The Path of Industrial Transformation and Upgrading in Eastern China from the Perspective of Global Value Chain- Based on an Analysis of the Development of Professional Towns in Anhui Province

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**Abstract:** In recent years, the pace of China’s integration into the global competitive market has been accelerating, and global value chain has become an important way for China to participate in the global economy. However, in the global value chain, China is not in a dominant position. The experience of OEM in the east coast also shows that it is very easy to be locked in the link of low value-added processing and production. Considering this, this paper analyzes the connotation of the global value chain and the ways of industrial transformation and upgrading under the global value chain. And then, taking the development of professional towns in Anhui Province as an example, using the relevant statistical data to carry out the analysis, it puts forward the path of industrial transformation and upgrading in the eastern region. Finally it provides suggestions for the sustainable economic development of the eastern region.

1 Background

The East China is generally highly industrialized, with a large number of cheap labor force, and has entered the mid-term stage of industrialization. From the perspective of its development status, there is a widespread phenomenon of "capture" by foreign multinational enterprises, and many areas are locked in the "high consumption, high pollution" low value-added production and processing links. These experiences show that if China does not find appropriate ways integrating into the global value chain division led by multinational enterprises is likely to stagnate in the trap of low-end links. How to integrate into the global value chain division is a question we must think about.

2 Overview of global value chain

The definition of the global value chain of the United Nations Industrial Development Organization is: the global value chain refers to the system that uses the production, marketing, after-sales, recycling and other processes of products to generate value and form a large-scale production network around the world. Different regions provide raw materials, production and processing, and product distribution for this process. It is not difficult to see from the above definitions that there must be some links with high technology content and high added value in the global value chain, as well as some relatively simple links with low added value, as shown in Figure 1:
Different links have different added value that the low-end regions of the GVC have the demand for industrial upgrading and transformation, which is the theme of this paper.

3 Industrial transformation and upgrading under the global value chain

3.1 The Model that Industry Embeds into Global Value Chain

Industries in different regions are embedded in global value chains in different ways. As far as the eastern part of China is concerned, the way of embedding into the global value chain is mainly technology transaction and acquisition and merger. In order to upgrade and enhance the added value, the enterprises in the industry chain must absorb the knowledge spillover of the high-end enterprises in the value chain with the opportunity of global communication, and then obtain the competitive advantage with the local advantages.

3.2 Upgrading of all links under the Global Value Chain

The industrial upgrading under the global value chain is generally centered on increasing the added value of links, which can be divided into the following paths:

Firstly, process upgrading and product upgrading. It is mainly through the knowledge exchange and technology transfer among enterprises in the industrial chain to drive the enhancement of regional innovation ability and technology ability. Market demand makes enterprises continuously strengthen product performance, and technological progress provides guarantee for this process.

Secondly, function upgrading and chain upgrading. The function upgrading is related to the core links of the value chain, such as product design and brand building. The influencing factors include not only the technology upgrading, the accumulation of human resources and capital resources, but also the brand building and policy support. Chain upgrading refers to the transformation of the whole region in different industrial chains based on the common promotion of technology, social capital, innovation, brand, outward linkages and other elements. The upgrade path of each link is shown in Figure 2:
4 The current situation of regional industry development: a case study of professional towns in Anhui

4.1 Unbalanced regional development

The imbalance of regional development is also the issue of imbalance of regional development is common even in the eastern region. This is mainly reflected in the high level of industrial specialization, more industrial clusters and high economic benefits created by the better developed regions, while the opposite is true for the less developed regions. Take Anhui Province as an example. In 2015, there were 189 Professional Towns in the province, but 55 in Lu'an, Fuyang and Anqing, and only 7 in Tongling and Huaibei. From the perspective of the business income of professional towns, southern Anhui accounts for more than 40%, while that in central and northern Anhui is less. It shows that the unbalanced development in the province is very prominent, as shown in Table 1:

Table 1. Business income of professional towns in different regions of Anhui Province in 2015 (unit: RMB 100 million).

<table>
<thead>
<tr>
<th>Region</th>
<th>North Income</th>
<th>Central Income</th>
<th>South Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huainan</td>
<td>288</td>
<td>Wuhu 702</td>
<td>Hefei 699</td>
</tr>
<tr>
<td>Suzhou</td>
<td>295</td>
<td>Maanshan 494</td>
<td>Liuan 499</td>
</tr>
<tr>
<td>Fuyang</td>
<td>350</td>
<td>Xuancheng 303</td>
<td>Chuzhou 626</td>
</tr>
<tr>
<td>Bozhou</td>
<td>199</td>
<td>Huangshan 163</td>
<td>Anqing 554</td>
</tr>
<tr>
<td>Huaibei</td>
<td>185</td>
<td>Chizhou 150</td>
<td></td>
</tr>
<tr>
<td>Benbu</td>
<td>105</td>
<td>Tongling 12</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1422</td>
<td>1824</td>
<td>2378</td>
</tr>
</tbody>
</table>

At the same time, from the perspective of the development trend of each region, Southern Anhui has the most increment, but there is not much difference in the development speed of each region, and even the more backward the more difficult it is to develop. As shown in Table 2:
Table 2. Income changes of professional towns in different regions from 2015 to 2018 (unit: RMB 100 million).

