Governance over Land Development during Rapid Urbanization under Institutional Uncertainty

-- With reference to peri-urbanization in Guangzhou metropolitan region, China

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Abstract

Institutional change in the context of gradualist reforms has stimulated economic growth without causing serious social instability in China. Nevertheless, institutional uncertainty has been brought about by the long continuous transition. Institutional uncertainty in the domain of rural collectives compromises the state governance. While the effective state governance over rapid urbanization is absent, and public goods are inadequate in the peri-urban areas as a result, private governance arises spontaneously in the form of gated super-communities in the far suburbs. Though it has met the aspiration of a rising middle-income class for a decent living environment, social segregation and urban sprawl emerge and become serious challenges to society.

Key words

urbanization; governance; land rights; institutional uncertainty; China
1. INTRODUCTION

China’s economic reforms, aiming at enhancing economic productivity and social mobility, have brought about tremendous changes to the country, and its cities have been undergoing rapid social, economic and physical transformations. In the course of the reforms, decentralization of economic management sets off an unprecedented change which gradually replaces central directives with material incentives to the agents at local level. The state is transforming itself from a producer and socialist welfare provider to an advocate for marketization. The socialist authoritarian government is changing from an ideologue preoccupied with political correctness to a state keenly pursuing economic growth, with the progressive reforms that are gradually phasing out unsustainable socialist welfarism and letting the market take over the role of provision.

The transition from central planning to market orientation is the key factor underpinning the change. Opening up to the world economy and turning to market-mediated production and consumption have fundamentally changed the way how economy and society are managed. Albeit dramatic changes, gradualism is the cornerstone of the unprecedented reform. Institutional change in the context of dualism (co-existence of central planning and marketization) leads to an uncertain state where old central planning mechanisms are phasing out and new market mechanisms phasing in. The centrally-controlled system has been considerably weakened, but governance based on a market economy has not been fully established. A conspicuous hiatus between the two systems constitutes institutional uncertainty. Uncertainty either induces disorderly short-term behavior or prompts invention of new institutions to manage disorder ensuing from uncertainty.

Rapid urbanization has been transforming the economically dynamic regions significantly. While old central cities are restructured substantially driven by new equilibrium of demand for and supply of land, new districts are built in the outskirts to accommodate incoming industrial investments and new migrants. The most profound and intriguing changes occur in the interface between the central city and the suburbs, namely peri-urban areas where extensive urbanization is taking place, while land is largely
owned by the agrarian community collectively. Based on the premise that built environments should be created within an institutional framework where land rights are critically influential, the main objective of the paper is to uncover the impact of institutional uncertainty on the formation of built environments in the peri-urban areas of Guangzhou metropolitan region. Institutional uncertainty, caused by ambiguous and incomplete rights over collectively-owned land, has induced disorderly competition for land rents and thus disorganized land development due to lax state governance. It has propelled further institutional change towards private governance.

The research methodology this paper relies on is a case study, determined by the nature of research questions which seek insights how land is developed and who develops land during the process of urbanization. Land use maps and data were retrieved from archives, and several site visits were made to conduct field reconnaissance and interviews. With the conceptual framework of institutional change, uncertainty and governance, the paper firstly elaborates the fragmented development in the case of a peri-urban district in Guangzhou. It then demonstrates how ambiguous and incomplete land rights give rise to disorderly land rent competition, and thus fragmented peri-urbanization and environmental degradation as a result of ineffective governance. The lax state governance over land development induces institutional change where private governance arises to fill the void. Nevertheless, private governance in the form of gated super-communities in the suburbs exacerbates social inequality between informal settlements and enclaves of middle-class housing estates. Finally, it is postulated that acute land scarcity (measured by population density) accentuates the importance of collective action, and effective state governance should be the key for sustainable urbanization in high-density developing China.

2. INSTITUTIONAL CHANGE AND UNCERTAINTY

Uncertainty prevails in the real world, because of complexity of human relationships and lack of knowledge of the human world. Knowledge and uncertainty are mutually
exclusive (Shackle, 1961). As human beings have gained much control over the physical world, uncertainty derived from human interactions has increased tremendously, resulting from the gap between human competence and difficulties in the real world (Heiner, 1983). Scarcity also complicates problems in human relationships (Commons, 1934), though neo-classical economists believe that scarce resources should be used efficiently if market forces are unshackled so as to drive the market towards a long-term equilibrium of demand and supply. When uncertainty occurs, it prevents individuals from making rational and most appropriate decisions because of not knowing the causality. Following patterns and thus rigidity and inflexibility of behaviour are a way to cope with the capricious real world. “[T]he flexibility of behavior to react … is constrained to smaller behavioral repertoires that can be reliably administered” (Heiner, 1983, p.585).

