

An Empirical Analysis of Income and Consumption Patterns of Rural Residents

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Abstract Based on the empirical analysis of the income and consumption of rural residents, the present paper discusses the reasons for the weak growth of income and the lagging consumption of rural residents in China. Finally, it comes up with some recommendations and measures to increase the income of rural residents, promote the consumption of rural residents, and open up the rural market.

Key words Income of rural residents, Consumption level, Engel's coefficient

0 Introduction

Household consumption has always been a hot topic in social and economic research. After China's economy entered the new normal, its economic growth has slowed down significantly. As one of the traditional 'three key drivers' of economic growth, the insufficient household consumption demand has resulted in an inadequate driving force on the economy, which stands as a critical contributing factor. This highlights the role of household consumption in social economic development. As rural residents who occupy half of China's population, the impact of their consumption capacity on economic and social development should not be ignored, especially the huge consumption potential of rural residents. In recent years, the income and consumption growth of rural residents has been relatively slow, which is very unfavorable for China's economy to expand domestic demand and promote high-quality economic development. How to effectively boost rural household incomes and stimulate rural household consumption is crucial to the overall economic development, serving as a vital component in building a prosperous China, realizing the Chinese dream, and achieving the second centenary goal of China (the second centenary goal of China refers to building the country into a modern socialist nation that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful by the time China celebrates its centenary in 2049. This goal aims to reach the level of moderately developed countries.)^[1].

1 Analysis of the current situation of rural residents' income

From the perspective of per capita disposable income of rural households, if indexed in 1978, it was 489.6%, 1020.10%, and 2144.2% in 2000, 2010, and 2020, respectively. In the

same period, the corresponding per capita disposable income index of urban households was 382.3%, 948.5% and 1728.4%. In other words, the per capita income growth of rural residents is slightly higher than that of urban residents, but because of the huge gap between the two bases, the income gap has increased from 2.74 times in 2000 to 2.99 times in 2010, and dropped to 2.56 times in 2020.

The per capita disposable income of rural residents mainly comes from wage income and net operating income, the proportion of net transfer income is relatively low, and the proportion of net property income in the disposable income of rural residents is basically negligible. From 2000 to 2021, the proportion of net property income is only about 2%, so we mainly examine wage income, net operating income and transfer payment income. The proportion of wage income increased from 31% in 2000 to 40% in 2010, and slightly increased to 41% in 2020. After 2010, the wage income basically remained at about 40%, accounting for nearly half of the country. The proportion of net operating income decreased from 63% in 2000 to 48% in 2010, and further decreased to 35% in 2020. The proportion of transfer payment income increased from 3% in 2000 to 7.6% in 2010 and 21% in 2020. It can be seen that, by comparison, wage income and transfer payment income are the main driving forces for the income growth of rural residents. In order to describe the sources of income increase of rural residents in more detail and clearly, we give the elasticity coefficient between wage income, net operating income, transfer payment income, net property income and disposable income (2015–2020):

$$\text{Calculation formula: } e_i = \frac{\beta_i - \beta_{i-1} - 1}{\beta_{i-1}} \bigg/ \frac{\alpha_i - \alpha_{i-1}}{\alpha_{i-1}}$$

where β_i denote wage income, net operating income, and transfer payment income, and α represents disposable income, t denotes time.

In terms of the elasticity coefficients of wage income, net operating income, transfer payment income and net property income (Table 1), the four types of income always have a positive effect on disposable income. During the period from 2015 to 2019, the elasticity coefficient of wage income was always greater than 1, indicating that the ability to pull up disposable income was relatively strong. The sudden drop to 0.345 in 2020 was due to the special circumstances in 2020, not the result of normal economic opera-

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tion. The elasticity coefficient of net operating income was always less than 1, indicating that the ability to pull up disposable income was insufficient and needed to be further strengthened. The elasticity coefficient of transfer payment income was always greater than 1, and the elasticity coefficient was larger in the four types of income, indicating that the ability to pull up disposable income was relatively strong, and the reason for the sudden decline in 2020 was the same as that of wage income. The elasticity coefficient of net property income was always greater than 1, and the elasticity coefficient was the largest among the four types of income, indicating that the ability to pull up disposable income was the strongest, but the proportion of net property income in per capita disposable income of rural residents was very low, so from the absolute number of rural residents' income, the effect of net property income on increasing disposable income of rural residents is minimal. Generally speaking, in recent years, the growth of disposable income of rural residents is related to the four types of income, but in terms of the degree of pulling up, wage income and transfer payment income play the most effective role, followed by net operating income, and finally net property income.

