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Political dynamics in land commodification: Commodifying rural land development rights in Chengdu, China

Qian Forrest ZHANG
Singapore Management University, forrestzhang@smu.edu.sg

Jianling WU
Chengdu University

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Qian Forrest Zhang, School of Social Sciences, Singapore Management University, Singapore 178903, Singapore

Jianling Wu, Research Center on Co-ordinated Urban–Rural Development, Chengdu University, China

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Abstract

Commodification of land is at the forefront of the re-casting of rural China by the spread of capitalism. This study examines a market-based program of land development rights trading in Chengdu, China. The program was made possible by a change in the central government's land-use regulation that shifted the policy goal from 'no net loss' of farmland to 'no net gain' of construction land. We detail how local governments at multiple levels work together to construct land development rights as a commodity and build market institutions to foster its trading, illustrating land commodification as an inherently political process. A unique combination of innovative local policies and central political concessions created an outcome of 'commodification without dispossession' in Chengdu. Land commodification was used to finance rural reconstruction and brought profound changes to rural space, including re-configuring land-use patterns, transforming physical conditions in residential communities, and changing the representation of space.

Keywords

Land commodification, Transfer of development rights (TDR), Land-use regulation, Dispossession, Rural reconstruction, Capitalism

1. Introduction

If we see space as a material product of a given social formation (Gottdiener, 1985), then the rise of capitalism in China, as it introduces a new social formation, ushers in a spatial transformation. From this view, the spread of capitalist modes and relations of production in rural China emerges as a central force in the 're-casting' of rural China. While the transition to capitalism in the rural setting can proceed via a variety of paths and entail a wide range of socio-spatial changes, the commodification of land, which provides the foundation of this new social formation, is at the forefront of this transformation.

In rural China, as in many other rural settings, access to land and land-related resources was traditionally based on membership rights and protected by social closure from encroachment or dispossession by external actors; land use was also heavily constrained by government regulations. The land commodification process turns land and land-related rights into a commodity that is disembedded from

local particularistic social relations, freely tradable on market and can be used for capital accumulation. Once land becomes a commodity and integrated into circuits of capital, it then enables a series of spatial changes in settlement patterns, the organization and use of land in agricultural and industrial production, locational relations of various types of land use, and the representation of space.

The 're-casting' of rural China by spread of capitalism, therefore, starts with and proceeds through the commodification of land. Bringing into the Chinese context Polanyi's (1944) insights on land as a fictitious commodity and land commodification as an inherently political process with disruptive social impacts, we analyze in this study the intricate political dynamics of creating commodified land rights in a context of communal ownership and strict government land-use regulation.

Since the 1990s, land commodification has proceeded rapidly in China. The dynamics and impacts of this process in urban China have been well documented (Hsing, 2010; Xu et al., 2009). In the rural setting, studies have examined the initial emergence of spontaneous leasehold transfer of farmland among rural residents (Kung, 2002; Zhang et al., 2004), the more recent, state-supported transfer of land use-rights to agribusinesses and other capitalized producers (Ye, 2015; Zhang and Donaldson, 2008, 2010), illicit transfer of rural construction land into urban uses in the black market (Lin and Ho, 2005), and local experiments with the transfer of development rights of rural land (Wang et al., 2010; Zhang et al., 2014).

Most of these rural studies, however, do not conceptualize these developments in terms of commodification of land or connect it with the rise of the capitalist social formation.1 Furthermore, none has attempted an in-depth analysis of the socio-political dynamics and spatial impacts of land commodification. Some studies (see Wang et al., 2010) implicitly assume that land would spontaneously and effortlessly become a commodity by simply removing administrative constraints. This view, which naturalizes the commodification process, neglects the complex politics that is always involved in turning socially embedded rights, customs and entitlements related with land into a fictitious commodity and the social tension and displacements that typically come with land commodification.

When researchers do problematize the political nature of land commodification, the focus is typically on state actions of expropriating rural land (and creating commodified land rights from that), seeing that as the most prevalent way of commodifying rural land (Hsing, 2010; Webber, 2008; Xu et al., 2009). This study examines a more recently emerged but increasingly prevalent way of commodifying rural land, which can be broadly called TDR (transfer of development rights) programs. Unlike in land expropriations, where the state single-handedly moves land from one domain (communal property protected by social closure) to another (markets for commodity exchange), TDR programs involve, first, the creation of land-related rights associated with different types of land as commodities, and then, the trading of them between multiple actors across space. The political and social dynamics at play here can be far more complex.

We share the perspective that Xu et al. (2009, 909) articulate so well in seeing 'market as an emerging institution in the context of a transitional economy'; its evolution, therefore, 'cannot be self-perfected, but rather needs external fostering and regulation (in particular by the state).' This directs our analytical focus to the extensive roles of the state in creating the new commodity of land development right (LDR) and building market institutions to foster and regulate its trading. The goals of this paper are therefore twofold: through studying an innovative program of rural land development in Chengdu, the capital city of Sichuan Province, we attempt to, first, provide a detailed analysis of the intricate dynamics in commodifying rural land, and second, evaluate how state policies and local political-economic context shape the outcomes of land commodification, resulting in what we call 'commodification without dispossession'.

2. Policy background and case selection

China's complex and evolving rural land system is a topic that has been thoroughly discussed in the literature (Lin and Ho, 2005; Xu et al., 2009; Wang et al., 2010). Without reiterating policy details or tracing their evolution, we highlight two central features in China's land regulatory system that are most relevant to our discussion: farmland preservation and centralized land-use regulation. These two principles are implemented through several specific land policies that led to the rise of LDR commodification.

2.1. Farmland preservation through centralized land-use planning

The Chinese central government's heightened awareness of the need for farmland preservation was a relatively recent phenomenon. The current practices of farmland preservation, among the strictest in the world, only began with the Land Management Law issued in 1998. In much of the 1980s and 1990s, the central government exercised little control over land use at local levels. Local governments, even village authorities, had a great degree of autonomy in converting agricultural land to non-agricultural uses (Ho and Lin, 2003).

In the late 1990s, the central government became alerted to the steadily declining stock of arable land caused by rapid urbanization over the past two decades and perceived the farmland loss as an unacceptable threat to its food self-sufficiency policy (Lin and Ho, 2003). Besides passing the Land Management Law, the central government also started to devise a national Land Use Master Plan to put nationwide land use practices under tight central control (Wang et al., 2010). This Master Plan sets out a series of targets for various types of land use for the next 15 years, including, for example, the amount of farmland to be preserved and the amount of agricultural land that can be converted to urban use.2 For each year, an Annual Land Use Plan then breaks down these long-term objectives into annual quotas for different types of land use and allocates these land-use targets to each province. Starting from provinces and down to townships, lower-level governments must then formulate and adhere to their respective land-use plans and annual land use quotas.

Under the current land system, rural land is divided into several land-use categories (see Fig. 1), including farmland (F), which is the main target of protection of the Land Management Law; family housing construction land (zhaijidi, H), which is collectively owned and allocated to members of rural collectives free of charge as a membership entitlement for constructing their own housing; and construction land (C), which is typically controlled by the village authority and can be used for local public facilities, non-farm enterprises and other non-agricultural uses.

