



Study on Transformation of Development Zones in China in Public Governance: General Analysis in the Perspective of Schema

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Abstract: Transformation of development zones in China in public governance performance determines the strategic upgrade of China's open economy. This paper assumes that the system of public governance has efficient allocation of public resources desirability. Namely, there is an interaction of rental incentive and space polarization effect among public administration, industrial upgrading, land-intensive and environmental protection, constructing "three in one" mathematical equilibrium models. Mathematical analysis reveals that government tax and corporate profit have integration, continuity and reciprocity of institutional incentives. Shanghai FTA experience has shown that the interaction between rent incentive and spatial polarization effect, is based on an open economic system with continuous innovation, and is kept in line with the liberalization of international trade rules. The policy implication is that the transition of development zones in China should move in direction of free trade areas to achieve its institutional evolution.

Keywords: development zones in China, transformation, government public governance, rental incentive, reciprocity

1 Introduction

Transformation of development zone is important measures where the Chinese Government promotes and deepens reform and open. Both the construction and expansion of Shekou Industrial Zone of Shenzhen Special Economic Zone, and pioneering reform of China (Shanghai) free trade zone, are always accompanied by a transformation stage of China's economic development challenge crack with forward-looking development bottleneck breakthrough, as well as the economic management system reform of the free trade area in Guangdong, Shanghai, Tianjin and Fujian.

Since the 20th century, in the process of transitions in China Development Zone which adapt to deep developing in international economic globalization and grasp the domestic economy, its optimization and

upgrading of industrial structure, the intensive use of land resources and environmental protection, has faced unprecedented challenges. Whether can produce benign interactive of interests mutual relationship between the government and enterprises in the transformation of public governance in China Development Zone, or in other words through effective of rent incentive (including industry rent, and land rent, and environment rent, and network rent and system rent,, structure adjustment and effect overlay, contributed to the all enterprises' pursuit of interests and pursuit of economic remaining maximize), then promote its industry upgrade, and the achievement of land intensive and environmental protection "three dimensional in one" benign interactive of synchronization. This is the core issue of this paper. The research on the transformation of public governance in Development Zone has been one of the hot research areas of public management at home and abroad.

Typical research, such as "The significant carrier of public governance for the development and transformation of development zone is to promote the construction and development of science park"^{[1][2]}, "The public governance for the development and transformation of development zone benefits mainly from industrial clustering, high-tech development and construction of independent innovation capability"^{[3][4][5]}, "Land consolidation during the process of the public governance for the development and transformation of development zone, the improvement of microcosmic governance model"^[6], "industrial agglomeration and land symbiosis"^[7], "The market allocation of land resources"^[8], "Stressing the oneness of industrial ecology and park ecology"^[9], "The construction of eco-intelligent control system model"^{[10][11]}, Wang Jin(2012) "The construction of model on eco-industry system based on system dynamics", have discovered that the analog data fits the real data pretty well in Nantong economic and technological development zone, with all error under 10%^[12]. However, some scholars believe that the public governance for the development and transformation of development zone shall be achieved through institutional innovation^{[13][14]} and the effective

connection of development zone system and the free trade zone management system^[15]. Nevertheless, when searching for relevant research, we do not find any research results about the analysis on the mechanism of “Three in One”, which contains industrial upgrading, land intensification and environmental protection, during the process of the public governance for the development and transformation of development zone in China. And this is what this paper is trying to explore. This paper contains mainly the following parts. Firstly, we build the conceptual framework and the logical relationship of public governance among industrial upgrading, land intensification and environmental protection. Secondly, we establish mathematical model for equilibrium analysis. Thirdly, we test the result using the experience we get in China (Shanghai) free trade test site. Finally, we draw conclusions and put forward policy recommendations.

2 The analysis of frameworks

China Development Zone contains the Shenzhen Special Economic Zone, known as the starting site of the reform and opening-up policy. And it also contains national economic and technological development zones, export processing zones, border economic cooperation zones, bonded zones, bonded logistics park, bonded port, cross-border industrial park and so on. Its development and transformation originated from the end of old development mode (attracting low-end production, excessive consumption of land resources and the paradise of environmental pollution) and the search for new methods. This phenomenon in economic development shall not stop with the intensive competition of external market. Facing the major problems of the development and transformation of China Development Zone in a focused perspective, we could find many. The construction of rule of law in public governance is lagging behind, which influences the institutional innovation and further on gets in the way of releasing bonus. The overall planning is lacked and the spatial layout is not optimized, causing a grab of land space from farmer and a grab of living space from cities. The non-binding preferential policies have caused great loss in the resources of regional development and the sudden disappearance of environmental bonus. Sustainable development is challenged. Low-end industry, non-optimized structure, extensive management, low-level redundant construction, partial overcapacity and sweatshops have become synonyms of development zone. The lack of innovation-driven development in science and technology makes us not able to occupy the high-end position in the global supply chain. To crack these problems and to build the analytic framework in the public governance for the development and transformation of development zone in China, we should at least concern about the following governance mechanisms.

(1) The governance mechanism of industrial optimization and upgrading. The core mission of

development zone is to build the growth mechanism of new industries, new formats and new business models. As the pioneer of opening up and reform policies, the development zone improves proper technology of industrialization development through integrating high-end techs at home and abroad. It achieves knowledge spillovers, applying industrial gradient transfer and multistep diffusion of technology to surrounding areas, aiming to regionally promote the development and optimization of industrial structure, organizational structure, goods (services) structure and technical structure.

