

– THE STATE AS BOTH REGULATOR AND PLAYER: The Politics of Transfer of Development Rights in China

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Abstract

The conventional argument that the introduction of transfer of development rights (TDR) shifts the power of land use regulation from the state to the market is increasingly under challenge. In China, the state's grip on land is reinforced through TDR, in which the state is both regulator and player. This state-dominated form of TDR affects China in three ways. First, competing aspirations of different scales of government complicate how TDR is implemented. Although the central state promotes TDR to maintain a national balance of arable land, some local states instrumentalize it to expand their landed basis of accumulation. Secondly, TDR tends to benefit the state but not its people. It may increase the fiscal income of the sending government and lessen the land shortage of the receiving government, but sometimes at the expense of the interests of land users without land ownership. Thirdly, given the state's deep involvement in TDR programs, the key for China's TDR to protect arable land lies not so much in clear property rights or a fully fledged market as in effective checks and balances regarding the state's powers over TDR. These three observations attest to the embeddedness of TDR in the local political economy.

Introduction

In recent years there has been increased interest in market-based instruments to preserve arable land and ecological properties in China. One such instrument that is rapidly gaining the attention of scholars and politicians is an approach called transfer of development rights or TDR—a market-based planning tool that allows landowners within areas that have valuable agricultural, natural and cultural resources to sell development rights for their land to other interested parties, who can then use these rights for development at another location. Originally practiced in the US in the 1960s, TDR has now spread to many other countries, including China (Janssen-Jansen, 2008; Wang *et al.*, 2009; Henger and Bizer, 2010; Wang *et al.*, 2010; Harman *et al.*, 2015).

Scholars, especially those in the field of economics, observe that while TDR leaves room for improvement, it does lead to fewer market constraints and more flexibility and efficiency in both ecological conservation and economic growth (Renard, 2007; Henger and Bizer, 2010; Linkous and Chapin, 2014). The success of a TDR program depends on market mechanisms, especially on the supply–demand equilibrium of the land market. This line of argument resonates with the notion of TDR as a market-based planning instrument to manage growth, preserve ecological properties and safeguard heritages (Johnston and Madison, 1997; McConnell *et al.*, 2005; Harman *et al.*, 2015). It indeed echoes the neoliberal political economy and its associated ideological frame—a sociopolitical force that drives the shift of planning from a regulatory and comprehensive approach to one that emphasizes market-based strategies (Linkous, 2017).

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The neoliberal planning approach to TDR has been blamed for blurring its political nature. Critics within the political-economic tradition level the harshest criticism, particularly by accusing TDR of being reactive to urban growth and thus unable to challenge growth machine dynamics (Pfeffer and Lapping, 1994). These arguments reappear in more recent scholarship, which demonstrates how TDR has become a planning technique to circumvent the rigidity of Euclidian zoning (Stinson, 1996) and to recoup the economic value of land under a restrictive planning regime (Shih and Chang, 2016). Accordingly, TDR should not be regarded as market-led commodification of development rights. Instead, it is an outcome of deeper political-economic processes. Its goals and implications are contingent on the local political economy, particularly on negotiations between the planning regime and market forces. This point is insightful, because it reminds scholars and policymakers to pay attention to how TDR, which originated in Western contexts, may be ‘stripped down to [its] administrative or methodological essence’ and re-embedded in other local sociopolitical contexts (Peck and Theodore, 2001: 435).

This re-embedding can be observed in China, where TDR is heavily affected by the state’s prerogative to allocate land resources. The Chinese central government enshrines TDR to counter the trend of farmland loss, reduce land shortage owing to economic growth, and promote rural development. While the central government offers policy guidance, local governments are in charge of implementing TDR programs. In contrast to practices in Western countries, where TDR helps planners ‘to carry out their public-oriented projects in a market society based on private property rights’ (Shih and Chang, 2016: 1244), China’s TDR operates in a context where—as elaborated later—the state owns all urban land and is empowered to expropriate rural land owned by village collectives. Although many private individuals claim development rights by virtue of state land leases or contracts with village collectives, it is the various local governments that trade rights through TDR programs, though which they also have a regulatory role. The state is thus both regulator of and player in China’s TDR programs.

In this context, we develop three arguments in this article. First, if we acknowledge that the state is primarily responsible for the peculiar path of TDR in China, we should trace the local embeddedness of the emulated program to the aspirations of state actors from different scales. To the central state, TDR may be a political strategy for ecological conservation, arable land protection and rural catch-up. Although the central state promotes TDR to flexibly maintain a national balance of arable land, some local states instrumentalize it to expand their scope of accumulation under a restrictive land supply regime. The second argument builds upon the first to contend that the state-orchestrated TDR policy has had mixed effects on land politics. TDR may increase the fiscal income of the sending government and lessen the land shortage of the receiving government, but comes at a social cost, because local states use it to exploit the interests of land users, who hold land use rights but do not have ownership of the land. Finally, given the state’s deep involvement in TDR, the key for China’s TDR to serve as a useful tool for protecting arable land lies not so much in the clear delineation of property rights and the development of a fully fledged market as in effective checks and balances regarding state powers over TDR. By developing these arguments we seek to make a convincing, if context-specific, case about TDR as an instrument reinforcing, rather than diminishing, the power of the state on land use regulation.

We base our arguments on an analysis of the implementation of two major types of TDR programs, namely ‘Increasing–Decreasing Balance of Urban–Rural Construction Land’ (*chengxiang jianshe yongdi zengjian guakou*, or IDB) and ‘Requisition–Compensation Balance of Arable Land Among Regions’ (*gengdi yidi zhanbu pingheng*, or RCB). IDB encourages rehabilitation, consolidation and conversion of idle rural construction land to productive arable land by allowing the transfer of development rights released in the process to urban areas at the same county-level unit (CLU) where

demand for land is high. RCB permits exchanges of development rights to arable land between CLUs endowed with abundant arable land on the one hand, and those that are encroaching on their arable land to facilitate land-led urban growth, on the other hand. Both programs are designed to achieve the goal of maintaining a balance of arable land at the national scale. Specifically, we focus on the pioneering implementation of these programs since the 1990s in Jiangsu Province, which offers an extremely useful window for exploring the intricacies of TDR politics in China.