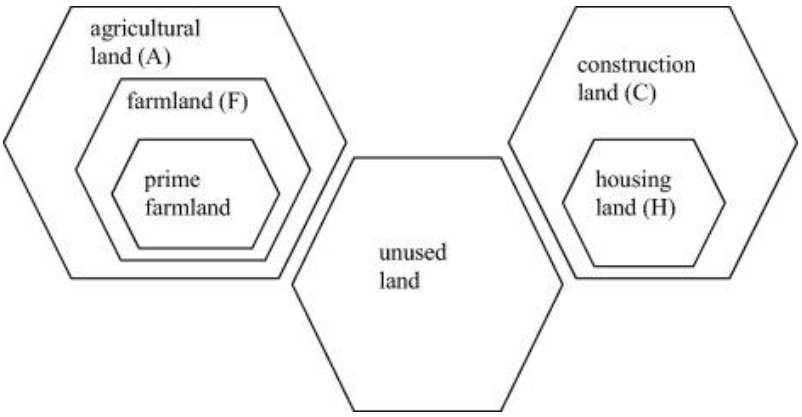

Fig. 1. Rural land in China, by types of land use. Note: The difference between agricultural land (A, nongyong di) and farmland (F, geng di) is crucial but often overlooked. Agricultural land also includes grassland, forestland, landscape land and water surfaces. Objects are not drawn to scale.

The first and foremost goal for these regulatory measures is farmland preservation. The most memorable item from the national Master Plan is the 120 million-hectares (or, 1.8 billion mu) 'red line' for farmland preservation. This is specified as the minimum amount of farmland that China needs to ensure food self-sufficiency and constitutes a bottom line that cannot be crossed.3 By 2007, however, the country's total amount of farmland has already declined to 121.7 million ha, leaving little room for further loss (Long et al., 2012).

The speed of urbanization, however, has not abated, and the demand at local levels for converting rural land, including farmland, into urban uses has only been rising. The two conflicting demands on rural land – one for food production, the other for urban development – made it inevitable that the central government had to settle for a compromise in the form of a 'no net loss' policy regarding farmland preservation, seeking a dynamic balance rather than static preservation. This policy, known as zhan bu ping heng (hereafter, ZBPH) – balancing farmland occupation with farmland reclamation, was codified in the 1998 Land Management Law (and its 2004 revised version) as the requirement for land users who occupy farmland for urban uses to reclaim new farmland of the same amount and quality.

Under this regulatory framework, in effect since 1998, all local governments from provinces down to townships face two constraints when they convert agricultural land to construction land.4 First, all such conversions must be approved – either within the Annual Land Use Plan or on ad hoc basis. Second, the loss of farmland resulting from such conversions must be compensated, under the 'no net loss' principle of ZBPH. The first measure keeps the increase of construction land under tight central planning and control; the second ensures that no farmland loss results from such increases. The only case of TDR in China that has been studied in the English-language literature, the trading of ZBPH quotas in Zhejiang (Wang et al., 2010; Zhang et al., 2014), is in fact simply an illegal scaling up of ZBPH, in violation of the first constraint of centralized scale control. It is no surprise that central government terminated it in 2009.

2.2. From 'no net loss' to 'no net gain'

The central government started to quietly roll out another initiative in mid-2000s, under a very cautious approach. A set of special circumstances, however, made it into a transformative policy in one locality – Chengdu.

The new initiative, officially described as 'linking up increase in urban construction land with decrease in rural construction land', was first experimented in 2006 in five pilot provinces, including Sichuan, where Chengdu is located, and gradually rolled out nationwide in the following five years (Long et al., 2012). This policy, known in Chinese as zeng jian gua gou (linking up increase [in urban construction land] with decrease [in rural construction land], hereafter ZJGG), although looks similar to the ZBPH policy, represents a break from that policy and its 'no net loss' principle. For ZBPH, the object of regulation is farmland; for ZJGG, construction land. For ZBPH, the policy goal is 'no net loss' of farmland; for ZJGG, it is 'no net gain' of construction land – and in fact, a net increase of farmland. More specifically, when any non-agricultural developments, including urbanization programs in rural townships, occupy farmland and result in an increase of urban construction land, some rural construction land must be reduced, and reclaimed into farmland.5 The ZJGG policy gives these pilot regions a new channel of turning farmland into urban uses in addition to and independent of the existing channels regulated by the land use Mater Plan, annual quotas and ZBPH policy.

In real practice, this policy shifted local governments' attention from reclaiming new farmland, which can come from a variety of sources such as other types of agricultural land, to reducing rural construction land. But how to reduce rural construction land? The answer, almost invariably across localities, comes from rural housing land (H in Fig. 1). Nationwide, all rural housing land adds up to 9.12 million ha in 2005 and accounts for 55 percent of all rural construction land; its size had also increased in the ten years prior to the implementation of the ZJGG policy (Song et al., 2008). Rural housing land also has huge potentials for reduction. The rural settlement pattern results in low land-use density. Furthermore, over-construction of houses – for example, multiple houses for one family, an illegal but widespread practice – and abandonment of houses, as a result of rural depopulation, which has created the widespread problem of 'hollowed villages' (Long et al., 2012), increases the 'wastage' in the use of rural housing land. One source, citing a Ministry of Land and Resources (MLR) survey, estimates that unused housing land amounts to 9 percent of total rural housing land (MLR, 2011). Reduction can, therefore, come through both reducing existing unused housing land and changing rural settlement patterns to further reduce housing land use.

The ZJGG policy sets up a framework for the transfer of development rights. In China's context, the ability to use rural land for non-agricultural development is a development right, a scarce resource created by the national policy of farmland preservation. The locality that turns a piece of land previously used as rural construction land into farmland is giving up the development right of that piece of land. Under the ZJGG policy, that right can then be transferred, in the form of a quota – through either some market mechanisms or administrative allocation – to another locality, which can then use it to 'develop' its agricultural land. If the Zhejiang experiment (Wang et al., 2010) used the ZBPH policy to create a tradable equivalence between lost farmland and newly reclaimed farmland, then the ZJGG policy now creates a tradable equivalence between reduced rural housing land and new urban construction land.

TDR under the ZJGG policy is further restricted by three requirements. First, the central government continues to exercise a tight control over the total scale of all ZJGG projects through allocating annual quotas to local units. From 2006 to 2010, the MLR only released a total quota of 49,000 ha. Second, in its implementation, the two projects of jian xin (building new construction and thus increasing urban construction land) and chai jiu (demolishing old buildings and thus reducing rural construction land), which are spatially and often temporally separated, must form a one-to-one linkage and be approved together as a single project. Last, the two linked projects must be within the jurisdiction of the same county-level unit, which restricts the scope of TDR within the county boundary.

These restrictions show the caution that the central government has toward the ZJGG experiment, which was never intended to be a transformative force in rural development. In all other localities, the policy has only had localized impacts, which mostly were disruptive (Ye and Meng, 2012). Only in Chengdu, it led to positive transformative changes.

