

URBAN LAND EVOLUTION IN SUZHOU AREA : FROM EARLY 1980S TO MIDDLE 1990S

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ABSTRACT: Firstly the general category and pattern of urban land evolution is theorized on the basis of correlating researches. This offers a research framework and theoretical reference for the case study in Suzhou area. Then four features of urban land evolution in Suzhou Area are summarized, including amount, locality structure, function structure and spatial structure. It is contended that all these features resulted from the developing process that has been followed with specific institutional transformation of China in this period. And in general economic development and structure shift is the key factor contributing to urban land evolution. Meanwhile rural demographic urbanization and town residents re-urbanization and landuse institution reform are other two important underlying causes. In comparison with classical Western model, such urban land evolution happening in Suzhou area is explicitly distinct due to many 'abnormal' characteristics. But it is 'normal' according to the underlying mechanism, which arguably illustrates the invalidity of empirical theoretical model.

KEY WORDS: urban land evolution, land evolution feature, land evolution mechanism, Suzhou area

Urban land is the main carrier of human development. At the same time land is a basic means of productivity. Urban land evolution sensitively reflects the process, tendency and contradiction of development. This paper first theorizes the general interpretation on urban land evolution. Then the main body concentrates on the empirical study on features and mechanism of urban land evolution in Suzhou area from the early 1980s.

1 GENERAL THEORIZATION OF URBAN LAND EVOLUTION

Aggregated with human behavior, urban land is characterized with dynamic evolution. In comparison with rural land, such an evolution is not only quantitative but more importantly, qualitative. Two levels can be distinguished in the research: one is urban land

evolution of individual city or town and the other is that of regional urban group. The former is the main content in the research on urban spatial structure while the latter is valid in revealing rule and tendency of macro-urbanization although these two aspects are interactive.

1.1 The Features of Urban Land Evolution

Urban land evolution is a complex process with interrelated causes and results. But in general we can investigate its features from four aspects: amount, locality structure, function structure and spatial structure. Here the locality structure means the distribution of urban land growth according to different scales of urban settlements namely the big city, intermediate city, small city and town. Similarly the function structure means the distribution according to different

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land functions and the spatial structure according to different locations within an urban settlement.

China's characteristic institution and ideology that we can find from the empirical discussion.

1.2 The Mechanism of Urban Land Evolution

The key is the dynamic mechanism. The essential dynamic origin for urban land evolution is societal factor that is mainly the population migration. Besides common urbanization of rural population, in leading developing areas a Chinese type of re-urbanization should be considered seriously. However the determining impetus seems the economy although it can not be extremely separated from the societal factor. In this category, because Chinese economy is still investment-driven, capital holds a vital role. There are a few other dynamic factors, but actually they work indirectly through their effect on these two key factors. Within them, the reform of landuse institution from the late 1980s has made land itself act as a real means of productivity for the first time in the history of New China. But in general, all these dynamic factors are strongly intervened by policy measures in

1.3 The General Pattern of Urban Land Evolution

The pattern of urban land evolution expresses the rule abstractly (Hu, 1995). It can be employed to study the periodical features and tendency of urban land evolution in particular circumstance, and therefore to produce policy implication. As mentioned above, the theorization of urban land evolution pattern is divided into two levels with one about individual city and the other regional urban group. The pattern of individual city is linked with the 'life cycle' of city's birth, growth and decline. In terms of regional urban group, the pattern is mainly connected with the developing rule of regional urban system. Based on existing theories on the Western classical urbanization and urban spatial structure (Cui *et al.*, 1992; Yao *et al.*, 1995; Song, 1996), the general pattern of urban land evolution is drawn here as the reference for empirical investigation (Fig. 1 and 2).

Index	1	2	3	4	5
Stage	Birth stage	Growth stage 1	Growth stage 2	Mature stage 1	Mature stage 2
Amount growth	Moderate	Speed-up(+)	High-speed(++)	Moderate(+)	Relative stability
Structure	Sprawl extension with little function adjustment	Sprawl extension with part function adjustment	Sprawl and leaping extension with large-scale function adjustment	Leaping extension with part function adjustment	Relative stability with sometime central decline and part function adjustment
Schematic diagram					
City spatial structure	Homocentric round structure, conglomeration style → fan-shaped structure, finger style → multi-core + satellite towns, star style → network structure, nebulosity style				
Corresponding urbanization stage	Early stage with beginning of concentration	Early speed-up stage with fast concentration	Later speed-up stage with high-speed concentration and beginning of sub-urbanization	Later stage of urbanization, sub-urbanization	Amalgamation stage of urban and rural areas
Corresponding industrialization stage	Afore-industrialization	Early industrialization	Middle industrialization	Later industrialization	Later industrialization to post-industrialization

