. Public auctions, on the other hand, dissipate the rent. While certainly reasonable, this explanation defies systematic analysis. We propose and empirically test an explanation that is based on regional competition and asset mobility. We argue that local officials continued to pursue revenue maximization in the new era. The 1994 tax-sharing-reform recentralized fiscal resources and local governments faced tighter budget constraints. To pay for increasingly demanding financial obligations, local governments had to double their revenue collection efforts. Moreover, with the gradual removal of regional protectionist barriers in the late 1990s, local governments faced a more competitive national market and could no longer rely on SOEs (state-owned enterprises) and TVEs (township and village enterprises) for easy incomes. As privatization was quickly unfolding, local governments metamorphosed into tax collectors and paid more attention to expanding businesses in their jurisdictions. They were particularly keen on developing two kinds of businesses, i.e. manufacturing and services (including commercial as well as residential projects). Here lies one major distinction. While services are generally locality specific, manufacturing facilities are footloose. This mobility empowered enterprises and intensified regional competition. In addition to relatively high paying jobs and technology, manufacturing enterprises also stimulated service industries a few years down the road. This spillover effect made manufacturing investments particularly desirable. To court these capitals, local officials had to engage in one-on-one negotiations and lower land prices, including giving away land leases free of charge. On the other hand, they could be more discriminatory to service land users. In short, local governments opted for a less revenue-yielding land leasing strategy, not because of the lack of revenue motivation but because of the constraints imposed by asset mobility.

¹ We calculated these prices from data published in China's National Statistical Bureau official website. For more information, see Table 2.

This paper aims to contribute to scholarly debates in several important fields. Firstly, there is a burgeoning literature on local state developmentalism. Researchers argue that formal budgetary contracts incentivized local governments for economic development (Montinola *et al.*, 1995; Che *et al.*, 2004). Some scholars have questioned this explanation by pointing out the lack of central commitment during the 1980s (Tsui, 2004; Cai and Treisman, 2007). Our study also casts doubt on this analysis by focusing on the change since the 1994 tax reform. According to their logic, recentralization under the tax-sharing reform should have weakened local governments' drive for revenue and economic development. The reality was just the opposite. We argue that local governments' continuing pro-growth incentive is a result of changes not only in central-local fiscal arrangement but also state-business relations. The market-preserving scholars have over-emphasized the formal budgetary rules. On the other hand, we believe that factor mobility became a more realistic assumption in the second half of 1990s. In a way, market-preserving federalism was more appropriate for this new stage of development.

Secondly, scholars have been debating the relationship between regional competition for investments and local public finance (Tiebout, 1956; Brenna and Buchanan, 1980; Wilson, 1986; Zodrow and Mieszkowski, 1986; Wellisch, 2000; Wilson and Wildasin, 2004). While some deplore the deleterious effects of "race to the bottom", others celebrate the welfare gains through sorting and matching. The difficulty of taxing mobile capital lies beneath these analyses. Our paper extends this insightful literature in two ways. Instead of formal tax rates competition, we discuss one major input that may sway investors' location decision, i.e. land. Other scholars have analyzed factors that are open to similar dynamics, such as public investments in efficiency-enhancing infrastructures and lax environmental regulations (Keen and Marchand, 1997; Wilson, 1999). In addition, we make further distinction between manufacturing and service capitals. This allows us to draw more refined comparisons and evaluate the power of asset mobility.

Finally, land in China has been under close scrutiny in recent years. Through surveys and in-depth case studies, students of urbanization have documented dramatic land development in different parts of the country (Ho and Lin, 2004; Lin, 2007; Lichtenberg and Ding, 2008; Po, 2008; Wang and Scott, 2008; Yang and Wang, 2008). These studies deepen our knowledge about the scale of land conversions and the huge regional variations. More important, these scholars reveal great details of the institutional environment in land management, including central and local policies as well as the interests of the key players. Their rich process-tracing helps us understand major driving forces behind this phenomenon. Our analysis complements the existing research by focusing on one particular causal mechanism: financial

incentive of local governments. We explain how it has fueled land development and shaped leasing strategies. Our empirical findings based on national level data lend strong and systematic support to analyses from specific cases. Our paper is complementary in another sense. While most studies emphasize non-budgetary revenues through land development, i.e. various fees, we zoom in on formal taxes part of the local revenues.

Theoretical contributions aside, our paper has important policy implications. Intensified regional competition for manufacturing investments has pressured local governments to lease land at ever lower prices, which became feasible mainly because of the latter's coercive power. Excessive land requisitioning has led to some serious economic and social consequences. Cheap land invited over-investment in manufacturing in many regions, which put more pressure on basic infrastructures and local environments. Sustainability of this growth was called into question. Unfair compensations, moreover, have enraged many peasants and violent clashes have destabilized the rural society. We argue that restoring peasants' rightful place in land transactions and making them a stake holder offer the best hope for defusing the tension.

The rest of the paper proceeds as follows. We first explore the institutional roots of land fervor and examine central-local as well as state-business relations before and after the tax-sharing reform in the early 1990s. Section 3 discusses the current land management regime and analyzes the tradeoffs between two leasing strategies. Location specificity provides an analytical angle. In section 4, we use panel data of China's prefecture-level cities to empirically evaluate the fiscal impacts of different leasing strategies. The final section concludes with some policy implications.

2. Regional Competition and the Rise of Land Developmentalism

Fiscal federalism provides a dominant interpretation of local state developmentalism and China's economic miracle. According to these scholars, local governments promoted economic growth for two reasons. Fiscal contracts regulating central-local budgetary incomes incentivized local officials. Collecting more revenues enabled them to save more for local spending. In addition, factor mobility forced local governments into fierce competition and better protection of property rights. Neither argument, however, accurately describes Chinese political economy in the 1980s (Tsui and Wang, 2004; Yang, 2006; Cai and Treisman, 2007). We echo these observations but contend that the Chinese economy since the second half of the 1990s does bear the factor mobility argument out. To illustrate this point, we interpret China's local developmentalism from a broader institutional framework. Many scholars have

emphasized the central-local fiscal dimension. While important, state-business relations must be examined as well to explain local officials' behavior. Combining these two angles, we can break down regional economics into two stages.

2.1 Protectionist local development

The first stage started in the early 1980s and gradually ended with the introduction of the tax-sharing system in 1994. During this period local governments actively promoted economic development. In the wake of the Cultural Revolution disaster, the Party elevated economic construction to the top of its agenda. It was well understood that economic revival hinged on local initiatives. Local officials were entrusted with more economic decision-making power, including the control over local public finance. With intimate knowledge about local conditions, they could make better decisions and invest public money wisely. This economic and fiscal decentralization created powerful incentives among local governments to develop economies. An “eating in separate kitchens” system was introduced, whereby local governments gained certain rights over the surplus revenues (Oi, 1992; Bahl, 2000). But this fiscal contract was unlikely to be one major factor behind local developmentalism. The contract lacked credibility and the central government had the power to revise the clauses afterwards. Between 1980 and 1994, the central government made several major adjustments (Wong *et al.*, 1995)². In each case, the central government was alarmed by the increasing share of local governments and tried to grab a large piece of the growing revenues. This significantly undermined the effectiveness of the contract.

