Present Situation and Evolution of Industrial Structure in Henan County

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Abstract

Based on the methods of industrial economics and metrological geography, this paper analyzes the current situation of economic development in Henan Province from 2000 to 2014. This paper chooses three representative regions from the structural differences of the first and second industries, mainly comparing the differences of the first industry in the three regions, and analyzes the characteristics of the industrial structure change in the three regions. Selected representative of the three regions: Zhoukou City Huaiyang County (traditional farming area), Zhengzhou City Zhongmou County (emerging industrial area) and Anyang City Linzhou City (old industrial area). The results show that: (1) the output value of the first industry is dominated by the southeast, the northwest is low, the ladder-like distribution and the regional clustering are obvious. The total amount of the whole industry is increasing but the proportion is declining continuously. (2) The development of agricultural advantage index in different regions is different and the polarization is differentiated. (3) The first industry has a large population, low output value, and unbalanced industrial structure and employment structure. The level of agricultural development needs to be improved, and the labor force in individual regions can guide the development of other industries. (4) The trend of diversification of industrial structure of agriculture, forestry, animal husbandry and fishery is related to the development of regional leading industry, especially the influence of the second industry on the diversification trend of agriculture, forestry, animal husbandry and fishery. The increase in the diversity index of agriculture, forestry, animal husbandry and fishery is often accompanied by the expansion of the secondary industry. vice versa.(5) regional industrial structure changes vary greatly. The overall development of the primary industry into the bottleneck period, the primary industry to reduce the annual growth rate and slowdown. In recent years, there have been negative growth in individual areas. Traditional farming areas of agricultural development limited contribution to the economy and the old industrial areas of industrial development and the lack of agricultural development conditions to be improved.

Keywords

Industrial structure, county, primary industry, comparison.

1. Introduction

The theory of industrial structure can be roughly divided into two major levels. The first level is to explore the interdependence between industrial sectors from the microscopic technical level. The second level is to explore the interdependence of industries from the macroeconomic level. The content of the research can also be divided into several aspects. In the general sense, the law of change in industrial structure, the influencing factors of industrial structure changes, and the choice of leading industries, the optimization and adjustment of industrial structure are the main contents of this level[1]. The research scale of the regional economy has also shifted from macroscopic scales such as the past provinces and regions to macroscopic and microscopic integration and macroscopic refinement research. The small scale in economic geography has become a research boom [2]. By comparing the economic development differences of small areas such as county areas, different county areas can

combine their own characteristics, recognize the future industrial structure development direction of the region, and find a development path that suits them.

The analysis of industrial structure is mainly based on case analysis: structural model and function analysis of the structural rationality of the three industries, pointing out that the regional development has insufficient technical structure and put forward corresponding suggestions [3-4]; some scholars according to the local industrial structure and economy Development is small and big, exploring the contribution of industrial structure to regional economic growth [5]; in recent years, the mechanism of industrial structure evolution has attracted the attention of scholars. Research at the county level is not new. Early county research analyzed the level of county economic development and spatial distribution in China, and then the study of county economic evolution [6]. The differences between counties in different provinces, the central-marginal differences in the same provinces, and the homogeneity-heterogeneity differences, as well as the single and comprehensive indicators in the economic county economic research, make the county economic research continue to develop and flourish [7-8] .

Research on Henan's industrial structure and county economy. For the first time, Li Xiaojian and others combined the development data from the county scale and analyzed the economic differences between the coastal and inland counties in the 1990s. According to the classification of economy and growth, the county analyzes the spatial distribution characteristics and influencing factors of developed and underdeveloped counties [9]. Jiang Guofu and others used Henan county economy as a research unit to select 10 economic development indicators to reveal spatial differentiation characteristics. It points out that the county economy has obvious differences, the relationship between spatial distribution and topography, pointing out the leading areas and subsidence areas of economic development [10]. Zheng Yun selected a series of indicators to analyze the internal structure of the three industries and the dynamic evolution process of industrial upgrading. Through the deviation analysis, the dynamic characteristics of industrial evolution are evaluated. The industrial structure is optimized and reasonable, but the difference between the east and the west is large, and Henan Province is still at a low level [11]. Guo Hua et al. described the evolution of the spatial pattern of Henan county economy through ESDA correlation analysis, the development level polarization polarization, spatial autocorrelation, cold hot spot evolution and migration trend. Analyze the driving force behind the evolution of the economic landscape. Yang Jiawei, etc., calculated that the industrial structure entropy, employment structure deviation, and deviation share analysis, etc., that Henan Province's industrial structure is characterized by high-level, non-equilibrium and internal diversification, pointing out the problem of uncoordinated industry and employment, summed up the summary. The characteristics and formation mechanism of industrial structure evolution in Henan Province, and suggestions on the problem [12].

The author attempts to compare the changes in industrial structure in different regions of the economic development level, especially the changes in the primary industry, from the county scale. Analysis of possible problems in the development of different types of districts in Henan Province, and put forward their own views and suggestions.

2. Status of industrial structure in Henan Province

This paper selects 18 provincial cities and 108 counties in Henan as the analysis unit, with 2000-2014 as the analysis period. The data comes from 2001-2015 Henan Statistical Yearbook, Henan Survey Yearbook, local statistical bulletin, yearbook and so on. Combining the relevant knowledge of industrial economics, the relevant methods in metrology geography, analyzing the status quo of industrial structure in different counties of Henan Province, and conducting a detailed analysis of the primary industry.

