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Integrated Development of Urban and Rural Industries in the Xi'an Metropolitan Area

ZHANG Hong^{1*}, GAO Zheng²

1. Institute of Industrial Economics, Xi'an University of Posts and Telecommunications, Xi'an 710061, China; 2. Shandong Electric Power Corporation, Jinan 250001, China

Abstract Based on the diagnosis of the industrial structure in the Xi'an metropolitan area, we point out the problems in the development of urban and rural industries in the Xi'an metropolitan area: there is imbalance in the industrial structure; the planning and layout is chaotic; the service system is unsound; the development of the county economy lags behind. From structural adjustment, urban-rural division of labor, technical support, and the coordination of interests, we put forward the measures for coordinating the development of urban and rural industries.

Key words Metropolitan area, Urban and rural areas, Industrial integration

The metropolitan area is the urban area around big city, maintaining close social and economic ties with the surrounding areas. In the period of rapid economic development and rapid progress of urbanization, China's metropolitan areas emerge rapidly, and become the spatial carrier closely related with residents' life. Foreign urban development indicates that "the new economic era" characterized by informatization, does not cause despatializing of economic activities, and the metropolitan area is a new form of urban spatial organization emerging within larger space, in the circular process of repeated agglomeration, diffusion, and re-agglomeration of urbanization. The metropolitan area is the highest spatial form for realizing urbanization, and the best carrier for achieving balanced regional development and coordinated urban-rural development^[1].

In June 2009, the *Guanzhong – Tianshui Economic Zone Development Plan* approved by the State Council, required that Xi'an – Xianyang economic integration should be achieved, promoting the formation of modern international metropolis. The vision of Xi'an developing toward the international metropolis has risen to national strategy. The study defines the range of Xi'an metropolitan area (large Xi'an) as a whole including the Xi'an urban area, the Xianyang urban area, and Yangling Demonstration Area, namely the Xi'an metropolitan area, and core area of Guanzhong town clusters and Tianshui economic area, a total of 12 districts, 14 counties and 1 county-level city. It has a total area of 20 304 km², and at the end of 2008, there was a total population of 13.543 2 million. 2 cities and 1 district are located in the middle of the Guanzhong Plain of Shaanxi Province, south to the Qinling Mountains, north to the Loess Plateau, with flat terrain. The Weihe River runs through it, across

2 first-level ecological areas (the Loess Plateau area and the Weihe River ecological area), and 4 ecological sub-regions (loess and gully area, loess tableland area, Guanzhong plain area, and the northern Qinling Mountains area). It is a warm temperate semi-humid and semi-arid monsoon zone, with four distinct seasons and agreeable climate, where the natural environment condition is better than that of other northern regions.

1 The status quo of development of urban and rural industries in the Xi'an metropolitan area

1.1 Diagnosis of the industrial structure The industrial structure is the mutual combination relations between various industrial sectors and the allocation state of production factors in various sectors, in the process of social reproduction. Because of the special location, the state gave priority to investment in building Xi'an into an industrial base, during periods of the First Five-Year Plan, the Second Five-Year Plan and the Third Front Construction, after the founding of new China. Xi'an is also the region where the national defense industry is most concentrated. Since the reform and opening-up, especially the implementation of the large-scale development strategy for the western region, Xi'an has developed by leaps and bounds in high-tech industry, culture and education industry, pharmaceutical manufacturing, food processing industry, real estate industry, tourism, fruit industry, etc.^[2].

In 2008, GDP of the Xi'an metropolitan area was 298.673 billion yuan, accounting for 43.59 % of the total provincial GDP; the structural proportion of output value of three industries was 1:5.41:5.29, and the output value structure is concentrated in the secondary industry. But in light of various regions, the structure is "tertiary industry, secondary industry, primary industry" in Xi'an, and the structure is "secondary industry, tertiary industry, primary industry" in Xianyang and Yangling, indicating that Xi'an is in the middle stage of industrialization (Table 1).

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* Corresponding author. E-mail: duanlf999@126.com

Table 1 The structure of industrial output value in the Xi'an metropolitan area in 2008

Region	GDP 10 ⁸ yuan	Output value of the primary industry 10 ⁸ yuan	Output value of the secondary industry 10 ⁸ yuan	Output value of the tertiary industry 10 ⁸ yuan	Proportion of three industries	Total population 10 ⁴ people	Per capita GDP yuan
The metropolitan area	2 986.73	255.20	1 380.64	1 350.89	1:5.41:5.29	1354.32	22 053
Xi'an City	2 190.04	103.45	987.70	1 098.89	1:9.55:10.62	837.52	26 149
Xianyang City	764.56	148.97	376.57	239.02	1:2.53:1.60	500.69	15 270
Yangling District	32.13	2.78	16.37	12.98	1:5.89:4.67	16.11	19 944

Note: Data are calculated based on *Shaanxi Statistical Yearbook* in 2009.