The existence of extra-budgetary accounts had larger impacts on local governments' incentive for growth. Since the formal budgetary contracts could not be trusted, local officials used extra-budgetary accounts to hide revenues from the center (Tsai, 2004). Government-business relations facilitated this diversion. Despite the dramatic success of private farming in the rural area, China's industrial success in the 1980s was really engineered by local states. For example, State Owned Enterprises (SOEs) controlled by provincial and municipal governments alone accounted for eighty percent of the total industrial outputs at or above the township level by 1985 (Qian and Xu, 1993). Even eight years later, private enterprises contributed to less than fifteen percent of the national industrial outputs (Qian, 1999). The status of

² There were at least three major changes in 1982-83, 1985, and 1988. For example, in the 1982-83 adjustment, local governments enjoyed a larger marginal share of the industrial and commercial tax, but the center was able to significantly raise the central fixed income. In the 1985 and 1988 reforms, the central fixed revenues were further raised.

Township and Village Enterprises (TVEs) was somewhat ambiguous, but they were mostly funded and operated by township governments and village collectives (Naughton, 1995). Local officials at various levels invested government resources into these public enterprises. They also utilized their power and pressured local bank branches to grant loans (Park and Shen, 2002;).³ This symbiosis, from a revenue perspective, allowed local officials to avoid central predation. Local control of all taxation bureaus provided further convenience. As owners, local governments collaborated with “their” enterprises to inflate production costs and deductions. As enterprise profits dropped, local governments had less to share with the center. These hidden resources stayed in the local enterprises or went to local extra-budgetary accounts (Ma, 1995; Tsui and Wang, 2004).

Being owners of public enterprises also shaped local governments’ attitude toward private as well as non-local businesses. Given the pent up demand for consumer goods and cheap labor, industrial investments offered relatively guaranteed returns in the 1980s (Lin *et al.*, 1999). Public enterprises under active state sponsorship preempted local private businesses. The latter faced high entry barriers and uncertainty (Qian, 1999). At the same time, local governments intentionally closed local markets off to commodities from other areas by disconnecting inter-regional roads or ordering local businesses to buy local products only. Foreign direct investments, one major source of mobile capital, did not make much inroad into Chinese economies then. They were heavily concentrated in special economic zones. For example, between 1983 and 1992, Guangdong, Fujian, Beijing, Shanghai, and Tianjin hosted more than seventy percent of all FDIs in the country.⁴

2.2 Marketization and the new developmentalism

This protectionist development led to its own demise in the early 1990s. As local governments rushed to build their own enterprises, duplications created serious industrial over-capacity and the pressure for restructuring mounted (Naughton, 1999; Young, 2000; Poncet, 2003). Local officials first reacted by erecting more local protections. This led to a vicious cycle and many public enterprises turned red. Gradual commercialization of banks further weakened local governments’ ability to extend cheap credits and provide subsidies. The hemorrhage prompted a gradual but determined shift toward privatization and liberalization (Li *et al.*, 2000). By the end of 1996, seventy percent of small SOEs had been privatized or

³ In the case of TVEs, some local governments went even further to explicitly guaranteed loans in lieu of collaterals for local enterprises, so that enterprises owned by the same local government (or collective) became jointly liable for loans to individual enterprises.

⁴ Our calculation based on data from National Bureau of Statistics, various years. In the early 1980s, FDIs in Guangdong alone accounted for seventy percent of the total inflow.

gone bankrupt in pioneering provinces and about half in other provinces (Cao *et al.*, 1999). In the second half of the 1990s, privatization gained momentum and about twenty-five million workers lost their jobs in SOEs and TVEs. This process was largely complete by the end of the decade (Qian, 2000). As a result, local governments transformed themselves from owners of public enterprises to tax collecting authorities.

The tax-sharing reform in 1994 further facilitated the demise of local state's pro-public enterprise bias. The reform was designed to arrest local governments' growing capacity to divert and hide revenues. Universal taxes replaced ownership-defined profit or tax submissions. Regardless of their ownership, all enterprises had to pay similar taxes. The introduction of Value-added Tax (VAT), in particular, further undermined local governments' ownership preference. As a tax on exchanges, VAT was effective in preventing cheating and fraudulent accounting practices, something quite common between local governments and their enterprises in the past. The central government built a parallel taxation agency across the country, which answered directly to the central government. VAT was collected by the central taxation agency, further limiting the room for government-business collusion in local areas (Bahl, 1998; Wong and Bird, 2005; World Bank, 2002).

The tax sharing reform had fundamentally altered central-local fiscal relations. Before 1994, local share in total government revenues gradually increased. The new system assigned some major taxes to the central government, such as the consumption tax and customs duties. Among three major taxes (VAT, business tax, and enterprise income tax), VAT was classified as a shared tax but seventy-five percent went to the central government. Enterprise income tax was initially a local tax. As it ballooned, the center reclaimed fifty percent of it in 2002 and further increased its share to sixty percent in 2003.⁵ Overall, the 1994 tax reform raised the central share in government revenues (World Bank, 2002). Local governments, on the other hand, found their share shrinking in the late 1990s and early 2000s. In addition to budgetary revenues, it became more difficult for local officials to divert revenues to extra-budgetary accounts. Their total resources could not keep up with the increasing financial obligations, including supporting retirees and laid-off workers from former SOEs and fulfilling various unfunded mandates from the center (Tsui and Wang, 2004).⁶

⁵ Business tax was assigned as a local tax. Other than this, tax bases for sub-national governments are mostly minor ones, such as urban maintenance and construction tax, vehicle purchasing tax, land use tax, , et al.

⁶ In the late 1990s and early 2000s, sub-national governments accounted for more than seventy percent of total public expenditure, while collecting less than fifty percent of total government revenues. Social service spending was decentralized further down to the county level with the sub-provincial tiers financing seventy percent of social services, provincial and central governments making up the other twenty and ten percents, respectively (World Bank, 2002).

In sum, changes in central-local fiscal arrangement and in government-business relations gave birth to a new kind of local developmentalism.⁷ Like before, local governments still had very strong incentive to promote growth. But there were two major differences. First, local officials were under great pressure to collect both budgetary and extra-budgetary revenues. Second, they welcomed any source of growth, including state and non-state, local and outside (both domestic and foreign) businesses. This triggered another round of regional liberalization and a national market for goods, capital, and labor developed very quickly (Bai *et al.*, 2003). Partly in response to these developments and partly because of restructuring in the global economy, billions of foreign direct investments rushed ashore, including many footloose manufacturers. Investors started to locate their production facilities to areas other than a few major metropolises. Factor mobility gradually became a reality and intensified regional competition.

3. Land acquisition and public leasing in China

To generate sufficient revenues, local governments turned their eyes to land. Land had been an underutilized asset in the past and clear property rights and government regulations had not developed. Local officials could easily turn it into a money-making business. As a major input for productions, land could also be strategically used to attract investors. We develop these arguments fully in this section but first introduce the regulatory structure surrounding land conversions.