2.1 Changes in the time of three industries in Henan

According to the changes in the output value and proportion of the three industries in Henan Province (see Fig. 1), we divide the industrial structure change in Henan Province into three phases: 20000-

2003, 2004-2008, 2009-2016. As far as the proportion of the three industries is concerned, in the period 2000-2003, the primary industry experienced a sharp decline, the secondary industry increased rapidly, and the tertiary industry remained basically unchanged. In 2004-2008, the primary industry showed a slight increase. The continued decline in the second industry continues to rise. It is worth noting that the decline of the primary industry and the rise of the tertiary industry are both converging from the first phase, and the rise and fall are slow. The tertiary industry has experienced a sharp decline since entering the new phase, and then enters a new stable period; In 2009-2014, the three industries experienced more complex changes. The primary industry continued to decline, with little change from the previous stage. In the initial stage of the second industry, the process of a small decline gradually recovered and then fell rapidly again, showing a semi-arc structure. The tertiary industry rose slightly after the initial increase and gradually declined.
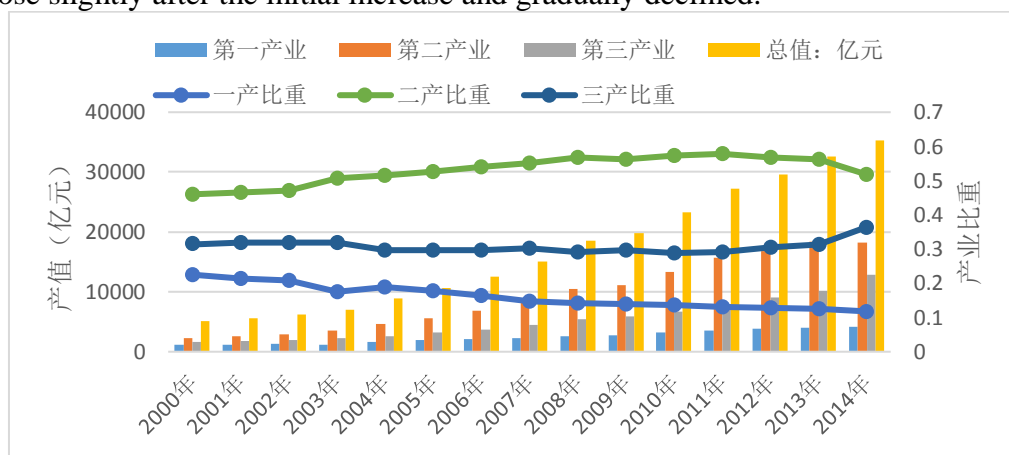

Fig. 1 GDP and proportion three industrues in henan (2000-2014)

2003 and 2008 have two social boundaries as two demarcation points. In 2003, the proportion of primary industry and output value decreased, mainly due to the serious agricultural disaster in Henan in the autumn. In addition, the spread of the SARS epidemic has affected agricultural production and the preferential policies for agriculture are far less than today. Farmers are not motivated to grow grain and the output value of the primary industry is declining. The changes in the second and third industries in 2008 were mainly affected by the global economic crisis. As a result, the proportion of the slowdown in the growth rate of the secondary industry has declined, and the breakthrough in the tertiary industry has increased.

2.2 Spatial changes in Henan′s industrial structure

We sorted the three industries from large to small, as shown in Fig. 2. Distribution of industry types in 2000 (left) and 2014 (right). According to the figure, we can see the changes in industrial structure. In Fig. 2, in 2000 (left), the eastern first industry accounted for a large share, and the western and northwestern secondary industries dominated. The first and second industries in the southern region are equally important. In some regions, the tertiary industry is leading. Except for some provinces and cities, the tertiary industry is the dominant position. In other regions, most of the tertiary industry and the first (or second) industries are slightly more dominant. In fact, the tertiary industry has no absolute advantage. In Fig. 2 (right), we see that most of Henan Province has a 231-type industrial structure. In some areas, such as Huaiyang, there are two-three types, and the primary industry still has a large share. The industrial structure of the 31-type is mostly distributed in the provincial cities and some scattered areas. It is seen that the industrial structure changes in the western and northwestern regions are not obvious. The eastern region has changed a lot, and most of the regions have realized the transformation of the 231-type industrial structure. Only the primary industry in some regions still has a large share, which is slightly inferior to the secondary industry.
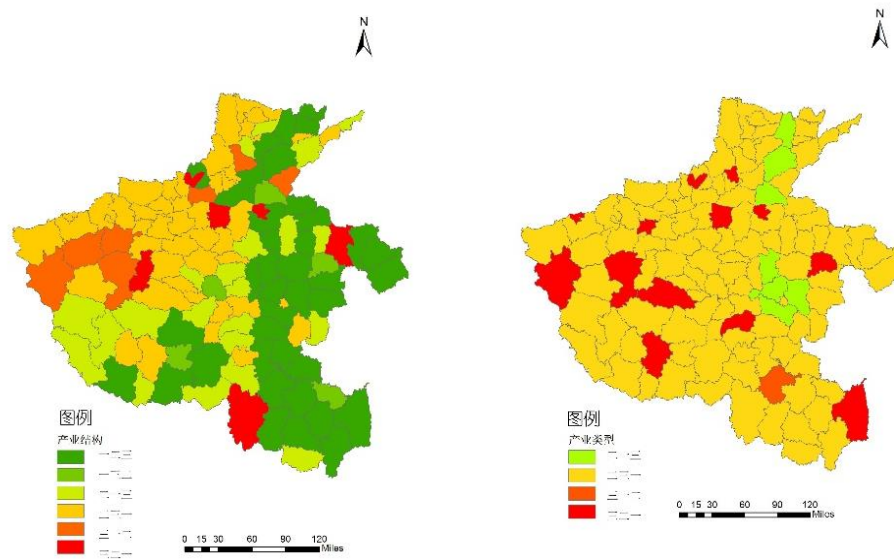
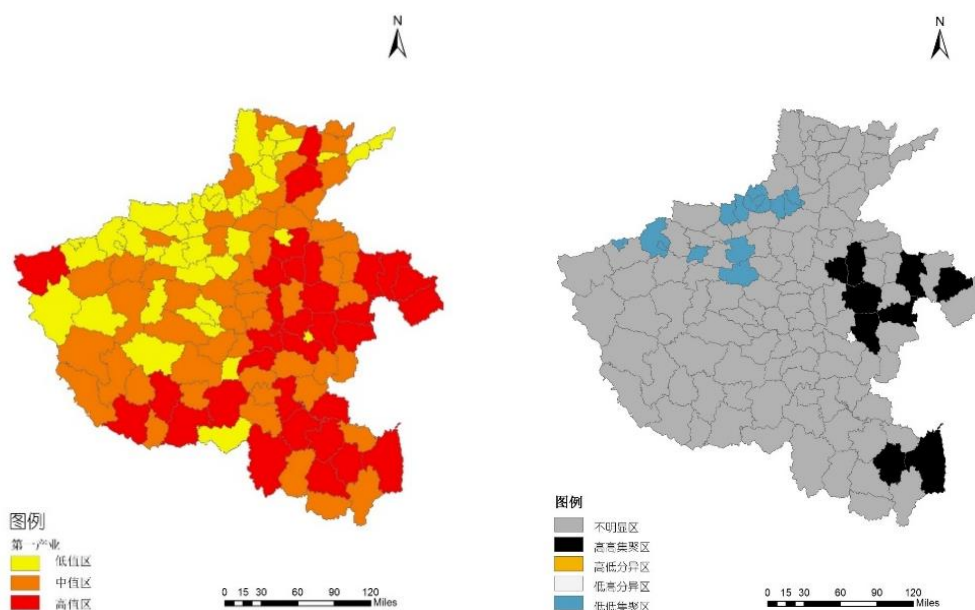Fig. 2 Industrial structures of 126 cities in Henan (2000、2014)

