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Research on the Benign Interactive Development Between Industrial Structure Adjustment and Greenization in Heilongjiang Province

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ABSTRACT
Adjusting the industrial structure according to the greenization requirements can improve the content of science and technology, reduce resource consumption, reduce environmental pollution, and form a new growth point of economic and social development. Based on the theory of the industrial structure, the method of literature research is used to analyze the present situation of the greenization of industrial structure in Heilongjiang province. The results show that the greenization of industrial structure in Heilongjiang province has some problems, such as low level, low degree and insufficient development power. In order to adjust the industrial structure of Heilongjiang province according to the greenization requirements, we must consolidate the foundation for the development of greenization agriculture, and accelerate the upgrading of the secondary industry and the greenization reform of the tertiary industry.

Keywords: *Greenization, Industrial Structure Adjustment, Benign Interaction, Heilongjiang Province.*

1. THE MEANING OF GREENIZATION

The concept of greenization was first proposed at the meeting of the Political Bureau of the CPC Central Committee on March 24 in 2015. It is put forward by the 18th National Congress of the Communist Party of China to deepen concept of "four modernizations". "Greenization" was joined on the base of the "new industrialization, urbanization, information and agricultural modernization". In other words, the "four modernizations" became "five modernizations". Greenization is a kind of production mode. Adjusting the industrial structure according to the requirements of greenization can improve the content of science and technology, reducing the consumption of resources and environmental pollution. At last it can form a new growth point of economic and social development.

2. THE PRESENT SITUATION OF THE GREENIZATION OF INDUSTRIAL STRUCTURE IN HEILONGJIANG PROVINCE

2.1. Overall Performance of the National Economy

Since the reform and opening up, the economy of Heilongjiang province has achieved rapid development. In 2020, GDP reached 1,369.85 billion yuan, an increase of 1.0% than the previous year, calculated at comparable prices. Figure 1 shows that GDP has increased from RMB 1189.5 billion in 2016 to RMB 1,369.85 billion in 2020.

2.2. The Proportion of the Industrial Structure

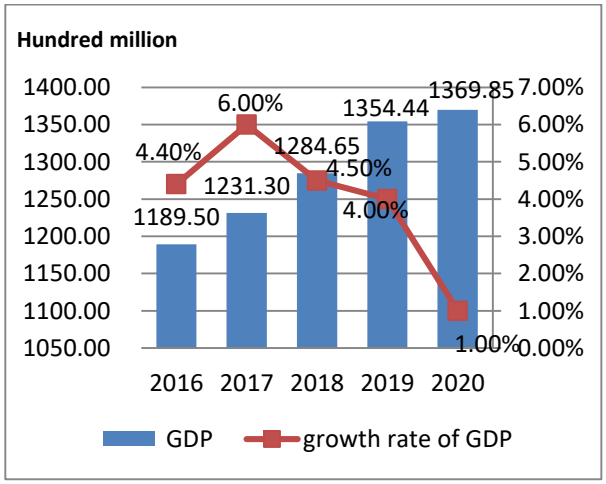

Figure 1 GDP and its growth rate from 2016 to 2020

From the point of the industrial structure, the added value of the primary industry in 2020 was

343.83 billion yuan, up by 2.9%.The added value of the secondary industry was 348.35 billion yuan, up 2.6%; The added value of the tertiary industry was 677.67 billion yuan, down 1.0%. The proportion of the industrial structure was 25.1:25.4:49.5. Since the reform and opening up, in terms of the proportion of the industrial structure in GDP, the secondary industry has the most obvious downward trend, which has decreased by 5.6% from 31.0% in 2016 to 25.4% in 2020. The tertiary industry shows the fastest growth, with its proportion rising from 45.9% in 2016 to 49.5% in 2020. Figure 2 shows that the proportion of the primary industry is generally stable with some fluctuations. From the perspective of the proportion of the industrial structure, the industrial structure of Heilongjiang province has also achieved a historic transform from "the primary industry, the secondary industry, the tertiary industry" to "the tertiary industry, the secondary industry, the primary industry".