3.1 Land market development and state regulation

Land market did not exist under the planned economy. Governments requisitioned land and allocated it to users with minimum fees. The need to court foreign investors in Shenzhen SEZ in 1987 midwived land use rights (Lin and Ho, 2005; Po, 2008). By separating use rights from ownership, pragmatic leaders effectively legitimized the transfer of land for commercial uses. China has since revised the contradicting clause in the constitution and promulgated laws to regulate this new market. Under the current system, land is still publicly owned. In the countryside, rural collectives own land and have the power to requisition land for local public projects, township and village enterprises, and village housings. In urban areas, land belongs to the state. Local governments can allocate land for public uses, such as school buildings, water projects, etc. They may lease land for other for-profit uses (industrial, commercial, and

⁷ In recent years, some scholars argue that local officials' career incentive has played a crucial role in regional development (Li and Zhou, 2005). More empirical testing is needed to verify this argument. We believe that political evaluation is endogenous to revenue adjustments. This analysis is developed further in a separate paper.

residential projects).⁸ As industrialization and urbanization took off in the 1990s, the demand for commercial land skyrocketed. Local states expanded into neighboring villages and claimed part of the rural land, most of which being farmland. Figure 1 shows the total areas of leased land in the country and the upward trend in the past ten years is quite clear. According to the Land Administration Law (LAL), local governments can acquire land from rural collectives on the basis of “public interests”. This ambiguous concept allows local governments to bend rules and to convert rural land for commercial development. Under this system, local state acquisition is the only legitimate means for crossing the urban/rural land divide (World Bank, 2005).

(Figure 1 about here)

Not surprisingly, local governments have turned this monopolistic power into a revenue-generating business. The secret lies in the huge gap between land acquisition costs and the leasing prices. LAL stipulates that local governments must pay rural collectives and peasants the followings for land acquisitions: a) compensations for land; b) resettlement funds; c) compensations for lost crops (Ding, 2003). The Ministry of Land Resources further requires that the maximum compensation cannot exceed thirty times the derived land productivity and any higher amount must receive explicit approval from the provincial authorities (MLR 2004). Even these moderate compensations are compromised in practice. Local governments have used various schemes to underpay the peasants, including undervaluing the land yield and opting for a lower multiplier. When land is leased out in the primary market, land users must pay the expropriation fee back, i.e. all compensations listed above. In addition, they also pay various stipulated land fees incurred in the transaction and a conveyance fee.

The last item constitutes the net profit for local governments. As de facto monopolists in local land markets, officials can rake in exorbitant revenues. In Fujian province, for example, one local government paid 10,000 Yuan per mu to farmers and collected 200,000 Yuan per mu (1/15 hectare) from industrial users and 250,000 Yuan from residential developers (Ding, 2005). Systematic data are hard to come by, but according to some statistics available for 1998, China collected 49.95 billion Yuan and \$98.31 million dollars from both domestic and international land developers. Some scholars estimated that forty-nine percent were conveyance fees (Lin and Ho, 2005). One scholar reported that land related revenues accounted for up to sixty percent of local government incomes (Lu, 2002). Another estimate put that

⁸ For residential usage, the maximum lease is 70 years. The lease is shorter for industrial and commercial usages (50 and 40 years, respectively).

figure between thirty to fifty percent for all sub-provincial governments and between fifty and sixty percent for city level governments (Zhou, 2007).

This massive land conversion, while facilitating urbanization and industrialization, has led to some undesirable consequences in China's countryside. The ability to suppress compensations incited over enthusiasm among local governments to convert rural land. The alternative route of acquiring and developing urban land was shunned because of the high conversion costs. "Green field" instead of "brown field" development has contributed to a decrease in farm land (Henderson, 2007; Lichtenberg and Ding, 2008). The huge profits also invited some brave souls to break the state monopoly. Local government agencies, rural collectives, and individual farmers brought their land directly to the market and rented it out to commercial users, fueling a vibrant informal market (Lin and Ho, 2005; Wang and Scott, 2008). This has become a breeding ground for corruption. But more importantly, existing rules disenfranchised farmers in the negotiation process.⁹ As legal agents of rural collectives, local cadres could seize part of the proceeds legitimately or embezzle money without much supervision. Low compensations coupled with few off-farm skills fermented dispossessed farmers to violent clashes with local authorities, seriously undermining rural stability (Zhu and Prosterman, 2007; Han, 2004). To stamp out local official exuberance, the State Council established a highly centralized State Land Supervision (SLS) system in 2006. Nine regional offices were dispatched from the center and were charged with supervising unauthorized and illegal land conversions across the country. In its first year of existence, SLS has closed 63 development zones, reclaimed about 40,000 mu unutilized land, and brought charges against 256 local officials (SLSB, 2008). While impressive, these figures also reveal the challenges facing the land regulatory regime.

3.2 Location-specificity and leasing strategies

Local officials may lease land to commercial users through four mechanisms. Land users and officials can meet one-on-one and negotiate (xie yi) the specific leasing terms. The other three are auction (pai mai), public tender (zhao biao), and listing of quotation (gua pai). Unlike private negotiations, these methods award use rights in a more transparent fashion and we collapse the latter three into the more competitive category in this paper. As indicated at the beginning of this paper, competitive biddings usually raise the leasing price and on average the premium is quite substantial. Local governments should list most land on

⁹ Some local governments have experimented with new shareholding cooperatives to align farmers' interest. For more, see Lin, 2007 and Po, 2008.

open markets. The statistics show exactly the opposite trend. During the 1995-2002 period when national level data are available, about 137,838 land leases with a total area of 959,670 mu were awarded annually. Negotiation has mediated nearly eighty-six percent of these transactions (Lin and Ho, 2005). To understand this phenomenon, we need to examine local governments' revenue incentive as well as their outside constraints.

From a fiscal perspective, land leasing generates two revenue streams for local governments. In the current period, they receive a lump sum payment of conveyance fees. As owners of land, both the central and local governments should share these incomes.¹⁰ In practice, conveyance fees are pocketed by the particular local government which mediates the transaction. Since these fees are local extra-budgetary incomes, local officials have full discretion in the spending. Another source of revenue derives from future taxes. After businesses start to operate, local governments can collect various formal taxes, such as VAT from enterprises, business tax from services, income tax from profits, etc.¹¹ These budgetary incomes must be shared with the central government. In the 1980s, this budgetary and extra-budgetary trade-off might be worth pondering. But, as discussed in the last section, fiscal recentralization has created such a gap in local public finance that local governments are now under pressure to collect any revenue to pay for official salaries and basic services. Both budgetary and extra-budgetary incomes are desirable. However, local officials need to maintain a balance between these two streams. Conveyance fees are sizable and their impacts are also immediate. But, once the transaction is over, this stream dries up. Formal taxes, on the other hand, generate a steadier stream. Local governments, in their drive to maximize revenues, must mix auction and negotiation mechanisms strategically. One-on-one negotiations do not fetch high conveyance fees. But, if this method can generate a steady revenue stream down the road, local officials will still opt for negotiation.

This logic becomes clearer when we bring industrial attributes of investments into the analysis. Since the early 1990s, local governments have been trying to encourage business development in their jurisdictions. In addition to local businesses, they competed hard for investments from other regions and from abroad. Local officials have been dealing with two kinds of investors. The first is commercial and residential businesses, including retailers, real estate developers, etc. The other is manufacturing enterprises, such as

¹⁰ Land Administration Law stipulates that thirty percent of these revenues should go to the central government.

