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Index Drift: Legal Nature, Subject of Rights and Institutional Orientation of Land Index Transactions: A Comparative Analysis Based on Dipiao, Jidiquan and Diquan

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Abstract: China's land index transaction emerges under the planned allocation mode of construction land indicators. The imbalance in index distribution across geographical spaces and regional development levels constitutes the endogenous driving force for land index transactions. Following the basic process of land index production, trading, and utilization, land index transactions can be broadly divided into two stages: initial allocation and market allocation. These transactions involve four powers (rights): land planning power, land consolidation power, trade supervision power, and profit distribution rights, which form a bundle of powers (rights). By analyzing local characteristic land index transaction practices such as Chongqing's Dipiao, Yiwu's Jidiquan, and Foshan's Diquan, it is found that fragmented land planning, the collective action dilemma in land reclamation, ineffective price mechanisms, and unreasonable distribution mechanisms constitute the realistic predicament of land index allocation. Therefore, it is necessary to systematically improve the land planning power, establish a government-led rule system for land consolidation power and a market-oriented trading mechanism, and ultimately realize the fair distribution of land profits and the optimization and promotion of overall social welfare.

Keywords: Construction land; Land index; "Separation of the four powers"; System and improvement

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I. Introduction: Institutional background and dynamic mechanism of land index transactions

Land indicators have emerged amid the declining quantity of cultivated land in China, and are an inevitable product of the state's implementation of land use control and land use planning systems. As a tradable special commodity, they possess the characteristic of scarcity. Specifically, China generally controls and allocates land indicators, especially construction land indicators, through overall land use plans and annual land use plans. The

overall land use plan determines the "planning indicators" for the new construction occupation of cultivated land in a region over a relatively long period (usually 15 years), following the allocation principles of "total amount control, unified distribution, and hierarchical decomposition" [1]. The annual land use plan stipulates the "annual plan indicators" for the new construction occupation of cultivated land in a region in the current year. The Outline of the National Overall Land Use Plan (2006–2020) issued by the State Council in 2008, the Measures for the Administration of Annual Land Use Plans, and the specific annual land use plans formulated by various regions in accordance with these measures have undertaken the macro and micro allocation tasks of land indicators.

"Planning indicators" and "annual plan indicators" can be regarded as new indicators for construction occupation of cultivated land. In addition, to implement the requirement of balance between occupation and compensation of cultivated land stipulated in the Land Administration Law, the central government has also issued the reduction of cultivated land caused by construction occupation during the planning period to various regions in the form of "cultivated land supplement indicators", so as to ensure the quantity of supplementary cultivated land. The three indicators, "planning indicators", "annual plan indicators", and "cultivated land supplement indicators", jointly determine the total scale and spatial layout of new construction land in a region in the future. In accordance with the state's land use control requirements, any agricultural land that intends to be legally converted into construction land must possess both "planning indicators" and "annual plan indicators".

Under the planned allocation mode of hierarchical decomposition of construction land indicators, the "uneven distribution" of indicators has almost become a normal state. Trading around agricultural land conversion indicators, resulting in the "spatial drift" of land use indicators to meet the demand for land use indicators for regional development, constitutes the endogenous driving force of land index transactions. In practice, the planned allocation of land use indicators has led to a surplus of new construction land indicators in underdeveloped regions and a shortage in regions with advanced urbanization [2]. On the premise of meeting the requirements of the land use control and land use planning systems, local governments have carried out various local experiments on land use indicator transactions to seek development space for urbanization construction. For example, Chongqing launched the "Dipiao" transaction relying on the Rural Land Exchange in 2008, Yiwu carried out the pilot reform of "Jidiquan" in 2015, and Foshan implemented the "Diquan" system in 2022.

Land index transaction is a limited market-oriented institutional innovation promoted by local governments under the central government's control. However, this innovation is still in the stage of separate exploration by local governments acting independently, lacking systematic theoretical sorting and practical optimization and updating. In view of this, it is necessary to theoretically summarize the basic issues such as the legal nature, allocation order, and subject of rights of land index allocation, propose a corresponding theoretical framework for power allocation, and use this framework to conduct a comparative analysis of the three modes of Dipiao, Jidiquan, and Diquan in China's land index allocation practice, so as to provide important reference for improving the legal system of land index allocation and building a unified urban-rural construction land market in the future.