Research shows that it also need to promote the generation of economies of scale and the combined effect of factors of production through the improvement of technology diffusion mechanisms and the optimization of regional industrial structure, not only through the mechanism of polarization^[16]. The logic structure of government using optimal configuration of common resources and promoting the optimization and upgrading of industrial structure in development zone is as following. The authorities organize the industrial development, implementing the strategy of the optimization and upgrading of industrial structure, processing industrial filter (government regulation), strengthening industrial innovation (enterprises implementation) and achieving industrial transformation (market decision). In the open space of global competition, we not only need to concentrate and combine the core advanced resource of industrial optimization and upgrading to its development zone, but also have to, to certain extent, remove the regionally less competitive traditional production to surrounding areas, leaving enough growing space for new industries, new formats and new economy business models. In short, without the formation of occurrence mechanism in the industrial optimization and upgrading of development zone, there is no maneuverability on the public governance for the development and transformation of development zone under the rent incentive. It is to say, we should build up the benefit rebalance relation of industrial upgrading and the re-improving access of the anticipation of development during the process of government rent incentive and enterprises chasing the maximization of benefit, making rent incentive a real lead to the automatic transformation of industry. The logical framework diagram of its mechanism is shown in Fig. 1.

(2) The governance mechanism of land saving and intensive use. The strong handshake between the visible hand of the government and the invisible hand of market, which is that the government uses the power of the development zones land's supply, with the method of market bidding, finds the interest equilibrium of the trade between the two. By introducing marketization bid rent pattern, the government supplies land to development zones' enterprises, the government land rental income and the enterprises land rent-seeking form interest fit. What the government need to solve is to translate the

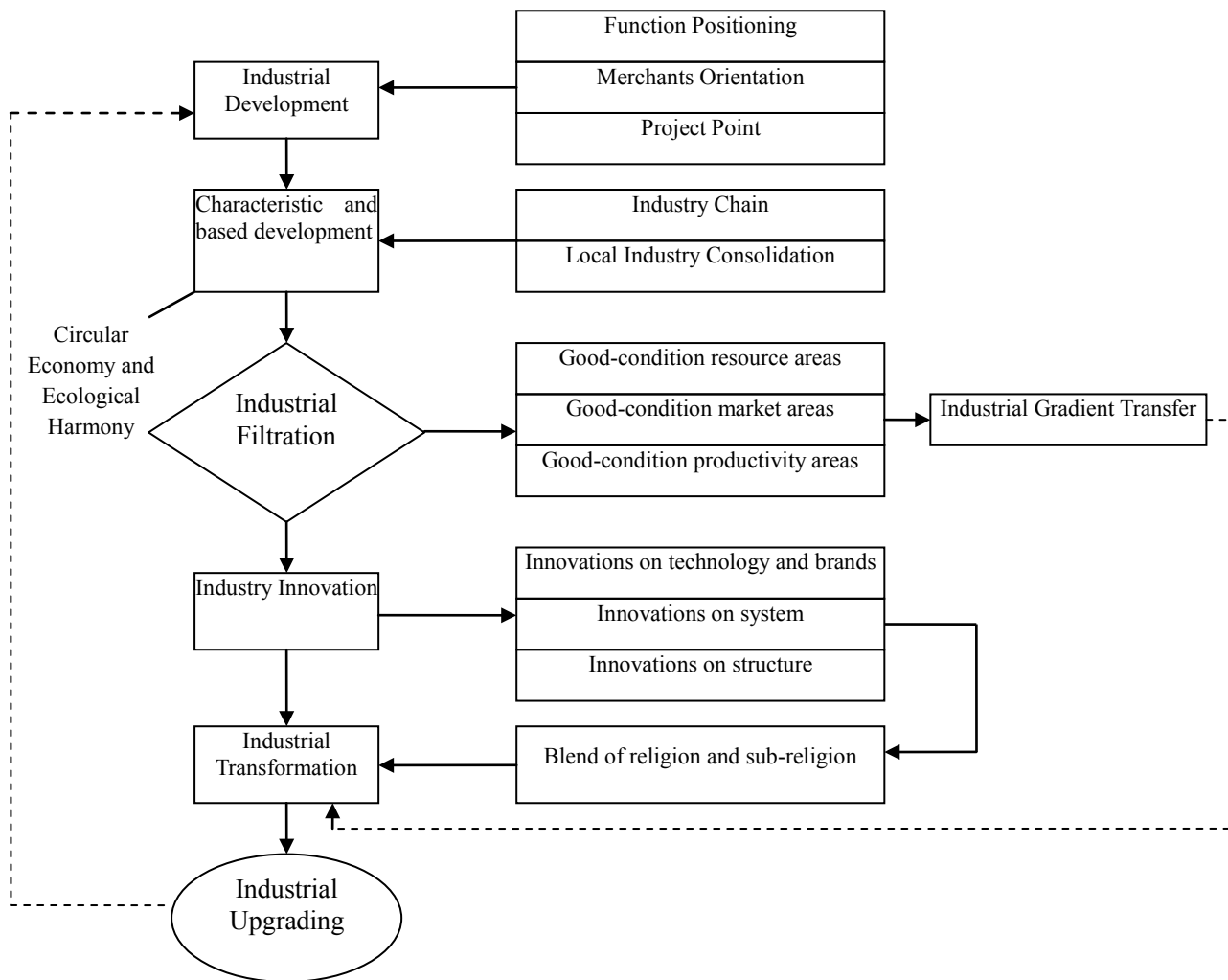


Fig.1 A schematic of zone industrial optimization and upgrading of development and transformation mechanism

Source from: Nanjing Development Zone Management Committee of Coordination^[17] Changes need to be made according to the study.

land resource from “noncompetitive” supply pattern to “competitive” allocation, solve the problem of the extensive land allocation during the development transformation of development zones.