¹¹ Local governments are also levying some minor taxes on land transactions, including urban land use tax, urban land value-added tax (for high-end residential land), land contract tax, farm land use tax, urban estate construction tax. According to Zhou (2007), these revenues constitute a growing share of local formal taxes. Somewhat like the conveyance fees, these taxes do not last long.

shoe, toy, and household appliance factories. From a tax perspective, these two types of businesses exhibit somewhat different dynamics. Commercial and residential businesses tend to generate a spurt of taxable incomes for local governments in the short run. House sales, in particular, lead to high business taxes. Unlike many developed countries, China has not introduced property tax. Once the sales are done, local governments' revenues drop quickly. Commercial and residential businesses will continue to provide some level of taxes, but they stabilize at a lower level after the spurt. Manufacturing enterprises, on the other hand, tend to have a longer take-off period. Once the factories are up and running, taxes increase gradually. More importantly, manufacturing industries have a large spillover effect on the rest of the local economy. Factory workers and management have need and financial means for various services, such as banks, real estates, retailers, restaurants, and barbers. In this sense, manufacturing and service industries complement each other. From a taxation perspective, manufacturing enterprises are more desirable since they provide a more sustainable mode of growth.

But manufacturing investments have one special attribute, i.e. location non-specificity. Most manufacturing factories are not mainly producing for local customers but sell their products to neighboring regions to the national market, and to the rest of the world. These businesses are extremely sensitive to production costs. Non-specificity also means that they can move to other areas and set up production facilities with relative ease, which greatly empowers these footloose investments vis-à-vis local governments. In response to this mobility, local officials have to offer attractive packages, including tax breaks for the first few years, low- or zero-priced land leases (usually through one-on-one and behind-the-closed-door style negotiations), etc. Neither contributes much to local coffers in the short run. Since preparing land for business can be costly, local governments may actually run a deficit in these deals. Fortunately, commercial and residential businesses play a useful complementary role. Unlike manufacturing, these businesses provide locality specific services to residents in one particular region. They cannot service their customers without physically being there. This attribute turns the table in favor of local governments. As the sole legitimate supplier of commercial land, local governments can raise land prices by rewarding the highest bidders in open auctions. A revenue maximizing government may intentionally tighten local land supply to service-oriented businesses to garner a premium.¹² On the other hand, since these service providers produce non-tradable goods, they can pass these costs on to consumers by raising prices. In this sense, open auctions will not deter commercial and residential investors.

¹² Many Municipal Land Management and Reserve Centers have sprouted up across China in recent years. They played a useful coordinating role for local governments.

In short, different leasing strategies reflect industrial attributes and fiscal impacts on local revenues. Manufacturing capitals generate sustainable taxable incomes and spurt the growth of services in the long run. Because of the mobility, local governments must sacrifice conveyance fees and reduce leasing prices through negotiations. They can raise conveyance fees by auctioning off land for commercial and residential businesses. By mixing these two strategies, local governments can maximize overall revenues. Moreover, subsidizing land leasing to manufactures with high conveyance fees from services also evens out the ups and downs and generates a steady revenue stream in local public finance. Our analysis makes one basic assumption: local governments are driven by revenues and rational. This is clearly a simplification. Not all governments in the real world are rational and some also pursue non-economic objectives. Therefore, our analysis may not be able to explain other dynamics in land development. But we believe that the above logic reveals a common pressure many local governments have to face in their governance.

3.3 Some preliminary evidence

Before going to more systematic analysis in the next section, we present some evidence from the national data. Detailed breakdowns about land conversion by industry and by leasing types are only available after 2003. Table 1 reports total areas, leasing revenues, and revenues per hectare. Two patterns fit nicely with our analysis above.

(Table 1 about here)

First, local governments leased about 200,000 hectares of land in the national market in 2003. About seventy-two percent of them were transacted through negotiations. Compared with the previous years, the proportion dropped a little. This was largely due to the publication of the Decision on Leasing State Land Use Rights through Auctions and Tenders (known as “Document 11”) by the Ministry of Land Resources in 2002 (MLR, 2002). The central government demanded local officials to lease land through more transparent processes. This has increased the share of land through auctions but local governments still showed strong preference for one-on-one negotiations.¹³ This empirical pattern can be mostly explained by these officials’ discriminatory strategies. Out of the total leased land through negotiations, sixty-eight percent was used to attract manufacturing investments. On the other hand, more than eighty-three percent

¹³ In September 2006, the Ministry of Land and Resources issued another regulation requiring all state-owned land to be leased through auction, public tender, and listing, including land to manufacturing land users. Like the last regulation, local governments resisted this regulation and even faked auctions to attract manufacturing investors.

of auctioned land was awarded to commercial and residential businesses. Even though the total amounts of land to manufacturing businesses and commercial/residential businesses, respectively, were about the same (fifty-one percent vs. forty-three percent), local governments adopted very different strategies. On the aggregate level, preference for negotiation was driven by this industrial difference.

Second, to attract manufacturing investors, local governments have dropped leasing prices significantly. Land leased to manufacturing enterprises garnered as low as 1/3 and 1/5 of commercial and residential businesses, respectively. A huge gap existed for both conversion channels. Interestingly, the gap was somewhat narrower for auctioned land, probably reflecting the power of public biddings. It also demonstrates the willingness of local officials to offer deep concessions in closed-door sessions. This pattern matches findings from case studies (Yang and Wang, 2007). The Pearl River Delta, one of China's most dynamic regional economies, local governments at city, county, and township levels offered "zero land prices" to compete for industries in the late 1990s and early 2000s. In another developed region, Zhejiang located in the Yangtze River Delta, the provincial average costs of land requisition and preparation in the early 2000s was as high as 1.5 million Yuan per hectare, while the average leasing price was less than 1.3 million Yuan per hectare. For 1/4 of the industrial zones, the leasing price was less than half of the costs (Huang, 2007). We conducted interviews during our trip to Suzhou city, Jiangsu province, one of the most successful host cities of foreign direct investments. The average leasing price in the early 2000s was 2.25 million Yuan per hectare, and the cost of land acquisition was as high as 3 million Yuan per hectare. To compete with Suzhou, Wujiang city and Wuxi city of the same province offered industrial investors land at prices as low as 300,000 Yuan per hectare.

4. Evidence from prefecture-level cities

The above analysis presumes that manufacturing and service industries have different impacts on local revenues. Service businesses bring faster payoffs for local governments, while incomes from manufacturing enterprises may take longer. During our field trips to some coastal provinces, such as Zhejiang, Shandong, and Jiangsu, local officials were quite explicit about their expectations about these revenue streams. In addition, they also counted on spillovers from manufacturing to generate more incomes, both budgetary and extra-budgetary. Unfortunately, reliable extra-budgetary statistics are hard to come by and systematic data about revenues from land acquisitions are simply not available. In this section, we use tax revenues instead to illuminate these effects.

The basic unit of analysis is prefecture-level city¹⁴. As major drivers of urban economies, these cities have played a pivotal role in the development of China's land leasing market. Our land lease data come from *China Land and Resources Yearbook* (multiple years), covering annual land lease cases for prefecture-level cities. Other fiscal and socioeconomic data, such as budgetary incomes, major categories of taxes, GDP per capita, etc. are collected from *National Statistics on Prefecture, City, and County Finance* (multiple years). Due to data compatibility, our final set includes information about 268 prefectural-level cities between 1999 and 2003.

