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Optimizing the Development Area to take the lead in Peaks-based on Location Quotient Analysis

Optimizing the Development Area to take the lead in Peaks-based on Location Quotient Analysis

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Abstract. The China Optimized Development Area was officially released in the National Main Functional Area Plan in 2011. It is an important population and economically intensive area of China and has a huge impact on China's future development. Under the background of international commitment and national planning to reduce carbon emission intensity, China's optimized development area should play a leading role. Based on the location quotient analysis method, this paper analyzes the basis and prospects of optimizing the development area to take the lead from the industrial structure level, and draws the following conclusions. From the perspective of a single city, it compares with the overall industrial structure of the country and obtains optimization. Compared with the whole country, the development zone has a better industrial structure as the basis for carbon emission peaks. The optimized development zone should continue to carry forward its advantages in industrial structure and play a leading role in China's 2030 carbon emission peak.

1. Introduction

China is a major energy and carbon emitter. It promised to reduce carbon emissions by 60%-65% in 2005 compared with 2005 at the World Climate Conference, and proposed in the "13th Five-Year Plan". During the "Thirteenth Five-Year Plan" period, the carbon emission intensity decreased by 40-45& relative to 2005.The optimized development area[1] has advantages in terms of spatial structure, urban layout, industrial structure, development mode and infrastructure, and its comprehensive strength is strong. Therefore, optimizing the development area to take the lead in peaking is of great significance for realizing China's commitment and planning.In recent years, many scholars at home and abroad have proposed that industrial structure has an important impact on carbon intensity and peak value, such as Deng Xiaolan and Chen Baodong. The rationalization of industrial structure has a significant impact on carbon emission intensity.Wu Changyan and Huang Xianjin have made it clear that it is very important to adjust the industrial structure as the main carbon emission

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[1]The Optimized Development Zone was officially released in the "National Main Functional Area Planning" in 2011. Its specific regional planning comes from "Beijing Main Functional Area Planning", "Tianjin Main Functional Area Planning" and "Hebei Province Main Functional Area Planning". "Liaoning Province Main Functional Area Planning", "Shandong Province Main Functional Area Planning", "Jiangsu Province Main Functional Area Planning", "Zhejiang Main Functional Area Planning", "Guangdong Province Main Functional Area Planning", and in 2015, The Chong'an District, Beitang District and Nanchang District of Wuxi City merged into Liangxi District, and Wujin District and Qishuyan District of Changzhou City merged into Wujin District.

reduction path. Feng Yan, Zhu Lingyun, and Zhang Dahong verified the significant relationship between industrial structure and carbon intensity.It can be seen that the industrial structure has an important impact on the carbon peak. From the perspective of industrial structure, this paper is based on the location quotient analysis method, and specific analysis of China's optimization of development areas to take the lead in peak basis.

2. Optimize the development area to take the lead in the carbon peak

2.1 Introduction to Location Commercial Law

Location quotient, also known as location entropy, is also known as the regional scale advantage index or regional specialization rate, which is usually used to reflect the relative concentration and specialization level of an industry in the region. This method is performed by the American economist Haggett , based on the theory of comparative advantage.Specifically, the location quotient usually refers to the proportion of the output value of a particular sector in a region to the total output value of the region, and the ratio of the output value of the sector in the country to the GDP. The expression is:

$$LQ_{ij} = \frac{X_{ij} / \sum_{i=1}^{m} X_{ij}}{\sum_{j=1}^{n} X_{ij} / \sum_{i=1}^{m} \sum_{j=1}^{n} X_{ij}}$$

Where I represents the i-th industry (i=1, 2, 3...m), j represents the jth region (j=1, 2, 3...n), and Lij represents the i-th industry The output value of the region, LOij represents the location business of the jth region of the i-th industry. Generally speaking, when LQ>1, it indicates that the industrial concentration and specialization level of this industry in this region exceeds the national average level and has a strong competitive advantage, and the larger the value of LQ, the more obvious the competitive advantage; When LQ=1, it indicates that this industry in this region is equivalent to the national industry level, and there is no obvious advantage and disadvantage; when LQ<1, it indicates that this industry is a disadvantaged industry in the region, and the smaller the value of LQ, the more disadvantages .

2.2 Optimize the location quotient of each city in the development area

Table 1. Location quotient for each city in the optimized development area in 2017

city	Production area location	Second-generation location	Three production location	city	Production area location	Second-generation location	Three production location
BeiJing	0.5	0.47	1.56	TianJin	0.12	1.01	1.13
LangFang	0.82	1.08	0.96	BaoDing	1.48	1.13	0.83
CangZhou	1.02	1.23	0.81	TangShan	1.07	1.42	0.66
QinHangdao	1.68	0.85	1.01	ShenYang	0.58	0.95	1.10
DaLian	0.82	1.02	1.01	AnShan	0.79	0.96	1.06
FuShun	0.77	1.31	0.79	BenXin	1.09	1.07	0.93
LiaoYang	1.26	1.12	0.86	YingKou	1.11	1.07	0.93
PanJin	1.41	1.14	0.83	QingDao	0.44	1.02	1.07
YanTai	0.83	1.24	0.84	WeiHai	0.97	1.11	0.92
BinZhou	1.15	1.16	0.86	DongYing	0.42	1.55	0.65

