

An Empirical Analysis of Shanxi's Financial Development and Urban-rural Income Gap

Bingjie Zhang

School of Economics and Management, XIDIAN University, 266 Xinglong Section of Xifeng Road, Xi'an, Shaanxi 710126, China
553083106[at]qq.com

Abstract: *The relationship between financial development and the income gap between urban and rural areas has always been a hot topic in the economic and financial field. Discussing the relationship between the two is not only of theoretical significance for the study of macro issues, but also can provide certain policy enlightenment for narrowing the gap between urban and rural areas and increasing farmers' income. Based on the data of Shanxi Province from 1987 to 2018, the VAR model was constructed using EViews software. Based on the co-integration test of the financial development level and urban-rural income gap in Shanxi Province, the dynamic correlation between these variables was further studied through impulse response analysis. The results show that, in the long run, the scale of financial development will aggravate the inequality of urban and rural income, and improving the efficiency of financial development will help narrow the gap. The mechanism of financial development on the urban-rural gap is manifested in both direct and indirect aspects: on the one hand, the urban tendency of financial resources will cause the urban-rural income gap to increase as the degree of financial development increases; on the other hand, the level of financial development may be affected. The intermediary variable of urbanization has an indirect effect on the urban-rural income gap. Therefore, while increasing policy support for rural finance, we must also pay attention to the acceleration of urbanization by financial development, and form a good urban-rural coordinated development mechanism.*

Keywords: Shanxi Province; financial development; urban-rural income gap; VAR model

1. Introduction

For a long time, due to the urbanization tendency of China's economic development, the urban-rural income gap has been widening. The economic development history of various countries shows that long-term and healthy economic development is often associated with fair income distribution, while economic backwardness is often accompanied by income polarization. Theoretical research also shows that uneven income distribution may prompt the government to adopt a higher tax rate to adjust the distribution, thereby hindering economic growth^[1]. At the same time, the long-term income gap is not conducive to the harmony and stability of the society.

From the perspective of transaction costs, the increase of social instability factors will deteriorate the investment environment, causing more funds to be used to protect property rights, leading to increased transaction costs. This is not conducive to the healthy development of the economy. Therefore, how to narrow the gap between urban and rural areas, develop the agricultural economy, and increase farmers' income has always been a difficult problem facing China. Reviewing the literature, it is found that relevant scholars have conducted research on the urban-rural income gap from the perspective of economic system and human capital. The research on financial development and income gap started late. The earliest research came from Greenwood and Jovanovich^[2], who believed that due to the existence of wealth threshold, there is an inverted U-shaped relationship between financial development and income gap. Townsend and Ueda^[3] also confirmed this conclusion. Domestic research generally believes that China has an urban-rural dual structure of financial development. Rural financial repression and urban financial deepening exist at the same time^[4].

Finance is more inclined to cities in the development process, resulting in a continuous urban-rural income gap. Increase^[5-9]. However, the current researches mostly start from the national or eastern, central and western perspectives, while the inter-provincial perspectives are relatively rare.

Shanxi Province not only has the same income gap problem, but also has its own particularities. Studying the relationship between financial development and urban-rural income gap, and further revealing how to use financial development to increase farmers' income and narrow the urban-rural gap has certain policy significance.

2. Model and sample data selection

2.1 Data sources and research methods

Due to the time lag of financial development on the urban-rural income gap, the financial development of the year may have an impact on the urban-rural gap in the next few years. However, traditional regression analysis cannot reflect the lag effect between variables, nor can it solve the problem of endogeneity well. In order to avoid these shortcomings, this article uses a vector autoregressive model to analyze the dynamic relationship between the financial development of Shanxi Province and the urban-rural income gap from 1987 to 2018. The data used in the model comes from the "Shanxi Provincial Statistical Yearbook" over the years.

2.2 Index selection

The dependent variable studied in this paper is the urban-rural income gap, which is expressed as the ratio of urban residents'

per capita disposable income to rural per capita net income. The core explanatory variable is financial development, referring to the practice of mainstream research and expressing it in terms of the scale of financial development and the efficiency of financial development. In addition, because there are many reasons for the urban-rural income gap, financial development is only one of them. In order to make the empirical results more robust, urbanization and opening to the outside world are introduced as control variables. The calculation methods of specific variables are shown in Table 1.

Table 1: Shanxi Province Financial Development and Urban-Rural Income Gap Comparison Index System

Indicator	symbol	formula
Urban-rural income gap	IG	per capita disposable income of urban residents/per capita net income of rural residents
Financial development scale	FIR	financial institution deposit and loan balance/GDP
Financial development efficiency	FE	Financial institution loan balance/Financial institution deposit balance
Urbanization	URBAN	Rural population/total population
Degree of opening to the outside world	OPEN	Import and export trade volume/GDP

3. Empirical analysis

3.1 Stationarity test

Table 2: Comparison of Financial Development and Urban-Rural Income Gap in Shanxi Province Unit root test results of each index

Variable	ADF	critical value	stationarity
IG	-3.007	-3.574**	Non-stationary
ΔIG	-2.913	-2.650***	stationary
FIR	-3.563	-4.720**	Non-stationary
ΔFIR	-5.117	-1.953**	stationary
FE	-0.222	-3.568**	Non-stationary
ΔFE	-6.331	-4.297***	stationary
URBAN	-2.248	-4.310**	Non-stationary
ΔURBAN	-3.162	-2.960**	stationary
OPEN	-3.811	-4.324***	Non-stationary
ΔOPEN	-5.904	-2.657**	stationary

