

# On the Influence of Income Uncertainty on Rural Residents' Consumption

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**Abstract:** Along with the continuous development of China's social economy, many migrant workers began to work in cities, but related research shows that there is a certain uncertainty in the income of migrant workers. Such income has a serious impact on the consumption of rural residents in China. This paper starts from the uncertainty of income, establishes the corresponding mathematical model, and analyzes the current situation of the income of migrant workers in China. Based on the data obtained, relevant recommendations will be made to better improve the income of rural residents and develop the consumption level of rural residents in China, and to steadily develop China's economic level.

## 1. Introduction

With the rapid development of China's economy, rural residents' consumption has become a major component of China's consumer groups. Promoting rural residents' consumption has become an important policy for China to build a harmonious society and achieve healthy and sustainable economic development. However, the actual situation, China's rural residents market has been in a state of sluggishness. In the urban and rural consumption statistics in 2012, urban consumption accounted for 79.62% of the total consumption, and rural consumption levels fell to the lowest ever. Relevant scholars began to explore the level of rural consumption in an attempt to find out the reasons for the low level of rural consumption, including the cultural level of rural residents, traditional concepts, the trend of working in cities, the old concept of consumption, etc. The factors directly affecting the consumption of rural residents are the unstable income of rural residents[1].

The unstable income of rural residents directly leads to the rural residents not afraid to chaotic consumption and high consumption. After understanding this important factor, this paper begins to study the impact of rural income instability on rural consumption, and establishes relevant mathematical models to understand rural income. The focus of stabilizing the impact on rural household consumption in order to improve and promote rural consumption.

## 2. Rural residents' consumption status

### 2.1 Rural residents have low consumption levels

Figure 1 is a graph of Engel's coefficient of rural and urban rural consumption levels in China, which has continued to decline since 1980 until 65% in 2000, and this trend is constantly increasing. The author thinks that the reasons for rural consumption shortage, rural residents' consumption decision-making is not only a person's decision-making behavior, and most of them have a great connection with local economic development, institutional system and resource constraints.

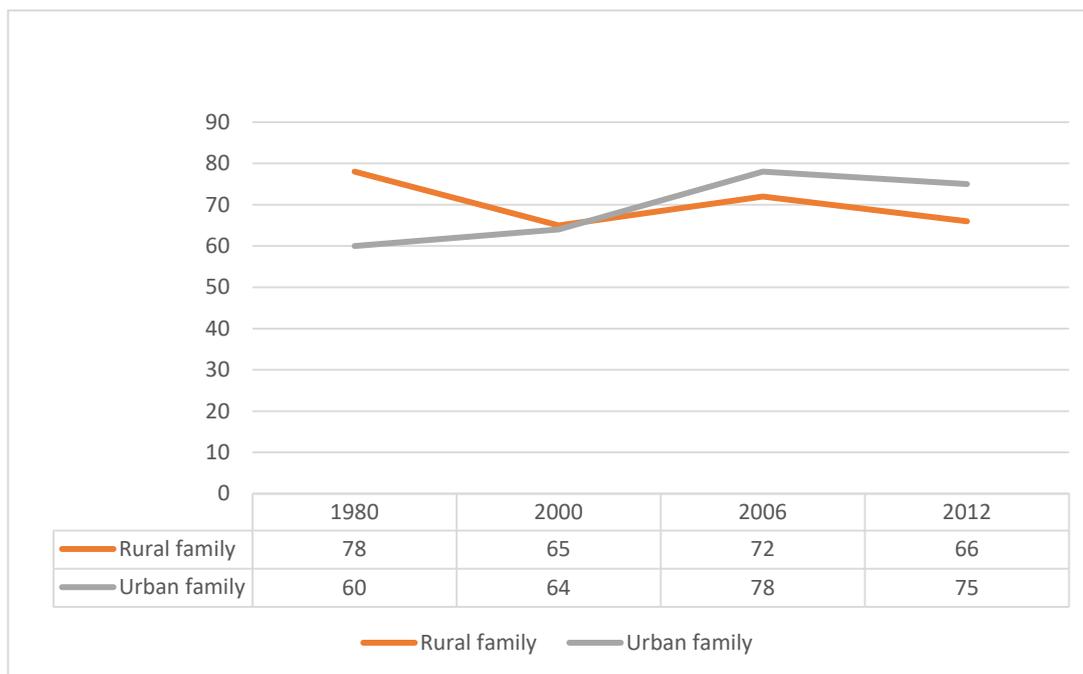


Figure 1: Engel coefficient of rural and urban residents in 1980-2012 (%)

## 2.2 Uncertainty of farmers' income

The direct manifestation of the uncertainty of rural residents' income is that they cannot predict and analyze future income, which will bring a serious psychological burden to the residents' consumption. Most rural residents will not make relevant consumption because of concerns<sup>[2]</sup>.

