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Research on the Path of Global Governance of Low Efficiency Industrial Land with Digital Empowerment

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Abstract

As the main type of urban land, industrial land plays an important role in the development of the whole city. Improving the efficiency of industrial land use is an inevitable way to improve the level of urban development, promote the healthy development of economy, industrial transformation and upgrading, and sustainable development. At present, there are still some problems in the management of low-efficiency land use in Wenzhou, such as unclear base, low per mu output level, low degree of industrial agglomeration, difficult implementation of new projects, and low level of digitalization. It is necessary to promote the whole-domain governance of low-efficiency industrial land by comprehensively finding out the base number of the base map, constructing a comprehensive index evaluation system for industrial land, formulating a reasonable redevelopment process for low-efficiency industrial land, and constructing a multi-department work coordination mechanism.

Keywords

Industrial Land; Governance; Digital Empowerment.

1. Introduction

Industrial land is our country for high quality development and renewal of a significant carrier of the real economy and realize the industry innovation and development and key resources, with the recent relevant national increasingly clear, mechanism and policy guide for inefficient the transformation and upgrading of industrial land, quality, and the efficiency of demand more urgent, many domestic cities for "half astern optimal 2, return to manufacturing" cognitive and also more obvious, The return of global manufacturing and the severe impact of COVID-19 have both exacerbated this development.

Focusing on the general requirements of "two priorities", Zhejiang Province, in combination with the development of the manufacturing industry's "bird out of the cage, phoenix nirvana" campaign, takes the digital reform as the guide, and comprehensively uses such measures as "planning guidance, system governance, industry guidance, and precise implementation" to further promote the remediation of inefficient industrial land, promote the optimization of spatial layout and industrial structure adjustment, and improve the efficiency of intensive use of land, energy consumption, environment and other elements of resources, It provides an important guarantee for accelerating the construction of the global advanced manufacturing base and promoting the high-quality economic development of the province.

Wenzhou has also developed and issued policy documents such as Measures for the Administration of Industrial Block Lines, Opinions on the Full Cycle Management of High Quality Utilization of Industrial Land, Implementation Plan for the Functional Transformation of Industrial Land in Central Urban Areas, closely focusing on the overall industrial governance, in combination with the reform of "heroes per mu", the rectification of "low scattered", the elimination of outdated production capacity, and the transformation of old plants, Focus on the

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five aspects of "stock increase, inefficient integration, special rectification, industrial reconstruction, and spatial land exchange", and make every effort to promote efficiency increase per mu. The city plans to continue to promote the construction of 16 urban industrial parks in the central urban area, and start the construction of 30 old industrial parks. At the same time, it will promote the overall governance of inefficient land, transform and improve the inefficient industrial land of more than 5000 mu every year, standardize the management of industrial plants of more than 1 million square meters, speed up the "shuffling" of industries and the space diversion, and improve the quality and efficiency of factor supply. In order to achieve the above goals, it is necessary to take the digital reform as the guide, promote the rectification and improvement of inefficient enterprises with high standards and efficiency by virtue of digital technology and methods, accelerate the high-quality development of our manufacturing industry, and consolidate the industrial foundation of common prosperity.

2. Research Status at Home and Abroad

2.1. Identification and Characteristics of Low-Efficiency Industrial Land

As for the identification of low-efficiency industrial land, it is a common practice in the academic circles to establish an evaluation index system and calculate the comprehensive score of industrial land by weighting. For example, Qu Zhongqiong et al. (2018) established an evaluation system to divide the level of industrial land into four ranges: low-efficiency land, general use, efficient use and extremely optimal use. The characteristics of inefficient industrial land are mainly analyzed and studied through quantitative data comparison and spatial and temporal distribution. For example, Shu Banrong et al. (2009) analyzed the characteristics of inefficient utilization of industrial land by comparing quantitative data such as investment intensity, floor area ratio, building coefficient and land price level. Zheng Wulin and Zheng Rongbao (2017) applied mathematical models combined with quantitative methods such as exponential decomposition to conduct empirical studies on spatio-temporal changes and regional differences of low-efficiency industrial land.