4.1 Descriptive statistics

Table 2 summarizes land leasing activities of prefecture-level cities. In agreement with the national trend, these cities have become increasingly involved in land development. In five years' time, the amount of transactions almost doubled. The breakdown between two leasing strategies is also consistent with the national data. Negotiation has accounted for an overwhelming majority of land transactions. Because of the central directive in 2002, local officials leased more land through auctions that year, but they quickly reverted to the old strategy once the limelight was shifted to elsewhere, which mirrors the national trend.

(Table 2 about here)

Various taxes and total budgetary revenues are reported in Table 3. The 1994 tax reform allowed local governments to keep their business tax. Since then, it has become one important item in local public finance. It is levied mostly on service-oriented businesses, such as transportation, construction, restaurants, entertainment, real estate, etc. All enterprises need to pay value-added tax (VAT) for sales of their products on the market. This is a major tax category, roughly 1/4 to 1/3 of all government tax revenues. However, local governments must share this with the central government and can only keep 25% of VAT. The figures in Table 3 only include local share of the VAT income. Unlike the business tax, this part of local revenues has not increased much. But it is nevertheless a stable source of income for local governments. In terms of percentage, enterprise income tax has actually dropped.¹⁵ This is not because the taxable income has dried up. In fact, this tax has been growing at a fast pace in the past few years. The decrease is mainly a result of fiscal recentralization. Under the tax sharing reform, local governments

¹⁴ All data cover the entire city-region, not just the urban areas.

¹⁵ In all statistics, enterprise income taxes and profit submissions are collapsed into one. Since some local state-owned enterprises lose money, the net figure may be negative.

could keep all enterprise income taxes generated from local enterprises. When the central government saw the growing trend of this revenue, it decided to claim 50% of it in 2002. The proportion further increased to 60% the next year. Table 3 reports only the remaining enterprise income tax.

(Table 3 about here)

These taxes are levied on different types of businesses. This offers an opportunity for evaluating the fiscal impacts of different leasing strategies. Our earlier analysis predicts a temporal shift in revenue streams. The multiple regressions below provide some evidence.

4.2 Regression results and discussions

Given the nature of land development and the different cycles of manufacturing and service businesses, we need to assess the fiscal impacts for both the current year and the later years. Our empirical specification is the following:

$$Y_{it} = \alpha + \gamma_1 N_{it} + \delta_1 N_{it-1} + \kappa_1 N_{it-2} + \zeta_1 N_{it-3} + \gamma_2 M_{it} + \delta_2 M_{it-1} + \kappa_2 M_{it-2} + \zeta_2 M_{it-3} + \mu_i + \nu_t + \varepsilon_{it}$$

Y_{it} represents either the total fiscal revenue for city I in year t , or more specific taxes, such as value-added tax, business tax, and enterprise income tax. N_{it} , N_{it-1} , N_{it-2} , N_{it-3} represents the number of land sites leased through negotiation for period t , $t-1$, $t-2$ and $t-3$, respectively. M_{it} , M_{it-1} , M_{it-2} , M_{it-3} represent the number of land sites leased through auction for period t , $t-1$, $t-2$ and $t-3$, respectively. μ_i and ν_t are city dummies and year dummies. Key information about all variables is summarized in Table 4.

(Table 4 about here)

Table 5 reports some major results. Interestingly, the two leasing strategies have markedly different impacts on three types of taxes. On the one hand, auction or the market-oriented leasing method has strong and statistically important effects on local business tax incomes. Moreover, this effect can last for two years down the road and disappears afterwards. This finding is consistent with the discussion about the main character of service industries. Construction of new houses and commercial building leads to a boom in local economies, which raises business tax revenues for local governments. When the construction is done and houses are sold, the boom effect gradually tapers off. Since land leases through auctions are overwhelmingly awarded to commercial and residential businesses, their impacts on VAT and enterprise income taxes are negligible.

On the other hand, land leases through closed-door negotiations have clear effects on both VAT and enterprise income tax. Moreover, the effect on VAT does not become significant until two years after the initial deal and is in fact getting stronger the following year. Their impact on enterprise income tax is slower to emerge, i.e. the third year after the land transaction. Since most negotiated land leases are targeting manufacturing businesses, these patterns are reasonable. Unlike commercial and residential businesses, manufacturing enterprises have a longer cycle. In addition, to attract these footloose investments, many local governments have waived their share of enterprise income taxes for the first two to three years.

Business tax requires more careful analysis. Empirically, negotiated land leases initially do not play any significant role in generating local business taxes. From the third year on, their effects become positive and highly significant. There are two possible explanations. It may be argued that, since some leases are awarded to commercial and residential businesses in this fashion, they generate business taxes for local governments. This explanation needs one assumption. As shown in the top half of the table, commercial and residential businesses have more immediate impact on business tax. We need to assume that negotiation slows down the development process for commercial and residential businesses. Alternatively, the delayed impact may be attributed to the spillover effect discussed in section 3. After all, this is one major reason why local governments have been willing to offer huge concessions in the land leasing process. Officials expect manufacturing enterprises to create enough local employment and the wealth eventually trickles down into demands for more houses and other services. Since the first explanation requires an extra assumption that contradicts the empirical findings, the spillover explanation seems to be more reasonable.

(Table 5 about here)

To check the robustness of these findings, we run a few more regressions (Table 6). In this specification, we control for four variables, i.e. prefecture's urbanization ratio (share of urban residents in the total population), prefecture's share of secondary industries in local GDP, and prefecture's share of tertiary industries in total GDP. Presumably, these variables affect local governments' ability to raise taxes in different categories. Except for GDP per capita, none of these variables seem to matter much. More important, with minor changes, the general patterns discussed above remain valid.¹⁶

¹⁶ We have also computed robust variance estimators and the results remain unchanged.

(Table 6 about here)

In sum, information about local extra-budgetary revenues is not available, but empirical findings based on formal taxes support our analysis in section 3. In order to win over more attractive manufacturing investments, local officials leased land at low or zero prices. There are no immediate financial gains but these enterprises generate VATs and income taxes a few years down the road. On the other hand, auctioning off land to commercial and residential businesses brings faster payoffs in the form of business tax. These two somewhat different revenue streams complement each other, smoothing local governments' incomes over a long period of time.

5. Conclusion

In the early period of China's reform, the combination of authoritarian command with local initiatives appears to have created an environment conducive to investment and thus growth (Yang 2006). This is quite similar to the growth story in other East Asian countries in the post World War II era. Unlike other East Asian countries, China has been especially attractive to foreign investors because they could take advantage of preferential treatments. Since the mid-1990s, one of the main instruments for preferential treatment has been the provisioning of subsidized land and infrastructure to manufacturing investors.¹⁷

The single-minded pursuit of revenue and economic growth by local governments, however, has brought about some adverse consequences. Land acquisition without sufficient compensations has negative consequences both in economic and social terms. When land as a key input is under-priced, the overall investment, especially the investment in the manufacturing sector, would be higher than socially optimal. This would lead to an over-industrialized economy, as well as relatively low returns in industrial investment. Abusive land requisition also results in serious social consequences. Land-related issues have recently become the top cause of rural grievance (Zhu and Prosterman, 2007). A 17-province, 1,962-farmer survey conducted in China in 2005 shows that incidents of land taking have increased more than 15 times during the past 10 years and appear to be accelerating. The hardship and grievance of these undercompensated and unfairly treated farmers have contributed to local social unrests and political instability. (Unirule, 2007).

