



Institutional uncertainty, fragmented urbanization and spatial lock-in of the peri-urban area of China: A case of industrial land redevelopment in Panyu

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ABSTRACT

Institutional arrangements can exert significant impact on land use and the spatial pattern for a region. Since the reform opening, the Pearl River Delta (PRD) area of China has witnessed an explosive amount of bottom-up rural industrialization. This situation has given rise to a fragmented urbanized landscape in peri-urban areas. In 2009 the Guangdong government initiated a comprehensive urban and rural redevelopment plan known as the Three-Renewal Policy. This paper begins with an analysis of the double-track land system and their impact on fragmented urbanization in peri-urban areas. Taking a typical peri-urban area such as the Panyu district of Guangzhou as a case study, this paper demonstrates the industrial land redevelopment practice created by the Three-Renewal Policy. The paper argues that the existing fragmented land use pattern in Panyu has been somewhat locked in, and the redevelopment of rural industrial land has been difficult due to historical institutional uncertainty and path dependency. The uncertainty caused by volatile redevelopment policies, absence of trust between local government and villagers, long-time reliance of villages on land leasing income, and high transaction costs to achieve consensus among villages serve as key barriers to redevelopment. These problems have led to a prolonged redevelopment process and low participation of villages. The results suggest that further institutional change and more collaboration among various parties are necessary to overcome the current barriers of spatial lock-in to push forward the redevelopment of collective industrial land.

1. Introduction

Since the reform opening, China has witnessed rapid urbanization. Two distinct types of urbanization coexist, top-down urbanization led by the urban government, and bottom-up urbanization led by rural villages (Deng and Huang, 2004; Wei and Zhao, 2009). Village-based urbanization commonly occurs in peri-urban areas which lie between the central city and suburbs, and dominates the transformation of economic structure, social relations and the physical landscape (Tian, 2015). Many autonomous villages transfer agricultural land into non-agricultural use formally or informally, creating intensified land competition with the urban government. This process is often conducted at the expense of agricultural land loss, giving rise to a fragmented urban-rural landscape, inefficient land development, and other environmental problems (Zhu and Hu, 2009; Zhu and Guo, 2014; Tian, 2015).

In order to curb extensive urban sprawl, the state imposed a land quota system in 2003. This new system regulated the amount of new land that could be added at the subnational level each year. This led to a shift in emphasis from urban sprawl to redevelopment in order to ease

pressure of future land demand in most cities (Tian and Ma, 2009). In 2009, the Guangdong provincial government started a “national site of experiment” with their Three Renewal Policy (Lin, 2015). This policy involved redevelopment of three types of land use, namely, the “renewal of old factories, old neighborhoods, and old villages in the city” (Lin, 2015).

Existing literature on peri-urban areas in China has revealed its development, spatial characteristic, and negative impact on the environment during expansion (Zhu and Guo, 2014; Tian, 2015). Limited studies, however, have traced the land use change in peri-urban areas in the context of redevelopment (Wu et al., 2013; Lai and Tang, 2016). Taking Panyu district of Guangzhou as a case study, this paper studies the barriers of industrial land redevelopment under the Three Renewal Policy, and their impact on existing fragmented urbanization. The remainder of this paper is organized as follows: based on a review of institutional uncertainty and its impact on urban and rural spatial patterns, this paper first examines Panyu’s manufacturing-driven economic development and land use fragmentation dominated by collective industrial land since the 1990s. It then examines the current

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industrial land redevelopment practice in Panyu under the Three Renewal Policy. The following section identifies four barriers of collective industrial land redevelopment and elaborates how the existing fragmented land structure has been spatially locked-in. It concludes with policy implications needed to build a more compact land use in peri-urban areas of China.

2. Fragmented urbanization under institutional uncertainty

2.1. Institutional uncertainty and land rent capture of collective land

Urban and rural China are two institutionally distinct domains. Property rights over state-owned land have been clearly defined, but property rights over collective land have been ambiguous (Zhu and Hu, 2009; Tian and Zhu, 2013). In the early 1980s, official documents defined collective land ownership as *sanji suoyou* (the collective land belongs to three entities, the commune, the brigade and the team in villages), but how much each entity was entitled to was never clarified (Zhu and Hu, 2009). According to the Land Management Law (1986), villages must receive approval from the state in order to develop their collective land for non-agricultural activities and the land uses are limited to village housing, public facilities, or collectively-owned township-village enterprises (TVEs). The villages are not allowed to derive income from land by letting it for urban users, unless they give up collective land ownership through the land requisition process.

However, a distinctive land rent differential emerges when compensation for villages giving up collective land ownership is based on current agricultural land rent rather than potential rent of new urban land use. This amount represents only three to five percent of land conveyance revenue on average (Po, 2008). Disparity between capitalized and potential land rent constitutes the land rent differential, a major incentive for land development or redevelopment in the urban context. Over time, capitalized land rent, which represents the actual quantity of ground rent under the present land use, may decline due to the obsolescence of a land parcel. Meanwhile, potential land rent which would be gained if the land were converted to its 'highest and best use,' may remain stable or go up since the metropolitan area is growing (Smith, 1979). The existence of land rent differentials may create huge profits if land parcels are redeveloped or reinvested. As a matter of fact, the urban government in China is very keen in capturing land rents derived from land use change. Thus, there are formal and informal competitions between the urban government and rural communities over land use and development (Tian and Zhu, 2013).