2.3. The Chengdu case

Before the MLR formally started ZJGG experiment in 2006, it selected one township in Chengdu – Tangyuan town in Pi County – to conduct a pilot study. Then in 2006, when the MLR expanded the experiment to the five pilot provinces, the entire municipality of Chengdu became a designated experiment zone and was given an annual quota of 7000 mu under the ZJGG scheme. This meant that, besides the annual quota of farmland that can be converted to urban use specified under the national land-use Master Plan (50,000 mu), the ZJGG scheme gave Chengdu an additional quota of 7000 mu construction land, a 14 percent increase, most of which would require conversion of farmland. This annual quota was increased to 10,000 mu in 2007. And then came the earthquake.

On May 12, 2008, a massive earthquake struck Sichuan; the epicenter was just 70 km from the center of Chengdu. The earthquake devastated several counties in Chengdu. It created an urgent need for a massive reconstruction in the vicinities of Chengdu, which could not proceed without greater flexibility in land use. During his visit to the disaster-stricken area on June 22, the then President Hu Jintao instructed that Chengdu should use the experimental scheme of ZJGG to speed up post-disaster reconstruction. The MLR gave the green light to Chengdu so that in the following three years the practice of ZJGG in Chengdu is exempted from the two restrictions of quota control and within-county transfer. For three years, the Chengdu municipal government was given a blank check to create as much new urban construction land as it needed under the ZJGG scheme, a privilege that no other local governments had.

Besides policy support, urban development also needs investment. Chengdu was again at the right historical juncture. The global financial crisis that started in late 2008 accelerated the relocation of manufacturing capacities from China's land-expansive and labor-scarce coastal area to inland provinces (Chan, 2010). Chengdu, thanks to its lax land-use regulation and recently improved infrastructure, became a top destination. Chengdu also received an influx of inter-provincial aid for post-disaster reconstruction (Abramson and Qi, 2011, 513). Both these created unprecedented demands for new construction land in Chengdu, which were then met through the emancipated version of the ZJGG policy. The result is a re-configuration of rural space on an unprecedented scale: in the three years from June 2008, Chengdu had converted a whopping 400,000 mu of farmland to urban use under the ZJGG scheme, eight times the allocated annual quota under the national Master Plan, and reduced an even larger amount of rural housing land.

Chengdu, therefore, is the only case in China where the full potential of the ZJGG policy can be observed. Furthermore, in its implementation of ZJGG, the Chengdu government also chose a different strategy than all other localities, which we will elaborate next. It is this policy choice that led to the emergence of a unique model, which not only fostered market trading of LDR, but also used such market trading to finance public goods provision in rural areas, both of which are missing in other localities where ZJGG was experimented. Chengdu therefore provides the best case in China for studying the processes and dynamics of commodifying LDR and the impact of it on rural development.

Data used in this study come from both primary data collection and secondary documents obtained from various government bodies. One of the authors followed closely the evolution of Chengdu's ZJGG program from 2008 onwards and was engaged by the municipal government to conduct assessment of the implementation and impacts of the program. During the past seven years, the two authors, independently and jointly, visited over 300 villages and conducted over 500 interviews with rural residents and local officials. We also conducted three rounds of questionnaire survey of about 2500 residents in 100 villages. The survey results are not directly used in the paper, but they informed our analysis.

3. Implementing ZJGG policy in Chengdu: building the TDR market

The Chengdu Municipality consists of 19 county-level units.6 These 19 sub-units are differentiated by both geographic location and level of urbanization into three layers, as shown in Fig. 2: (1) the central urban area, which comprises five urban districts that are already fully built up and have virtually no agricultural land left; (2) the peripheral urban area, which includes six counties that immediately surround the urban core and have been facing rising demands for urbanization; and (3) eight counties in the urban fringe area, which have far fewer opportunities for urbanization but a far greater reserve of rural construction land.

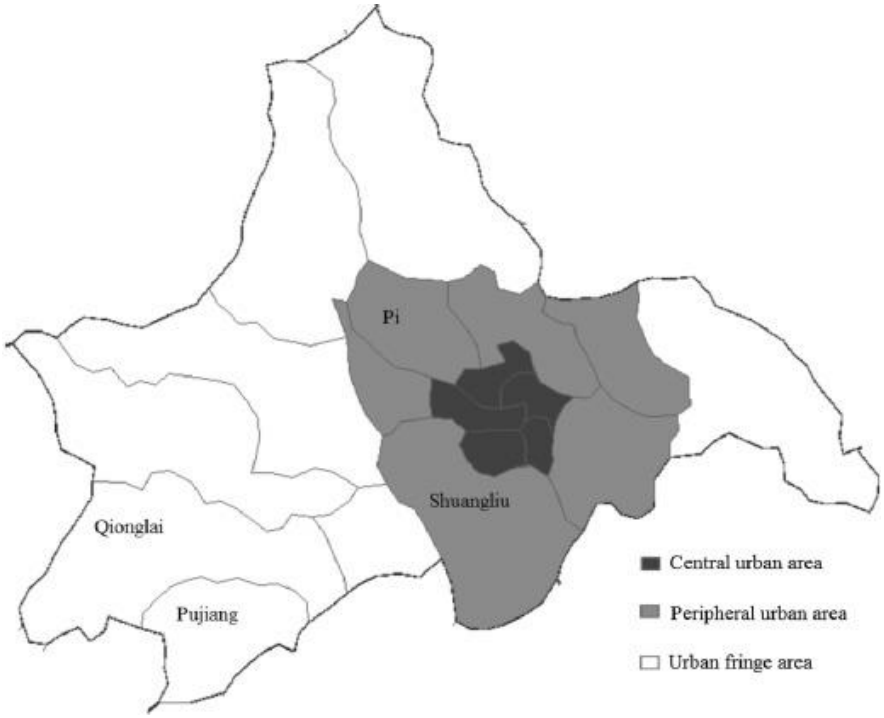

Fig. 2. Map of Chengdu.

Under the ZJGG scheme, for a TDR transaction to happen, one piece of rural housing land would give up its development right and then be reclaimed into farmland; this right will then be transferred to another piece of farmland, which can then undergo urban development. This means that some rural houses must first be demolished and the housing land reclaimed into farmland. This presents a host of challenges in real practice. Residents whose houses are demolished need places to live. Although there are uninhabited

houses and unused housing land in rural areas, to reach a meaningful scale, a ZJGG project would always involve many inhabited houses.7 Rural areas also have little rental housing stock to provide temporary housing. Only one solution is left: constructing new residential housing before demolition starts. But that raises more questions. Before any de-construction is done, where to find additional land for new construction? How to get approval for this, which typically involves occupying farmland? How to fund it when no LDR has been sold yet?

Furthermore, at the two ends of the TDR transaction are two very different parties. The original owners of development rights over small and scattered pieces of rural housing land are individual rural households; the potential end users of such development rights are, however, mostly urban businesses who need a much bigger area than any single rural housing plot. It is highly improbable that any TDR could spontaneously occur between these two parties. All these stumbling blocks must be cleared before TDR can happen, and the visible hand of the state is indispensable in every step of the development of this market.