¹⁷ Land is not the only instrument used in regional competition for manufacturing investment. Relaxing standards on labor and environment protection has also been used in regional competition in China. This has led to a serious imbalance between economic growth, environmental protection and social equality. The ignorance of social justice and environmental improvement has led to widespread social unrests in China (Sargeson, 1999).

Land can be provided at relatively low costs to industrial investors in China because, under the current system, local governments can acquire land from farmers at the state-defined, and usually very low, prices. Farmers are largely excluded from the benefits in land appreciation. Under the “Leviathan” theory, a decentralized system may push politicians and bureaucrats to compete with one another over mobile resources and prevent them from lining their pockets (Brennan and Buchanan 1980). In China, there is not sufficient protection of farmers’ land property rights in urban expansion and industrialization. Such “race to the bottom” style regional competition may well be carried out at the costs of the dispossessed farmers and sacrifice the country’s long-term sustainability of economic growth.

If farmers who own their land can directly negotiate with land users, land-leasing prices would be significantly higher because farmers would not give up their land unless they would benefit from the transaction. Therefore, further marketizing land requisition by allowing farmers to directly negotiate with land users about compensations would not only help the dispossessed farmers improve their economic welfares, but also significantly contain the negative sides of fierce regional competition for industrial investments. Therefore, granting farmers a legal status in land transfers will not only help China to shift away from its investment-driven growth, but also improve land use efficiency and income distribution in the process of fast urbanization.

With significant reduction in local budgetary and extra-budget revenues, local infrastructural development may be jeopardized. This effect, however, can be mitigated. Local governments can levy a value-added tax on land transactions between the farmers and the land users. Conversion usually raises the value of agricultural land and urban infrastructure development is partly responsible for that increase. levying a value-added tax on such land transactions can be fully justified. The value added would be defined as the difference between land sale/lease prices and the imputed land value for agricultural uses. In addition, a property tax on existing residential and commercial estate can also be introduced to consolidate local tax base. With these two new taxes the negative impacts of “marketizing land requisition” on local fiscal revenues would be largely offset. Both land value-added tax and property tax are formal taxes. From an administrative perspective, formal procedures ensure transparency and accountability. Therefore, this change has the added benefit of regularizing local public finance, a major goal for the central government in the reform era.

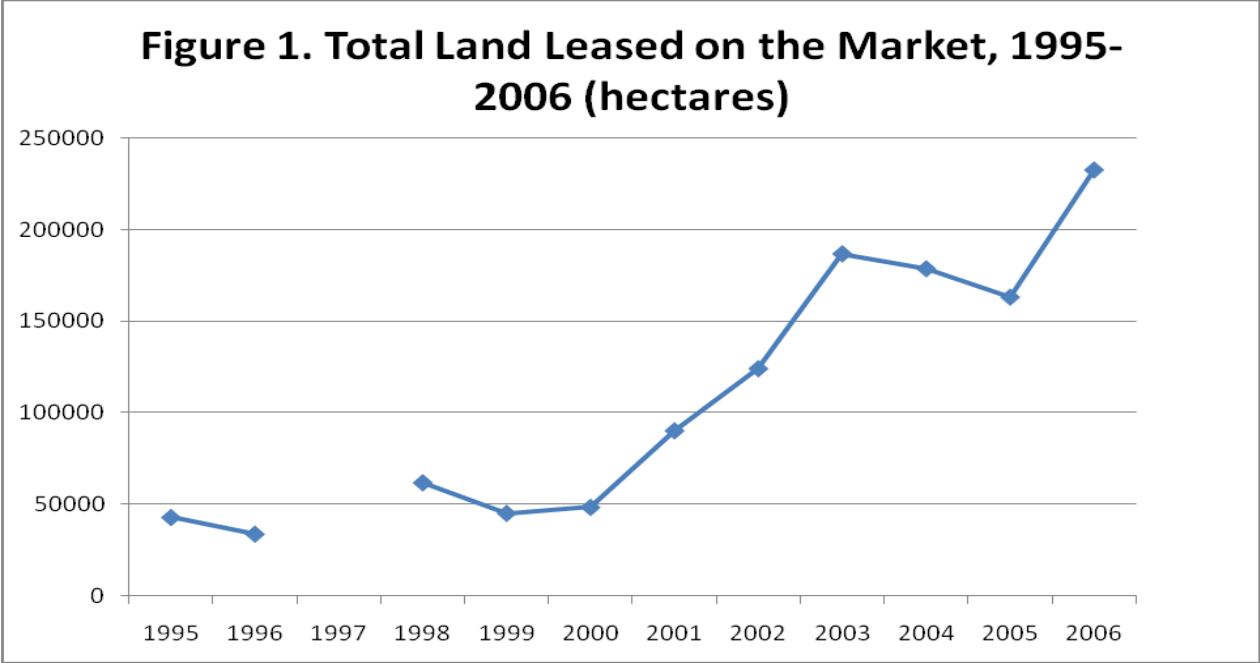
References

- T. Bernstein, and X. Lu. 2000. "Taxation without Representation: Peasants, the Central and Local States in Reform China." *China Quarterly* 163, 742-763.
- G. Biglaser, and C. Mezzetti. 1997. "Politicians' Decision Making with Re-election Concerns." *Journal of Public Economics* 66: 425-447.
- R. Bahl. 1998. "Central-Provincial-Local Fiscal Relations: The Revenue Side." In D.J.S. Brean, (ed.), *Taxation in Modern China*. Routledge: New York; London.
- C. Bai, Y. Du, Z. Tao. 2004. "Local Protectionism and Regional Specialization: Evidence from China's Industries." *Journal of International Economics* 63: 297-317.
- G. Brennan, and J.M. Buchanan. 1980. *The Power to Tax: Analytical Foundations of a Fiscal Constitution*. Cambridge: Cambridge University Press.
- H. Cai, and D. Treisman. 2008. "Did Government Decentralization Cause China's Economic Miracle?" *World Politics*, forthcoming.
- Y. Cao, Y. Qian, and B. Weingast. 1999. "From Federalism, Chinese Style, to Privatization, Chinese Style." *Economics of Transition* 7(1): 103-131.
- J. Che, and Y. Qian. 1998. "Insecure Property Rights and Government Ownership of Firms." *Quarterly Journal of Economics* 113(2): 467-496.
- C. Ding. 2003. "Land Policy Reform in China: Assessment and Prospects." *Land Use Policy* 20(2): 109-120.
- C. Ding. 2005. "Land Acquisition in China: Reform and Assessment." Lincoln Institute of Land Policy, *Working Paper WP05CD1*.
- F. Deng. 2003. "China's Urban Land Reform, Urban Productivity, and Local Government Behavior." *Eurasian Geography and Economics* 44 (3): 210-227.
- V. Henderson. 2007. "Urbanization in China: Policy Issues and Options." Working paper, Brown University, <http://www.econ.brown.edu/faculty/henderson/finalfinalreport-2007050221.pdf>.
- J. Han. 2003. "Change Collective Land Ownership into Shareholder Ownership (Jiang Tudi Nongmin Jiti Suyou Dingjie Wei An Gufen Gongyouzhi)." *China Economic Times* (Zhongguo Jingji Shibao), . (In Chinese). November 11.

