



The enlightenment of transformation of old industrial cities in China and abroad to Zigong

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Abstract: How to transform and develop traditional industrial cities is a difficult problem for China's high-quality economic development. As an important old industrial city in southwest China, Zigong has a deep industrial base and an unrepeatably urban form of salt, dragon and lamp. This paper analyzed and summarized the successful cases of transformation and upgrading of old industrial cities at home and abroad, compared the industrial development path of Zigong city, and puts forward reasonable suggestions for the development of Zigong economy.

Keywords: Old industrial city, Case study, The economic development.

1. Introduction

Zigong city, located in the south of Sichuan province, China, is one of the five major cities in Sichuan province with an area of more than 100 square kilometers and a population of more than 1 million. Since the middle Qing dynasty, Zigong city has been the center of China's well salt production, and gradually developed into an industrial city with national new material industrialization base and a number of well-known enterprises and scientific research institutes, with machinery, chemical industry, salt industry, textile, light industry, food, lighting, new building materials and other pillar industries. In the late Qing dynasty and the early republic of China (early 20th century), Zigong's economy was on a par with that of Chengdu and Chongqing, and a three-way pattern of "Rong (Chengdu), Yu (Chongqing) and Jing (Zigong)" was established. However, since the 1990s, the industrial economy of Zigong has fallen into a dilemma, especially the salt industry, which seriously restricted and affected the economic development and social stability. In 2018, Zigong ranked 11th in the provincial GDP ranking, behind Liangshan and Neijiang. From the perspective of growth rate, according to the unified accounting and approval of the provincial bureau of statistics, the city's regional gross domestic product (GDP) in 2018 reached 140.671 billion yuan,

calculated at comparable prices, with a year-on-year growth rate of 8.7%, higher than the national and provincial average level of 2.1 and 0.7 percentage points. The 8.7% economic growth rate was the highest in nearly five years in Zigong and 0.4 percentage points higher than the target set at the beginning of the year. It can be seen from these data that although Zigong's economy is growing steadily, there is still a certain gap between Zigong's economy and that of Chengdu, Mianyang and other cities. Therefore, how to promote the development of Zigong economy towards high quality under the premise of sustainable development has become a topic that needs to be discussed. There are many successful cases of transformation and upgrading of old industrial cities at home and abroad. By analyzing and summarizing these cases, this paper compares the industrial development path of Zigong city and summarizes the new development path of Zigong city.

2. Case of transformation of old industrial cities in Germany

Essen is one of the most successful cities in the transformation and upgrading of old industrial cities in Germany, with a total population of 590,000 and a total land area of 210 square kilometers. For 150 years, Essen supported coal, iron, steel, artillery and other industries. However, around 1960, the mining industry and the steel industry suffered crises one after another, and Essen entered a depression period of industrial development. Meanwhile, the employment rate and population were greatly reduced. In order to turn the situation around and promote economic development, Essen proposed the goal of urban transformation and upgrading from gray to green, and made a series of efforts. [1].

(1) Transformation from traditional mining industry to service industry. The state government converted all of Essen's factories and equipment into theaters, restaurants, sports fields and parks. Transforming Thyssen Krupp's steel mill into a nature park and museum area, bringing in 1.5 million visitors a year. [2].

(2) Green space management repair. Beginning in 1990, the 30-year Emche river governance project transformed industrial waterways and contaminated pools in the Ruhr area of Essen.

(3) Promote the use of bicycles. The city government has built a cycling network and the Ruhr express single lane, which is the backbone of a sustainable transportation system that runs through Essen's urban center. Residents bike to work as a daily commute, not just a weekend pastime.

(4) Develop education to solve employment. From 1965 to 1993, Essen established a number of nationally and internationally renowned universities, and the total employment population increased from 220,000 in 1951 to 420,000 in 2017.

(5) Top-down remediation. Not all of Essen's green achievements have come from

government investment, but also from local residents. For example, volunteer groups set up after a storm have volunteered to help repair buildings and plant trees in the affected areas. [3].

