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Study of Comprehensive Evaluation of Poverty Reduction Effect for Chinese Poverty-Stricken Areas-Based on the Data of Chinese 14 Contiguous Poor Areas

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Abstract

China has achieved significant achievements on poverty reduction effect since 1978, two hundred fifty million people have get rid of poverty. While with the relative poverty has become increasingly prominent, there are more dimensions which influence the poverty reduction effect. In order to make a comprehensive evaluation on poverty reduction effect for Chinese poverty-stricken areas, this paper presents a dynamic evaluation model based on the gray correlation method to measuring multidimensional poverty reduction effect by selecting the data of Chinese 14 contiguous poor areas. According to analyzing from three evaluation situations of current development, growth and comprehensive evaluation, the result shows that Desertification Area of Yunnan, Guangxi and Guizhou all have high rankings in comprehensive evaluation, current development evaluation and growth evaluation. While Qinba Mountain Area, Wuling Mountain Area and Dabie Mountain Area are ranked higher in current development evaluation than in growth evaluation, which indicates that these areas will have more difficulties in poverty reduction in the future. On the contrary, Tibet Area, Tree Districts in South Xinjiang and Daxing'anling Mountain Area are ranked lower in current development than in growth evaluation, which reflects that there are much more potential in poverty reduction in these areas.

Keywords: Poverty Reduction, Comprehensive Evaluation, Multidimensional Poverty

1. Introduction

Since the reform and opening, China has obtained certain achievements in poverty reduction. The poverty population has been reduced from 250 billion in 1978 to 7017 million in 2014. In China, hundreds of millions of people have run out of poverty in the long term, it can be called the “greatest escape” for all human being (Angus, Deaton 2014). However, with the continuous development of China’s economy, “income” is no longer the only factor which influences the poverty, while the relative poverty has become increasingly prominent. The poverty problems of other dimensions besides income perform more obviously (Wang Xiaolin, Sabina Alkire, 2002). China’s poverty alleviation has entered into a new era of “Multidimensional Poverty Alleviation”.

The poverty-stricken people in China are mainly distributed in the underdeveloped areas, according to the characteristics of geographic positions for poverty-stricken areas, poor areas in China have been divided into 14 contiguous poor areas. Released in 2011 “China rural poverty alleviation and development program (2011 - 2020)” which also made it clear that “Liupan Mountain Area, Qinba Mountain Area, Wuling Mountain Area, Wumeng Mountains Area, Western Desertification Area of Yunnan, Guangxi and Guizhou, Western Yunnan Area, Daxinganling Mountain Area, Yanshan - Taihang Mountains Area, Lvliang Mountains area, Dabie Mountains Area and Luoxiao Mountain Area and the implementation of special policies in Tibetan Area, Four Tibetan Area, Three Districts in South Xinjiang are the main battlefield of poverty alleviation.” With the targeted classification of poverty-stricken area, the poverty alleviation program becomes more targeted. Likewise, the poverty education effect for the whole poverty-stricken areas and the comparison of poverty reduction between different areas have great research value, and how to measure the overall poverty reduction effect in the poverty-stricken areas become a common concern for

Chinese government and community.

In order to reflect the comprehensive poverty reduction effect for Chinese poverty-stricken areas, this paper makes a dynamic comprehensive evaluation of poverty reduction for Chinese 14 contiguous poor areas as the research object based on gray correlation method.

This paper is organized as six parts: the first part is the introduction, the second part is to make research summary and construct comprehensive evaluation index system of poverty reduction effects, the third part is the data sources selected by this paper, the fourth part is the process of index calculation of poverty reduction, the fifth part is comprehensive evaluation results and analysis on poverty reduction effect for Chinese poverty-stricken areas, the sixth Part is the part of conclusions and suggestions.