Fig.3 The first industry output distribution and clustering situation in Henan（2014）

2.3 First industry output value and spatial clustering spatial clustering analysis

We use arcgis10.2 to visually analyze the output value of the primary industry, as shown in Fig. 3. As can be seen from the figure, the distribution of the primary industry in space basically conforms to the north-southwest 45° oblique line segmentation. From northwest to southeast, it has experienced three regions of low value, median value, and high value, which are roughly stepped, forming a spatial gradient on the output value. The primary industry is obviously affected by the topography. In addition, the mineral resources in the southwest are abundant, and the secondary industry is relatively developed, resulting in a lower output value of the primary industry. As can be seen from the cluster

map, there are hot spot concentration areas in the vicinity of Zhoukou, Shangqiu, Xinyang East and West and Nanyang City. In the northwestern region (with focus as the center), there is a stepped cold spot distribution, which is concentrated. The output value and distribution of the secondary industry are roughly opposite to those of the primary industry. The distribution of topography and mineral resources has an obvious impact on the primary and secondary industries.

3. Comparison of industrial structure in three counties

Combining the output value and clustering of the primary industry, we selected the Zhoukou Huaiyang area (traditional agricultural area) for detailed analysis of the primary industry. The output value of the first industry in Huaiyang County ranks eighth in 108 counties of Henan Province, and the first industry ranks fourth, ranking in the spatial cluster center. In addition, Zhengzhou Zhongyu (Xingxing Industrial Zone) and Anyang Linzhou (old-fashioned industrial zone) regions also tried to analyze their industrial structure due to their changing industrial structure. The output value of the second industry in Zhongmu County ranked first in the output value of the second industry in 108 counties of Henan, and the second industry ranked third and representative. Its industrial structure has been rapidly transformed from a more balanced type of the first, second and third industries in 2000 to a special area where the secondary industry is dominant (more than 75%). In 2000, the proportion of the primary industry in 2000 was already very low, and it continued to decrease. The secondary industry continued to increase, and the proportion of the third production began to increase significantly. It is the representative of Henan's traditional industrial transformation. .

3.1 Agricultural Advantage Index

$$A_{ij}=(P_{ij}/G_{ij})/(P_i/G_i) \qquad (1)$$

A_{ij} represents the agricultural advantage index of the county [12] of j, P_{ij} and G_{ij} are the agricultural output value and GDP of the county, and the P_i and G_i respectively represent the agricultural output value and GDP of Henan Province in the year of the year.

A_{ij}>1 reaction The county agriculture has a comparative advantage in Henan Province. A_{ij}<1 reflects that the first industry of the county has no comparative advantage in Henan Province. The change in A_{ij} value can be used to measure the agricultural status of each county in Henan Province. The higher the value reflects the relatively strong agricultural capacity and its contribution to regional development.

