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**LAND POLICY AND URBANIZATION
IN THE PEOPLE'S REPUBLIC
OF CHINA**

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Xianxiang Xu

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Abstract

In this paper, we explore the relationship between land policies and urbanization in the People's Republic of China (PRC). We analyze the land policies associated with urbanization, and summarize findings related to central and local government involvement in the process of urbanization. In particular, we explore the relationship between urbanization and land leasing. We find that the urbanization rate and the land leasing revenue are positively related. Land leasing provides financial support for PRC urbanization, but damages the interest of landless peasants. Especially in the west, population urbanization lags behind land urbanization, resulting in much higher land and house prices in the east than those in inland PRC. Current land and household registration policies hinder the mobility of production factors, including construction land and the labor force, and distort the process of urbanization and industrialization. The land policy should be revised such that the market determines the allocation of land resources, which will create a unified, competitive urban–rural land market.

JEL Classification: H71, P26, R52

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1. INTRODUCTION

The pace and scale of urban growth, infrastructure development, and spatial restructuring have together become a metaphor for the People's Republic of China's (PRC's) economic miracle. Some emphasize the "dominance of the government" in urban landscapes and economic growth (Rithmire 2013), which is often related to the PRC's "urban biased" land policy (Davis and Henderson 2003). This paper analyzes the land policies associated with urbanization, including dual urban and rural landownership, the local government's dual monopoly over land exchanges, expropriation, open lease, and the central government's administrative allocation of construction land quotas. This paper also summarizes findings related to central and local government involvement in the process of urbanization. In addition, we describe trends in urban expansion, including the establishment of economic development zones and the creation of new towns within the expanding sprawl of industrial, commercial, and residential land.

In particular, we explore the relationship between urbanization and land leasing. The urbanization rate and land leasing revenue are positively related, and land leasing provides financial support for PRC urbanization. The positive feedback mechanism between land financing and investment in urban infrastructure (Zheng et al. 2014) encourages local governments to expropriate rural land to capture the land value added, which in turn accelerates urbanization. We also investigate the gap between urbanization and industrialization. Under the dual price system for land, prices of industrial land are much lower than those of commercial and residential land, which is associated with the lag between urbanization and industrialization. Finally, we investigate the administrative allocation of construction land quotas as a means to balance regional disparities—a policy that diminishes the agglomeration effects of urbanization.

2. INSTITUTIONS AND STYLIZED FACTS

2.1 Landownership

Property rights are the foundation of the institution of land. Over the last half century, the structure of the PRC's landownership has been dualistic, comprising state-owned urban land and collective-owned rural land. The emergence of an economy including diverse forms of enterprise ownership following reforms and opening up has promoted the separation of landownership and land use rights because the new private firms demanded urban land for construction and development. "During the 1980s, China implemented two key reforms to provide land for expanding private sector activity. First, it set aside land in economic development zones and industrial development zones to provide space for foreign direct investment and other private sector economic activity. Enterprises in these zones were granted tax exemptions and readier access to credit in addition to land" (Ding and Lichtenberg 2008, pp. 2–3). Compared with state-owned urban land, the property rights system for collective-owned rural land is more complicated.¹ A three-class system of collective ownership exists in the PRC's rural regions and includes (i) natural villages—peasant collective ownership of farms in

¹ In many cases, the administrative village issues land leases, even though the land belonged to the natural village in the past. It is like the ownership rights to land have been silently stolen from the natural village and vested in a level higher (Ho 2001).

villages; (ii) administrative villages—peasant collective ownership of more than two rural collective economic organizations in villages; and (iii) towns—peasant collective ownership in townships. This three-class system makes property rights over rural collective-owned land difficult to discern. The term “collective” is not clearly defined, nor is the relationship between the collective and the farmers. This leads to ambiguous property rights and makes it difficult for rural land to enter the market.

Unequal, dualistic rights to urban land and ill-defined rights over rural land severely weaken farmers’ bargaining power in transactions involving the expropriation and requisition of rural land for urbanization. The requirement that rural land be nationalized before entering the urban land market is indicative of the inequitable treatment of rural property owners. The village collectives that own and administer rural land are subject to oversight by higher-level government. Although the village collectives have the authority to allocate rural land for certain limited purposes other than agriculture, such as housing, public works, and village enterprises, the allocation of rural land for uses other than these designated purposes requires that the land be converted from collective ownership to state ownership. Thus, the development of land for most residential, commercial, and industrial uses is permitted only after a change in ownership status, which is accomplished through the requisition of rural land by urban government officials (Ding and Lichtenberg 2008), and the land value added accrues to the local government (Qu and Tian 2011). Through land expropriation and requisition, rural agricultural land is converted to urban construction land or other nonagricultural land. In the process of land expropriation, village cadres represent the peasants of the collective in negotiations with the local government. In the current administrative hierarchy that exists in rural PRC, village cadres tend to acquiesce to the demands of higher government authorities or seek personal gain from the expropriation and requisition process. In either case, farmers’ interests are ignored (Zhou 2004; Jiang, Liu, and Li 2007; Cai, Henderson, and Zhang 2013). In addition, the ambiguity in rural property rights complicates the compensation scheme for land expropriation.²

2.2 Land Expropriation Policies

The land requisition system has existed since the creation of the PRC in 1949. The Measures of Land Requisition for State Construction (MLRSC) issued in 1953 comprised the first land requisition regulations and legitimized land expropriation for economic development. The MLRSC set forth the basic principles, compensation standards, and approval procedures for land requisitions. After the Three Major Socialist Transformations, farmland ownership was transferred from private individuals to collectives, and in 1958, the MLRSC was revised to reflect this change. In 1978, certain land management regulations were even added to the Constitution, including the mandate that, based on legal requirements and other conditions, the state may purchase, requisition, or nationalize the land (Article 6). In 1982, the Constitution was further modified so that “the government may, in the public interest, requisition land” (Chapter I, Article 10). The Regulations on Land Requisition for State Construction (RLRSC) promulgated the same year emphasized the enforceability of land requisition by the government, stating that “all that conform to these regulations, including cadres of communes and the masses, shall be subject to the needs of the country, and

² Before 30 October 1998, the party interested in leasing rural land negotiated a price directly with villagers, while the land administration played a limited role as mediator. This negotiation process resulted in increased compensation to farmers. However, after the revised Land Management Law was adopted in 1999, “land agreement leasing” (*xie yi chu rang*) became “land notice leasing” (*gong gao chu rang*). Under land notice leasing, the land administration section negotiates on behalf of the government with the interested party, and land buyers and farmers are no longer permitted to meet.

obstruction or interference is forbidden” (Article 4). The RLRSC also elaborated on land expropriation compensation, which included compensation for the land as well as resettlement fees. In 1987, the Land Administration Law (LAL) was implemented. This law stated that, the government can expropriate collective-owned land for the purpose of economic construction, cultural construction, national defense, and social public undertakings, and any unit or individual who needs land for construction must apply for the right to use state-owned land according to the relevant laws (Article 21 of Chapter IV). The Property Law enacted in 2007 contains more detailed provisions and states, for example, that, to meet the needs of public interests, collective-owned lands, premises owned by entities and individuals, or other real properties may be expropriated in accordance with the power, scope and procedures provided by law. As for the expropriation of collective-owned land, it is necessary, according to law and in the full amount, to pay fees such as land compensation fees, placement subsidies, and compensation for above-ground fixtures and seedlings on the land; to arrange for social security benefits for the farmers whose lands are expropriated; to secure the farmers’ livelihood; and to safeguard the farmers’ legitimate rights and interests (Article 42 of Chapter IV, Part 2). The combined effect of these institutional arrangements is that urban construction land has to be acquired from the state. However, the supply of state-owned land depends on the de-agriculturalization of farmland, and the state, represented by local governments, is the sole decision maker with respect to the use of farmland for nonagricultural purposes.

In sum, the conversion of farmland to construction land is subject to mandatory state directives and can be implemented without the consent of peasant collective economic organizations or the farmers.

As the PRC’s economic system transformed from a planned economy into a socialist market economy, the land expropriation compensation system transitioned through three stages: employment resettlement with little economic compensation, employment resettlement with increased economic compensation, and economic compensation only. In the 1980s, the RLRSC (1982) and the LAL (1986) both emphasized job placement as well as economic compensation for land expropriation. Thus, these laws gained the support of unemployed farmers and avoided massive social opposition. In 1998, the LAL was revised to adjust land expropriation compensation standards, but the revisions failed to address problems such as the unemployment of landless peasants and the lack of a social security system. Although farmers who had lost land received one-off compensation, they had no long-term sources of income or guarantees of social security, which led to significant problems caused by a massive increase in the number of landless peasants. Before the modern social security system was implemented in rural PRC, land was the primary asset owned by farmers and it guaranteed their livelihoods. Therefore, land expropriation without rational compensation drove farmers who had lost land into both homelessness and joblessness.

