

# An Empirical Analysis of the Factors Affecting the Income Gap between Urban and Rural Residents in Shanxi Province

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**Abstract:** With the continuous development of the economy, the income gap between urban and rural residents is also constantly changing, so the urban-rural income gap has received some attention. Taking into account the various differences between different provinces, this article takes Shanxi Province as an example, based on its relevant data from 1999 to 2018, establishes a suitable model to analyze the factors affecting the income gap between urban and rural residents in Shanxi Province. Provide coordinated development and narrow the income gap between urban and rural residents.

**Keywords:** Shanxi Province; Urban-rural income gap; Influencing factors; Empirical analysis

## 1. Introduction

Since the reform and opening up, China's economic level has been significantly improved, and people's living conditions have been continuously improved. With the continuous implementation of inclusive finance and targeted poverty alleviation policies in recent years, more and more residents have escaped poverty and moved to a well-off society, moving from rural to urban areas, accelerating the process of urbanization. Although on the whole, the quality of life of rural residents has changed greatly compared with before, due to regional differences, development foundations and other constraints, the development rate of rural areas and the extent of changes in residents' lives are similar to those in urban areas. There is still a certain gap. Residents who migrate to urban areas are mainly young people who strive for greater development, so the proportion of elderly groups in rural areas will increase. Against the background of the aging population in China, It is even more difficult for development to keep pace with urban areas. Many high-quality policies can be better implemented in urban areas and continue to benefit urban residents. This has in fact widened the income gap between urban and rural residents. In view of this, the research on the influencing factors of the income gap between urban and rural residents is very meaningful. Not only can we analyze what measures can effectively reduce the income gap between urban and rural residents, change the state of unbalanced development between urban and rural areas, but also find some less obvious effects Measures to continuously clarify ideas and adjust policies according to actual conditions, so that urban and rural development is coordinated.

It is found through literature review that many scholars have conducted related research on the income gap between urban and rural residents from multiple perspectives. For example, Xiao Yucai and Zhong Danneng [1] found through theoretical research and analysis of actual conditions that the difference in the supply of basic public services is the main factor affecting the income gap between urban and rural residents. China's fiscal decentralization system has made local fiscal expenditures tend to be urban-oriented As a result, there are differences in the provision of basic public services between urban and rural areas. If we want to achieve the ultimate goal of narrowing the income gap between urban and rural areas, we should work on the innovation of the basic public service supply system and related institutional changes. Wu Liling [2] used the provincial data from the central region of 2000-2017 to calculate the urbanization rate of each province and city based on the entropy method, and based on this, studied the relationship between the circulation industry and the urban-rural income gap, and found the development of the circulation industry The interaction with the new urbanization rate can reduce the absolute income gap between urban and rural residents to a certain extent. Liu Binfeng [3] took Sichuan Province as an example and used its relevant data from 2003 to 2017, and found that infrastructure investment had a significant effect on reducing the income gap between urban and rural residents, and also made relevant suggestions for the high-quality development of the Sichuan economy. Hou Zhenmei, Tian Maozai, Wang Zhihao, and Dou Yan [4] discussed the impact of technological innovation, population growth, and urbanization on the urban-rural income gap by using quantile regression models, and found that excessive population growth was not condu-

cive to narrowing the urban-rural income gap. Ye Hanliang and Zhou Shanshan conducted empirical analysis using panel data from 12 provinces in the western region from 2008 to 2017 and found that urbanization will widen the income gap between urban and rural areas, and the impact of changes in industrial structure and financial development level is not obvious.

Based on the existing research and considering the differences between different provinces, this article takes Shanxi Province as an example. Based on its relevant data from 1999 to 2018, the data is derived from the Shanxi Statistical Yearbook, and the influencing factors on the income gap between urban and rural residents. Carry out in-depth research and provide relevant suggestions for narrowing the income gap between urban and rural residents based on the conclusions of empirical analysis and local actual conditions.