2.2. Inefficient Industrial Land Redevelopment Model

The existing researches are mainly sorted and refined from two aspects: disposal subject and disposal method. According to the disposal subject, it is generally divided into three modes: government-led development, enterprise independent development, and market cooperation development. For example, Wang Xunjie et al. (2013) proposed two low-efficiency industrial land withdrawal modes: government repurchase and market transfer, according to the degree of government participation. Zhang Rui et al. (2016) proposed the government-led traditional development mode of land acquisition and storage after public transfer for the overall redevelopment of industrial parks, and proposed the mode of independent development by land-use holders for the sporadic land redevelopment of industrial parks and the sporadic land redevelopment of urban areas. Jiang Min (2019) proposed three redevelopment and utilization models: government-led demolition and construction model, government-guided enterprise and market cooperative development model, and government-guided enterprise self-renovation model. According to the disposal methods, it is generally divided into buyback, collection and storage, comprehensive transformation, property rights transfer, property rights replacement and other modes. For example, Liu Tianqiao et al. (2017) sorted out four practical modes: paid buyback, purchase and storage mode, function transformation mode, independent transformation mode, and market circulation mode. Luo Yao et al. (2018) summarized the disposal mode into intensity improvement mode, efficiency improvement mode, use adjustment mode, comprehensive transformation mode, property rights transfer mode, replacement mode and exit mode according to the specific operation mode of urban inefficient industrial land disposal.

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2.3. Research on the Withdrawal Mechanism and Redevelopment Strategy of Inefficient Industrial Land

Policies and regulations is not perfect, the shortage of funds, insufficient incentive policy, the lack of overall planning guidance, department coordination mechanism is the inefficient industrial land has not been established main problems exit (ji-wei Chen, 2017), a major concern for these related research also discusses reasonable inefficient industrial land exit mechanism and problem solving countermeasures. For example, Wang Xunjie et al. (2013) proposed the exit mechanism of "parallel incentive and reverse force, and complementary market and administration". Zhou Lianghua (2015) from the develop and perfect the inefficient industrial land redevelopment and regulations system, the implementation of diversified land lease way, strengthen the construction of the park infrastructure, establish linkage mechanism to supervise and transformation of industrial land economic incentive policies inefficient industrial land in cities and towns in China is proposed to develop a long-term mechanism of policy recommendations. Zheng Wulin et al. (2017) proposed redevelopment strategies for low-efficiency industrial land in villages and towns in coastal areas from the aspects of formulating reasonable land transfer fees and reserved land index policies, optimizing current planning, and standardizing redevelopment processes. Wang Bo (2022) proposed the strategy of consolidating the main responsibility of governments at all levels, revitalizing inefficient industrial land due to enterprises' policies, and improving the guarantee capacity of construction project elements.

2.4. Study on the Treatment Experience of Inefficient Industrial Land at Home and Abroad

In foreign countries, Singapore has experienced five industrial transformation and upgrading since its founding, until the formation of today's knowledge intensive industry. For example, Jurong Island Industrial Park is considered to be one of the most successful industrial parks in the world. It covers more than 70000 hectares of industrial land and 4 million square meters of factory buildings. The industrial output value accounts for 30% of Singapore's GDP. Singapore attaches great importance to land use performance evaluation, and the regular dynamic evaluation results are used as a reference for the withdrawal of inefficient industrial land in the park. The reform direction of Dutch industrial land policy has shifted to the redevelopment of existing industrial land. The renewal of Dutch urban abandoned industrial land can be traced back to the urban renewal plan in the early 1980s. As early as 2002, the first industrial land renewal plan in the Netherlands was to redevelop 10000hm2 of abandoned industrial land in 10 years, with the total area of development accounting for about 17% of the total industrial and commercial land area in the Netherlands. At the same time, the Netherlands provides various special subsidies to the municipal government, encourages the renewal of land for industrial and commercial purposes, significantly reduces idle and abandoned sites, and monitors industrial land that needs to be improved within a time limit through IBIS information system.