Certainty is therefore created by regular and predictable patterns of behaviour and cooperation between community members (Elster, 1989). Formation of rules thus aims to reduce complexity and uncertainty caused by actors’ limited ability to gather information, and to lower transaction costs as well (Williamson, 1985). Transaction costs refer to the effort, time and expense necessary to obtain sufficient information to make, negotiate and enforce an exchange. Transactions are not costless owing to costly acquired knowledge. Hayek (1973) distinguishes between two types of order: organisation and spontaneous order. The former is formed consciously by human design, and the latter is shaped through an evolutionary process of social selection. Alternatively, order can be regarded as institutions which are considered as “rules of the game”, structuring and binding social interactions and market transactions. North (1991) suggests that institutions should be composed of both informal constraints such as sanctions, taboos, customs, traditions, and codes of conduct, and formal rules like constitutions, regulations and laws. Therefore, institutions, either formal or informal, are generated in the context of pervasive uncertainty in human interactions, and institutions “reduce uncertainty by providing a structure to everyday life” (North, 1990, p.3). Institutions are fundamental to mitigating uncertainty as social norms make human behaviour more predictable by bounding individuals and providing regularity (Cornell and Kalt, 1997).
Institutions are evolving constantly driven by socioeconomic and technological changes. In North’s (1990) and Eggertsson’s (1994) views, institutional change is made marginal, incremental and path-dependent by an immense stock of social capital in the form of an institutional matrix. Change of institutions is related to social choices, and choices are constrained by cultural norms. Socially deeply embedded institutions of the status quo, both formal that are sanctioned, maintained and enforced by the state, and informal that are controlled by the community and social network, will not be terminated immediately. Those strong institutions determine the path of change, and are often themselves transformed, along with the change, into a new strain with much bearing on the past. The interests of the status quo should play a significant role in maintaining order and thus certainty in an evolutionary process of institutional change. A vacuum will be created when the institutions of the status quo are weakened and new institutions are yet to be established, and thus institutional change can generate uncertainty.

Institutional uncertainty during the China’s economic reforms and social transformation since 1978 has been well pronounced. Gradualism for socioeconomic changes has been chosen because of political constraints, which brings in an approach of trial and error in the implementation of new initiatives. Without a clear chart to guide the change, gradualism leads to dualism which means a co-existence of new and old systems. Institutional uncertainty during the institutional change is characterized by a vacuum of governance between the two systems while old institutions are phasing out and new institutions phasing in (Nee, 1991; Walder, 1992; Shirk, 1993; Sachs and Woo, 1994; Wang, 1995; Huang, 1996; Oi, 1996), which results in rampant arbitrage between the two systems. A lack of rules and institutions results in the absence of a predictable and transparent environment that is essential for social and economic activities (World Bank, 1992). Other examples such as increasingly significant sustainability and city’s capacity building in the global competition also point to the critical role of governance as institutions (Cowell and Owens, 2006; Benneworth and Dauncey, 2010).

In the sphere of China’s urbanization and related land development, emerging market forces are at work, but new institutions managing market-driven land development are
not fully established yet. Arising from the absence of formal governance, uncertainty can induce disorderly short-term behaviour and thus unsustainable land development. Land rent dissipation occurs, in terms of land economics. Alternatively, uncertain circumstances can push for further institutional change to mend uncertainty. Examples are schemes such as farming cooperative and insurance that were invented to spread risks in face of uncertainty (Schotter, 1981). During the transition, the formal governance over the rural land development is explicitly weak. When state governance is weak in maintaining order and managing interactions, private governance may emerge to fill the void. Two spatial domains may possibly appear subsequently: one is where state governance is not in control; and another is where private governance is in force. This institutional change is undesirable, probably problematic, as the two domains would exacerbate social segregation. In the setting of high population density and rapid urbanization, this direction of institutional change can be damaging, locking social segregation in its spatial form. While developing rapidly to accommodate a flux of rural-to-urban migrants, high-density settlements without effective governance will easily slip into a worsening state due to uncontrolled negative externalities. A deteriorating place manifests its failed state governance, which strengthens the tendency towards private governance. Spatial polarization sets in.

3. RAPID AND FRAGMENTED URBANIZATION AMID GRADUALIST REFORMS

The transition from the closed socialist autarchy to an open economy with market orientation since 1978 has resulted in significant restructuring of the economy and dramatic transforming of social relations. Due to the ideology of socialist industrialization, urbanization was suppressed during the centrally-controlled period 1949 – 1978 (Ma, 1976). Urban residents only accounted for 19.4 percent of the total population in 1980, rising from 12.5 percent in 1950. Urbanization has gone rapidly since 1978, driven by the marketization and pent-up demand from industrialization. According to official statistics, urban residents accounted for 46.6% of the total population in 2009.
An equally significant amount of agricultural land has been converted for urban uses since 1978. Cities have been expanding drastically; especially those in the coastal region.