2. Research Summary and Construction of Index System

Poverty as a global problem has been being paid high attention all the time. Normally the traditional poverty is considered as a single poverty of income, with the social practice and the deepening understanding of poverty, the connotation and dimension of poverty continue to be broaden. A.Sen in 1999 proposed capability poverty and built a multiple meanings of the Multidimensional Poverty Theory (A.Sen, 1999). In 2010, UNDP cooperated with the University of Oxford to develop Multidimensional Poverty Index (MPI) based on the human development index, which contains 10 indicators to measure three aspects of health, education and living (UNDP, 2010). The core view of the Multidimensional Poverty is that people's poverty is not only the poverty of income, but also the poverty and subjective feelings of the welfare of drinking water, roads, health facilities and other objective indicators (Wang Xiaolin, Alkire.S, 2009). Likewise, many scholars have conducted deep research on the measurement of multidimensional poverty. Alkire, S. and Foster J. (2011) propose the recognition and sum decomposition method of Multidimensional Poverty; Xiaolin Wang and Sabina Alkire (2009) apply the MPI measurement technique to calculate the multidimensional poverty in families in China; Haider A.Khan(1999) applies a decomposition technique to analysis the poverty alleviation in South Africa, Besma Belhadj(2012) applies a fuzzy theory approach to propose a new weighting scheme in multidimensional poverty indices. On the basis of MPI, Guo Jianyu and Wu Guobao adjust the multidimensional poverty measurement index, index value and weights to make their influence on multidimensional poverty results. Michael Rogan (2015) uses the MPI to estimate gerder difference in a number of different achievements. Fan Chenhui, Xue Dongqian and Ma Beibei (2015) apply Rasch model to make an empirical research on multidimensional poverty in China. From these researches we can see multidimensional poverty index is a more comprehensive method to measure poverty reduction effect on each dimensions, it can also promote the effectiveness of the targeted poverty alleviation in China.

In order to make a comprehensive evaluation of Chinese overall poverty reduction effect, especially in recent years which the relative poverty is more and more obvious, according to the human development index, based on Multidimensional Poverty Index Multidimensional Poverty Index (MPI) which is released by the United Nations and the “Oxford poverty and human development project "group in 2010 and China Green Development Index (Li Xiaoxi, Liu Yimeng, Song Tao, 2014), combining with the specific content of the efficiency of Chinese poverty reduction, taking the data of 14 contiguous destitute areas for years in 2012 and 2014 as the research object, this paper constructs a comprehensive evaluation index system of poverty reduction in Chinese poverty-stricken areas, containing a total of 5 dimensions with 13 second-level indexes and 20 third-level indexes.

Table 1. Comprehensive Evaluation Index System of Poverty Reduction in Chinese Poverty-Stricken Areas

First-level index	Second-level index	Third-level index
Economic Development	Overall Economy	per capita GDP (million)
	Income	per capita net income of farmers (yuan)
Living Standard	Drinking Water	number of people which have achieved safe drinking water(people)
	Traffic	number of administrative villages which have highway (a)； number of administrative villages which through the bus (a)；
	Electricity	number of natural village of being electrified(a);
	Land	irrigated area (hectare);
	Information	number of administrative villages TV broadcasting (a)； number of villages through broadband network

		of more than 20 households(a);
"Social Development Ability",	Education	gross enrollment rate of senior high school education (%); investment in YULU program(million); number of training participate in YULU program (people) ;
	Medical Care	number of people which participate in the new rural cooperative medical system (people);
	Hygiene	number of administrative village which have health room number (a);
	Insurance	number of people which participate basic old-age insurance for urban and rural residents(people);
Poverty Situation	Poor Population	poverty population (million); the poverty incidence rate (%);
	Poverty Assistance	number of households participating in poor village mutual funds organization (households);
Protection of Resources and Environment	Protection of Resources and Environment	forest coverage(%)；administrative land area (square kilometers);

