2018 DESCRIPTIVE CASE STUDY

"Floating TDR" and Land Value Capture in Taiwan

Designing a More Effective Land-Finance Tool

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TOPIC

Land Value Capture

SUBTOPICS

Transfer of Development Rights, Financing of Public Facilities, Planning

TIMEFRAME

2000–2018

LEARNING GOALS

- Understand the design, global application, and local adaption of TDR.
- Understand the concept and mechanisms of land value capture.
- Evaluate the effectiveness of TDR as a land finance tool.
- Evaluate the role of urban planning from financial, political, and social perspectives.
- Become familiar with mixed research methods—statistical modeling, geographic information system mapping technology (GIS), and fieldwork research—in analyzing land issues and designing planning solutions.
- Compare and contrast international planning knowledge.

PRIMARY AUDIENCE

This case study is written for an audience of urban planning educators, practitioners, students, and policymakers, especially those interested in land- and public-finance issues in comparative and international contexts.

PREREQUISITE KNOWLEDGE

No prerequisite knowledge is required

SUMMARY

This case study tells an analytical story of Taiwan's "floating" transfer of development rights (TDR) through the lens of land-based finance. We call the Taiwanese TDR model "floating" because it does not legally require planning designation for the areas where TDR density bonus can be used and gives developers a large degree of legal freedom to build TDR projects almost anywhere in the city. This enhanced market flexibility has made TDR extremely popular in Taiwan, even though planners have no control over where such projects take place. The case study introduces the reserved land issue (baoliudi) that gave rise to Taiwan's floating TDR, examines its ineffective mechanism of land value capture, analyzes the impacts on housing prices and community environments, and discusses two possible solutions for reforming floating TDR (a points-based system and a market-based system) and their political feasibilities. The goal is to highlight the difficult but central role of planning in ensuring that market-enabling tools such as TDR serve the public interest.

Fields and city view on a sunny day in Taipei. Source: stockinasia/iStock/Getty Images

DEFINITION OF THE PROBLEM

On October 17, 1987, a headline in a major newspaper in Taiwan read:

> "Budget running dry, time running out
> Acquisition of public-facility reserved land is difficult
> Expropriation by the deadline is impossible"[1]

This issue of reserved land (baoliudi) is one of the most lasting challenges to urban planning in Taiwan since planners first encountered the issue in the 1970s. As a legal term, "reserved land" refers to land zoned for public facilities such as roads and parks and stripped of development potential, but whose private landowners have yet to receive full compensation due to governmental budgetary deficits. A 1988 estimate showed Taiwan had nearly 41,000 hectares of reserved land in total, with a compensatory cost almost double that of all Taiwanese governmental budgets combined.[2]

A full-blown crisis loomed large in the mid 1980s because Taiwan's Urban Planning Law mandated that, if municipal governments were not able to compensate the affected landowners by September 5, 1988, reserved lands would be legally released from restrictive zoning and regain their full developmental potential.[3] To defuse this situation, the Legislative Yuan amended the Urban Planning Law in 1988.[4] Since then, Taiwan has had no legally required timetline for municipal governments to compensate owners of reserved lands. Without that legal pressure, those owners increasingly demanded a policy response, generating a roaring grassroots discontent to which the rapidly democratizing Taiwanese government could not turn a deaf ear.

[1] *Untited Daily News* 聯合報 1987, "Yaoqian caiyuan buzu, yaokuai shijian bugou要錢財源不足，要快時間不⊠" [Budget running dry, time running out], October 17, A7.

[2] *Legislative Yuan* 立法院, 1988, *Gonggong sheshi baoliudi* 公共設施保留地 [Land Reserved for the Public Facility]. Taipei, Legislative Yuan. Pages 38, 138.

[3] Article 50 of the Urban Planning Law promulgated in 1973.

[4] The highest legislative body of the Taiwanese government.

