Development Mode of Mid-small Cities in Northern Jiangsu Based on the Growth Pole Theory

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Abstract The development mode of mid-small cities in northern Jiangsu is analyzed on the Growth Pole theory. Depending on scales, endowment of resources, geographical positions, and industrial advantages of mil-small cities, we can divide the development mode of those mid-small cities within this context into five types: development through integration into big cities; independent development; resource-dependent development; single industry development; and mixed industry development.

Key words Growth Pole, Mid-small cities, Development mode, Northern Jiangsu

Since China adopted the reform and opening-up policy, it has promoted development of Pearl River Delta, Yangtze River Delta, Bohai Economic Rim and Chengdu – Chongqing Economic Circle through construction of growth poles such as Shenzhen Special Region, Pudong New Area, Tianjin's Binhai New Area and Chongqing's Liangjiang New Area and has made great achievements. However, people always focus on big and super cities as growth poles, but rarely notice mid-small cities connecting big cities and rural areas. Research and practice of the growth pole strategy has taught us that adoption of this big city growth pole strategy presumes certain regional conditions, namely support from improved urban economic system and close economic linkage in the region, so that it can realize the goal of promoting regional economic development through growth poles [1]. In this case, connection through mid-small cities is essential.

Based on the theory of growth pole, we analyze the development mode of mid-small cities in northern Jiangsu considering the characteristics of those mid-small cities. Mid-small cities herein refer to county-level cities excluding towns.

1 Overview of the theory of growth pole strategy

French economist Francois Perroux found through study early in the 1950s that growth appeared not in all places, but at some growth points or growth poles with different strength, and then it spread outward through different channels and generated different ultimate influences on the entire economy. Therefore, Francois Perroux is the first to put forward the concept of growth pole. Of course, growth pole by Perroux doesn't refer to specific geographic space but to abstract " economic space" highlighting " economic relationship among economic elements". Later, with focus on regional characteristics of growth pole, Perroux's student Boudeville puts forward economic geographic explanation and classification of " economic space" and associates it with city scales. He defines growth pole as a group of expansive propulsive industries that promote economic activities in the region under its control to develop further. In this case he has endowed geographic characteristics to the concept of growth pole. Since then, some economists, such as Herman, Myrdal *et al.* have further studied the function and influence of geographic units such as city during the regional development, considering city as a growth pole of a region.

The theory of growth pole is essentially a theory of unbalanced economic development. It emphasizes that main dynamics of economic development are innovation and technology progress and describes that innovation usually concentrates in some special businesses, industries or regions. These business, industries or regions always have an economic growth speed higher than average, and are the most active part of economic growth. The theory of growth pole also highlights realization of overall economic development through promotion of development of upstream and downstream businesses, industries or related regions by means of economic linkage [3].

The theory of growth pole is extensively applicable. It is of great guiding significance to both developed and developing regions and helps to exert the regulation function of governments. Therefore, this theory has been consecutively been adopted by France, Italy, Brazil, Israel, China, *etc.* as the theoretical basis for making regional economic development polices to guide and promote economic development in specific countries or regions, especially those backward regions. Brazil, for example, moved its capital to Brasilia in April 1960 in order to promote inland economic development. The capital was made an important growth pole and brought prosperity to the middle west of Brazil. It connected the south and north of Brazil, and promoted further development of the whole country.

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2 Function of mid-small cities in the growth pole strategy

Influences of growth pole on its surrounding regions have to spread gradually through different channels based on the urban system where it lies. It is not isolated. Functions of mid-small cities in the growth pole strategy mainly include the following two aspects:

2.1 Participation in division of labor and specialization Growth pole promotes regional economic development through close economic linkage. In one hand, the downstream and upstream chain effect generated by propulsive units (businesses or industries) in the growth pole triggers demands for raw materials or prior-stage products. Mid-small cities can participate in division of labor to meet these demands. Meanwhile, as the scale of mid-small cities are so limited that they cannot provide diversified comprehensive resources, facilities or services, therefore, because of their specific advantages and historical development path, they can attract businesses of certain types to centralize. In this case they generate their leading industry and form their specialization of mid-small economic structure. For example, they may become the raw material supply base or accessories supply base, *etc.* for the grow pole.

At the same time, with the continuous scale expansion of big cities, "economy" generated by centralization will be replaced by "diseconomy", which means with competition getting fiercer, profits will decrease due to rising costs of labor, land, *etc.* In addition, with the development of big cities, tremendous consumer and service demands are generated. Some mid-small cities will then become a base for supply of these services. For example, some may become production and processing base of agricultural products by distribution of such products, or they may become resorts for tourism and leisure.