Fig. 3 summarizes key steps in completing a ZJGG project in Chengdu. A full discussion of the detailed procedures and complex dynamics at every step will require a separate paper. For the purposes of this study, we highlight four points. First, all local governments – provincial, municipal, county and township – are involved in this complex process of inter-governmental interactions. The provincial government holds the power to approve a project and allocate TDR quota to it.8 The Chengdu municipal government, besides putting in most of the building blocks in this institutional framework, also provides interest-free start-up funds (step 2) that make all the ensuing actions possible. The start-up funds will eventually be recouped from the sales of construction land (step 11), but must be advanced long before that to pay for expenses in steps 3–6. In recent years, the municipal government has tried to attract private capital into playing this role, but due to the long delay in repayment (typically three years or longer) and lack of high returns, there have been few takers. The municipal government remains the 'lender of last resort.' The municipal government can also do matchmaking between Counties A and B in step 2 when the project is approved; but in most cases, the municipal government has allowed the production of TDR quota (i.e., steps 1–6, the 'decrease' part of ZJGG) and its sales (steps 9–11, the 'increase' part) to be de-linked.9 County and township governments collaborate closely in direct implementation in all other steps.

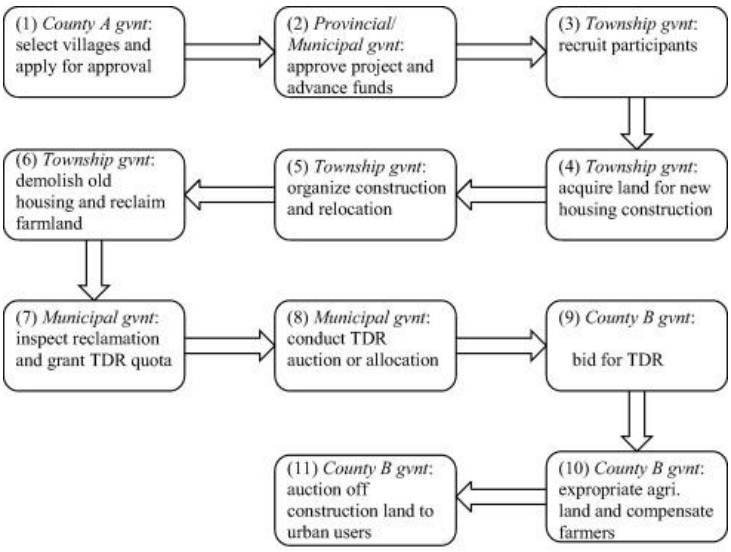

Fig. 3. Operational procedures of a ZJGG project in Chengdu. Note: This is a schematic illustration. In practice, both the sequence and operation can vary.

Second, while the practice of ZJGG ultimately connects rural households with urban land users, the real TDR trading happens between two county governments, mediated by the municipal government (step 8). The municipal government inspects the housing land reduction and farmland reclamation (step 7). Only with its approval, the LDR released from the reclaimed farmland can then be granted a TDR quota (zhibiao in Chinese),10 legitimately registered, and traded as a commodity. The Chengdu government has set up a Municipal Land Reserve and a Rural Property Rights Exchange (RPRE). After the TDR quota is approved and becomes a tradable commodity, it is acquired by the Land Reserve, which serves as a 'TDR bank'.11 Any county could then bid for the TDR quota in auctions run by the RPRE. The TDR market is, therefore, both created and monopolized by state actors: TDR quota is approved by the municipal government, can only be bought and sold by the Municipal Land Reserve and RPRE, respectively, and, only county governments can sell to and buy from them.

Third, central policies actually never specified that TDR transactions under ZJGG must be conducted by state agencies such as Chengdu's Land Reserve and RPRE, and theoretically, county or township governments can directly trade with each other. Setting up these two agencies to monopolize the TDR trading is the key innovation in Chengdu. A danger of direct TDR trading between local governments in a free-market fashion is that suppliers of TDR quota, when their potential supply outstrips demand,12 would enter into a race to the bottom by continuously lowering their cost of TDR-quota production. Alternatively, when demand surpasses supply and the rewards are high, local governments would then have incentives to create more supply, by force if necessary. Either way, in practice, this means forcing more rural residents to demolish their houses, relocating them into high-rise buildings, and minimizing compensation to rural residents and public service provision. All these are recipes for social contention and political resistance, as experiences elsewhere attest to (Long et al., 2012).

Chengdu, in place of scale control through setting quotas, chose to instead regulate the cost of TDR quota production. This was done through two measures. First, the purchasing price of TDR quota was set by the Land Reserve, the only buyer in the market. Second, the price was set much higher than the costs of de-construction, reclamation, relocation and new housing construction, but also covers costs of providing a standardized set of public services in the 'new rural communities' that would be built to house relocated rural residents. When ZJGG was first scaled up in 2008, the Land Reserve set the purchasing price at 150,000 yuan per mu and mandated the provision of a package of 13 public services in new rural communities; by the end of the three-year period, the price had doubled, and the mandated public services had increased to 21 items.13 The TDR quota would only be granted (step 7) after the 'new rural community' and its public-service provision has passed the municipal government's inspection.

Last, while the production and trading of TDR quota is restricted to state actors, non-state actors can voluntarily participate in either supplying the housing land for TDR quota production (step 3) or bidding for the state-owned construction land that is created with the TDR quota (step 11). And thanks to the price control and public-service provision mandate imposed by the Land Reserve, both township governments and villagers had incentives to participate. For township governments, which nowadays are starved of discretionary fiscal resources (Smith, 2010), a ZJGG project brings in a huge fiscal transfer. These funds not only allow a township to transform its physical landscape and potentially draw in more non-farm businesses, which further generate fiscal revenues; more importantly, all these construction activities create profit-making – and even rent-seeking – opportunities for local officials – usually by directing businesses to their clients and relatives in the 'shadow state' (Smith, 2010). For villagers, as we will discuss in more details later, improved public services are a clear benefit. In fact, in our survey of

townships in two counties, 90 percent of all projects adopted some selection criteria to reduce the number of participating households, who were then required to put down a deposit to hold their positions.

4. Political dynamics in land commodification

The development of Chengdu's TDR market presents us a valuable opportunity to examine the complex dynamics of turning land into a commodity traded on market. Even in the more sophisticated analysis of China's land commodification process (Xu et al., 2009, for example), land seems to have become a commodity by fiat.14 The political processes and representational changes involved in creating an abstract, monetized, and spatially movable commodity out of the qualitatively specific and heterogeneous, natural, and spatially fixed land are left un-problematized. Problems only arise from contested property rights and the dispossession of farmers of such rights, which the literature on China's land politics almost single-mindedly focuses on. The Marxist commodity theory that exposes the intricate political dynamics inevitable in any commodification processes and the depth added to it from post-structuralist, ecological and cultural perspectives has not yet been brought to this analysis. In this section, we bring such an analysis to Chengdu's case of commodifying land through TDR. Our focus here is on the political dynamics in constructing a representation of land as a commodity and then institutions that enable its trading. We organize our discussion around the four moments in commodification that David Harvey (1996, 55, cited in Robertson, 2000, 468) identifies: (1) abstraction (of the concrete materiality of land) to functional categories, (2) monetary valuation of these categories, (3) further spatial abstraction of these abstract categories, and (4) establishment of the exchange process.15

4.1. Functional abstraction

Products of labor only become commodities and tradable with each other when their 'concrete forms and useful properties' are abstracted into 'their common character of being human labor in general, of being the expenditure of human labor power' (Marx, 1976, 159). Only through such an abstraction, all the qualitative particularities of different commodities (use values) are then subsumed under some quantitatively commensurable feature (exchange value) that makes them exchangeable. The commodification of land requires the same abstraction process that creates commensurability among parcels of land that are qualitatively different.