Driven by the two engines of industrialization and market-oriented land development, rapid urbanization has significantly transformed the Pearl River Delta region towards one of the most dynamic in the world. With a total land area of 41,685 km$^2$, it saw its total urban area increased by 2.6 times during 1990 – 2002, growing from 1067 km$^2$ (1990) to 3863 km$^2$ (2002). The urban built-up area as a percentage of the total land area rose from 2.6% (1990) to 9.3% (2002) in 12 years (Guangdong Bureau of Statistics, 2003). Guangzhou, the capital city of Guangdong Province, had its urban built-up area increased from 980 km$^2$ (1996) to 1324 km$^2$ (2004). The urban built-up area as a proportion of the total territory of the municipality (7434 km$^2$) reached 17.8% in 2004 (see Figure 1, Guangzhou Bureau of Statistics, 2005). Guangzhou’s population rose from 5.0 million to 10.0 million during the period 1980 – 2007. In 2007, the population density stood as high as at 15,000 residents per square kilometer in its central area (280 km$^2$, consisting of four districts) (Guangzhou Bureau of Statistics, 2008).

**Figure 1 here**

Rapid urbanization is unfolding evidently in the peri-urban areas between the central city and the vast countryside. KI District (KID) in Guangzhou is the case in illustration (see Figure 2). Located to the immediate south of Guangzhou central city, KID used to be a rural county and has become an urban district annexed to the Guangzhou metropolis only since 2000. In 2009, KID had a territory of 774 km$^2$ with 999,200 permanent residents (with local residence registration) and 1,023,300 temporary migrants (without local residence registration) (KID Bureau of Statistics, 2010). In spite of KID becoming an urban district, there were still 45.5% of its permanent residents categorized as rural residents living mainly in the villages. Based on the statistics of the KID’s economy where agricultural farming only accounted for 5.3% of its annual GDP in 2009, it can be
inferred that only a fraction of villagers are working in the field. Most of them, together with a great deal of temporary migrants, work in the manufacturing and service industries.

China’s rural society is managed by a three-tiered governance system which is composed of the township, the administrative village and the natural village. As a peri-urban region, KID consists of 19 rural townships and urban jiedaos as at 2011. Further down in the hierarchy, there are 247 rural administrative villages and 2,352 natural villages in the rural domain, and 92 urban neighborhood units in the urban domain. With 69.4% of its total area in agricultural uses and 30.6% in non-agricultural uses, KID as a rural area is rapidly urbanizing in the periphery of Guangzhou central city. A Fragstates patch analysis reveals that there are 1,287 patches of farmland and 4,352 patches of built-up land in total, and patch densities (number of patches / km²) of 1.7 for farmland and 5.6 for built-up land, respectively. Land development during the process of urbanization appears to have created a fragmented landscape where agricultural and urban land uses are mixed and intermingled (see Figure 3). Intensive mixture of urban and rural land uses is conducive to neither urban living nor rural farming, as efficient provision of facilities for living and farming requires urban compactness and contiguous farmland. Fragmented peri-urbanization results from problematic governance over land development.

Figure 2 here

Figure 3 here

4. LAX GOVERNANCE OVER THE EMERGING LAND DEVELOPMENT MARKET DUE TO INSTITUTIONAL UNCERTAINTY

Urban land has been owned by the state on behalf of the people since 1949 when the People’s Republic of China was founded. As a component in the package of economic reforms, socialist people’s land ownership has been reformed since 1988 when land leasehold was invented to accommodate a market-oriented economy. Thereafter, land has
been restored as an economic asset with investment value, which entails institutional change in land rights. Property rights are clearly delineated and defined over the land supplied under the newly invented leasehold (Tang, 1989). An emerging urban land market has been evolving ever since.

However, land is still basically considered a means of production in the rural domain. According to China’s Constitution (1954), agricultural land belongs to the rural community as long as land is used for agricultural farming. Rural land in agricultural uses is reasonably well protected for the agrarian community under the collective land ownership. Nevertheless, the rights to derive income and to develop for higher and better uses are not secured to the collective community when a land plot is changed from its agricultural to a non-agricultural use. The notion of land being a means of production only grants land use rights to the “owners”, as the rights to derive income and to develop for non-agricultural uses are considered attributes of land as assets which are owned by the state.

Thus, urbanization in the peri-urban areas where a substantial amount of land is converted has caused confusions and conflicts over landed interests among stakeholders. Demsetz (1967) believes that property rights should be clarified when externalities have to be internalized, if the gains of internalization become greater than the cost of it. The problematic definition of land rights over rural land during transition generates externalities, which constitutes a problem for governance. The overall gains of internalization may be greater than the total costs of it. However, the key issue unaddressed is who receives the gains and who bears the costs. This is the critical incentive structure driving the institutional change.

(a) Institutional uncertainty: ambiguous and incomplete land rights

According to China’s Constitution (1998), rural land is collectively owned by the agrarian community which is composed of three entities: township, administrative village and natural village (Ho, 2001). Land ownership is vested with the three hierarchical
collective entities, and the natural villages are the main owners. Nevertheless, how much each entity is entitled to is never clearly stated, and thus rights over land are ambiguously delineated among its co-owners (Cai, 2003). Moreover, demographic boundaries and structures of the natural villages change continuously as new members (births and marriages) join in and existing members drop out (deaths and emigration). Land owners themselves are a constantly changing variable (Rozelle and Li, 1998).