This article consists of eight sections. Following this introduction, the second section revisits the theoretical debates on the state–market relationship in land use regulation and how this might influence TDR. The third section reviews China’s institutions and politics of land to explore how TDR is re-embedded in the country’s sociopolitical context, while the fourth section describe IDB and RCB as concrete forms of such embeddedness. After outlining the research methodology for this article in the fifth section, in the sixth and seventh sections we examine in detail how IDB and RCB, respectively, have been implemented in Jiangsu Province, with specific attention to the land-related and social implications of the deep involvement of the state in TDR. The article concludes in the final section by presenting our major findings and our reflections on these.

Rethinking TDR: putting the state to work for the market—or vice versa?

China’s TDR programs are inspired by experiences in the West in general and in the US in particular (Wang *et al.*, 2010; interview with Nanjing University professor, September 2015). Though outlining Western TDR practice is beyond the scope of this article, it is useful to provide a short account of scholarly debates on how TDR redefines the state–market relationship in the West to establish a comparative perspective for this study.

Rooted in natural resource policy such as air and water pollution trading, the concept of TDR is built on a strong belief in the free market. Three characteristics of TDR programs reflect this. First, although designed by public institutions as a planning instrument, TDR leverages market mechanisms to achieve public purposes such as preservation of historical sites or farmland without governments having to pay land expropriation and protections costs (Nelson *et al.*, 2012). It allows separation of the right to develop a land parcel from ownership (Janssen-Jansen, 2008) and creates a marketplace for development rights exchange between ‘sending areas’ targeted for protection and ‘receiving areas’ slated for growth (Linkous, 2016). Secondly, through the market TDR compensates those who stand to suffer from regulation-induced loss of economic value of their land. Van der Veen *et al.* (2010) argue that, when gains from land are considered the most important aspect of land use, the right to develop land is more important than ownership of land—to the extent that governments are often obliged to pay compensation for land that is subject to rigid planning control. TDR shifts the compensation burden to the market by rendering regulated development rights tradable. Finally, TDR is designed to follow market logic that supposedly works to the benefit of various stakeholders, including sellers and buyers. Thus, the state’s role is ideally ‘restricted to the regulatory tasks that enable the market to function properly’ (van der Veen *et al.*, 2010: 1011).

One consequence of this intensifying interest in TDR as a market-based instrument for preservation and efficiency is the rise of scholarship on how TDR serves as a tool for growth management and governance, mainly but not exclusively based on transatlantic cases (Johnston and Madison, 1997; McConnell *et al.*, 2005; Kaplowitz *et al.*, 2008; Linkous, 2016). Although scholars appear united in acknowledging TDR as a market instrument, they draw inspiration from diverse theoretical foundations and thus differ in their views towards how TDR reconstructs the state–market relationship and how this relationship in turn influences the outcomes of TDR programs. Those

in economics habitually treat market forces as the ‘emperor’ (Haila, 2007) governing TDR’s effectiveness. Governments may initiate TDR programs, but the success of these programs is a matter of market equilibrium. If there is any failure of TDR, it can be attributed to a lack of demand for development rights (Linkous and Chapin, 2014) or planners’ inaccuracy in predicting supply–demand conditions (Daniels, 2007). In these arguments, it is near customary to portray the market as the primary ‘institution’ that shapes the trajectory of TDR, although the program is used for market intervention. This links TDR to a neoliberal regulatory shift in land use planning, from a government-steered model to a stakeholder-driven approach (van der Veen *et al.*, 2010).

However, it is worth emphasizing some remarks on the subtle role of the state in this body of economics writings. Rather than leaving TDR to the market, the state, some scholars suggest, should play a role in facilitating its operation. Harman *et al.* (2015) argue that planning authorities in receiving areas may suppress local permitted density to compel developers to purchase development rights via TDR programs for higher-density development. They may also offer a zoning waiver to usher developers into a TDR program. Linkous (2017) similarly contends that a key role of the state is to ensure an appropriate transfer ratio of arable land to urban land to avoid too many development rights in sending areas being undervalued and thus lead to landowners becoming unwilling to sell theirs. This point echoes Janssen-Jansen’s (2008) remarks about the necessity of establishing a TDR bank to reduce transaction costs in a ‘thin transaction market’.

Nonetheless, political-economic scholars indicate that the state’s role in shaping the outcomes of TDR may be wider and deeper than the economics literature admits. Pfeffer and Lapping (1994: 247), in their study of the northeastern US, argue that TDR programs do not necessarily serve to constrain urban growth, but rather facilitate the spatial concentration of development rights to lubricate elite-led ‘growth machines’ centered on land exchange. Shih and Chang (2016) observed a similar tendency in Taiwan, where the government has institutionalized commodification of development rights to bring private developers and investors in to alleviate the government’s capital shortage to redevelop private land zoned for public facilities. Linkous (2017) offers more evidence on the state’s intrinsic significance to TDR by identifying several top-performing US TDR programs that have relied primarily on public purchase of development rights rather than private exchange. Furthermore, Micelli (2002: 143) refers to the Italian experience to alert us that the creation of TDR markets does not necessarily displace the function of planning, but is ‘limited to intervening to correct its failures’. These findings prompt us to conclude that the wide application of market-based instruments may not lead to the demise of the state, but to state sociospatial reorganization to promote political goals and profitability on the basis of rigid planning regulations. Not only a facilitator, the state directly shapes the outcomes of TDR. We therefore argue that the success of TDR programs does not merely depend on their design but also on the local political economy in which they operate.