The compensation provided by the PRC’s requisition laws includes compensation for the land (*tu di bu chang fei*), resettlement allowances for farmers who have lost land (*an zhi bu zhu fei*), and compensation for above-ground assets (e.g., young crops, structures, and water wells) (*di shang fu zhuo wu bu chang fei*). Land compensation and resettlement allowances are calculated on the basis of a benchmark price and a multiplier. The most significant change in the PRC’s requisition laws was the transformation from a noncompulsory standard to a compulsory standard with ceilings. While the 1953 and 1958 versions of the MLRSC merely set a reference compensation standard, the 1982 RLRSC introduced two compensation ceilings. The first ceiling limited the maximum resettlement allowance to 10 times the annual value of the land’s

agricultural production; the second limited the sum of the resettlement allowance and land compensation to 20 times the annual value of the land's agricultural production. The 1999 LAL raised the ceiling for total compensation to 30 times the annual value of agricultural production and stipulated that the State Council could increase the multiplier under certain conditions; subsequent reforms similarly entitled local governments to exceed the compensation ceiling. Specifically, in 2004, the State Council permitted local governments to increase the multiplier above 30 and required local governments to formulate either a unified annual output standard or integrated land expropriation price to ensure that similar land received similar compensation. In 2013, the compensation standard with ceilings was removed from the LAL, which is a progress.

The acceleration of urbanization caused land values to increase after expropriation. As indicated above, the standard compensation paid to farmers who had lost land generally could not exceed 30 times the average annual value of agricultural production over the previous 3 years. However, current land expropriation compensation standards do not adequately account for the land value added after expropriation (Qian 2004). Specifically, this compensation system does not consider the location, development potential, or market value of the expropriated land. In short, the government makes decisions regarding land expropriation compensation that denies farmers who have lost land an appropriate share of the land value-added revenue. The World Bank estimates that from 1990 to 2010, local governments paid approximately CNY2 trillion below market value for expropriated rural land (World Bank and DRC 2014). Ren and Hao (2003) found that land requisition compensation, calculated by using multiple compensation methods, was equivalent to one-fifth of the land value. Moreover, land requisition compensation only pays farmers for property income losses, while ignoring their nonproduction income. Rural land, being dominated by the government, is expropriated at prices far below market value, which produces an unreasonable distribution of the wealth derived from the land value increment. Figures disclosed in the 2005 *Green Book of China's Rural Economy* clearly illustrated this unreasonable distribution: local governments took 20%–30% of the land value increment, enterprises received 40%–50%, village-level organizations received 25%–30%, and farmers received only 5%–10%.

This unfair distribution of the land value increment further widens the income gap between urban and rural areas, which causes numerous social conflicts (Rithmire 2013). In 2003, disputes over farmers' land rights and interests became the subject of Zhejiang Province's first mass petitions. In Zhejiang, complaint letters about land acquisition and resettlement compensation problems numbered 586 in 2001 and 1,058 in 2002, which represented an increase of 14.5% and 80.6% over the previous year, respectively (Jiang, Liu, and Li 2007). The *China Social Situation Analysis and Forecast 2004–2005* issued by the Chinese Academy of Social Sciences identified social contradictions and conflicts caused by the expropriation of farmland as one of the six major issues facing contemporary PRC. Poor compensation for land expropriation and unreasonable distribution of the land value increment inflame these social conflicts.

2.3 Land Leasing

The land leasing system parallels the land expropriation system. Based on Hong Kong, China's experience, the PRC developed a system of long-term leases for land use rights that gave private investors secure tenure and control over land, albeit for a limited period (Ding and Lichtenberg 2008). The LAL clearly states that any unit or

individual who needs land for construction must apply for the right to use state-owned land according to relevant laws and thereby legally secures the local government's position as a monopoly supplier of urban land (Article 21 of Chapter IV). With the rapid development of the PRC after reforms and opening up, the land-grant system changed from free to paid transfer. In 1980, the state council's Interim Provisions on the Construction Land of Joint Ventures, Article 1, noted that joint venture enterprises should pay site-use fees for either newly expropriated land or originally owned enterprise land and began the process of charging fees for the use of urban state-owned land (Table 1). Hence, free state-owned land was transformed into property with a price tag.

Table 1: City-Level Initiatives

Year	City	Reform
1984	Fushun, Liaoning Province	Implemented a pilot land-use tax system and thus realized the paid use of state-owned land
1987	Shenzhen, Guangdong Province	First leased land through agreement, tender, or auction and set time limits on transfers
1988	Guangzhou, Xiamen, Zhuhai, Fuzhou, and other coastal cities	Conducted pilot projects to realize the paid use of urban state-owned land with favorable results

In 1988, the LAL stated that the state shall practice a system of paid use of state-owned land in accordance with the law, which legally prescribed the paid transfer of rights to use state-owned land (Articles 21–34 of Chapter IV). In 1999, the revised LAL established new regulations. With the exception of the four types of construction land (military use; municipal infrastructure; energy and power industries; and schools, hospitals, and other public facilities) that can be transferred through allotment, construction units are permitted to use state-owned land only by means of a paid transfer (Article 54 of Chapter V). Provisions introduced by the State Council in 2001 indicated that the PRC not only strictly limited the administrative allotment of state-owned land but also set the minimum grant price based on a combination of the standard land price and the demarcated land price, limited the scope of land use, and vigorously promoted the tender and auctioning of state-owned land. Decree No. 11 of the Ministry of Land and Resources, which was implemented on 1 July 2002, stipulated that, profit-oriented land, such as land for business, tourism, entertainment, and commercial housing, can only be transferred by means of tender, auction, or listing (Article 4). Urban state-owned land is now transferred through open-market tender; local governments already monopolized the primary urban land market.

The previous section maintains that the local government is a monopoly supplier in the construction land market under current land policy. Provisions introduced by the State Council in 2001 state clearly that if two or more persons want the same piece of land after the publication of plans for commercial real estate development or other land supply, the administrative department of land for the municipality or county must lease the land by tender or auction. Subsequent laws and regulations, particularly the 2007 Property Law, have made adjustments to market allocation. The Property Law states that, if two or more persons want the same piece of land that is designated as industrial, commercial, tourism, entertainment, residential, or other commercial land, the local government shall lease the land through tender, auction or other public process (Article 137 of Chapter XII, Part 3). The local government leases land under a dual price system, pursuant to which lands leased for military use; municipal infrastructure; energy and power industries; and schools, hospitals, and other public

facilities are transferred at cost, whereas commercial land is sold at market prices through tender, auction, and listing.

Land leasing by the local government is selective. In practice, local governments use agreement and tender for most industrial land leasing transactions, whereas auctions are used for commercial and residential land leasing to ensure that the highest tenderer acquires the land and that there is no price cap. Due to the public financing of land development projects, some real estate developers will tender for land regardless of the market price; some developers even deliberately boost prices at the behest of local governments. In addition, the current lax economic environment enables developers to tender fiercely regardless of market risk because higher prices are expected in the future. This practice results in high premium transactions. By strictly controlling the supply of commercial and residential land, local governments can increase land-leasing revenues.

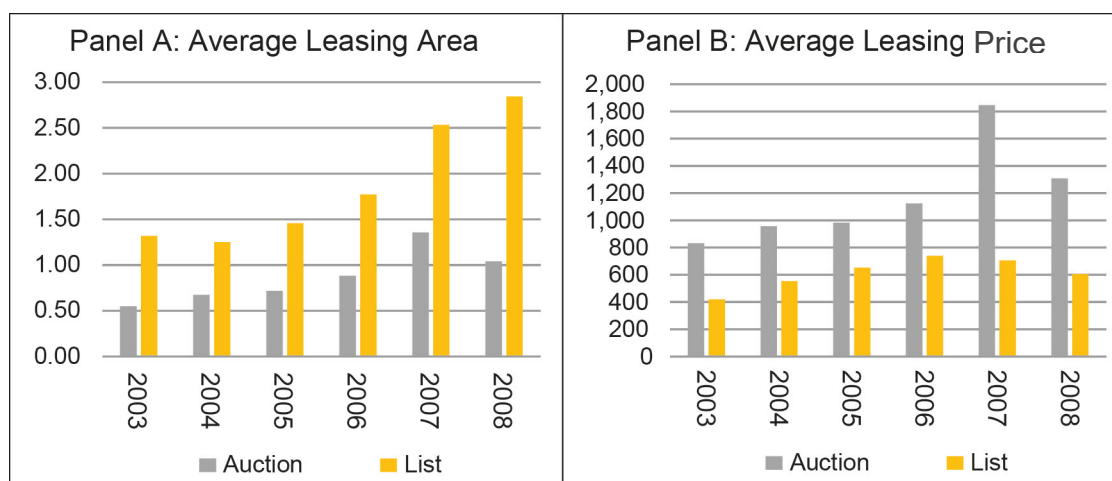
Table 2: Land-Leasing Mode, Area, and Revenue (%)

	Leasing Area				Leasing Revenue			
	Agreement	Tender	Auction	Listing	Agreement	Tender	Auction	Listing
2003	0.72	0.03	0.05	0.19	0.43	0.12	0.16	0.29
2004	0.71	0.02	0.05	0.21	0.45	0.08	0.15	0.33
2005	0.65	0.03	0.06	0.26	0.29	0.08	0.16	0.48
2006	0.69	0.01	0.05	0.24	0.28	0.04	0.16	0.52
2007	0.50	0.01	0.06	0.43	0.18	0.04	0.21	0.58
2008	0.16	0.02	0.06	0.76	0.07	0.05	0.13	0.74

Source: Data used is from the *China Land and Resources Yearbook* and the authors' own calculations.