In the index system, we draw on five first-level indexes including "Economic Development", "Living Standard", "Social Development Ability", "Poverty Situation", "Protection of Resources and Environment". "Economic Development" is divided into two aspects: the overall economy and income poverty, which reflect a region's overall economic level and income level, there are a total of three third-level indicators: per capita GDP (million) and per capita net income of farmers (yuan). "Living standard" is divided into five aspects: "drinking water", "transportation", "electricity", "land" and "information", reflecting the living quality of the poverty-stricken people, which contain a total of seven third-level indicators: the number of people which have achieved safe drinking water (people), number of administrative villages which have highway (a), the number of administrative villages which through the bus (a), the number of natural village of being electrified, irrigated area (hectare), the number of administrative villages TV broadcasting (a) and number of villages through broadband network of more than 20 households(a). "Social development ability" is divided into four aspects: "education", "Healthcare", "Environmental Health" and "insurance" which reflect the improvement of the education, health care and other public environment in poverty-stricken areas, containing a total of six third-level indicators: gross enrollment rate of senior high school education (%), investment in YULU program(million), the number of training participate in YULU program (people), number of people which participate in the new rural cooperative medical system (people), number of administrative village which have health room number (a), number of people which participate basic old-age insurance for urban and rural residents(people). "Poverty reduction" is divided into two aspects: poverty population and poverty alleviation assistance, reflecting the poverty reduction and poverty alleviation work for poverty-stricken areas, including three third-level indicators: poverty population (million), the poverty incidence rate (%), number of households participating in poor village mutual funds organization (households). "Resources and environmental protection" reflects the importance of sustainable development in poverty reduction, with two third-level indicators: forest coverage (%) and administrative land area (square kilometers).

3. Data Sources

The original data of the index calculation are from CPAD's monitoring data of counties located in 14 contiguous destitute areas for years of 2012 and 2014, which include a total of 680 poverty-stricken counties. The data selected covers almost the poverty-stricken areas in China, which can generally reflect the poverty situation in Chinese poverty-stricken areas.

4. Index Calculation

On the basis of the grey correlation analysis, this paper adds time dimension，combining time, areas and indicators together to make a dynamic evaluation model which contains a three-dimensional model, aiming to compute the correlation degree between the comparison sequence and the reference sequence at each time point by setting reference sequence and comparative sequence.

4.1 Index and weight setting

The comprehensive evaluation index system includes 20 third-level indexes, which are expressed as P = {P1，P2…Pj…Pn}，n =20, the corresponding index weight vector is w = {w1，w2,…,wj,…,wn}T，in which 0 ＜ wj＜ 1，and $\sum_{j=1}^{n} Wj = 1$.Time as T_i(i = 1，2，…，r), the corresponding index weight vector is v = {v1，v2，…，vr}^{T}, and 0 ＜ vr＜ 1，$\sum_{i=1}^{r} v_i = 1$.

This paper selects 2 years' data (2012 and 2014), r = 2. The research object is the Chinese 14 contiguous poor areas, expressed as Q = {Q1, Q2... Qk... Qm} = 14. So the index P_j in area Q_k on time T_i can be expressed as a_{kij}. There are many kinds of methods to determine the weight vector of index, such as expert opinion method, analytic hierarchy process and so on. The most commonly used approach to weighting in multidimensional indices of well-beings has been equal weighting (Besma.Belhadj, 2012), also because the number of three-level indexes of each first-level index in this paper are different, in order to avoid that the first-level index weight is too large or small, this paper adopts the method of 20 indexes divided equally, that is each three-level index's weight is 5%, then calculating the weight of the indexes, the weight of each first-level index can be obtained respectively: economic level is 10%, living standard is 35%, social development capacity is 30%, poverty situation is 15%, protection of resources and environment is 10%. For the weight of time point, due to two years' time span is shorter, setting two years of equal weight.