1. Advance the marketization allocation of land resource. The important part of public governance of the development transformation of development zones, is the government carries out marketization allocation to land resource. Translate ration system land resource public product into land supply and competition embed^[18], of which the mechanism is that the competitive market produce a kind of output improved by Pareto efficiency^[19], which is that the equilibrium of demand and supply appear between consumer surplus and producer surplus, and form the best price satisfy the utility maximization for both sides: the government gains the land rent revenue maximization during the supply of land, and restricts the waste of extensive land; enterprises in development zones purchase land at proper price, not only reduce the cost of production and management, but make the maximization of utility and allocation. I describe the rental incentive method of land resource

marketization like this: sustain by the government (enhance public management function, make a regulation, develop and mobilize, supervise by society) →organize by society (organize by social intermediary, mainly by operation from non-profit organization, introduce auction mechanism)→competition(introduce some competitors, compete for land resource)→ surplus incentive (government, society, competitors realize multi-win). This institutional arrangement of land resource allocation, is launching the competitor with the highest price through the open-information bidding mechanism with auction function. See particularly in Fig. 2.

2. Strengthen the effect of rebidding. Choose the victor of land usage right by using marketization method is not enough.

The development zones’ government still need to strengthen its’ supervise on the development of the land resource after enterprises bidding, in order to realize order development and deep development, to make full use of land resource. One of the effective public management way for government to push the development zones translate and develop, is to keep the

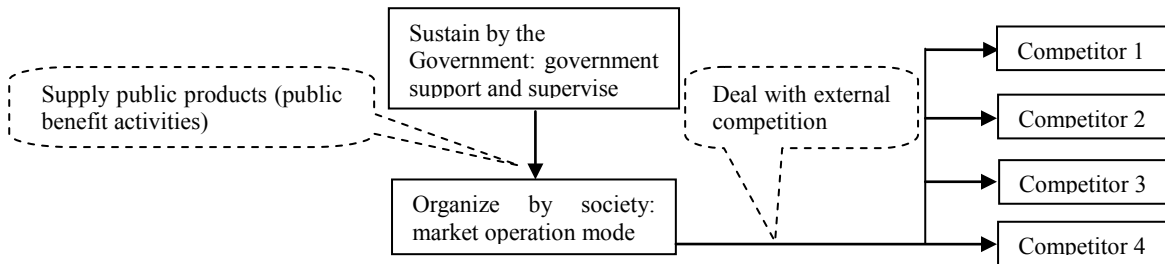


Fig.2 Land resource market supply under government supervise

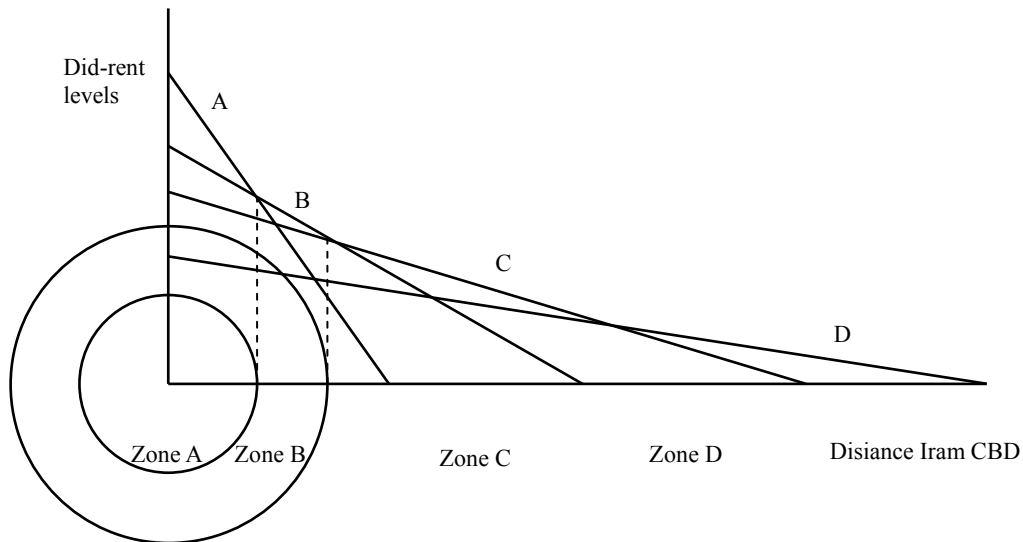


Fig.3 Land bidding mechanism formed in city space

Data resource: (Bourne,1971)^[22]

marketization reallocation of land resource, in the process of government adding income and enterprises in development zones accelerating translation, realize win-win or multi-win. As the new space point of city's development and expansion for development zones, land rebidding can not only prevent government's power rent-seeking but also prevent enterprises with land usage right enclosure without exploitation, or assignment and reselling land resource. With the market competitive mechanism, land rent has never make limit development zones land resource so scarce like today; land resource utility make contribution to economy development, but not so valuable like today. In the past, land capitalization, making profit with land, financing with land construct the developing way, "make development with land". I believe that the problem of traditional land supply mode is the underestimation of scarcity of land and the loss of price discovery mechanism, which causes the loss of land resource and developers enclosure without exploitation. But the reason of the problem is that the construction of land bidding mechanism falls behind, it does not bind in system to development zones translation, to realize the translation from product bidding sale in the past into bidding supply for today. Because only by emphasize the land usage right rebidding function, the local government can build public management

relationship with enterprises owning the development right of plenty land, and form the "menu" order which is that who can purchase the translating land in development zones(Base on the plan of local government's development holistic project's demand and periodic implement, open step by step at regular intervals), who will have the deep development right of land, make the government have the system safeguard of land rent appreciation, and develop the expected investment by development zones' enterprises. Its' land rebidding mechanism achieves bidding equilibrium between city's center zone and some development zones, is an effective method to optimize land resource. See particularly in Fig. 3.