Table 1 Elasticity coefficient of different income sources in 2015 – 2020

Year	Wage income	Net operating income	Transfer payment income	Net property income
2015	1.212	0.705	1.131	1.467
2016	1.116	0.645	1.546	1.052
2017	1.105	0.701	1.374	1.342
2018	1.029	0.748	1.384	1.462
2019	1.014	0.785	1.345	1.056
2020	0.345	0.323	0.651	0.389

2 Analysis of the current situation of rural residents' consumption

2.1 Changes in consumption structure Consumption structure refers to the proportion of all kinds of consumption expenditure to the total living consumption expenditure. In the opinion of Engel, a German economic statistician, with the improvement in living standards, the relative proportion of food expenditure will decrease. Later, people call the ratio of food expenditure to total consumption expenditure Engel's coefficient. The standard of the Food and Agriculture Organization of the United Nations is that the Engel's coefficient below 0.39 is rich, 0.4–0.49 is well-off, 0.5–0.59 is adequate food and clothing, and above 0.6 is barely living. The Engel's coefficient of rural residents dropped from 0.48 in 2000 to 0.38 in 2010 and 0.33 in 2020, with an obvious downward trend, which, on the one hand, is due to the government policy tendency and the fact that urbanization provides more job opportunities for rural residents, and the income of rural residents has shown a gratifying change. On the other hand, it is due to the change of consumption concept of rural residents, they gradually pursue high utility and diversification of consumption^[2]. According to the standard of FAO, the overall consumption of rural residents in China has achieved digital affluence, but it should be noted that this is a low level of well off, or digital well off, not re-

al well off. The top three consumption items of rural residents are: food, housing and clothing or culture, education and entertainment in most years before 2010, specifically, food, housing and clothing before 1990, food, housing and culture, education and entertainment from 1990 to 2010, and food, housing and transportation and communication after 2010. From the perspective of changes in the main components of rural residents' consumption, so far, food and housing are still the two most important expenditures, with the total proportion of the two in 1990, 2000, 2010 and 2020 being 76%, 65%, 60% and 54%, respectively. The reduction of food and housing expenditure is mainly used to subsidize transportation and communication, culture and education, and health care, especially after 2010, the expenditure on transportation and communication has increased rapidly. The change of rural residents' consumption expenditure shows that their consumption is turning to a higher level and diversified direction. Rural families pay more and more attention to their children's education, and have more and more contacts with the outside world. The degree of openness in rural areas is constantly improving^[3].

2.2 Marginal propensity to consume (MPC) According to the time series data of disposable and living consumption expenditure of rural residents, the total demand function obtained by monadic linear regression is (values in parentheses are *t*-statistics):

$$\sum P_i X_i = 499.14 + 0.523Y$$

$$R^2 = 0.912 \quad (3.50) \quad (7.88)$$

The equation indicates that the marginal propensity to consume of rural residents is 0.523, that is to say, 52.3% of the increased net income of rural residents will be used for living consumption. There is a big gap between this and the marginal propensity to consume 0.779 of urban residents. On one hand, this indicates that China's current rural consumer market has not yet been effectively developed, and rural residents' consumption willingness remains relatively weak, which may be related to the existing supply structure and volume of rural products and services^[4]. On the other hand, it demonstrates that rural residents bear relatively heavy burdens while having comparatively low income levels. Therefore, increasing rural residents' income and reducing their burdens have become the top priority of the government's current work concerning agriculture, rural areas, and farmers.

3 Reasons for the slow growth of rural residents' income and the lag of consumption

The rural market has several times the number of consumers in the urban market, but the total consumption is much lower than that in the city. If we look at the per capita consumption, the difference between urban and rural areas is even greater. The difference between urban and rural marginal propensity to consume is 0.256, which is almost half of the rural marginal propensity to consume. There are many reasons why the consumption of rural residents lags behind at this stage, and the most fundamental reason is that the income of rural residents grows too slowly.