China’s political economy of land: struggling for regulated state dominance

With regard to state dominance, China’s local political economy requires careful reading. It is hardly surprising that Chinese national and local governments have sought to learn from the prototypical TDR programs in the West to solve their own crisis—the threat of phenomenal urban expansion to China’s land basis for food security. Lichtenberg and Ding (2008) estimate that China lost over 14.5 million hectares of arable land from 1979 to 1995. Chien (2015) reports that the annual loss of arable land between 1999 and 2005 averaged 1.1 million hectares. This trend was accompanied by an increasingly rebellious rural society, upset at how local governments were continuously grabbing and leasing its land to finance urban development (Liu, 2017). These alarming situations have compelled the central state to restructure its land regime. The outcome

is encouraging: Liu *et al.* (2018) observed that the average annual loss of arable land between 2010 and 2015 fell remarkably, to 0.1 million hectares. Yet arable land protection remains an uphill battle, with sustained pressure for land development often coming from within the state.

China's land is not privately owned; rather, rural land is collectively owned. This means that a collective, on behalf of peasant households, might possess and use land, and benefit from ownership of the land. However, such collective ownership does not entail a full range of rights. Only a limited portion of rural land can be used for construction, and construction types are restricted to township and village enterprises, rural public facilities and housing sites of collective members. Moreover, land cannot be used for urban construction, including commercial housing and office developments. In most cases where rural land is designated for agriculture use, rural households are permitted to labor on and benefit from it, based on contracts with their collectives, but are not allowed to trade the land use rights. Urban land, by contrast, is owned by the state, and land use rights can be privatized and traded in the land market (Xu, 2018). Local governments dominate trade of urban land use rights between state and commercial users. The state thus becomes both the regulator of and a market player in China's land market. Specifically, as Lin (2009) argues, China's urban fortune is accumulated through a land-centered politics. Leasing of urban land use rights is a prime source of government revenue, while requisitioning rural land is a key solution for urban land shortage. As local officials' career prospects are determined by their superiors, these local officials are motivated to lease and develop more urban land to achieve local economic growth targets set by upper-level governments (Chien and Woodworth, 2018). Although this land regime contributes substantially to urban growth, it has led to problems such as uncontrolled land development, black-market land transactions, massive loss of arable land and land expropriation without adequate compensation (Cartier, 2002; Hsing, 2006; Lin, 2009).

To tackle these problems, the Chinese central government has refined its regulatory regime for consolidated land governance. Since the late 1990s, the central and provincial governments gradually recentralized authority over land expropriation and rural land conversion that had been devolved to local authorities a decade earlier (Xu and Yeh, 2009). This move was accompanied by two top-down land-related quantitative requirements. First, to restrain urban expansion, the central government initiated a quota system on the annual increase in urban construction land. The central government allocates an annual quota to each province for converting rural land to land for urban construction. Similarly, each provincial government allocates an annual rural-to-urban land conversion quota to regions under its jurisdiction. Through this quota system, the central government hopes to retain a minimum of 124.3 million hectares of arable land by 2020. Secondly, to ensure food security, the central government defined the minimum area of arable land that each jurisdiction must protect. In lieu of any arable land that is expropriated for urban construction, local governments are required to create the same amount and quality of arable land elsewhere in their jurisdictions. Governors whose provinces fail to meet this target are subject to central-level disciplinary action. Coercive as these two initiatives may seem, they have been ineffective in curbing rural land conversion (Shao *et al.*, 2018). Moreover, both policies have led to a regional imbalance in land supply—insufficient land use quotas in developed areas and unused quotas in less developed regions (Wang *et al.*, 2010).

China's major TDR programs: IDB and RCB

To allow more flexibility for economic growth under a restrictive land supply regime, the Ministry of Land and Resources (the central ministry overseeing land management, restructured into the Ministry of Natural Resources in 2018) has since the 1990s trialed two TDR programs: IDB and RCB. Re-embedded in China's sociopolitical contexts and property rights regime, these TDR programs do not mirror their Western

models. What IDB and RCB create are quasi-markets of development rights, through which the state seeks to reap the supposed land use efficiency gains of the free market without giving up its control on land resources. Besides setting up and enforcing rules, state actors are also directly involved in development rights transactions.

IDB relieves the shortage of urban land supply and promotes better use of vacant and fragmented rural construction land. An IDB program is implemented for redistributing development rights in a CLU with both urban and rural areas.¹ The size of these CLUs ranges from below a hundred to a few thousand square kilometers. IDB defines a unit's rural part as the sending area and its urban part as the receiving area. With official financial support, scattered, idle rural construction land is consolidated and rehabilitated into productive arable land, thus releasing development rights. Villagers giving up their homesteads receive compensation from local governments. Since relocation sites are commonly high-density to accommodate multiple households, these are far smaller than those on the rural construction land that the villagers relinquished, and excess development rights can be redeployed for urban expansion. County-level governments and their municipal superiors often play a leading role in transactions. Although villagers occupy and use rural land, they are not allowed to sell development rights to developers in the receiving urban areas directly. Instead, village collectives 'sell' the development rights to their county-level governments, which then lease these rights in the formal land market. Part of the money local governments earn from development right leasing can be spent on supporting some villagers with their relocation and raising the living standards of those who remain. Villagers have little power to defend their position—if the local government decides to relocate them, they usually have to accept.

RCB is the exchange of development rights on arable land across CLUs. As stated earlier in this article, each jurisdiction is required to preserve a specified area of arable land during a given planning period. As the economy grows and urban areas expand, many jurisdictions cannot meet their targets. Since the potential to prevent loss of arable land varies strongly between jurisdictions, the central government also allows the balancing of requisition and compensatory production of arable land at the larger scale of the province. In a typical RCB program, the sending area is a CLU that is rich in arable land, usually in a developing region, whereas the receiving area is a CLU that is short on arable land, mostly in developed regions. In return for financial compensation, the sending area preserves a certain area of arable land, or consolidates and creates new arable land, for the receiving area to meet its minimum arable land requirement. In so doing, the sending area effectively sells the development right of its arable land that is surplus to its preservation requirement to the receiving area, which can then expand its urban development. To some extent, this facilitates further growth of the developed areas but restricts growth of the developing areas. Whereas some local governments trade their development rights privately, others trade through an intermediary to match demand and supply.