2.2 Forming complete economic cycles Within the entire urban system dominated by a grow pole, the economic system of the growth pole is composed mainly of capital-intensive industries, such as manufacture, financial service, export trade, commodity wholesale, postal communication, *etc.* Its communication with other big-middle cities for commodities, capitals and information, *etc.* forms the so called "high-level cycle", while in its broad peripheral region, the economic system is composed of noncapital-extensive manufacture, non-modern services, non-modern small-scale trades, which form the so called "low-level cycle" [4]. Mid-small cities are of great significance in the low-level cycle.

The function of mid-small cities in the economic cycle consists of two aspects: one is vertical linkage, *i.e.* their upward linkage with the central city and downward linkage with peripheral regions. The other is lateral linkage, that is, mid-small cities' linkage with surrounding peripheral regions. In this case, mid-small cities have become nodes of linkage between villages and between urban and rural regions. They form an economic cycle network which is continuous in space and of gradient levels.

Generally, in contrast to the diversity of economic structure in big-middle cities, the economic structure of mid-small cities is more special, specific, regional and resource-based. This characteristic of economic structure of mid-small cities results from its participation in the economic linkage dominated by the growth pole. It makes mid-small cities connect directly or indirectly with external economy through big-middle cities, thus they are open in a higher level and can promote the economic development of peripheral regions.

3 Development mode of mid-small cities in northern Jiangsu

For the sustainable development of a grow pole, it must have the following strategic factors: forming of a competitive leading industry, promotion of other industries by the leading industry, centralization and diffusion caused by development of the leading industry, so as to generate consequential urbanization effect [5]. Based on such requirements of development and according to the driving force factors of urbanization in northern Jiangsu, we present the following 5 development modes of mid-small cities in northern Jiangsu.

3.1 Development through integration into big cities This mode of development through integration into big cities is adopted by cities that have unique special geographic advantages. These cities are close to and under strong radiant effect of big cities. They themselves hardly can develop into another big city, so naturally, they choose to integrate into big cities and become a part of it. In northern Jiangsu, typical examples include Chuzhou District of Huai'an City, Tongshan County of Xuzhou City, Suyu District of Suqian City, Yandu County of Yancheng City. Many of them have become a part of central city by transforming county into urban district. However, such administrative transformation isn't equal to becoming an organic part of big cities. Though some counties have had their names changed into district, they are the actually same with counties no matter in terms of economic life, social management or evaluation, and are really not a part of central cities. For example: Chuzhou District of Huai'an City is 13 km away from the main urban area. Without sufficient transportation for convenient communication between them, the development of Chuzhou District hasn't been significantly promoted by the main urban area. Therefore, these counties should take the initiative to integrate into central cities, interface with central cities in every aspect and participate in the division of labor in central cities. Of course, central cities should really accept them and coordinate in planning, industrial distribution, *etc.* By contrast, Tongshan District is mutually inclusive with and under strong radiation of the main urban area of Xuzhou City and thus develops quickly. With the inclusion of Tongshan District, Xuzhou City has enlarged its space for development and adjusted its industrial distribution of the secondary and the tertiary industries.

3.2 Independent development Independent development refers to the mode that a self-contained big-middle city with broad hinterland of its own while possibly under radiation from growth poles of big surrounding cities absolutely can develop itself into a growth pole that promotes development of surrounding hinterlands. In northern Jiangsu there are such typical middle sized cities as Shuyang, Xinyi, Xuyi, *etc.* These middle

sized cities themselves have a large scale, a complete industrial system and a large population under its jurisdiction and radiation; therefore, they themselves absolutely can develop into a new growth pole. Taking Shuyang County for example, in 2010 the urban built-up area reached 43.6 km^2, with a population of nearly 400 000 people, a temporary resident population of 20 000 people and a county subject population of 1 807 000 people. In 2010, the total GDP of the county reached nearly 31 billion which equals to the scale of a prefecture-level city in Midwest China. Taking Xuyi County for another example, though attached to Huai'an City, it is 110 km far away from the central Huai'an City and hardly under radiation of central Huai'an City. In addition, construction of the county has begun to take shape. It has a rather complete industrial system, a broad surrounding area under its radiation and is well-known widely. Therefore, these middle sized cities with a large scale should choose the independent development mode. They should augment their strength while accepting the radiation from surrounding big cities, so that they would develop into an influential new growth pole.

Mid-small cities of independent development mode are characterized by long distance from big cities, large scale, broad radiation scope and complete economic system. Therefore, they are very likely to develop into middle sized cities radiating over surrounding counties (areas) and become a new growth pole of regional economy.