WeiFang	1.13	1.21	0.82	NanJing	0.28	0.94	1.16
SuZhou	0.16	1.18	0.99	WuXi	0.16	1.17	1.00
NanTong	0.63	1.16	0.93	ChangZhou	0.30	1.15	0.99
YangZhou	0.65	1.21	0.89	TaiZhou	0.70	1.17	0.92
ZhenJiang	0.44	1.22	0.91	HangZhou	0.31	0.86	1.22
HuZhou	0.65	1.17	0.92	ShaoXing	0.51	1.21	0.91
NingBo	0.40	1.28	0.87	ZhouShan	1.48	0.90	1.00
JiaXing	0.39	1.31	0.85	ShangHai	0.04	0.76	1.34
GuangZhou	0.13	0.69	1.38	ShenZhen	0.01	1.02	1.13
ZhuHai	0.23	1.19	0.97	FoShan	0.18	1.43	0.79
HuiZhou	0.55	1.30	0.83	DongWan	0.04	1.19	1.00
ZhongShan	0.20	1.24	0.93	JiangMen	0.88	1.22	0.85
ZhaoQing	1.96	0.90	0.93				

Source: Statistical Yearbook or Statistical Bulletin of each province and city in 2018.

Note: Replace the parts of each city in the optimized development area with the industrial structure of the entire city.

The optimized development area covers 45 cities, of which 33 cities have less than 1 location business, and 12 cities including CangZhou, QinHuangdao, BaoDing, TangShan, LiaoYang, PanJin, BenXi, YingKou, BinZhou, WeiFang, ZhouShan and ZhaoQing. The number of quotients in the primary industry is greater than 1, and only the location quotient of QinHuangdao and ZhaoQing's primary industries is greater than 1.5. Therefore, it is known that about 73% of the cities in the optimized development area have less than one location, about 22 The location of the first industry in the city is between 1-1.5, and only about 4% of the urban location quotient is greater than 1.5 and less than 2. Therefore, we can conclude that the location of the primary industry in most of the 45 cities covered by the optimized development area is less than 1, that is, the degree of specialization of the primary industry in most of the optimized development areas is lower than the national average. And it is a disadvantaged industry.

In the optimized development area, the location of the second industry in 35 cities is greater than 1, and the location of the second industry in Beijing, QinHuangdao, Shenyang, Anshan, Nanjing, Hangzhou, ZhouShan, ShangHai, GuangZhou and ZhaoQing is less than 1 Among the 10 cities, only the second-tier cities in Beijing, Shanghai and Guangzhou have a location business of less than 0.8, so it is known that about 78% of the urban secondary industries in the optimized development area have a location business greater than 1, About 18% of the urban secondary industry's location business is between 0.8-1, and only about 7% of the urban secondary industry's location business is less than 0.8. Therefore, it is concluded that the location quotient of most of the urban secondary industries in the optimized development area is greater than or equal to 1, that is, the industrial concentration and specialization level of the secondary industry of most cities in the optimized development area is better than the national average and Has a clear competitive advantage.

In the optimized development area, the location of the tertiary industry in Beijing, Tianjin, QinHuangdao, ShenYang, DaLian, AnShan, QingDao, NanJing, WuXi, HangZhou, ZhouShan, ShangHai, GuangZhou, ShenZhen and DongGuan is greater than or equal to 1, including Large cities with developed economies such as BeiJing, TianJin, ShangHai, Hangzhou, Shenzhen, GuangZhou, etc.; the location of the tertiary industry in 30 cities in the optimized development area is less than 1, but only 30 of the 30 cities are TangShan LQ=0.66, Fushun LQ The location quotient of the third

industry of =0.79, DongYing LQ=0.65 and FoShan LQ=0.79 is less than 0.8. Therefore, it can be seen that about 33% of the urban tertiary industry in the optimized development area has a location business of more than 1, and about 58% of the urban tertiary industry has a location business between 0.8-1, and only about 9% of the urban location. The quotient is less than 0.8. Therefore, it can be said that about half of the urban tertiary industry in the optimized development area has a location quotient of less than 1, that is, the tertiary industry of about half of the cities is at a disadvantage relative to the whole country; about 33% of the optimized development area The city's tertiary industry has a location business of greater than or equal to 1, that is, about 33% of the urban tertiary industry's industrial concentration and specialization level is higher than the national average and has obvious competitive advantages, and these cities are based in Beijing, Shanghai, Guangzhou and other large cities with higher output values.

2.3 conclusions and recommendations
In 2017, most of the cities in the optimized development area have a production area of   less than 1 and the second-generation or third-generation area is greater than 1, that is, most cities are dominated by secondary or tertiary production, and Industrial concentration and specialization are better than the national average, and have strong comparative advantages and competitiveness relative to the whole country. On the whole, the industrial structure of the optimized development area is more complete than that of the whole country, and it has the industrial structure foundation with the highest carbon emission.

The optimized development area covers 45 cities in China, spanning 6 provinces and China's capital Beijing and two municipalities Tianjin and Shanghai. The optimized development area not only covers a wide range, but also has a large output value and population. By 2017, the GDP of the optimized development area (the constant price in 2005) accounted for 52.70% of the national total, and the resident population at the end of the year accounted for 21.27% of the national total. The carbon emission rate will reach the peak in advance.

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