This article is certainly not the first to examine the operation of TDR in the form of programs such as IDB and RCB in China. Earlier studies reveal that Chinese local states engage TDR programs primarily to achieve their urban expansion ambitions (Wang *et al.*, 2009; Chien, 2015), such that some of them degenerate TDR programs into vehicles for dispossessing rural households of their land (Zhang, 2018). This article builds on insights from these earlier studies to create a more nuanced understanding of how the state shapes China's TDR practices as a regulator and a player simultaneously. We draw specific attention to three aspects: the strategies pursued by local and provincial governments to align TDR programs with their desire for urban development; the

1 A CLU may take the form of a county (*xian*), a county-level city (*xianjishi*) or a city district (*shixiaqu*). In general, although the governments of all these CLUs are subordinate to their corresponding prefecture-level municipal governments, county governments and county-level city governments enjoy greater administrative autonomy. Note that highly urbanized city districts are often excluded from IDB programs, because they do not have rural areas.

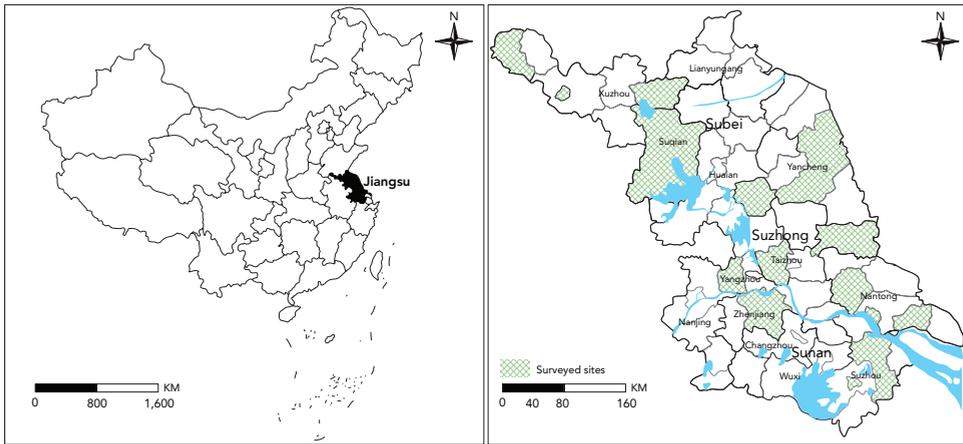


FIGURE 1 Location of Jiangsu Province (left) and surveyed county-level units (right) (map produced by Zinan Shao)

impact of TDR programs on farmers' livelihoods; and the effectiveness of TDR programs in reversing arable land loss at the wish of the central state. To investigate these three aspects, we now turn to the IDB and RCB programs implemented in the eastern Chinese province of Jiangsu (see Figure 1), a national pioneer of TDR implementation.

Methodology and data

Jiangsu Province is characterized by rapid urban growth and limited land resources. As China's fifth most populous province, it has a permanent population of 79.98 million, 67.7% of which are urbanized (Jiangsu Statistics Bureau, 2017). It is the country's second largest growth engine, yielding a per capita GDP of RMB 96,747 (NBSC, 2017). However, urban development represents only about 20% of the province's 107,217 square kilometer territory. The remainder is earmarked mainly for agriculture or ecological conservation. A shortage of land for construction has led to considerable constraints for socioeconomic expansion and put arable land under huge pressure. The Jiangsu government therefore pioneered China's introduction of TDR in the 1990s and thus offers a window for examining regional variation in TDR programs. Land resource availability and socioeconomic development differ considerably in Sunan, Suzhong and Subei, the three sub-regions that make up Jiangsu Province (see Figure 1). This sub-regional variation allows us to explore how the implementation of TDR varies according to local socioeconomic circumstances.

This article's findings on Jiangsu's experience with TDR stem from two linked research projects, both comprising a combination of reviews of pertinent government documents, reports and statistics of 2017 and intensive fieldwork. The first project gauges the implications of the IDB program. During 2013 and 2014, we conducted questionnaire surveys with villagers, and semi-structured interviews with officials, in seven prefecture-level cities: Suzhou and Zhenjiang in the more developed Sunan region, Yangzhou and Nantong in the ascending Suzhong region, and Xuzhou, Yancheng and Suqian in the less developed Subei region. These cities were chosen to represent cities from across Jiangsu's economic development spectrum and related land use transformations (see Table 1). In each of these cities, three towns from three CLUs were selected.² Within each town, 15 villagers each were randomly identified from two

² Table 1 reports only on the findings of two CLUs in Yangzhou, because our collaborators in the third surveyed CLU withdrew from the study after the completion of data collection.