1.2 Industry development problems

1.2.1 There is imbalance in the industrial structure. Uncoordinated industrial structure seriously restricts the economic development and the improvement of the overall efficiency. From the perspective of agriculture, Xi'an's agricultural foundation is still weak, and mostly it is only a buyer-seller relationship among the leading enterprises, production bases and farmers; a complete industrial chain has not been established. Due to outmoded management pattern and low degree of organization, the proportion of agricultural output value is far below the proportion of employment in agriculture, and invisible unemployment of farmers is serious, which seriously affects the rural market development and the rapid growth of the national economy as a whole, so that many issues concerning agriculture, countryside and farmers have not yet been effectively resolved for a long time. From the perspective of industry, the Xi'an's equipment manufacturing industry occupies an important position throughout the western regions, but due to excess low technological production capacity, insufficient development of high value-added industry, convergence of internal industrial structure and lack of comparative advantage and gradient complementation, the scale advantages do not translate into economic advantages, and the ratio of total profit of the manufacturing industry in Xi'an to total profit of the manufacturing industry in whole country is negative, in a loss position overall. From the perspective of service industry, the added value of Xi'an's service industry accounted for 45.23% of GDP in 2008, well below 73.25% in Beijing and 53.66% in Shanghai. Underdeveloped service industry is difficult to provide convenient, efficient, high-quality, affordable services for other industries, promote specialized division of labor and technological innovation in other industries, affecting the improvement of competitiveness and ultimately reducing the benefits of economic growth. Uncoordinated development of three industries, the constraint of technical bottleneck on the industrial structure, and extensive economic growth mode, greatly reduces the carrying capacity of resources and the environment^[3].

1.2.2 The planning and layout is chaotic. The Xi'an metropolitan area is in the period of the large-scale industrialization and urbanization construction. Due to the thinking inertia of giving priority to the urban development, the government has not yet optimized the urban and rural economic layout from the height of coordinated urban and rural economic development; adjust the economic structure in rural areas from the development path "using industry to support agriculture, using the city to support the village", to promote rural development. The differ-

ential rent effect drives the factory to move out of the urban centers with high estate value, to promote environmental optimization and factory technical transformation, but due to lack of scientific proof, the planning and layout is chaotic, some companies move to ecologically fragile rural areas, often resulting in greater environmental pollution. In addition, the small towns established on the basis of decentralized rural industrialization, restrict the normal development of urbanization, cause environmental pollution, waste of land resources, resources allocation efficiency losses and other negative effects, thereby generating "rural malady" more serious than "urban malady".

1.2.3 The service system is unsound. In terms of some science and technology, culture, and theoretical innovation, the Xi'an metropolitan area is close to or even beyond the developed areas, but significantly lags behind the developed areas at home in terms of institution, mechanism, concept, awareness and other development ideas, lacking systematic and effective industrial service system and innovative mechanism. There is a shortage of advanced manufacturing technology research and development incubator industries, and deep processing industries of regional superior resources; the productivity promotion center, investment advisory center, property transaction center, human resources development center and investment and financing institutions urgently needed by enterprises are still blank. In addition, the absence of platform for switching from manufacturing military products to goods for civilian use, and the connection platform of research institutes and the markets (enterprises), leads to the disjunction problem of regional scientific and technological advantages and the regional industries. Yangling's high and new science and technology of agricultural and forestry, is not enough to promote the development of regional industries; Xianyang's scientific and technological strength is extremely weak, lacking innovation sources; Xi'an's research and development sources are various, but it has not formed the interaction mechanism.

1.2.4 The development of the county economy lags behind. As against large and medium-sized cities, due to capital shortage and insufficient understanding, the county lags far behind in environmental construction, and some companies do not want to be rooted in small and medium-sized towns, so that the rational industrial layout cannot be carried out smoothly. In addition, the lack of features makes it difficult to retain talents and attract foreign investment. The industrial policy, promulgated by the state, of compressing excess capacity and shutting down the enterprises with backward technology and serious pollution, will often leave the county, where small and medium-

sized enterprises are concentrated, at a disadvantage in development. Under the dual role of the national macro-control orientation and the market resource allocation orientation, more and more natural resources, capital, technology, human resources, information and other factors of production, cluster and concentrate in large and medium-sized cities, large enterprises, leading to low growth of the county economy, backward industrial structure, low degree of opening up, and difficulty in boosting rural economic development.