In rural China's case, the two legal categories of agricultural and construction land were originally devised to regulate land use and preserve farmland. Once they are in place and land-use practices are determined by them, all parcels of land go through a functional abstraction in representation and, regardless of their material and place specificities, are henceforth conceptualized and used as either agricultural or construction land. As a result, the 'definitional value' of a piece of land – being construction land, for example – becomes most important in regulating the use and exchange of land, while other qualities of land are either ignored or reduced to this dimension. Within the same category, all parcels of land have been rendered equivalent by legal and regulatory definition, commensurable, and thus, exchangeable; their only difference is size.

Then, with the help of another abstract construct, LDR, both the ZBPH and ZJGG policies further make these two categories changeable into each other. Agricultural land becomes construction land once endowed with LDR; construction land becomes agricultural land when LDR is forsaken.

Traditionally, parcels of land were put into different uses because of their material and place specificities – soil fertility, access to water, or relationship with other socially significant places. But under the current regulatory framework, the functionally abstracted representation of land, as either agricultural or construction land, now re-casts it into two types of uses. Further, by either acquiring or relinquishing LDR, parcels of land can travel across these two categories.

There had always been land trading in pre-Revolution rural China, which also required some sorts of functional abstraction of land into commensurable units. But the current functional abstraction, politically imposed by the state and based on two categories, is much more simplistic. In its disregard of existing and alternative logics of land use, such as those ecologically and culturally based, this functional abstraction imposes an order of simplicity over complex practices within the same functional category and creates problems in the material use of land. For example, under the ZJGG scheme, traditional housing land, selected for its geomantic or cultural characteristics, can be reclaimed into farmland just to produce TDR quota. The TDR quota makes the newly reclaimed farmland the functional equivalent of a piece of most fertile farmland nearer to the city and allows the latter to be turned into a car dealership. The qualitative differences between the two pieces of land, such as agricultural productivity and locational specificities, are ignored.

These efforts of disembedding land from its socio-cultural and ecological contexts to fit its abstracted commodity function are bound to produce social tension and ecological impacts. Reclaiming farmland from graveyards, for example, has in recent years become an issue of social contention in many rural areas. In Henan province's Zhoukou prefecture, in 2012, in order to create ZBPH quota to allow for farmland conversion, the local government aggressively leveled over two million graves, which were not always relocated, to reclaim from those over 2000 ha of farmland and caused widespread protests.16

4.2. Monetary valuation

The next moment in the transformation of land into a commodity is another act of abstraction – a monetary valuation of the already-abstracted exchangeable function, an act that first reduces the multifaceted values related with LDR into a singular economic value, and then expresses the economic value of that fictitious commodity in monetary terms. The LDR commodity, in the form of tradable TDR quota, is constructed through an elaborate political process as illustrated in Fig. 3; monetary valuation of this commodity is therefore an inherently political process. The state's administratively setting a purchasing price for TDR quota, which covers the cost of providing a set of public services mandated by the state, is the most obvious example of how the local state's political agenda shapes monetary valuation of the LDR commodity. The political determination of monetary valuation goes far beyond this and can be found in every step along the process that creates the LDR commodity.

The purchasing price for TDR quota is only what the Municipal Land Reserve pays to the county that produces it; the county government still needs to pay a host of actors according to some politically determined monetary valuation of certain services or rights, which are all components that create the LDR commodity. For example, in step 4 (in Fig. 3), once the township has selected a site for the construction of new housing, it has to compensate villagers who are owners/users of that land. In practice, the valuation of this service is highly variable, and compensation has been offered in diverse ways including land swap, cash payout, insurance purchase, and some combinations of these.

In steps 5, after new houses are built, old ones demolished and relocation about to happen, the township government then needs to decide at what rate villagers' old housing will be 'traded-in' to offset the price of new houses. This valuation process is fraught with tension, as the government needs to negotiate with hundreds of families on whether and how the old housing's age, size, condition, building materials, location, and type of use will be included in the pricing of the trade-in value.

Furthermore, in steps 1 and 7, since both the application for project approval and land reclamation are often outsourced to specialized companies, the pricing of their services also needs to be negotiated. Finally, in step 10, once County B has obtained the TDR quota and can start construction, it then needs to negotiate with villagers whose farmland will be expropriated on their compensation.

Most of these political negotiation and contention is about what services, rights, or materials are represented as 'value' when they are mobilized into this commodification process, and how such values should be monetarized. In the functional abstraction of land in terms of development rights, the state has obliterated all the other social, material and locational characteristics of land in the representational creation of LDR as the exchangeable commodity. It continues the same logic and tries to exclude other 'values' of land in the monetary valuation of LDR. But as monetary valuation directly involves non-state actors, it faces resistance and has to contend with alternative accounts of values.

One scenario we have encountered repeatedly is the refusal of households whose old housings enjoy certain locational advantages, such as proximity to water sources or roads, to join the relocation project. This is mainly because local governments failed to either recognize such locational 'value' as economic value or translate that into fair monetary terms. Another widely contested issue – not only in Chengdu but across the country – is the valuation of compensation for expropriated land. The state's Land Management Law only includes three items in the valuation – land compensation, relocation allowance and compensation for crops and buildings – and allows limited flexibility in valuating each. Affected rural residents, however, often argue for the inclusion in the valuation of other economically 'invisible' values, such as fairness across a community and emotional bond to homes and land, and propose different methods of valuation (also see Sargeson, 2013).

4.3. Spatial abstraction

Physical land is immovable, but the commoditized LDR needs to be spatially abstracted from its place-specificity and becomes movable, friction-free, in a constructed 'absolute space' (Smith, 1990). In cases of TDR motivated by environmental preservation and guided by the 'no net loss' principle, equivalence is often the goal of spatial abstraction – wetland lost anywhere is equivalent to wetland gained anywhere (Robertson, 2000), for example. But in the case of 'no net gain' TDR, differentials in the economic value of LDR across a space become the goal. Spatial abstraction under the 'no net gain' policy must, therefore, create a differentiated but navigable space, so that the LDR commodity can move to places where financial returns are higher. Economic gains can then come from transferring LDR across the value-differentiated space. Such gains are also what motivate local officials in Chengdu to go through all the hassles to produce the LDR commodity.

The central government's initial policy of ZJGG severely restricted this possibility by limiting all TDR within the county boundary. Such a space is not only small, but more importantly, often insufficiently differentiated in the economic value of LDR. For Chengdu, an important breakthrough was the MLR's permission for it to expand the tradable space of the LDR commodity to the entire municipality, where

significant differentials in the economic value of LDR exist between peri-urban counties and those in the urban fringe.