TABLE 1 Implementation of IDB program in Jiangsu (2008-2013)

Prefecture-level city (region)	Reason for inclusion in the survey	County-level unit	No. of sub-programs	Arable land gains (<i>mu</i>)	Development rights added to urban areas (<i>mu</i>)	Transfer ratio
Suzhou (Sunan)	Best GDP performer	K	61	4,985	4,985	1:1
		C	349	8,627	8,627	1:1
		W	73	8,633	5,824	1.5:1
Zhenjiang (Sunan)	Good GDP performer; local state piloted a large-scale farmland consolidation project	Y	44	3,430	3,430	1:1
		T	22	1,871	1,871	1:1
		Z	3	1,339	1,339	1:1
Yangzhou (Suzhong)	Moderate GDP performer; development influenced by strong neighbor (Nanjing)	Y	172	6,469	6,469	1:1
		B	192	6,531	6,531	1:1
Nantong (Suzhong)	Moderate GDP performer; development influenced by strong neighbor (Shanghai)	H	386	4,530	4,530	1:1
		G	17	7,681	7,681	1:1
		R	564	14,103	10,830	1.3:1
Xuzhou (Subei)	Subei's economic primate; poor GDP performer	T	27	1,143	1,143	1:1
		F	55	3,450	3,450	1:1
		X	69	6,193	5,432	1.1:1
Yancheng (Subei)	Poor GDP performer	Y	168	4,624	1,844	2.5:1
		S	464	9,179	5,170	1.8:1
		T	311	7,431	4,200	1.8:1
Suqian (Subei)	Worst GDP performer	S	174	7,113	7,113	1:1
		Y	107	6,571	6,020	1.1:1
		B	295	30,726	12,628	2.4:1
Total (overall for transfer ratio)			3,553	144,629	109,117	1.3:1

NOTE: Comments on each city's GDP performance are based on per capita GDP ranking in Jiangsu

SOURCE: Compiled from data acquired during interviews with local officials

villages. The sampling of these base-level units likewise intended to maximize coverage of the varied contexts, practices and outcomes of IDB. For example, in a given town, two villages with considerable contrasts in terms of aspects such as average income level or quantity of development rights transferred would be preferred over those with similar attributes. Within this sampling framework, we collected 966 valid questionnaires from villagers and conducted 121 face-to-face interviews with officials at the county, town and village level. The questions we raised with respondents covered various aspects of the IDB program, including villagers' participation, compensation, resettlement, livelihood changes, as well as land development rights transferred and the effects thereof on local arable land protection.

In the second project, undertaken in 2015, we assessed the implications of the RCB program. For a province-wide picture of how the interlocal TDR program had worked, we conducted 25 semi-structured interviews with national and Jiangsu provincial and municipal land management officials, as well as with planners and researchers who were familiar with the implementation of the program. This part of the project was followed up with a questionnaire survey of 80 officials in municipal and county-level land management authorities in three cities: Nanjing, Jiangsu's largest buyer of development rights through RCB; Changzhou, a city with medium-level demand for development rights from RCB, for which data were readily available; and Suqian, one of Jiangsu's most important sending areas for RCB owing to its abundance of arable land. The survey solicited opinions about the necessity of RCB and details on the program's implications for arable land development.

IDB: robbing Peter to pay Paul

In Jiangsu, land value capture lies at the heart of many IDB programs. Local governments often attempt to achieve rural-to-urban transfer of development rights within their jurisdictions through IDB, which did not always facilitate arable land protection and in some cases disrupted villagers' livelihood significantly.

– Active transaction under local state discretion

IDB has been widely and eagerly practiced in Jiangsu because local governments are incentivized in two ways to consolidate rural construction land in exchange for more development rights on urban land. First, as stated before, local governments rely on urban land leasing for fiscal income and development rights for urban development. Secondly, since compliance with the land use quota has recently become a key performance indicator for the promotion of local officials (Chien and Woodworth, 2018), it has become increasingly difficult for local officials to lease more land by simply ignoring the quota. Instead, local officials rely on IDB to help them redeploy restricted development rights to sites that yield greater fiscal and economic benefits. In most of the CLUs we surveyed, the transfer ratio for IDB programs was 1:1, meaning that all development rights that had been freed up in the sending area through land consolidation had been transferred to the receiving area (see Table 1). In a few cases, the transfer ratio was larger than 1:1, meaning that some development rights freed up in the sending area had not yet been transferred. This happens when a part of these rights is used for resettlement in sending areas, or when such rights cannot be transferred immediately owing to the limits of a jurisdiction's annual quota for rural-to-urban land conversion.

The ratios above are based on official data. However, as several survey participants suggested, some local governments deliberately reported a 1:1 transfer ratio despite not transferring all the development rights it had released from rural areas (interviews with officials of land and resources bureaus or LRBs, in Nanjing, Suqian and Changzhou, April 2018). They did so to avoid leaving the impression that they could create more arable land via land consolidation above the amount they needed to free up to attain sufficient development rights for urban development. They feared that, if the higher-level government considered them to be rich in arable land, it would impose more arable land protection obligations on them and even designate them as sending areas under RCB. While this manipulative reporting reaffirms the local governments' priority of maintaining its urban land-based growth model, the excess development rights that were concealed in this way signal that some governments were seeking to stock up on development rights in anticipation of increasing costs of rural land consolidation over time.

– Arable land protection in sending areas: organized action and externalized risks

Besides meeting urban development needs, IDB programs are meant to preserve arable land. In Jiangsu Province, progress has been made towards achieving this goal in quantitative terms. IDB allows rural communities to draw up rehabilitation plans to consolidate the otherwise fragmented rural construction land. This has effectively impeded construction of new rural residential buildings that encroach on arable land. In a village official's words (interview, Zhenjiang, January 2014), 'consolidation of arable land, investment in agricultural infrastructure, and demolition of idle factories and residences on rural construction land have improved local farming conditions and enlarged arable land areas'. His remarks were echoed by over two thirds of the officials we surveyed. Specifically, one official (interview, Yangzhou, February 2014) cited the significance of income generated through IDB programs in helping village collectives upgrade their agricultural sector:

The IDB-induced land consolidation allows leveling of land, improving and fertilizing soil, and building new agricultural infrastructure such as access roads and drainage systems. It also enables the transfer of small pieces of arable land to cooperatives and enterprises that specialize in large-scale farming. This increases the scale of agricultural production, which is beneficial for the intensification and utilization of land and the modernization of agriculture.