## 2. Analysis of the Income Gap Between Urban and Rural Residents in Shanxi Province

According to the relevant data in the Statistical Yearbook of Shanxi Province, it is found that from 1999 to 2018, the per capita disposable income of urban and rural residents in Shanxi Province increased year by year. The absolute difference between the two has increased year by year, but compared In each year, the ratio of disposable income of urban and rural residents in Shanxi Province will find that the ratio gradually increased at the beginning, reached the maximum in 2009, and gradually decreased from 2010, indicating that with the country and government attaching great importance to the coordinated development of urban and rural areas Relevant policies have achieved certain results, and further reforms are needed in the future. Compared with the values of per capita disposable income of urban and rural residents across the country, the corresponding value in Shanxi Province is lower than the average level, which means that we must strive for continuous economic development.

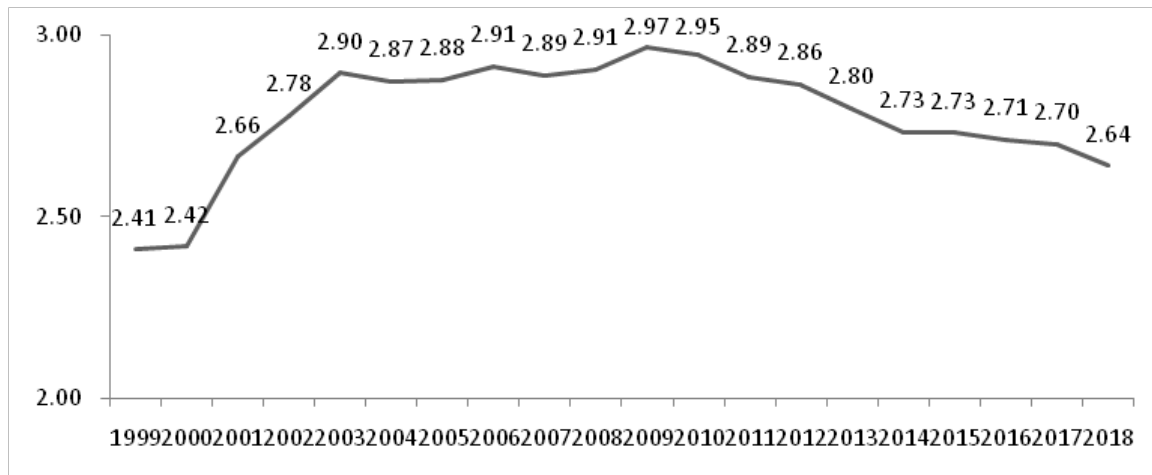


Figure 1. Income gap between urban and rural residents in Shanxi

Looking at the urbanization rate of Shanxi Province in the past 20 years, the growth rate was the highest in 2000 and fell slightly in 2001. After that, the urbanization rate in each year has increased and the growth rate fluctuated slightly. The ratio of the total deposits of financial institutions to the total loans represents the efficiency of financial development. This value reached its maximum in 2008, and it has gradually decreased since then. Among the general public budget expenditures, the proportion of general public service expenditures has declined slightly, and the proportion of urban and rural community affairs expenditures and agriculture, forestry, and water affairs expenditures has shown an upward trend, reflecting the country's emphasis on the "three rural" issues in recent years Degree and the implementation of some targeted poverty alleviation policies. Although the scale of educa-

tion expenditure fluctuates slightly in value, compared with other fiscal expenditure items selected, the proportion of education expenditure is still the highest, indicating that the country attaches importance to science and technology, education, and talent.

## 3. Empirical Analysis

### 3.1. Index selection

#### 3.1.1. Explained variable

By combing relevant literature, we can find that there are many indicators for measuring the income gap between urban and rural residents, such as the absolute difference between disposable income of urban and rural residents, Gini coefficient, Theil index, structural relative coefficient, and the ratio of disposable income of urban and

rural residents. . Considering the availability, comparability, and relativity of the data, this paper chooses the ratio of disposable income of urban and rural residents to measure the income gap between urban and rural residents in Shanxi Province.

**3.1.2. Explanatory variables**

In order to further explore the influencing factors of the income gap between urban and rural residents in Shanxi Province, this article collected relevant data from 1999 to 2018, and selected six explanatory variables, Respectively the urbanization rate (X1), financial development efficiency (X2), the proportion of general public service expenditure in fiscal general public budget expenditure (X3), the proportion of education expenditure in fiscal general public budget expenditure (X4), the proportion of urban and rural community affairs expenditure in the general public budget expenditure (X5) and the expenditure of agriculture, forestry and water affairs in the general public budget expenditure (X6), of which the financial development efficiency (X2) is calculated by the ratio of total deposits to total loans.