3. Transformation of old industrial cities in the United States

Houston is the largest city in Texas and an important industrial city in the United States, with a population of about 2.2 million in 2014. By the mid-19th century the city's industry had grown rapidly on the back of ports and railways, and the discovery of oil in 1901 laid the foundation for its emergence as an oil hub. By the mid-1980s, however, a sharp drop in oil prices led to a recession in Houston. In response to the crisis, Houston began to transform its industrial structure, reducing its dependence on the oil industry and becoming a modern capital, knowledge and technology intensive city.[4]. Specific transformation experience is summarized as follows:

(1) Extend the industrial chain and develop traditional industries. The oil industry is an important industry that dominates Houston, so the energy industry cannot be abandoned in the short term. So the city government introduced policies to encourage the further processing and comprehensive utilization of petroleum products, such as increasing the production of ethylene and epoxy resin products. In addition, also vigorously promote the production of oil exploration equipment. Inject new vitality into the oil industry chain.

(2) Give play to regional advantages and promote economic diversification. Houston makes full use of its location advantages to develop high-tech industries related to traditional industries. The growth of the oil industry, for example, has pushed out the electricity, steel, transport and communications industries that serve it. Houston is a major medical center in the United States, so it has developed biopharmaceutical and medical device manufacturing. In addition, the development of aerospace industry has also promoted the development of electronic information industry and precision instrument industry. In addition to developing high-tech industries, Houston also made full use of its natural resources to develop farming, wheat and dairy cattle.

(3) Develop the tertiary industry and balance the economic structure. On the business side, wholesale and retail sales in Houston doubled after the transition. In the financial sector, economic development attracted many famous foreign Banks to establish branches here, making Houston one of the four major financial centers in the United States. In terms of cultural creativity, Houston has a variety of resident professional performance companies, which attract more tourists to the city.

4. Transformation case of China's old industrial cities

In 2016, Zibo high-tech zone was approved as Shandong peninsula national

independent innovation demonstration zone. In 2017, the resident population of Zibo was 4.7084 million. As an old industrial city with more than 100 years of industrial development, Zibo has a complete range of industrial categories and complete supporting industries in the upper and lower reaches, laying a good foundation for the development of strategic emerging industries. Specific transformation experience is summarized as follows:

(1) We will transform and upgrade traditional industries and develop new ones through innovation. Over the past five years, more than 400 billion yuan has been invested in technological upgrading, enabling a number of traditional industries and enterprises to become "high-end" and "emerging ". In the fields of new materials, new medicine, new energy and precision machinery manufacturing, about 50 technology-based small and medium-sized enterprises with strong capacity for independent innovation and strong momentum of development are supported annually. In addition, Dongyue group after 8 years of research, successfully conquered the ion membrane technology, broke the decades of technology and market monopoly in the United States, Japan and other countries, expanding a huge market space, with a new industry.[5].

(2) Policy incentives to provide technical support for the development of emerging industries. The municipal finance department spends special funds every year to reward the newly-built national and provincial R&D centers with 2 million yuan and 300,000-500,000 yuan respectively. At the same time, focus on cooperation with "big institutes, big schools, big enterprises" to expand the space for scientific and technological exchanges and cooperation.

(3) Clear objectives and reasonable planning. Zibo city precise transfer as a "strategic line", the goal is to build a distinctive high-end industrial base with international influence. Closely around the development of old industrial city transformation and focus on the construction industry in Zibo city, cultural city, ecology, successively for traditional industry reformation, emerging industries and modern service industry development, industrial park of science development, the backbone enterprises, innovation-driven development, green low carbon development, and optimize the business environment has made the detailed deployment, speed up the old industrial base in northeast. We formulated relevant action plans and identified the priorities and directions for the development of strategic emerging industries.