As shown in Table 2, since 2003, local governments have used tender, auction, listing, and other methods to lease state-owned land. As shown in Figure 1, from 2003 to 2008, small, expensive land parcels were generally leased by auction, whereas large, inexpensive lots were leased by listing. As shown in panel A of Figure 1, the land areas leased by listing are on average approximately twice as large as those leased by auction, and panel B indicates that the average transaction price for listed land is only approximately 60% of the price obtained through auction.

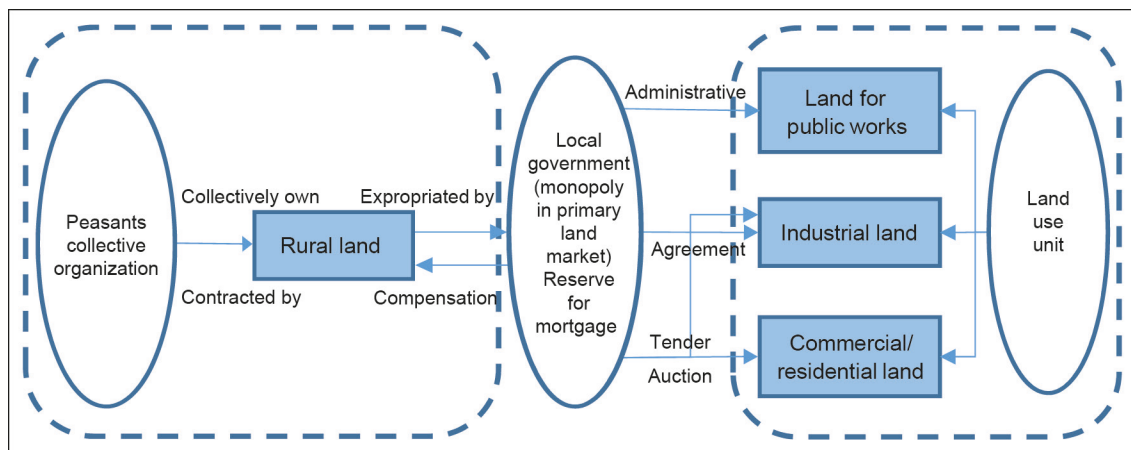
Figure 1: Leasing Areas and Prices



Note: Panel A, Average Leasing Area, is in hectares. Panel B, Average Leasing Price, is in yuan per hectare. Source: Data used is from the *China Land and Resources Yearbook* and the authors' own calculations.

In short, local governments have monopsony power in the rural land market and monopoly power in the urban land market. The local government obtains significant amounts of land and funds and functions as a single-plank bridge between the urban and rural land markets (Figure 2).

Figure 2: The Status of Local Governments in the PRC Land Market



PRC = People's Republic of China.

With its monopoly on land expropriation and transaction, local governments have held down land expropriation prices to acquire large amounts of rural land and turned them into urban lands, which directly led to the excessive expansion of urban land area, as in the massive construction of development zones and new towns. As the *hukou* system hinders rural–urban migration, it can be predicted that land urbanization will outpace population urbanization, with decreasing density of urban population and low efficiency of land use. As governments of higher levels allocate construction land quotas, it is impossible to improve land use efficiency through exchange land quotas among regions.

2.4 Administration of Land Planning

PRC construction land use planning is administered mainly pursuant to the National General Land Use Plan (NGLUP) and annual land use plans. The NGLUP 1997–2010 regulates the quantity of new construction land within a region over the long term, whereas annual land use plans regulate the quantity of new construction land on an annual basis. The NGLUP 1997–2010 determines the total amount and spatial layout of construction land based on an index system that considers the amount of arable land currently occupied by construction, the necessity of protecting basic farmland, and the total amount of arable land (Wang and Tao 2009).

Land quota allocation is biased toward inland PRC. Although local governments determine the land supply, annual construction land quotas are controlled by the central government. Therefore, local land supply largely reflects the local government’s implementation and oversight of land quotas allocated by the central government. The proportion of land supply allocated to the central and western provinces (inland PRC) increased significantly after 2003 (Lu and Xiang 2014). The central government intensified its balance policy after 2000. However, both before and after 2003, the central government implemented several considerable changes to the regional allocation of economic resources (including construction land quotas and capital). In particular, the allocation of construction land was reconfigured as a policy tool to

support the economic development of mainland PRC. The NGLUP 1997–2010 highlights the coordination of land use in different regions and strengthened restrictions on construction land in the southeast coastal and Bohai Sea regions (Lu and Xiang 2014). For example, Zhejiang Province has experienced rapid modernization and industrialization. However, the central government has allocated smaller quotas to Zhejiang since 1999, and the construction land supply in Zhejiang has consequently struggled to meet demand. In Zhejiang, the planning and administration of construction land was inconsistent with its rapid industrialization and urbanization (Wang and Tao 2009)

3. TRENDS IN URBAN EXPANSION

3.1 The Speed of Urbanization

The urbanization of the PRC's population has been rapid since the reforms and opening up of the PRC. The urban population (permanent residents) has increased from less than 20% of the total population in 1978 to 52% of the total population in 2012, representing an increase of 15 million people annually. It is expected that the PRC's urbanization rate will reach 70% by 2030 (World Bank and DRC 2014). From 2000 to 2008, the urbanization rate increased by an average of 3.78% per year.

Land urbanization has proceeded much more quickly than population urbanization, a phenomenon known as the urbanization of land rather than peasants.³ Between 2000 and 2010, the built-up area of the PRC's cities increased at a compound annual growth rate of 6% and nearly doubled in size, expanding from 22,000 square kilometers (km²) to 40,000 km². The average 6% annual growth rate of the built-up area of the PRC's cities significantly exceeds the 3.78% growth rate of the urban permanent resident population,⁴ indicating that local governments promote land urbanization to a greater extent than population urbanization. In addition, rather than developing existing construction land, which is expensive, local governments tend to expropriate relatively inexpensive rural land. Consequently, urban land continually spreads outward, and although the pace of land urbanization is rapid, the quality is low (World Bank and DRC 2014). This process decreases urban population density, produces urban sprawl, and leads to inefficient land use. Urban population density has exhibited a downward trend in recent years: from 2000 to 2008, urban population density decreased by approximately 27.6% (Xu 2011).

A geographic comparison of population urbanization in the PRC indicates that the eastern region has experienced a higher level of population urbanization and that its urban population is quite evenly distributed along a ribbon-shaped band. In contrast, the urban population in central PRC has a fragmented distribution and is characterized by significant interregional differences (Xu 2011). Urban agglomerations of different levels, sizes, and degrees of development currently exist in the PRC. For example, the urban agglomerations of the Yangtze River and Pearl River deltas are relatively mature and contain a dense network of cities and towns. Urban agglomerations attract a greater labor force, enhance the efficiency of resource allocation, and promote urbanization and economic development.

³ *People's Daily*. 2011. 城市化是人的市民化 不是土地的城市化 [Urbanization is urbanization of people rather than land]. February 14. http://news.xinhuanet.com/2011-02/14/c_121072956.htm (accessed 21 October 2016).

⁴ Data is sourced from CEInet Statistics Database. Ratio is calculated by the authors.

Land urbanization occurs at a similar pace in the eastern and western regions, whereas the pace of land urbanization in central PRC is relatively slow. Population urbanization is most rapid in eastern PRC, and the gap between the population urbanization rates of central and western PRC is small. The difference between the population growth rate and land expansion rate in eastern PRC is 1.71%, which is quite consistent with the national average of 1.84%, whereas this gap in central PRC is slightly lower than the average level, and in western PRC it is 2.78% (Table 3). Western PRC has a nonagricultural population growth rate that is nearly twice the land urbanization expansion rate, which makes it the region in which a bias toward population urbanization over land urbanization is most evident. This characteristic is related to current government allocation methods for land quotas. Since 2003, construction land quotas have favored the central and western provinces, while construction land quotas in the eastern region have experienced a corresponding decrease (Lu and Xiang 2014).