### 2.2.1 Chaos in rural farmers market

Judging from the rural household income, rural household agricultural production income is at a lower level relative to the city, and the rural market has a higher operational risk. As can be seen from Table 1, the price and cost of rural product production are showing an upward trend, while the price increase is not as good as the cost. There are two reasons for this. One is that agricultural products are essential consumer goods for rural residents, and the local market often has the phenomenon of raising prices<sup>[3]</sup>. On the other hand, due to the impression of national price growth factors, the cost of agricultural products and prices have continued to rise. The continuous increase in costs and the rise in prices have led to a downturn in rural residents, whether trade or consumption<sup>[4]</sup>.

Table 1: Agricultural product price and production cost Table

Year	Agricultural product wholesale price index	Agricultural product production price index	Agricultural product production materials price index
2006	103.45	102.12	108.11
2008	131.39	136.3	118.36
2010	136.63	148.00	139.65
2012	153.79	177.63	155.26

### 2.2.2 Rural employment instability

As shown in Table 2, from 2006 to 2012, the proportion of migrant workers in rural employment in rural areas is increasing. At the end of 2012, there were 260 million people, and this trend is still rising. However, in the actual survey, the income of migrant workers still has uncertainty. Most of the migrant workers who did not sign the relevant labor contracts, the basic construction farmers with higher incomes basically did not sign the relevant labor contracts. The migrant workers' group lacks the stability of their work. Once they are dismissed by the company, they need to spend more

time and energy to find the next job, which makes it difficult for migrant workers to obtain effective protection.

Another major factor in the unstable employment of rural residents is that the cultural level of migrant workers is underground, and most of them do not receive corresponding vocational skills training. As China's information technology continues to rise, technology-intensive industries will gradually occupy the market, and the electronic computer era will continue to occupy the market, and migrant workers have no relevant understanding of this technology, resulting in more effective employment. The group of migrant workers is increasingly in a weak position in employment. Relevant enterprises will not see migrant workers with corresponding technology, and the uncertainty of migrant workers in future income and employment will become more and more obvious.

Table 2: Migrant workers employment scale

Year	Rural employment population(Ten thousand people)	Migrant Workers(Ten thousand people)	The proportion of migrant workers in rural employment
2006	43461	22856	51.82%
2008	41418	22698	54.06%
2010	40523	25268	62.41%
2012	38956	26264	66.21%

### 2.2.3 Migrant workers lack employment security mechanism

The social security mechanism is an important policy to help migrant workers stabilize their income sources. On the one hand, they can help rural residents to obtain a stable source of income in the future. On the other hand, they can subsidize potential risks, such as migrant workers' injuries and diseases. Factors that cause farmers to be laid off and unemployed can be subsidized. At present, the social security system for migrant workers abroad is still not obvious, and the participation in work injury insurance, medical insurance and unemployment insurance is far from enough<sup>[5]</sup>.

### 2.3 The potential of rural residents' consumption development

By understanding and analyzing the current situation of rural consumption, this paper finds that there are serious shortcomings in the consumption of rural residents in China, but it is undeniable that there is a huge room for improvement in rural consumption in China. According to the data of "China Statistics 2013", the raw data of total retail sales of social consumer goods is estimated, and the rural consumption level accounts for 13.62% of the national consumption level. Such a data not only shows that China's rural consumption level is low, but also implies the development potential of rural areas, and accelerating the integration of urban and rural economic development has become the primary goal of China's economic development.

Another group of data from "2013 China Statistics" made urban enterprises pay attention to the rural market. At the end of 2012, the average urban residents in China had 25.6 air conditioners, 23.6 computers and 67.5 washing machines per 100 households; 1.7 air conditioners, 0.7 computers, and 3.6 washing machines. This shows that the electrical appliances of rural households in China are still not widespread, and there are also popular fitness equipment such as range hoods, water heaters and microwave ovens for urban residents, which have hardly been seen in rural areas. These products have a certain market in rural areas, and have a certain role in solving the problem of overcapacity in China's household appliances industry and promoting the sustainable development of the people.

From the perspective of consumption structure, most of the rural consumption is concentrated on "eat" and "wear", that is, food and clothing. Consumption of "traffic and communication", "cultural entertainment and related services", "tourism and travel", "medical and health supplies" is negligible. The rural consumption structure is still at a relatively low level. The reform of the rural consumer industry is an important step in the upgrading of the rural development consumption

structure. This also shows that the Chinese government supports the rural market and further strengthens the rural consumption<sup>[6]</sup>.