5. Inspiration for Zigong from transformation and upgrading of old industrial cities at home and abroad

Due to the establishment of salt city, Zigong once had a brilliant history. However, due to the relatively closed salt industry system, the short sales radius of salt chemical products and low added value of products, Zigong's economy gradually declined. After

the founding of new China, based on the salt industry, Zigong gradually became the salt chemical industry base in southwest China, and the chemical industry gradually became the pillar of Zigong industry. After the reform and opening up, Zigong has formed an industrial city with machinery manufacturing, salt and salt chemical industry, and new materials as the pillar, and has become one of the regions with the strongest processing and manufacturing capacity in Sichuan province. However, since the comprehensive promotion of market economy in China in 1990, Zigong's economy has encountered a development bottleneck and its industrial structure failed to keep up with the pace of The Times. Due to the disadvantages of the system and mechanism, talents and transportation, Zigong's economy was once sluggish, and a number of enterprises gradually started to suffer losses every year and finally went bankrupt. The economic development trajectory of Zigong city is similar to the development of traditional and old industrial cities at home and abroad. Therefore, the following enlightenment is summarized:

(1) Transform and upgrade traditional industries, extend industrial chains, and innovate and develop emerging industries. As the traditional industries of Zigong, salt industry and chemical industry should not be abandoned. In order to open new shoots in the old tree, we must innovate and upgrade, transform from a pure salt product enterprise to an industrial cluster formed by extending the industrial chain, form core competitiveness, and become the explorer of salt industry reform. Enrich the variety of salt products, improve the quality of salt products, reduce the energy consumption and cost of the whole process of salt industry.

(2) Vigorously develop transportation and promote economic and cultural exchanges. The social and economic development is closely related to the level of transportation construction. In recent years, China has continuously increased the investment in the construction of transportation facilities, with the fundamental purpose of building a better platform for economic development and promoting steady economic growth. At present, transportation infrastructure of Zigong is relatively backward. Before, there were only two ways to transport goods, namely road and water. The completion of Zigong Fengming general airport in 2018 marks that Zigong has the first general airport in south Sichuan. In terms of human flow and transportation, Zigong only has highways and high-speed trains for the time being, which is not conducive to the communication between people in various regions and the economic development. But with the construction of the Rong-Kun high-speed railway (Ziyi section) starting on December 21, 2018, Zigong will soon have a high-speed railway line, which will greatly increase the flow of people in Zigong.

(3) Developing regional advantages and promoting economic diversification. Using tourism to drive the economy is the way many traditional old industrial cities transform.

Zigong city have "salt city" in one thousand, "dinosaur of the township", "city" in the south three business cards, so rich and colorful cultural history, should make full use of to build Zigong own characteristic culture, makes the tourist city of cultural characteristics, to attract investors, builders and consumers together to improve the economy in Zigong city quality.

(4) Strengthen urban planning and create urban characteristics. The rational development of tourism and industry cannot be separated from the rational planning and construction of cities. As an old industrial city, Zigong city should be built around the general idea of developing a famous historical and cultural city. In terms of overall urban style, traffic road planning, cultural tradition dissemination and other aspects, Zigong city should be fully considered in the planning stage.

6. Conclusion

As one of China's old industrial cities, it needs a lot of efforts to build Zigong into an industrial city with obvious advantages, a cultural city with distinctive features, a vibrant innovation city and a prosperous, harmonious and happy city. Based on the transformation of famous old industrial cities at home and abroad, this paper puts forward some Suggestions on how to promote the transformation of Zigong.

References

- [1] Zhang Fang. Essen's green transformation: From an industrial city to the green capital of Europe [J]. Ningbo economy (financial and economic perspective), 2018(12):48-49.
- [2] Fan Shanshan. Essen: Green transformation of a resource city [J]. Energy, 2018(08):47-49.
- [3]. Essen's green transformation: From industrial city to green capital of Europe [J]. Pr world, 2017(05):84-87.
- [4] Meng Zhaoguo. Experience and enlightenment from the reconstruction of old industrial areas in foreign cities [J]. Shanxi architecture, 2008(18):18-20.
- [5] Dong Lijing. Study on industrial transformation and employment change in old industrial cities [D]. Northeast normal university, 2008.