Table 3: Average Expansion Rates of Built-Up Land and Nonagricultural Populations, 1990–2008
(%)

Average Rate	National	East	Central	West
Built-up land expansion	5.63	6.49	4.43	6.17
Nonagricultural population growth	3.79	4.78	2.98	3.39
Difference	1.84	1.71	1.45	2.78

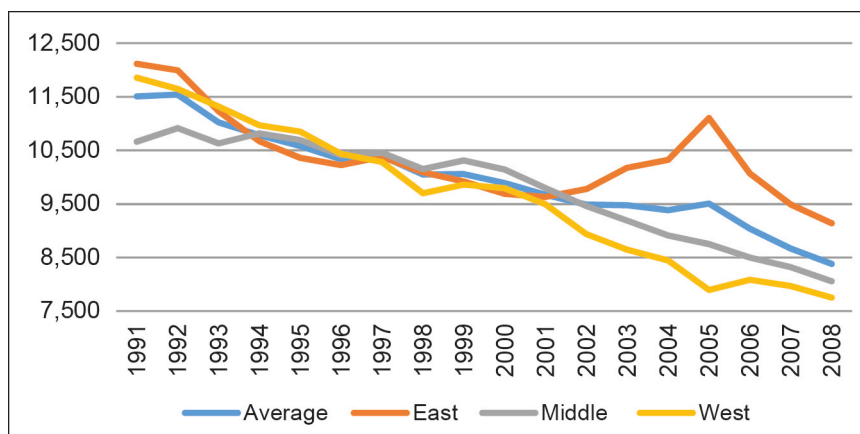
Source: CEInet Statistics Database. The ratio is calculated by the authors.

Long (2014) assessed urban land area in the PRC at the prefectural level and above for the period 1980–2010 using remotely sensed images. The ratio of urban land area in 2010 to that in 1980 approximates the degree of urban expansion in each city. Inland PRC has experienced greater urban expansion than the coastal region during this period. Huang, Zhu, and Deng (2007) observed that although the expansion of construction land across the PRC accelerated from 1989 to 2000, expansion trends varied significantly by region. For example, the rate of expansion slightly decreased in the eastern region, but increased in the western region. Huang, Zhu, and Deng (2007) analyzed the relationship between density, available construction land per capita, and land expansion, and their model indicated that the intensity of land use and maintenance of construction land per capita in eastern PRC were the main reasons for its declining land expansion rate, whereas economic growth and increment of construction land per capita in western PRC (likely due to laxer policies and relatively low prices of land) were the primary reasons for the increased land expansion rate in this region. Therefore, the expansion of construction land and the corresponding reduction of arable land driven by economic growth may exert profound influences on future development in the central and western regions.

Population aggregation has not kept pace with the urbanization process because the population growth rate is slower than the urbanization rate. Figure 3 indicates that the national average population density in the PRC decreased from 11,600 people per km² in 1990 to 8,400 people per km² in 2008, a reduction of 27.6%. From 1990 to 2000, regional differences between eastern and western PRC were less obvious. Between 2000 and 2005, the average population density remained relatively stable, although the population density of the eastern region increased because construction land use was limited. However, average population density in the PRC continued to decline after 2005. Population density in the central region decreased at a stable rate, whereas the western region experienced a significant drop, falling to near 8,000 people per km²—its lowest historical level—in 2005. The decline of national and regional population density

between 1990 and 2008 also reflected the inability of population urbanization to keep pace with land urbanization, and the west experienced the greatest annual rate of decline at 2.42%. The decline of population density in eastern PRC was consistent with the national average, whereas the rate of decline in central PRC was relatively low. Decreases in population density are detrimental to the quality of urbanization because agglomeration effects are more evident in cities with high population densities. Agglomeration can reduce the cost of providing services and infrastructure in cities.

Figure 3: National and Regional Population Density
(people per square kilometer)

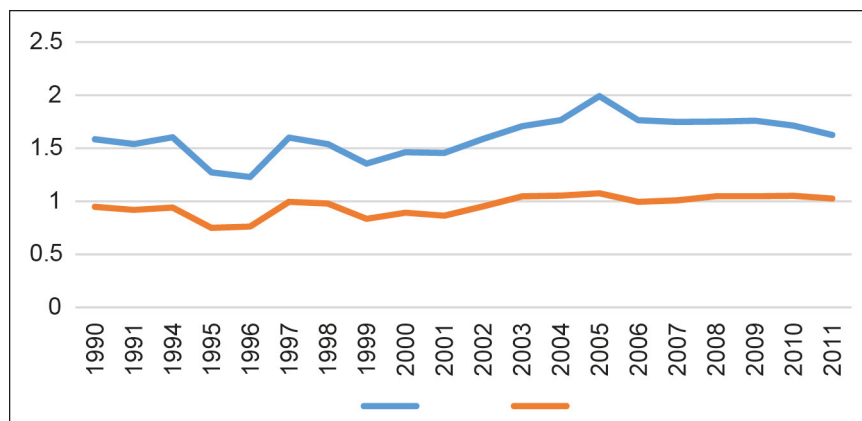


Source: CEInet Statistics Database. The density is calculated by the authors.

3.2 Land Use Efficiency

Differences in land use efficiency among the PRC's regions are significant. Eastern PRC has the greatest utilization efficiency, and the gap between the central and western regions is widening. Figure 4 displays the trends in the PRC's urban land use efficiency since 1990. Land use efficiency is defined as the ratio of the output value of the city's secondary and tertiary industries to the area of built-up land (Lu 2011; Shao et al. 2011; Zhang and Xu 2011). Both national and regional land use efficiency have increased. Before 2003, the increasing trend was slight; however, in 2003, the government began to reorganize open economic zones and reduced urban construction planning land by 74% (Lu and Xiang 2014). This policy enhanced the utilization of urban land, increasing land use efficiency dramatically. In 2003, the difference between the values added by the respective secondary and tertiary sectors of eastern and western PRC was CNY135 million per km². In 2011, this difference was CNY323 million, an increase of 139.3%. However, the increased land use efficiency in eastern PRC is inconsistent with the current administrative allocation of construction land quotas. Specifically, most construction land quotas have been allocated to the central and western regions in recent years, implying that although the eastern region generates the highest land value added, it is allocated the lowest land quotas. This allocation policy violates market rules and creates land resource waste and land use inefficiency. Since all of the PRC's largest cities are located in the eastern region, this policy will not help the country's largest cities to improve urbanization quality or generate greater agglomeration effects.

Figure 4: Average Land Use Efficiency 1990–2011
(billion yuan/square kilometer)



Source: CEInet Statistics Database. Density is calculated by the authors.

3.3 Urban Sprawl

The PRC's urbanization process has been accompanied by urban sprawl. Urban sprawl is caused by the large-scale formation of new towns and development zones. These processes are discussed in detail below.

3.3.1 New Towns

The tremendous transformation of agricultural areas into commercial and residential areas has stimulated the construction of new towns. In 2013, the City and Town Reform and Development Center of the National Development and Reform Commission conducted a survey on the planning and construction of new towns. The survey included 156 prefecture-level cities and 161 county-level cities in 12 provinces. This survey revealed that 90% of the prefecture-level cities had planned for new town construction and that most of these plans had been implemented. Of the 255 plans for new town construction, 96 revealed their expected construction scale. The total area covered by these 96 planned new towns was 6,105 km², an average of 63.6 km² per town. According to the *City Statistical Yearbook of China* (2012), the average urban built-up area of all prefecture-level cities in the 12 sampled provinces is 115 km², which means that the average planned area for new urban districts is more than half of the existing urban area. Moreover, some cities had planned for the construction of more than one satellite town. Among the 145 prefecture-level cities that planned to construct new urban areas, 121 cities totally or partially promulgated the expected populations of the new towns. The total expected population of these new towns is 96.72 million people, an average of about 800,000 per town. However, the yearbook statistics also reveal that the average population of all prefecture-level cities in the 12 sampled provinces is 884,000, which means that the expected population per new town is nearly equal to the population of existing towns.