From Fig. 4, we can see that Huaiyang County has obvious agricultural advantages, and Linzhou City has a weak agricultural advantage. Zhongyu County has a good agricultural advantage in the early stage. In 11 years, the farming advantage has dropped to less than 1, and the agricultural advantage is lower than that of Henan. standard. The overall agricultural superiority of Huaiyang County peaked in 2007, mainly due to the negative growth of the secondary industry caused by the bankruptcy of individual major enterprises (Hualin Group) in 2007, and the proportion of the primary industry increased. After the recovery and rapid development of the secondary industry, the agricultural superiority index declined, but remained above 2.5, and the advantages of farming in Henan Province were obvious. The agricultural superiority index of Zhongmu County has declined overall. In the early period, it showed a slight increase. After reaching a maximum of 1.51 in 2005, it began to decline. In the past 10 years, the growth rate of the primary industry slowed down and the secondary industry expanded rapidly. As a result, the agricultural superiority index dropped significantly after 10 years, and fell to the provincial level in 11 years. It reached a level equivalent to Linzhou in 14 years, and the agricultural superiority index was around 0.43. Linzhou City is a region with good industrial base and does not have agricultural advantages. The agricultural superiority index continued to decline overall, with small fluctuations in the early stage, but it did not affect the reality that the agricultural advantages were lower than the overall level of Henan Province and continued to decline.
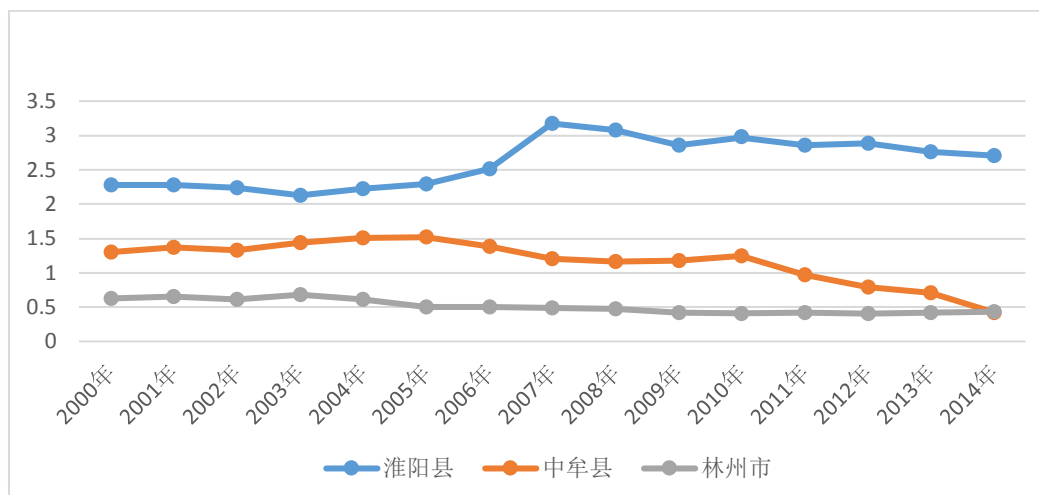
Fig.4 the three counties farming advantage index (2000–2014)

3.2 Primary industry output value and employment coordination

According to the Principal-Clark theorem, we can see the trend of economic development and labor transfer. Labor transfer and industrial structure changes are inseparable. The overall trend is that the labor force is decreasing in the primary industry and increasing in the secondary and tertiary industries. Is the distribution of primary industry output and labor employment in the three regions coordinated? This paper uses the deviation of employment structure to measure the coordination degree of labor transfer between the first industry in the three regions.

$$\emptyset_1 = \frac{GDP_i/GDP}{Y_i/Y} - 1, \quad \emptyset_2 = \left| \sum_{i=1}^{n} \left(\frac{GDP_i}{GDP} - Y_i/Y \right) \right| \tag{2}$$

Where: GDP_i/GDP is the proportion of the output value of the i-th industry GDP; Y_i/Y is the proportion of the employed people in the i-th industry. The positive deviation of the employment industry structure indicates that the proportion of output value is greater than the proportion of employment. The smaller the absolute value is, the more balanced the industrial structure and employment structure are. When zero, the two are balanced. The larger the deviation coefficient, the larger the gap between industrial structure and employment structure. This paper mainly discusses the employment deviation and deviation coefficient of the primary industry in the three regions, and draws Fig. 5. The employment deviations of the primary industries in the three regions are all negative, indicating that the proportion of the output value of the first industry in Henan is less than the proportion of employment, and the output value of the secondary and tertiary industries is greater than the proportion of employment. In short, the employment in the primary industry accounts for a relatively high proportion but does not produce a consistent output value. Of course, this is related to the limitations of agriculture itself, and it also indicates that the agricultural level of Henan Province needs to be improved. The overall degree of employment structure deviation of Huaiyang County's primary industry showed a downward-rise-re-decline trend. There was a rising period around 2005, mainly due to the increase in the employment of the secondary and tertiary industries, and the increase in the proportion. Compared with the social background at that time, the annual average population was almost the same as the total population at the end of the year, indicating that the number of migrant workers decreased. The number of the second and third industries has increased significantly, which has led to a decrease in the proportion of the population in the primary industry, and the output value has continued to increase, resulting in a narrowing of the industrial structure. After that, the output value and employment population of the secondary and tertiary industries continued to increase, the output value of the primary industry was insufficient, and the deviation of industrial structure expanded again. Zhongyu County and Huaiyang County have similarities, but the growth rate of the previous structural deviation is smaller than that of Huaiyang County. On the one hand, it is close to the provincial capital, which is convenient for solving the employment of the secondary and tertiary industries. In addition, its industrial base is stronger than that of the Huaiyang area, and

it is less affected by the outside world. The early fluctuations were small. In the later period, the proportion of output value of the secondary industry continued to expand rapidly. The output value of the primary industry increased slowly and the population transfer was less. The deviation of the structure of the primary industry expanded sharply. The early stage of Linzhou City was hardly affected by the social background at that time. The output value and employment of the secondary and tertiary industries continued to increase, and the deviation of the structure of the primary industry slowly expanded and was relatively stable.
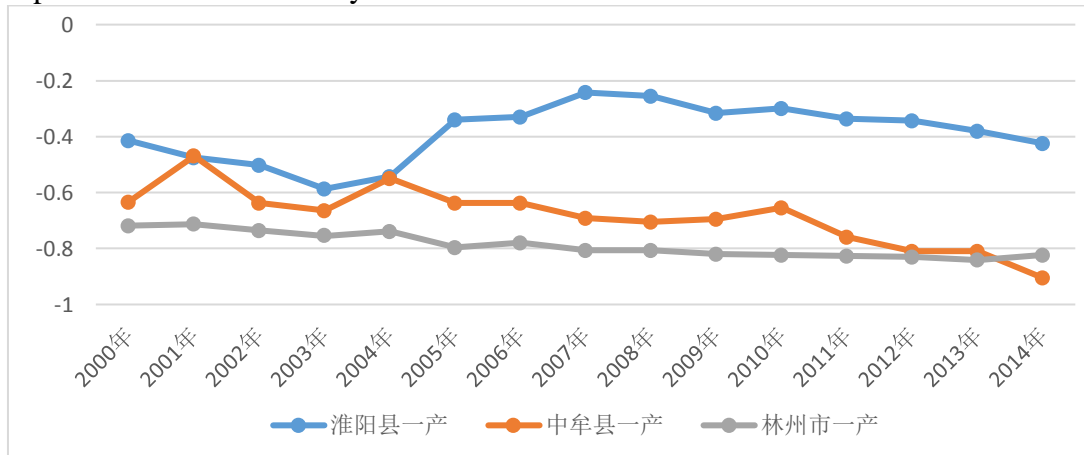

