An Analysis on Main Influencing Factors of Regional Urban and Rural Income Gap—Based on the Data of Sichuan Province from 1995 to 2013

Puxin Zhang, Weiqun Gu*
[1]Southwest Jiaotong University, School of Public Administration; Chengdu, Sichuan, 610031

*Corresponding Author:
Weiqun Gu
Email: zpxswjtu@163.com

Abstract: Based on the fact that Sichuan province is one of the leading provinces that have major labor transfer and huge agricultural industry, especially traditional one, the author of the paper made a quantitative study of the impact of various factors on the urban and rural income gap by building the principal component analysis model based on the statistical data of Sichuan province from 1995 to 2013. The empirical results show that increasing the coordinating level of industrialization and urbanization, accelerating labor transferring from agriculture to non-agricultural employment and enhancing investment in fixed assets in rural areas can significantly narrow down the income gap between urban and rural areas in Sichuan. Therefore, both Sichuan and other less-developed regions should break the household registration system, accelerate the harmonious development of urban and rural employment to construct the unified urban and rural human resource market, strengthen the coordinated development of urban and rural industries to promote the synchronized increase of economy and employment and advance the integrated development of urban and rural systems to realize the equilibrium of urban and rural income distribution.

Keywords: Sichuan province, agricultural industry, urban , rural, income

INTRODUCTION

For the past several years, the income disparity in China has been increasing and the Gini coefficient already reached 0.4 in 2000, maintaining a high status since then for a long time. As a major part of the income disparity, urban-rural income gap has become a hotspot for attention and the focus of scholar's study. Take Sichuan province as an example, the principal factors which affect the urban-rural income gap as a whole in our country can be found through research. Sichuan province is one of the important representative regions in the Western region, which has vast land, a large population and abundant resources. Since 2000, driven by the strategy to develop western regions, Sichuan province has witnessed a prosperous and thriving period of time. The economy is booming, local industries are expanding and the process of industrialization and urbanization is accelerating prominently. However, while the per capital income in Sichuan province is increasing, so is the urban-rural income gap. From 1995 to 2013, the per capita disposable income in urban area in Sichuan has increased more than fivefold, from 4003 RMB to 22368 RMB. The per capita net income in rural area has increased nearly sevenfold, from 1158 RMB to 7895 RMB. Although the ratio of urban income to rural income has decreased from 3.5 to 2.8, the gap becomes more evident at the absolute figure, from 2845 RMB to

14473 RMB. From revenue resources, the proportion of business income is 42.1%, the proportion of salary is 44.9%. These two parts account for the majority of the whole income while the proportion of property income and transfer income is quite small, namely 2.6% and 10.5%. As for the income in urban area, the proportion of salary income, as the main part, is dropping slowly and the proportion of property income and transfer income keeps increasing, arriving at 3.5% and 26.1% separately. What's more, if we count the invisible welfare brought by the wholesome public service in the city, the urban-rural income gap will become bigger.

The researchers have done a lot of researches on the factors resulting in the urban-rural income gap. In 2000, Ming Lu[1] stated that the population census registration transfer, open economy, denationalization and the government interference were all factors that led to the urban-rural income gap, and that the continuously increasing gap between urban and rural income was related to local government policies, which were leaning towards urban area. In 2006, Kejun Zhang[2] argued that the increase of the production ratio of agriculture to secondary and tertiary industry, the different human capital in urban and rural area, employment structure and urbanization were the factors causing the urban-rural income gap and the public expenditure of the government had a certain positive

effect on reducing the gap . In 2012, Juan Du [3], through empirical research, found that the agriculture development level, the amount of non-agriculture employees and the level of urbanization were the key factors and the main reason of the gap expanding was salary and transfer income. While, the business income in rural area had no obvious influence on reducing the gap.

To summarize the viewpoints of all the scholars, the influencing factors of urban-rural income gap are found to be mainly economy, institution, policy, factor endowments and so on. Based on these viewpoints, this essay analyzes the influencing factors with principal components analysis and studies the influence degrees of these factors so that we can propose corresponding policy suggestions.

DATA SOURCES AND VARIABLE CHOICE
A. Data Source
In 1985, a price system reform took place in China and in 1994 a tax distribution system reform was conducted to accelerate commercialization in China. Therefore, the data after 1995 can reflect the truth about economy development at that time. In the paper, data from 1995 to 2013 in Sichuan province is chosen to research about the influencing factors of the urban-rural income gap. Among all these working factors, we will select and research some of them using the data from 1995 to 2013 with a regression analysis approach.