- X. Huang. 2007. "Exploring the institutional foundations of land issues in China." (in Chinese) *China Taxation* 2: 46-47.
- M. Keen, and M. Marchand. 1997. "Fiscal Competition and the Pattern of Public Spending." *Journal of Public Economics* 63: 33-53.
- H. Li, and L. Zhou. 2005. "Political Turnover and Economic Performance: the Incentive Role of Personnel Control in China." *Journal of Public Economics* 89: 1743-1762.
- S. Li , S. Li, and W. Zhang. 2000. "*The Road to Capitalism: Competition and Institutional Change in China.*" *Journal of Comparative Economics* 28 (2): 269-292,
- J. Lin, F. Cai, and Z. Li. 1996. *The China miracle: Development Strategy and Economic Reform*. Hong Kong: The Chinese University Press of Hong Kong.
- J Y Lin, and Z. Liu. 2000. "Fiscal Decentralization and Economic Growth in China." *Economic Development and Cultural Change* 49 (1): 1-23.
- C.S. Lin and P.S. Ho. 2005. "The State, Land System, and Land Development Processes in Contemporary China." *Annals of the Association of American Geographers* 95 (2): 411-436.
- J. Ma. 1995. "Modeling Central-local Fiscal Relations in China." *China Economic Review* 6:105-136.
- G. Montinola, Y. Qian, and B. Weingast. 1995. "Federalism, Chinese Style: The Political Basis for Economic Success in China." *World Politics* 48(1): 50-81.
- E. Lichtenberg and C. Ding. 2008. "Assessing Farmland Protection Policy in China." *Land Use Policy* 25 (1): 59-68.
- G. Lin. 2007. "Reproducing Spaces of Chinese Urbanization: New City-Based and Land-Centered Urban transformation." *Urban Studies* 44 (9): 1827-1856.
- J. Litwack, and Y. Qian. 1998. "Balanced or Unbalanced Development: Special Economic Zones as Catalysts for Transition." *Journal of Comparative Economics* 26 (1) (March): 117-141.
- Ministry of Finance. *National Statistics on Prefecture, City, and County Finance* (various years). Beijing: China Finance Press.
- Ministry of Land and Resources. 2004. "Policy Directives of Improving Land Requisition Compensation and Reallocation." November, 3, 2004.
- National Bureau of Statistics. *China Land and Resources Yearbook* (various issues). Beijing: China Statistical Publishing House.
- J.Oi. 1992. "Fiscal Reform and the Economic Foundations of Local State Corporatism in China." *World Politics* 45(1):99-126.

- B. Naughton. 1999. "How Much Can Regional Integration Do to Unify China's Markets?" Paper presented for the Conference for Research on Economic Development and Policy Research, Stanford University.
- A.Park, and M. Shen. 2003. "Joint Liability Lending and the Rise and Fall of China's Township and Village Enterprises." *Journal of Development Economics* 71: 497-531.
- S. Poncet. 2003. "Measuring Chinese Domestic and International Integration." *China Economic Review* 14 (1): 1-21.
- L. Po. 2008. "Redefining Rural Collectives in China: Land Conversion and the Emergence of Rural Shareholding Co-operatives." *Urban Studies* 45 (8): 1603-1623.
- Y. Qian, and C. Xu. 1993. "Why China's Economic Reform Differ: The M-form Hierarchy and Entry/Expansion of the Non-state Sector." *Economics of Transition* 1(2): 135-170.
- Y. Qian, Yingyi; and R. Weingast. 1997. "Federalism As a Commitment to Preserving Market Incentives." *Journal of Economic Perspectives* 11(4): 83-92.
- Y.Qian, 1999. "The Institutional Foundations of China's Market Transition." In Boris Pleskovic and Joseph Stiglitz, eds., *Proceedings of the World Bank's Annual Conference on Development Economics*. The World Bank.
- Y. Qian. 2000. "The Process of China's Market Transition (1978-98):The Evolutionary, Historical, and Comparative Perspectives." *Journal of Institutional and Theoretical Economics* 156(1):151-171.
- Y. Qian. 2003. "How Reform Worked in China." In Dani Rodrik, editor, *In Search of Prosperity: Analytic Narratives on Economic Growth*. Princeton University Press.
- S. Sargeson. 1999. *Reworking China's Proletariat*. Houndmills: Macmillan.
- S. Shirk . 1993. *The Political Logic of Economic Reform in China*. Berkeley: University of California Press.
- C. Tiebout. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy* 64: 416-424.
- K. Tsui, and Y. Wang. 2004. "Between Separate Stoves and a Single Menu: Fiscal Decentralization in China." *China Quarterly* 177: 71-90.
- Unirule (Unirule Institute of Economics). 2007. "Protection of Land Property Rights in China's Urbanization." Research Report, Unirule Institute of Economics, Beijing.
- J. Wilson. 1999. "Theories of Tax Competition." *National Tax Journal* 52: 269-304.
- D.Wellisch. 2000. *The Theory of Public Finance in a Federal State*. New York: Cambridge University Press.
- Y. Wang and S. Scott. 2008. "Illegal Farmland Conversion in China's Urban Periphery: Local Regime and National Transitions." *Urban Geography* 29 (4): 327-347.

- C.Wong, C.Heady, and T.Woo. 1995. *Fiscal Management and Economic Reform in the People's Republic of China*. New York: Oxford University Press.
- C. Wong, and R.Bird. 2005. "China's Fiscal System: A Work in Progress." Working Papers, No.0515, International Tax Program, Institute for International Business, Joseph L. Rotman School of Management, University of Toronto.
- D. Wildasin. 1989. "Nash Equilibria in Models of Fiscal Competition." *Journal of Public Economics* 35: 299-240.
- World Bank. 2002. *China National Development and Sub-national Finance: A Review of Provincial Expenditures*. Washington, DC.
- World Bank. 2005. "China: Land Policy Reform for Sustainable Economic and Social Development." Washington D. C.
- X. Xu. 2002. "Have the Chinese Provinces Become Integrated under Reform?" *China Economic Review* 13: 116-133.
- D. Yang. 2006. "Economic Transformation and its Political Discontents in China: Unequal Growth, and the Dilemmas of Political Development." *Annual Review of Political Science* 9:143-64.
- D.Yang, and M.Li, eds. 2003. *How Far Across the River? Chinese Policy Reform at the Millennium*. Stanford: Stanford University Press.
- D. Yang and H. Wang. 2008. "Dilemmas of Local Governance under the Development Zone Fever in China: A Case Study of the Suzhou Region." *Urban Studies* 45 (5-6): 1037-1054.
- A.Young. 2000. "The Razor's Edge: Distortions and Incremental Reform in the People's Republic of China." *Quarterly Journal of Economics* CXV: 1091-1135.
- N. Zhai and G. Xiang. 2007. "An Analysis of China's Current Land Acquisition System and Policy Implications." *China Administration* (in Chinese) 3.
- G. Zodrow, and P. Mieszkowski. 1986. "Pigou, Tiebout, Property Taxation and the Under-provision of Local Public Goods." *Journal of Urban Economics* 19: 356-370.
- K. Zhu, and R. Prosterman. 2007. "Securing Land Rights for Chinese Farmers: A Leap Forward for Stability and Growth." *Cato Development Policy Analysis Series*, No. 3.
- F. Zhou. 2007. "Governments and Peasants in Land Development and Transfers." *Sociological Studies* (in Chinese) 1: 49-81.
- T. Zhou. 1984. Ed. *Dangdai Zhongguo de Jingji Tizhi Gaige* (Economic System Reforms in Contemporary China). Beijing: China Social Science Press.