Fig. 4 illustrates the spatial outcomes of a completed ZJGG project involving the TDR across two townships. The sending one was located in Qionglai county in the urban fringe and the receiving one in the peri-urban Shuangliu county. A total of 545 mu of new farmland was reclaimed from previous housing land in the de-construction areas in Qionglai. This was then abstracted into a commodity of 545 mu of TDR quota, as represented by the three shaded areas in Fig. 4. Since the central policy requires a net gain of farmland, 11 mu of the quota – a token amount – was forfeited to leave a balance of new farmland. Qionglai county itself had to use 186.5 mu TDR quota to convert farmland in another village for the construction of new housing. It then sold 347.5 mu TDR quota to the Land Reserve, which was subsequently acquired by Shuangliu county and used for urban development. The whole project was only possible when Qionglai can produce TDR quota at a cost lower than the Land Reserve's purchasing price (at about 120,000 yuan per mu in 2008, when the project was approved), while Shuangliu can use the TDR quota to create urban construction land that can be sold for much higher prices. The commodity of TDR quota would only move in such a space where differentiated LDR values exist.

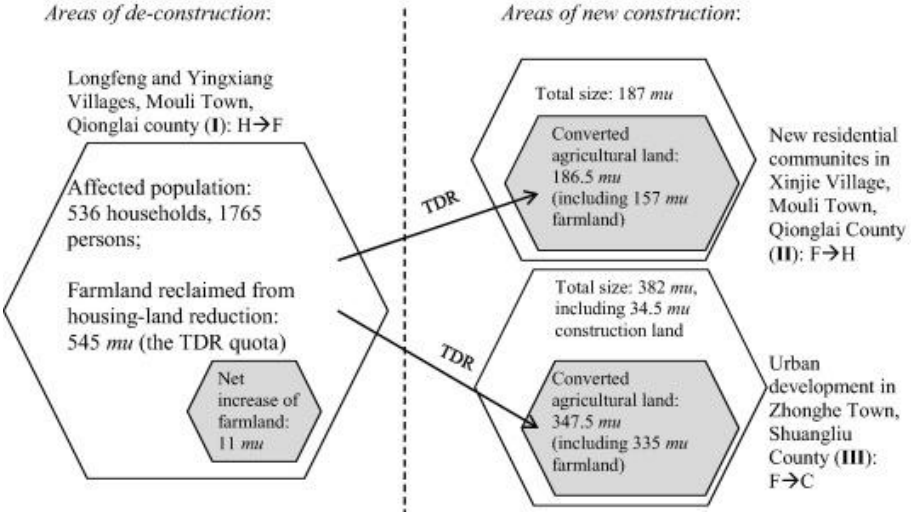

Fig. 4. Land-use changes in a ZJGG case in Chengdu. Shaded areas are where the TDR quota is used. Objects are not drawn to scale.

Fig. 5 documents the financial flows created by this ZJGG project. All the financial resources ultimately come from the sales of urban construction land created with the TDR quota in Shuangliu county, the revenues from which were reaped by the county government. But long before that sales, the Municipal Land Reserve had advanced to Qionglai county the payment for the TDR quota that the latter would produce (step 2 in Fig. 3). That expense was then recouped by the Land Reserve when it sold the TDR quota to Shuangliu. So, while items A and B were transfers from the Land Reserve (not shown in the figure), they ultimately came from Shuangliu county.

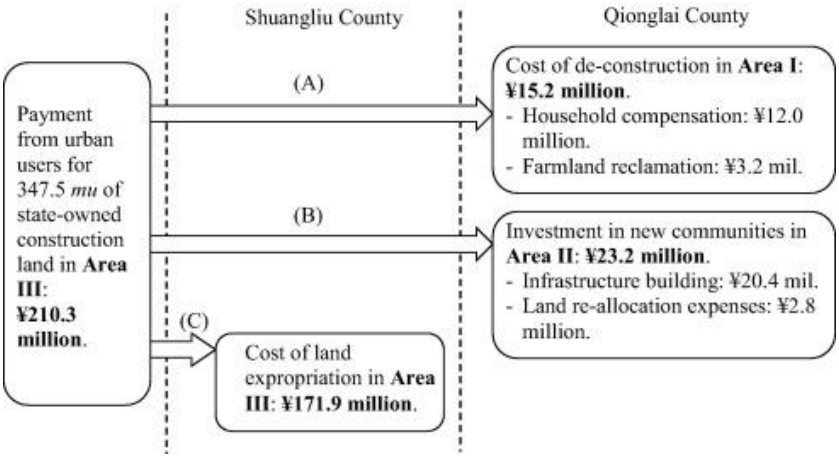

Fig. 5. Financial flows in a ZJGG case in Chengdu. See Fig. 4 for descriptions of Areas I, II and III.

It is important to note that the biggest expense was actually item C (about five times the size of A and B combined), the cost of compensating villagers in Shuangliu – a more urbanized area where land value and relocation costs are high – for expropriating their farmland into state-owned construction land. If the cost of compensating villagers and producing TDR quota (steps 3–6 in Fig. 3) were equally high in areas I and II in Qionglai, which would far surpass the purchasing price paid by the Land Reserve, such a TDR transaction would then make no economic sense for local governments and never happen.

5. Commodification without dispossession: evaluating Chengdu's experience

Chengdu's experiment with LDR commodification under the ZJGG framework has progressed successfully since 2008. By the end of 2013, the municipal government's own statistics shows that a total of 1839 'new rural communities' are at various stages of construction, including 1219 already completed, all financed by the sales of TDR quota under ZJGG projects. These 1839 communities involve a total of 307,064 rural households and 987,496 rural residents.17 This means that this program has relocated over one fifth of Chengdu's total rural population (4.6 million in 2013) into newly constructed residential communities, where physical conditions and provision of public services are on par with urban areas, a big accomplishment in a context of long-standing severe rural–urban disparities. The fact that this all happened without major incidents of protests, petitions or violent confrontations is another rare achievement in today's China. Participation in the program has remained voluntary, and in every village that relocated to a new community, we always met households who stood their grounds and refused to move. They faced efforts of persuasion and sometimes, social pressure, but never the use of violence.

At the same time, the TDR quota created from these rural relocations has allowed urban built-up areas, as well as the urban economy, to expand rapidly in the peripheral counties. Take the Economic Development Zone in Longquanyi county for example, Chengdu's only national-level development zone. Its size increased from 990 ha in 2008 to 6100 ha in 2013, with full legality thanks to the ZJGG practice. The development zone, all built on rural land, now houses nine major automakers and has become one of the largest bases of automobile industry in western China.

Chengdu's experience contrasts sharply with stories of forceful evictions and violent confrontations that have been widely reported in the literature on land dispossession in China. Putting aside the shortcomings of that literature, we can still see that Chengdu's differences with other localities are real. In fact, with the exception of Chengdu, on a national scale, the implementation of the ZJGG policy has caused widespread protests and violent resistance.18 Local policy innovations in Chengdu, we argue, caused this divergence.

When the commodified LDR travels across a value-differentiated space, an increase in value is realized; but how this incremental value is distributed is a political arrangement. Chengdu government from the very beginning of the experiment made two critical choices that distinguished it from all other comparable cases: first, decentralizing the incremental value to its sub-units – county governments; and second, mandating the provision of public services in new rural communities and instituting the mechanism of financing such rural reconstruction through TDR to create an equitable division of the incremental value between spatially unequal counties.