Fig. 1 Urban land evolution pattern of individual city

Index	1	2	3	4	
Stage	Birth stage	Growth stage 1	Growth stage 2	Mature stage	
				Urban System style	Conurbation style
Amount growth	Moderate	Speed-up(+)	High-speed(+ +)	Relative stability	Moderate(+)
Structure	Leading development of small towns	Leading development of primary city (regional central city)	Leading development of sub-central cities	Prosperity of small towns, formation of urban system	Conurbation
Schematic Diagram					
Urban system structure	Equilibrium structure	Primary structure	Terraced structure	Terraced structure, tending to network structure	Network structure
Corresponding urbanization and urban system developing stage	Early stage of urbanization, low-level balanced development	Early period of speed-up stage of urbanization, growth-pole development	Later period of speed-up stage of urbanization, point-axis development	Later stage of urbanization, tending to high-level equilibrium development	Amalgamation stage of urban and rural areas, high-level equilibrium development
Corresponding industrialization stage	Afore-industrialization	Early industrialization	Middle industrialization	Later industrialization	Later industrialization to post-industrialization

Fig. 2 Urban land evolution pattern of regional urban group

2 FEATURES OF URBAN LAND EVOLUTION IN SUZHOU AREA FROM EARLY 1980S TO MIDDLE 1990S

(1) Urban land amount has been increasing at a high speed. This is especially conspicuous after entering the 1990s with increase within four years (from 1991 to 1994) almost surpassing the historical total. Meanwhile, the fluctuation of growth rates among different years is widened.

The amount of urban built-up land in the whole of Suzhou area was 220.7 km² in 1991 and in 1994 this figure reached 419.0 km². In Suzhou City, the urban built-up land was 30.0 km² in 1982 and 66.0 km² in 1994. Within this period, there were only 7.1 km² increase from 1982 to 1990 with an annual increase of less than 0.9 km², and annual increase rate of 2.69%. While from 1990 to 1994, the annual increase was more than 7.0 km² with an increase rate of 15.5%. On the other hand, there was very trivial fluctuation during the whole of the 1980s. But during

the 1990s, in the most outstanding 1991 the urban built-up land increased by 32.61% within a year comparing with only 5.01% in 1993. Such a situation could also be seen in the six prefectural cities.

(2) The increase of urban land in intermediate and small cities, and especially in towns is faster than that in large cities. But a new trend in the 1990s is that extension of intermediate and small cities began to speed up. On the contrary, the high-speed growth in towns slowed down in general though the situations were different from towns to towns.

From 1986 to 1990, the built-up area of Suzhou City increased by 6.61%. In the same period, the land used for towns and market towns increased by 11.65% which is 1.76 times as much as the relative increase in Suzhou City. From 1990 to 1994, the built-up area of Suzhou City increased by 77.90%, while the same figure is up to 145.57% in towns and

The data are based on Annual Report of Urban Construction of Suzhou(1992 - 1996), Suzhou Land (1996, 1 - 6), and local planning files.

market towns.

In the gross amount of urban built-up land, the proportion of Suzhou City, six prefectural cities, and towns and market towns is respectively 22.35%, 26.11% and 51.77% in 1991 while 15.75%, 26.49% and 57.76% in 1994. Obviously the extension of large city is the slowest and the small towns the fastest. However, when investigating in terms of long tendency, if we can say the growth of small towns is the most predominant in the 1980s then the growth of intermediate cities in the 1990s is the particular highlight.

Among towns, some still kept original trajectory of high-speed growth but others fell into stagnation. The three cases of towns in this research belong to Changshu City and their urban land increasing rates are all less than the average level in the whole of Suzhou area. For example in Wangshi Town, which had ever been the first leading developed towns in Changshu City for a long time, the urban built-up land increased by 103.78% from 1987 to 1994. There is a conspicuous disparity from the gross increase of towns in the whole of Suzhou area that achieved 209.14%.

(3) On the one hand, the manufacture sector is still the leading function for the extension of urban land though non-manufacture sectors has been acting as more and more important roles. On the other hand, within large and intermediate cities especially advanced-developed large city, there was large-scale adjustment of city function structure. Such structural adjustment was another impetus for urban land extension.