Source: Annual reports by the Ministry of Land and Resources (multiple years); Lin and Ho 2005.

Table 1. Land Leasing Activities in China, 2003

	Total Area (hectares)	%	Leasing Revenue (100 million RMB)	%	Leasing Price (10,000 RMB/ha)	%
Total	193,604		5,421		280	

All Types						
Manufacturing	99,435	51.4	1,247	23.0	125	44
Commercial	39,082	20.2	1,386	25.6	355	126
Residential	43,323	22.4	2,590	47.8	598	213
Others	11,763	6.1	198	3.7	168	60
By Negotiation						
Subtotal	139,434	100	2,350	100	169	100
Manufacturing	94,751	68.0	1,077	45.8	114	67
Commercial	19,616	14.1	487	20.7	248	147
Residential	17,669	12.7	689	29.3	390	231
Others	7,398	5.3	97	4.1	132	78
By Auction						
Subtotal	54,169	100	3,071	100	567	100
Manufacturing	4,684	8.6	170	5.5	363	64
Commercial	19,466	35.9	899	29.3	462	81
Residential	25,654	47.4	1,901	61.9	741	131
Others	4,365	8.1	100	3.3	230	41

Source: China Land and Resources Yearbook 2004.

Table 2. Land Leasing in Prefecture-level Cities in China, 1999-2003

Year	Average Cases	By Negotiation	%	By Auction	%
1999	290.3	249.7	86	40.5	14
2000	374.5	321.1	86	53.3	14
2001	519.2	442.8	85	76.4	15
2002	597.4	472.8	79	124.6	21
2003	562.9	507.4	90	55.5	10

Source: China Land and Resources Yearbook, various years.

Table 3. Budgetary Revenues of Prefecture-level Cities in China, 1999-2003 (100 million yuan)

Year	Business Tax	%	VAT	%	Enterprise Income Tax	%	Total Revenues
1999	953	22.5	795	18.7	453	10.7	4,244
2000	1,052	22.4	927	19.7	611	13.0	4,708
2001	1,287	22.1	991	17.0	1,096	18.8	5,825
2002	1,620	26.2	1,177	19.0	642	10.4	6,187
2003	2,016	27.2	1,388	18.7	668	9.0	7,416

Source: National Statistics on Prefecture, City, and County Finance, various years.

Table 4. Summary Statistics of Variables in the Analysis

Variables	No.	Mean	Standard Deviation	Minimum	Maximum
Enterprise income tax	1,340	25,896	61,302	-28,509	718,843
Business tax	1,340	51,708	131,563	2,507	2,153,876
VAT	1,340	39,394	72,039	1,184	968,392
Other taxes	1,340	94,785	126,203	5,919	1,563,662
Total local taxes	1,340	211,784	366,086	13,251	4,803,983
Lease through negotiation	1,340	407	567	1	5,264
Lease through auctions	1,340	94	201	0	2,802
GDP per capita (yuan)	1,340	38,598	30,567	1,566	284,814
Urbanization ratio	1,340	57	32	8	84

Secondary industry ratio	1,340	49	13	14	92
Tertiary industry ratio	1,340	41	10	7	81

Source: our data set.

Note: The units for all taxes are in 100 million yuan.

Table 5. Land Lease and Local Public Finance

	Enterprise Income Tax	Business Tax	VAT	Other Taxes	Total Local Taxes
M_{it}	-2.011 (0.36)	42.244 (2.57)**	1.634 (0.23)	26.207 (1.90)*	68.074 (1.84)*
M_{it-1}	-2.509 (0.42)	41.248 (2.36)**	-0.744 (0.10)	23.777 (1.63)	61.772 (1.57)
M_{it-2}	6.213 (0.76)	47.264 (1.97)**	3.701 (0.35)	33.038 (1.65)	90.216 (1.68)*
M_{it-3}	5.677 (0.50)	-2.992 (0.09)	-7.818 (0.53)	22.201 (0.79)	17.068 (0.23)
N_{it}	-0.071 (0.03)	8.540 (1.10)	5.199 (1.53)	15.320 (2.37)**	28.988 (1.66)*
N_{it-1}	1.957 (0.75)	4.422 (0.58)	4.098 (1.22)	13.495 (2.10)**	23.972 (1.39)
N_{it-2}	1.249 (0.48)	16.066 (2.11)**	8.240 (2.46)**	20.547 (3.22)***	46.102 (2.69)***
N_{it-3}	8.413 (2.13)**	28.723 (2.47)**	15.680 (3.07)***	34.473 (3.55)***	87.289 (3.34)***
No. of cases	536	536	536	536	536
R-squared	0.03	0.15	0.18	0.32	0.23

Note: 1. All revenues are deflated using 1999 as the base year. All units are in 10,000 RMB.

2. Absolute value of t statistics in parentheses.

3. * significant at 10%; ** significant at 5%; *** significant at 1%.

4. City and year dummies controlled but not reported in the table.

Table 6. Land Lease and Local Public Finance with More Controls

	Enterprise Incomes	Business Tax	VAT	Other Taxes	Total Local Taxes
M_{it}	-2.163 (0.38)	42.458 (2.64)***	1.623 (0.24)	26.514 (2.03)**	68.432 (1.93)*

M _{it-1}	-2.832 (0.47)	39.365 (2.31)**	-1.914 (0.26)	22.488 (1.62)	57.107 (1.52)
M _{it-2}	5.883 (0.72)	42.630 (1.82)*	0.874 (0.09)	26.605 (1.40)	75.991 (1.47)
M _{it-3}	7.235 (0.63)	10.027 (0.30)	0.175 (0.01)	36.435 (1.36)	53.872 (0.74)
N _{it}	-0.507 (0.19)	1.545 (0.20)	1.221 (0.37)	7.872 (1.25)	10.131 (0.59)
N _{it-1}	1.344 (0.50)	-0.608 (0.08)	0.986 (0.30)	7.937 (1.28)	9.659 (0.58)
N _{it-2}	0.694 (0.26)	11.038 (1.46)	5.189 (1.61)	15.123 (2.46)**	32.045 (1.92)*
N _{it-3}	7.803 (1.93)*	22.187 (1.93)*	11.689 (2.38)**	26.339 (2.82)***	68.017 (2.68)***
GDP per capita	0.199 (1.05)	2.241 (4.16)***	1.326 (5.76)***	2.448 (5.59)***	6.214 (5.22)***
Urbanization ratio	694.7 (0.32)	496.3 (0.08)	553.6 (0.21)	353.0 (0.07)	2,097.5 (0.15)
Secondary industry ratio	453.0 (0.32)	-591.2 (0.15)	-175.5 (0.10)	-2,836.4 (0.86)	-3,150.1 (0.35)
Tertiary industry ratio	248.9 (0.61)	-393.2 (0.34)	17.1 (0.03)	-161.1 (0.17)	-288.3 (0.11)
No. of cases	536	536	536	536	536
R-squared	0.04	0.21	0.27	0.40	0.30

Note: 1. All revenues are deflated using 1999 as the base year. All units are in 10,000 RMB.

2. Absolute value of t statistics in parentheses.

3. * significant at 10%; ** significant at 5%; *** significant at 1%.

4. City and year dummies controlled but not reported in the table.