

THE IMPACT OF PER CAPITAL NET INCOME AND RETAIL PRICES ON CONSUMPTION IN RURAL CHINA

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Abstract

This article sorted out the data which are our country per capita net income of rural residents per capita consumption, and commodity retail price index in 1990-2016, using modern quantitative analysis tools and correlation analysis to empirical research of data. Finally, we can obtain the following conclusions: Income has an important effect on rural household consumption level. Therefore, in order to improve the level of rural residents' consumption in China, China should improve rural residents' wages, perfect social security system and so on ways.

Key: *Commodity price, Consumptions, Eviews software, Income*

1. Foreword

With the deepening of reform and opening up and the stable prosperity of market economy, the consumption level and quality of life urban and rural residents in China have significantly improved. Rural per capita net income shown a steady upward trend, commodity retail price index fluctuated state (Commodity retail price index refers to reflect a certain period the trend and degree of changes in commodity retail price). During 1990-2012, rural residents per capita consumption, per capita income and commodity price

index changed respectively 16.33 times, 17.01 times and 0.17 times (Data source: national bureau of statistics and statistical yearbook data in 2017 in China). This reflects that income is the most direct and decisive factor affecting rural consumption, while the commodity price index has a relatively small impact on consumption. China is a big agricultural country in developing countries, so the consumption expenditure of rural residents is very important to the development of national economy. The research for resident per capita consumption situation of research is advantageous to the analysis of macroscopic equilibrium and its dynamic economic growth situation. Then, taking effective and reasonable measures promote rural residents income and consumption and improve the economic development of China.

2. Data Collection

In this paper, data resulted from historical the national bureau of statistics and 2017 statistical yearbook data in China and the time span is 1990-2016 years. There are indicators: rural resident per capita consumption expenditure (Y), the per capita net income (X) (I) and commodity retail price.

3. Model Specification

3.1 Scatter diagram

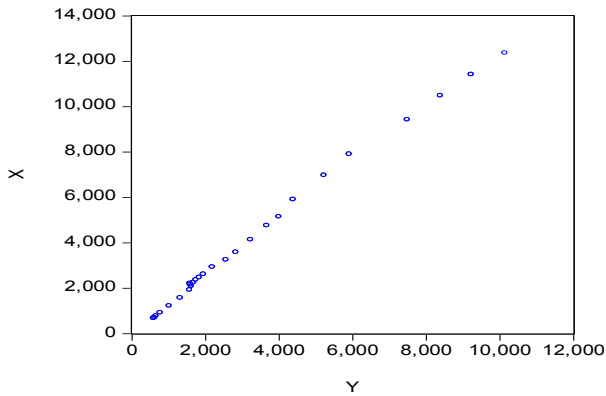


Figure.1 Y and X scatter plots

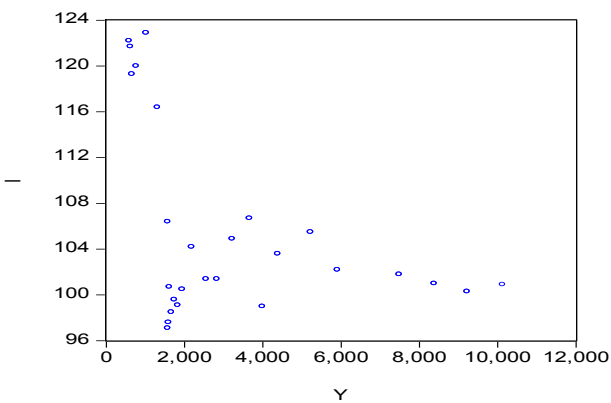


Figure.2 Y and I scatter plots

As shown in fig.1, there is a clear linear relationship between Y and X. In other words, with the increase of rural per capita net income, the per capita living consumption expenditure has also increased. As shown in fig.2, there is a weak linear relationship between Y and I. In other words, with the increase of per capita consumption expenditure in rural areas, the commodity retail price index has had a small fluctuation.