Manufacture sector has long been considered as the main function of city in China and acted as the main resource to promote urban development. In the research on urban fringe it is also contested that in China the extension of manufacture land is the leading factor for the growth of urban fringe while the residential land tends to concentrate in the city central district. This is exactly opposite to Occidental condition where residential land leads the development of urban fringe. In Suzhou area, manufacture sector

has continuously been the leading function for urban land extension especially in towns. But the condition has been changing gradually since entering the 1990s. There have been many occasions that non-manufacture function dominated urban land extension. Maybe the most outstanding feature of urban land evolution in the 1990s in China is various developing districts that appear likely within one night. Although in general these Developing Districts aim to develop manufacture, some of them, especially in intermediate and large cities, are actually multi-function economic developing districts. In fact, because these Developing Districts are very large, they must serve themselves to some extent. This necessitates integration of various functions.

For example, there are four Developing Districts in Suzhou City namely SND (Suzhou New District), SCSIP (Suzhou China-Singapore Industrial Park), WETDD (Wuxian Economic Technological Developing District), and XETDD (Xushuguan Economic Technological Developing District). All of their main function is manufacture sector. Even the least proportion of manufacture sector land in planning (SCSIP) is also over 50%. However, in SND and SCSIP systematic financial, administrative, business and services, and residential districts are all well configured. So these two developing districts are essentially like common city areas with synthesized functions.

The large-scale adjustment of urban land function structure mainly occurred in Suzhou City and some in intermediate and small cities, only a few in towns. In Suzhou City, such a measure was adopted mainly for regeneration of ancient inner city. A policy named "withdraw second sector, promote tertiary sector" reduced manufacture land in ancient inner city from 2.42 km² in 1985 to 1.2 km² in 1995.

(4) There are two features characterizing spatial structure evolution of urban land. Firstly there are many "leaping extension". Quite a lot of developing districts are located separating from central district

Zou Yi *et al.*, 1991. Research on Urban Fringe. Unpublished working paper, Department of Geography and Ocean Science. Nanjing University. (in Chinese)

“old” city. They usually integrated blocks in relatively large area. Secondly in central urban area the block distribution with different functions are changing continuously.

The developing districts are generally located at separated block with good geographical conditions such as SND, SCSIP, Changshu Economic developing district. Actually, with very few exceptions the areas of these developing districts all nearly equal that of central district in original city. But gradually because the blank area between developing district and central district in original city is filled by construction, most of these Developing Districts adjoin with central district of original city again.

The central district is reformed to function as CBD (central business district) or similar district in every city. Therefore the functions conflicting with

this objective are replaced such as manufacture.

3 MECHANISM OF URBAN LAND EVOLUTION IN SUZHOU AREA FROM 1980

(1) Economic development determines urban land evolution. The amount feature of economy determines the amount feature of urban land evolution. So do the structure features.

Firstly, the gross high-speed growth and fluctuation of urban land are matched with economic growth in the same period. This can be seen from Fig. 3. When comparing the situations among different areas, it is also explicit that in the area with low economic stability, the urban land growth is also unstable.

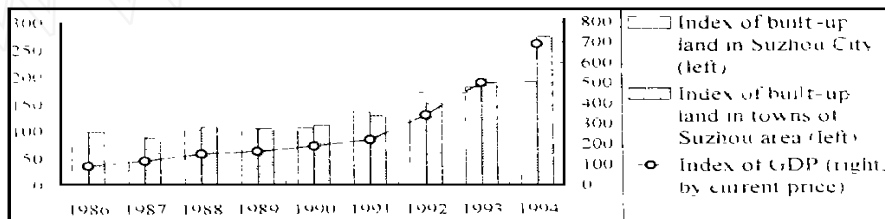


Fig. 3 Urban land and economic growth in Suzhou area from 1986 to 1994

Secondly, investment structure, ownership structure and product structure are determining factors for locality structure feature of urban land evolution.

Among them, the investment structure is the most important. In general, different backgrounds of capitals affect the selection of investing location. As the archetype of Sunan Model, at the very beginning of reform, collective ownership economy of Suzhou area developed very quickly. Excellent agricultural base was one reason. Besides, earlier development of TVEs (township and village enterprises) before the beginning of reform policy had accumulated quite lot of capital for this area. At that time capital flow was controlled strictly and capital accumulated through the development of TVEs most remained in small

towns. This therefore promoted so-called “bottom-up” urbanization.