**3.2. Setting of the model**

Considering that the model may have a heteroscedasticity problem, a logarithmic transformation is performed on the linear regression model, and the logarithm of each independent variable is taken, namely lnX1, lnX2, lnX3, lnX4, lnX5, and lnX6, and then Y is interpreted Variables, input related data into eviews software, enter related commands, and build regression models.

$$Y = C + C1 * \ln X1 + C2 * \ln X2 + C3 * \ln X3 + C4 * \ln X4 + C5 * \ln X5 + C6 * \ln X6 + \epsilon$$

**3.3. Model results and tests**

According to the above steps to build a regression model, you can get the following output results:

$$Y = 5.423785 + 0.105719 \ln X1 + 0.619510 \ln X2 + 0.223220 \ln X3 + 0.639690 \ln X4 + 0.194021 \ln X5 + 0.325968 \ln X6$$

From the output results, the model's determinable coefficient is 0.732724, which indicates that the model's goodness of fit is not high. Observing the F statistical value, we can see that the F-statistic is 5.939805, given the significance level is 0.05, The adjoint probability of the F-test value is 0.003553, which is significantly less than 0.05, so it indicates that the selected explanatory variables have a significant impact on the explanatory variables as a whole.

The "COR Y X1 X2 X3 X4 X5 X6" command was used to construct the correlation coefficient matrix between the variables. The results are shown in Table 1:

	Y	X1	X2	X3	X4	X5	X6
Y	1.00	0.21	0.77	0.38	0.36	-0.49	-0.10
X1	0.21	1.00	0.36	-0.57	-0.07	-0.16	0.50
X2	0.77	0.36	1.00	0.33	0.31	-0.63	-0.26
X3	0.38	-0.57	0.33	1.00	0.07	-0.24	-0.57
X4	0.36	-0.07	0.31	0.07	1.00	-0.48	-0.16
X5	-0.49	-0.16	-0.63	-0.24	-0.48	1.00	0.11
X6	-0.10	0.50	-0.26	-0.57	-0.16	0.11	1.00

Observing Table 1 shows that there is no obvious multicollinearity among the variables.

Next, the white test was used to test the heteroscedasticity of the model. The adjoint probability of the white test was greater than 0.05, so the model passed the heteroscedasticity test and there was no heteroscedasticity.

Then perform autocorrelation test on the model. In order to draw accurate conclusions, the Lagrangian multiplier test is used to verify based on the partial correlation coefficient test. The concomitant probability of the Lagrangian test is 0.0153, which is less than the critical value is 0.05, so the model has autocorrelation, and it is modified by the generalized difference method. When the model is introduced, ar (1) and ar (2) are introduced, and the goodness of fit has been significantly improved. The final model can be obtained as:

$$Y = 2.502454 - 0.067023 \ln X1 + 0.594100 \ln X2 + 0.054890 \ln X3 + 0.111886 \ln X4 - 0.140019 \ln X5 + 0.046242 \ln X6$$

**3.4. Results analysis**

From the final model obtained, the signs in front of the two explanatory variables of urbanization rate and the scale of urban and rural community expenditure are negative, indicating that these two explanatory variables have a negative correlation with the income gap between urban and rural residents in Shanxi Province, while financial development efficiency, The signs of the four explanatory variables of general public service expenditure scale, education expenditure scale, and agriculture, forestry and water affairs expenditure scale are all positive, indicating that these four explanatory variables have a positive correlation with the income gap between urban and rural residents in Shanxi Province.