2.3. The Development of the Industrial Structure

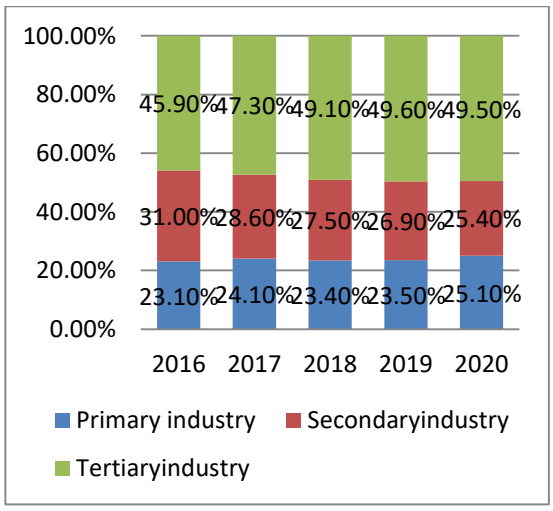

Figure 2 Proportion of the added value of the industrial structure in the regional GDP from 2016 to 2020

With the rapid development of Heilongjiang's economy, the industrial structure has developed to different degrees, especially the tertiary industry as shown in Figure 2. From the overall situation of industrial structure changes, in GDP of Heilongjiang province in 2000, the primary industry accounted for12.2%, the secondary industry accounted for 54.9%, and the tertiary industry accounted for 32.9%. In 2020 the proportion of the primary industry in GDP was 25.1%, and the proportion of the secondary industry decreased from 31.0% in 2016 to 25.4% in 2020. The proportion of the tertiary industry has increased greatly from 45.9 percent in 2016 to 49.5 percent in 2020. This reflects the weak of the secondary industry development in Heilongjiang province and the increasing dependence on the primary industry and the tertiary industry. At present, although the industrial structure of Heilongjiang province has initially formed the "the tertiary industry, the secondary industry, the primary industry ", the overall structure is not reasonable. The proportion of the primary industry is too big; the proportion of the secondary industry is too small. Heilongjiang is a strong industrial province where most of its industries are high pollution and high energy consumption. At present, as economic growth slows down and the prices of steel and coal fall, as well as the implementation of greenization policies, related industries in Heilongjiang province are struggling to survive, and the proportion of the secondary industry keeps declining.

2.4. Energy Conservation and Emission Reduction

During the 11th Five-Year Plan period (2006-2010) and 12th five-year Plan period (2011-2015), Heilongjiang province has over fulfilled its energy conservation targets. From 2011 to 2015, the energy consumption per unit GDP in Heilongjiang province decreased by 18.9%. Figure 3 shows that in 2016 the energy consumption per unit GDP of the province was 4.50% lower than that of 2015. In 2019 the reduction rate of energy consumption per unit OF GDP was -2.49%.

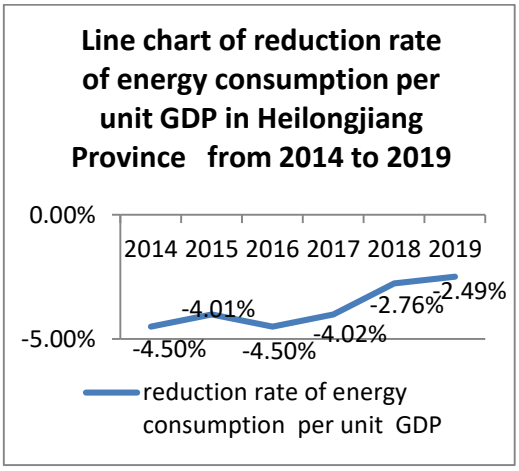

Figure 3 Line chart of reduction rate of energy consumption per unit GDP in Heilongjiang province from 2014 to 2019

3. THE PROBLEMS IN THE GREENIZATION OF INDUSTRIAL STRUCTURE IN HEILONGJIANG PROVINCE

3.1. The Greenization Level of Industrial Structure Is Low

First, the "greenization" competitiveness of the primary industry is not strong. Heilongjiang province is a big traditional agricultural province, but not a strong agricultural province. The development of greenization of agriculture is obviously insufficient, and the potential and advantages of agriculture have not been fully played. Second, the proportion of "greenization" of the secondary industry is low. The proportion of secondary industry decline gradually, but the dependence on the energy industry is still serious. Resource processing and resource-based enterprises still account for a large proportion, making the entire economic structure become resource-oriented. This is also an important factor that prevents the high-tech industry developing rapidly, because resources will dry up. Sustainable development is increasingly urgent and the transformation of industrial structure is inevitable. Take Daqing city of Heilongjiang province as an example, Daqing city as a typical resource-exhausted city has a relatively single mode, which is low technical content and multiple primary processing.

3.2. The Greenization Degree of Industrial Structure Is Not High

As a major agricultural province in China, Heilongjiang province has not fundamentally changed the traditional development mode of high input, high pollution and low benefit in agricultural development. The secondary industry is excessively dependent on heavy industry and energy consumption, which reduces the greenization degree of the industrial structure. The "greenization" degree of the tertiary industry is not high. Although the proportion of the tertiary industry is higher than the national average level, its contribution to economic growth is much lower than the national average level. The development momentum is slow, and the efficiency of output also needs to be improved.