There are two types of indexes in this paper: benefit index and cost index, benefit index means that the higher attribute value, the better index, the cost index refers that the lower attribute value, the better index. The standardized formula for positive index is: $b_{kij}=\frac{a_{kij}-\min_{k,i} a_{kij}}{\max_{k,i} a_{kij}-\min_{k,i} a_{kij}}$,where i=1,2； k=1,2…m; j=1,2…n; $\max_i(x_{ij})$ and $\min_i(x_{ij})$ denote the maximum and minimum values of indicator P_j in 14 contiguous destitute areas. The standardized formula for negative index is: $b_{kij}=\frac{\max_{k,i} a_{kij}-a_{kij}}{\max_{k,i} a_{kij}-\min_{k,i} a_{kij}}$,where i=1,2； k=1,2…m; j=1,2…n; $\max_i(x_{ij})$ and $\min_i(x_{ij})$ denote the maximum and minimum values of indicator P_j in 14 contiguous destitute areas. After normalizing the matrix A_i(i = 1，2), a new matrix is obtained, which is expressed as: B_i= (b_{kij})$_{k\times n}$ (i = 1，2).

4.2 Growth matrix and comprehensive evaluation matrix

The normalize data matrix in 2014 minus the data matrix in 2012，we get the growth matrix C_i, which can be observed by the growth of the area in a certain indicator. The growth of the matrix C_i can be expressed as: C_i= B_{kij}－$B_{k(i-1)j}$= (c_{kij})m×n， where i = 2. Making linear integration of the normalize matrix B_i and the growth matrix C_i to get a comprehensive evaluation of the matrix D_i (I = 2), the linear integration formula is: D_i= αB_i+ βC_i= (d_{kij})m×n, where i = 2. This comprehensive matrix can combine effectively the normalize matrix and the growth matrix, taking into consideration both the current development and future improvement potential, in order to make a comprehensive and sustainable analysis. And α and β can be arbitrarily assigned according to the actual situation, which refers to the different degree of importance. When α=0.5, β=0.5, which means the current development and area growth have the equal weight. In extreme situations that when α=1, β=0 or α=0, β=1, the comprehensive matrix equals to normalize matrix and growth matrix respectively, the former indicates that only taking consideration of current development, the later includes only the consideration of area growth without current development. Combining the dimensions of time, areas and indicators together to make a three dimensional matrix, then the comprehensive matrix can be expressed as:

D_k = (d_{kij})(r－1) ×n，in which k = 1，2，…，m. Because this paper uses two years' data, so according to the formula we can obtain one comprehensive matrix.

4.3 Ideal matrix and negative ideal matrix

According to the comprehensive evaluation matrix D_k（k=1,2,…m）, the positive and negative ideal matrix can be calculated, in which E^+ is expressed as the ideal matrix of the decision program, E^- is expressed as the negative ideal matrix of the decision matrix, then E^+=（$\max_k d_{kij}$）$_{(r-1)\times n}$=(e^+) $_{(r-1)\times n}$, E^-=（$\min_k d_{kij}$）$_{(r-1)\times n}$=(e^-) $_{(r-1)\times n}$, where r=2,

k=1,2,…,m, j=1,2,…,n, m=14, n=20. The ideal matrix and the negative ideal matrix indicate the highest and lowest index values of the 14 contiguous poor areas for two years. Assuming L_k^+ and L_k^- are the distance between K scheme and the ideal matrix and the negative ideal matrix, then:

$L_k^+=E^+-D_k=(l_{kij}^+)_{(r-1)\times n}$, (k=1,2,…,m);

$L_k^-=D_k-E^+=(l_{kij}^-)_{(r-1)\times n}$, (k=1,2,…,m);

Integrating the indicators based on the weights, we can get:

$l_k^+=[\sum_{i=2}^{r}(\sum_{j=1}^{n}w_j\times l_{kij}^+)^2]^{1/2}$ (k=1,2,…,m);