3. Realize land bidding's interest balance. Under the circumstance of balancing bidding price, the basic aim for all resource consumers is to make the maximization of utility. Assuming that development zones' bit is balanced, the premise of land bidding trade is marginal income is equal to marginal cost. Under the circumstance of the public facilities in development zones have enough investment, the logistics cost and logistics income is in inverse proportion. We use Alonso locational land use's equilibrium model, analysis the theory of maximization of interest, to describe how to use the optimal configuration of land resource, promote

the translation of investor in development zones. When total marginal cost rises, marginal income and marginal profit goes down, the maximization of land income, along the land rent contour decline line from the highest rent area, extend to the lowest rent area, in the process of dynamic equilibrium, A and B land profit area are formed, because they are in the center of the city, the land cost is high, the profit is at reduce, due to the motive in pursuit of profit, new for-profit synergistic evolution path is formed: $t_e^1 \rightarrow t_e$, thus, area B becomes land

profit area, achieve profits. Because t_e belongs to balance zone, so area B must larger than area A, to make up this loss, realize the maximization of interest, when $t=0$, make the maximization of profit B area. See particularly in Fig. 4. From above, the operating mechanism of Chinese development zones translation public solving land intensive use is, land resource marketization, land bidding causes multi or series exploitation, realize the balance of interests in land resource competition.

(3) Environmental protection governing mechanism. Strengthen environmental protection is the main task for Chinese development zones translation public mechanism. The direct development income of environmental protection is, to improve the sustainability of development zones, improve the rate of return on investment. About the mechanism framework of environmental protection and ecological construction, see particularly in Fig. 5.

The experience observe of environmental protection in the process of development zones translation, can be realized by the simulation of emulation system. The basic frame is: under the persistent excitation of development zones main aim, receive the dual

interaction from limit of resource and target encouraging, because the environmental profits can make both sides achieve some profits, so environmental protection public mechanism can cause mutually beneficial action with same goal. From the performance of government public mechanism, the performance measure of development zones environmental protection includes three aspects: environmental projects, cleaner production and zoology industrialization. Environmental protection can realize rent incentive. But in the process of actual operation, Chinese development zones translation environmental protection's public mechanism still has its difficulty, the main reasons are the complication of environmental protection interactive relationship, the indistinctness of border and externality problems. Moderately increase environmental tax, strengthen the internalization process of environmental externality, may be the effective way of rent incentive.

(4) Governance mechanism by the interaction of "Three dimensional integration". Internal mechanism of the development zone in transition, is to maximize the development zone enterprises to obtain rent in essence. Government improve the competitive level of the whole industry market in development zones and promote regional prosperity and development; Increasing taxes to ensure the supply of public goods and services in place; thus expanding employment, thereby highlighting the demographic dividend; Improving the level of infrastructure construction, realization of interconnection within national territory but outside Customs territory, building a better business environment to attract foreign investments; Achieving environmental improvement, and improve the sustainability and carrying capacity of the development. Enterprises in these cases where the rent incents, highlight the effectiveness of innovation-driven development, build use of interaction mechanisms of