However, qualitatively speaking, this form of large-scale farming may defy the ultimate goal of arable land protection for food security. For one thing, farmers receive money from arable land rent and can shift from farming to jobs in factories or the service sector for extra income. They do not have any economic motivation to farm on the consolidated arable land. For another, when arable land is rented to farming enterprises or cooperatives, these new contractors tend to plant fruit, flowers or other high-value-added plants compared to staple crops such as rice and wheat, which reduces yield in terms of calories and constitutes a threat to food production.

Moreover, our surveys show that not all programs produce more high-quality arable land. In certain cases, the consolidated arable land in the sending areas was infertile or had less organic matter in the soil than the arable land sacrificed for urban construction in the receiving areas. To remedy such deviations, local governments mobilized farmers in sending areas to improve arable land quality through state-mandated land contracts. Infertile land for which development rights had already been transferred was assigned to individual farmers for a period of five years. This was the case in a Nantong village (interview, village leader in Nantong, March 2014). The rights and duties of farmers who were contracted to improve the quality of the new arable land were specified by the local government in a contract. Villagers were enrolled to support a context-specific ‘framework of action’ of TDR in China: local governments reaped benefits from IDB, but strategically externalized many socioeconomic risks to individual residents.

– Villagers’ living conditions in sending areas: heterogeneous social impacts

The mobilization of individual rural households to improve the quality of new arable land is but one example of the high social cost of IDB in practice in the sending areas. Another example is the impact of IDB on villagers’ livelihoods. Without any institutionalized national or provincial standard for valuation of houses to be demolished, local governments enjoyed considerable discretion regarding compensation allocated to relocated villagers. Compensation often varied based on local economic and fiscal conditions. In Suzhou, the economically strongest city in Jiangsu Province, the average cost of creating additional arable land via IDB in County K was RMB 143,000/mu. This high cost reflects that affected villagers received substantial compensation. One villager from Suzhou (interview, March 2014) told us that his compensation consisted of a total housing area of 130 square meters and RMB 234,000. Relocated villages were rebuilt with new public infrastructure, including concrete roads, sewage systems, hospitals and schools. Given these local farmers’ substantial gains, most welcomed the IDB program.

Although 60.3% of the surveyed villagers shared the view of these villagers that IDB improved their living environment (see Table 2), we found that relocated villagers in less developed sending areas were inadequately compensated. In Suqian’s County S and Yancheng’s County Y, the cost of additional arable land was only RMB 68,000/mu and RMB 60,000/mu, respectively. The reason for the low payment was because local governments suppressed compensation to villagers to alleviate fiscal pressure on themselves. In County S, villagers were paid as little as RMB 20,000/mu (interviews, March 2014). Several interviewees lamented that they had had to withdraw years of savings or borrow from relatives to buy their new houses. Since a regulatory vacuum

TABLE 2 Descriptive statistics of the survey on Jiangsu's IDB program (n = 966)

Questions	Answers	%
Are you satisfied with your relocation?	Yes	44.41
	No	10.14
	Prefer not to say	45.45
What is/are the most important change(s) the TDR program has brought about? (Multiple options possible)	Improvement in living conditions	60.25
	Incompatibility with new lifestyle	7.04
	Increase in living costs	25.47
	Protection of arable land	33.02
	Improvement in agricultural mechanization	31.88
	Inconvenience to agricultural production	3.93
	Reduction of urban-rural gap in living conditions	7.66
	Promotion of large-scale agricultural production	32.30
	Others	0.52
	Prefer not to say	1.76
Did you express your opinion during the process of rural land consolidation?	Yes	14.91
	No	76.71
	Prefer not to say	8.38
Who was in charge of the rural land consolidation process?	The government	48.65
	The villagers	16.98
	The government and villagers together	33.23
	Others	1.14

SOURCE: Compiled from data acquired during survey of villagers

allows local governments to arbitrate the redistribution process, villagers are often forced to accept whatever compensation they were offered.

Another social cost relates to the profound reordering of people's rural lifestyles (see Table 2). Altogether 10.1% of surveyed villagers expressed dissatisfaction with their resettlement into primarily mid-rise or high-rise buildings in terms of IDB programs. Many villagers in the sending areas farmed for a living and, as one of them explained, 'It is really not easy to store agricultural tools, dry crops and agricultural machinery upstairs' (interview, Xuzhou, March 2014). Consequently, despite being knowledgeable about and skillful at raising poultry or growing vegetables, some villagers relinquished their courtyard economy and had to subject themselves to the stress of finding a job. Furthermore, 25.5% of respondents indicated that their cost of living had increased after relocation, for example, because they now had to buy vegetables and poultry, while they had been self-sufficient in this regard before.

– Villagers' participation in sending areas: ignored voices and forced relocation

We found that IDB programs were strongly driven and implemented by the local governments. They were imposed on the villagers, by forcing them to sell their development rights or their property entirely. Although local governments introduced various communication channels to steer programs into a direction favored by the villagers, such as villagers' representation meetings and face-to-face meetings, only 14.9% of the respondents to our questionnaires believed they were able to voice their opinions at such meetings. Only 17.0% of interviewees agreed that they had a say in consolidation processes, while 48.7% of interviewees argued that the IDB programs were entirely imposed upon them by their governments (see Table 2). In fact, our fieldwork investigations revealed that some villages had been demolished completely, and that farmers had been forced to move to apartment buildings against their will.

RCB: 'free love' is no better than an 'arranged marriage'

In contrast to the local autonomy granted to governments in terms of IDB programs, the implementation of RCB programs in Jiangsu entailed substantial intervention from the provincial government to both stimulate and mediate interlocal TDR. As the governments of developed areas paid increasingly higher prices for their compensatory arable land, attempts have emerged in the developing areas to create poor-quality arable land for the sake of trading it through RCB programs.

- The quasi-TDR bank: a state institution to regulate development rights transactions

As discussed in the previous section, each jurisdiction is required to preserve a certain area of arable land over a specified planning period. Although a state can compensate for the area of arable land that is given up to urban expansion via IDB, costs of rural demolition and relocation of villagers climb all the time. Moreover, the quality of newly gained arable land declined and governments could no longer meet the quality requirements of the requisition–compensation balance, especially in developed areas with limited arable land. Therefore, governments have begun paying attention to RCB.