**3.4.1. Careful observation of the model reveals that expanding the scale of urban and rural community spending can significantly reduce the income gap between urban and rural residents**

Urban and rural community expenditure is an important financial expenditure, which refers to government urban and rural community affairs expenditure, including urban and rural community management affairs expenditure, urban and rural community planning and management expenditure, urban and rural community public facility expenditure, urban and rural community housing expend-

**Table 1. Correlation coefficient matrix**

iture, urban and rural community environmental health expenditure, Construction market management and supervision expenditures, etc. In recent years, with the country's continuous emphasis on the three issues of agriculture and the implementation of various targeted poverty alleviation measures, rural economic development has gradually accelerated, and people's living standards have also been effectively improved. However, compared with rural areas, urban areas have a better development foundation in all aspects, and communities have developed more rapidly and are more mature. Therefore, whether it is community management, community planning, related facilities, or environmental sanitation, it has reached a better level. Level, so expanding the scale of urban and rural community expenditure may not have a particularly obvious effect on urban areas, and may not have a major change in all aspects of urban residents' lives. Conversely, in rural areas, facilities and resources in all aspects are relatively backward. Therefore, the expansion of the scale of urban and rural community expenditure in the fiscal agricultural support system may significantly improve some rural communities. Therefore, the lifestyle of rural residents will be changed to a certain extent, and the consumption needs of rural residents will increase. Demand, rural residents will also find some effective ways to increase their disposable income, so the income gap between urban and rural residents will narrow.

**3.4.2. In addition to the scale of urban and rural community expenditure, the increase in urbanization rate can also reduce the income gap between urban and rural residents to a certain extent, but the effect is not as obvious as the scale of urban and rural community expenditure**

The urbanization rate refers to the proportion of the urban population in the total population. When collecting data, it can be found that with the development of the economy, the urbanization rate is increasing year by year, which shows that in general, there are many rural residents in each year. The transfer of cities and towns has led to a declining proportion of rural residents. Those residents who have just arrived in cities and towns are not so familiar with resources and the environment and need a certain amount of time to adapt. At the beginning, they may still maintain the previous disposable income level, that is, temporarily unable to reach the average disposable income level of urban residents. Therefore, the growth rate of the average disposable income of urban residents may be reduced to a certain extent, so that the growth rate of disposable income of urban residents as a whole is slower than that of rural residents. According to the previous explanation, this article uses the ratio of urban residents' disposable income to rural residents' disposable income to measure the income gap between ur-

ban and rural residents. Therefore, the increase in urbanization rate will also reduce the income gap between urban and rural residents, but the effect is not obvious.

**3.4.3. At the same time, according to the model, it will also be found that the increase in the efficiency of financial development and the increase in the scale of education expenditure will increase the income gap between urban and rural residents**

In recent years, China has vigorously developed inclusive finance, which is an inevitable requirement for China to build a well-off society in an all-round way. It is conducive to promoting the sustainable and balanced development of the financial industry, promoting mass entrepreneurship and innovation, and promoting the transformation and upgrading of economic development methods. Promote social equity and social harmony. Inclusive finance's key service targets are small and micro enterprises, farmers, urban low-income people, the poor, special groups such as the disabled, and the elderly, with the aim of improving the status quo. However, it is inevitable that the long-term living environment of these special groups is relatively closed, the education level is generally not high, and there are relatively few financial institutions in the countryside. Therefore, they may not fully interpret the policies and cannot understand these items in time. Conversely, urban residents live in a better environment, and there are more financial institutions. Under the influence of the external environment and the people around them, their own consciousness is also relatively strong. Increasing the scale of education expenditure will also widen the income gap between urban and rural residents, but the effect is relatively weak. With the implementation of the strategy of "rejuvenating the country through science and education and strengthening the country by talents", China has always ensured the scale of education expenditures. However, education resources in rural areas are relatively scarce and teachers are weak. Although the country attaches great importance to education, there is still a lack of allocation of educational resources. The problem of balance. Many high-quality educational resources are occupied by cities. Compared with urban areas, there is still a large gap in the infrastructure, resources and development speed in rural areas. It also reflects from the side that the current scale of expanding education expenditure is temporarily unavailable. The expected effect was achieved without reducing the income gap between urban and rural residents.

