

Study on the Influence of the Coordinated Development of Resident Income and GDP on Local Economic Development: Take Shandong Province as an Example

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Abstract: With the rapid development of China's economy, the coordinated development of resident income and GDP has become an important indicator to measure local economic development. How to realize the synergistic growth of the two in the new era is of great significance for promoting the sustainable development of the local economy. Based on the theory of the coordinated development of resident income and GDP, this paper will take Shandong Province as an example to analyze the interaction between resident income growth and GDP, find out the influencing factors that restrict the coordinated development of resident income and GDP, and explore the impact of the coordinated development of resident income and GDP on local economic development. Finally, relevant policies will be studied. How to effectively increase residents' income, promote the sustainable and healthy development of the local economy, and put forward relevant suggestions to promote the coordinated development of residents' income and GDP.

Keywords: Household income; Gross domestic product; Coordinated development; Influence mechanism

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1. Introduction

In economics, household income and gross product are two key indicators to measure the economic health of a country or region. The relationship between them is crucial for understanding the quality and sustainability of economic development^[1]. With the change in the global economic pattern and the adjustment of national policies, the collaborative development of household income and GDP has become a research hotspot. According to the latest statistics, China's national economy got off to a good start in the first quarter of 2024, with GDP growing by 5.3% year-on-year and per capita disposable income growing by 6.2% in real terms. These data show that there is a certain synergistic growth relationship between household income and GDP. However, to study this relationship in depth, it is necessary to consider a wider range of factors, including the adjustment of industrial structure, changes in employment levels, tax policy reforms, and the development of

social security systems. In addition, under the background of building a well-off society in an all-round way, the coordinated growth of residents' income and GDP has attracted wide attention from all walks of life. The production and sharing of economic achievements and the contribution and distribution of different economic entities are important issues in current social development. This means that in addition to the pursuit of economic growth, how to ensure the synchronous growth of residents' income and achieve common prosperity is also a problem that policymakers need to focus on.

2. Theory and empirical analysis of the coordinated development of resident income and gross domestic product

2.1. Theoretical discussion and research views

In the theory of Coordinated development of resident income and GDP, the core idea is to ensure that economic growth and resident income growth coordinate and promote each other. This theory emphasizes that sustainable economic development as well as social harmony and stability can be achieved only when resident income and GDP increase simultaneously ^[2]. According to the literature review, the report of the Party's 20th National Congress proposed that the growth of residents' income and economic growth should be synchronized, which shows that the government is committed to ensuring that the people share in the fruits of economic development. In addition, the report also emphasizes the synchronization between the improvement of labor remuneration and the improvement of labor productivity, which reflects the importance of improving the treatment of workers and safeguarding the rights and interests of workers.

To realize the coordinated development of household income and GDP, a series of measures need to be taken. First, we will increase people's income by promoting employment and optimizing the distribution system. Secondly, stabilize and expand employment by improving the business environment, reducing financing costs, and promoting industrial upgrading, thereby ensuring the source of residents' income. Thirdly, income distribution should be adjusted to ensure social stability and development by improving taxation, social security, transfer payment, and other policies ^[3].

2.2. Empirical analysis of the coordinated development of household income and GDP

The coordinated development of household income and GDP is an important aspect of measuring the comprehensive index of a country's economic activities. The following takes Shandong Province as an example for analysis:

2.2.1. Analysis of the characteristics of coordinated development and evolution of residents' income and regional GDP in Shandong Province

The GDP growth rate and per capita disposable income growth rate of Shandong Province from 2006 to 2023 were selected as analysis samples to conduct time series analysis and observe the correlation between them. As can be seen from Figure 1, the per capita disposable income growth rate has fluctuated greatly in the past 20 years. Except for 2011 and 2012, the GDP growth rate is higher than the per capita disposable income growth rate. From 2006 to 2017, the gap between the two fluctuated somewhat; Since 2017, the gap between the two has generally shown a narrowing trend. Overall, according to the passage of time, the fluctuations and trends of the growth of household income and GDP are the same, and the gap between the two shows a shrinking trend.