2 Measures for coordinated development of urban and rural industries in the Xi'an metropolitan area

2.1 Structural adjustment The general law of changes in the regional industrial structure is to evolve from the structure "primary industry, secondary industry, tertiary industry", to the structure "secondary industry, tertiary industry, primary industry", then to the structure "tertiary industry, secondary industry, primary industry". It has gradually formed the industrial pattern "dominated by high-tech industries, supported by the basic industry and manufacturing industry, comprehensive development of service industry". In 2008, the output value structure proportion of three industries in the Xi'an metropolitan area was 1:5.41:5.29, and the output value structure is focused on the secondary industry.

When conducting the industrial development planning, the government should give full consideration to a variety of industries, resource consumption and impact on environment; strictly limit the development of high-pollution, high-energy-consumption and high-costs industries; vigorously develop the quality-based, efficiency-based, technology-oriented, resource-saving, and labor-intensive industries; strengthen pollution prevention technology research, develop and promote environmental protection equipment, correctly guide and vigorously support the development of the environmental protection industry, and put the environmental protection industry in preferential development list; carry out comprehensive planning of industrial development and rational distribution, pay equal attention to the economic benefits, the social benefits and environmental benefits^[4]; transform the pattern "mainly rely on industry-led growth" to the pattern "growth driven by industry, service industry, tourism, cultural industry, and agriculture", so as to promote upgrade of the industrial structure.

2.2 Urban and rural division of labor Integrated urban-rural development is the conversion process of the economic structure, and even the process of re-organization of urban and rural spatial structure. Through a series of transformations in the industrial structure, it is to make urban and rural geographical space achieve high-level combination, so that urban and rural areas achieve benefit-sharing and risk-sharing organic connection in economy^[5].

The functions in urban and rural areas are different, and thus the industrial structure should also have different emphases. Urban-rural division of labor, the important content and realization path of spatial integration of urban and rural areas,

can better improve the efficiency of economic system in urban and rural areas^[6]. As for the industrial development in the Xi'an metropolitan area, it should carry out industrial division of labor and dislocated development between urban and rural areas, according to different positioning and comparative advantages of urban and rural areas, in order to form an organic whole. We should guide the processing industries occupying excessive land and consuming considerable energy in conjunction with labor-intensive industries to gradually move from the central city of Xian to the surrounding small and medium-sized towns. At the same time, we should make the township enterprises scattered in the vast rural areas concentrate in small and medium-sized towns; address "urban malady" and "rural malady" in the Xi'an metropolitan area, and also the problem of industrial isomorphism and excessive competition between urban and rural areas, to form integrated urban and rural industrial support system^[7].

The central city of Xi'an should enhance the level of industrial structure, and focus on the development of finance, trade, information, services, culture, education and other industries; small and medium-sized towns should lay more emphasis on productive functions, and act as the medium for Xi'an to spread economic and technological energy to rural areas and the node for rural areas to gather various factors in Xi'an; the rural areas should develop modern urban agriculture, to meet the needs of large and medium-sized cities and small towns for resources and factors, to obtain the scale merit of agricultural operation and the overall efficiency of urbanization development^[8], promote the structure optimization and integrated development of urban and rural industries in the Xi'an metropolitan area, and address issue of the backward county economy.

2.3 Technical support American economist Joseph Stiglitz in his book *Economics* pointed out that the main factors for promoting labor productivity includes increase in capital accumulation, improvement in the quality of labor, enhancement in the efficiency of resource allocation, and technological progress. Among them, the technological progress promotes the quality of labor, determines the combination pattern of various factors of production in economic activities, propels the industrial structure to evolve from resource-intensive structure, labor-intensive structure, and capital-intensive structure, to knowledge-intensive structure. Therefore, it is the most important factor in improving productivity.

In the Xi'an metropolitan area, science, education, and human resources are rich, and the technological innovation capability in important areas is in the leading position across China. It should adhere to the combination of government guidance and market allocation; strengthen integration efforts in scientific and technological resources; comprehensive construct the technology support platform in the Xi'an metropolitan area, so that the level of technology and equipment in the areas of agriculture, industry, and service industry reaches the national advanced level; significantly innovate upon innovation, application and promotion ability in the areas of information technology, biotechnology and new energy technology; greatly improve

the competitiveness of the regional competitive industries in the domestic and overseas market.