Has the PRC achieved its goals? Due to unrealistic development as well as the extreme scarcity of supporting industries and public facilities, a great number of newly constructed towns have become so-called "ghost towns" or "sleeping cities." For instance, Kangbashi, a new town in Ordos, was planned and constructed beginning in 2003 on a planned urban area of 32.23 km². Kangbashi's population was expected to

grow to 300,000 by 2020 and reach 1 million in the long term. However, the town had only 28,000 residents by 2010, resulting in a small population lost in a big city.⁵

3.3.2 Development Zones

Urban sprawl can also result from constructing new development zones on large areas of land converted from agricultural to industrial use. The policies for development zones are extensions of the successful Special Economic Zone (SEZ) policies implemented by the PRC government. With the advancement of reforms and opening-up policies, development zones have been transformed from test fields shouldering the task of economic reforms and institutional innovation into a major policy instrument for boosting regional economic development (Lu and Xiang 2014). As state-level development zones are established on the construction standards of SEZs, they enjoy similar preferential policies, including tax privileges and favorable land pricing. These preferential policies reduce the cost of land transfers by 10,000–50,000 yuan per unit area, depending on the scale and availability of the investment, and reductions of 30,000–60,000 yuan per unit area are possible if the project is considered high-tech by the local science and technology committee (Ge and Tian 2008). Moreover, because the economic basis and development demands vary from town to town, local governments can make moderate adjustments to their preferential policies. In addition to state-level development zones, three types of provincial development zones are recognized by the central government: provincial economic development zones, high-tech industrial zones, and characteristic industrial zones. Due to the unequal tax powers of local governments and the central government, the degree of tax allowances in provincial development zones differs significantly from that of state-level development zones. To attract more enterprises to province-level development zones, some local governments provide unqualified industries with allowances such as land premium refunds, corporate income tax exemptions, and the construction of supporting facilities. The scale of development zones has expanded rapidly and blindly since the first coastal development zones were established in 1984, resulting in an uncontrolled wave of development zone construction. Local governments use these zones to attract private investment and to transform large areas of agricultural land into industrial land. Even if no immediate investment is made in these zones, the land can be reserved for future financing.

Development zones are obviously advancing inland. Wang (2013) cited data from the 2006 *China Developing Zones Audit Announcement Directory* related to 1,568 development zones and outlined the geographical advancement of the reforms and opening-up policy. This data shows that the number of cities taking advantage of the opening-up policy has increased dramatically and that only a minority of urban areas have not yet established any development zones. The data also shows that the inland advancement of the PRC's development zones increased significantly after the opening-up policy came into effect in 1992.

The cleanup and rectification of development zones strengthen regional balance. At present, the PRC's national ministries and commissions recognize only national development zones and three types of provincial development zones. The cleanup and rectification of development zones conducted by the Ministry of Land and Resources and the State Council during 2003–2006, following the blind expansion of development zones, has been the most significant undertaking since the development zone policy was implemented. By 2006, the number of the national development zones decreased by 77.2%, dropping from 6,866 to 1,568, and the planning area decreased by 74%,

⁵ Yicai (www.yicai.com/news/2010/04/336567.html).

going from 38,600 km² to 9,949 km² (Lu and Xiang 2014). The cleanup and rectification of development zones from 2003 to 2006 not only successfully contained the excessive expansion of development zones but also strengthened the regional balance of provincial development zones.

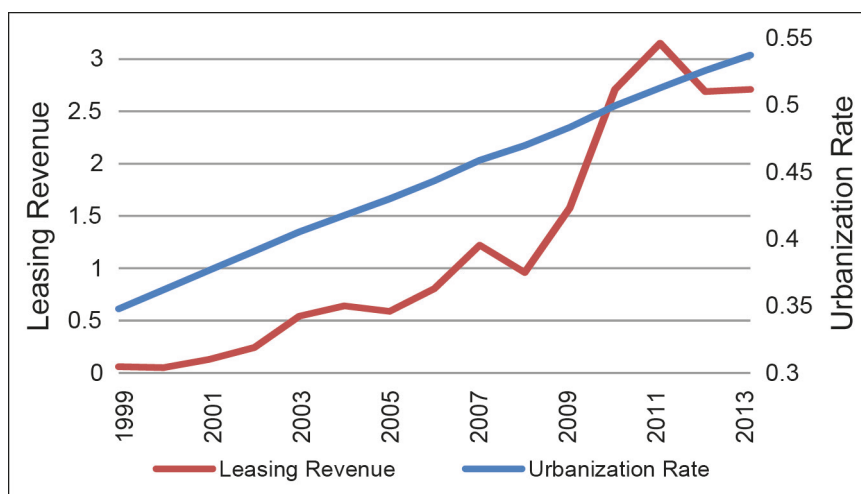
Lu and Xiang (2014) calculated the number of the enterprises in the eastern development zones both before and after the rectification and calculated the proportion of counties in the PRC that have development zones. Their study found that although the rectification significantly reduced the number of development zones in eastern PRC, the number increased in the mid-west. The PRC’s regional balance strategy prioritized development in the inland areas to promote equality among regions. This policy allocates more resources to the mid-west and promotes relatively rapid development of this region over the short term. However, this policy conflicts with market dynamics because resource use efficiency is higher in the PRC’s east coast, resulting in the loss of macroeconomic efficiency. The spatial distribution of the provincial development zones reflects the PRC’s regional balance strategy.

4. LAND AND URBANIZATION

4.1 Land Leasing and Urbanization

Urbanization rates and land leasing revenue are positively related. The booming real estate market in most PRC cities increases the value of urban construction land, which is the primary resource of local governments, and increases local government revenue, especially since 2003. Figure 5 shows that the land leasing income in 2013 (CNY2.71 trillion) was nearly 45 times the land leasing income in 1999 (CNY59.6 billion).

Figure 5: Land Leasing Revenue and Urbanization Rates



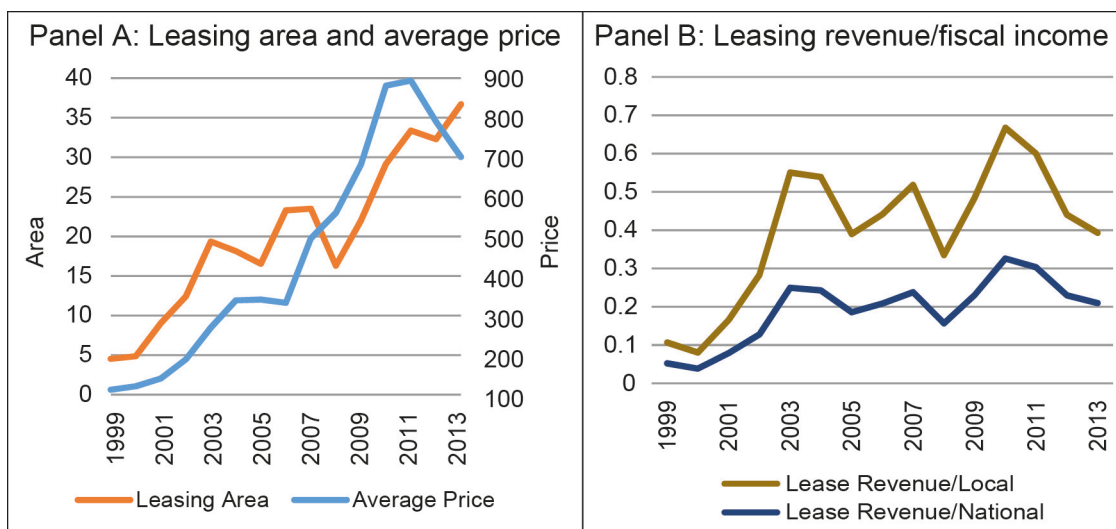
Note: Land leasing revenue is in trillion yuan.

Sources: Leasing data is from the *China Land and Resources Yearbook*; urbanization data is from CEInet Statistics Database and the authors’ own calculations.

The amount of land leased by local governments and the average price of land leases transitioned through three stages. During the period 1999–2002, local governments transferred between 45,000 hectares (ha) and 124,000 ha of land each year, reaching an average total leased area of approximately 200,000 ha, and the price of leased land

soared. In 2010–2013, the area of leased land increased to more than 300,000 ha; by 2013, the area of leased land had grown to 367,000 ha, approximately eight times the area of leased land in 1999.⁶ Leasing prices gradually increased from an average of CNY1,133 thousand per hectare in 1999 to CNY7,384 thousand per hectare in 2013, an increase of nearly 600%.

Figure 6: Land Leased by Local Governments



Note: Area is 1 = 10,000 hectares. Price is 10,000 yuan per hectare.

Sources: Leasing data for 1999–2002 is sourced from the *China Land and Resources Yearbook*; leasing data for 2003–2007 is sourced from the China Infobank website, www.bjinfobank.com; leasing data for 2009–2013 is sourced from the PRC land resources bulletin; and fiscal data is sourced from the National Bureau of Statistics of China website, www.stats.gov.cn. Average price = leasing revenue/leasing area.

