

# The Effect of Urban-rural Integration on the Effect of Rural Residents' Consumption Promotion

## -- Based on Panel Quantile Model Analysis

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### Abstract

Urban-rural integration, as an inevitable choice after urbanization reaches the mid-to-high stage, is of great significance for the coordinated development of urban and rural areas, the building of a well-off society in an all-round way, and the modernization of socialism. In the process of Urban-rural integration, the consumption of rural residents will show an urbanization tendency, which will induce changes in the consumption structure and consumption level of rural residents. However, there is still a certain gap in the disposable income and consumption levels of urban and rural residents at this stage. Therefore, we should speed up the integration of the Urban-rural dual system, promote the process of urbanization of rural residents, increase rural incomes, and increase residents' consumption ability, so as to further promote the upgrading of rural residents' consumption and meet the needs of the people. The growing need for a better life.

### Keywords

Urban-rural Integration; Rural Residents; Consumption Upgrade; Panel Quantile Model.

### 1. Introduction

According to economic data released by the National Bureau of Statistics, the total retail sales of consumer goods in 2018 reached 380,987 billion yuan, an increase of 9.0% over the previous year. At the same time, retail sales of consumer goods in rural areas increased by 10.1%, surpassing urban consumption growth for seven consecutive years. Activating the rural market is of great significance to expanding domestic demand and stimulating consumption, and it also injects strong impetus into high-quality economic development. The process of economic development is also a process of continuous transformation of social stages. With the advancement of industrialization and urbanization, the Urban-rural dual structure that exists in developing countries will inevitably change to Urban-rural integration. Urban and Rural Integration.

Under the background of globalization, if the consumption status of rural residents is not paid attention to, it will be difficult to realize the real urbanization of rural residents and the coordinated development of urban and rural areas. According to the World Bank's classification of economies, Zhengzhou's per capita GDP in 2007 exceeded US\$4,000, and it officially entered the "upper middle income" stage. The living standards of residents at this stage may undergo rapid changes. Therefore, this article selects Zhengzhou rural residents since 2007. Consumption related data analyzes the changes in consumption of rural residents, and attempts to explain the upgrade of rural residents' consumption from the perspective of the promotion of Urban-rural integration. [1].

## 2. Literature Review

Xu Manyun, Yang Deqi, and Zhang Huirong (2020) proposed that the application of digital technology has promoted the continuous development of my country's financial market. Digital financial inclusion effectively solves the problems of high cost, high threshold and low efficiency in traditional finance, and better satisfies the edge Financial needs of residents in the zone. Taking Yunnan Province as an example, the study uses empirical data from 2011 to 2018 to analyze the impact of digital financial inclusion on the income gap between urban and rural residents in Yunnan Province, showing the depth of use of digital financial inclusion And the coverage is stronger than that of traditional finance and inclusive finance, which has better narrowed the income gap between urban and rural residents[2].

Wang Yingzi (2020) uses panel data from 27 prefecture-level cities in my country's Yangtze River Delta to measure my country's digital financial inclusion and Urban-rural income gap through the Sarma Index and Theil Index, and examines the relationship between digital financial inclusion and Urban-rural income. The relationship between the gaps also shows that the availability of financial services is a key factor affecting the income gap between urban and rural areas in digital financial inclusion, which can better realize the optimal allocation of financial resources. Yin He, Jiang Hongli, Zhang Caijing, Jiang Pengcheng (2020), based on national sample data, used the spatial Dubin model to empirically study the spillover effect of the development of digital financial inclusion on the Urban-rural income gap, and further explored the impact of different dimensions of digital financial inclusion on urban and rural income gaps.

The degree of response to the income gap. The study shows that my country's digital financial inclusion development has not yet responded to the Urban-rural income gap as a whole. However, the different dimensions of the digital financial inclusion development respond to the Urban-rural income gap with heterogeneity. The Urban-rural income gap has a good response effect, but the coverage and depth of use of digital financial inclusion have not produced a good response to the Urban-rural income gap[3].

## 3. Theoretical Mechanism

In general, the development of digital financial inclusion is closely related to the lives of residents. Existing research has explored the relationship between digital financial inclusion and urban and rural residents' income, income gap, and consumption and consumption gap. The gap and the income gap between urban and rural residents are integrated together to test the dynamic relationship between the development of digital financial inclusion and the income gap between urban and rural residents and the consumption gap between urban and rural residents.