3.2 Cointegration test

Before the co-integration test, a preliminary VAR model needs to be established to determine the optimal lag period of the model. The results show that there are 4 indicators indicating that the optimal lag period of VAR is 4, so a VAR model with a lag of 4 periods is established, and on this basis, a further co-integration test is performed to find out whether it is a trace test or a maximum eigenvalue test. Both show that the model has a cointegration equation. The cointegration expression is:

$$\text{CoinEQ1} = \text{IG}_{t-1} + 1.821\text{FE}_{t-1} - 1.923\text{FIR}_{t-1} + 1.447\text{URBAN}_{t-1} - 1.320\text{OPEN}_{t-1} - 1.308C$$

From the co-integration equation, we can see that there is a long-term stable equilibrium relationship between the scale of financial development, the efficiency of financial development, the level of urbanization, the degree of opening to the outside world, and the urban-rural income gap. In the long run, the scale of financial development and the degree of opening to the outside world will worsen the inequality of urban and rural income, while the efficiency of financial development and the level of urbanization will help narrow the gap, which is consistent with the results obtained by Yao Yaojun^[5] using national data. of.

4. Conclusion and Inspiration

(1) The co-integration equation shows that in the long run, the expansion of the scale of financial development will aggravate the inequality of urban and rural income. This may be caused by the urban-rural dual structure of the financial development level itself. The profit-seeking nature of capital makes financial resources more important. Many places are inclined to cities, while the rural sector is facing difficulties in financing. Improving the efficiency of financial development can help narrow the gap. According to the indicators used in this article, the efficiency of financial development reflects the efficiency of the conversion of deposits into loans. This shows that in the case of uneven distribution of financial resources, as long as a small portion of loans is used for agricultural production, it will bring about a narrowing of the gap between urban and rural areas. However, the results of the variance decomposition show that the contribution of the scale of financial development is far greater than that of the efficiency of financial development, about twice the contribution of the efficiency of financial development. Therefore, on the whole, the impact of the scale of financial development on the urban-rural income gap is comparatively large. Occupy a dominant position.

(2) Whether in the long-term or short-term, the level of urbanization can help narrow the urban-rural income gap, and urbanization has a high degree of explanation for the urban-rural income gap. Regarding the reasons behind this, the mainstream view in China believes that this may be due to the fact that urbanization has transferred surplus labor in rural areas, increased the level of competition in the labor market in the urban sector, and led to a decline in wages in the urban sector. The increase in labor productivity in rural areas and the increase in income have reduced the income gap between urban and rural areas through these two aspects. In addition, because urbanization is often accompanied by the construction of a large number of supporting infrastructure, and the construction of infrastructure is usually completed by migrant workers, urbanization may also increase the income of farmers through employment effects, thereby reducing the income gap between urban and rural areas.

Therefore, this article believes that the level of financial development has two effects on the urban-rural income gap. One is that the imbalance of financial development will directly enlarge the urban-rural income gap, and the other is that the level of urbanization will play an intermediary role. Financial development accelerates urbanization. The process in turn increased farmers' incomes and narrowed the

urban-rural income gap. Therefore, to narrow the income gap between urban and rural areas in Shanxi Province and increase farmers' income, in addition to increasing policy support for rural finance, vigorously developing inclusive finance, and breaking the credit constraints faced by farmers, we must also pay attention to the acceleration of financial development on urbanization. Therefore, whether to strengthen the development of the countryside itself or to promote the countryside through the development of cities will be a dilemma faced by financial development. Relevant decision-making departments should coordinate the relationship between urban and rural development and form a good urban-rural coordinated development mechanism.

References

- [1] Ming, Chen Zhao. Urbanization, urban-oriented economic policies and urban-rural income gap [J]. *Economic Research*, 2004(06): 50-58.
- [2] GREENWOOD J, JOVANOVIC B. Financial Development, Growth, and the Distribution of Income [J]. *Journal of Political Economy*, 1990,98,5(1):1076-1107.
- [3] TOWNSEND R, UEDA K. Financial Deepening, Inequality, and Growth [J]. *IMF Working Papers*,2003(9):64.
- [4] Wen Tao, Ran Guanghe, Xiong Deping. China's financial development and farmers' income growth[J]. *Economic Research*, 2005(09): 30-43.
- [5] Yao Yaojun. Financial development, urbanization and urban-rural income gap-cointegration analysis and Granger causality test[J]. *China Rural Observation*, 2005(02): 2-8+80.
- [6] Zhang Lijun, Zhan Yong. The impact of my country's rural financial development on the urban-rural income gap [J]. *Finance and Economics*, 2006 (4): 53-60.
- [7] Sun Yongqiang, Wan Yulin. Financial development, opening to the outside world and the income gap between urban and rural residents—An empirical analysis based on inter-provincial panel data from 1978 to 2008[J]. *Financial Research*, 2011(01): 28-39.
- [8] Wang Quanjing, Hao Zenghui. The economic structure basis of China's urban-rural income gap: ownership structure and financial structure—Based on the perspective of dual dual structure[J]. *Economic Science*, 2018(03): 21-34.
- [9] Sun Yongqiang. Research on Financial Development, Urbanization and Income Gap between Urban and Rural Residents[J]. *Financial Research*, 2012(04): 98-109.