### 3. Model establishment of rural residents' income uncertainty

#### 3.1 Consciousness of consumption

In order to understand the uncertainty in consumption, the relevant scholars began to define the consumption behavior of rural residents. The consumption volatility caused by our uncertainty is divided into three periods, and the consumption is effectively classified by t.

1) Unexpected events: The occurrence of accidents often brings certain consumption. For example, various accidents such as diseases and car accidents will bring certain consumption expenses to migrant workers.

2) Foreseeable consumption: children's education expenditure, mortgage, pension insurance and other planned expenditures

3) Irrational consumption: expenditures that were not planned in the previous period, for example, listening to the price increase of salt began to purchase a large amount of salt, and irrational consumption such as the stock profits of the stocks began to enter the stock market, which will affect the level of user consumption.

The above-mentioned consumption will bring about an increase and decrease in the number of base points t, so it is necessary to effectively analyze the factors of consumption uncertainty. There are two ways to analyze the current data. One is to compare the variance and standard deviation of the income of migrant workers between different occupations, different incomes and different regions to replace the uncertainty in income. Another is to use the expected income and century income to calculate the indicators that exist, including the average difference, variance, dispersion, and dispersion rate of common proxy variables with uncertain income. Domestic scholars generally study one type of income uncertainty or study the two together. In order to protect the effect of our experiment, the average rate of increase of income over a period of time is used as the rate of change of expected income, and then the annual pre-revenue value is calculated. After calculating the annual income of the residents, the actual income and the related expected income are subtracted, and the expected income fluctuations are removed, and then the difference between the two is regarded as unpredictable income fluctuation, so as to adjust the difference of income. On this basis, we must maintain a relevant attitude towards consumption<sup>[7]</sup>.

#### 3.2 Establishment of related models

An important branch of Western consumer theory is a strict assumption that is specific to consumption theory. The uncertainty factor is introduced to integrate the consumer's benefit into the function expansion to the common relative risk function or the risk aversion function, so as to analyze the consumer's consumption behavior under uncertainty. In the process of salt, a simple mathematical model was established to further establish the optimal consumption and sustainable income of rural residents. Which is:

$$c_i^* = a + y_i^p + \beta\sigma_y + \mu_t$$

According to the above hypothetical theoretical model, the marginal coefficient of the permanent income of rural residents began to be adjusted. In the general study, the experiment often adopts the hypothesis of weak and persistent income, that is, the marginal coefficient is less than 1. So we can get the model 1.

$$\partial C_x / \partial y_i^* < 1$$

$$\text{Model 1: } \ln C_i = a + \beta_2 \ln y_i^p + \beta_2 \text{EDR}_i + \varepsilon_i$$

$$\text{Model 2: } \ln C_i = a + \beta_1 \ln y_i^y + \beta_3 \text{EDR}_i + \beta_3 \text{LC}_i + \beta_4 \text{RR}_i + \beta_5 \text{INF}_i + \varepsilon_i$$

In the model 2:

$C$  representing the level of permanent income of rural residents;  $y$  indicates the income level of rural residents,  $EDR_i$  expressing the uncertainty of the income of rural residents in China;  $\varepsilon_i$  is random error. By considering the credit that has not been developed in rural areas of China, the economic level must limit the development of China's rural consumer market. Rural residents' consumption is often subject to liquidity constraints and restrictions, so uncertain constraints and some potential consumer factors are used as a reference. And introduce variables such as market interest rates ( $RR_i$ ) and inflation rates ( $INF$ ). Model 2 uses a combination of variables. This model shows that rural residents will have more confidence in future life security after the expected increase in rural residents' income. Uncertain psychological pressure will decrease and rural residents will be promoted. Consumption.

Not only that, the relevant scholars will explore the size and symbol of the index coefficient without lack of sexuality, and draw the uncertainty of the rural residents' uncertainty caused by the change of income uncertainty, and finally explain the impact on the rural residents' consumption behavior.