Fig.5 Degree of deviation of the first employment industrial structures in three countries (2000—2014)

3.3 Industrial structure diversification index

Due to the limitation of data, this paper only analyzes the industrial structure in general agriculture (ie, agriculture, forestry, animal husbandry and fishery), and measures the internal industrial structure of general agriculture with diversification index. The Diversification Index is a measure of the extent to which the internal structure of an industry is diversified. Calculated as follows:

$$\gamma = 1/\sum_{i=1}^{n} X_i^2 \tag{3}$$

In the formula (3): X_i is the proportion of each industry in a certain industry to the total output value.

According to formula (3), we calculate the diversification trend of agriculture, forestry, animal husbandry and fishery in Huaiyang County, Zhongmu County and Linzhou City and draw Fig. 6.
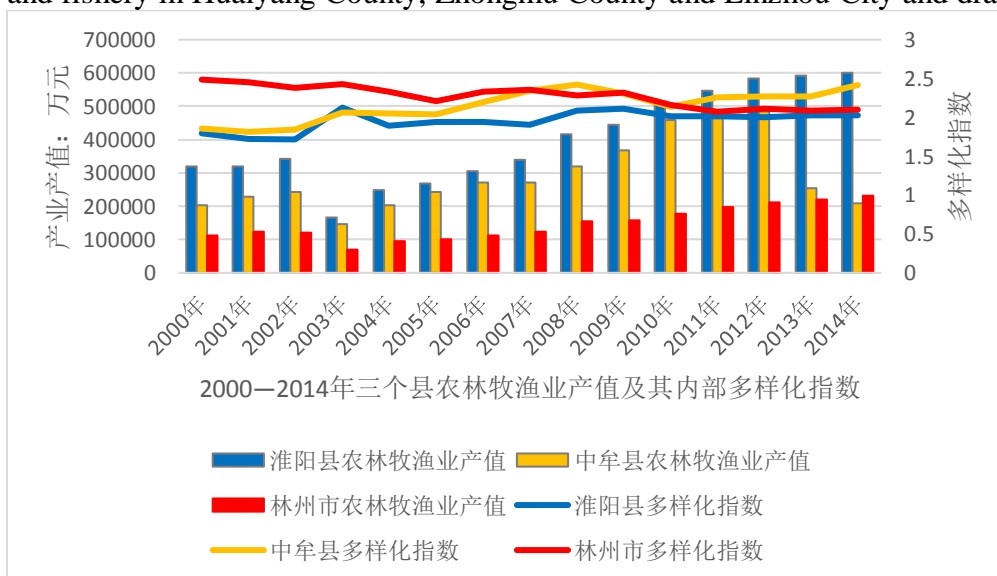

Fig.6 Gross output value of farming, forestry, animal husbandry and fishery and the diverse index of internal agriculture (1986-2011)

From Figure 6, we can see that the three regions of Huaiyang County, Zhongmu County and Linzhou City experienced a sharp drop in 2003, and then increased year after year, gradually returning to the previous level. Zhongmu County returned to the output value of 2002 in 2005, and Huaiyang County and Linzhou City returned to the level of 2002 in 2007, slightly slower than Zhongyu County. It is worth noting that the growth rate of the three regions has slowed down significantly after 12 years. Zhongyu County has even reduced production by nearly half, and it has continued to decline.

From the diversification index of the three regions, the diversification index of agriculture, forestry, animal husbandry and fishery in Huaiyang County and Zhongmu County is on the rise, and Linzhou is the opposite. The Huaiyang County Diversification Index experienced large fluctuations in 2003, mainly due to the significant reduction in crop production, and the increase in other industries such as animal husbandry and fishery, which led to an increase in the diversification index. The subsequent abolition of the agricultural tax and a series of preferential agricultural policies led to an increase in the crop industry and a diversification index. The subsequent increase and decrease are less obvious, indicating that the stability of agriculture, forestry, animal husbandry and fishery in traditional farming areas is higher. The rising speed of Zhongmu County is higher than that of Huaiyang County, and the fluctuation range is small. In 2008, the Zhongmu County Diversification Index peaked and began to decline after a decline. In the 2008-10 years, if the agricultural product diversification of the economic crisis is affected, it tends to be self-sufficient production, and the diversification index has declined. In 10 years, it began to pick up. In line with the economic recovery, the expansion of the secondary industry and the contraction of the primary industry, people began to explore diversified production instead of the increase in the output value of agriculture, forestry, animal husbandry and fishery. The overall situation of agriculture, forestry, animal husbandry and fishery in Linzhou City is declining. The internal structural changes are mainly due to the increase of the proportion of animal husbandry, and the reduction of crop production and other industries, which is related to the special geographical environment in which the local farming industry is not suitable for development. Compared with the plain area of Huaiyang County, it lacks the topographical advantages of developing large-scale planting mechanized production. This has also led to a continuous decline in the diversity index of agriculture, forestry, animal husbandry and fishery.

4. Deviation-share analysis

The deviation-share analysis method divides the variation of the economic aggregate of a particular region into three components in a certain period, that is, the share component, the structural deviation component and the competitive deviation component, thereby explaining the reasons for regional economic development and recession, and evaluating The strengths and weaknesses of the regional economic structure and the strength of its own competitiveness, identify the industrial sectors with relatively competitive advantages in the region, and then determine the rational direction of regional economic development and the principle of industrial restructuring.

According to the deviation-share analysis method, the economic growth (G_{ij}) of a region can be divided into three parts: the regional growth share component (N_{ij}), the industrial structure deviation component (P_{ij}), and the competitive deviation component (D_{ij}).