$l_k^-=[\sum_{i=2}^{r}(\sum_{j=1}^{n}w_j\times l_{kij}^-)^2]^{1/2}$ (k=1,2,…,m);

Combining l_k^+ and l_k^- we can get the close degree between K scheme and the ideal matrix, that is the comprehensive evaluation index for the contiguous poor areas, which can be expressed as:

$$\phi_k=\frac{l_k^-}{(l_k^++l_k^-)}\times 100,\ (k=1,2,\ldots,m);$$

Based on the different evaluation index value for each area, the comprehensive poverty reduction between Chinese 14 destitute areas can be calculated and compared. According to the three situations with different weight of α and β, we can get different positive and negative reference matrixes, which lead to different poverty reduction effects in 14 contiguous poor areas.

5. Comprehensive Evaluation Results and Analysis on Poverty Reduction Effect for Chinese Poverty-Stricken Areas

5.1 The result of comprehensive evaluation of poverty reduction effect for 14 contiguous poor areas

According to the calculation of comprehensive evaluation index of poverty reduction for 14 contiguous poor areas, we can get the comprehensive evaluation value K of poverty reduction for each area, which are showed in Table 2.

Table 2. Comprehensive evaluation of the poverty reduction effect

Areas and Reference groups	**α = 0. 5, β=0.5**	**α = 0, β=1**	**α = 1, β=0**
Liupan Mountain Area	37.50	35.65	42.93
Qinba Mountain Area	56.09	30.59	73.59
Wuling Mountain Area	55.85	38.37	68.08
Wumeng Mountain Area	38.90	44.94	38.80
Desertification Area of Yunnan, Guangxi and Guizhou	59.42	55.05	62.23
Western Yunnan Area	29.88	41.83	27.63
Daxing'anling South Area	29.62	48.79	22.62
Yanshan-Taihang Mountain Area	35.78	47.78	32.34
Lvliang Mountain Area	21.46	38.44	17.52
Dabie Mountain Area	50.43	33.49	63.35
Luoxiao Mountain Area	29.25	42.80	26.07
Tibetan Area	34.34	58.97	22.79
Three Districts in South Xinjiang	27.63	49.09	19.51
Four Tibetan area	23.28	42.98	17.18
Mean value	37.82	43.48	38.19

Table 3 shows the poverty reduction comprehensive evaluation values for 14 contiguous poor areas in three situations with different weighting of α and β, which refers the areas' comprehensive poverty reduction performance in three kinds of develop model. When α = 0.5, β = 0.5 that evaluating both the current development and growth of the area, the average comprehensive evaluation value of poverty reduction effect for 14 contiguous poor areas is 37.82; When α = 0, β = 1 that only evaluating the current development of the areas, the average comprehensive evaluation value of poverty reduction effect for 14 contiguous poor areas is 43.48; When α = 1, β = 0 that only evaluating the current development of the area, the average comprehensive evaluation value of poverty reduction effect for 14 contiguous poor areas is 38.19.

5.2 Comparative analysis of comprehensive evaluation of poverty reduction effect for 14 contiguous poor areas

When α and β take different weightings, there are three results of poverty reduction effects for 14 contiguous poor areas, the comprehensive evaluation values ranked from small to large can be seen as table 3:

Table 3. Ranking of comprehensive evaluation of poverty reduction effect

	α = 0.5, β=0.5		**α = 0, β=1**		**α = 1, β=0**	
1	Desertification Area of Yunnan, Guangxi and Guizhou	59.42	Tibetan Area	58.97	Qinba Mountain Area	73.59
2	Qinba Mountain Area	56.09	Desertification Area of Yunnan, Guangxi and Guizhou	55.05	Wuling Mountain Area	68.08
3	Wuling Mountain Area	55.85	Three Districts in South Xinjiang	49.09	Dabie Mountain Area	63.35
4	Dabie Mountain Area	50.43	Daxing'anling South Area	48.79	Desertification Area of Yunnan, Guangxi and Guizhou	62.23
5	Wumeng Mountain Area	38.90	Yanshan-Taihang Mountain Area	47.78	Liupan Mountain Area	42.93
6	Liupan Mountain Area	37.50	Wumeng Mountain Area	44.94	Wumeng Mountain Area	38.80
7	Yanshan-Taihang Mountain Area	35.78	Four Tibetan area	42.98	Yanshan-Taihang Mountain Area	32.34
8	Tibetan Area	34.34	Luoxiao Mountain Area	42.80	Western Yunnan Area	27.63
9	Western Yunnan Area	29.88	Western Yunnan Area	41.83	Lvliang Mountain Area	17.52
10	Daxing'anling South Area	29.62	Wuling Mountain Area	38.37	Luoxiao Mountain Area	26.07
11	Luoxiao Mountain Area	29.25	Lvliang Mountain Area	38.44	Tibetan Area	22.79
12	Three Districts in South Xinjiang	27.63	Liupan Mountain Area	35.65	Daxing'anling South Area	22.62
13	Four Tibetan area	23.28	Dabie Mountain Area	33.49	Three Districts in South Xinjiang	19.51
14	Lvliang Mountain Area	21.46	Qinba Mountain Area	30.59	Four Tibetan area	17.18
Mean Value	37.82		43.48		38.19	

When α and β have different weightings in three situations, poverty reduction results in 14 contiguous poor areas have been changed. when $\alpha = 0.5$, $\beta = 0.5$, that evaluating both the current development and growth of the area, there are five areas higher than the mean value (37.82), which are Desertification Area of Yunnan, Guangxi and Guizhou, Qinba Mountain Area, Wuling Mountain Area and Dabie Mountain Area and Wumeng Mountain Area, their comprehensive evaluation values were all higher than 38. In the nine areas which are lower than mean value, the comprehensive evaluation values of Liupan Mountain Area, Yanshan-Taihang Mountain Area and Tibetan Area are between 30-38, which are close to the average level; while the evaluation results for Western Yunnan Area, Daxing'anling South Area, Luoxiao Mountain Area, Three Districts in South Xinjiang, Four Tibetan area and Lvliang Mountain Area are ranked last six in 14 contiguous poor areas, their poverty reduction effects are lower than other areas. When in the situation of $\alpha = 0$, $\beta = 1$ that only evaluating the current development of the areas, the poverty reduction effect is relatively better, there are four areas' comprehensive evaluation results higher than 60. While there are no areas have a comprehensive evaluation value above 60 in the other two situations ($\alpha = 0.5$, $\beta = 0.5$ and $\alpha = 1$, $\beta = 0$). The average evaluation value of 14 contiguous poor areas is 43.16, there are four areas higher than the average value. When $\alpha = 0$, $\beta = 1$ that only evaluating area growth, the evaluation results of 14 contiguous poor areas are all between 30-50, the average evaluation value is 43.48, there are 8 areas higher than the average value, which reflects that area growth evaluation is better than the comprehensive evaluation.

From the ranking of poverty reduction effects for 14 contiguous poor areas, when α and β have different weights, the areas ranking changes correspondingly. Overall, Desertification Area of Yunnan, Guangxi and Guizhou, Wumeng Mountain Area and Yanshan-Taihang Mountain Area all achieve high rankings in current development, area growth and comprehensive, the poverty reduction effects are stable and the changes are slight. While for Daxing'anling South Area,

Luoxiao Mountain Area, Three Districts in South Xinjiang, Four Tibetan Area and Lvliang Mountain Area, each area has low ranking at least twice in three situations of α and β with different weights, their poverty reduction effects are not stable and the changes are large. In addition, Qinba Mountain Area is ranked in the forefront in comprehensive evaluation and current development evaluation, but at last in growth evaluation, which reflects that although Qinba Mountain Area have high poverty reduction values in two situations, low rankings in growth evaluation still can influence the area's stability of poverty reduction work.