Land rent capture for different stakeholders is governed by either formal or informal institutions. Formal institutions such as regulations or laws are usually developed by the state or in the formal market, whilst informal institutions like traditions, habits or social norms are often developed from the bottom up (North, 1990). Informal institutions may occur when there is a demand of providing certainty, but regulations and laws are inadequate or where transaction costs are too high. Alexander (2001) claims that many projects for urban development are undertaken in informal planning sessions by private firms when formal institutionalized planning is too costly. Given that the institutional context is changing constantly, if existing institutions were weakened and new institutions not established soon enough, the resulting vacuum could generate many uncertainties. In that case, informal institutions may replace the formal in order to provide much needed certainty.

A bottom-up institutional change during the 1990s, known as the village-based Land Shareholding Co-operatives (LSCs), was a response to the institutional uncertainties caused by the ambiguous and incomplete property rights of collective land. Under the LSC system, village collectives changed individual peasants' land rights into shares, pooling and planning the land together for both agricultural and non-agricultural activities (Cai, 2003). As a way to maximize their well-being, the autonomous villages under the LSCs could lease their land

resources to private enterprises to obtain land rentals, notwithstanding that the collective-owned land is prohibited for non-agricultural uses without official approval. As a result, an informal rural land market has gradually developed since the 1990s (Ho and Lin, 2003). Governed by the LSCs, the collectives have become active actors in the land rent competition and they hold a large quantity of built-up land without *de jure* property rights (Tian and Zhu, 2013).

2.2. Fragmented urbanization and spatial lock-in peri-urban areas

Efficient institutions contribute to lower transaction costs and help make the development process even more efficient (Webster, 1998). However, many institutions persist even when they are sometimes highly inefficient suggesting that existing institutions are not always moving towards lower transaction costs (Buitelaar, 2004). Informal institutions may be efficient and provide certainty and improve welfare for a homogeneous community during times of social and economic transition, but in the context of a dynamic and heterogeneous environment, they could hardly handle complicated economic and social changes (World Bank, 2002). In the absence of formal rules, activities under informal institutions may be confronted with many additional uncertainties and risks, such as possible legal sanctions, a lack of social security protection and a potential default risk (Chavdarova, 2014). In this case, participants tend to have short-term, risk-averse and opportunistic behaviors due to their bounded rationality which results in more transaction costs as deadweight losses (Williamson, 1985).

Although the development of LSCs allowed villages to benefit from increased land rental income and to better handle the social-political tensions of new-found prosperity (Cai, 2003; Po, 2008), the informality of the LSCs also caused uncertainty. Since the LSCs could not protect collective land from being purchased by the government at a relatively lower price, villages were still confronted with a high possibility of losing potential profitable land rent differentials. In addition to this, they also faced possible sanctions since non-agricultural land utilization of collective land was informal. Therefore, uncertainties led to short-sighted behaviors. Villages strived to maximize their own wellbeing rather than focus on long-term interests, converting more land into non-agricultural uses to capture additional income from land rent differentials (Zhu and Guo, 2014).

Informal land development dominated by autonomous villages may contribute to urban fragmentation since LSCs work within a homogeneous village rather than work across multiple villages. Driven by land rent capture, each village acts as an independent developer to plan and develop non-agricultural land within its own boundary (Tian and Zhu, 2013). In most areas around the Yangtze River Delta regions and the Pearl River Delta regions, traditional agricultural landscapes have already been replaced with fragmented and isolated cityscapes (Yu and Ng, 2007; Wei and Zhang, 2012; Tian, 2015). Accompanied by spatial fragmentation, land property rights have become fragmented and complex due to the coexistence of two types of land ownership. The state acquires farmland for urban projects along with non-agricultural land development dominated by villages, leading to a mixture of collectively-owned and state-owned land use pattern (Zhu and Guo, 2014).

In spite of the negative externalities of urban fragmentation demonstrated by many studies (Lin, 2005; Wei and Zhang, 2012), a spatial structure under a 'selected' institution may be difficult to alter. One of the major reasons is path dependence, which means 'history matters', describing a phenomenon that contingent events in the past will significantly shape current decisions (Pierson, 2000; Martin, 2009). Once random historical economic events have selected a particular institutional path, some dynamically increasing returns may drive institutions into a self-reinforcing and self-reproducing process (Arthur, 1989; Pierson, 2000). Moreover, existing institution, no matter formal or informal, clear or unclear, efficient or inefficient, cannot easily be replaced by newly-devised one, since it can perform a particular and necessary role function for society (Monkkonen, 2016; Ho, 2017).

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