The relational expression is expressed as: regional economic growth (G_{ij}) = regional growth share component (N_{ij}) + industrial structure deviation component (P_{ij}) + competitive deviation component (D_{ij})

The formula is as follows:

$$G_{ij} = N_{ij} + P_{ij} + D_{ij} = b_{ij,t} - b_{ij,0}, \quad P_{ij} = \left(b_{ij,0} - b_{ij,0}\right) * R,$$
$$D_{ij} = b_{ij} * \left(r_{ij} - R_j\right), \quad N_{ij} = b_{ij} * R_j \tag{4}$$

The formula is as follows:

$$G_{ij} = N_{ij} + P_{ij} + D_{ij} = b_{ij,t} - b_{ij,0}, \quad P_{ij} = \left(b_{ij,0} - b_{ij,0}\right) * R,$$
$$D_{ij} = b_{ij} * \left(r_{ij} - R_j\right), \quad N_{ij} = b_{ij} * R_j \tag{5}$$

In the formula: $b_{ij},0$ and $b_{ij},t(j=1,2,...,n)$ respectively represent the scale of the j-th industrial sector in the initial and final phases of the region i; B_0 and B_t indicate that the region is located in the region or the country The total size of the economy at the beginning and end of the period; $b_{ij},0$ and b_{ij},t represent the scale of the j-th industrial sector in the early or final period of the region or the country; r_{ij} is the change in the period of the j-th industrial sector $[0,t]$ of the region i Rate; R_j is the rate of change in the regional or national j industry sector in $[0, t]$; b_{ij}, 0 is the standardization of the regional industrial sector by the share of the regional or national industrial sectors. , the formula is b_{ij}, $0 = (b_{ij}$, $0*B_j$, 0) / B0 (j = 1, 2, ..., n). The final calculation results can be broken down as follows:

$$L=W*U, \quad W = \frac{\frac{\Sigma_{j=1}^{n} K_{j,0}*B_{j,t}}{\Sigma_{j=1}^{n} K_{j,0}*B_{j,0}}}{\frac{\Sigma_{j=1}^{n} B_{j,t}}{\Sigma_{j=1}^{n} B_{j,0}}}, \quad U = \frac{\Sigma_{j=1}^{n} K_{j,t}*B_{j,t}}{\Sigma_{j=1}^{n} K_{j,0}*B_{j,t}} \tag{6}$$

In this paper, five periods are selected at a time interval of five years: 2000-2004, 2005-2009, and 2010-2014. Table 1 is drawn according to the calculation result of the above formula. From the perspective of the province's growth share, the three regions of Huaiyang County, Zhongmu County, and Linzhou City are all province-wide growth sectors, but the three industries in the three regions have different growth. For example, the negative growth of the primary industry in Zhongmu County from 11 years to 14 years. Mainly due to the acceleration of the secondary industry process, the output value of the primary industry has shrunk. The total increase in the primary industry in Huaiyang is less than the national share. The failure to break through is mainly due to the large agricultural base and the difficulty in continuing to increase the growth rate. The total increase of the secondary industry is basically larger than that of Henan Province. It is at a slightly leading level, the industrial base is weak, and the development momentum is flourishing. However, for some reasons, there has been a slight decline in the second phase. The first stage of the tertiary industry is lower than the provincial level, and the second stage is achieving positive growth and continuous improvement. The tertiary industry has developed rapidly in the past five years; the total increment of the primary industry in the Zhongmu area has always been less than the province's share component, and The expansion trend is obvious, but its secondary and tertiary industries are larger than the share of Henan Province, especially the secondary industry, which has developed rapidly and made up for the shortage of the primary industry; Linzhou County is similar to Zhongyu County, and the total increase of the primary industry is less than the province. In terms of share weight, the tertiary industry was less than the province's share component in the first five years, and it surpassed and developed steadily in the next decade. It is worth noting that its secondary industry has dropped from its original level of superiority to below the provincial level. From the perspective of structural deviation, the primary industry in Huaiyang County has been negatively incremented. In the first two phases, the secondary industry has become the main force contributing to the total economic output. The final stage has been replaced by the tertiary industry, and the secondary industry has also become negative growth. Linzhou is similar to Zhongli, and the offset component of the industrial structure of the primary industry has always been negatively negative, and the secondary industry has become the main force in the mid-term contribution of structural deviation. The tertiary industry has grown positively from the medium term and has become the main force in the third phase. Judging from the competitive offset component, Huaiyang County has negative values in the first and third phases, and the overall competitiveness is declining. However, the rise of the medium- and third-industry industries is that the total competitiveness has become positive, indicating that its competitiveness has improved but has once again declined, reflecting the lack of competitiveness in the three industries. The first industry in Zhongmu County is a process of continuous decline to a negative value. Of course, it is accompanied by an astonishing rapid development of the secondary industry and a significant increase in the competitiveness of the secondary industry. The advantages of the early first and second industries in Linzhou County were obvious, and the competitiveness of the tertiary industry was insufficient. In the medium term, the three industries are all positive growth, and the competitiveness has reached its heyday. However, in the third stage, the competitiveness of the first and second

industries was weak, and there was negative growth. The tertiary industry developed at a faster pace and became a competitive advantage industry.

In addition, Table 1 also lists the structural effect index W, regional competition effect index U, and relative growth rate L of the three regions. The relative growth rate of Huaiyang County is slightly lower than the provincial level. Its structural effect index caught up with the general provincial level in the third stage. The regional competition effect index increased rapidly after a small decline, but it was always lower than the provincial average. Although the relative growth rate of Zhongmu County has increased, it is still slightly lower than the provincial level. However, its structural effect index and regional competition effect index continue to increase at an alarming rate. The relative growth rate, structural effect index and regional competition effect index of Linzhou City were flat in the first stage, the second stage reached full prosperity, and the third stage returned to normal slightly lower than the provincial level.