Another aspect of ambiguity exists in the rights over collective land. The rural collective could convert farming land to non-agricultural uses for public facilities (schools, clinics etc), village housing, rural industries, retail premises etc. used by villagers themselves (Byrd and Lin, 1990). Pursuing higher income-yielding activities is in the best interest of the agricultural community (Ho and Lin, 2003). Rural industrialization thus has stimulated growth of non-agricultural land uses on the one hand. On the other hand, loss of arable land is also aggravated by rapid urbanization driven by the drastic economic transformation. Concerned with potential large-scale agricultural land loss and security for food supply, the central government in its Land Management Law (1986) promulgates centralization of the management over rural land development for non-agricultural uses to the government at the county level or above (Brown, 1995; Ash and Edmonds, 1998; Smil, 1999; Lin and Ho, 2005). Only the state has the right to convert rural land to urban uses. Thus, ambiguity sets in the collective landownership whether the collective has the right to derive income from land by leasing it out, and the right to change its form and substance by developing it for non-agricultural activities.

As land is a special property because of its intrinsic attributes of location fixity and resultant externalities, land use and development rights have to be defined by land use planning in order to internalize detrimental externalities which may be caused by individual land developments against other land users in the neighborhood. Ex ante designation of land uses and development parameters maintains the landed interests in relation to the neighborhood spatial structure. Land utilization in the rural jurisdiction is autonomously managed by the collective, according to the Land Management Law (1998). Although land use planning for villages and market towns, coordinated by the
township government, is recommended by the central government in its “Regulations on Management of Village and Market Town Planning and Development” issued on June 29, 1993, the proposed land use coordination at the township level is often resisted by villages which autonomously manage their land resources. As a matter of fact, a statutory land use planning system, considered as an urban institution, has not been established formally in the rural jurisdiction, and land utilization is practically at the discretion of the village heads or villagers themselves. If development control is highly discretionary without necessary certainty, or it does not exist at all, land users and residents do not have the right not to be affected by negative externalities generated in the neighborhood, especially when residential density and land use intensity are on the rise. Therefore, collective land rights are incomplete.

(b) Disorderly land rent competition and informal development

Land rents are the value of land appropriated in the economic transactions, for the market price of land is interpreted as capitalized land rents. The rent of a land plot is largely determined by the equilibrium of demand for and supply of land as commodity in its use designated use by zoning (agricultural, residential, commercial and so on). The potential land rent represents an amount of rents that can be capitalized under the “higher and better use”. The gap between the potential land rent based on the “higher and better use” and the actual land rent capitalized under the present land use constitutes the land rent differential (Smith, 1979). Capture of land rent differentials gives land owners sufficient incentive to develop or redevelop land parcels. Nevertheless, land rents are appropriated under a structure of land rights. Rising intensity of economic activities and population density in the peri-urban areas into which urbanization is rapidly penetrating have accentuated the potential value of land in the villages, and thus intensified the competition for land resources over which the property rights are ambiguously delineated. Barzel (1989) maintains that land rents are subject to grabbing if land rights are ambiguously delineated, and land rents in this case will be capitalized hastily and injudiciously before the opportunity vanishes.
Buttressed by the Land Management Law (1986), agricultural land can be legally acquired by the city government in the course of urbanization before its leasehold is sold to a developer for a land lease premium based on the new land use. Conversion of collective landownership to the state requires compensation paid to the collective owners based on the land value under existing land uses, i.e. agricultural farming, instead of the potential value derived from the new urban land use. To capture the land rent differential which is the gap between the compensation fee (the actual land rent) and the land lease premium (the potential land rent) intensifies competition between the urban state and rural collectives.

The goal of local municipal governments is to advance developmental strategies that can stimulate local growth and expand local fiscal capacity. In the same vein, the rural collective is also seeking its local development and revenues. Land rents are thus keenly sought after in the context of twofold competition between the rural collective and the urban state, and among the joint owners within the rural community. In the name of stimulating village economies, some land development projects are carried out under the disguise of legitimate provision of premises to village’s economic activities. As a matter of fact, many land parcels are developed to be rented to outside industrialists. Thus, the real motivation of land development is to capture the covet land rents, which makes land development a pure real estate business. Using land as assets, rather than “a means of production”, is not considered legitimate by the state, and thus land development for the purpose of rent-taking is clandestine, informal and opportunistic. Though the state-sanctioned land management rules require that land for village housing should be used for owner-occupation only, and villagers cannot rent out housing space to earn rental income, it is a common practice that villagers ignore the rules by building their family houses to a size much bigger than what the households actually need. As those extra spaces are leased out, land rent differentials are taken by the villagers.