Landscape View of Guandu Plain, Taipei, Taiwan.
Source: yaophotograph/iStock/Getty Images

In search of a market-based solution, Taiwanese planners turned to and modified the Transfer of Development Rights (TDR) mechanism that was developed and used in the United States. The operational design of TDR monetizes the development rights of private landownership (based upon floor area) in areas under restrictive regulations ("sending sites") and allows these rights to be realized in (i.e., transferred to) growth-desired areas (" receiving sites") (Costonis 1974). By retaining the operational essence of transferable development rights, Taiwanese planners have attempted to leverage the private real-estate market to finance public compensation for the reserved land. In practical terms, Taiwanese TDR rewards property developers with extra density if they purchase reserved-land parcels and donate them to the municipal government. In the American TDR practice, designating a receiving site falls within the purview of intense planning and can generate opposition in the surrounding community, due to worries of rising housing costs, visual impact, and traffic congestion (Levinson 1997; Too, 1999). To ensure TDR projects promote urban growth while maintaining a compact city, planners in New York City specify the districts, areas, and land lots that are eligible to receive additional density (Been and Infranca 2012).

To further enhance TDR's market flexibility, the Taiwanese TDR model—"floating TDR"—deviates from this design by not requiring planning-designated receiving sites and by giving developers a large degree of legal freedom to build TDR projects almost anywhere in the city. These enhancements have made floating TDR extremely popular in real-estate development in Taiwan. As table 1 shows, 3,764 development projects have utilized TDR since the early 2000s, generating 807 hectares of floor area in excess of existing density limits—roughly equivalent to adding 100,875 new, market-rate apartments to Taiwan's housing stock.[5] Taiwanese TDR has thus proven an institutionally creative, market-savvy, and politically effective innovation; however, its floating form, also means that planners have little control over where its employment occurs in the city. Building on analyses of Sanchong District in New Taipei City, which has the largest amount of reserved land, this case study examines three issues associated with Taiwan's floating TDR:

[5] Based on the average apartment size of 80 m^2 in Taiwan.

1. TDR is an ineffective tool of land value capture for the municipal government. As practiced on the ground, floating TDR involves a circular dynamic among several social actors, each of whom captures a different value in the process. As figure 1 shows, informed and savvy local brokers buy reserved land parcels from individual landowners through negotiation, usually at low prices. Land ownership changes hands again between the broker and the property developer, who then donates the reserved land to the government in exchange for higher building density privileges. Both brokers and property developers capture a value gap: the former by cashing in on the buying and selling of reserved land and the latter by profiting from the price difference between the market value of land development and the money paid to the broker. The landowner receives a payment for the parcel deprived of development potential (i.e., the reserved land) because of restrictive zoning. The government, however, captures *no* monetary value while instead enabling a market-based solution that reduces sociopolitical discontent on the long-term reserved land issue.

Many planners thus believe that floating TDR's circular mechanism has left much of the land value created by urban growth uncaptured by the municipal government. For example, a 2013 investigative report published by the Control Yuan of the Central Government argues that the distribution of profits produced by TDR trading in Taiwan is heavily skewed toward private real-estate developers.[6]

2. TDR results in insufficient engagement with local communities. High-density, luxurious TDR projects towering next to old low-rise neighborhoods has become an easily observed phenomenon in the city (figure 3), another outcome of not legally designating receiving sites. Planners, local communities, and NGOs have expressed concerns over issues of public safety and carrying capacity of public facilities in such areas, including high-density buildings fronting narrow streets, road access for fire trucks, and traffic congestion. Floating TDR in its current form and practice has yet to engage with local communities to address these issues and concerns.

3. TDR is a land-frontier seeker and housing-price driver. Without planning designation, the location of a TDR receiving site is primarily determined by the developer's market decisions, raising questions of how floating TDR impacts urban spatial patterns and housing markets. Figure 2 shows that TDR development projects are highly concentrated in a specific area of the Fugui Block neighborhood on the fringe of Sanchong District. This pattern contrasts sharply with the randomly scattering of sending sites and existing reserved-land parcels in the older, built-up neighborhoods (Shih and Chang 2016). While Fugui Block today boasts luxurious, high-rise residential developments, it was an area dotted with small-scale farms, manufacturing factories, and warehouses in the 1990s. This suggests that floating TDR seeks what Neil Smith calls a "rent gap," expanding the frontier of real-estate development into urban outskirts (1996).

[6] The highest supervisory agency of the Taiwanese government.

[7] Based on an exchange rate of one US dollar to 30 NTD.