Table. 1 SSM analysis of different periods in three countries (2000-2014)

地区	时间段	产业类型	总增长Gij	增长率	Nij	Pij	Dij	PD
淮阳县	2000-2004	第一产业	6.008	32.027	14.044	−5.366	−2.670	−8.036
		第二产业	13.528	116.649	8.682	2.459	2.388	4.846
		第三产业	2.994	47.637	4.706	−0.661	−1.050	−1.711
		合计	22.531	61.488	27.431	−3.568	−1.332	−4.900
	2005-2009	第一产业	17.448	64.993	23.057	−10.710	5.101	−5.609
		第二产业	16.288	56.106	24.933	3.827	−12.472	−8.645
		第三产业	11.533	117.183	8.453	0.061	3.019	3.080
		合计	45.268	68.883	56.443	−6.822	−4.352	−11.174
	2010-2014	第一产业	8.034	15.818	26.225	−10.827	−7.364	−18.191
		第二产业	31.508	64.934	25.054	−7.246	13.700	6.454
		第三产业	20.828	82.781	12.991	10.032	−2.196	7.837
		合计	60.370	48.500	64.270	−8.041	4.140	−3.901
中牟县	2000-2004	第一产业	8.611	74.381	8.667	−3.311	3.256	−0.056
		第二产业	16.114	111.749	10.795	3.057	2.262	5.319
		第三产业	6.625	48.305	10.267	−1.443	−2.199	−3.642
		合计	31.350	78.944	29.728	−1.697	3.318	1.621
	2005-2009	第一产业	12.354	50.650	20.948	−9.731	1.136	−8.594
		第二产业	85.745	214.565	34.323	5.268	46.155	51.423
		第三产业	34.262	132.444	22.218	0.161	11.883	12.044
		合计	132.361	146.707	77.489	−4.302	59.174	54.872
	2010-2014	第一产业	−9.023	−19.928	23.379	−9.652	−22.750	−32.402
		第二产业	397.138	265.838	77.136	−22.309	342.310	320.002
		第三产业	73.517	105.071	36.128	27.900	9.489	37.389
		合计	461.632	174.439	136.643	−4.061	329.050	324.989
林州市	2000-2004	第一产业	3.443	57.856	4.455	−1.702	0.690	−1.012
		第二产业	30.192	125.898	17.953	5.084	7.155	12.239
		第三产业	4.570	36.105	9.475	−1.331	−3.574	−4.905
		合计	38.205	89.705	31.883	2.051	4.271	6.322
	2005-2009	第一产业	5.836	58.468	8.572	−3.982	1.245	−2.737
		第二产业	113.654	146.820	66.485	10.204	36.965	47.169
		第三产业	41.070	171.620	20.554	0.149	20.368	20.517
		合计	160.560	144.230	95.611	6.371	58.578	64.949
	2010-2014	第一产业	5.015	28.209	9.180	−3.790	−0.375	−4.165
		第二产业	38.204	16.928	116.534	−33.703	−44.627	−78.330
		第三产业	86.793	118.881	37.697	29.112	19.984	49.096
		合计	130.012	41.081	163.411	−8.382	−25.017	−33.399

地区		淮阳县			中牟县			林州市		
年份		W	U	L	W	U	L	W	U	L
2000年-2004年		0.944	0.978	0.924	0.976	1.049	1.023	1.028	1.056	1.085
2005年-2009年		0.944	0.962	0.909	0.974	1.362	1.327	1.031	1.275	1.314
2010年-2014年		0.957	1.023	0.979	0.990	1.828	1.810	0.983	0.947	0.930

5. Conclusions and recommendations

The distribution of the output value of the first industry in Henan Province is uneven, which is roughly opposite to the distribution of the second production. The first industry is high in the east and low in

the west, and the east is highly concentrated. In the time, the output value of the primary industry fell in individual years, but the policy adjustment support, the impact on the primary industry is huge, and then continued to grow. The proportion of the primary industry in total output value has generally declined year after year, contributing to economic development.

The three case areas selected have a large gap in farming advantages. The advantages of farming in traditional agricultural areas are obvious and continue to rise. The old-fashioned industrial area has a small agricultural advantage, and is affected by the topography. The constraints of agricultural development are obvious, and the agricultural superiority index has maintained a steady decline. The agricultural superiority index of the newly-developed industrial areas has changed greatly. In the early stage of industrial development, the agricultural advantage index was higher. With the increase of industrial output value, the proportion of agriculture declined, and the agricultural advantages fell sharply in the rapid development of industry. The three regions reflect the changes in agricultural advantages among regions in Henan Province. In traditional farming areas, the agricultural advantages are obvious and continue to increase; in the old industrial areas, the agricultural advantages are lower than the average level of Henan Province and continue to decline. The gap in farming advantages between the two has continued to expand, and the regional division of labor has become more specialized. The agricultural advantages of the newly-developed industrial areas are obviously affected by the industrial development, and the industrial expansion leads to the decline of the agricultural advantages.

The employment structure and industrial structure of the primary industry vary widely, but the proportion of the employment of the primary industry is greater than that of the primary industry. The employment population is too large and the output value is insufficient. Of course, this is related to the ability of the primary industry to contribute to the economy, and the agriculture between regions cannot reach the parity of employment and output value. The difference between the proportion of the primary industry's primary industry and the primary industry's output value is the smallest. On the one hand, the output value and proportion of the primary industry are double, the output value of the second and third industries is smaller than that of the first industry, and the employment of the primary industry is relatively reasonable. . However, it can be found that its volatility is the greatest. The population of the primary industry is huge, and the surplus labor of farming is vulnerable to the influence of policies and society, which leads to large fluctuations in the employment structure of the industry. In the old industrial zone, the deviation of the employment income and industrial structure of the primary industry has remained basically unchanged, with a slight expansion trend, mainly because the rate of decline in the employment of the primary industry is lower than the decline in the proportion of output value, resulting in a large population retention in the primary industry. The development of emerging industrial zones is similar to traditional farming, which is greatly affected by policies and society. The main factor is that the secondary industry has not yet developed and developed. The primary industry still occupies a certain proportion. The population of the primary industry is highly volatile and employment is unstable. In the middle stage, the development of the secondary industry, the population transfer of the primary industry is slower than the development of the secondary industry, resulting in the gradual expansion of the employment of the population and the industrial structure. In the latter period, the secondary industry developed rapidly and the degree of deviation rapidly expanded. From this we can see that the deviation of industrial structure and employment structure is subject to large fluctuations in policy and social factors in traditional farming areas. In the old industrial zone, it will not, mainly the stable industrial structure, the slower transfer of employment and the speed of industrialization, and the expansion trend is relatively flat.