Land development becomes a pre-emptive measure against potential rent-taking by other stakeholders, resulting in land development for the sake of rent-taking. Ambiguous delineation of collective land rights gives rise to a land development market where
disorderly competition for land rent differentials prevails under the disguise of land
development for the economic growth of townships and villages. In the six-town area of
139 square kilometers with 479 villages, there are a total of 967 industrial land patches
(310 patches by the urban state and 657 patches by the rural collectives) (see Tables 2
and 3). Overt competition and covert negotiation between the urban state and rural
collectives are clearly demonstrated by the even distribution of industrial land patches
developed by the both parties among the villages. Villages could only conduct land
development for non-agricultural uses to capture land rent differentials within their own
jurisdictions, while the urban state needs to negotiate with every village for land
acquisition so that each village has its “fair” share of land acquired. Usually ill-conceived
and hastily-executed, those developments are often not carried out in the best interest of
long-term sustainability. Those land parcels are not used most appropriately in terms of
social welfare, economic efficiency and ecological integrity. iii

Self-built housing violating building codes, if there are any, or obtaining no planning
permits is known as informal housing, or termed euphemistically as popular housing.
Examples such as Favelas (Brazil), villas miseries (Argentina), urban kampungs
(Indonesia) and urbanizing villages (China) epitomize the informal settlements in
different socioeconomic contexts (Janoschka and Norsdorf, 2006; Tian, 2008). It is
estimated that a substantial number of inhabitants in the developing countries live in
informal shelter (United Nations Centre for Human Settlement, 1987). When people’s
basic needs are not satisfactorily met within the formal framework managed by the state,
informality emerges and becomes a mode of urban life. Informality seems to have
remained a way of life for the urbanized settlements of many Third World countries (De
Soto, 1989; Roy and AlSayyad, 2004). When both the state and the market fail to respond
to housing needs of the poor, and thus there is an inadequate supply of housing both as
social and private goods, informal housing becomes a useful means of shelter provision.

Nevertheless, in the context of high population density which suggests a high degree of
land scarcity, it becomes imperative that land for housing should be used efficiently, and
the mode of housing development is at issue. Due to unsophisticated construction
technologies, self-built housing is normally “landed”, i.e. single-family houses or low-rise structures shared by a few households. Under the pressure of high population density and rapid urbanization, spontaneously-built informal settlements become denser over time by encroaching upon vacant land in order to build additional housing spaces. The deteriorating built environment emerges endogenously by default without top-down regulatory mechanisms in the form of land use planning.

(c) Fragmented land development and worsening peri-urban environment

Fragmented land development in the peri-urban areas is caused by diverse interests in land and thus various modes of land development. It should not be a cause for concern if population density is low. As a matter of fact, various modes of land development give rise to diversity in the urban environment. But it becomes a serious challenge when population density is very high and land scarcity is acutely severe. It is observed that there are two types of urbanization spatially intermingled. One is the top-down penetration of urban projects sponsored by the city state (49.2%); the other is the bottom-up rural industrialization and other constructions initiated by the village collective (50.8%) (see Figure 4). The former entails change of landownership from the collective to the state, while the latter does not change the nature of land ownership, as the land is still owned by the collective community.

The existence of 1,142 patches of industrial land developed by the rural collective in KID shows that almost every two nature villages (2,352 in total) have a rural industrial site. In the area composed of six townships (Dalong, Dashi, Donghuan, Nancun, Xinzao, and Zhongcun) which are more urbanized than other townships (see Figure 5), the density reaches to 1.37 patches of rural industrial land per village. It shows that natural villages, instead of townships, are the basic autonomous units responsible for rural industrialization. The district government does not and cannot impose zoning regulations on rural industrialization.

Figure 4 here
It is revealed that, by further dissecting the built-up areas into urban commodity housing, urban industrial, rural village housing and rural industrial land uses, extensive and piecemeal mixture of housing and industrial projects developed by both the urban state and rural collective causes problematic sprawling which is exacerbated in the more urbanized six-town area (see Figure 5, Table 1, Table 2 and Table 3). In the six-township area where the built-up land accounts for 59.5% of the total and the rest is farm land (40.5%), one-fifth of the area is developed for rural and urban manufacturing and another one-fifth for rural and urban housing. Farmland is fragmented into 455 patches within the area of 139km², average size of farm patches being 12.4 ha (see Table 3). The scattered industrial land parcels (patch densities of 3.3 patches / km² in the whole KID and of 7.0 patches / km² in the six-township area) seriously compromise the environmental quality, as the land use planning practice has proved that industrial zoning should be fundamental for human settlements, and segregation between residential and pollution-prone industrial land uses becomes urgent for habitations where population density is high.ii Polluting and hazardous factories are widely spatially dispersed in KID. In the setting of high population density and land scarcity, “self-contained” village informal development and bargaining negotiation for land acquisition between the urban state and the rural collective inevitably generate a piecemeal and fragmented pattern of land utilization. This spatially haphazard pattern of peri-urbanization has been found elsewhere in Guangdong, China, corroborated by their empirical investigation (Jiang and Liu, 2003; Yang and Liu, 2004; Yuan, Yi and Wang, 2005; Yuan etc, 2009).

