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Research on the Marginal Consumption Propensity of Urban and Rural Residents' Clothing Consumption in China

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ABSTRACT
Based on the empirical data of per capita clothing consumption and per capita income from 1992 to 2019, this topic has an empirical study on the marginal clothing consumption propensity of urban and rural residents. The results show that there is a significant positive correlation between clothing consumption and income of urban and rural residents. The total amount of clothing consumption, the proportion of clothing consumption in income and the marginal propensity of clothing consumption of rural residents in China are significantly lower than those of urban residents. Accordingly, this paper presents the related suggestions to increase rural residents' income, promote the development of clothing industry and provide diversified products of clothing.

Keywords: *Dummy explanatory variable, Marginal propensity of consumption, Clothing Consumption*

1. INTRODUCTION

The Proposals of the Communist Party of China Central Committee for Formulating the 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives Through the Year 2035,which were examined and approved in the fifth plenary session of the 19th CPC Central Committee, pointed out that establishing a new development pattern where domestic and foreign markets can boost each other with the domestic market as the mainstay is a strategic choice to raise the level of China's economic development, as well as to forge new advantages in global economic cooperation and competition. The realization of internal circulation is the internal requirement of giving full play to the advantages of China's super large economies. From the perspective of demand potential, China has formed the world's largest and most potential market with 1.4 billion people and more than 400 million middle-income groups. As it moves forward to the ranks of high-income countries, the huge domestic market continues to expand. Clothing consumption is an important part of residents' consumption expenditure. The development of clothing consumption market can not only promote economic development, but also improve the living standards of residents.

There are many literatures on the research of urban and rural consumption in China. Zhang (2007) focuses on the consumption difference between urban and rural areas under the dualism structure, and makes an analysis of mathematical economy by using the price discrimination theory [1]. Zhu, Zhang and Wang (2012) has an empirical study on the impact of different part of the income gap on consumption gap between urban, rural areas, analyses and sorts the impact of operating income gap, property income gap and wage income gap and transfer income gap on consumption gap between urban and rural areas based on the empirical data of China's provinces, areas and municipalities from 2002 to 2009[2]. Guo and Wang(2010) sets a dynamic panel data model of residents' consumption function to estimate the marginal consumption tendency of urban and rural residents in China based on the rational expected consumption function[3]. For a specific industry, there are researches on the information consumption and cultural consumption. Zhang (2017) makes a cointegration test on the information consumption expenditure and income variables of urban and rural residents, and studies the change law of marginal consumption tendency of information consumption of urban and rural residents in China [4]. Huang (2020) uses the panel data of urban and rural areas in 31 provinces from 2007 to 2018 to make a

comparative analysis on the influencing factors of Chinese residents' cultural consumption from the perspective of urban-rural differences.

2. RESEARCH DESIGN

According to the absolute income hypothesis, we set up the following models for per capita clothing consumption and per capita income of urban residents, per capita clothing consumption of rural residents and per capita income of rural residents respectively.

For urban residents:

$$C_{1i}=\beta_{11}+\beta_{12}Y_{1i}+\mu_{1i} \quad i=1,2,3\ldots n_1 \tag{1}$$

For rural residents:

$$C_{2i}=\beta_{21}+\beta_{22}Y_{2i}+\mu_{2i} \quad i=1,2,3\ldots n_2 \tag{2}$$

Among them, C_{1i} represents the per capita clothing consumption of urban residents, Y_{1i} represents the per capita income of urban residents, C_{2i} represents the per capita clothing consumption of rural residents, and Y_{2i} represents the per capita income of rural residents. β_{12} is the marginal consumption propensity of urban residents' clothing consumption, and β_{22} is the marginal consumption propensity of rural residents' clothing consumption.

There may be the following four combinations to compare the possible results of the above two models.

(1) $\beta_{11}=\beta_{21}$ and $\beta_{12}=\beta_{22}$.The intercept and slope of the two equations are the same, that is, the clothing consumption function of urban residents and rural residents is the same.

(2) $\beta_{11}=\beta_{21}$ but $\beta_{12}\neq\beta_{22}$.The intercept of the two equations is the same, but the slope is different, that is, urban residents and rural residents have the same autonomous consumption, but different marginal consumption propensity.

(3) $\beta_{11}\neq\beta_{21}$ but $\beta_{12}=\beta_{22}$.The intercept of the two equations is different, but the slope is the same, that is, urban residents and rural residents have different autonomous consumption, but the marginal propensity to consume is the same.

(4) $\beta_{11}\neq\beta_{21}$ but $\beta_{12}\neq\beta_{22}$.The intercept and slope of the two equations are different, that is, urban residents and rural residents have different autonomous consumption and different marginal consumption tendency.