Compared with Chengdu, in other pilot zones such as Tianjin, the provincial governments monopolized the land incremental value from LDR transfer. The production of TDR quota was first handed down to lower-level governments as an administrative task from the province, and once produced, the TDR quota was then centralized and allocated by the provincial government. This created at least two problems: first, county governments had few incentives to implement the ZJGG program; and second, little of the incremental value was allocated to rural areas.

Once the incremental value is decentralized to county-level governments, another danger emerges: since the valuable TDR quota can only be produced from reducing rural housing land, over-zealous local governments – now motivated by the financial gains from TDR – will force such reduction to happen, which occurred frequently elsewhere (Long et al., 2012; Ye and Meng, 2012). Therefore, the administrative price-setting and public-service-provision mandate is critically important for Chengdu to avoid this pitfall. Setting the TDR quota price artificially high created an equity-enhancing fiscal transfer; mandating public-service provision precluded the misuse of the fiscal transfer.

In practice, the municipal government first bundled rural public-service provision with TDR quota production, and then added the cost of such public-service provision to the purchasing price of TDR quota. As a result, construction of new rural communities in the quota-sending, urban-fringe counties and provision of public services there are paid for by the quota-receiving, peri-urban counties. Peri-urban counties like Shuangliu, which otherwise would monopolize much of the benefits of urbanization due to their locational advantage, now have to transfer part of those benefits to counties in the urban fringe like Qionglai, which would otherwise have less chance of benefiting from the city's urban expansion. From the case depicted in Fig. 5, we see it clearly that the 20.4 million yuan invested into building a new rural community with improved infrastructure and public-goods provision in area II is the net gain of Qionglai county, and is paid for by Shuangliu from the sales of its LDR at a much higher price.

In the other two market-based TDR programs in China, the now defunct one in Zhejiang and the 'land ticket' (dipiao) trading in Chongqing, although the TDR also created a similar financial transfer from spatially advantaged peri-urban counties to those less so, how this fiscal windfall was used by local governments led to divergent development outcomes. In Zhejiang's case, where there was no political regulation by the provincial government on local governments' use of the revenues from TDR, there was no evidence of investing such revenues into rural public services (Wang et al., 2010). Chongqing's 'land ticket' trading allows individual households or villages to relinquish their housing land, which is then reclaimed into farmland by an authorized company, to gain a TDR quota (the 'land ticket') and trade it in the municipal Rural Land Exchange. Chongqing's program differs from Chengdu's in several key

aspects, including its tightly controlled scale (not exceeding 10 percent of the quota allocated in the annual Land Use Plan), the relatively small share of 'land ticket' trading in overall TDR quota allocation, and the difficulties that end users of 'land tickets' still face in matching the quota with physical land and land use rights. But the most important difference is, again, the lack of a mechanism that channels financial gains from LDR trading into rural public-service provision. In the Chongqing program, rural households can directly participate in the production and trading of TDR quota; any proceeds from that are pocketed by households and not used in public-service provision.19 The municipal government also does not set a price for TDR quota but leaves it to market. Even under its tightly controlled current scale, TDR quota prices in Chongqing have always been about just two thirds of those in Chengdu (Duan and Fu, 2011). If this program were scaled up to Chengdu's size, the increased supply would surely drive down the TDR quota price to a level insufficient for public-service provision.

Overall, the two policies adopted in Chengdu ensure that, on one hand, rural public services will not be short-changed in local governments' efforts of cost reduction, and, on the other, residents have strong incentives to relocate and thus, voluntarily provide a sufficient supply of rural housing land. In choosing these policies, the municipal government was primarily motivated by practical considerations: it needed a way to both discipline and motivate local governments to perform political functions of the state, and it did not need to foot the bill, as the funding came from end users of urban land. In 2007, Chengdu also became the national pilot zone for rural–urban integration, which gave its leaders greater incentives to promote rural investment and use excellence in this area for political gains. But in practice at least, Chengdu's policies have paid heed to Polanyi's (1944) warning of the perils of social dislocation that come with turning land into a 'fictitious commodity' and proactively instituted a 'double movement' to provide social protection through re-embedding land commodity relations in political regulations.

On the basis of the strong voluntary participation by rural residents, absence of social contention caused by relocation, and significant improvement in public-service provision in new rural communities, we describe the experiences of TDR quota trading and land-financed rural reconstruction in Chengdu as 'commodification without dispossession'. Several caveats, however, are worth noting here. First, the successful implementation of Chengdu's ZJGG program was helped by a selection bias. Both in selecting villages to apply for the ZJGG project and approving such application (steps 1 and 2 in Fig. 3), the county and municipal governments purposefully targeted village communities that had strong leadership and social cohesion and no antecedents of protests or petitions. The nearly 2000 villages that have so far participated are the proverbial 'low-hanging fruits'.

Second, 'without dispossession' here refers to the absence of forceful eviction or property seizure during the processes of relocating residents to new communities, demolishing old housing, and producing the TDR quota. Once the TDR quota is traded and county governments now need to expropriate rural land (step 10 in Fig. 3), which basically is a process external to the ZJGG program, dispossession can happen like anywhere else in China.

Finally, the relocation to new rural communities brought many changes to residents' livelihoods, in areas such as farming operation, social interaction, and food self-supply. In the nearly 2000 'new rural communities', the rural residential space has been profoundly transformed. These new communities bear a lot of resemblance to the new village that Bray (2013) studies in Jiangsu, with carefully planned landscaping, urban-style single-family and multi-family housing, functionally differentiated and tightly regulated public space, and the ironic concurrence of denser settlement yet much less social interaction among residents (see an example in Fig. 6). In our visits to numerous new rural communities, we find that residents are overwhelmingly satisfied with the much improved physical conditions, but more ambivalent about changes to their daily use of space and social activities. A full analysis of these changes and the

contestation over the new rural space will need a separate study; but it suffices to say here that these are results of commodification of rural residents' subsistence, not simply dispossession.

Fig. 6. A 'new rural community' in Shuangliu County, Chengdu. Source: Author's photograph.

6. Conclusions

By turning the once place-bound rural housing into a spatially abstracted LDR and allowing it to travel across a regional commodity space, Chengdu's TDR quota trading program has unleashed a spatial re-shuffling of land-use patterns. Rural settlement pattern in the Chengdu Plain was traditionally highly scattered due to its recent immigration history (Skinner, 2001). Clusters of a few houses in bamboo- or tree-shaded areas in the middle of farm fields created what is known as the linpan landscape, a pattern of spatial fragmentation (Abramson and Qi, 2011). Under this new scheme, however, rural settlements begin to concentrate in 'new rural communities', which are nearly always constructed near market towns and transportation routes. Demolished rural houses in far-flung areas are also 'reincarnated' in the form of urban industrial and commercial construction on peri-urban farmland near the city. At the same time, the peri-urban farmland also 'flew' – at least when represented as land parcels in planning maps and acreages in accounting books – to what used to be housing land in the urban fringe area. On a citywide scale, an increasing degree of spatial differentiation based on the economic division of labor among places is resulting from this re-shuffling. As built-up areas congregate around the city center and towns, while farmland spreads out to the de-populated rural hinterland, capital is re-making the whole region in its own image.