Figure 5 here

Table 1 here

Table 2 here

Table 3 here
Building construction without effective development control imposes externalities on the neighborhood where incompatible land uses could be next to each other. Individual better-off (e.g. industrial profits, maximization of building floor areas) leads to neighborhood worse-off (e.g. pollution, over-consumption of open space and blocking adequate light and air to neighboring buildings) (Bowers, 1992). There is rent transfer from the party who suffers from externalities to the party who inflicts externalities. Nevertheless, the transferred rent is not secured, as incessant tit-for-tat in the neighborhood causes further rent transfer which aggregates and exacerbates externalities continuously. As a result, the neighborhood environment deteriorates, demonstrated convincingly by haphazardly located and extensively spreading industrial factories built both by the urban government and rural villages, and dismal “urbanizing villages”\(^v\). Infrastructure and public amenities in “urbanizing villages” are provided at a minimum level. Only about 10% of land is used for social facilities and open space, while the planning regulations require 25 – 35% of land in the city for those uses (Jin, 1999; Tian, 2008; Wu, 2009).

5. INSTITUTIONAL CHANGE: PRIVATE GOVERNANCE IN PLACE OF DEFICIENT STATE GOVERNANCE

(a) Environmental degrading as a result of deficient state governance

Resulting from an absence of the regulatory state in the midst of changing governance, disorderly competition for land rent differentials and environmental deterioration caused by ambiguous and incomplete land rights are a sign of deficient state governance, exacerbated in the setting of high population density. China as an ancient nation with a large population has long been run according to Confucianism as a cultural cornerstone which regards the state the only credible institution that can manage society. Stability of the nation was only interrupted periodically by chaotic anarchy followed by the decay of dynasties. The market as a mechanism of provision and allocation had never been fully nurtured up. Pursuit of economic growth since the reform has inevitably forced the state
to discharge its role of the absolute provider and to give room for bottom-up initiatives. Due to path-dependency, the socialist authoritarian state is changing from its pre-occupation with political ideologies to the active pursuit of economic development in order to legitimize itself by improving the livelihood of its citizens.

In the process of decentralization as the key measure of the reforms, local governments, used to be passive agents of the central government, are made active actors pursuing local growth (Solinger, 1992; Nolan, 1995; Unger and Chan, 1995; Wong, Heady and Woo, 1995). China’s local governments have become the local developmental state, thanks to their origin of the socialist state (White and Wade, 1988; Woo-Cumings, 1999; Zhu, 2005). Intimately involved in the economic production, the pro-growth local developmental state has not possessed, intentionally or unintentionally, adequate regulatory capacity for the management of the economy and society. Ambiguous delineation of land rights and unclear delineation of land use and development rights by the state as the third-party show the absence of regulatory functions of the state.

An absence of land use planning may not be a serious problem to the usually low-density and low-intensity rural communities. The characteristics of KID’s peri-urbanization have shown that China as the most populous nation undergoing rapid urbanization has been facing a serious challenge. For the low-income developing countries with high population density and thus acute scarce land resources, urbanization is made unsustainable by the disorderly competition and uncoordinated development. Sprawling of substandard developments ensues as a result. When a planned urban housing quarter with required public goods and amenities is in the vicinity of a crowded village with a paucity of open space as a result of uncontrolled developments, trespassing is inevitable by the village residents into the housing estate to seek the enjoyment of environmental amenities (see Figure 6).

Figure 6 here
(b) Gated housing estates as private governance

When public governance by the state fails, private governance by the market arises to fill the void. The gated community as private governance is a well-known phenomenon in both the developed and developing countries (Glasze, Webster and Frantz, 2006). Worsening public security and inadequate urban amenities as public goods are considered as two primary causes for the rising momentum of gated communities. Gated housing estates are fenced-off, and property rights over the residential environment are well defined and managed by developers initially and subsequently by homeowner associations. If public goods are underprovided and amenities over-consumed in the public domain, excludable collective goods and amenities can be protected by the clear property rights in the private domain (Webster, 2002, see Figure 7).

Figure 7 here

Because of well-defined and ascertained property rights, privately-planned gated housing estates are able to use land more efficiently and offer better living environment than spontaneously urbanized areas without collective planning. In Figure 7, the village settlement, next to a village industries site, reaches a plot-ratio of 0.49 and site-coverage 34.7%, while the planned housing estate achieves a plot-ratio of 1.7 and site-coverage 23.9%. On the one hand, the village is still urbanizing, and its open space is not protected and will be encroached upon under the heavy pressure of high population density. Its trajectory is evidently shown in many urbanizing villages in the Pearl River Delta region (Tian, 2008). On the other hand, environmental amenities in the urban housing estate are under control, protected by the condominium property rights. The mode of high-plot-ratio with low-site-coverage is considered more efficient and sustainable in terms of land utilization than the mode of low-plot-ratio with high-site-coverage for an urbanizing region with high population density, as the former offers more housing and open green spaces than the latter. In view of the ongoing dynamic urbanization, the development mode of the village only represents the interests of the status quo (existing residents), as
the village’s capacity of accommodating migrant newcomers is much less than a planned housing estate.