2. Examining China's index transaction practice through comparative analysis of Dipiao, Jidiquan and Diquan

2.1. Current situation of land rights allocation: A comparison of power items

2.1.1. Land planning power: Differences in substantive rules and slight differences in procedural operation

The three modes of Dipiao, Jidiquan, and Diquan have significant differences in the substantive allocation and

procedural operation of land planning power. A comparative analysis of the three modes in terms of land planning power. There are significant differences in the substantive allocation of land planning power. Dipiao must comply with the triple requirements of the overall land use plan, urban and rural construction plan, and annual land use plan. Jidiquan and Diquan (Type A) only need to meet the requirements of the overall land use plan, while Diquan (Type B) must also satisfy the urban and rural plan in addition to the aforementioned conditions. The degree of government participation in the procedural operation of land planning power varies. After the land right holder or the government completes on-site survey and mapping, under the Jidiquan and Diquan modes, the government also has the obligation to formulate reclamation planning and design, which shall be submitted to the land and resources department for approval and confirmation.

2.1.2. Land consolidation power: Same application right, different implementation right

Land consolidation power includes two types of power: land reclamation application right and land reclamation implementation right, both of which focus on imposing corresponding public law obligations on the power holder.

The rules for land reclamation application right are roughly the same. In all three modes of Dipiao, Jidiquan, and Diquan, the land reclamation application right is unexceptionally allocated to the land right holder (including rural collective economic organizations, farmer households, and other organizations with land ownership). However, only the Dipiao and Diquan modes stipulate the basic rule of majority decision (the applicant must provide a written document signed by more than two-thirds of the members of the collective economic organization agreeing to reclamation). Moreover, under the Jidiquan mode, if the homestead user applies for reclamation, it must also meet the requirement of "concentration and contiguity". At the same time, the government (town or sub-district) shall sign an agreement with the land reclamation applicant to clarify the rights and obligations, profit distribution, etc.

There are significant differences in the rules for land reclamation implementation rights. The main body responsible for land reclamation involved in Dipiao is the rural collective economic organization or the natural person with land use right, who may implement the reclamation independently or entrust a professional rural land reclamation institution. Jidiquan and Diquan regard the government as the main implementing body for organizing reclamation, stipulating that the government (town or sub-district) shall organize the demolition and reclamation of land. Among them, Diquan also stipulates that the government (town or sub-district) shall be responsible for the later management, protection, and supervision of the agricultural land formed by reclamation.

2.1.3. Trade supervision power: Different subject access standards, similar trading mechanisms

Dipiao is traded in the Chongqing Rural Land Exchange; Jidiquan is traded in the Yiwu Property Rights Exchange; and Diquan trading must be conducted in the Foshan Public Resources Trading Center. There are differences in the participating subjects of index transactions. The transferors in the three modes are all land right holders, but the transferees are different. The transferees of Dipiao are governments, rural collective economic organizations, legal persons, and natural persons; the transferees of Jidiquan are governments (towns or sub-districts), real estate enterprises, state-owned platform companies, and natural persons; the transferees of Diquan (Type A) are district governments.

The transferors of Diquan (Type B) include not only rural collective economic organizations but also governments (towns or sub-districts) and state-owned construction land users (mainly enterprises), and the transferees are administrative institutions such as governments (towns or sub-districts) and new urban area

management committees. Lastly, the trading methods and mechanisms are also different. Dipiao, Jidiquan, and Diquan (Type A) adopt auction or listing, while Diquan (Type B) adds the method of agreement transfer. In terms of trading mechanism, Jidiquan adopts the method of "more auctions and fewer listings". Additionally, in Diquan trading, when the final quotes of all selling subjects are not lower than the minimum reserve price, the Diquan supply subject is determined in ascending order of quotes. When the quotes of selling subjects are the same, the supply subject is determined by lottery.

2.1.4. Profit distribution right: Right holders get the lion's share, reclamation entities get a small share

It has almost become a consensus that the original homestead user obtains most of the benefits, but the scope of subjects participating in profit distribution varies in the three modes. Under the Dipiao and Jidiquan modes, the homestead user and the rural collective economic organization are the only two profit distribution subjects. In the Diquan mode, the district and town-level finances become additional profit distribution subjects besides the above-mentioned subjects. It is worth noting that there is a "watershed" in the profit distribution of Dipiao. That is, when the reclaimed area of rural homestead exceeds 667 square meters, in principle, all the net land income from the area exceeding 667 square meters shall belong to the village collective.

However, for Dipiao where the registered area of the homestead exceeds 667 square meters, 85% of the income corresponding to the registered area of the homestead belongs to the homestead user, and 15% belongs to the village collective. On top of that. under the Dipiao and Jidiquan modes, the income from other collective construction land, such as village collective public facilities and public welfare undertakings belongs to the rural collective economic organization. In the Diquan mode, in addition to the rural collective economic organization enjoying 90% of the income, the district and town-level finances each share 5% of the income. Finally, the ownership of income after the reclamation of state-owned construction land is different. The income from Dipiao belongs to the land user, the income from Jidiquan belongs to the government, and Diquan does not specify it.