For the above two models, we can combine them into one model by introducing a dummy variable Di.

$$Ci=\beta_0+\beta_1Yi+\beta_3Di+\beta_4(DiYi)+\mu i \tag{3}$$

When Di is 0, it means rural residents, and when Di is 1, it means urban residents.

$$E(Ci|Di=0,Yi)=\beta_0+\beta_1Yi \tag{4}$$

$$E(Ci|Di=1,Yi)=(\beta_0+\beta_3)+(\beta_1+\beta_4)Yi \tag{5}$$

Model (4) and model (5) represent the clothing consumption function of rural residents and urban residents respectively.

3. EMPIRICAL ANALYSIS

3.1. Data Sources

We selected data from 2013 to 2019. The per capita clothing consumption expenditure of urban households and rural households are selected as the per capita clothing consumption expenditure of urban and rural residents respectively. The per capita disposable income of urban households and the per capita disposable income of rural households are selected as the per capita income of urban and rural residents. The data of urban residents' per capita clothing consumption expenditure, rural residents' per capita clothing consumption expenditure and urban residents' per capita income in 1992-2012 are the same as those in 2013-2019. Due to the availability of data, for the per capita income of rural residents from 1992 to 2012, we select the per capita net income of rural residents as the per capita income of rural residents, and the per capita income of rural residents from 2013 to 2019 comes from the per capita disposable income of rural households.

Since 2013, the National Bureau of statistics of China has carried out an investigation on the income and expenditure and living conditions of urban and rural households. The data in 2013 and later are from this investigation, which is different from the investigation scope, investigation method and investigation standard of urban and rural households before 2013. Therefore, the data of this study can be divided into 1992-2012 and 2013-2019. In order to eliminate the impact of price changes, the income and expenditure data of urban residents and rural residents are converted to the 1991 price level by using the urban consumer price index and the rural consumer price index respectively. The data are all from China Statistical Yearbook. The descriptive statistics of the variables used in this paper are shown in Table 1.

Table 1. Descriptive statistics of variables

Year	Variable	Mean	Std.Dev	Min	Max
1992-2012	Per capita clothing consumption of urban residents (C1)	359.550	147.489	216.390	682.609
1992-2012	Per capita clothing consumption	72.823	30.203	46.201	152.724

	of rural residents (C2)				
1992-2012	Per capita income of urban residents(Y1)	4380.514	2219.656	1866.483	9034.176
1992-2012	Per capita income of rural residents(Y2)	1585.221	717.951	748.806	3235.351
2013-2019	Per capita clothing consumption of urban residents (C1)	1578.099	33.084	1514.620	1603.935
2013-2019	Per capita clothing consumption of rural residents (C2)	533.956	58.898	441.634	618.372
2013-2019	Per capita income of urban residents(Y1)	31283.050	4009.144	25746.110	36737.220
2013-2019	Per capita income of rural residents(Y2)	793.130	138.261	622.598	1013.372

Table 1 shows that in the two sample intervals, the mean of per capita clothing consumption expenditure of urban residents is far greater than that of rural residents, and the mean of per capita income of urban residents is far greater than that of rural residents.

In terms of the mean of per capita clothing consumption expenditure, urban residents were 4.94 times of rural residents in 1992-2012, and urban residents were 2.96 times of rural residents in 2013-2019.From 1992 to 2012, the mean of per capita income of urban residents was 2.76 times that of rural residents. Due to the different statistical indicators of urban residents and rural residents in 2013-2019, it is not comparable.

3.2. Data Processing

First, the unit root test is used to test the stationarity of time series data. We test the per capita clothing consumption of urban residents (C1), per capita clothing consumption of rural residents (C2), per capita income of urban residents (Y1) and per capita income of rural residents (Y2) in 1992-2012 and 2013-2019 respectively. The test results are shown in Table 2.

Table 2. Results of unit root test

Year	Variable	ADF value	1% critical value	5% critical value	Stationarity
1992-2012	Per capita clothing consumption of urban residents (C1)	4.5959	-3.8085	-3.0207	Unstable
1992-2012	Per capita clothing consumption of rural residents (C2)	4.5100	-3.8085	-3.0207	Unstable
1992-2012	Per capita income of urban residents(Y1)	10.9609	-3.8085	-3.0207	Unstable
1992-2012	Per capita income of rural residents(Y2)	11.4493	-3.8085	-3.0207	Unstable
2013-2019	Per capita clothing consumption of urban residents (C1)	-3.2548	-5.1198	-3.5196	Unstable
2013-2019	Per capita clothing consumption of rural residents (C2)	-0.8611	-5.1198	-3.5196	Unstable
2013-2019	Per capita income of urban residents(Y1)	-0.3882	-5.1198	-3.5196	Unstable
2013-2019	Per capita income of rural residents(Y2)	4.4549	-5.1198	-3.5196	Unstable

Table 2 shows that the data of all variables in the two sample intervals are not stable. Therefore, if we want to establish equation (1) and equation (2), we need to carry out cointegration test.