## 4. Establishment and Analysis of the Model

### 4.1. Variable Selection and Data Description

Financit represents the development of digital inclusive finance in various provinces, autonomous regions and municipalities. It refers to the general literature and uses the data calculated by the Peking University Digital Finance Research Center and the Ant Financial Group Joint Research Group. The data includes the two years of 2011-2015 and 2016-2018. In this stage, the data for 2019 and 2020 have not been calculated for the time being. Therefore, this paper uses the data from 2016 to 2018 to obtain the approximate value of 2019 by linear fitting, and obtains the data of the development of digital financial inclusion from 2011 to 2019. Selection of relevant control variables: select the level of regional economic development (measured by GDP), the level of residents' income (measured by the per capita disposable

income of urban and rural residents), industrial structure (measured by the proportion of tertiary industry), and social security situation (measured by Social insurance participation rate measurement) as a control variable that affects the consumption gap.

The original data and related control variable data for the calculation of Theil index come from the local statistical yearbooks and EPS data platforms of various provinces over the years. The development of digital financial inclusion comes from the Digital Finance Research Center of Peking University (measured by linear regression based on the data in 2019). The variables that appear in the form of scale variables are processed by logarithm[4].

### 4.2. Build Panel Quantile Regression Model

This part builds a panel quantile regression model to conduct an empirical analysis of the consumption promotion effect of tax cuts and fee reductions in the context of the new dual-cycle development. The panel quantile regression model is also a weighted minimization residual error that modifies the traditional linear panel model. The regression estimation method of the sum of absolute values, in the form of:

$$Y_{it}(T | X_{it}, D_{it}) = \alpha_i + \beta_T X_{it} + \theta_T D_{it} + \varepsilon_{T,it} . \tag{1}$$

Among them:  $Y_{it}$  is the explained variable,  $X_{it}$  is the explanatory variable,  $D_{it}$  is the control variable,  $\beta_T$  and  $\theta_T$  are the marginal effect parameters at the  $T$ th quantile, and  $\varepsilon_{T,it}$  is the unobserved random item.

In the traditional mean linear model, all sample points are given the same weight in the estimation procedure, so the relative importance of the sample points has nothing to do with the position of the sample points in the sequence; and in the quantile represented by equation (1) in the numerical model, the relative importance of the sample points is constrained by the weight of the sample points in the sequence. The sample points within a given quantile level are given a higher weight.

Taking into account the incompleteness of the data of Tibet, Hong Kong, Taiwan, and Macau, this paper finally selects the panel data of 30 provinces, autonomous regions, and municipalities in my country for empirical research from 2011 to 2019. The specific empirical research content is divided into two parts. The first part is the research on the effect of the development of digital financial inclusion on the consumption gap between urban and rural residents. The development level of financial benefits is divided into two groups (high-level and low-level groups) to examine the differences in the impact of digital financial inclusion on the consumption gap between urban and rural residents under different development levels of digital financial inclusion; the second piece will include the Urban-rural income gap. The intermediary variable examines the intermediary effect of the Urban-rural income gap in the impact of the development of digital financial inclusion on the consumption gap between urban and rural residents, and also examines the difference in the impact of different levels of digital financial inclusion.

Therefore, the parameters  $\beta_T, \theta_T$  and  $\varepsilon_{T,it}$  are actually conditional estimates under the conditions of a given quantile and a sample set  $\{Y_{it}, X_{it}, D_{it}\}$ . In the estimation procedure, the panel quantile model described by equation (1) is estimated by minimizing the conditional loss function in equation (2):

$$\min_{\alpha_i, \beta_T} \sum_{T=1}^{T=M} \sum_{i=1}^{i=N} \sum_{t=1}^{t=T} |W_T L_T| . \tag{2}$$

Among them:  $WT$  is the weight of the quantile of  $T \in (1, 2, \dots, M-1, M)$ ;  $LT$  is the loss function of the panel quantile model parameter estimation,  $LT$  is expressed by equation (3):

$$L_T = Y_{it}(T | X, D_{it}) - (\alpha_i + \beta_T X_{it} + \theta_T D_{it}) + \lambda \left( \sum_{i=1}^{i=N} |\alpha_{T,i}| \right). \quad (3)$$

The panel quantile model can not only effectively eliminate the normal distribution assumption based on the minimum residual square sum panel model for the unobserved residual items; it can also analyze the heterogeneity and adjustment of the parameter values at different locations in the sample interval. Direction to better reflect the rich information in the sample data set. Therefore, this study chooses the panel quantile model for empirical analysis to improve the value and accuracy of the research.