Land leasing revenue has become an important source of local government income. On average, the ratio of land leasing revenue to local fiscal revenue is approximately two-fifths, and the ratio of land leasing revenue to national fiscal revenue is approximately one-fifth, as shown in Figure 6, panel B. As the direct embodiment of land premiums, local governments’ land leasing revenue corresponds to a sustained increase in land prices and has become the most important source of extra-budgetary revenue for local governments. Statistical data indicates that gross land leasing revenues represented 50.9% of local general budget revenue during the period 2004–2011 and represented more than 60% in 2010 and 2011 (Zheng et al. 2014).

Land leasing provides financial support for the PRC’s urbanization. Local governments continue to directly or indirectly control infrastructure investment projects in the vast majority of the PRC’s cities; however, given the current tax system and the property tax vacancy situation, traditional budget revenue does not provide adequate and sustained funding for local development. This means that other modes of financing city construction—modes with “Chinese characteristics”—must exist. Land leasing income is considered extra-budgetary revenue, and local governments can use this money with few constraints. The apportionment of land leasing revenue between the central and local governments has been adjusted several times. Currently, 30% of new

⁶ Ministry of Finance of the PRC (http://gks.mof.gov.cn/zhengfuxinxi/tongjishuju/201401/t20140123_1038541.html); Sina (<http://finance.sina.com.cn/g/20110107/12029219005.shtml>); Ministry of Land and Resources of the PRC (www.mlr.gov.cn/xwdt/jrxw/201301/t20130125_1178667.htm, www.mlr.gov.cn/xwdt/jrxw/201004/t20100409_144481.htm%202009); the National Bureau of Statistics of China (www.stats.gov.cn/tjsj/zbjs/201310/t20131029_449552.html).

construction land leasing revenue is paid to the central government and the remainder belongs to the local government.

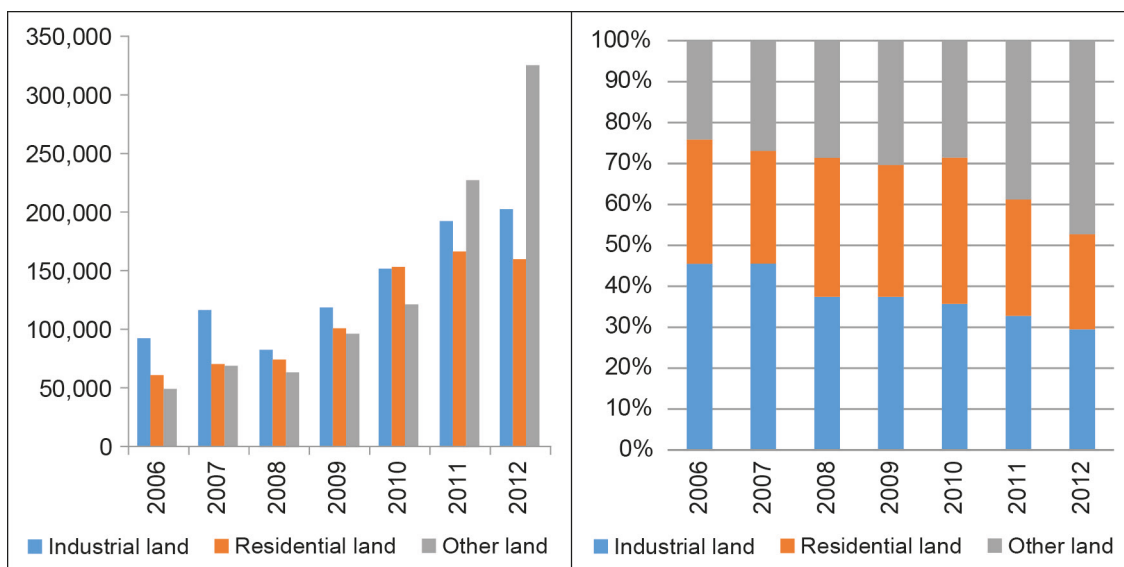
There is an important indirect, or collateral, effect of the land bonus. Land that has been expropriated and reserved, but not yet leased to private actors, represents the most important asset of most local governments, and increases in land prices enhance the ability of local governments to engage in debt financing (Barro 1976; Stiglitz and Weiss 1981). This combination of land leasing revenue and land mortgaging provides an important source of funds for much urban infrastructure investment—this method of financing infrastructure is called “land financing” (Fan and Mo 2013; Zheng et al. 2014). By stimulating local economic growth and improving the quality of life in cities, urban infrastructure investment causes land prices to increase further, which enables local governments to conduct additional, large-scale land financing. This positive feedback relationship between land finance and urban infrastructure investment (Zheng et al. 2014) incentivizes local governments to expropriate additional rural land to capture land value-added income and accelerate urbanization.

4.2 Land Supply Structure and Price

Land policies and the local governments’ land supply jointly determine the supply of urban construction land in a particular area. Industrialization and urbanization increase the demand for industrial, commercial, and residential land, which in turn affects the price of a city’s land.

As Figure 7 indicates, the proportion of industrial land declined during 2006–2012, dropping from 45% to less than 30%. In contrast, the proportion of land used for roads and squares rose rapidly, which reflects local governments’ pursuit of enhanced city image and infrastructure construction. Although the proportion of industrial and warehouse land decreased to less than 30% by 2012, this proportion remains much higher than the foreign average of 10%–15%.

Figure 7: Land Supply Structure
(hectares)

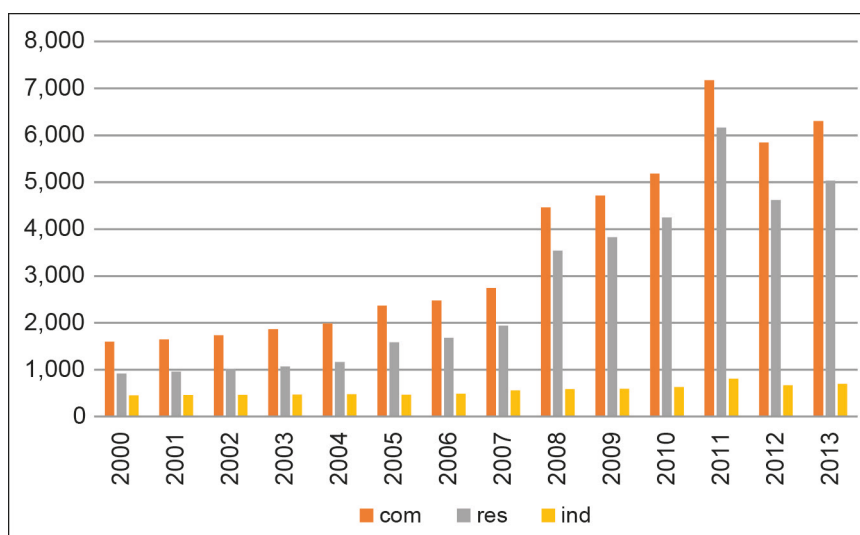


Note: Other land uses include public facilities, public buildings, and transportation.

Source: Landchina (www.landchina.com/default.aspx?tatender=325&WebShieldDRSessionVerify=9Pem7QKq1FfSzYAPMVd7).

A high proportion of industrial land has resulted from the rational choices of local governments (Tao et al. 2009). The proportion of industrial land is much higher than that of commercial land, which lowers the price of industrial land and increases the price of commercial land. Since the amount of industrial land is large and its price is low, it attracts investment. Conversely, the amount of commercial and residential land is small while the price is high. Accordingly, governments either lease commercial and residential land to obtain revenue or reserve the land to obtain financing. Figure 8 shows that the price of industrial land is much lower than that of commercial and residential land.

Figure 8: The Price of Land for Different Uses (2000–2013) in Urban PRC
(yuan per square meter)



com = commercial; res = residential; ind = industrial.

Source: China Urban Land Price Dynamic Monitor (www.landvalue.com.cn).

Attracting investment with industrial land has strong external benefits. Such investment can rapidly increase investment in local capital assets, contribute to gross domestic product (GDP) growth, and facilitate the attainment of political performance goals. Moreover, it can help increase employment and tax revenues. However, using this approach to attract investment creates excess industrial land. Local governments monopolize the transfer of local urban land, and local government intervention affects land use during the process of urbanization.

According to National Land Use Planning 2006–2020, the volume fraction of industrial land was only 0.3 to 0.6 in 2005. However, over the past 6 years, the volume fraction increased to 1.26, which means that the volume fraction of early industrial land represented a significant amount of waste. In addition, industrial land supply has continued to grow rapidly in subsequent years; in 2012, industrial, warehouse, and mining land accounted for 40.9% of nationally approved new construction land. At this time, an overall industrialization strategy was being pursued regardless of endowments, and all regions committed to the development of similar industries. This strategy contributed to a race to the bottom, characterized by low-level, redundant construction and low overall land use efficiency; it also severely hampered sustainable industrialization and urbanization.