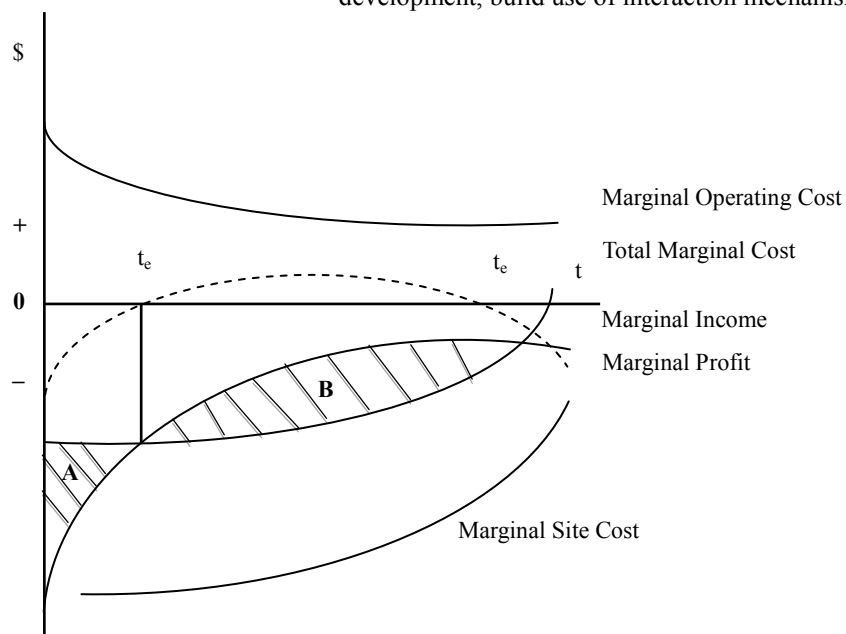


Fig.4 Maximization of interest under land bidding rent

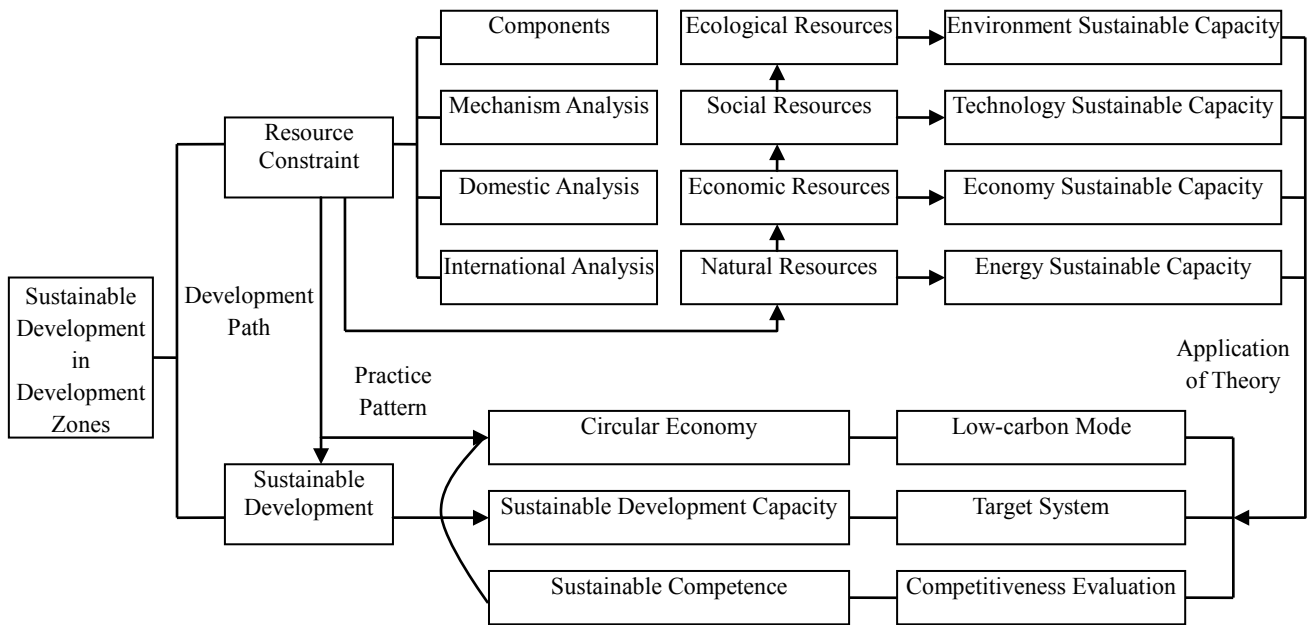


Fig.5 Governing mechanism of environment protection in development zones translation
 Data resource: (Tang Decai, 2009)^[24] The writer has made an adjustment based on the research need.

institutional innovation, in the transformation of the development of technological innovation, industrial upgrading, land and environmental protection three-in-one, reflecting the growth, technical innovation and the development of sustainable, forming the new pattern of earnings growth. Enterprise gets reform development bonus, which forms inner contact of interests protection, sharing and development: enterprise in mutual action of promoting development zone transformation jointly, rent incentive and space polarization effect has formed interactive role of interactive relationship, which large of economic remaining concentrated zone, through industry agglomeration, capital concentrated, enterprise cluster, and supply chain formed, put scale economic, range economic, network economic and innovation economic of are external effective overflow, for enterprise gets bigger of interests, for maximizing the profit, eventually build the transformation of the development zones – the rent incentive--the logic of space-polarization effects and structure. When the rent incentive effect of government public policy continue to overflow, not only makes up the costs in enterprises industrial upgrading, land and environmental protection, but also bring enormous economic surplus, so that they share the extra dividend brought by space-polarization effects of the development zone: including window effect (from the macro level of national development, implementation of the comprehensive national strategy for development zone, using the zone to form space strategic node for the liberalization of international trade, embedding the networking group formed by the development zones to promote economy innovation development systems regional development and prosperity); Regional flock

(from meso level, development zones carry out investment race of public based facilities, through investment flock of regionals and zones following up, brings technology spills of public based facilities model advantage and public service sharing, through the optimization of business thing environment, attract large extraterritorial capital into development zones, thus highlighting capital concentrated effect); localized (from micro angle see, development zones individual elements agglomerate, accelerate chain reaction of zone network innovation, promote the positive overflow of production elements agglomeration utility).

All in all, the rent incentive promotes transformation of development zones in China, and release a large amount of space-polarization effects, which ultimately expresses in the process of industrial upgrading, land and environmental protection system of bonuses (including the transaction costs, administrative costs, costs and management costs of the Organization relative decline caused by tariffs, investment facilitation, government service, public service quality level of) lasting appearance.