3.1 Reasons for the slow growth of rural residents' income

3.1.1 The effectiveness of the state's policies to increase rural residents' income remains to be enhanced. Since 2000, China has implemented multiple agricultural restructuring policies. Both the

19th and 20th National Congresses of the Communist Party of China have issued numerous guiding principles regarding rural income growth, aiming to elevate rural residents' earnings. However, the actual outcomes in boosting rural incomes have yet to show substantial improvement. Another relevant policy initiative is agricultural industrialization, which seeks to integrate scattered small-holder farmers through leading agribusiness enterprises. This approach intends to achieve dual objectives: enabling rural residents to share in value-added benefits while enhancing agricultural competitiveness. Nevertheless, a practical challenge persists: these leading enterprises, operating as commercial entities rather than rural cooperatives, adhere strictly to profit-driven market principles. Consequently, their willingness to transfer substantial benefits to rural residents remains limited.

3.1.2 Insufficient enforcement of economic policies related to agriculture, rural areas and farmers. For a long period, China's development model has prioritized rapid industrialization and urban-centric industries, while the implementation of economic policies pertaining to agriculture, rural areas, and farmers has remained inadequate to a certain extent. This constitutes the institutional root cause of the persistently low and slow-growing income levels among rural residents. The specific manifestations include: firstly, disproportionate emphasis has been placed on developing industrial sectors and their supporting economic domains (transportation, construction, mining) at the expense of agricultural development; secondly, comprehensive provision of public goods (basic livelihood security, education, healthcare, pension systems) has been ensured for urban residents, whereas corresponding public service allocation in rural areas remains markedly inadequate, essentially forcing rural residents to rely on self-reliance; thirdly, the credit fund distribution exhibits a paradoxical pattern: capital outflow persists in capital-deficient rural regions, while affluent urban areas continue to attract capital inflow, resulting in diminished developmental momentum in rural areas^[5].

3.1.3 Agricultural development lags behind, which makes rural education level seriously low for a long time. The level of education seriously restricts the income growth of rural residents, and the transfer of rural labor force and the upgrading of agricultural industry are positively correlated with the level of education of rural residents^[6]. Therefore, providing education support to rural areas, providing free vocational training and implementing free compulsory education are important measures to change the backward situation of rural areas and increase the income of rural residents.

3.2 Reasons for the lagging consumption of rural residents

(i) The income directly restricts consumption, and the fundamental reason for the lagging consumption of rural residents is the slow growth of income, which leads to the lack of effective demand and purchasing power of rural residents. By the end of 2021, the rural population accounted for 35.28% of the total population, while the rural retail sales accounted for only 12.6% of the total retail sales, that is, the rural population, which accounted for more than 1/3 of the total population, purchased only 1/8 of the total retail sales. Behind this figure, there is a huge income gap between urban and rural areas, so the realization of rural residents' income is

closely related to the promotion of rural residents' consumption.

(ii) The unoptimistic consumption expectation of rural residents and the lack of consumption confidence are the important constraints of the weak consumption demand in rural areas. As can be seen from the consumption of rural residents, the consumption to meet the basic needs of food and housing is the mainstream consumption. With the increasing emphasis on education, rural residents are paying more and more attention to the cultivation of their children's cultural quality. Education expenditure has gradually become one of the main expenditures of rural residents. The deepening of education reform has greatly increased the expected expenditure of rural residents. Paying high education fees for their children has become a major burden for rural households.

(iii) The backwardness of rural infrastructure and the supply of rural public goods have seriously restricted the consumption of rural residents. Relatively backward infrastructure closely related to rural residents' lives, such as power grid, communication facilities, tap water supply, roads, *etc.*, limits rural residents' demand for high-end household appliances, communication services, automobiles and other commodities to varying degrees. There are the following problems in the supply of rural public goods: too much supply, which exceeds the demand of rural residents, resulting in excessive burden on rural residents; the supply structure is not suitable for the demand structure of rural residents, and the effective supply is insufficient, which increases the undue burden on rural residents; the cost of public goods is unfairly shared, which aggravates the burden on low-income rural residents.

4 Measures and recommendations for increasing rural residents' income and promoting rural residents' consumption

As the largest income and consumption group in China, the income and consumption of rural residents is a major problem in China's economic development. To properly solve the problem of slow income increase and lagging consumption of rural residents is the top issue we are facing. In this regard, we came up with the following recommendations.