Further analysis also shows that TDR has a spillover effect on driving up the sale prices of existing residential apartments nearby (Shih et al. 2017). An ordinary least squares (OLS) regression model suggests that the presence of a TDR-utilizing development project within a 150-meter radius is associated on average with an increase of 133,000 NTD (roughly 4,400 USD) in total sale price of an apartment.[7] A quantile regression model further shows that increased housing costs disproportionally burden the poorest families: Price increases account for 29 percent of annual disposable income in the bottom 20 percent of households, compared to only 11 percent for those in the top 80 percent. This suggests that TDR can potentially exacerbate affordable housing in Taiwan. This case study focuses on improving the land value capture mechanism in Taiwan's TDR model.

POSSIBLE STRATEGIES AND SOLUTIONS

Municipal governments have two basic options for reforming floating TDR: a points-based system and a market-based system. The former focuses on the physical conditions of a TDR receiving site to determine the actual amount of additional floor area for which a developer is *eligible*. The latter uses real-estate appraisal methods to assess the market value of the additional floor area that a developer *wishes* to receive. In other words, the points-based system addresses floating TDR's impact on urban environment (i.e., the second issue) while the market-based system addresses the ineffectiveness of the value capture mechanism (i.e., the first issue).

The New Taipei City Government pioneered the points-based system beginning in 2017.[8] Three major criteria now determine the number of points a TDR development project receives:

- Width of the road fronted by the site;
- Physical characteristics of the site; and,
- Existing plans for reducing development impacts such as traffic congestion and parking demand.

Twelve sub-criteria further allow for detailed considerations, such as:

- Twenty points for a site fronted by a road wider than 20 meters;
- Two points if a mass transit station is within 300 meters of the site;
- Up to eight points if an open space for public use is present on site; or,
- Two points if the developer provides and maintains a pedestrian path.

A higher number of points suggests a site has greater physical capacity, which then makes it eligible for a greater additional density.

[8] For a detailed documentation of the points-based system for TDR cases in New Taipei City, please see New Taipei City 2018, Xinbeishizhengfu banli dushi jihua rongji yizhuan shenqing yiru rongji liangti pingding yuanze 新北市政府辦理都市計⊠容積移轉申請移入容積量體評定原則 [New Taipei City Evaluation Guidelines for Applying for Transferred Development Rights in Urban Planning]. New Taipei City: The New Taipei City Government Law Database. http://web.law.ntpc.gov.tw/Scripts/Query4A.asp?FullDoc=all&Fcode=C0150118.

The market-based system has been proposed and promoted by planners, scholars, and NGOs but has yet to be adopted in Taiwan. In this design, planning is central to the harnessing and balancing of market forces for public interests. Planners deal with private developers and individual owners of reserved land directly, and the government grants developers extra floor area, the value of which is determined by market-value assessment—not negotiation. The government in turn utilizes developers' payments to compensate owners of reserved land, particularly prioritizing areas lacking public facilities. In other words, the channels for negotiation and trading among brokers, developers, and owners of reserved land under floating TDR are closed off and entirely mediated by the government in this model. Figure 4 illustrates how the market-based system works.

SOLUTION AND IMPLEMENTATION

The implementation of the points-based system in New Taipei City is an outcome of two major factors. First, local urban planners have long engaged in efforts to reform floating TDR, remaining persistent even in the face of the powerful property coalitions that have historically influenced local political dynamics and, at times, urban policies (Chen 1995). Second, in recent years, the impact of floating TDR on local communities has come to the forefront of public discussion. For example, the development pattern "narrow lane, towering building," or *zaixiang gaolou*, described by our interviewees, has sparked concern from NGOs, planners, and local communities regarding public safety, traffic congestion, burdens on existing public facilities, and the fairness of how and by whom these impacts are shouldered.

RESULT

It is too early to tell the results of the points-based system; as of this writing, it has been less than a year since the new system was first implemented in July 2017. Based on our interviews with planners of New Taipei City, however, planners expected to see a TDR model that successfully differentiates among the density bonuses of various TDR projects based on sites' physical conditions, that reduces negative impacts on local communities, and that spurs more developers investment in community-oriented facilities.

ANALYSIS AND EVALUATION

The strength of the points-based system comes from its use of measurable and environmentally sensitive criteria to evaluate all TDR development projects, which helps reconcile property coalitions' opposition. While the floating form of TDR has remained unchanged because planning designation of receiving sites remains absent, planners now do have some control over the volume of density bonus. The weakness of the points-based system, however, clearly lies in its disinterest in changing floating TDR's inherently ineffective mechanism of land value capture. While New Taipei City planners can control how much additional floor area to grant to developers, reducing impact and safeguarding the community, they still cannot require developers to pay full market value for the density bonus. This shortcoming comes from the property coalitions' economic and political power and from the fact that the municipal government still relies on the real-estate market to compensate owners of reserved land.