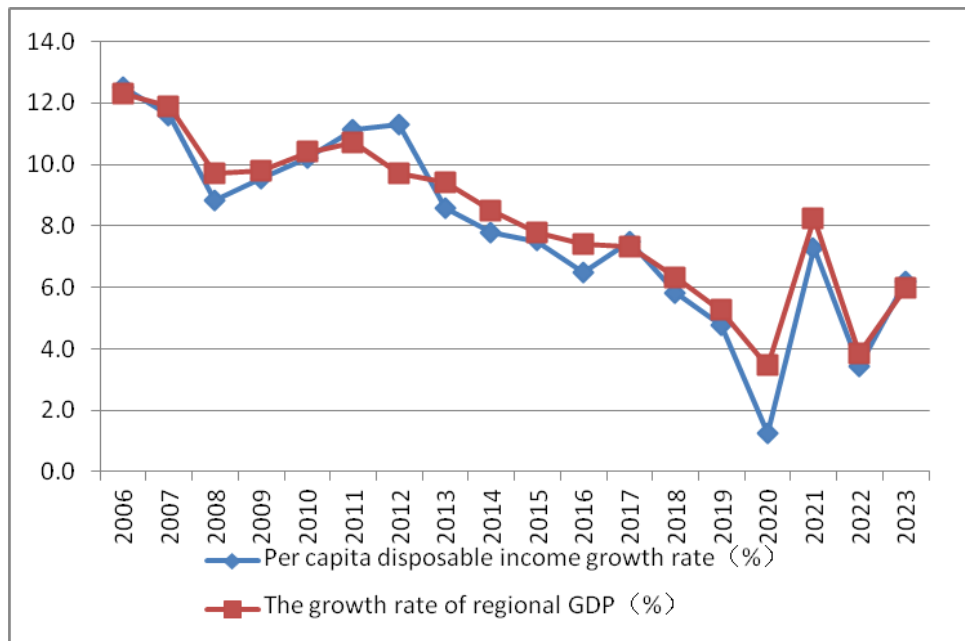


Figure 1. Population income growth rate and GDP growth rate of Shandong Province from 2006 to 2023

2.2.2. Synergistic correlation analysis of household income and GDP in Shandong Province

By calculating the correlation coefficient between the growth rate of per capita disposable income and GDP growth rate, we can assess whether there is a significant correlation between the two. Correlation analysis can quantitatively show the relationship between income growth and economic growth.

SPSS software was used to conduct correlation analysis on the sample data of Shandong Province, and the correlation coefficients were obtained as shown in **Table 1**. According to the correlation table, the Pearson correlation coefficient between the per capita disposable income growth rate of all residents and the GDP growth rate is 0.973, and the result is above 0.9. The *P*-values of the two-tailed significance test were both 0.000 and below 0.05. Therefore, it can be considered that the growth rate of per capita disposable income of all residents in Shandong Province has a strong positive correlation with the growth rate of GDP, that is, the growth of GDP can drive the increase of residents' income, and vice versa.

Table 1. Correlation

		Per capita disposable income growth rate (%)	The growth rate of regional GDP (%)
Per capita disposable income growth rate (%)	Pearson correlation	1	0.973**
	Significance (two-tailed)		0.000
	Number of cases	18	18
The growth rate of regional GDP (%)	Pearson correlation	0.973**	1
	Significance (two-tailed)	0.000	
	Number of cases	18	18