In China, Suzhou formulated the Measures for the Implementation of Land Repurchase for Enterprises in Suzhou Industrial Park in 2011, making a lot of detailed provisions on how to realize the withdrawal of inefficient industrial land in the park 132:1. Through actively implementing the paid withdrawal policy of inefficient industrial land, Suzhou made reasonable compensation for the physical withdrawal of industrial land, and guided the conceptual withdrawal of inefficient industrial land by designing a multi angle incentive and restraint mechanism. In accordance with the strategy of "innovation driven and concentrated development", Shanghai has gradually guided the original industries to other regions through land secondary development measures such as "vacating the cage for phoenix". By raising the

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threshold, Shanghai's industrial development focuses on strategic emerging industries, which maximizes the comprehensive utilization of land.

3. The Current Situation of Comprehensive Management of Low-Efficiency Industrial Land in Wenzhou

In recent years, Wenzhou has closely focused on industrial governance, actively carried out the reform of "heroes are equal per mu", the rectification of "low scattered", the elimination of backward production capacity, and the transformation of old plants.

For idle and inefficient land such as vacant factory buildings, bankrupt enterprises and old parks, we will guide the government to collect and store land, cooperate with state-owned platforms and industrial operators and other ways to promote redevelopment, reactivate idle land, and make room for building small and micro enterprise parks. For example, Longwan District cooperates with Zhejiang Hengwo Culture to build a digital industrial park using the old factory area of hobby pen industry; Ouhai District collects and stores the vacant land for Tengxu costumes, and cooperates with University Science Park Development Co., Ltd. to build Ouhai Science Park; Yongjia County revitalized nearly 150 mu of inefficient land, and built Zhu'ao Fashion Light Industry Microenterprise Park.

In strict accordance with the "ten rigid measures" of the small and micro enterprise park, we will deepen the docking of plant resource supply in the park, strengthen the access control of enterprise projects, build a normalized safety supervision mechanism, improve supporting construction and optimize value-added services, and comprehensively improve the park's industrial concentration, park entry standardization, production safety and enterprise satisfaction. If "one park and one industry" is explicitly required, the leading industry of the park shall not be less than 70%, the average investment per mu shall not be less than 2 million yuan/mu, the average output value per mu shall not be less than 4 million yuan/mu, and the average tax per mu shall not be less than 150000 yuan/mu.

Vigorously promote the "machine replacement" and "zero land technical transformation", adhere to the spatial land exchange, and maximize the efficiency of enterprise land use. For example, Yueqing City supports the transformation of old plants, with the floor area ratio being extended to 3.2 at most, the building density being extended to 55% for multi-storey buildings and 50% for high-rise buildings.

In addition, in order to speed up the transformation and upgrading of old industrial zones, improve the level of land resource conservation and intensive utilization, and promote the high-quality development of manufacturing industry, our city recently formulated and issued the Three Year Action Plan for the Transformation and Upgrading of Old Industrial Zones in Wenzhou (2022-2024), which aims to transform and upgrade more than 10000 mu of inefficient industrial land each year, including more than 5000 mu of demolition and reconstruction, more than 4000 mu of land for re supply, and more than 5 million m2 of new industrial plants.

Although the inefficient land use governance in our city has achieved some results at present, based on the new development stage, there are still many problems in the experience and practices of the national models such as Foshan, Shunde and Ningbo Yinzhou, which are highlighted in the unclear base, low average output per mu, low degree of industrial agglomeration, and difficult implementation of new projects. The existing research has not yet combed the actual problems existing in the inefficient land use governance at this stage, The proposed development strategy also starts from the overall level. In addition, the level of digitalization, informatization and intellectualization in the governance of inefficient industrial land in our city is low, which affects the effect of the whole area governance. Therefore, it is urgent to focus on the actual situation of digital empowerment in the governance of inefficient

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industrial land in our city, find problems and take effective measures to deal with them in a timely manner. Only in this way can we effectively solve the key problems such as inefficient idle industrial land and constraints on industrial development space.

4. Countermeasures to Promote the Whole Management of Low-Efficiency Industrial Land in Wenzhou

4.1. Fully Understand the Base Map Base Number

By means of digital empowerment, we will deepen the special survey of industrial land, make full use of the latest technological means, accurately measure the boundary of industrial land and related data, and achieve the "corresponding location of enterprises and space, unified management of rules and regulations". From six aspects of industrial orientation, economic benefits, regional location, social and environmental impact, land use efficiency, tenure situation, etc.

