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Measurement and Analysis on the Level of Industrial Structure Upgrading in Northern Jiangsu

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Abstract. The industrial structure height value is used to measure the level of industrial structure height by considering the proportion of three industrial structures and the change of labor productivity. Based on the description of the current situation of the industrial structure in Northern Jiangsu, this paper uses the industrial structure height value to measure the industrial structure height level of Northern Jiangsu and other cities, and then studies the economic development law of Northern Jiangsu, so as to put forward targeted suggestions to accelerate the process of promoting the industrial structure of Northern Jiangsu.

1. Introduction

The upgrading of industrial structure, also known as the upgrading of industrial structure, is based on the rationalization of industrial structure, which promotes the gradual transfer of the focus of industrial structure. The level of industrial structure upgrading is not only the premise of analyzing whether the regional industrial structure is reasonable, but also the important basis of industrial structure adjustment and upgrading. In this paper, the industrial structure height value is used to measure the level of industrial structure upgrading in Northern Jiangsu and other cities, so as to study the law of economic development in Northern Jiangsu, find out the location and entry point of promoting the layout of industrial structure upgrading, and accelerate the promotion of Jiangsu The process of industrial structure upgrading in North China.

2. The current situation of industrial structure development in Northern Jiangsu

According to the current administrative divisions and social and economic development pattern of Jiangsu Province, the land area of Northern Jiangsu accounts for 51.82% of the land area of Jiangsu Province; the population of Northern Jiangsu accounts for 45.86% of the total population of Jiangsu Province at the end of 2018.From 2008 to 2018,the GDP growth of the five cities in Northern Jiangsu is relatively fast, with an average annual growth rate of 13.67%.However,after years of high-speed growth, the total GDP of the five cities in Northern Jiangsu only accounts for 23.07% of Jiangsu's GDP in 2018,with a relatively low economic contribution compared with Jiangsu Province.

In 2008-2018, as a whole, the industrial structure of Northern Jiangsu is developing towards rationalization. From table 1, it can be seen that the proportion of the primary industry in Northern Jiangsu is declining, from 14.90% in 2008 to 10.25% in 2017,while the proportion of the tertiary industry is rising from 35.30% in 2008 to 46.49% in 2018.By 2016,the proportion of the third industry in the industrial structure of Northern Jiangsu exceeded that of the second industry for the first time, indicating that the "three two one" model of the overall industrial structure of Northern Jiangsu has been formed since 2016.

In Jiangsu Province, the economic development areas of South, middle and North Jiangsu are quite different, and the industrial structure of the five cities in North Jiangsu is also very different. In 2015,the industrial structure of Xuzhou and Huai'an formed the mode of "three two one", and the industrial structure of Yancheng and Lianyungang formed the "three two one" mode in 2017 and 2018

respectively, but Suqian did not form the "three two one" mode of industrial structure until 2018.It shows that the industrial structure of Northern Jiangsu is not reasonable, so further optimization is urgently needed in order to fully realize the transformation to the "three two one" industrial structure mode and realize the upgrading of industrial structure.

3. The measurement of the industrial structure of the north of Jiangsu Province

Many scholars have studied and put forward many methods to measure the level of industrial structure. In this paper, the industrial structure height value is used to measure the level of industrial structure of Northern Jiangsu and the cities under its jurisdiction. The value of industrial structure height not only considers the proportion of three industrial structures, but also considers the change of labor productivity, and chooses to measure the level of industrial structure height by combining the two.

The proportion of the tertiary industrial structure is a dimensionless value, and the labor productivity is a dimensionless value, so it is necessary to standardize the labor productivity; in addition, in order to make the industrial structure height value not only be used to judge the industrialization process of our country, but also be used to compare the industrialization process of our country with other countries and regions, and consider the labor production the rate is standardized and dimensionless.

$$LP_{it}^{N} = \frac{LP_{it} - LP_{ib}}{LP_{if} - LP_{ib}} \tag{1}$$

Among: i means indicates the i industry; LP_{it}^{N} means the labor productivity of i industry after standardization; LP_{it} means the labor productivity of i industry calculated directly; LP_{if} means the labor productivity of i industry at the completion of industrialization; LP_{ib} means the labor productivity of i industry at the beginning of industrialization or at the beginning of industrialization.At the completion of industrialization,at the beginning of industrialization or just entering into industrialization,the labor productivity of i industry is calculated according to the benchmark data in the standardization of Chanery's standard structural model and the exchange rate between RMB and US dollar in 2017.