3 Mathematical analysis

According to the above analysis, this article assumes that: the public administration of the transformation of the development zone have two interactional interest bodies----government and enterprises. Both of them have the features of rational agents, there exist a space between the tax incentive of the government and the profits of enterprise. In other words, it's possible to create a positive interaction between the two interest bodies. Especially between the

game of government tax revenue and enterprise profits (the rules of the competition in the development transformation of the development zones are established by both two sides, otherwise the enterprises and the foreign capital will exit). The rules for interaction have the characters of integration, continuity and reciprocity. This is a motivation to conducive the transformation of development zones. It will agree with both policy of political governance market and economic governance market. It will promote the agreement of the policy for public governance and the rules for economic competition, increase the rents of government and the interests of enterprises. Author holds the opinion that: It's very important for the government to adjust the tax policy and encourage the enterprises for the optimization and upgrading of the industrial structure, the economization on land and the protection of the environment. It's also very important for the enterprises to do business investments according to the policy. The influences and functions this article defined have Increase of Marginal Utility and the characters of imperfect competition.

The research of public governance for the development zones in China can be transformed into the problem of three-dimensional spherical geometry curve to seek maximize space position.

(1)Theoretical Assumption: In the space of three dimensional interaction interactive spherical surface: X representative the cost of environment protection, Y representative the tax revenue of government, Z representative the products of enterprises(including the economical land use ,because there present a direct proportion relationship between productivity increase and the economical land using).The three parts formed three indifference curve and built a three-dimensional spherical surface space Giving a point in the space, as it's showed in Fig. 6.

Assume the length of vector \vec{OM} is r, which representative the observation and measurement of the achievements of the development of development zones.

The angle between \vec{OM} and the positive direction of Z is φ , represent the observation and measurement of optimization and upgrading of the industrial structure, provide that $0 \leq \varphi \leq \pi$. Then make a projection of \vec{OM} into the surface xOy, assume the angle between projection vector and x is θ , represent mathematical variables for the observation and measurement of the environmental protection. Given that $0 \leq \varphi \leq \pi$, set (r, θ, φ) as the spherical coordinates of M. That form the three dimensional control points for the rent incentive and space polarization effect interaction of public governance development zones. The variation range of r, θ, φ is $0 \leq r < \zeta$, the upper limit value of r

represent the reserve space of country's policy innovation. The value is not infinite, while the National sovereignty and economic security should not be affected; $0 \leq \theta \leq 2\pi$, the upper limit of θ represent that the optimization and upgrading of the industrial structure can conclude all the factors. Not only the incentives and constraints of domestic market competition should be considered, also the incentive and constraint of the international market competition.

$0 \leq \varphi \leq \pi$, the upper limit of φ represent that the maneuver room of the environmental restriction to economy development is very small and in the condition of rigid constraint. Once it break the upper limit value, the environment can never be restored. The scopes which were mentioned in this article provide the policy basis for the value of the static equilibrium and dynamic equilibrium of public governance for the development zones.

The definition of three-dimensional means that there exist a mathematical relationship between the optimization and upgrading of the industrial structure, the encouragement of foundation and the space polarization effect, means it's possible to search the max value in Three-dimensional spherical surface.

(2)Static Equilibrium Analysis: When r is a constant, the sphere which center on the origin represent the three-dimensional incentive and the constraint development space polarization effect, formed the possibility curve boundary. It has the exogenous characteristic, its policy meaning is that development level in a particular stage of development, and its public governance effect always tends to a constant value. θ is a constant value, the policy meaning is: represent a half plane cross the Z axis. Reflect the industry's marginal benefit level is solidified in a space of economical and intensive land resources configuration node. Using the increase of land area output, reflect the marginal revenue source, from the improvement of agglomeration level in the development zone. φ is a constant value, the policy meaning: represent a cone surface which set the origin as vertex and symmetry about z axial. Represent the lowest limit value of the bearing capacity of environment development. Only when the binding variables allowed, the rent incentives can achieve the interaction between industrial upgrading, land consolidation and environmental protection. Using the three-dimensional spherical surface $r = \text{constant}$, $\theta = \text{constant}$, $\varphi = \text{constant}$, produce a unique space node $\{r, \theta, \varphi\}$. Generally, any point in space will determine a set of data: $\{r, \theta, \varphi\}$, This method of determining the space, called a spherical coordinate system.

If point M's coordinates in rectangular coordinate system is (x, y, z) , So that point coordinates can be converted into $\{r, \theta, \varphi\}$ in the spherical coordinate system. As it showed on Fig. 6, space node optimization

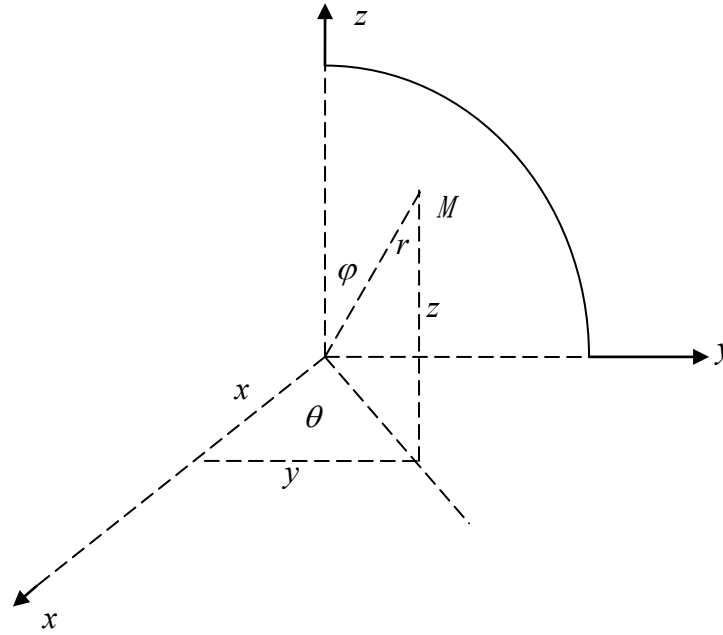


Fig.6 “Three-Dimensional” static equilibrium model for public governance

Source from (Li Xincan, Xu Bing, 1989^[26].) The figure is adjusted as needed.

solution of the static equilibrium as follows:

$$\begin{cases} x = r \sin \varphi \cos \theta, & 0 \leq r < \zeta \\ y = r \sin \varphi \sin \theta, & 0 \leq \theta \leq 2\pi \\ z = r \cos \theta, & 0 \leq \varphi \leq \pi \end{cases} \quad (1)$$

(3) Dynamic Equilibrium Analysis.