From middle-end of the 1980s, the condition has changed with foreign capital becoming a main impetus for economic growth in Suzhou area. In the initial stage, foreign investment programs were generally small. Thus they tended to select the locations where hard and soft environment were all very good but meanwhile with the lowest cost. Thus intermediate and small cities were the best choice. The investigation on the foreign investment programs’ scale and location proves this viewpoint. Simultaneously, intermediate and small cities possess the better locality to absorb collective ownership capital and they are capable to enact more flexible policy. All these factors together contribute to the leading development of inter-

mediate and small cities in the 1990s.

On the contrast, the large city, which relies on national capital for long time, seemingly encountered trouble in this period. But such a situation should not be considered as a result of the 'poverty' of nation. Besides for visible capital such as currency and material, national capital still includes invisible part, mainly various policies, which can adjust the distribution of capital. For a long time from the beginning of reform, national invisible capital is actually inclined to non-national ownership economy. To a certain degree, a big part of value increment of collective ownership and foreign capital is just the transition of national invisible capital. From middle-end 1980s, China has also tried to invest invisible capital into national ownership economy that concentrates in large city. Arguably the reform of landuse institution is such a policy because the collective ownership land is not permitted to enter market. However, partly because the policy itself still needs improvement, the implementation of this policy did not totally accord with initiative.

The discussion about visible and invisible national capital partially unifies the ownership structure with the investment structure though ownership structure also means different operating mechanism of enterprises. Entering the 1990s, the policy change has impacted the TVEs strongly because the decline of invisible capital (the reduction of policy favor). Meanwhile predicament of national enterprises is still far from solved. Comparatively only enterprises involving in foreign capital occupy the advantages of technology, mechanism, capital and policy. Thus in terms of urban land evolution, the situation becomes that development speed of towns tends to decline and the inner differentiation tends serious. Intermediate and small cities taking the advantages of good locality, infrastructure and so on like large city and cheap land, labor etc. like small towns simultaneously, becomes the best choice for foreign capital thus keeping the high-speed growth. Big city bears the burden of national economy. But due to national support and high quality of integrated environment that attracts

the powerful transnational capital, Big city still keeps the relative stable development.

In reference of product structure, low-level products were main weapons of TVEs in the early stage of reform. But Chinese economy is becoming more and more mature and transformation of TVEs is inevitable. This directly leads to the stagnation of small towns' development.

Thirdly, industrial structure is the determining factor for the function structure feature of urban land evolution. The core of economic development in Suzhou has been always manufacture sector. In the inner structure of manufacture sector, TVEs acts a very important role. Recently, the growth of tertiary sector tends to speed up. This leads to the function structure change in urban land evolution in the 1990s.

At last, the quantity, scale and content of investment projects determine the spatial structure feature of urban land evolution. There are lots of new industrial projects in Suzhou area, many with large-scale. The infrastructure and land in central district of original city is incapable to support them. Thus it is natural to develop new district with good locality, low land cost and complete blocks. By the way, since there are many new manufacture projects with pollution, such a measure is actually beneficial for protecting city environment.

All important policies or political movements have affected the urban land evolution in this area. For example, Deng's inspection in South China in 1992 and following macro economic adjustment makes 1992 - 1993 a turning point in urban land evolution.

(2) Large scale of rural population keeps high pressure on fast extension of urban land. Meanwhile a Chinese style of re-urbanization influences the structure feature of urban land evolution.

The tremendous rural population is a long-term pressure for the demand of urban land. Under current household policy in which migration is constrained strictly, such a pressure transforms into a phenomenon of TUR (temporary urban resident). The TUR amount in Suzhou area keeps arising since

1980, which is estimated officially up to 8% of the total population. TURs are mainly rural population with low-level education background. But not all low-level educated population is TURs. There is another specific kind of non-eternal urban population named SUR (swinging urban resident). SUR is quite different from common 'commuting urban resident' that usually refers to resident with eternal household. SURs generally reside in their original rural area but work in towns' TVEs and occasionally possess property in towns. They keep their cropland and do some agricultural work if necessary. There is a big proportion of SURs in towns. For example in Wangshi Town this figure is 62.7% in 1988 and 59.1% in 1994. In terms of 'formal' migration, the larger the city is, the bigger attraction it has. Thus these cities can select new residents based on their background. Those high-level migrants such as young graduates from university mainly concentrate in cities.