### 4.3. Descriptive Statistical Analysis

The empirical results found that the effect of the development of digital financial inclusion on the consumption gap between urban and rural residents is negative and statistically significant. This indicates that the development of digital financial inclusion does have a significant effect on reducing the consumption gap between urban and rural residents, regardless of whether it is all At the sample level, whether it is a region with a low level of digital financial inclusion, or a region with a high level of digital financial inclusion, Both have significant results. However, in comparison, areas with a higher level of digital financial inclusion have a stronger effect on reducing the consumption gap between urban and rural residents, which is more consistent with theoretical expectations and reality. In fact, digital financial inclusion is essentially the use of the Internet, big data, cloud computing and other science and technology to broaden the coverage of financial services, increase the depth of financial services, and make it difficult to cover rural financial services through the empowerment of digital technology.

Can achieve wide coverage of financial services[5].

With the expansion of the breadth and depth of digital inclusive financial services, rural residents can enjoy almost the same financial services as urban residents, which provides a basis for rural residents' advanced consumption or the use of financial resources to expand consumption, and stimulates rural residents' consumption. Vitality has released the consumption potential of rural residents, which has been better confirmed by reality. The most typical example is that Internet financial technology companies represented by Tencent and Alibaba have launched consumer financial products such as Micro Loan, Huabei, and Borrowai, so that rural residents can obtain consumer financial services anytime and anywhere for consumption, breaking the credit cards provided by traditional banks. More applicable to the limitations of the scope of urban residents' consumption, the convergence of financial products and financial services for urban and rural residents has led to a narrowing of the consumption gap between urban and rural residents to a certain extent. However, it can also be seen from the estimation results that in areas with a high level of digital financial inclusion, digital financial inclusion has a stronger effect on narrowing the consumption gap between urban and rural residents.

The consumption stimulus effect of residents is not much different, and the acceptance of digital financial inclusion by urban residents is relatively similar, but for rural residents, there are greater differences. Generally speaking, in areas with a high level of digital financial inclusion, the level of rural economic development is generally higher, and the education level of urban and rural residents is also similar. They are more avant-garde in their thinking, and rural residents have relatively stronger access to and acceptance of digital financial products and services. In areas with a low level of digital financial inclusion, rural residents have less

exposure to digital financial products. And the acceptance of digital financial products is lower, and the thinking is relatively conservative, which leads to unwillingness to achieve higher levels and better advanced consumption through consumer finance, which in turn leads to overall bias in consumer spending and consumption levels. Low, the consumption gap between urban and rural residents has widened.

## 5. Research Conclusions and Policy Implications

The expansion of urban agglomerations and urban functions has enabled more rural residents to integrate into urban life and changed the traditional way of life. After 2008, the consumption propensity of rural residents (average consumption expenditure per capita of rural households/ disposable income per capita) is higher than that of urban residents and is consistent with the trend of urban residents' consumption propensity curve. This explains the rural residents in the process of Urban-rural integration. The consumption habits and consumption levels of urbanization are developing. The equalization of public services is of great significance to guarantee the basic survival and development rights of rural residents, and to improve the consumption level of residents. Compulsory education is an important area of public services, and improving the quality of rural education is the focus. This will inevitably enable rural residents to enjoy higher-quality educational resources, and at the same time reduce the education costs of rural residents, especially children from poor families. The establishment and improvement of the social security system has provided rural residents with good consumption expectations and solved a large extent of "worries for the future."

In this way, the potential consumption demand of rural residents is converted into actual consumption willingness. For example, the consumption structure of the Urban-rural integration medical security system will inevitably be reflected in the reduction of the proportion of medical expenditures in total consumption expenditures, and the consumption structure will be more reasonable. The development and improvement of public infrastructure, such as the promotion of transportation, cable television, telecommunications networks, gas, and electricity, have brought huge convenience to the lives of rural residents, and will lead to an increase in transportation and communication expenditures and cultural and entertainment consumption. Therefore, in the process of Urban-rural integration, the consumption structure will continue to upgrade. The upgrade of the consumption structure can also be seen from the continuous decrease in the Engel coefficient of rural residents. In 2007, the Engel coefficient of rural residents was 0.309, and in 2017 it was only 0.220.