Prior to 2000, RCB was implemented in Jiangsu in a fragmented manner. Local governments transacted with each other directly. Interpersonal relationships between local officials played an important role in transactions among CLUs because prices and areas of transferred development rights were usually negotiated between sellers and buyers. A Changzhou LRB official (interview, December 2015) recalls this pre-2000 practice, indicating that his county and another 'have a good relationship with each other, so the leaders from the arable land protection department [of the two counties] just get together and negotiate the amount and price. It is relatively easy to get development rights'. Another LRB official in Nanjing (interview, March 2015) indicated that 'sometimes, if the sending area doesn't agree to sell, county leaders will negotiate with each other, and in the end, it will be successful'. To regulate these individualized transactions, the Jiangsu government created a provincial TDR platform in 2014 and prohibited direct deals among local governments.

It is not unusual for governments to establish institutions to guide and facilitate TDR deals. In the West, such institutions often take the form of a TDR bank, which acts as a clearing house to balance demand and supply of development rights, stabilize the market and reduce transaction costs (Janssen-Jansen, 2008). While a fully fledged TDR bank buys or sells development rights directly, Jiangsu's TDR platform serves a narrower purpose: that of providing information on the demand and supply of development rights. Given the tightening of quotas for land development by the central government, some local officials from potential sending areas expected development rights to become even more valuable in future. They therefore preferred to retain development rights for longer to be able to profit more from TDR in future, to support local development needs—a move that would boost officials' careers (Wang *et al.*, 2010).

This speculative behavior resulted in an insufficient supply of development rights and thus a small TDR market, which led to another round of provincial interventions in 2014, consisting of three measures. First, to combat land hoarding, the Jiangsu government required potential sending areas to supply development rights through the provincial TDR platform. Secondly, it set the base bidding price and allowed buyers to bid only once. This prompted buyers to place higher bids to acquire these development rights, increasing both the level and volatility of the transaction price. According to data from Jiangsu's TDR platform, following the new policy's implementation, the average price of development rights transacted through this platform jumped almost six-fold from RMB 54,844/mu in March 2014 to RMB 319,064/mu in November 2017. Thirdly, the Jiangsu government strategically favored the economically better-off regions in the buying process for development rights (see Table 3). Because economic growth

TABLE 3 Development rights acquired by Jiangsu cities through the provincial TDR platform for the RCB program (unit: *mu*)

Prefecture-level city	2014		2015		2016					2017	
	1st round	2nd round	2nd round	1st round	2nd round	3rd round	4th round	5th round	1st round	2nd round	
Nanjing	201	6,475	3,600	589	8,317	1,873	150	1,774	1,809	2,452	
Wuxi	3,641	-	1,500	2,925	-	-	414	3,221	53	1,652	
Suzhou	101	851	2,500	2,301	31	841	526	1,813	158	-	
Zhenjiang	-	1,298	-	320	-	-	-	750	1,915	693	
Changzhou	-	576	-	-	-	2,287	-	-	1,792	-	
Taizhou	2,975	800	2,400	421	-	-	1,803	297	-	293	
Nantong	-	-	-	3,444	1,652	-	1,106	1,000	4,272	410	
Xuzhou	300	-	-	-	-	-	-	-	-	-	
Yancheng	515	-	-	-	-	-	-	-	-	-	

NOTE: Data for 1st round in 2015 not available

SOURCE: Compiled from the Jiangsu provincial TDR platform website (TDR, nd)

remained a priority, the provincial government wanted to ensure that the regions that were leading the provincial economy would maintain their growth trajectories despite their obligations to ensure arable land preservation. Developing areas are theoretically allowed to participate in transactions, but their names are seldom found as buyers in transaction records. In fact, although developing areas are allowed to purchase development rights, they are simply too poor to place bids that are high enough to compete with the bids submitted by the developed areas, particularly since the price of development rights increased dramatically following the new provincial interventions. These observations alert us that the state is participating in development rights transactions as an arbitrator of ‘the market’, as an instrument of policy initiative and implementation, and a vital means to shape the identity and trajectory of TDR programs.

– Arable land protection in sending areas: capital gain trumps nature

The primary policy goal of RCB is similar to that of IDB: to preserve arable land—as 68.8% of our survey respondents acknowledged. A Changzhou LRB official (interview, August 2015) commented that, ‘on the whole, RCB alleviates the imbalance in resource distribution, keeps the preservation of arable land in a dynamic balance at the provincial level, and supplies development rights for receiving areas to invest in their local economy and promote urbanization’. Similar observations were shared by other officials. In the words of a district LRB official (interview, Nanjing, October 2015), ‘the transfer can highlight the value of development rights, which not only boosts efficient land use, but also improves enthusiasm about land consolidation’. An official from the Nanjing land bureau stressed that ‘our government cannot achieve a dynamic balance of arable land prescribed by the upper-level government without the RCB program’ (interview, Nanjing, May 2015). We also found that RCB programs helped receiving areas reduce the costs of economic development by resolving the bottleneck of limited land resources. An expert (interview, Nanjing Agricultural University professor, November 2015) reflected on RCB practice by arguing that ‘it can efficiently allocate population, industry, employment and land, and improve land use efficiency’. It is clear that governments in the receiving areas value the capacity of RCB to help them achieve economic expansion at low cost by overcoming construction land shortages.