B. Explanatory Variables
There are quite a number of influencing factors of the income gap, including market structure, economy development, institution, government policy and factor endowments, all of which have different impacts on the gap in terms of intensity and time. Based on the fact that Sichuan province is one of the leading provinces that have major labor transfer and huge agriculture industry, especially traditional one, the urban-rural income gap in Sichuan will be studied from the indexes of transfer and production.

Explanatory variables are the specific influencing factors, which includes the following parts.

- PGDP: per capita GDP are used in this paper to represent the economy development factor.
- I: the ratio of agriculture fixed assets investment to the whole fixed assets investment. It is used to represent the factor of promoting agriculture in the paper.
- FCY: non-agriculture industry production portion in the whole industry production. It is used to represent the industry structure factor in the paper.
- E1: primary industry employed population portion in the whole employed population. It is used to

describe the employment structure factor in the paper.
- N/U: the coordinating level of industrialization and urbanization. The higher the level is, the more matched industry structure and employment structure become.
- NI: the ratio of net income per capita in rural area to GDP. It is used in the paper to represent the income factor.

C. Explained Variables
Explained variables refers to the urban-rural area income gap, which in this paper is illustrated by the ratio of urban area resident disposable income per capita to rural area resident net income per capita, abbreviated as GAP. Urban area resident disposable income per capita and rural area resident net income per capita represent the level of urban and rural area resident income separately. The bigger the ratio gets, the wider the income gap becomes.

EMPIRICAL ANALYSIS
Principal components analysis is a statistic method which transforms many relating numerical indexes into just a few irrelevant general indexes. Principal components regression solves multicollinearity problems among independent variables. It can reflect the integrated information of the original relevant indexes well so that the regression equation and the estimate of parameters are more dependable.

In this essay, we use statistic software SPSS17.0 to standardize all the variables first and then to analyze them with principal components analysis. The value of KMO and Barlett are 0.826 and 188.51 separately, which are suitable for factorial analysis.

The analysis result is shown in Table-1, which indicates that the contribution rate of principal component is 92.459% in the first dimension. That is to say, the principal component in the first dimension includes 92.459% of the information of the eight(?six) original variables.

The principal component:
$$F=-0.992\ln PGDP-0.813\ln I\ 0.984\ln FCY + 0.99\ln E1 + 0.981\ln N/U +0.995NI \tag{1}$$

We use spss18.0 to conduct regression, using F as explanatory variable and lnGAP as explained variable. When explanatory variable significance level passes the test under 0.05, the equation of regression is:

$$LnGAP=1.114-0.0258\ln PGDP-0.0211\ln I-0.0256\ln FCY+0.0257\ln E1+ 0.0255\ln N/U+0.0259\ln NI \tag{2}$$

Table-1: Total Variance of Explanation

Component		Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
dimension0	1	5.548	92.459	92.459	5.548	92.459	92.459
	2	.393	6.557	99.017			
	3	.036	.594	99.611			
	4	.017	.281	99.891			
	5	.005	.087	99.978			
	6	.001	.022	100.000			
Extraction Method: Principal Component Analysis.							

In terms of the result, economy development (PGDP), the ratio of agriculture fixed assets investment to the whole fixed assets investment (I) and non-agricultural industry production portion (FCY) have a distinct reverse influence on the urban-rural area income gap. Elastic coefficients descend from GDP to I, then from I to FCY. If they gain one percentage point each, the income gap will drop by 2.58%, 2.56% and 2.11% accordingly. This shows that the growth of GDP in Sichuan province can narrow the income gap between urban and rural area and the economy development is the ultimate source of the resident income. On the basis of the inverted U curve theory of Kuznets, when the income per capita is quite low, the growth of resident income brings a wider gap; when the resident income per capita reaches to a certain point, the growth of resident income results in the gap narrowing, which looks like an inverted U curve. The GDP growth in Sichuan and the urban-rural area income gap have entered the reverse part of the curve. Thus, promoting the growth of GDP can narrow the income gap. The agriculture fixed assets investment is a reproduction process for the assets, including farmland construction and mechanic equipment purchase for farming, forestry, husbandry and fishing, which is good for increasing the rural area resident business income. In terms of the income source of the rural area residents in Sichuan, the business income portion is still very high. Thus increasing the ratio of agriculture fixed assets investment to the whole fixed assets investment can diminish the income difference. Non-agricultural industry reflects the industrialization level and the status and profiting ability of tertiary industry in the national economy. By the end of 2013 in Sichuan, the rural area laborer transfer output are 24.55 million people, which contain 12.468 million people transferring within the province and 12.001 million people transferring export. Many rural area laborers have shifted from agriculture department to modern industry department. Therefore, the bigger the portion of non-agriculture industry gets, and the higher salaries the rural area laborers can have, which can narrow the income gap.