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Total Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Anhui</td>
<td>1422</td>
<td>1506</td>
<td>1610</td>
<td>1655</td>
<td>233</td>
</tr>
<tr>
<td>Central Anhui</td>
<td>1824</td>
<td>2095</td>
<td>2354</td>
<td>2370</td>
<td>546</td>
</tr>
<tr>
<td>South Anhui</td>
<td>2378</td>
<td>2501</td>
<td>2830</td>
<td>3030</td>
<td>652</td>
</tr>
</tbody>
</table>

4.2 Great pressure on industrial upgrading
At present, East China is generally concentrated in the densely populated areas. In the early stage of development, labor-intensive industries are generally preferred in such areas, which have accumulated certain capital for economic development, but can not provide reliable guarantee for the sustainable development of the region. From the development experience of industrialized countries, they have all transformed their production methods. For example, Silicon Valley in the United States realized zero-inventory by outsourcing production, which greatly reduced production costs. From the perspective of industrial development in the eastern part of China, the industries in various regions are constantly expanding outward, and the regions that can be driven are becoming larger and larger. However, the industries involved are very concentrated, concentrated in labor-intensive industries such as agricultural and sideline products, electronic appliances, home appliance manufacturing, etc., with low technology level, low added value of products, great difficulty in product upgrading, and pressure on industrial organization upgrading, so the adjustment is very difficult.

4.3 Small scale of leading enterprises
At present, there are 189 Professional Towns in Anhui Province, but most of them are less than RMB 5 billion in scale, mostly formed by small and medium-sized enterprises. These enterprises are limited in scale and lack of comprehensive strength, so it is difficult to drive the development of the whole region. There are few leading enterprises that can really play a role in promoting the development of the region and supporting the development of the industry.

Secondly, the products of industries in many regions are still at the low end of the global value chain, with low added value. In the initial stage of development, the eastern region of China generally starts from the labor-intensive processing link. The main competitive advantage is the labor price and land cost. It is positioned in the low-end market of international trade, with low product grade, low specification, serious homogenization and few trade interests.

4.4 Brand lacks international influence
At present, the development of East China has made some achievements, and some brands have begun to produce brand effect, but this brand effect often only has a certain impact in the domestic market, but not in the international market. As Huanggang town is known as "the capital of willow products in China", it is well-known in the province and in China, but not in the world.

5 The path of industrial transformation and upgrading in East China

5.1 Government perspective
In the process of industrial transformation and upgrading in the eastern region, the government plays a crucial role. In many cases, the decision-making of the government is often related to the fate of the industry. In this regard, this paper puts forward the following suggestions from the perspective of the government:

First of all, the government should formulate the value chain development policy according to the actual situation of regional industrial development. Embedding global value chain is the main way for local industry development and industrial upgrading. According to the needs of local industrial development and upgrading, local governments should improve the construction of urban infrastructure and public service system, and establish an external environment conducive to industrial upgrading and transformation.
Secondly, formulate industrial and financial fiscal policies to prepare for industrial upgrading and transformation. The local government should improve the policy system, formulate the industrial revitalization plan, adjust the regional development by means of taxation, credit and finance, reasonably allocate the production factors, and create policy conditions for the industrial upgrading and transformation.

Thirdly, we shall support the upgrading of leading industries can effectively enhance industrial competitiveness and expand domestic demand. For the identification of leading industries, the author believes that it is not only the ability of industrial development, but also its substitutability.

Finally, the regions introduce high-tech companies to promote the sustainable development of regional economy. From the history of investment attraction in some regions, we gave a lot of preferential policies to foreign investors in order to introduce foreign capital, and even turn investment attraction into a project of political achievements.

5.2 Industry perspective

First of all, industry associations and intermediary organizations should do a good job in coordination, further improve the service level, attract more enterprises to join the industry associations and chambers of Commerce, enhance the cohesion among enterprises, and promote the healthy and orderly development of the whole industry.

Secondly, industry associations and intermediary organizations shall strengthen risk warning and information release, communicate market information, timely release industry trends and enterprise wishes to the government, and play a good role in communication.

Thirdly, industry associations and intermediary organizations should guide regional enterprises to carry out strong alliance, promote the complementary resources of different enterprises, promote the formation of a "group army" with a complete industrial chain, and then speed up the industrial upgrading.

5.3 Enterprise Perspective

In the global value chain, the transformation and upgrading of industries in the eastern region must be based on the transformation of enterprise strategy to promote the continuous improvement of regional technology level. The specific countermeasures are as follows:

First of all, enterprises should be embedded in the global value chain. Enterprises in the eastern region are usually located in the middle and low end of the global value chain. Therefore, the current focus is to climb along the global value chain.

Secondly, enterprises should actively cooperate and communicate with other enterprises in the region. The upstream and downstream enterprises in a value chain and their peers should actively cooperate in technology and capital, enhance the ability of cooperation.

Thirdly, enterprises should actively innovate management system and mechanism. The perfect management system can promote the efficiency of production. The enterprise should reform the management mode of family business, get rid of the malpractice of management and establish a reasonable talent competition mechanism.

Finally, enterprises should also take brand building as a major work, actively cultivate their own brands, and build domestic and world-famous professional brands.

6 Conclusion

After decades of development, industries and enterprises in eastern China have made great progress. Transformation and upgrading are the inevitable choice for these enterprises and industries. Relevant personnel should aim at the high-end links in the value chain, boldly carry out technological innovation and management innovation, continuously improve the value content and added value of products, realize the leap of the stratum in the value chain, and promote the transformation and development of regional economy.
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References