**The correlation was significant at 0.01 level (two-tailed).

2.2.3. Structural decomposition analysis

Structural breakdown analysis can help us understand the extent to which different industries contribute to GDP growth and how this growth affects household income. Here, the gross domestic product is broken down into

primary, secondary, and tertiary industries, and how the growth of these industries translates into the income of residents is analyzed. The added value growth rate of the primary industry, secondary industry, and tertiary industry and the per capita disposable income growth rate of all residents in Shandong Province from 2006 to 2023 are selected as analysis samples. SPSS software is used to conduct correlation analysis on the sample data of Shandong Province, and the correlation coefficients are shown in **Table 2**. According to the correlation table, the Pearson correlation coefficient between the growth rate of per capita disposable income of all residents and the growth rate of added value of the secondary industry and the tertiary industry is 0.933 and 0.878, and the result is above 0.8. The *P*-values of the two-tailed significance test were both 0.000 and below 0.05. Therefore, it can be considered that the growth rate of per capita disposable income of all residents in Shandong Province has a strong positive correlation with the growth rate of added value of the secondary industry and the tertiary industry.

Table 2. Correlation ($n = 18$)

		Per capita disposable income growth rate (%)	The primary sector of the economy growth rate (%)	The secondary sector of the economy growth rate (%)	The tertiary sector of the economy growth rate (%)
Per capita disposable income growth rate (%)	Pearson correlation	1	0.316	0.933	0.878
	Significance (two-tailed)		0.201	0.000	0.000
The primary sector of the economy growth rate (%)	Pearson correlation	0.316	1	0.306	0.225
	Significance (two-tailed)	0.201		0.216	0.370
The secondary sector of the economy growth rate (%)	Pearson correlation	0.933	0.306	1	0.755
	Significance (two-tailed)	0.000	0.216		0.000
The tertiary sector of the economy growth rate (%)	Pearson correlation	0.878	0.225	0.755	1
	Significance (two-tailed)	0.000	0.370	0.000	

3. Analysis of the factors restricting the coordinated development of household income and GDP

- (1) The unreasonable economic structure is one of the main reasons restricting the coordinated development of residents' income and GDP. Economic growth is accompanied by the upgrading of industrial structure, which has a positive effect on economic growth. It can be seen that the rationality of industrial structure will directly affect the local economic development and residents' income sources in a region, and is bound to have a certain impact on the coordinated development of local economic development and residents' income ^[4]. At present, the industrial structure of Shandong Province is gradually optimized, and the important position of the tertiary industry in the industrial structure has been established. However, there are still some unbalanced phenomena in the economic structure of Shandong Province.
- (2) The difference in income structure is an important factor affecting the coordinated development of residents' income and GDP. Income structure is the result of economic development and social change. The source of the income gap can be judged through its change, and it can also have a certain impact

on residents' consumption. Therefore, differences in income structure can not only reflect residents' income sources but also affect local economic development ^[5]. From 2013 to 2023, the main source of residents' income in Shandong Province was wage income (accounting for 57.5% on average), followed by operating net income and transfer net income, and finally property net income. Generally speaking, the income structure of all residents in Shandong Province is relatively stable.

- (3) The mode of economic growth may affect the coordinated development of household income and GDP to a certain extent. Economic growth mode refers to the realization mode of a country's (or region's) economic growth, which mainly includes two basic types: extensive growth mode and intensive growth mode ^[6]. Energy consumption per 10,000 yuan GDP can reflect the economic growth pattern of a region. From 2006 to 2022, energy consumption per 10,000 yuan of GDP in Shandong Province decreased year by year, resource use efficiency increased year by year, and the decline rate fluctuated between 2.4 and 7.0, which was related to the control degree of industrial structure upgrading and the intensity of policy support. Resource use efficiency affects regional economic growth to some extent.

In summary, many factors restrict the coordinated development of household income and GDP. In addition, changes in the labor market and employment structure, social security system, policy support, and the international economic environment also have a certain impact on the synchronous growth of household income and GDP.