Here the re-urbanization refers to urban residents' migration between different urban settlements. This is different from Western re-urbanization in urban regeneration. Of course either this is not the common population flow among cities because it has positive regular direction in which the towns' residents move to larger cities. Such a re-urbanization is seemingly resulted from the unsatisfactory quality of small towns. It has affected the current prosperity of small towns and maybe restrict their potential to grow to cities as usually understood. Entering the 1990s, there are many small towns with their residents declining in Suzhou area. Because population natural growth was net increase, obviously many people moved out. Most of them moved to higher-level cities and only a few returned to cropland. The cases such as Wangshi Town and Zhitang Town all show such a condition. But at the same time, due to the predicament of national ownership economy that produces more unemployment or underemployment, larger cities also face up to the puzzle to digest their own residents. This sets a handicap for re-urbanization.

(3) Reform of land use institution to introduce

market mechanism efficiently catalyzes the high-speed extension and structure adjustment of urban land.

At first, it stimulates the speedup increase of urban land amount. The marketization of land resource essentially transforms land into capital. It accumulates tremendous capital for urban construction in very short period. For example, from 1988, when this land reform was turned into reality in Suzhou area, to 1995 the gross contract amount of money for transference of land usage-right achieved more than 10 billion yuan in Suzhou City. This is a big support for construction of city infrastructure. Meanwhile, the buyers of city land will invest much more money. And all these improve the whole quality of city and therefore attract more investment. A positive cycle is therefore formed.

Secondly, larger cities can benefit more from this reform. The large cities seem more attractive in today's China. Actually, collective ownership land is not permitted to enter into land market directly. Besides for Suzhou City mentioned above, another successful example is prefectural city Kunshan. Until 1995, the contract amount of money for urban land transference was 4.8 billion yuan with 2.8 billion yuan had been paid. However, this reform is not for promoting too fast extension of urban land. While there existed lots of irrational conditions after this reform especially in small towns. In this case we cannot evaluate this policy's role for urban land evolution simply.

Thirdly, it can benefit the functions according different developing directions in different scales of cities but especially the tertiary sector. In general, in large city the tertiary sector benefits more from land usage-right transference while in intermediate cities

Data resource: Suzhou Public Security Bureau.

According to sample questionnaire, only 16.5% of total TURs were ever educated at senior high school and very few educated at technology school.

Shen Jiewen, 1996. Analysis on mechanism of economic and demographic concentration and confusion in small towns in Sunan, Unpublished working paper, Department of Urban and Resources Science, Nanjing University. (in Chinese).

It is stated in File 95-1 of Suzhou Labor Management Bureau that the amount of accepting labors from outer Suzhou City is strictly controlled. Only thirteen sectors that need low technology and hard work can employ non-Suzhou labors.

it is the second sector that gain biggest profit. Thus we can find that in all land-right transferences of Suzhou City, manufacture projects occupy 48 % of quantity and 39 % of area. In intermediate city Kunshan the manufacture programs occupy up to 80 %. More space has been shared for tertiary sector through such a reform. In fact, land market itself is a new active tertiary sector.

At last, it promotes the function adjustment in urban central district, old city regeneration and the prosperity of developing district.

But one new trend is that the competition in land market have been transforming from price to integrated quality. Thus although possessing nearly the same locality, the land prices of SND and SCSIP are much higher than that of WETDD and XETDD, most enterprises still prefer the former two.

4 CONCLUSION

As a conclusion, compared with the general interpretation on urban land evolution, urban land evolution in Suzhou area mixes the features of different economic and urbanization stages. For example the amount feature of urban land evolution matches the general experiences in the beginning of industrialization and speedup stage of urbanization, so does the function structure. But the locality structure and spatial structure has shown some features occurring at the later stage of industrialization. Meanwhile, there seems no such a recurrence of urban land evolution process like the classical condition. For example, there exist many features that commonly happen at the middle or later stage of industrialization or urbanization. But some years later these features begin to vanish whilst the condition seems still in the early stage of industrialization or urbanization. One exam-

ple is the locality structure of urban land evolution. The leading development of small towns happened at first. But this is a feature of very early or very later stage of industrialization or urbanization. Then the intermediate and small cities began to develop faster while this is a feature of the middle stage of industrialization or urbanization. Another example is the spatial structure. The development of developing districts has not led to a multi-core city inner structure with 'organic dispersion' feature. Quite the contrary, gradually the city returned to the sprawl state. However in any case, these conditions have their reasons that lie on the economic-societal developing process in this area. And the whole of this developing process is a result of human selections, collective consciousness. Thus, arguably any empirical theoretical model in this field is powerless to interpret the contemporary process needless to say prediction and policy implication. And only the causality unraveled through case study is valid for understanding the realistic phenomena. The past experience of urban land evolution in Suzhou area abides by its own causality and trajectory, and the future tendency will still be implied from its own particular economic-societal process within China's backdrop.

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