2.2. Operational dilemmas of land rights allocation

2.2.1. The restrictiveness of participating subjects is the main factors constraining the function of the price formation mechanism

The transferors in the three modes of Dipiao, Jidiquan, and Diquan are all land right holders, while the transferees are very diverse, forming a market transaction structure with a single supply and diverse demands. However, the restrictiveness on the scope of transferee subjects hinders the effective functioning of the price mechanism. In the Dipiao and Jidiquan modes, all market entities can participate in bidding without restrictions on subjects; in the actual operation of the Jidiquan system, in addition to the government as the main buyer, real estate enterprises and state-owned financing platform companies are also allowed to participate in market transactions, and the scope of market entities is relatively wide.

In contrast, Diquan only allows the government to act as the buyer in the secondary market, which undoubtedly raises the market access threshold and causes insufficient competition. Since the implementation of the Diquan system in Gaoming District, Foshan in January 2019, a total of 2 batches with a total of 106.025 mu have been traded. Although the transaction unit price is as high as 500,000 Chinese Yuan/mu, the transaction volume is significantly insufficient, indicating that the market mechanism of Diquan has not yet played a major role. In contrast, due to the wide range of buyers and almost no restrictions, Dipiao transactions are relatively active.

2.2.2. High degree of land planning fragmentation hinders intensive development and utilization

In the process of land reclamation, planning is often the direct basis for the implementation of reclamation and final acceptance. Both the Jidiquan and Diquan modes adopt a "point-to-point" planning mode of "the reclamation subject formulates the reclamation project plan" + "relevant departments accept according to the planning and design plan", lacking the overall planning and systematic utilization of centralized and contiguous development of the land to be reclaimed from an overall perspective. The Dipiao mode, on the other hand, imposes the obligation on the land and resources department to formulate a land consolidation plan, which guides the reclamation of construction land in an orderly manner by estimating the scale of construction land reclamation. Compared with the "point-to-point" mode that only conducts point-like planning for reclaimed land, this mode creates a planning system of "from overall to specific, and gradual deepening", which has a higher degree of intensification and is more conducive to the systematic and orderly development of the land to be reclaimed.

2.2.3. The "collective action dilemma" in land reclamation remains to be resolved

As the main form of existence of land right holders, rural collective economic organizations naturally have the problem of "collective action dilemma", which is most evident in the implementation of land reclamation. In the existing land index transaction system, the land right holder is often also the reclamation subject. For example, Article 9 of the Measures for the Administration of Dipiao in Chongqing stipulates that "the land right holder is the subject of construction land reclamation". The consistency between the right subject and the reclamation subject exacerbates the collective action dilemma of land reclamation. Land reclamation not only needs to coordinate the reclamation wishes of different members within the collective to form a unified reclamation decision but also involves a series of professional and complex land consolidation procedures, such as reclamation financing, surveying and mapping, planning and design, demolition and relocation, and reclamation quality evaluation. The difficulty of collective action in land reclamation is correspondingly increased.

2.2.4. The unreasonable incentive mechanism for the distribution of land value-added income leads to low enthusiasm of participating subjects

Land value-added income is mainly reflected in the transaction and transfer price of indicators. The distribution of the transaction and transfer price directly affects the enthusiasm of relevant subjects to participate in the generation and transaction of indicators. The government undertakes more obligations in the process of indicator generation, such as reviewing reclamation applications, declaring reclamation projects, conducting on-site surveys, formulating reclamation design documents, organizing reclamation, and accepting completion. On the other hand, most governments have no right to participate in the distribution of land value-added income after reclamation. For example, the proportion of value-added income distribution between rural collective economic organizations and homestead users in the Dipiao mode is 15:85, and 10:90 in the Jidiquan mode. Neither of these two modes includes the government, which plays a major role in land reclamation, into the scope of distribution subjects, resulting in relatively weak enthusiasm of the government to participate in land reclamation in practice.

3. Correction and optimization of the land index transaction system

3.1. From overall to specific: Systematically improve the land planning power

As mentioned above, both Jidiquan and Diquan adopt a planning initiation mode of "the land right holder first applies for reclamation + relevant departments then formulate the reclamation project plan". This initiation mode has

typical characteristics of "passive planning" and is prone to government failure such as inaction and slow action by the authorities, which is not conducive to the systematic development and intensive utilization of the land to be reclaimed. Furthermore, theoretically, it is generally believed that the value of a piece of land is closely related to its location conditions. The closer it is to urban areas, the higher the land value and development potential; the farther it is from urban areas, the opposite is true. Therefore, reasonably determining the development order of the land to be reclaimed is of crucial practical significance for reducing the waste of land resources and improving the level of intensive use of construction land in the region. The author believes that the future land planning power should transform from "passive planning" to "active planning". Starting from the overall perspective of the land to be reclaimed, through the scientific formulation of land consolidation plans, we should proceed from the overall to the specific, reasonably determine the development order of the land to be reclaimed, and guide the orderly reclamation of construction land.