Although RCB programs in general have allowed the national government to achieve its goal of protecting arable land effectively, they do have negative effects. There

are indications that the quality of the: additional arable land is worse than predicted, as has been the case in some IDB programs. For example, an official in the Jiangsu Commission of Land and Resources (interview, August 2015) suggested that ‘in a few programs, the quality of newly gained arable land is worse than the quality of existing land. Sometimes, even coastal wetlands, lakes, forests and gardens were consolidated into arable land, which obviously damaged the ecology and overall environment and disobeyed TDR principles’. While a land parcel may have been well cultivated at the time of approval of the transaction, there was no guarantee that this would subsequently still be the case. An official from the Jiangsu Institute of Land Surveying and Planning (interview, October 2015) noted that ‘in some programs, the newly added arable land is checked and accepted, and then converted to other purposes, such as a forest or a garden plot’ after the transfer has been agreed. These deviations seem to suggest that the governments of the sending sites may take advantage of RCB programs to create new ways to recapture the added value of the land while subordinating the original goal of preserving farmland and ecological properties to quick capital gain. The requisition–compensation balance is not truly achieved.

Conclusion

This article contributes to the growing debate on the use of market-based instruments in land use regulation. Our point of departure in this article is the study of state–market relationships and how these shape the effects of TDR programs. In the traditional economics literature, TDR has often been associated with a pro-market political environment and its effects are determined by market logic, leaving little room for strategic intervention by and long-term visions of the state. The state merely plays an enabling role to facilitate market operations. This line of arguments seems to assume, as many authors have concurred, that strong state intervention prevents TDR from producing positive results. Such readings offer one scholarly interpretation of how and why certain TDR programs have succeeded or failed. Nonetheless, a growing number of studies suggest that TDR might be used as a political strategy to restructure state sociospatial organization to promote political goals and profitability in the context of rigid planning regulation. The outcomes of TDR depend on the local political economy.

We add to this growing literature on the politicized nature of TDR by arguing that the trajectory of TDR in China is strongly shaped by the state, which acts as both regulator and player in this mechanism. This double role has crucial implications, because the state owns the land *and* defines the rules of transactions. Any decision in the ‘quasi-market’ of TDR is likely to be initiated by the state, and the implementation thereof can be a very complicated social engineering project. The processes involved—such as village relocation, consolidation of rural construction land and rehabilitation of arable land—require the input of the local state. Re-regulating speculative behaviors of local governments to avoid policy distortion demands the involvement of the central government and hierarchical state structures for enforcement. Governments at various levels can mobilize political and social resources that are unavailable to other actors to develop, implement and regulate TDR programs.

Our study in Jiangsu of two types of Chinese TDR programs, IDB and RCB, yields three sets of conclusions that support this line of argument. First, as pressure on officials to boost local economic growth for their political career collides with a restrictive, quota-based regime of development rights, local governments in China increasingly use TDR to recapture the economic value of land resources. This approach is characterized by the strong desire of the governments of the receiving areas of TDR programs to promote lucrative urban land development, and the aspiration of the sending areas’ governments to secure more income and upgrade their agricultural sector by hoarding valuable development rights, thus creating a commodity shortage.

In this sense, China's TDR practices are similar to their Western counterparts, as both depend structurally on the real-estate market. These practices are characterized by the respective governments' eagerness to maximize and capture the value of the restricted development rights in circulation, which determines where and how many development rights are reallocated. What differentiates the Chinese case is that it is the heavy-handed state, and not the private sector, which captures the value. Another difference is that TDR programs in China mostly supply development rights for urban expansion, rather than adding density to land that has already opened up. TDR thus merely leads to spatial displacement of the threat of arable land encroachment. This problem is compounded by doubts as to whether IDB can truly help ensure food production, as it creates less fertile arable land and encourages farmers to grow high-value-added plants.

Secondly, state-orchestrated TDR programs have been implemented at high social costs. While landowners voluntarily participate in TDR in the West, China's TDR programs often involve local governments forcing holders of development rights to give up their land rights. This is possible because in China, land is publicly owned and governments have the institutionalized power to expropriate it. The consequence is that in rural areas designated as sending sites, villagers are sometimes removed from their homes against their will to make way for rural land consolidation. Some are uprooted from their agricultural livelihoods, either because their new, densified settlements do not allow them to farm, or because village collectives lease the consolidated farmland to larger enterprises. These farmers have a hard time adjusting to resettlement and find it hard to secure new means of subsistence. Thus, they are resentful of TDR. Such social cost is one reason why local residents are strongly opposed to some TDR programs. This opposition has led to protests and social unrest. Villagers are not benefiting from the growing demand for development rights to land that is in their hands; rather, TDR is rendering their life more precarious, owing to local governments' development ambitions.

Finally, managing the effects—positive and negative—of China's TDR programs requires not only the introduction of additional market institutions, as some authors have suggested (see Tian *et al.*, 2017), but also initiatives from the state. Our findings in Jiangsu lend further support to the emerging argument that the marketization of various resources—of which land is a prominent example—in post-reform China is not so much about paving the way for a market economy. Instead, it is about leveraging the market to compensate for allocation deficits in a command-and-control regime. Marketization therefore contributes to the consolidation of state authority (Wu, 2018; Yeh *et al.*, 2015). Given the current context of state-controlled TDR, we concur with other scholars (see, for example, Wu *et al.*, 2007; Xu, 2018) that it is an oversimplification to view China's TDR as an ill-developed market and thus call for the clarification of property rights and the introduction of market players. Rather, we believe that the root of TDR's deficits lies in the Chinese state becoming both a market regulator and an actor, so that, in terms of TDR, property rights for urban and rural land have been dramatically commodified without due regulatory constraint. As an end to state-sanctioned growth priorities is nowhere in sight, TDR is likely to remain popular with local governments for making the most out of their development rights. A robust mechanism of checks and balances for stakeholders is therefore much needed to maintain the aim of TDR programs: to ensure arable land protection and, equally importantly, to prevent coercive applications from exacerbating inequalities. As the Chinese state started trialing TDR at a wider, inter-provincial scale in 2017, more research is needed to chart the deepening implications of TDR for China's land politics and, importantly, to further inform research on the changing state-market relationship as embodied by TDR as a global yet deeply contextualized practice of land use management.

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