Form visual database of industrial land foundation, build digital "industrial regulation map". Problems such as "deviation from planning requirements, prominent safety and environmental protection issues, scattered spatial distribution, and low resource utilization" were comprehensively sorted out to lay a solid foundation for concrete implementation.

4.2. To Construct the Comprehensive Index Evaluation System of Industrial Land

Potential evaluation was carried out on the present situation of industrial land use regulation, combining qualitative and quantitative analysis method, a comprehensive index evaluation system for industrial land, to the evaluation results from the repel, transformation, keep all three aspects of the comprehensive mining domain of industrial land renovation potential, and from the Angle of all the resources to plan as a whole, to strengthen the research of industrial land regulation orientation, Implement the direction and arrangement of industrial land consolidation.

4.3. Develop Reasonable Redevelopment Procedures for Inefficient Industrial Land

First of all, to improve the identification standards of low-efficiency industrial land, we should strengthen the collection and sorting of basic data, establish a scientific and reasonable evaluation index system, timely identify inferior industries and low-efficiency enterprises, formulate standardized post-identification procedures and exit measures, and increase the identification of low-efficiency industrial land. Secondly, for the redevelopment area, the special development and utilization plan and annual plan should be formulated in time to clarify the redevelopment objectives, key areas and development sequence of industrial land. Land for idle and inefficient industrial projects should be recovered according to law and put to active use, and a dynamic adjustment mechanism for idle industrial land should be established. We will clarify the amount, targets and areas for the redevelopment of inefficient industrial land, and encourage new enterprises to make good use of the land. Again, we should give full play to the leverage of tax revenue, and further increase the tax rate for inefficient industrial land enterprises to encourage the transformation and upgrading of enterprises and improve the utilization rate of land. Reduce the transfer cost of existing industrial land, and provide appropriate preferential treatment and exemption of relevant taxes.

4.4. Establish a Multi-Departmental Work Coordination Mechanism

The promotion of low-efficiency industrial land is a systematic work which needs the coordination of multiple departments and measures. As the promoter and organizer of the promotion of low-efficiency industrial land, the government should not only benefit the market

and activate the market, but also protect public rights and interests, improve the mechanism guarantee of the promotion of low-efficiency industrial land, and form a diversified renewal situation of "government guidance, enterprise leadership, market operation and multi-participation". First of all, we should establish an organization and coordination mechanism, set up a multi-department work coordination group, formulate a guiding catalogue for industrial layout and structural adjustment, and guide market investment expectations. Secondly, it is necessary to improve the application process and approval mechanism, refine the implementation rules of land price policy, supporting standards, rent before sale, and management after approval. In combination with the work of "running at most once", it is necessary to pay attention to the standard coordination and efficiency improvement between departments to ensure the implementation effect. Finally, a dynamic monitoring platform should be built to strengthen fine control. Inefficient land use is a relative and dynamic concept, and different development stages have different evaluation criteria. For the stock of inefficient industrial land, should through the many department data sharing and linkage, the enterprise data spatialization, monitoring platform to build enterprise development signs, comprehensive, system, in real time to hold the space for each park and enterprise performance, set for project access, precondition, update size, male PeiJian provide important reference.

4.5. Encourage the Transformation, Upgrading and Diversified Development of Traditional Enterprises

We will guide enterprises to increase investment in scientific and technological innovation and human capital, optimize enterprise management, constantly enhance the comprehensive strength of industrial enterprises in their development, further improve the allocation of inputs to various factors of production, enhance their comprehensive strength, and raise their industrial output. First of all, enterprises are encouraged to fully and actively cooperate with universities and scientific research institutes to form the integration of industry and education, so as to promote the transformation and upgrading of enterprises. Secondly. Traditional enterprises should increase the scientific research funds and the introduction of scientific research personnel, increase the scientific research investment and talent introduction. Thirdly, the government should give full play to the role of bridge services, actively build technology exchange platforms, provide information and technology intermediary services for enterprises, guide the transformation and upgrading of enterprises, and shorten the technology cost of small and medium-sized enterprises. Finally, we should pay attention to diversified development. Economic development cannot rely on a single industry. We should scientifically formulate strategic planning for development positioning and industrial land use to improve the utilization efficiency of land resources.

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