3.3 Resource-dependent development Resource-dependent development refers to the development mode of utilizing its own natural resources to develop characteristic economy and become a special member in the division of labor of surrounding areas or even the Yangtze River Delta. Ganyu County is a typical example. With the Yellow Sea to its east, it has well developed sea-water aquaculture industry and is an important member of the marine development strategy of Jiangsu. It can vigorously development marine economy, make good use of the opportunity that Jiangsu coastal development strategy is promoted to national strategy and make itself a strong county of marine economy. Meanwhile, Sihong County, Hongze County, *etc.* may utilize its resource advantages of Hongze Lake and develop into a strong county of lake economy. Donghai Crystal City has the largest specialized trade market of crystal in China and one distribution center of worldwide crystals. It occupies a floor space of and 18 000 m^2 and a business area of 36 000 m^2. Throughout Donghai County there are over 100 000 people engaged in crystal industry and the annual output value of this industry is up to 6 billion Yuan. Therefore, crystal industry has become an important pillar for economy of Donghai County. The lobster and attapulgite industry of Xuyi County is well-known worldwide. In 2010, the urban area population of Xuyi County is 121 000 people, and the total GDP is 2.3 billion Yuan.

The characteristic of resource-dependent development is that mid-small cities have their own special natural resources and geographic locations, which can provide important support for economic development, so that they can develop some sort of characteristic regional economy.

3.4 Single industry development Single industry development refers to the mode of development by utilizing its own influential traditional advantages to develop competitive industry and become a production site of a well-known industry or brand. In northern Jiangsu, a typical example is Yanghe New Town of Suqian City. Yanghe New Town was a new town built on the basis of former Yanghe Town through integration and was established on April 2011. The pillar industry of Yanghe New Town is Yanghe liquors. On November 6, 2009, Jiangsu Yanghe Brewery Joint-stock Co., Ltd. was officially listed at Shenzhen Stock Exchange. Throughout the new town there are over 70 breweries. The Yanghe New Town based Jiangsu Liquors Group has an annual turnover that keeps a stable position as one of top three brands in the industry at home. It has brands known worldwide such as Yanghe Blue Class, Yanghe Daqu, Shuanggou Daqu, Sujiu, *etc.* It is really a mid-small city developed through specializing in liquor brewery industry and is now making itself a Liquor Capital. It is a typical example of single industry development in northern Jiangsu. In 2010, Yanghe New Town has an area of 4.8 km^2, with 70 000 people and the revenue of 150 million Yuan.

The characteristic of single industry development is that economic development of a mid-small city is obviously specialized in a certain industry, which becomes its pillar industry and accounts for a large part of the entire economy aggregate. This mid-small city has become a gathering place for this industry and is well-known for this industry.

3.5 Mixed industry development Mix industry development refers to the development mode chosen by some mid-small cities not too far away from central cities and with certain resources and not too large scales. For example, Jinhu County of Huai'an City develops machinery manufacture and instrument industry; Guannan County of Lianyungang City constructs a salt chemical industry park and vigorously promote the construction of state-level edible fungi industrial center; Siyang constructs a "Shanghai Textile City" and develops forest wood process industry to become a forest industry county well-known throughout China; Fengxian County has an annual output of electrical tricycle that accounts for over 50% of its total output in China. It has constructed 6 agricultural product processing industrial parks. These counties can neither completely integrate into central cities, nor develop into a large scale middle sized cities because that they are not large in scale, have specialized but not complete industrial system, and are neither too far nor too near from central cities. They can utilize their own resources advantages and develop specialized economy so that they would develop into mid-small cities that participate in division of labor in central cities while also have their own characteristics to promote the economic development in their counties.

The characteristic of mixed industry development is that the development of these mid-small cities can not fall into any development mode described above, but have the characteristics of two or more of these development modes.

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disasters; the construction of a new socialist countryside and other opportunities can be used to improve the social, economic and ecological environment in the demonstration area, provide services for rocky desertification control.

Third, the ST strategy, namely a variety of strategies for rebuilding the ecological environment. It is the strategy of using one's own advantages, to avoid or mitigate the external threat. With the change in national policy, the ecological reconstruction in the demonstration area will face more and more challenges (such as over-dependency on the outside). In this case, we can use the ST strategy: using our own strength to avoid or mitigate the external threat; giving play to our own geographical location advantage, brand effect and other advantages, to develop suburban participatory tourism; improving the structure of income, in order to reduce pressure on the regional ecological restoration. On the basis of the ecological compensation mechanism, the governments' emergency measures in face of climate, meteorological disasters are discussed, in order to improve the ability of residents to respond to disasters.

Fourth, the WT strategy, namely the defense-based strategy. It is the strategy for overcoming the internal disadvantage, and avoiding the external threats as much as possible. In face of its own disadvantages and the challenges, the region can rely on its own resources, and draw on the national policy opportunities. In the first place, the industrial chain that takes its own resources as strength is extended; in the second place, in input of matter, energy, information from the outside, the industries that adapt to the characteristics of suburban agriculture, are cultivated, to get rid of the threat of traditional agricultural model to the ecological environment.

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