According to the given mathematical equation, a simple and feasible solving mathematical optimization algorithm is: transfer the spherical surface optimization problem into the solution of a cylindrical surface optimization.

The author give a little space M randomly, which is shown in Fig. 6. Projecting it onto a plane xoy, P, which coordinates for (r, θ_t) . (r, θ_t, z) is defined as the

cylindrical coordinate system of the point M. r, θ_t, z can ensure the location of M. We call method which ensures the location of M for cylindrical coordinate system. Among them, the range of r is $0 \leq r < \zeta$, the range of θ_t is $0 \leq \theta_t \leq 2\pi$, and the range of z is $-\infty \leq z \leq +\infty$. From the above explanation for static equilibrium analysis: When R is constant, means the cylinder whose center axis is z axis; When R is constant,

means half-plane after the z axis; When θ_t is constant, means the plane which parallels the xoy plane. Cylindrical coordinate's means using the above three surface intersection to determine the spatial position of any point.

If the coordinates of the point M under rectangular coordinate system is (x, y, z) , then the corresponding coordinates of under cylindrical coordinate system $(r,$

$\theta_t, z)$ we can learn from Fig. 7 that the mathematic expression of the dynamic equilibrium analysis is :

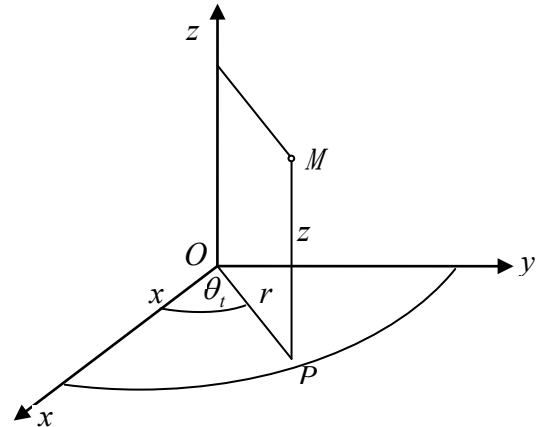


Fig.7 “Three-Dimensional” static equilibrium model for public governance

Adopting the method of substitution method to reduce dimension, get a dynamic equilibrium solution for

$$\begin{cases} x = r \cos \theta_t \\ y = r \sin \theta_t \\ z = z \end{cases} \quad (2)$$

Using the method of substitution, we get the equilibrium solution:

$$z = \sqrt{x^2 + y^2} = r \quad (3)$$

According to formula (3), infer by equilibrium analysis. We draw a conclusion that the equilibrium solution is $M=r$, meet the three-dimensional incentive and constraint conditions.

(4) The policy implications of equilibrium solutions:

In the process of public governance for the development transformation of development zones, the core mechanism of the interaction between Rent Incentive and Spatial Polarization Effect: the optimization and upgrading of the industrial structure, Land Saving and Intensive use and Environmental Protection can reach a mutual interaction. In order to verify the theoretical assumptions, this article raised propositions which were not proved: **r should be decided inside the system to make a positive performance in the interaction between the encouragement of rent revenue and spatial polarization effect, it's necessary to make the policy fit for the liberalization of international trade, free trade area may be the important direction of development zone's development transformation.**

4 Evidences from experience

(1) Sample introductions

China (Shanghai) free trade zone is the product of the Development Zone. As early as 2003, the famous scholar Cheng Siwei called for the development zone with the nature of the free trade zone to the free trade zone of true meaning^[27]. In a study of three national level development zone and twelve Municipal Development Zone, the closer the distant from the port is, the better the benefit is^[28]. Through empirical study, Breznitz and Murphree also believe that Shanghai as an important leader of the "Red Queen run", the gathering of the industrial parks, universities, basic industries and regional headquarters of large multinational companies, research institutions, is a key factor^[29]. August 2013, the State Council officially approved the establishment of China (Shanghai) free trade experimentation zone. September 29, 2013, the zone set up. Shanghai free trade experimentation zone covers four customs special supervision areas, inclusive of Shanghai Waigaoqiao Free Trade Zone, Waigaoqiao Bonded Logistics Park, Yangshan Bonded Port Area and social Pudong Airport, the total area for 28.78 square kilometers. This extended to 120 square kilometers. It is not only the expansion of the geographical space, but also a cover of new system, which fully shows that in accordance with the international trade liberalization rules of the Development Zone, the developing transition space of Shanghai is increasing.