The advancement of Urban-rural integration has changed the traditional consumption habits to a certain extent, leading to a decline in the rate of food self-sufficiency. This commercialization of food consumption will make rural residents no longer rely solely on the consumption of self-produced grains, which in turn will increase the food expenditure of rural residents, and the consumption will show a trend of diversification and diversification. At the same time, the process of Urban-rural integration will lead to urbanization of rural residents' consumption concepts and consumption habits, such as paying more attention to "eating well" instead of just pursuing "satisfaction" in the past. The integration of urban agglomeration construction has given rural residents more employment options, and their income has steadily increased, which has fundamentally improved the consumption capacity of rural residents. As income growth and total consumption expenditure continue to increase, consumption levels will also continue to rise, which can be reflected in more comprehensive nutritional intake and more diversified sources. In order to confirm this point of view, this paper adopts direct method to calculate the nutrition calculation method, draws on Zhang Chewei, Cai Fang (2002) and other studies, adopts the average consumption of main consumer goods per person in rural households in the "Statistical Yearbook of Zhengzhou City" as Basic data, on this basis, calculate

the food source composition of protein and fat intake based on the data in the "Food Composition Table". In the process of nutrition calculation, first, according to the statistics of Zhengzhou Municipal Bureau of Statistics, the food is divided into eight groups.

At the same time, the classification of Li Guojing and Chen Yongfu (2018) is referenced. In view of the availability of data and the convenience of calculation, only part of each group is selected. Food, namely grain (rice, flour), cooking oil (vegetable oil), pigs, cattle, sheep, poultry (chickens, ducks), eggs (eggs), fresh milk (milk), vegetables (fresh vegetables (average)), aquatic products (Aquatic products (average value)), wine (beer (average value)), sugar (white sugar). Secondly, according to the protein and fat content of each food in the "Food Composition Table", calculate the total amount of protein and fat of residents, that is, where  $k=1$  and  $2$ , which represent protein and fat respectively.  $Q_{ki}$  represents the  $k$ -type nutrition of the  $i$ -th food, and  $Q_i$  represents the consumption of the  $i$ -th food. Finally, according to the formula to calculate the food source composition of protein and fat. From the composition of food sources of protein and fat (Table 1), it can be seen that the sources of protein and fat of rural residents in Zhengzhou are more diversified, the dietary structure is more diversified, and the quality of life is more focused. The increase in life expectancy of rural residents in Zhengzhou in recent years can also support the view that the living standards of rural residents continue to improve.

The Urban-rural dual system accelerates the integration. Although my country's overall economic development continues to improve, it is undeniable that there is still a certain gap between rural and urban economic levels, and there is a certain imbalance in urban and rural economic development, and economic imbalance will inevitably lead to differences in consumption levels. The most critical reason for this phenomenon is that the long-standing dual system has not been eliminated, and there has been an imbalance between industrial development and agricultural development. Therefore, at this stage, we should speed up the development of Urban-rural integration, make full use of the advantages of rural area development, and coordinate development with cities.

Speed up the process of urbanization of rural residents. The promotion of Urban-rural integration is not simply transforming, repairing or rebuilding the countryside, but pursuing a new countryside that develops in harmony with the city at a higher level. The urban carrying capacity is temporarily unable to accommodate the huge rural population. In the process of Urban-rural integration, the level of rural public service construction can be improved, and the industrial layout can be combined with regional characteristics, so that rural residents can be urbanized on the spot. This change in urbanization has an important impact on the changes in rural residents' consumption concepts.

Vigorously increase rural incomes and increase residents' spending power. Income growth has always been a prerequisite for an increase in consumption and a qualitative improvement. How to increase farmers' income is a fundamental issue in promoting the consumption upgrade of rural residents. Therefore, the government must strengthen its support for rural construction, promote the level of new rural construction, develop modern agriculture, and work together to increase the income level of rural residents through a multi-pronged approach.

## Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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