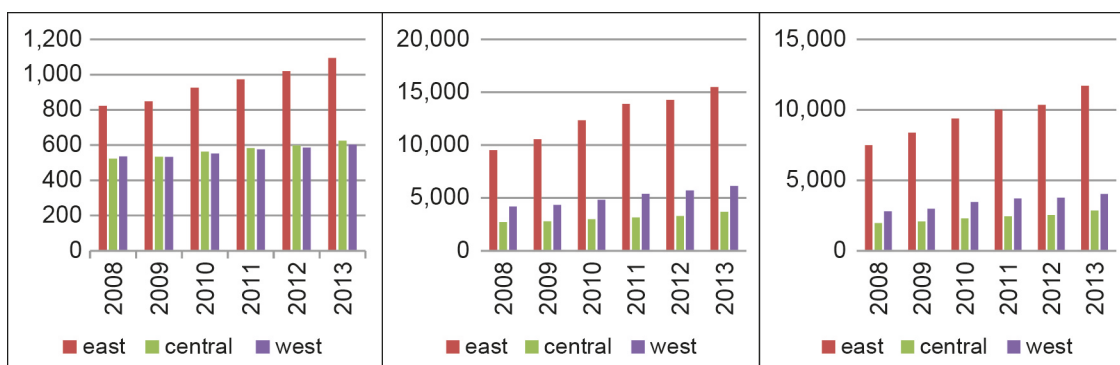
Land transfer income is derived primarily from commercial and residential land and from subsidies for industrial land (Tao et al. 2009). Local governments supply a significant amount of industrial land at low prices to attract investment and spur industrialization. Industrialization substantially increases the demand for labor, which prompts landless peasants and farmers to enter cities to seek employment. The expropriation of farmland for land urbanization thus encourages landless farmers to leave rural areas and establish residency in cities as nonagricultural labor, thereby promoting human urbanization. It is evident that local governments use land supply to spur industrialization, which acts like a “switch” in the PRC’s industrialization and urbanization process.

The acceleration of urban development increases the demand for real estate, which causes land prices to rise. Increased urbanization leads to higher numbers of immigrants entering cities, which sustains residential demand growth. Since housing is a mortgage commodity, when investors rationally anticipate sustained residential demand growth, they will invest in housing. Thus, residential prices may increase faster than per capita GDP (and income) increases, especially in the coastal area, where land supply has been restricted in recent years (Lu, Zhang, and Liang 2016). The Research Group on China’s Economic Growth (2011) found that because the supply of land was limited, the inter-temporal allocation of residential land increased market risk. If real estate prices increase too quickly, urban population and industrial growth are hindered. The Research Group on China’s Economic Growth (2011) demonstrated that the expansion of land finance and increased public expenditure directly spur urbanization; but if urbanization does not produce increasing returns to scale and government revenue and expenditure remain unchanged, the sustainable development of cities is threatened.

4.3 Land Price Variation and Location Choices of Enterprises and Workers

Industrial, commercial, and residential land prices in the PRC vary widely by region. Land prices in the east are much higher than those in the mid-west, especially the price of residential land. Figure 9 shows the gap between industrial, commercial, and residential land prices in eastern, central, and western PRC.

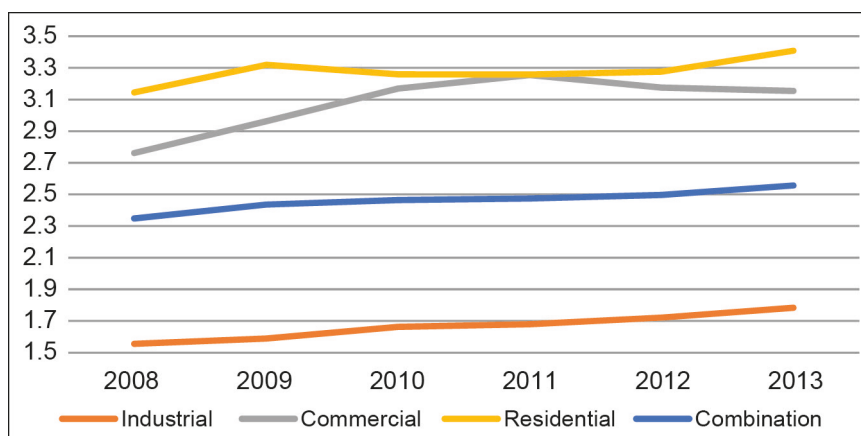
Figure 9: The Price of Industrial, Commercial, and Residential Land by Region
(yuan per square meter)



Source: China Urban Land Price Dynamic Monitor (www.landvalue.com.cn).

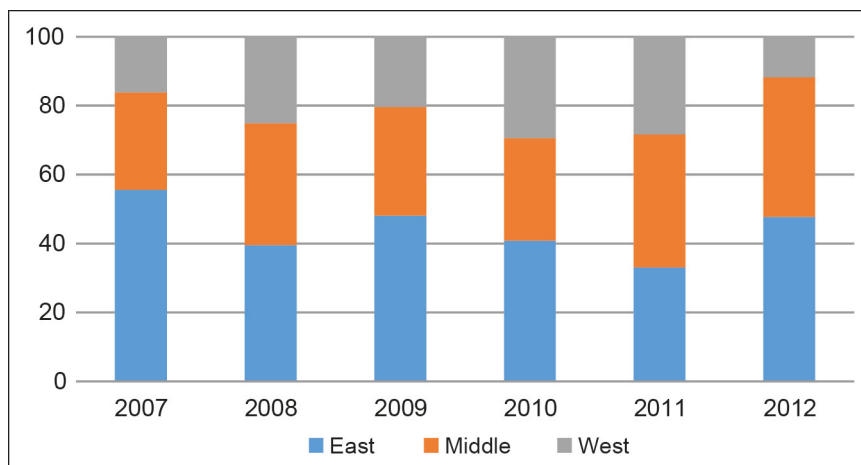
The price gap between the east and inland has widened in recent years. Figure 10 indicates the industrial, commercial, residential, and combination land price ratio of the east to the average of the mid-west—the wider price gap is related to land allocation being biased towards the mid-west. The central government intensified its regional balance policy after 2000 and, in 2003, significantly altered the regional allocation of economic resources (including construction land quotas and capital). In particular, the allocation of construction land was reconfigured as a policy tool to support economic development in the mainland. The Outline of National Land Use Planning 1997–2010, which was approved by the State Council in April 1999, emphasized the coordination of land use among regions and strengthened restrictions on the amount of construction land in southeast coastal areas and the Bohai region. Although local governments determine land supply, annual construction land quotas are controlled by the central government. Therefore, local land supply largely reflects the oversight and implementation of land quotas established by the central government. Figure 11 depicts the distribution of industrial land quotas. At first, there is no indication of growth in the mid-west area. However, a gradual upward trend in the industrial land allocated to mid-west areas occurs in two stages, one from 2007 to 2008 and the other from 2009 to 2011. In 2012, the allocation of industrial land quotas to the eastern region increased, but remained below its 2007 level. Thus, the mid-west regions not only enjoyed an advantage in land quota distribution but also benefited from substantial increases in annual new industrial land after 2008. The current administrative allocation of construction land is inconsistent with land use efficiency; that is, increasing amounts of construction land have been allocated to the mid-west regions, which has resulted in the waste of land resources and demonstrates a lack of allocation efficiency. Since urban agglomeration is greatest in eastern PRC, this system of land allocation will not promote greater agglomeration effects or improve the quality of urbanization in eastern cities. Figure 12 depicts the distribution of commercial and residential land quotas.

Figure 10: The Price Ratio of the East to the Mid-West



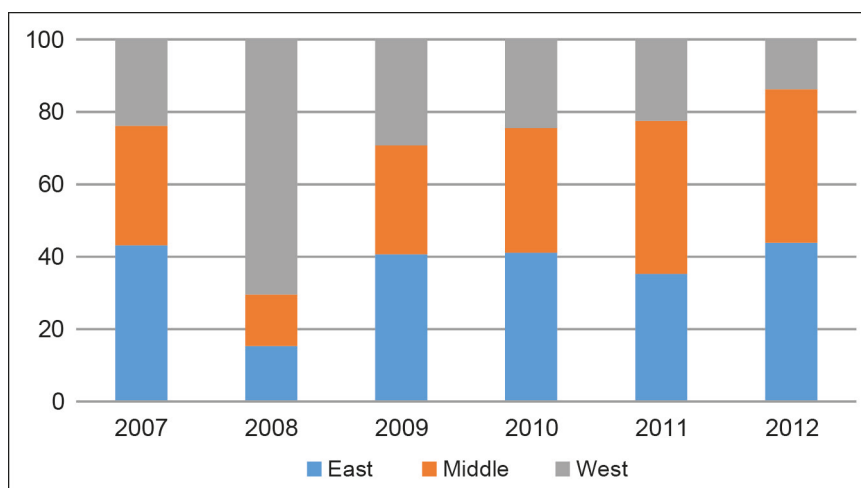
Source: China Urban Land Price Dynamic Monitor (www.landvalue.com.cn).