A market-based design for Taiwanese TDR would bring about a more effective land-finance tool, as explained in the "Possible Strategies and Solutions" section. There is, however, a great political obstacle to such a reform, as observed in the experience of Taipei City, the capital city of Taiwan, which sheds light on the intricate, entangled, and often contested relationships among planners, property coalitions, and the real-estate market. The Taipei City government had planned to adopt a market-based system starting in 2017; however, local property interest groups and politicians strongly opposed the change because it would result in them paying higher prices for the additional density. Under floating TDR, property developers only need to pay the negotiated—and often much lower—prices to owners of reserved land. Unable to summon enough political support for reforming floating TDR in the City Council, then, Taipei City was forced to continue its current TDR practices.

Suburb of Taipei City with mix of high-rise and low-rise buildings. Source: yenwen/iStock/ Getty Images

LESSONS LEARNED

The history, impacts, and recent reforms of Taiwan's floating TDR system highlight several lessons for planning practice.

First, the role of planning ensures that a market-enabling tool such as TDR can primarily serve the public interest. In Taiwan, floating TDR was originally adopted as an expedient response to the reserved-land issue, but the lack of planning in designating receiving sites led to an increasingly problematic situation where land value increments are mostly captured by real estate actors. Meanwhile, the municipal government and local communities are burdened with high-density development. Our case study echoes existing scholarship arguing that the use of market-based tools, in fact, requires more planning intervention, not less (Linkous 2016; Mukhija 2003).

Second, the implementation of a points-based system suggests that focusing on direct community impacts is an effective way to garner greater societal support for reforming floating TDR, even in the face of strong property coalitions. Using measurable, site-specific, environmentally sensitive criteria to determine density bonus eligibility allows both differentiated treatments among developments and system-wide applicability. Planners should monitor whether—and how effectively—the points-based system helps reduce negative impacts and should then make necessary adjustments.

Lastly, planners should continue to engage the public in further efforts to reform the currently ineffective mechanism of land value capture in Taiwanese TDR. The points-based system does not address this significant issue: Land brokers and property developers still directly trade and negotiate with individual owners of reserved land, excluding municipal government from the process. Planners and municipal governments should incrementally implement a market-based system under which they can at least partially capture land value increments. Providing affordable housing and investing in public facilities, especially in low-income communities, should also be made the top priority of future TDR practice.

Table 1

The Reserved Land Issue and the Use of TDR in Taiwan

Municipality	Reserved in Land		TDR and Bonus Density		
			TDR Cases (#)	TDR Bonus (in hectares)	Reserved Land Obtained through TDR (in hectares)
New Taipei City	3,048	1,206,388,959	1,630	303.36	144.55
Taoyuan City	1,025	452,134,720	709	216.81	97.32
Taichung City	4,639	842,122,251	504	133.37	93.27
Kaohsiung City	2,629	986,843,370	243	43.13	15.41
Hsinchu City	313	206,379,979	132	24.51	8.37
Taipei City	1,444	2,036,435,535	119	24.78	7.86
Tainan City	3,792	337,107,914	114	29.45	18.47
Miaoli County	339	68,451,243	66	9.19	4.75
Yilan County	375	47,959,028	54	6.31	3.69
Hsinchu County	326	67,489,645	49	8.12	3.28
Hualien County	156	110,472,280	49	1.52	1.46
Kinmen County	241	16,245,024	43	1.31	0.83
Changhua County	551	95,075,817	34	4.01	1.25
Keelung City	748	12,783,897	11	0.64	0.65
Penghu County	100	11,543,941	3	0.09	0.07
Lienchiang County	361	2,216,007	2	0.01	0
Nantou County	1,342	75,039,788	1	0.06	0.01
Chiayi City	323	62,909,913	1	0.09	0.05
Yunlin County	341	39,306,395	-	-	-
Chiayi County	1,160	95,846,683	-	-	-
Pingtung County	735	133,822,266	-	-	-
Taitung County	1,774	148,974,372	-	-	-
Total	**25,762**	**7,170,604,109**	**3,764**	**807**	**401**

Source: Tasi and Peng (2017).

