

Analysis on the Relationship of Urbanization and Industrial Structure in Xinjiang Production and Construction Corps

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ABSTRACT: Xinjiang Production and Construction Corps to improve the level of urbanization, the Corps is important to bring the whole Xinjiang and promote China's western development and the pace of opening up to the West. In support of the Chinese government and the local government, the Corps urbanization has made considerable progress. In this paper, principal component analysis, Delphi method, AHP, regression analysis studied the relationship between Xinjiang Corps urbanization and industrial structure between the results show that with the improvement of the industrial structure rationalization, also will increase the level of urbanization, and put forward relevant policy recommendations.

Introduction

Urbanization also known as urbanization, which is agriculture-oriented to service-oriented industries and modern urban society is gradually changing historical process, improve the level of urbanization is not only able to absorb surplus labor, narrowing the urban-rural dual structure, but also improve the regional industrial structure, enhance the economic development of the region. Industrial structure is an important factor affecting China's urbanization process, rational industrial structure urbanization will have a positive role in promoting, and industrial structure deviation would severely hinder the process of urbanization. The future development of the Xinjiang Production and Construction Corps, not only to improve the level of local towns, but also to make rational distribution of industrial structure.

Regional Overview

October 7, 2014, the Xinjiang Production and Construction Corps 60th anniversary, until now, has 14 divisions, 174 Farms, has seven "one city division" of the region directly under the county-level cities and five "Mission (field) in one town," the towns, unified management at different levels by the Corps.

Since the Corps has an independent jurisdiction to space and separate management systems, the Corps urban system to some extent, also has its own independence. Corps urbanization lags behind, not only hindered the economic development of the region, and also restricting the comprehensive and coordinated development of Xinjiang. Local conditions to explore the Xinjiang Corps path of

urbanization, urbanization development, especially under the military coexist, achieve economic development in Xinjiang has become an inevitable requirement.

Methods Introduction

Principal component analysis, also known as principal component analysis, designed to take advantage of lower-dimensional thinking, the more indicators into a few composite indicators. In practical problems, in order to comprehensively and systematically analyze problems when index selection, we extract the main principle component corresponding is greater than the previous m principal components 1, because if the characteristic value is less than 1, indicating that the main ingredient explanatory power not as a direct interpretation of the introduction of the average intensity of a primary variable is large, it is generally possible with eigenvalues greater than 1 as the inclusion criteria.

The data matrix component vector obtained by SPSS 19.0 software feature vector data and the feature vectors will be normalized by multiplying, then come to the overall level of value.

Analytic Hierarchy Process is a multi-objective decision qualitative analysis and quantitative analysis method of combining. The main idea of the law by the complex problem into several levels and a number of factors, the importance of twenty-two indexes to make comparative judgments, judging matrix by calculating the maximum judgment matrix eigenvalues and the corresponding eigenvectors, we can lead to different degrees of importance weights program, provide the basis for selecting the best solution.

In this paper, the selected data are from 1997 to 2013 "Statistical Yearbook of Xinjiang Corps."

Xinjing Urbanization Level Analysis

In order to accurately represent the level of urbanization meaning, according to the AHP, the urbanization of the overall evaluation objectives continuity decomposed at different levels of evaluation objectives, the final evaluation system built to reflect the status of the Corps urbanization level, and then the total continuity evaluation target decomposition to obtain different levels of evaluation objectives, evaluation objectives FIG organic layers will be represented by.

Table 1 Assessment of Urbanization Level Target

A target layer	Criteria layer B	Criterion level C	
Urbanization level (A1)	B1 Urbanization (0.6484)	C1 urban proportion of the population (0.291)	
		C2 rural population ratio (0.0529)	
		C3 a production share of employment (0.1036)	
	B2 economy urbanization (0.2296)	C4 secondary industry employment proportion (0.1495)	
		C5 tertiary industry employment proportion (0.3133)	
		C6 per capita GDP (0.0962)	
			C7 proportion of industrial output value (0.0643)
			C8 a proportion of production value (0.0400)
			C9 proportion of secondary industry

output value (0.0198)
 C10 proportion of tertiary industry
 output value (0.0093)
 C11 education and cultural services
 expenditure (0.0610)
 B3 lifestyle urbanization (0.122)
 C12 per capita education expenditure
 (0.0610)

On the table top down hierarchical eleven target using the Delphi method to establish pairwise comparison judgment matrix layers preferably scoring criteria as follows:

Table 2 Table Meaning

The importance of scale	Meaning
1	Compared to represent two elements, equal importance
3	It represents two elements, the former is slightly more important than the latter
5	It represents two elements compared to the former than the latter obviously important
7	It represents two elements compared to the former than the latter strongly
9	Represents two elements compared to the former than the latter is extremely important
2, 4, 6, 8	It represents the intermediate value judgment
reciprocal	If the ratio of the importance of the element I element and j is a_{ij} , the ratios of the elements j and the importance of the elements I was $a_{ji} = 1 / a_{ij}$

By collected from 1998 to 2012, the actual value of the corresponding index, the values must first standardize, where gang-free processing of data [] by SPSS software, then the weighted sum of indicators, to give 1998 to 2012 urbanization comprehensive level value.