The labor productivity LP_{it}^{N} after standardization can be compared with that of the developed economy, indicating the degree of convergence with the developed economy [1].When the labor productivity LP_{it}^{N} of the secondary industry and the tertiary industry is higher than that of the industrialization, LP_{it}^{N} is greater than 1.At this time, the industrial structure height is also greater than 1,indicating that the industrial structure height reaches the level of the industrialization completion period [2].

$$H = \sum_{i=1}^{3} (K_{it} \times LP_{it}^{N}) \tag{2}$$

Among: H means high value of industrial structure; K_{it} means proportion of i industrial structure; LP_{it}^{N} means the labor productivity of i industry after standardization.

The value of industrial structure height can be used not only for dynamic comparison of industrial structure height,but also for static comparison to make clear the level of industrial structure height in the world [3].

It can be seen that the industrial structure height value in North Jiangsu is less than 1 before 2013, indicating that it has been in the period of accelerated industrialization development before 2013.In 2013, the industrial structure height value in North Jiangsu exceeds 1, indicating that it reaches the level when industrialization is completed. From the perspective of the development level of standard labor productivity of three major industries in Northern Jiangsu, the labor productivity of the tertiary industry first entered the level of industrialization completion, which exceeded 1 in 2011,but the labor productivity of the secondary industry did not reach the level of industrialization completion until 2018, while the labor productivity of the primary industry did not reach the level of industrialization completion until 2018 The level [4].

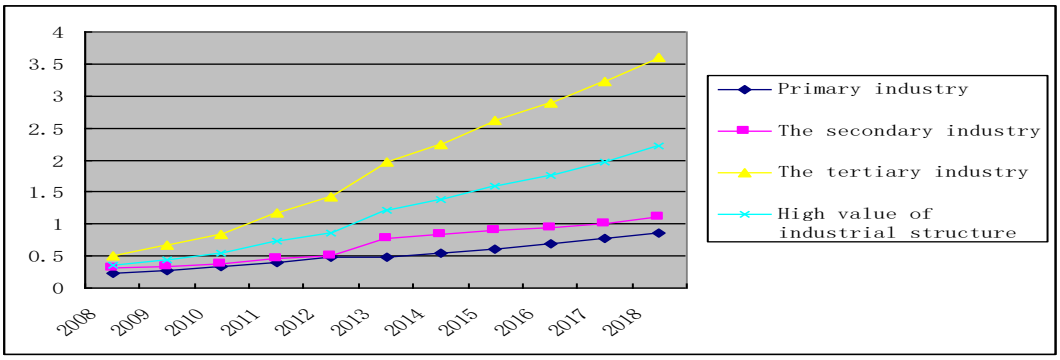

Fig.1. High value LP_{it}^{N} of three industries and industrial structure in Northern Jiangsu in 2008-2018

From the LP_{it}^{N} of three industries in Northern Jiangsu with The growth trend of high value of industrial structure, the LP_{it}^{N} of the first and second industries have been promoted slowly, the labor productivity and the industrial structure height value of the third industry have been growing rapidly, and the labor productivity of the third industry has promoted the rise of the whole industrial structure height value in Northern Jiangsu [5].The LP_{it}^{N} of the third industry in Northern Jiangsu is the main industry leading the rise of the industrial structure height value in Northern Jiangsu Strength. In recent years, the proportion of the first industry in Northern Jiangsu is less than 15%. The LP_{it}^{N} of the first industry has no great influence on the change of the industrial structure.