### 3.3 Prospect theory

According to the change of income uncertainty, combined with the prospect theory in Behavioral Economics, the “foreground theory” uses the form of dummy variables to divide the uncertainty of rural residents. “Foreground theory” is a major achievement of psychology and behavioral science research. The prospect of future development of the theory through realistic development, its theory applied to rural consumer psychology, shows that rural residents will carry out certain risk aversion when faced with access, and There is a certain preference for facing losses. Rural residents are more sensitive to losses than to obtain, so rural residents are more painful than loss and gain. Simply put, it is difficult to offset the pain of being cheated by 50 yuan when you get 50 yuan a day on the road. In 1980, recent research by relevant psychologists showed that this kind of psychology can also occur in the absence of risk, and the characteristics of people's “loss avoidance” are still manifested in all aspects of social development. We have also seen this mathematical relationship in a mathematical relationship and brought it into the relevant mathematical equations, build a new model:

$$\text{Model 3: } InC_i = a + \beta_1(FALL)Iny_i^p + \beta_2(RISE)Iny_i^p + \beta_3EDR_i + \beta_4RR_i + \beta_5INF_i + \varepsilon_i$$

Model 3 effectively analyzes the changes in the income of rural residents, which leads to uncertain psychological changes that may directly affect the consumption behavior of migrant workers and consumerism<sup>[7]</sup>.

## 4. Data validation and related conclusions

### 4.1 data analysis

The text was selected from more than 30 cities nationwide in 2006-2012 to conduct research on related resources. Relevant research was conducted on the income of rural residents in 16 provinces of China. The data comes from relevant statistics of various provinces and cities.

Through data processing, we obtained various panel data of rural residents' consumption, income, consumption uncertainty and income uncertainty, and finally gathered into Table 4.

Table 3: Descriptive statistics of variables

Variable	Mean	Standard deviation	Maximum	Minimum
Rural consumption	649.92	410.26	2594.36	185.36
Rural income	856.264	574.26	3482.36	234.3
Rural residents' consumption uncertainty	1.2563	52.351	395.326	-264.362
Rural residents' income uncertainty	3.264	52.354	445.36	-542.36

In order to avoid the distortion of the data, we have more ways to compare the panel data units with the relevant classification and field survey, as well as related questionnaires. From the relevant data we can draw some conclusions. From mathematical models to data verification, it is not difficult to see that income uncertainty has a certain negative impact on rural residents' consumption, which is also consistent with conjecture, but the relevant data does not deny that income uncertainty has certain consumption for residents. The promotion effect, although not obvious, can be determined that income uncertainty directly affects the consumption behavior of rural residents.

Analysis of disparity data through relevant income and consumer disparity data analysis:

1) When the income of rural residents grows, the more consumer behavior will be, and the amount of transactions formed will also increase.

2) When the coefficient of income adjustment rate is negative, income uncertainty has a hindrance to the growth of rural residents' consumption, and with the increase of uncertainties, the suppression of rural residents' consumption is increasing, and income For every 1% increase in uncertainty, the growth of rural residents' consumption will decrease by 0.42%; in real life, for every 1 yuan increase in the income of migrant workers, the corresponding consumption of rural residents will increase by 0.52 yuan. Moreover, consumption growth is extremely sensitive to the uncertainty of consumption. Once consumption fluctuates, rural residents' consumption will gradually decrease, forming a huge vicious circle.

3) Comparing the uncertainty of income and the uncertainty of consumption have a certain impact on the consumption of rural residents, and related research shows that the effect of consumption uncertainty on rural residents' consumption is greater than the effect of consumption uncertainty on consumption.

4) The uncertainty of rural residents is weakened, and their consumption behavior is also weakening. Compared with the uncertain psychology, the avoidance of rural residents' consumption behavior risks is more sensitive.

5) In other data, when the regression coefficient of liquidity constraint is negative, the consumption expenditure of rural residents in China is restrained by the liquidity constraint, resulting in the fact that the real interest rate is negative. This negative number indicates that rural residents are more concerned about the income benefits of real interest rates. Such data show that rural residents focus on income rather than consumption, and they use more income as a kind of savings. On the one hand, this direct consequence is not conducive to the development of the national economy. On the other hand, when the social economy is in crisis, the savings in the rural hands will be devalued, which will lead to a series of social problems<sup>[8]</sup>.

## 4.2 Conclusion

Through the establishment of models and data analysis, we can understand the impact of rural income uncertainty on rural consumption and effectively manage related influencing factors.

1) Rural residents often face two important decision-making problems when making consumer decisions. One is the uncertainty of income and the other is the uncertainty of consumption. In terms of social welfare mechanism, the employment of migrant workers lacks corresponding guarantees. In terms of income and employment, migrant workers do not have stable employment agreements, and even enterprises are in arrears with wages, resulting in extremely uncoordinated incomes of migrant workers.