The main measures are as follows: coordinating original scientific innovation and focusing on independent innovation of key technologies; promoting the coordinated development of major systematic and integrated innovation, focusing on promoting research and development innovation and achievements conversion in aerospace, new materials, electronic information, advanced manufacturing, modern agriculture and other areas; supporting industrial technology alliance, and establishing the platform of public services, technology transfer and intellectual property rights trading, to promote information transmission, knowledge flow, and technology transfer between enterprises, between enterprises and universities or research institutes; vigorously supporting technology innovation-oriented enterprises, actively undertaking major national science and technology projects, to build various types of park into gathering places of high-tech research and development, incubation base and industrialization base; achieving breakthrough in core technology and key technology, strengthening the efforts in protecting intellectual property rights, and creating a large number of enterprises with international competitiveness; increasing the input of science and technology, and establishing diversified technology investment and financing system; relying on high-tech development zone, agricultural high-tech industrial demonstration area, economic and technological development zone, high-tech industrial base, the university science and technology park and other scientific and technological resources, to carry out comprehensive coordinated reform pilot of independent innovation capability.

2.4 Coordination of interests The gap between urban and rural areas is not the difference in the economic aggregate of urban and rural areas, but the difference in the public services, people's living standards and quality between urban and rural areas. Cities and towns are responsible for the spatial carrier function of economic development and population gathering; the vast rural areas bear the important task of producing food and protecting the ecological environment. Urban and rural areas must strengthen exchanges and cooperation in politics, economics and culture, to eliminate the political, economic and cultural barriers, in order to achieve functional complementation, industrial complementation and ecological complementation between urban and rural areas, promote urban and rural integration. The urban areas, taking socio-economic wealth production as the main function and enjoying the eco-efficiency, should offer reasonable share of "external benefits" spillover to compensate for the rural areas taking the ecological supply as the main function, through fiscal transfer payment system, to support public service facilities construction in the vast rural areas and promote social justice, so that people in urban and rural areas can share the fruits of economic development. The financial transfer payment can also be seen as an important means for cities and towns to buy ecological products from rural areas.

3 Conclusions

The Xi'an metropolitan area, located in the center of the Eurasian Continental Bridge, is a strategic place as a bridge between the east and the west, connecting the south and the north, and also an area with good economic foundation, favorable natural conditions, rich cultural history, and great potential for development, in China's western regions^[9]. The people-oriented concept, coordinated development concept, balanced development concept, all-round development concept, sustainable development concept, scientific development concept, and harmonious development concept, are put forth, coupled with corresponding preferential policies and measures, creating favorable macro-support conditions for the rapid development of the Xi'an metropolitan area.

The Xi'an metropolitan area accelerates the adjustment of industrial structure, and promotes the integrated construction of urban and rural industries, which will be conducive to the construction and development of the economic zone, and strengthening the regional economic strength, forming an important growth pole supporting and driving rapid development in western regions; conducive to deepening institutional innovation, in order to explore new path and provide new experience for coordinating scientific and technological resource reform; conducive to building a new pattern of opening up and cooperation, promoting the economic revitalization in northwestern regions; conducive to in-depth implementation of western development strategy, building the Xi'an metropolitan area, to lead the development of the northwest; conducive to confronting the impact of current international financial crisis, undertaking the industry transfer in the eastern and central regions; conducive to the concept propagation of justice and competition, equality and freedom, to achieve economic prosperity and social harmony, and promote balanced socio-economic development in urban and rural areas.

References

- [1] SHI YQ, ZHUANG JF. Development strategic of metropolis circle in urbanization[M]. Shanghai: Shanghai University of Finance and Economics Press, 2007: 102–106. (in Chinese).
- [2] WANG SX. Shaanxi industry development research[M]. Beijing: China Statistics Press, 2002: 18. (in Chinese).
- [3] DU LM. Main functional zone division and construction: New horizon of regional coordinated development[M]. Chongqing: Chongqing University Press, 2007: 75–76. (in Chinese).
- [4] DENG L. National land development and urban construction[M]. Chengdu: Sichuan University Press, 2007: 29–30. (in Chinese).
- [5] WEI QQ. Urban-rural integration: special pattern of urbanization[J]. Urban Studies, 1997, 4(4): 26–29. (in Chinese).
- [6] XU XQ. China rural-city transformation and coordinated development[M]. Beijing: Science Press, 1998: 30–31. (in Chinese).
- [7] LUO J, WANG DJ. The summary and enlightening on the theories of the relation of town-country[J]. Research of Development, 2005, 21(1): 29–31. (in Chinese).
- [8] YANG JD, QIN XF, SHAN YH. Rural urbanization and ecological safety[M]. Beijing: Social Sciences Academic Press, 2005: 42–46. (in Chinese).
- [9] DUAN LF, ZHANG H. Analysis of Xi'an City rural-urban dual economy structure from rural-urban integration[J]. Ecological Economy, 2011, 27(8): 73–76. (in Chinese).