This spatial reconfiguration is an explicit policy goal of the municipal government. Articulated as the 'Three Concentration' policy, it seeks to re-configure rural space by concentrating industries in centralized developmental zones, residents in new rural communities and farmland in scaled-up agricultural operations. This policy makes it clear that the commodification of LDR is a part of a broader process of commodifying all rural land, but especially farmland. In Chengdu's practice, LDR commodification facilitates the commodification of farmland in at least two ways. First, any ZJGG project is always preceded by a land-titling program that clarifies the allocation of collective land among

villagers and freezes the individualized leasehold in 30-year leases. This prepares a necessary condition required for commodified transfer of farmland, especially in long-term leases to agribusinesses. Second, when relocating rural housing, a ZJGG project severs the ties that traditionally connected rural residents' residence with their farming activities in the linpan landscape. The spatial abstraction of LDR, therefore, helps dissolve the place-specificity of farmland and makes its spatial abstraction easier during the commodification process. We have seen many cases where residential relocation caused rural residents to abandon place-bound farming activities, such as backyard pig farming, which requires around-the-clock supervision and cannot be relocated closer to new residential communities, and release their farmland as a commodity into the leasehold market.

This connection alerts us to the far more widespread process of farmland commodification through market-based land transfer. The commodification of farmland is driven by both the state and agro-capital, who share the goal of turning family-based smallholding agriculture into scaled-up and capitalized agriculture that is integrated into circuits of capital accumulation. These developments lead Zhang et al. (2015) to argue that commodification – of both rural resources and residents' subsistence – is a far more prevalent and consequential process in today's China than dispossession caused by land expropriation. In fact, as we see in Chengdu's case, land expropriation (step 10 in Fig. 3, and in some cases, step 4 too) can be just one step in the elaborate processes involved in commodifying land and should not be analyzed in isolation. In our experiences in Chengdu, 'dispossession' – as understood by many as an outright coercive deprivation of villagers' land rights – rarely happens; social contention rather revolves around the valuation of various rights, services, and assets, as discussed earlier, and resembles market bargaining far more than political resistance – to the extent the two can be separated.

In the Chengdu case and in the broader commodification of farmland, local states are the most active force pushing forward land commodification. Spread of capitalism is intricately intertwined with state actions – it may be particularly so in China's state-led capitalism, but certainly not uniquely so. What the local states did in Chengdu's land programs is clearly serving the interests of capital.

The LDR-trading program not only helps to meet the demand of urban capital for more construction land, it also enables a property-relation transformation that changes collectively owned rural land into commodified state-owned land (area III in Fig. 4) and disembeds it from social closure mechanisms that previously restricted its access to membership entitlements. In the increasingly differentiated rural communities today (Zhang, 2015), relocation to newly constructed rural communities accelerates some farmers' transition into wage workers, when farming is made locationally more expensive while wage work less so, and thus supplies more wage workers for both urban and agro-capital. Finally, the transfer of farmland is also preparing the condition for the speedier entry of capital into agriculture, which requires larger and contiguous land plots. Therefore, the processes of land commodification studied here, albeit orchestrated and led by local states, are best understood as an integral part of the spread of capitalism in rural China.

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Appendix A. Supplementary material

The following KMZ file contains the Google map of the most important areas described in this article and can be found at http://dx.doi.org/10.1016/j.geoforum.2015.10.001

These data include the Google maps of the most important areas described in this article.

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1 Zhang and Donaldson (2008, 2010) are the exception in terms of seeing farmland transfer as a key step for the emergence of capitalist producers, but their focus is on class formation rather than land commodification. Webber (2008) is the most explicit in conceptualizing broader changes in rural China as primitive accumulation. But similar to Zhang and Donaldson, Webber focuses on the consequences of class formation arising from primitive accumulation; land commodification is not identified as one of the processes of primitive accumulation, presumably because of its underdevelopment. In fact, one of Webber's critics (Post, 2008) specifically points out the absence of land commodification as his key objection to Webber's use of primitive accumulation to understand social changes in rural China.

2 The first national Land Use Master Plan was made in 1997, but soon revised in 2005; the current national Master Plan is in effect from 2006 to 2020.

3 More specifically, the targets are to preserve 121.2 million ha farmland by 2010 and 120.33 million ha by 2020, of which 104 million ha should be prime farmland. Mu is the commonly used measure in China; one mu equals one fifteenth of a hectare.

4 Such conversion can happen in two ways: first, by rural collective units (villages, for example) when they develop collectively owned agricultural land for non-farm enterprises, rural housings or public facilities; second, by the state when it expropriates rural land into state-owned land for urban development. Both must comply with these land-use regulations.

5 In fact, the central government requires that the newly reclaimed farmland should have 'an increase in area and improvement in quality', compared with the lost farmland.

6 In China's territorial administrative system, a county-level unit can be called variously as a county, an urban district, and a city. Chengdu has nine districts, four cities, and six counties. For simplicity sake, they will all be referred to as 'counties' in this paper.

7 The Sichuan provincial government has required that the de-construction part of any ZJGG projects be carried out in entire administrative villages, thus precluding the possibility of only using unused houses across multiple villages.

8 This provincial-level approval was suspended during 2008–2010, when MLR removed the ZJGG quota limit for Chengdu to accelerate post-disaster reconstruction.

9 As mentioned earlier, this one-to-one linkage between de-construction in County A and new construction in County B is mandated by the MLR. Chengdu has devised a local policy – called the 'Project of Constructing Centralized Rural Housing' – to circumvent this restriction.

10 During 2008–2010, when the quota limit was removed for Chengdu, this TDR 'quota' was no longer used to limit the quantity. But it was still needed as an approved status for entry into TDR market.

11 The Municipal Land Reserve is also the agency that advances start-up funds to counties.

12 In any Chinese city, the urban fringe area typically has a far greater potential of reducing rural construction land than there is demand for new construction land, which tends to concentrate in the peripheral urban area. This is one of the reasons that the central government tried to limit the supply by imposing an annual ZJGG quota. But in Chengdu's case during the three post-earthquake years, such supply restriction was removed, and oversupply became a real possibility.

13 The 21 items are the minimum required for rural communities in villages; for communities near the county seats or towns, the minimum is raised to 23 items. These public services include a comprehensive social service station, clinic, childcare center, library, convenience store, ATMs, public toilet, and connections of gas, electricity, water and sewage system. We can provide the detailed list upon request.

14 In Wang et al.'s (2010) study of the 'TDR market' in Zhejiang, the authors provide no details about how the 'market' operates – how prices were set, market information was disseminated, and transactions were conducted; and what, if any, market institutions were built. In a study of 'market', market institutions and operations are conspicuously missing. In fact, form their description, the TDR in Zhejiang may very well be the result of administrative allocation, not market trading.

15 The state's efforts in building market institutions to enable the exchange process have already been discussed in Section 3 and will not be repeated here.

16 For a description of the case and summary of news reports, see http://baike.baidu.com/view/9631972.htm (in Chinese).

17 These numbers are from the municipal government's internal documents provided by informants.

18 Ye and Meng (2012) find that in 2010 there were nearly a million reports in Chinese media regarding the ZJGG policy; farmers' resistance and scholars' criticism were the two dominant themes.

19 Households who can afford to relinquish their rural housing are usually those who have already moved to cities and economically better off. Such individual-level financial transfer is therefore not necessarily equity-enhancing.