According to the result, E1, N/U and NI have a distinct positive influence on the urban-rural area income gap. Elastic coefficients descend from NI to E1 and then from E1 to N/U. If they gain one percentage point each, the income gap will increase by 2.59%, 2.57% and 2.55% accordingly. NI is the portion rural area resident net income per capita accounts for in GDP. The statistic criteria in Sichuan indicates that although rural area laborers work and live outside home for more than half a year averagely, their income mainly goes to their home, connecting closely to their residence. And they are still considered as family permanent residents, which are the basis of calculating the rural area resident income per capita. But in a province that has such an enormous amount of laborer transfer, counting the shifter income as the net income in rural area can overestimate the true net income in rural area. Most of those who stay at home in rural area are those with weak production capacity or kids and the elderly and they can enlarge the income gap statistically. Due to the low income of traditional agriculture, the more people work in the primary industry, the fewer people transfer to non-agriculture industry and the wider the income gap becomes. N/U reflects the coordinating level of industrialization and urbanization, the higher the N/U value gets, the more uncoordinated the level becomes. In terms of the data in Sichuan province, the urbanization level falls behind the industrialization level, which constrains the absorption of rural area laborers and widens the income gap.

CONCLUSION
Based on the above empirical analysis, we can conclude that the current situation of urban-rural income gap results from the comprehensive effect of the employment structure and the industrial structure under the condition of two structures in urban and rural areas.

In view of the above conclusions, this paper puts forward the following suggestions in order to narrow down the urban-rural income gap in the regions including Sichuan Province.

A. Improving the quality and level of urbanization, reforming the corresponding system and promoting the integration of urban and rural system

First of all, we should reform the household registration system with a greater effort, establish an unified urban and rural household registration system with a legal stable residence and occupation as the basic conditions and the habitual residence as the registration form, which should be determined by law, abolish the constraints of the household registration system for the transfer of the rural population so as to truly help the migrant workers realize their citizenship.

Secondly, we should consociate urban and rural social security system construction in the whole region, establish an urban and rural social security system integration including the pension, medical, unemployment, education etc, make sure that the migrant workers won't worry any longer, promote that urban and rural workers share a fair status in employment and income distribution.

B. Optimizing the industrial structure, promoting the coordinated development of urban and rural industries

First of all, according to the requirement of the new-typed industrialization, informationization and agricultural modernization, as well as the actual situation in the region, we should adjust and optimize industrial structure accordingly. Vigorously develop modern agriculture and ecological agriculture, encourage the circulation of rural land management rights and accelerate the realization of agricultural intensification and industrialization. At the same time, nurture agriculture with the help of industry, and realize the extension from industrial chain to the agricultural chain relying on the industrial city. Secondly, realize the transformation and upgrading of secondary industry and promote the traditional industry to transform to the modern industry. We should continue to promote the development of the tertiary industry vigorously so as to give full play to the secondary or tertiary industry, which absorb non-agricultural labor force employment while guaranteeing economic growth at the same time.

Also we should promote the adjustment of industrial structure and employment structure synchronously.

C. Phasing out of the segmentation in urban and rural labor market, promoting the coordinated development of urban and rural industry

We should speed up the building of urban and rural integration of human resource market, set up a unified employment information network which covers both the urban and rural areas, protect the various rights and interests for equal employment of rural laborers, and improve the allocation efficiency of employment transfer. In this process, we should strengthen the investment for education and occupation training in rural areas, enhance the farmers' work skills and qualities effectively, ensure their employment when transferring to the city and realize the optimization and upgrading of employment structure so as to increase their income and narrow down the urban-rural income gap.

D. Continuing to propel construction of socialism new rural area community, advocating the policy "agriculture-rural area- farmers" to gain more support

Increasing farmers' income can effectively narrow down the income gap. Therefore we should implement the national policy, continue to push forward the socialism new rural construction, increase the proportion of rural productive expenditure in fiscal expenditure, perfect such infrastructures as country water conservancy, machinery, transportation, electricity and network so as to further promote the construction of rural social security system as a whole, and increase farmer's income as much as possible through various policies like tax incentives, subsidies and so on. Since investment in rural areas is a large amount of money, which cannot be finished overnight but be done in long term steadily.

REFERENCES
1. Lu M, Chen Z; Urbanization, urban-biased economic policies and urban-rural inequality. J. Economy Research, 2004;6(3): 8.
2. Zhang KJ; Analysis of the urban-rural area income gap influencing factors in China. J. Population & Economy, 2006; (6): 50-54.
3. Du J, Liu B; Empirical study on Sichuan urban-rural area income gap transfer. J. Statistic and Decision, 2012; (18): 142-144.