

The Effects of Aging Society on Consumer Market in China

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Abstract

China is facing a dual challenge of declining household consumption and intensifying population aging. The elderly exhibit unique consumption patterns that affect overall demand. The inclusion of demographic factors in the study of insufficient consumption expenditure not only provides a theoretical understanding of China's aging population, but also encourages the government to actively develop the elderly consumption market and expand consumption, especially in the service industry. This article reviews the relevant theories of China's aging population and its impact on consumption, and analyzes the current situation of a large elderly population, fast aging rate, large regional differences, and "aging before wealth" in China. By studying the direct and indirect pathways of population aging on household consumption, an empirical model using panel data from 2002 to 2022 revealed a positive impact nationwide. However, regional differences have emerged; The aging population has stimulated consumption in the western region, but suppressed consumption in the eastern region. The central region has not shown significant impact. The further differentiation of urban-rural differences has had an impact. The article concludes with policy recommendations to promote household consumption in the context of China's aging population. Suggestions include implementing the "comprehensive three child" policy, transforming economic development, improving elderly care security (especially in rural areas), and cultivating the elderly industry and consumer market. These measures aim to address challenges and stimulate sustainable economic growth.

Keywords: Population aging, Resident consumption, old-age dependency ratio, age structure

Introduction

Most scholars have explained the insufficient household consumption demand in China perspectives rapid, disparities, an incomplete social. the accelerated development

aging, has integrated discourse. In the 1980s, China has implemented the "family planning" policy, significantly reducing. Coupled with the rapid, which and advancements in healthcare. Under the joint influence of these factors, the aging process of the Chinese population has rapidly progressed. According to international standards for a reached 166.58 million in 2018, accounting for 11.9% of the total population, significantly surpassing the criteria for an aging society (Li, 2020). China's aging population issue has been increasingly severe. The proactive approach to addressing the aging population problem. This indicates that the major social issue of aging is related to the strategic development of the country

Individuals in different age groups have different consumption tendencies. Inevitably affecting residents' lives. The study of issues related to aging and resident consumption not only enables us to have a clearer understanding and grasp of the relationship between them, but also plays an important role and significance in how China can better develop its socio-economic development in the context of aging in the future.

Research Objectives

This study aims to explore in depth the impact of China's aging population on household consumption, and through theoretical and empirical analysis, reveal the direct and indirect effects of aging population on consumption levels.

Literature Review

Relevant studies and theories are summarized, research gaps are summarized, and research hypotheses are formulated to develop a conceptual framework.

1. Population aging

Western countries entered an aging society earlier in human history. In 1865, France became the first country in the world to enter an elderly society. Therefore, Western scholars began studying population aging relatively early, initially holding pessimistic views. In 1983, Alfred Savvy declines population quality, resulting insufficient social demand, which could lead society into a 'Malthusian trap.'

Wang (2016) suggests that the 'silver economy' resulting from population aging, together with national policies, consumption upgrades, and the urbanization process, form four major factors promoting economic growth's transition from investment-driven to consumption-driven.

2. Resident consumption

The level of consumption is closely related to advancement economy. Macroeconomics, consumption pronounced role driving economic development. Most affirmative perspective is that the two are directly interrelated. The growth in consumption inevitably leads to increased domestic demand, thereby enhancing market

liquidity, assisting in resource allocation, promoting production, improving living standards through production, and creating conditions for further consumption, ultimately contributing to a consumption influences.

3. Old-age dependency ratio

Many foreign scholars have conducted research on the aging population and consumption issues in China. Karry (2000) Divide from use two-stage least squares econometric analysis, it was found that the elderly dependency ratio did not have a significant impact on savings, whether in urban or rural areas. The pension ratio is not the reason for the high savings rate in China. Cao (2004) Constructing an econometric model. Analysis of data from 1953-2000 in China reveals related to changes in population age structure. Globalization and high economic growth are inseparable. Chamon (2008) used micro data from urban households in China to analyze the city. The savings rate of households in town areas shows a U-shaped variation characteristic with the increase of the age of the head of household. The study of consumer behavior among the elderly is crucial for corporate decision-making.