With a further analysis, the average level of poverty reduction comprehensive evaluation for 14 contiguous poor areas is lower than the current development evaluation and growth evaluation, which suggests that it is more difficult taking into account both the current development and future growth capacity of the poverty reduction. From the evaluation results for each area, such as Desertification Area of Yunnan, Guangxi and Guizhou is ranked first in comprehensive evaluation, it is also ranked front in current development evaluation and growth evaluation as well, which indicates that Desertification Area of Yunnan, Guangxi and Guizhou has both a high current development ability and future improvement potential. While Qinba Mountain Area, Wuling Mountain Area and Dabie Mountain Area although are ranked in the top three in current development evaluation, they are ranked after five in growth evaluation, which refers that they need a further improvement in the poverty reduction efforts to enhance future poverty reduction potential. On the contrary, Tibet Area, Tree Districts in South Xinjiang and Daxing'anling Mountain Area although have a low rank in current development, they are ranked front in growth evaluation which reflects much more potential in poverty reduction in the future.

6. Conclusions and Suggestions

According to the result of poverty reduction in 14 contiguous poor areas, there are following conclusions obtained: One is that considering both the current development and area growth, the overall poverty reduction effect for 14 contiguous poor areas are not positive, when $\alpha = 0.5$, $\beta=0.5$, the average evaluation value of 14 contiguous poor areas is only 37.82. In terms of the current development evaluation, poverty reduction effect has achieved certain achievement, part of the areas' evaluation values are more than 60, but the growth evaluation is generally low, there are no areas with evaluation values higher than 60, which shows that part of the areas' poverty reduction effects are obvious, but the difficult in future development is increasing. Secondly, the difference of poverty reduction between areas is relatively large. Such as Desertification Area of Yunnan, Guangxi and Guizhou (59.42) ranked first in comprehensive evaluation is higher 1.77 times than Lvliang Mountain Area (21.46) which is ranked the last. While the difference in current development evaluation in areas is larger, Qinba Mountain Area (73.59) ranked first is higher 3.28 times than Four Tibetan Area(17.18) which is ranked last, indicating that there is a big gap in the current poverty reduction ability between areas. Thirdly, part of the areas' ranking change obviously in three evaluation models, such as Qinba Mountain Area is ranked top in current development evaluation, but it is ranked in the lower 50% in growth evaluation. On the contrary, Tibet Area is ranked top in growth evaluation, but lower in current development evaluation, indicating that a lot of areas have not taken into account of current development and future improvement potential which affect the overall poverty reduction.

According to the analysis of results above, there are following explanation: One is that with the poverty reduction in Chinese poverty-stricken areas, the poverty depth is increasing, the poverty-stricken people are gathering in the regions with bad nature conditions and underdeveloped economy, the difficulty of future poverty reduction is aggravating. Another reason is that because of the differences of the geographical locations, natural characteristics and economic conditions, resulting in the gap of poverty reduction between areas, some areas achieve acceptable poverty reduction effects, while some areas have little improvement in poverty reduction. The last reason is that in poverty alleviation process, it is lack of targeted consideration and measures which lead to the unbalanced poverty reduction in areas.

Based on the analysis, this paper puts forward some suggestions to the future poverty reduction in China poverty-stricken areas: Firstly, as the main battlefield of Chinese poverty alleviation, 14 contiguous poor areas need more communication and cooperation between areas and provinces to promote as a whole, especially for some projects cross counties, provinces and areas. Secondly, each area should put forward targeted and diverse policies and measures according to their own characteristics and problems to reduce poverty, combining with the local government, society and enterprises to enhance their hematopoietic function. Thirdly, poverty-stricken areas also need to pay attention to enhancing the future development potential in the present stage, considering the idea of environmental protection, green poverty reduction, ecological poverty reduction, in order to form a long-term multidimensional poverty reduction mechanism.

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