The diversification index of agriculture, forestry, animal husbandry and fishery industry in traditional agricultural areas has an upward trend, and fluctuations in individual years indicate that traditional agricultural areas have begun to focus on agricultural development outside the planting industry in agricultural development. The concept of agricultural development is no longer simple. The concept of traditional small farmers with farming as the deputy. However, the agricultural diversification index has risen very slowly and there is a need to continue to improve. In the old industrial zone, the

diversification index of agriculture, forestry, animal husbandry and fishery industry continued to decline, mainly due to the reduction of planting industry, while the animal husbandry and other industries have expanded. It reflects the emphasis on the pastoral industry and the specialization of the old-fashioned industrial zone, repositioning based on its own resource conditions, and abandoning the shortcomings of the planting industry. The development of agriculture, forestry, animal husbandry and fishery in emerging industrial areas has diversified trends. On the one hand, in the process of industrialization, the demand for agricultural supply due to the increase of urban population has promoted the development of agriculture, forestry, animal husbandry and fishery. On the other hand, new industrial areas are often lacking in older industrial areas. The advantages of industrial raw materials and agricultural diversification can also meet the development needs of light industry.

Based on the analysis of the industry deviation-share, it is found that the development rate of traditional agriculture to the primary industry is lower than the provincial level, and the primary industry's output value base is large, and the improvement space is limited. The secondary and tertiary industries have become the driving force and direction for the development of traditional agricultural areas. However, its structural effects and relative growth rate are still lower than the provincial level, and the room for improvement is huge. In the period of rapid expansion of the secondary industry in the emerging industrial zone, the primary industry experienced a sharp decline. In the remaining periods, the industrial structure developed well, and the regional competition effect and relative growth rate were far ahead. However, it can be seen that the impact of the secondary industry on the primary industry is huge. The old industrial zone has experienced rapid development and the industrial structure is better, but the regional competition effect index and relative growth rate are lower than the provincial level, and even worse than the farming area. It shows that after the rapid development of local resources in the old industrial zone, the structure is reasonable but the competitiveness is not enough, and the new development momentum needs to be explored. The slow development of the primary industry and the bottleneck of the secondary industry have yet to be resolved.

In the traditional agricultural areas, the level of agricultural production is still very limited and is seriously affected by natural factors. Agricultural insurance can be promoted to prevent farmers from suffering huge losses due to disasters and affecting the enthusiasm of agricultural production. Policy can increase agricultural subsidies, increase production enthusiasm, and maintain adequate and reliable food supply. The advantage of farming is significantly higher than that of other regions, and the development of agriculture is its traditional advantage. The government can actively guide the intensification of agriculture, and a small number of people will carry out centralized and large-scale production and management, so that the labor force will be liberated from it. Agricultural development is large-scale and mechanized. Reduce the number of employed people in the primary industry and accelerate the coordination of industrial structure and employment structure. At the same time, the secondary industry can combine the characteristics of agricultural products in traditional agricultural areas to develop agricultural product processing and industrial chain extension to increase the added value of agricultural products. The farming area often has a good historical and cultural heritage and rich human resources. Cultural tourism can also be combined with agricultural advantages to carry out farmhouse music, rural tourism, etc., to combine the three industries, promote each other, and coordinate development.

The emerging industrial zone is affected by policies and neighboring developed cities, and the trickle effect is obvious. Agricultural development has been steadily reduced by the secondary industry, and traditional farming advantages no longer exist. Develop market-oriented agriculture to meet the demand for agricultural products in the process of urbanization brought about by the rapid changes in industrial structure. It is possible to appropriately reduce traditional grain cultivation, increase animal husbandry and fishery, and promote diversification of agricultural production. While focusing on the development of the secondary industry, the role of agriculture as a basic industry cannot be ignored. The decline of the fast-moving primary industry may have an adverse impact on the secondary and tertiary industries. The transfer of employment population tends to follow up slowly,

resulting in a large surplus of labor. In the emerging industrial zone, we can take advantage of the leading position of the secondary industry, develop high-tech agriculture, increase agricultural output value, and play a leading role in the province's agriculture.

In the old industrial zone, the three industrial structures are relatively reasonable and the fluctuations are small, but the secondary industry has insufficient incentives for economic growth. The government can improve infrastructure, promote new technologies, and guide farmers to scientific production. Cultivate talented people and create distinctive industries. The planting industry can combine the topography and develop suitable cropping industries according to local conditions, and appropriately reduce grain cultivation. Old-fashioned industrial areas are often distributed in the hilly areas of western mountains. The development advantages of forestry and animal husbandry are obvious. Combining forestry and animal husbandry can develop related processing industries. The output value of the first industry in the old industrial zone is relatively low, but the employment population is huge. It is suitable to combine tourism with natural scenery to guide the transfer of the employment of the primary industry to the tertiary industry. In the old industrial zone, the secondary industry is often heavy industry, which has obvious damage to the environment. Combining the current ecological and environmental protection concept, accelerating the construction of tourism infrastructure, consuming industrial product inventory, and guiding the development of forestry and animal husbandry processing and tourism may be a new development direction.

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