Urbanization comprehensive level value determined by the weighted summation matrix:

$$A = \begin{pmatrix} a_{11} & a_{12} & a_{13} & \cdot & \cdot & a_{1m} \\ a_{21} & a_{22} & a_{23} & \cdot & \cdot & a_{2m} \\ a_{31} & a_{31} & a_{31} & \cdot & \cdot & a_{31} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ a_{n1} & a_{n2} & a_{n3} & \cdot & \cdot & a_{nm} \end{pmatrix} \quad B = \begin{pmatrix} b_1 \\ b_2 \\ b_3 \\ \cdot \\ \cdot \\ b_n \end{pmatrix} \quad \text{so } A*B = \begin{pmatrix} a_{11}b_1 & a_{12}b_1 & a_{13}b_1 & \cdot & \cdot & a_{1m}b_1 \\ a_{21}b_2 & a_{22}b_2 & a_{23}b_2 & \cdot & \cdot & a_{2m}b_2 \\ a_{31}b_3 & a_{31}b_3 & a_{31}b_3 & \cdot & \cdot & a_{31}b_3 \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ a_{n1}b_n & a_{n2}b_n & a_{n3}b_n & \cdot & \cdot & a_{nm}b_n \end{pmatrix}$$

Value determined by summation of the weighted matrix urbanization comprehensive level in the following table:

Table 3 1998--2012 Corps urbanization level results

Year	1998	1999	2000	2001	2002	2003	2004	2005
The overall level of value	-0.606	-0.45	-0.267	-0.241	-0.198	-0.185	-0.161	-0.122
Year	2006	2007	2008	2009	2010	2011	2012	
The overall level of value	-0.067	0.033	0.234	0.337	0.454	0.581	0.86	

Table 3 except outliers 2004 policy and other causes from 2000 to the outside, it can be seen from 1998 to 2012 the overall value of the overall level of urbanization increased year by year trend, indicating that the Corps urbanization comprehensive level of increase year by year.

Industrial Structure Level Analysis

Industry structure rationalization means to enhance economic efficiency, requiring a certain stage of economic development, based on science and technology, consumer demand structure, the basic quality of population and resources, to initially irrational industrial structure adjustment, to achieve a reasonable production factors configured so that the coordinated development of various industries.

Factors related structural changes in the industrial process and energy on behalf of its highly reasonable, the following factors as an analytical paper selected indicators:

Table 4 Level of Index of Industrial Structure rationalization

No.	Index	No.	Index
1	Per capita GDP	7	A proportion of production value Proportion of secondary industry
2	Disposable income	8	output value Proportion of tertiary industry
3	The level of urbanization	9	output value
4	The main business income	10	Fixed-asset investment Fixed investment in the secondary
5	Per capita income	11	industry
6	Consumption expenditure	12	Fixed investment in the tertiary industry

Since there is no comparability between indicators, so the need for data standardization indicators by SPSS 19.0 software for data standardization and data normalized principal component analysis, the results were as follows:

Table 5 Ingredient Matrix

	Contend		
	1	2	3
Per capita GDP	0.995	0.074	0.017
Disposable income	0.992	-0.085	0.051
The level of urbanization	0.908	-0.304	0.086
The main business income	0.976	-0.007	0.059
Per capita income	0.995	0.005	0.018
Consumption expenditure	0.977	-0.163	0.102
A proportion of production value	-0.638	0.371	0.657
Proportion of secondary industry output value	0.902	0.09	-0.377
Proportion of tertiary industry output value	-0.731	-0.621	-0.188
Fixed-asset investment	0.951	-0.097	0.158
Fixed investment in the secondary industry	0.969	0.196	-0.049
Fixed investment in the tertiary industry	0.937	0.19	-0.074

Found that per capita GDP, per capita income, disposable income, the main business income, consumption expenditure, fixed investment in the secondary industry from Table 5, a fixed yield investment, fixed investment in the tertiary industry, the level of urbanization, the proportion of secondary industry in the first primary there are higher loading on components, a first principal

component reflects the basic information on these indicators; the proportion of primary industry output value, secondary industry fixed investment, fixed investment in the tertiary industry, the proportion of secondary industry, per capita income, per capita GDP in the second principal component on a higher load; in addition to the proportion of secondary industry output value, the output value of the proportion of tertiary industry, secondary industry fixed investment, fixed investment in the tertiary industry, the other indicators in the third principal component had a high load. So extracted three main components is basic information reflecting the full range of indicators, we decided to use three new variables (x1, x2, x3) to replace the original twelve variables.