Figure 1

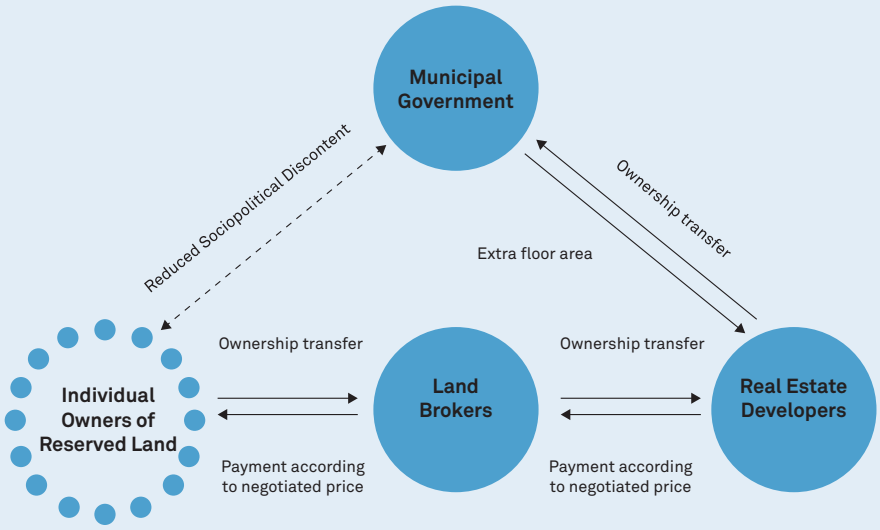


Figure 2

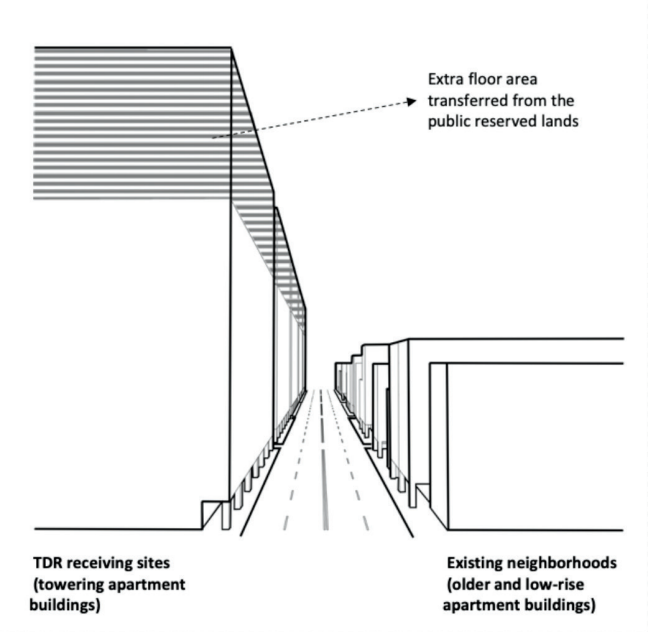
Sending Sites

Receiving Sites

Reserved land TDR sending sites are scattered around the older parts of the District while the receiving sites are concentered in the urban fringe where luxurious high-rise residential developments are located.

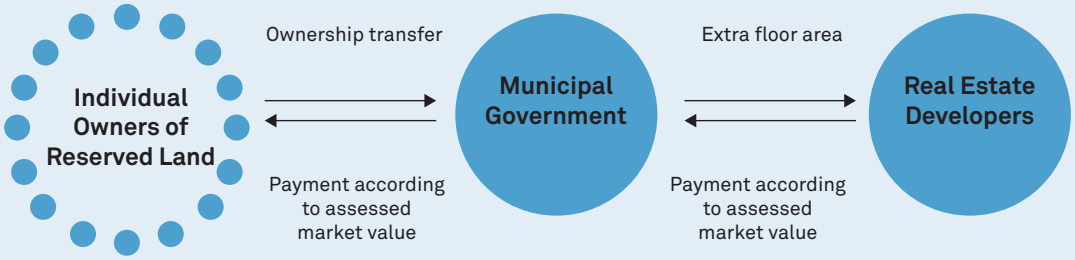
Source: adapted from Shih and Chang, 2016, p. 1253, 1256

Figure 3



High-density, luxurious TDR projects, adjacent to the low-rise, older neighborhoods, create a contrasting landscape and rising concerns about the physical and social-economic impacts of TDR.

Figure 4



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KEY ISSUES

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