Being a global phenomenon, gated communities are not unfamiliar to the China’s urban middle classes. Gated communities are associated with exclusiveness and coveted privileges derived. Almost all newly built urban housing estates are gated in China. Nevertheless, gated housing estates in the suburbs were unheard of in China up to the late 1990s. China has been a predominantly agrarian society up to now, as about 50 percent of its populace is still engaged in the agricultural sector. Rural living has a connotation of backwardness, instead of romance and peace related with country living in the developed countries. Living in the suburbs, or suburbanization, is not perceived as related to modern life. People’s psyche is that city living means modernity and quality. Central locations are always sought after, demonstrated by much high housing prices in the city center. Therefore, it was phenomenal, even revolutionary, that Chinese-styled suburbanization occurred in Guangzhou in the late 1990s for the first time in history when the idea of suburban living was still associated with peasantry and car-ownership was still low. Gated super-housing-estates leapfrogged to locales further away from the peri-urban areas and emerged in the far suburbs in KID where greenfields lay undeveloped and environment was wholesome (see Figure 8 and Table 4). Although the demand for decent living environments was evident from a rising middle class, this risky but measured undertaking (as against normal-size gated communities in the city and peri-urban areas) was taken so as to provide potential residents with another option against the exiting peri-urban environment. It is a choice between the peri-urban environment without effective state governance and the suburb location under effective private governance.

Exploiting the advantage of economies of scale, those gated super-housing-estates can provide a variety of services and facilities as club goods which are not found elsewhere. The first gated super-housing-estate, Clifford Estates, was initiated in 1991 by a Hong Kong developer returning to his hometown. It had developed about 50,000 housing units by 2006 with private schools (primary, secondary and international), a private hospital, and estate buses serving residents commuting between the Clifford Estates and the central
city of Guangzhou. The developer effectively assumes the role of a mayor serving about 150,000 residents, albeit his “constituency” is composed of the customers of middle-class home owners. Land rent dissipation and consequent environmental deterioration in the peri-urban areas are prevented within the Clifford Estates by the private governance. However, social segregation and inequality are exacerbated as low-income residents are excluded from gated housing estates as private cities and increasingly concentrated in ever-deteriorating villages. This social dichotomy is clearly created by the land development market without effective public governance.

6. CONCLUSION

The gradual and incremental reforms are intended as cautious institutional change, and thus social stability has been maintained without calamitous clashes which were often the cases in the long Chinese history. Rent-seeking arising from dualism is, however, rampant. Ambiguous and incomplete rights over collectively-owned land generate institutional uncertainty, which subjects land rents to open access by the stakeholders and induces hasty and disordered capitalization of land rents. As land development becomes a pre-emptive measure against potential rent-taking by the competing stakeholders, land is developed for the sake of rent-taking. The taking of land rent differentials has direct impact on the mode of land development. Disordered land rent competition is one of the key factors responsible for spatially fragmented and disorganized intense-mix of agricultural and nonagricultural land uses. Uncontrolled externalities accumulate and worsen the quality of social and ecological environments.

In the context of high population density and thus acute land scarcity, peri-urban land developments in disarray inevitably lead to deterioration of environmental quality. In the absence of effective governance by the state and orchestrated collective action, private
governance emerges from the market in the form of suburban gated super-housing-estates with well-defined property rights over the fenced-off sites. Chaotic and disorganized peri-urbanization prompts first-of-its-kind suburbanization with Chinese characteristics. Though private gated communities meet the aspiration of a rising middle-income class for a decent living environment, social segregation inevitably arises. The urbanization characterized by the dotted gated super-communities in the suburbs and environmental deterioration in the peri-urban areas is not deemed environmentally, socially and economically sustainable. Guangzhou has set a worrying precedence. There is a dire need for credible institutions to coordinate drastic social and economic changes during the transition. Land rights have to be clarified and public governance strengthened. Muddling-through may not be the best strategy. Collective action, or the state, has to assume the regulatory role, so as to prevent social segregation and environmental degradation from further worsening.

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i Jiedao is the urban equivalent to the rural township.

ii Fragstates is a computer software program for spatial pattern analysis.

iii Apartments and houses with “minor property rights” are those housing units built on the collective land plots and sold to those who are not local residents by the villagers who are keen on taking land rent differentials. With only the use right but not the full ownership rights, those housing units are only worth about half of the housing value with formal ownership certificates (http://www.focus.cn/news/2005-11-09/164295.html, accessed on 19 February 2007). Land rents dissipate as a result.

iv It was reported that a chemical plant located between two villages in KID blasted in November 24, 2011. Toxic hydrogen chloride gas was detected in the air following the explosion and about 6,000 residents had to be evacuated (Mo, Zhang, and Zhang, 2011).

v Accommodating many times more tenants than their intended capacity, “urbanizing villages” are of extremely high density, in the absence of decent, affordable rental housing supposedly provided by the government to the low-income migrant residents. The highest density was recorded as 411,000 residents per square kilometer in one of those in Shenzhen (Du, 1999).

vi Actually, the estate management offices of gated super-housing-estates provide estate shuttle buses for residents to commute between their residence and the central city of Guangzhou.
Note: The shaded areas are the urban built-up areas.