2) There is a certain volatility in rural consumption, mainly based on the season. Farmers mainly collect income crops, and these crops are seasonal products. Farmers only know the income of their current year when they harvest. Such income is expected to be estimated in the last quarter, so there is a certain lag effect on the consumption of rural residents. This kind of lag effect has a certain inhibitory effect on the consumption level of rural residents in history. Only by adjusting the consumption plan with more current consumption conditions can this lag effect be broken in order to adjust.

3) From the perspective of the expected consumption of rural residents, the rural residents' forecast deviation adjustment is large, 0.75462. This shows that the rural households' budget for

consumption is not accurate. This is mainly due to rising prices, which is mainly due to the fact that rural residents do not have an accurate positioning of the market environment. Migrant workers are limited by their own educational level and lack of awareness in the information age. They are unable to obtain the latest resources from the Internet, leading to defects in social security awareness and consumption budgeting capabilities.

## **5. Policy suggestion**

With the continuous development of Chinese economy, Chinese economy has begun to face multiple difficulties. Chinese export and investment economic development has been constrained by foreign economic policies. Domestic urban economic development is still slow. The main way to develop rural economy to help China expand domestic demand and increase market economy . Through the above data analysis of the income instability of China's rural residents, we can promote the consumption level of rural residents and develop the national economy through policy adjustments in the following aspects.

The income of rural residents is the main factor affecting the consumption of rural residents. In order to obtain the development of the national economy, it is necessary to raise the income level of migrant workers reasonably and effectively. The main source of income for rural residents is the output of migrant workers and farming. On the one hand, it accelerates the process of agricultural modernization, strengthens the support and protection of agriculture, and increases agricultural subsidies and increases farmers' income. On the other hand, improve the professionalization of the process of migrant workers, and stipulate that enterprises should sign temporary employment agreements when hiring migrant workers in order to improve the competitiveness of enterprises and increase their income.

### **5.1 Perfection of social security system**

We will improve the rural medical security mechanism and increase the care and protection of rural people through the promotion of medical insurance, unemployment insurance, and pension insurance. Such policy adjustments can reduce the barriers to consumption of rural residents and promote the rational consumption of rural residents. At the same time, strengthen the popularization of rural education mechanisms, help more migrant workers understand agricultural knowledge and national culture, thereby increasing the employment rate of migrant workers' industrial industries, guiding industrial and commercial capital into rural markets, and rationally constructing a new model of urban and rural long-term development.

### **5.2 Accelerate the transfer of rural population to urban population**

Accelerate the pace of urban-rural integration, establish a sound unity of agricultural professional population and urban resident status, fundamentally break the boundaries between urban and rural people, improve the employment competitiveness of rural residents in cities, and create inclusive and open public services. The system effectively solves the pressure of rural children entering the city to attend school. Through the transfer of rural residents to urban population, the consumption level of rural residents is stimulated to improve the country's economic capacity.

### **5.3 Establish a sound vocational training mechanism**

Establish and improve vocational training institutions for rural residents, and strengthen rural residents' agricultural development and non-agricultural vocational skills training. Improve the employability of rural residents, help farmers to have better employment, and provide them with employment competitiveness. Through the advantage of skills to protect the employment and self-protection ability of migrant workers, in order to stabilize the income of migrant workers, thereby promoting the consumption of migrant workers.

### **5.4 Perfection of the rural market**

In Chinese, rural market still does not form a certain system, and the marketing model is also the

most traditional store marketing, and there is no corresponding credit market. This series of problems has led to certain restrictions on the consumption awareness and consumption power of rural residents. First of all, we need to make rural residents use and realize the Internet market. Through the gradual popularization of the Internet, the Internet has emerged in rural areas. Then introduce the courier company to help improve the corresponding logistics and expand the market for rural residents. For physical stores, you should constantly update your products to attract customers. Relevant policies should support credit companies to enter the rural market and accelerate the development of the rural market. As far as the current rural market is concerned, education loans, housing loans, and agricultural production and operation loans can all be fully developed. Under the gradual development of credit companies, they can gradually form their own consumer groups, which has accelerated the development of rural urbanization to some extent.

## 6. Conclusion

With the continuous development of Chinese market economy, Chinese economic growth has begun to have some problems. Foreign markets have received the influence of international policies and cannot effectively promote economic growth through import and export and overseas investment. In the domestic market, Chinese urban economy has been in a state of rapid development. However, in recent years, the market has gradually become saturated. Chinese economy needs to open up new markets, and China's untapped rural market has become an important goal of Chinese economic development. Through data models and related analysis, we understand the impact of rural income and income uncertainty on Chinese rural residents' consumption to solve Chinese rural consumption. The problem of low level is to promote the development of Chinese market economy<sup>[10]</sup>

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