**4. Suggestions for Coordinating the Income Gap Between Urban and Rural Residents In Shanxi Province**

**4.1. Speed up urbanization**

It can be seen from the analysis results that an increase in the urbanization rate can reduce the income gap between urban and rural residents. Since the reform and opening up, with the rapid development of the economy, the transition from a traditional rural society based on agriculture to a modern urban society based on industry and services is gradually accelerating. The urbanization rate has continued to rise and the level of urbanization has increased significantly. More and more people gather to cities. The transfer of rural population to cities is obvious, and the urban population growth is rising rapidly. In this context, in addition to the continuous improvement of various industries and buildings in the city, the input of the primary industry must also be guaranteed. China is a large agricultural country. Agricultural products are very important to the daily lives of residents. It can be said that the stable development of the primary industry is an important cornerstone of the continuous improvement of the secondary and tertiary industries. Therefore, while paying attention to high-rise buildings in cities, Animal husbandry and aquaculture must also be taken seriously, so that urbanization can be effectively accelerated, and residents' lives can be effectively guaranteed to achieve a good transition.

#### **4.2. Pay attention to the adjustment of fiscal expenditure structure**

The scope of fiscal expenditure items is very wide, and the different scales of each expenditure item form the fiscal expenditure structure. The amount of expenditures of different fiscal expenditure items varies widely, and their proportions are different, but the proportion of expenditures for the same project is relatively stable. Although there are changes in each year, they are slightly changed from the previous year. It will not suddenly change dramatically in one year, indicating that the structure of fiscal expenditure is relatively stable. However, according to empirical analysis, it is found that some fiscal expenditure items can effectively reduce the income gap between urban and rural residents, while some fiscal expenditure items have weak effects. Those fiscal expenditure items with obvious effects should occupy a more important position, so the local government should Based on the actual situation, find out where we are weak according to the relevant status quo, increase the importance of this, and introduce various solutions, and continue to summarize based on previous developments, adjust the structure of fiscal expenditure appropriately, and make some changes At the same time, we must also pay attention to the distribution of the proportion of fiscal expenditures received by urban and rural areas, so as to consolidate related construction in urban areas and continuously strengthen various constructions in rural areas, so as to achieve coordinated development of urban and

rural areas and reduce the income gap between urban and rural residents. aims.

#### **4.3. Increase investment in infrastructure**

Compared with cities and towns, rural development is slower. One of the most important reasons is that rural areas have weak infrastructure. It is difficult to achieve rapid development. Although many related policies have been introduced, they do not have a good foundation. , It is difficult to achieve the expected policy implementation, and it is not easy to achieve a good effect. Therefore, the state and government need to increase infrastructure investment in rural areas, improve from all aspects of rural residents' life, and realize the importance of increasing infrastructure investment to reduce the income gap between urban and rural residents. Pay attention to the construction of transportation infrastructure, determine a reasonable transportation network according to the local geographical location and surrounding environment, promote population circulation, make the environment in rural areas reach a more open state, learn the advantages of surrounding cities, and learn To use. At the same time, it is necessary to promote the flow of production factors between urban and rural areas to achieve the purpose of industrial agglomeration. According to the theory of factor endowment, cost advantages, and economies of scale, the economic growth between urban and rural areas can be promoted, and the development imbalance between urban and rural areas can be eased. This is a long process, and we should strive to innovate in development and improve in development to meet our own needs.

#### **4.4. Improve the social security system**

Although the urbanization rate is increasing and the process of urbanization is accelerating, most of the young people who move to cities and towns are young people who want more space for development and a better life. But those older people live longer in rural areas and are more familiar with the environment. They don't want to leave this familiar environment suddenly, so they are willing to stay in the countryside. In this way, the average age of rural residents will increase, and under the background of population aging in recent years, the social security system should be further improved. First, we must ensure the basic daily life of rural residents, be able to get plenty of food and clothing, and set up special funds to regularly subsidize the lives of rural residents. Secondly, the living conditions of rural residents are generally inferior to those of urban residents. Today, it is expensive and difficult to see a doctor. Some rural residents cannot afford high medical expenses, so basic health conditions are difficult to be guaranteed. Among the items of fiscal expenditure, we can increase the proportion of expenditure items of medical care and social security system, attach importance to the problem of old-

age care in rural areas, and improve the old-age insurance system. Finally, because the rural area is relatively small and the employment area is relatively narrow, there may be residents facing unemployment. Therefore, some policies should be introduced in terms of employment to increase the employment rate in rural areas and radically improve the daily lives of rural residents. Living, improve welfare, and narrow the income gap between urban and rural areas.

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