Figure 1: Urban built-up areas in Guangzhou Metropolitan Region, 1996 and 2004
Figure 2: KI District in Guangzhou
Figure 3: Rural and urban land uses in KID

Source: KID Planning Bureau
Figure 4: State-sponsored and collective-initiated land development in KID

Source: KID Planning Bureau
Figure 5: Extensive mixture of village housing, urban housing estates, rural and urban industries in KID
Figure 6: Potential spillover of externalities from a crowded village into a planned housing estate, KID
Figure 7: Two kinds of governance: open village settlement versus gated housing estate
Notes: 1. The shaded areas are gated housing estates. 2. The numbered shaded areas are super-scale gated housing estates (see Table 3 for detail).

**Figure 8: Gated super-housing-estates in KID**
Table 1: Fragmentation of urban and rural housing and industrial land uses in KID

<table>
<thead>
<tr>
<th>Land use</th>
<th>As % of total built-up area</th>
<th>Number of patches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village housing</td>
<td>14.8</td>
<td>594</td>
</tr>
<tr>
<td>Rural industry</td>
<td>16.8</td>
<td>1,142</td>
</tr>
<tr>
<td>Urban commodity housing</td>
<td>14.4</td>
<td>360</td>
</tr>
<tr>
<td>Urban industry</td>
<td>25.6</td>
<td>1,391</td>
</tr>
</tbody>
</table>

Source: KID Planning Bureau

Table 2: Intensive mixture of urban and rural industrial and residential land uses in the six-township area

<table>
<thead>
<tr>
<th>Township</th>
<th>Area (ha)</th>
<th>Built-up area as % of the total</th>
<th>Farm land as % of the total</th>
<th>Contagion index</th>
<th>Industrial land use as % of the total area</th>
<th>Residential land use as % of the total area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>Dalong</td>
<td>2560.3</td>
<td>66.2</td>
<td>33.8</td>
<td>0.32</td>
<td>19.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Dashi</td>
<td>2004.7</td>
<td>66.5</td>
<td>33.5</td>
<td>0.34</td>
<td>10.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Dongkuan</td>
<td>1201.2</td>
<td>68.7</td>
<td>31.3</td>
<td>0.33</td>
<td>8.1</td>
<td>13.5</td>
</tr>
<tr>
<td>Nancun</td>
<td>4397.8</td>
<td>61.0</td>
<td>39.0</td>
<td>0.36</td>
<td>12.1</td>
<td>5.3</td>
</tr>
<tr>
<td>Xinzao</td>
<td>1381.6</td>
<td>33.3</td>
<td>66.7</td>
<td>0.52</td>
<td>6.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Zhongcun</td>
<td>2357.3</td>
<td>53.9</td>
<td>46.1</td>
<td>0.43</td>
<td>8.1</td>
<td>5.8</td>
</tr>
<tr>
<td>Total</td>
<td>13902.9</td>
<td>59.5</td>
<td>40.5</td>
<td>--</td>
<td>11.6</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Note: # The contagion index measures the extent to which land uses are aggregated or fragmented in landscape ecology. The landscape is aggregated at high values, and dissected into small patches at low values (0 < contagion index ≤ 1) (O’Neill et al, 1988).

Source: KID Planning Bureau
Table 3: Patch analysis of industrial and agricultural land uses in the six-township area

<table>
<thead>
<tr>
<th>Township</th>
<th>Number of nature villages</th>
<th>Number of patches in industrial land use</th>
<th>Number of farmland patches</th>
<th>Average size of farm patches (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Dalong</td>
<td>92</td>
<td>157</td>
<td>71</td>
<td>228</td>
</tr>
<tr>
<td>Dashi</td>
<td>85</td>
<td>118</td>
<td>57</td>
<td>175</td>
</tr>
<tr>
<td>Dongkuan</td>
<td>41</td>
<td>56</td>
<td>27</td>
<td>83</td>
</tr>
<tr>
<td>Nancun</td>
<td>147</td>
<td>225</td>
<td>89</td>
<td>314</td>
</tr>
<tr>
<td>Xinzao</td>
<td>44</td>
<td>44</td>
<td>27</td>
<td>71</td>
</tr>
<tr>
<td>Zhongcun</td>
<td>70</td>
<td>57</td>
<td>39</td>
<td>96</td>
</tr>
<tr>
<td>Total</td>
<td>479</td>
<td>657</td>
<td>310</td>
<td>967</td>
</tr>
</tbody>
</table>

Source: KID Planning Bureau

Table 4: Gated super-housing-estates in KID

<table>
<thead>
<tr>
<th>No.</th>
<th>housing estates</th>
<th>size (ha)</th>
<th>No.</th>
<th>housing estates</th>
<th>size (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clifford Estates</td>
<td>390.2</td>
<td>4</td>
<td>Yajule Garden</td>
<td>311.9</td>
</tr>
<tr>
<td>2</td>
<td>Jingxiu Xiangjiang Garden</td>
<td>87.6</td>
<td>5</td>
<td>Huanan Newtown</td>
<td>202.5</td>
</tr>
<tr>
<td>3</td>
<td>Huanan Bigui Garden</td>
<td>69.2</td>
<td>6</td>
<td>Xinghe Bay</td>
<td>80.0</td>
</tr>
</tbody>
</table>

Source: KID Planning Bureau