3.2. Government-led: Establish a government-led rule system for land consolidation power

From the perspective of China's land index transaction practice, the setting of land consolidation power rules mainly has two modes: "market-led" and "government-led", and the "market-led" mode is the mainstream. Under the "market-led" mode, the land right holder (mainly the village collective) is both the reclamation application subject and the reclamation implementation subject. It not only needs to obtain the consent of more than two-thirds of the members within the collective through the majority decision rule to form a "collective will" to apply for reclamation but also bears a series of reclamation-related obligations and responsibilities, such as entrusting surveys, demolition and relocation, land leveling, and waste disposal.

The power of land consolidation has a strong decentralized color. Although the "market-led" mode can greatly mobilize the enthusiasm of reclamation subjects and their members, due to their lack of professionalism, it is also prone to defects in the quality of reclaimed land and slow reclamation progress, which indirectly leads to the waste of land resources and the decline of reclamation efficiency and benefits. Therefore, the setting of future land consolidation power rules should fully consider the appropriate intervention of the government. Through legislation, the power, obligations, and responsibilities of the government in land consolidation should be clarified, so that the government can play a greater role in the implementation of land reclamation, enhance the professionalism and effectiveness of land reclamation, and thereby resolve the "collective action dilemma" of relevant subjects.

3.3. Market-oriented: The allocation of trade supervision power should give full play to the role of the market mechanism

The government is the supervisor of land index transactions. The intensity and strength of supervision (administrative mechanism) are often negatively correlated with the degree of market-oriented allocation of land indicators (market mechanism). Generally speaking, the administrative mechanism is often realized by imposing certain restrictions on market entities or market prices. For example, if the participating subjects of land indicators are restricted, the administrative mechanism is strong and the market mechanism is weak; if the transaction price of land indicators is restricted, the administrative mechanism is strong and the market mechanism is weak. To give full play to the resource allocation function of the market mechanism, the author believes that the future allocation of trade supervision power should follow the concept of "market mechanism as the mainstay and administrative mechanism as the supplement", and gradually relax the restrictions on bidding subjects. For example, the scope

of buyers allowed to participate in bidding for land indicators can be expanded from only the government to market entities such as real estate enterprises, rural collective economic organizations, natural persons, and other organizations, so as to enhance the effectiveness of the market price discovery mechanism through subject competition.

At the same time, the formation of the minimum reserve price can be comprehensively formulated with the help of the evaluation price of third-party institutions, as well as factors such as the market environment, historical transaction status, and market supply and demand, so as to avoid "government failure" due to price control. From the transaction records of Diquan (Type A), all land parcels were traded at the minimum reserve price determined by the provincial government, and there was no situation where the transaction unit price was driven up by supply exceeding demand. Therefore, the rationality of the minimum reserve price formulation has become the primary factor affecting the market mechanism to play a major role.

According to public information, the formulation of the minimum reserve price has procedural and substantive flaws, such as opaque price formation process and questionable price rationality. It is necessary to introduce corresponding market mechanisms, such as third-party institution evaluation, market supply and demand analysis, historical transaction analysis, and other methods, and dynamically adjust the minimum reserve price on an annual basis to accurately reflect the real supply and demand situation of the market and the inherent value of land indicators.

3.4. Appropriate incentives: The allocation of profit distribution right should appropriately balance the interests of multiple subjects

Most of the existing land value-added income distribution rules tend to favor land owners and land users, and rarely involve government departments that play a leading role in land consolidation. This leads to a mismatch between the power and responsibility of government departments, making it difficult to mobilize their enthusiasm for implementing reclamation. Considering that the stakeholders involved in reclamation have complex demands and great coordination difficulties, and the reclamation procedure is cumbersome with more auxiliary inputs, township-level governments or district-level governments should be appropriately allowed to participate in the distribution of land index transaction prices, so as to improve the enthusiasm of local governments to carry out reclamation and enhance the development speed and efficiency of land reclamation.

4. Conclusion

Land indicators arise from structural imbalances in the spatial distribution of construction-land quotas and the differentiated development needs of regions, making these imbalances the fundamental driver of land-index transactions. Comparative analysis of Dipiao, Jidiquan, and Diquan shows that fragmented land planning, collective-action difficulties in reclamation, weak price-formation mechanisms, and unreasonable benefit-distribution rules hinder the effective allocation of land indicators. To address these issues, it is essential to improve overall land planning, establish a government-led yet professionalized land-consolidation system, introduce more market-oriented and transparent trading mechanisms, and rebalance profit-distribution arrangements. These measures can promote fairer land-index allocation, support urban–rural coordinated development, and enhance overall social welfare.

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