4. The impact of coordinated development of resident income and GDP on local economic development

- (1) Increase residents' income level and the size of middle-income groups: When the income of residents in a region keeps pace with the growth of the local GDP, it means that the income level of residents has been improved. Such growth can not only enhance the purchasing power of residents but also stimulate their consumption desire, thus driving the development of local service industries ^[7]. For example, in the 14th Five-Year Plan of Shandong Province, it is proposed that residents' income should be synchronized with economic growth, and this goal should be achieved by improving the labor compensation distribution system and providing certain policy guarantees. Such an approach will help increase the proportion of labor remuneration in the primary distribution, which can significantly increase the income of local residents.
- (2) Promote economic development and consumption growth: The improvement of residents' income and the synchronization of economic growth can not only improve residents' living standards but also promote the further development of the economy. When residents have more disposable income, they are more willing to spend, which will directly promote the growth of the local economy. At the same time, the growth of consumption also helps to promote the development of the service industry, thus increasing the value-added speed of the service industry. This is a positive cycle for the local economy ^[8].
- (3) Improve social structure and reduce social conflicts: Keeping pace with economic growth will also help improve the social structure and reduce social conflicts. A clear example is the words of Huang Qunhui, director of the Institute of Economics at the Chinese Academy of Social Sciences: "The goal of keeping household income growth at the same level as GDP growth means that ordinary people can fully enjoy the development dividend." In addition, synchronizing income growth with economic growth is conducive to forming a relatively stable social structure ^[9].
- (4) Promote employment and stabilize society: When economic growth keeps pace with household income growth, it will also help create more jobs. The government can promote employment through a series

of policy measures, such as providing employment and entrepreneurship support policies, expanding employment subsidies, and so on. The increase in employment can not only help people improve their living standards but also enhance social stability^[10].

In conclusion, the coordinated development of resident income and GDP has an all-round positive impact on local economic development. It can not only improve the income level and quality of life of residents but also promote sustained economic growth and social harmony and stability.

5. Strategic suggestions for the coordinated development of household income and GDP

- (1) Increase people's income through multiple channels: Increasing residents' income is one of the important means to promote economic growth. To achieve this goal, the income level of residents can be raised by improving the level of human capital, encouraging hard work and prosperity, promoting equality of opportunity, and so on. In addition, the income of farmers and other low-income groups can be increased through measures such as developing education and vocational training, and comprehensively promoting rural revitalization^[11].
- (2) Optimize the distribution system: The distribution system is the basic system for promoting common prosperity. To better promote the coordinated development of resident income and GDP, efforts should be made to increase the proportion of resident income in the distribution of national income and increase the proportion of labor remuneration in the primary distribution^[12]. This needs to be achieved by improving the policy system of distribution according to factors, exploring multiple channels to increase the factor income of low - and middle-income people, and increasing the property income of urban and rural residents through multiple channels.
- (3) Strengthen industrial drive and policy incentives: Industry is an important way to increase residents' income. By encouraging entrepreneurship and expanding employment, we can lay a solid foundation for increasing the income of urban and rural residents. In addition, appropriate policy incentives can also encourage more people to participate in economic activities, thereby increasing the overall GDP^[13].
- (4) Advance supply-side structural reform: Supply-side structural reform is an important way to promote high-quality economic development. By promoting supply-side structural reform, the production efficiency and competitiveness of the entire economy can be improved, thus driving the growth of household income^[14].

In summary, the coordinated development of household income and GDP needs to start from many aspects, including increasing household income, optimizing the distribution system, strengthening industrial drive and policy incentives, and promoting supply-side structural reform. The implementation of these strategies requires the joint efforts of the government, enterprises, and individuals to achieve common economic and social development^[15].

6. Conclusion

The coordinated development of household income and regional GDP is very important for the sustainable growth of the local economy. Through an in-depth study of the interaction and influence mechanism between the two, the relationship between the two can be better understood, and effective policies can be formulated accordingly to promote the synergistic growth of the two. This paper can provide theoretical support and practical guidance for the steady and healthy development of the economy. Future research should explore

various influencing factors more deeply and formulate personalized development strategies according to the characteristics of different regions.

Disclosure statement

The author declares no conflict of interest.

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