3.2 Correlation Analysis

The correlation coefficient of Y and X is 0.999, indicating that there is a strong linear correlation between Y and X. The correlation coefficient of Y and I is 0.432, indicating that there is a weak linear correlation between Y and I, so a binary linear regression model can be established.

3.3 Construct the Binary Linear Equation Model

$$Y = \beta_1 + \beta_2 X + \beta_3 I + \mu \quad (1)$$

The choice of Variables: Y is the rural resident per capita consumption expenditure (yuan). X is the per capita net income of rural residents (RMB). It is commodity retail price index. μ is a random error term.

$\beta_1, \beta_2, \beta_3$ are unknown parameters. $T = 1, 2, 3, \dots, n$ are sample observation value, using least square method for parameter estimation.

4. Parameter Estimation

According to the parameter estimation results, the following (2) can be obtained:

$$\hat{Y} = -1037.235 + 0.809X + 8.663I$$

<i>t</i>	(-2.619)	(952.575)	(2.427)
<i>p</i>	(0.015)	(0.0000)	(0.023)

$R^2 = 0.998 \quad \bar{R}^2 = 0.998$
 $F = 5270.948 \quad n = 27$

The estimated results show that:

4.1 Test of economic significance.

The results of the model estimate show that the average rural per capita income of rural residents will increase by 0.809 yuan on average, if other variables remain unchanged. The average rural living consumer spending will increase by 8.663 yuan per unit of retail price index. This is consistent with theoretical analysis and empirical judgment.

4.2 Test of goodness of fit.

According to the data in the parameter estimation results, the fitting degree R^2 is 0.998, and the fixed

coefficient of correction \bar{R}^2 is 0.998, which is close to 1. The consequence indicates that the model has a good effect on the sample data fitting as a whole. That is, the explanation variable "rural per capita net income" and "commodity retail price index" explain most of the difference between "rural per capita living consumption expenditure". The meaning of rural per capita living expenditure changes 1 unit, of which 99.8 per cent can be caused by per capita net income and commodity retail price.

4.3 Test of T.

In the case of the significance level α of 0.05, for $H_0: \beta_2 = 0, \beta_3 = 0$, the degree of freedom $n-k=25$

critical value is obtained, which is $t_{0.05}(n-k) = 0.684$.

According to the data of formula (2), the β_2, β_3 absolute value of the corresponding t statistic is 92.579 and 2.427 respectively, which is greater than

that $t_{0.05}(n-k) = 0.684$,

which indicates that in the case of significance level $\alpha = 0.05$, it which is $H_0: \beta_2 = 0, \beta_3 = 0$ should be rejected. In other words, when under the condition of invariable in other explanatory variables, explain variables (X) "rural per capita net income of" and "commodity retail price index" (I) to be explained variable "rural per capita consumption expenditure life" (Y) has a significant effect.

Calculation in the process of t test is the regression parameter significance test: R^2 coefficient is used to test of goodness of fit, main effect is linear correlation and regression model between different variables of the inspection for fitting degree of observed value, namely

evaluation we established by regression model is good or bad.

5. Suggestions

(1)The income level of rural residents has always been the most direct and fundamental factor affecting the consumption expenditure of residents. Therefore, it is very important to raise the salary income of rural residents. On the one hand, once the income of rural residents increases, the consumption level of residents will increase. On the other hand, in the process of life, it can better reflect the economic pulling effect of consumption, so as to ensure the sustainable and steady growth of consumer spending.

(2)The government in the process of income policy, not only need to gradually expand the fiscal policy of rural compulsory education and infrastructure construction such as public products provided, more should pay attention to regulating the commodity retail price, control the speed of rising prices, so as to control inflation.

(3)In the long run, consumption growth also ACTS on income growth, so we should constantly optimize the income distribution of government policies to narrow the gap between income and income of residents. We will accelerate reform of the social security system and constantly improve the social security system. Enhance the sense of security of residents' lives and reduce the degree of uncertainty about the future expenditure of rural residents.

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