(2) Overflow from the new policy's effect

Shanghai Free Trade Zone spillover effect highlights. From January to April this year, Shanghai FTA test area of new investment projects accounted for 54.5% of the number of new investment projects, contracts from foreign investment grew year-on-year 7.5 times, accounting for 82.4% of the city's foreign contracts. New contracts from foreign investment are 4.335 billion dollar, which is an year-on-year increase of 106.1%; 385 new foreign investment projects, shows an year-on-year increase of 0.5%; Foreign firms in Shanghai set up 506 regional headquarters of Multi-National Corporation, 29 the Asia Pacific headquarters; 302

investment companies; 384 R&D center, 21 new regional headquarters of a Multi-National Corporation, which includes the administrative headquarters of 13 companies, 5 investment companies, 3 R&D centers; record of 311 foreign direct investment projects ,record of the total foreign direct investment, an year-on-year increase of 356.76%, of which, the record of Chinese investment amounted to 11.461 billion dollars, an increase of 262.85%. In these 311 projects, there exist 264 private enterprise projects; 28 state-owned enterprise projects; 19 projects of foreign-funded enterprises, from the number, private enterprises accounted for ratio reached 84.9%^[30]. These developments show that, as long as the implementation of the full range of open strategy, China Development Zone is still a demonstration zone of national open window, reforming, innovation and environmental management.

(3) System innovation experience

In response to the new situation that the economic downturn continued to increase, the development of China (Shanghai) free trade zone are from the system innovation effect. 1. National top-level design system innovation leads. The State Council announced the "special management measures of access to foreign investment in free trade experiment zones (negative list)", for Shanghai, Guangdong, Tianjin, Fujian four free trade test area. The negative list is divided into 15 categories, 50 entries and 122 special management measures, according to the national economic industry classification (GB/T4754 - 2011). The implementation of investment negative list, is intended to realize a new pattern of easing into, strict supervision and better service through the liberalization of the international trade transaction rules. Promote the transformation of development zones, the benign interaction between the industrial upgrading, intensive land use and environmental protection, through system innovation rent incentives^[31]. The real role is, the institutional innovation of top-level design at the national level determine a clear boundary of private law and public law and construct a market regulation system with comprehensive adjustment which promotes a coordination between public law and private law^[32]. 2 the refinement of innovation system implemented by local organizations. The central government's expectations for the China (Shanghai) free trade zone are to be formed as soon as possible to the national promotion, and can be copied to the specific institutional arrangements. In order to win negotiations qualification to participate in the US led TPP and TTIP, Shanghai Trade test area focus on a series of problems inclusive of system in financial and foreign exchange, investment management, service trade, offshore trade, location of state-owned enterprises, the tax system, customs supervision, labor standards, environmental standards, enterprises and government relationship, which are major reforms for the current economic system^[33]. The crack of these problems is the refinement of the system arrangement in the concrete operation and operation

level. Such as the transformation of government functions, prior approval by the steering attention during and after the event, institutional arrangements and supervision services; expand the area of investment, the establishment of negative list system of national economy industry; promote trade development, to encourage the construction of Multi-National Corporation to set up regional headquarters building, making integration of trade, logistics, billing and other functions of the operating system of center, especially the interconnection of convenient and efficient import customs supervision system and integrated into the global industrial chain of high-end supply chain; deepen the open innovation in the financial sector, the first implementation of the convertibility of RMB project, financial market interest rate market, the RMB cross-border use system constructing; to create a first-class commercial environment to adapt to globalization, actively building "the first release, " construction supervision and management system in line with international trade rules in the region. " "Secondary Security Effectiveness", explores the effective way of customs clearance facilitation. Tax fairness, incentives to support offshore trade and foreign equity investment specific tax support measures^[34]. 3 institutional innovation to promote the interaction between the rent incentive and the spatial polarization effect. China (Shanghai) free trade zone system benefits from system innovation, which has become the driving force of development. Free Trade Zone in Shanghai has achieved by preferential policies to system affordable rent incentive mode transformation, further highlighting the spatial polarization effect of FTA, which is because foreign capital entry barriers and tariff policy has a complementary role, but unless a specific industry to implement the regulation, negative list system arrangement of import and export effect than the government carefully designed optimal tariff effect good^[35]. I believe that the decision factor of the development of public governance in the development zone of China, the system, tax burden and resource endowment is more important. Because, open to forced reform, thus forming a new institutional arrangements, more in line with the international trade liberalization of trade rules.

5 Conclusions and policy recommendations

(1) Basic conclusions

The governance and the level of public governance in the development of China's development zone determines its open economy transformation. The establishment of interaction between rent incentive effect and spatial polarization effect not only make up the costs of industrial upgrading, land intensive and environmental protection. The economic surplus from innovation which retains the enterprises in the development zone enjoys sharing the benefit of the window effect (all-round opening - trade liberalization), regional herd effect (advantage in investment in public infrastructure model)

and localization effect (specific factor spatial agglomeration of innovation network chain reaction) of the Development Zone 2. The government control of public governance resources effective disposition of system acceptability, local governments have incentive system integration, continuity and reciprocity, is the government public governance and enterprise behavior interaction with tax and corporate profits, is conducive to the development and transformation of development zone. The economic implication of the equilibrium solution is that the development zone is the main free trade zone which is based on the system innovation. 3 China (Shanghai) free trade experimentation zone experience has proved that the Development Zone Development and transformation of the system emphasis more on the role of system innovations stimulate development.

(2) Policy recommendations

Institutional innovation and adapt to the trading rules of the liberalization of international trade coincide. Accelerate the gathering of higher development factors to the Development Zone. Strengthen the causal relationship between rent incentive and spatial polarization. Continuously innovate derived from the open economy system. Free trade zone can be an important direction of transformation of Chinese national level development zone.

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