Figure 11: Allocation Ratio of Industrial Land Area by Region (%)



Source: Landchina (www.landchina.com). The average ratio is calculated by the authors.

Figure 12: Allocation Ratio of Commercial and Residential Land by Region (%)



Source: Landchina (www.landvalue.com.cn). The average ratio is calculated by the authors.

The high price of commercial and residential land is associated with high housing prices and rents. There is some debate over the precise mechanism by which land prices influence housing prices, but the positive correlation between them is obvious (Kuang 2005). According to the Fischer–DiPasquale–Wheaton model, an increase in housing prices produces an increase in rents. As most migrant workers live in villages, factory dormitories, and workplaces (e.g., shacks on the construction site), as well as other informal dwellings, they are insensitive to housing prices. Nonetheless, rents will increase as housing prices rise (as indicated in our survey of rents for village houses in Guangzhou), rising rents will increase the cost of living for the labor force, and the increased cost of living will trigger worker demands for higher wages. When the price of industrial land is low, enterprises with constant productivity can afford to increase wages. However, if the price of industrial land increases, enterprises will be unable to afford increased labor costs. In this scenario, the substitution effect concept suggests that enterprises will either use capital to substitute for labor inputs or leave the city. The

labor force will then also leave the city because of fewer jobs and higher living costs, which will have a negative influence on urbanization.

Under the central government's regional balance policy, land controls in the eastern region differ from those in the mid-west. The PRC's central government manages urban land and controls the scale of each province's construction land based on an index system. Recently, the central government has introduced a series of policies that support the transfer of industry to the mid-west. For example, the allocation of new construction land—and particularly construction land zoned for industrial development—clearly favors the mid-west. Due to the relatively high level of industrialization and urbanization in eastern PRC, these allocation policies initially led to a significant gap between the supply and demand of construction land in eastern areas. Specifically, during the rectification of development zones that occurred after 2003, land planning in the mid-west was strictly implemented and the allocation of land supply was significantly biased toward the mid-west. This biased land policy caused the price of land in eastern PRC to increase and limited the tools available to local governments in eastern PRC to attract investment. A combination of these factors influences enterprises' location selection and shifts industry away from eastern PRC to inland regions. This industry shift affects cities' urbanization and industrialization.

The significant gap between the prices for land used for different purposes in the mid-west attracts business investment. Specifically, the price of land drives housing prices and rents, which affects wages and enterprise production and thus influences location selection. Lu, Zhang, and Liang (2014) found that wages and housing prices were positively correlated. In eastern PRC, housing prices have increased faster than wages since 2003, especially in 2007 and 2010, due at least in part to the relatively tight land supply. Therefore, although the labor force continues to flow to eastern PRC because of agglomeration effects, the land in eastern cities is under stricter control and the portion of available land is decreasing. When housing prices and rents increase, migrant workers face higher costs of living in eastern cities; simultaneously, increased local government investment in inland areas provides more job opportunities in these areas. Thus, migrant workers can opt to work in their respective local cities, creating a shortage of migrant workers in the coastal areas. In this situation, enterprises in the coastal areas must use higher wages to recruit a labor force. In short, housing prices and wages have a positive feedback relationship.

Is the increased investment in mainland PRC efficient? Lu and Xiang (2014) calculated the average capital productivity of each prefecture-level city using enterprise data. It is clear that investment efficiency in the coastal area is much higher than that in the hinterland of the mid-west. If factors flow freely, then theoretically the returns on capital in different regions should converge. In practice, the PRC's restrictions on land and investment lead to the survival of enterprises with higher productivity. This strategy decreases investment efficiency in the mid-west and highlights the distortive effect of government intervention on efficient resource allocation.

Although businesses that shift to mainland PRC tend to be attracted by the low price of land, the efficiencies achieved by such transfers are insubstantial. The relatively high cost of logistics in the mainland and the lack of competition in its institutional environment dissuade many enterprises from transferring to the mainland to escape increasing cost pressures in eastern PRC, as policy makers expect; instead, these enterprises relocate to the Southeast Asian countries around the PRC because the cost of labor in these countries is much lower. Moreover, the pressure on local government officials to achieve success based on the PRC's performance assessment index has prompted some mid-west cities to increase their tolerance of industries with

high levels of energy consumption and pollution. Therefore, the quality of investment attracted to the mid-west is often low.

To sum up, current land and household registration policies hinder the mobility of production factors, including construction land and the labor force, and distort the process of urbanization and industrialization. Current land policy essentially grants local governments a dual monopoly over the urban construction land market, in which local governments lease land to generate funding for urban infrastructure, preventing efficient land transactions. On the other hand, improved urban infrastructure increases house and land prices and attracts investment. This cycle promotes land-financing strategies and provides a source of funding for the expansion of cities. Combined with the *hukou* system, these developments have decreased urban population density. In addition, local governments transfer land strategically; specifically, they lease below-average amounts of commercial and residential land, which enhances the already substantial price gap between industrial land and commercial and residential land. This gap produces a lag between urbanization and industrialization. Meanwhile, the central government allocates land quotas in a manner intended to balance regional development gaps and reduce regional income disparities, which has amplified the misallocation of construction land among regions. Therefore, a series of policy reforms, including land and fiscal reforms, should be implemented on an expedited basis to stimulate urbanization and city system adjustment rather than simply relying on the administration to guide the flow of resources appropriately.

5. CONCLUSIONS

Current land policy essentially grants local governments a dual monopoly over the urban construction land market, in which local governments lease land to generate funding for urban infrastructure, preventing efficient land transactions. On the other hand, improved urban infrastructure increases house and land prices and attracts investment. This cycle promotes land-financing strategies and provides a source of funding for the expansion of cities. Poor compensation for land expropriation and unreasonable distribution of the land value damage landless peasants' interests and incrementally inflame social conflicts.

There has been an inflow of population to eastern PRC, while land has been vacated in the west. Since eastern PRC, its big cities in particular, has stronger agglomeration effects, we find that the market power has driven the population to migrate to the east, but more construction land quotas are allocated to inland PRC. Such policies have intensified the shortage of construction land in eastern PRC, resulting in much higher land and house prices than those in inland PRC. Due to high costs in the east, firms move to inland cities. Since the agglomeration effect is not strong enough, few firms stay except those with low efficiency and high pollution.

Population urbanization lags behind land urbanization. The current land and *hukou* systems distort the flow of production factors. On the one hand, local governments have dual monopoly power over the land market—motivated by the strategy of “land finance,” they prefer to expand their urban areas, which leads to excessive land urbanization. On the other hand, the *hukou* system has restricted immigrant urbanization. These two opposite forces have made population urbanization lag far behind land urbanization. Prices in the land market are distorted and hinder the effective allocation of land. The local government knowingly distorts the supply structure of land, chooses the land leasing mode to push up the prices of commercial

and residential land, holds down the price of industrial land, and distorts the land cost of urbanization and industrialization, damaging the interests of landless peasants.

First and foremost, the land policy should be revised such that the market determines the allocation of land resources, which will create a unified, competitive urban–rural land market. This is a long-term, arduous task, but it may begin with the following two measures.

First, linking land reform with *hukou* reform offers the most effective way to solve these problems. Under the current landownership system, a national construction land quota trading system can be established for the market to decide the allocation of construction land quotas and encourage simultaneous population migration. At present, when peasants migrate to cities, they cannot make the best use of their homesteads and farmlands. Land is not mobile, but construction land quotas can be traded. The experiments in Chengdu and Chongqing are restricted within their respective regions, inconsistent with the interregional labor flow, and thus fail to fully demonstrate the advantages of matching flowing populations with land quotas. Circumventing the provincial boundaries and allowing peasants to exchange their land quotas of homesteads for entry into cities can help fix this problem. The homesteads can be recycled for land reclamation and the farmlands can be priced and sold to the local community or other villagers. In this way, the population-receiving governments can have more construction land quotas.

Second, farmers whose land has been expropriated should participate equally in the expropriation process to curb the exploitation of farmers by local governments. In this regard, the government should abandon the notion that land use rights and interests can be acquired in exchange for the mere establishment of a social security or compensation system.

Furthermore, our proposal is to change the local government's pattern of "land finance" to reduce factor misallocation of construction land. By opening up a variety of other financing channels in support of urban development and reducing the local government's overdependence on land for financing, we can change the local government's role in the land market as a monopolist to simply that of an agent.

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