3.3. The Power of Greenization Development of Industrial Structure Is Insufficient

Innovation is an inexhaustible driving force for industrial upgrading. In recent years, although the ability of industrial innovation of Heilongjiang province has been improved to a certain extent, there are still some problems such as insufficient innovation motivation and weak innovation ability. Taking the R&D expenditure of enterprises as an example, it was 7.148 billion yuan in 2019, 28.519 billion yuan in Beijing and 59.065 billion yuan in Shanghai, 220.16 billion yuan in Jiangsu, 127.422 billion yuan in Zhejiang and 231.486 billion yuan in Guangdong. Even Liaoning province, an old industrial base in northeast China, was much higher at 31.025 billion yuan.

4. COUNTERMEASURES FOR THE BENIGN INTERACTION BETWEEN INDUSTRIAL STRUCTURE UPGRADING AND GREENIZATION IN HEILONGJIANG PROVINCE

4.1. Consolidate the Foundation for the Development of Greenization Agricultural Industry

First of all, the government should strengthen the foundation of green agricultural development by establishing green food management system, special fund system and green food website. Secondly, the government should optimize the industrial structure and resource allocation; at the same time introduce advanced equipment and technology to improve the deep processing and added value of product of green food. Finally, the government should strengthen brand awareness and accelerate the certification of green food.

Heilongjiang province should cooperate with Russia to upgrade agricultural cooperation. Russia is rich in land and forestry resources and has a broad prospect of cultivation for organic crop. Russia attaches great importance to food safety and favors healthier organic food. Russia's organic food market is vast, but the supply is insufficient; China is a major producer and exporter of organic food. Organic agriculture in Heilongjiang province has developed maturely and has relatively advanced technology of organic crop cultivation and processing. Enterprises in Heilongjiang province should make use of their own advantages to increase the development of organic crops in Russia, so as to meet the demand of the Russian market.

4.2. Accelerating the Upgrading of the Secondary Industry

First, in accordance with the arrangements of The State Council, we must resolutely implement the policy of "eliminating a number of enterprises and upgrading a number of enterprises" and shut down some enterprises which is overcapacity. We will strengthen our capacity for independent innovation and speed up research of new and high technologies in order that traditional industries can meet new market demands. Second, we should speed up the green transformation of resource-based industries and strive for sustainable utilization of resources, so that economic benefits and environmental benefits can be organically unified. For example,

according to the requirements of sustainable development, the oil industry should adopt green technology in the extraction equipment and improve the utilization rate of oil resources and reduce environmental pollution; State-owned forest areas should strengthen the protection of forest resources and actively develop ecological tourism projects by using the advantages of resources. In the coal industry, we should cut overcapacity and actively develop circular economy technologies, so as to achieve greenization development. Third, we should speed up technological innovation and build the chain of green industrial, so as to better promote the green transformation of industrial structure.

4.3. Accelerating the Greenization Reform of the Tertiary Industry

First, information technology should be applied in traditional industries so as to enhance the added value and competitiveness of traditional manufacturing industries and integrate industrialization and information technology. Second we should develop the digital industry which serves the manufacturing and living consumption such as industrial design and new media. Third, software industry should be vigorously developed in the field of network communication, digital audio and video, automotive electronics and so on, which can accelerate the development of the "Internet of Things". Fourth, we should actively develop industry chain of electronic certification. On the basis of services of electronic certification, application of digital design can be enhanced.

5. CONCLUSION

In recent years, the adjustment and optimization of industrial structure in Heilongjiang province have been increasingly intensified. The industrial structure has grown from 12.2%:54.9%:32.9% in 2000 to 25.1:25.4:49.5 in 2020, basically forming a trend that the primary and tertiary industries have steady growth and the secondary industry has declined. But compared with the advanced level and greenization requirements of the central, there are still some problems in the greenization adjustment of industrial structure in Heilongjiang Province. The "greenization" competitiveness of the primary industry is not strong, and the traditional development mode of high investment, high pollution and low benefit in agricultural has not been fundamentally changed. The secondary industry is excessively dependent on heavy industry and energy consumption, which reduces the greenization degree of the industrial structure. The contribution of tertiary industry to economic growth is much lower than the national average level. The development momentum is slow, and the efficiency of output also needs to be improved. In view of the relatively low degree of greenization of industrial structure in Heilongjiang Province, we should combine traditional agricultural technology with modern high and new technology to reduce the use of chemical pesticides and the pollution to farmland environment and agricultural products, so that the quality of agricultural products can be improved. We will strengthen our capacity for independent innovation and speed up research of new and high technologies in order that traditional industries can reduce energy consumption. The development of modern producer services should be promoted by advantages of technological and R&D.

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