Through regression of equation (1) and equation (2), and stationarity test of residuals, the p value of cointegration test is shown in Table 3.

Table 3. Results of cointegration test

	(1)	(2)
1992-2012	0.0360	0.1151
2013-2019	0.0992	0.0355

Table 3 shows that the test results of equation (1) in 1992-2012 and equation (2) in 2013-2019 show that the cointegration relationship is significant. The test results of equation (1) in 2013-2019 and equation (2) in 1992-2012 show that the cointegration relationship has certain significance, and the regression results of equation (1) and equation (2) are given in Table 4.

Table 4. OLS regression results of equation (1) and equation (2)

Dependent Variable	Variable	1992-2012		2013-2019	
		Coefficient	R-squared	Coefficient	R-squared
C1	C	72.6984*** (5.7530)	0.9712	1401.8810*** (16.5006)	0.4660
	Y1	0.06548*** (25.3238)		0.0056* (2.0887)	
C2	C	8.0796* (2.0151)	0.9425	203.5738*** (6.3545)	0.9562
	Y2	0.0408 (17.6546)		0.4166*** (10.4462)	

Due to the small number of data periods, especially the 2013-2019 sample interval, according to the test results and the needs of research, we further use the dummy variable model for analysis. The regression equation is shown in equation (6), and the regression results are shown in Table 5.

Table 5. OLS regression results of dummy variable model

	1992-2012		2013-2019	
	(1)	(2)	(3)	(4)
C(1)	8.0796 (0.7922)		203.5738*** (4.0823)	
C(2)	0.0408*** (6.9401)	0.0451*** (19.0508)	0.4166*** (6.7109)	0.6667*** (43.2985)
C(3)	64.6188*** (4.681)	72.6984*** (7.8529)	1198.307*** (14.2876)	1401.881*** (13.3522)
C(4)	0.0246*** (3.9840)	0.0204*** (6.7203)	-0.4109*** (-6.6162)	-0.6611*** (-41.9610)

$$CONSUME=C(1)+C(2)*INCOME+C(3)*DUMMY+C(4)*DUMMY*INCOME \quad (6)$$

Table (4) and table (5) show that the autonomous consumption of clothing of urban residents is higher than that of rural residents. The OLS regression results from 1992 to 2012 show that the autonomous consumption of clothing of urban residents is 64.6188 yuan more than that of rural residents. The regression results of dummy variable model without intercept show that the gap is larger, 72.6987 yuan. The OLS regression results from 2013 to 2019 show that the autonomous consumption of clothing of urban residents is 1198.307 yuan more than that of rural residents, and the regression results of dummy variable model without intercept show that the gap is larger, 1401.881 yuan.

From 1992 to 2012, the marginal propensity of clothing consumption of urban residents was 0.06548, while that of rural residents was 0.0408, with a gap of 0.0246. The marginal propensity of clothing consumption of urban residents was significantly higher than that of rural residents. From 2013 to 2019, the marginal propensity of clothing consumption of urban residents is 0.0056, while the marginal propensity of clothing consumption of rural residents is 0.4166. The marginal propensity of clothing consumption of rural residents is 0.4109 higher than that of urban residents. The regression results of dummy variable model without intercept show that the gap is larger, which is 0.6611.

4. CONCLUSION

Through empirical analysis, it can be concluded that there is a positive correlation between per capita clothing consumption and per capita income of urban residents and rural residents, but the clothing autonmacs consumption of rural residents is far lower than that of urban residents. No matter from the growth trend of all data, or comparing the mean value of 1992-2012 and 2013-2019 data, it shows that the growth rate of per capita clothing consumption expenditure of rural residents is faster than that of urban residents, while the growth rate of per capita income of rural residents is slower than that of urban residents. The analysis of the data from 1992 to 2012 shows that the marginal propensity of clothing consumption of urban residents is significantly greater than that of rural residents. Clothing consumption expenditure is an important index to measure people's consumption level and quality of life. According to the analysis results, the following suggestions are given.

Increasing the income of residents, especially the income of rural residents, is conducive to increasing the clothing consumption expenditure and improving the consumption level of residents. Because the income level of residents will affect their marginal propensity to consume, improving the income level is also helpful to improve the marginal propensity to consume clothing of urban and rural residents.

Clothing industry should adjust the style, quantity and quality of products in time according to the needs of residents. So that residents can buy the clothes they

need to improve the level of clothing consumption. In particular, it provides sufficient fashion clothing products for rural areas and preconditions for rural residents' clothing consumption.

At the national level, efforts should be made to improve the logistics infrastructure, improve the logistics consumption environment, promote the development of rural logistics, and make online shopping as convenient in rural areas as in cities.

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