4. Age structure

Foreign scholars have been researching the relationship between the elderly population and consumption structure earlier than domestic researchers. Some foreign scholars focus on revealing the dynamics between aging populations and consumption structures by examining changes in consumer preferences before and after retirement. Smith (2006) suggests that food consumption among the elderly decreases after retirement, especially for those involuntarily retired. Battistin (2009) argue that retirement, as a significant turning point for the elderly, leads to a 9.8% and 14% decline in non-durable goods and food consumption, respectively.

Research hypothesis

H1: China's population structure is undergoing aging, and the proportion of the elderly population is gradually increasing.

H2: There are differences in population aging between regions.

H3: The consumption gap between urban and rural residents in China is widening.

H4: The aging society has had a significant impact on the Chinese consumer market.

Research Methodology

The research paradigm of this study is a hybrid research method that combines primary and secondary data.

Primary Data: Quantitative method

Through comparative research, this issue can be comprehensively grasped. Under research. This article uses various comparative research methods, such as in the current

situation analysis, comparing the differences in population aging between regions, the differences in consumption levels between urban and rural residents, and analyzing the transmission mechanism, comparing the demand preferences of different types of elderly people for consumer goods. Comparative analysis can enhance understanding.

This article focuses on the statistical analysis methods of the chapter on population aging and the current consumption situation of residents. Various forms such as numbers and line graphs are used to statistically analyze China's age structure, population aging, and consumption trends of residents.

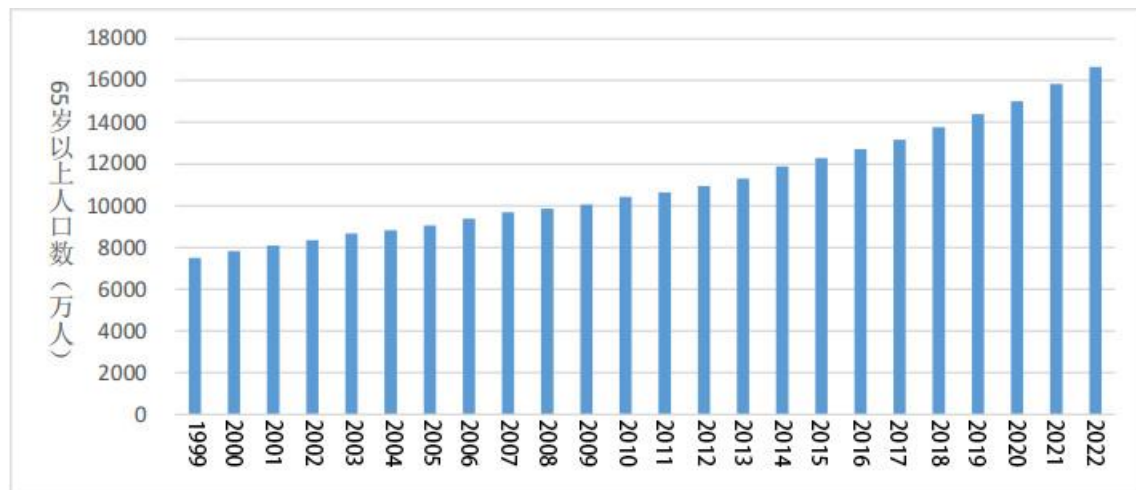
Secondary Data

Based on theoretical analysis and combined with China's actual situation, this article introduces population age structure factors into the consumption letter Using inter provincial panel data from 2002 to 2022, after multiple analyses and tests, the FLGS model was ultimately used Estimating the type pair function to further Quantify the impact of China's aging population on consumer behavior. strengthen the analysis of population Deepening residents' understanding of consumption under the aging population.

Results

Obtain results through primary and secondary data analysis.