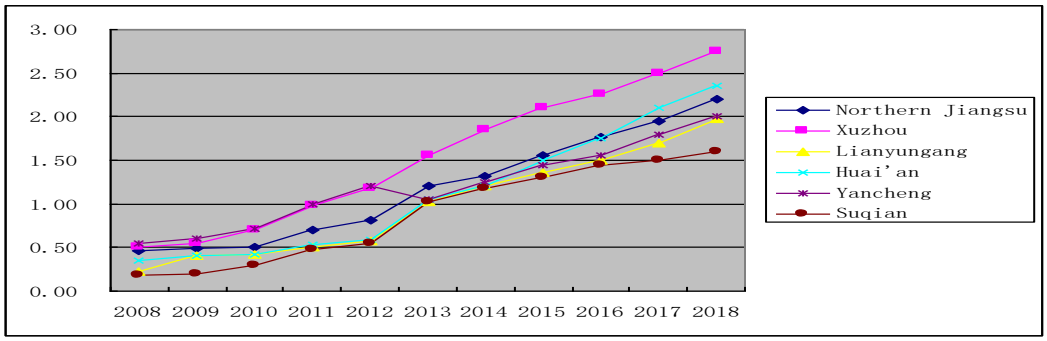

Fig.2. High value of industrial structure in North Jiangsu and five cities in North Jiangsu in 2008-2018

From Figure 2, we can see the development and change of industrial structure height value of five prefecture level cities in Northern Jiangsu, which shows that with the passage of time and the development of economy, the industrial structure height value is rising to a higher level. By 2013, the industrial structure height of all cities in Northern Jiangsu had exceeded 1, reaching the level when industrialization was completed; specifically, during the development process, the industrial structure height of Xuzhou and Yancheng had shown a cross fluctuation rise. In recent years, the industrial structure height of Xuzhou was the highest, and the industrial structure height of Xuzhou showed a stable and rapid increase trend. The reason is that Xuzhou is located in the border area of Jiangsu, Shandong, Henan and Anhui provinces, with a good geographical location. The Beijing Hangzhou Grand Canal passes through Xuzhou, and the Longhai and Beijing Shanghai railway lines meet in Xuzhou. In recent years, Xuzhou has continuously introduced advanced technology, transformed traditional industries, and vigorously developed the third industry, accounting for nearly 50% of the total in 2017.The rapid development of the third industry has a high impact on the industrial structure of Xuzhou Chemical development has played a leading role.

4. Summary

According to the analysis of the results of the measurement of the industrial structure height and the actual industrial development in Northern Jiangsu, we can consider the following aspects to improve the industrial structure height in Northern Jiangsu.

(1) Accelerate the construction of Characteristic Urbanization in Northern Jiangsu

Improving the urbanization rate plays an important role in promoting the industrial structure. In 2018, the urbanization rate of Jiangsu Province reached 69.6%,and that of Northern Jiangsu was only 63.21%. In addition to Xuzhou, the urbanization rate of other cities in Northern Jiangsu was less than 65%, and that of counties in Northern Jiangsu was lower, less than 55%. In order to promote the development of urbanization, we should give full play to the role of cities at all levels. Cities at all levels should build characteristic industries according to their own characteristics, build characteristic towns and towns, improve the urbanization rate of each region, especially the county level urbanization rate, and promote the coordinated development of five cities in Northern Jiangsu. Accelerate the construction of Characteristic Urbanization in Northern Jiangsu, promote the development of catering industry, tourism and other service industries in cities and towns, drive the transformation of industrial structure with the development of urbanization, and then improve the level of industrial structure.

(2) Increase investment in technological innovation

Innovation is the first driving force to lead economic development. The economic model of factor input has been transformed into a new economic model driven by scientific and technological innovation. Technological innovation can greatly improve production efficiency, create new demand and make it possible to transfer among the three industries. Technological innovation can promote the development of industrial structure through such an internal mechanism. Therefore, we should attach importance to the role of technological innovation in upgrading the industrial structure, increase the investment in technological innovation, increase the investment in scientific research, and effectively transform scientific research results into technology application.

In addition, in the areas where foreign trade has advantages, we should continue to increase foreign trade, give full play to the leading role of foreign trade, so as to make the development of Northern Jiangsu more characteristic; at the same time, different areas in Northern Jiangsu should actively exchange, promote the smooth flow of resources between cities, actively promote cross regional economic cooperation, and improve the industrial structure of Northern Jiangsu. please indicate the format and word processor used. Please also provide your phone number, fax number and e-mail address for rapid communication with the publisher. Please *always* send your CD along with a hard copy that must match the CD's content *exactly*. If you follow the foregoing, your paper will conform to the requirements of the publisher and facilitate a problem-free publication process.

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