4.1 Increasing investment in agricultural infrastructure and transforming the backward situation of rural infrastructure

Developed countries attach importance to the construction and investment of agricultural infrastructure, and further increase their support in the process of changing the way of agricultural production from direct to indirect. Data show that in the United States, Canada, Britain, Australia and other agricultural developed countries in the early 21st century, the government's financial support for agriculture is equivalent to 25% of agricultural GDP, and even higher in Japan, Israel and other countries. Even in developing countries like India, the proportion of agricultural expenditure in agricultural GDP has reached 10%^[7]. According to *China Statistical Yearbook*, fiscal agricultural expenditure accounted for 5% of agricultural GDP in 2000, 8% in 2010 and 13% in 2020. For a long time, the total amount of fiscal support for agriculture in China has been insufficient. Relatively speaking, China's agricultural infrastructure is still very weak, and the ability to resist natural disasters is not strong. Only by constantly increasing the con-

struction of agricultural infrastructure can we consolidate and improve agricultural production capacity.

4.2 Reforming the rural financial service system and providing financial support for rural development Rural development requires a lot of financial support. Relatively speaking, the ability of rural areas to absorb funds is not the same as that of cities. At present, China's agriculture and rural work are in a new stage of development, showing new characteristics: the market supply and demand relationship of major agricultural products has undergone important changes, from shortage to the basic balance of supply and demand, more than a year of prosperity; with the development of marketization and the acceleration of urbanization, agriculture and industry, rural residents and citizens, rural and urban interdependence is getting higher and higher; the main source of income growth for rural residents has undergone major changes, gradually shifting from agricultural industries to non-agricultural industries; the motivation for the transfer and movement of surplus labor has undergone major changes, and many rural residents have become workers, citizens and business owners through part-time work. The biggest problem brought about by these new changes is that rural residents need more financial support to improve their living standards, so the development of rural finance has become an important condition to ensure rural economic development. Faced with the long agricultural production cycle, small scale, weak borrowing capacity of rural residents, low guarantee capacity and credit level, and high loan costs, to develop the rural financial service system, we must first further deepen rural financial reform, strengthen the restraint mechanism, enhance service functions, appropriate state support, and local governments are responsible. In addition, various regions are required to adapt agricultural finance to local conditions, choose appropriate models for their own characteristics, and pilot different forms of property rights, so as not to engage in one-size-fits-all. It should be said that this kind of reform can more highlight the function of finance to serve "agriculture, farmers, and rural areas".

4.3 Improving the supply of public goods in rural areas and creating a good consumption environment for rural residents

The public goods are quasi-public goods, including electricity, telecommunications, radio and television, tap water and other products. Power companies should transform rural power grids to ensure the stability of power operation in rural areas, which will inevitably stimulate the consumption of rural electricity and household appliances. Water supply companies should improve rural water facilities and water quality, popularize tap water, and improve the water use conditions of rural residents. The communications sector should improve the signal coverage rate in rural areas, which can not only promote the consumption of household appliances by rural residents, but also through these media to educate rural residents on consumption and guide them to establish correct consumption concepts, thereby promoting the expansion of the rural market.

4.4 Establishing a new social security system and constantly improving the rural social security system The report of the 20th National Congress of the Communist Party of China explicitly states: "improving the social security system, improving a multi-

level social security system that covers the whole people, coordinates urban and rural areas, is fair and unified, safe and standardized, and sustainable, and expands the coverage of social insurance" points the way for improving the rural social security system. According to this requirement of the central government, efforts should be made to improve three aspects: first, improve the medical security system for rural residents, and effectively solve the problems of rural residents who are difficult and expensive to see a doctor, so as to prevent rural residents from becoming poor due to illness and returning to poverty due to illness. By increasing the financial subsidies for medical insurance for rural residents, building specialized and large-scale designated medical institutions, and providing suitable medical insurance for rural residents, the improvement of the medical security system for rural residents has been realized. The second is to actively promote the full coverage of old-age insurance for rural residents and promote the reform of the integrated old-age planning system for urban and rural integration, increase the publicity and promotion of old-age insurance, so that rural residents can truly realize that old-age insurance is closely related to their own interests, and increase their initiative to actively participate in old-age insurance. The third is to formulate support policies that are tilted towards rural education, so as to eliminate the imbalance in urban and rural education resources as much as possible. Education can effectively improve the level of human capital and promote the improvement of income levels, and education is a quasi-public product with increasing marginal yields^[8]. While the government supports the children of rural families to complete compulsory education, it will issue special education subsidies to families with economic difficulties who are indeed difficult to pay for higher education, so as to realize the social function of educating the poor between generations, and gradually balance urban and rural education resources.

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