Calculated to obtain a comprehensive rationalization of industrial structure level values in the following table:

Table 6 overall level of industrial structure rationalization

Year	1998	1999	2000	2001	2002	2003	2004	2005
The overall level of value	-3.795	-3.257	-11.05	-5.866	-20.615	1.837	-2.22	-1.282
Year	2006	2007	2008	2009	2010	2011	2012	
The overall level of value	-0.746	0.095	4.328	4.174	3.628	5.127	8.349	

By observing Table 6 can be found from 1998 to 2012, the industrial structure rationalization comprehensive level of increase year by year, in addition to abnormal industrial structure level value 2003 2000 and, during this period show Corps three industries accounted for abnormal changes of GDP, the primary industry in GDP accounted for more than a second in the industry, this result seems a departure from the "evolution of the industry should continue to rationalize and Advancement" rule. The reason for this result might change that is attributable to the impact of policy factors Corps system. Due to various reasons, the Corps formed revoked, under the Land Reclamation Bureau management, secondary and tertiary industries are handed over to local management, causing 2000 to 2003 data is abnormal, this article is no longer in the subsequent analysis of these four years of data analysis .

According to the 1998 to 2012, the overall level of value rationalization of industrial structure, can directly see the rationalization of industrial structure level value overall upward trend, indicating that 12 basic indicators used correctly reflect the industrial structure of Xinjiang Corps level.

Corps Relations Rationalization of Industrial Structure aAnd Urbanization Level

Correlation analysis is closely related to the degree of correlation between two or more with the amount of elemental analysis, which measure two variables factors []. In this paper, through the Xinjiang Corps urbanization and industrial structure level of correlation analysis to explore the relationship between urbanization and industrial structure.

Due to rationalization of industrial structure from 2000 to 2003, the overall level of data belonging to abnormal data, after analysis because these years in the Corps policy and economic investment in the primary industry due to, for the sake of accuracy of the calculation, the policy causes abnormal data analysis without relationship.

Correlation analysis by Eviews 6.0 software, respectively, comprehensive level of urbanization, rationalization of industrial structure level,

Analysis results are as follows:

Coefficient	Std. Error	t-Statistic	Prob.
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C	0.440532	0.307631	1.432012	0.1859
X	8.742131	0.709547	12.32072	0.0000

At a given level of significance, the F distribution table check, obtain the critical value, as long as the value is greater than 0.4299 statistics, the table can explain the significant linear relationship model is established. And the correlation function obtained as follows:

Function formula described as the rationalization of the industrial structure to increase the level of a unit, the overall level of urbanization increased by about 8.743 units.

Conclusions and Recommendations

Paper, through Xinjiang Corps rationalization of industrial structure and urbanization level of relationship analysis, demonstration of the rationalization of industrial structure level increased by 1 percentage point, the level of urbanization along with an increase of about 8.742 percentage points; the same time as the Xinjiang corps to which the initial to the autonomous region turned over industry, while Corps formed revoked, under the Land Reclamation Bureau management, secondary and tertiary industries are handed over to local management, although the cause of development in recent years, but the proportion is still not high, it showed a greater proportion of primary industry, structure not reasonable.

Accelerate infrastructure construction and lay a solid foundation for the development of urbanization. Urbanization level of a region, not only in the number of cities, size and proportion of the population level of the area, but reflects the level of infrastructure in the region, the level of modernization. Xinjiang is currently the city's infrastructure is poor overall, which directly restricts the quality of Xinjiang urbanization, economic growth and people's lives. Therefore, the development of urbanization in Xinjiang is to increase the social infrastructure.

Develop pillar industry and characteristic industry, medium and small cities will develop into a strong functional city and provide supplies to the cities a functional city. Actively develop high-tech industries, public services and new services in large cities, expand employment channels, optimal adjustment of the internal structure of the three industries, to enhance coordination between the development of three major industries.

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