Secondary data results

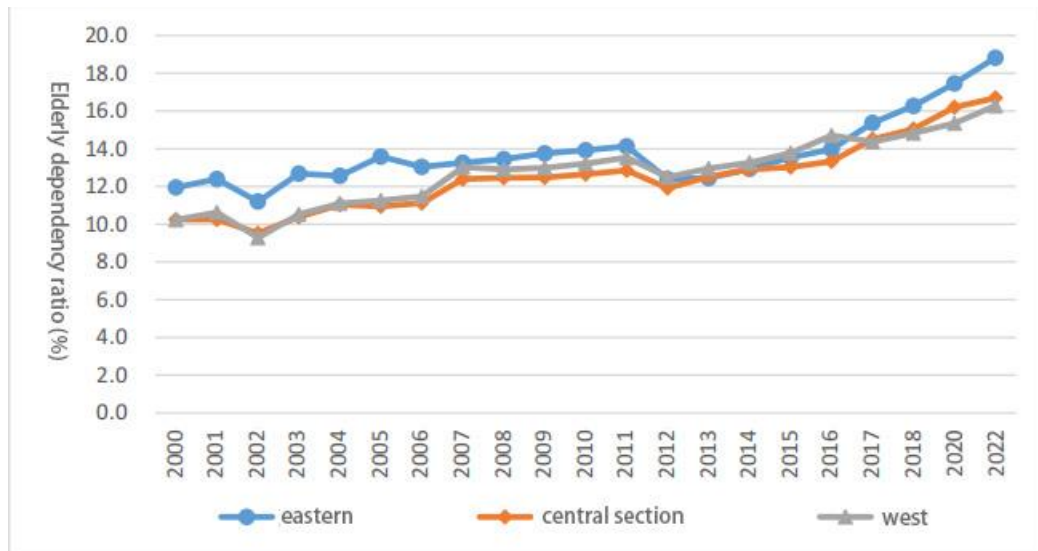


Source: The data in this figure is from the 2023 China Statistical Yearbook

Figure 4.1 Changes in the total population of people aged 65 and above in China

A large population base means that with the development of aging population, China will have a large number of elderly people. As shown in Figure 4.1, the total population of elderly people aged 65 and above in China was 49.22 million in 1982, increased to 63.68 million in 1990, 88.21 million in 2000, 120 million in 2010, and 180

million in 2020. At the same time, the proportion of the population aged 65 and above in China has increased from 4.9% in 1982 to 12.0% in 2022, an increase of 7 percentage points.



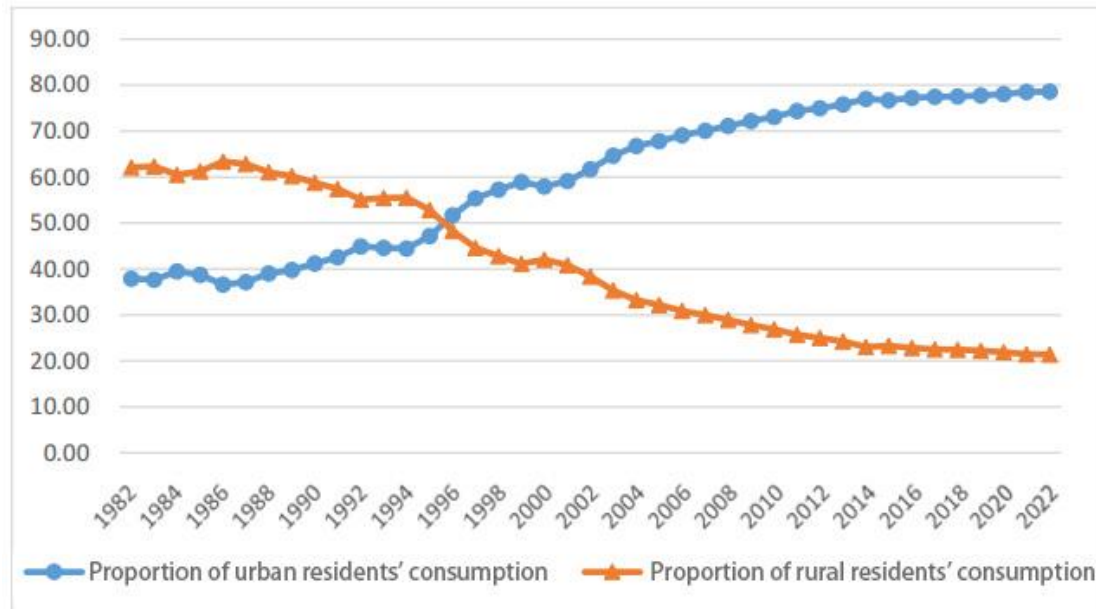
Source: Compiled based on relevant data from China Statistical Yearbook from 2001 to 2023.

Figure 4.2 Changes in the dependency ratio of elderly people in eastern, central, and western regions of China

As shown in Figure 4.2, when examining the eastern, central, and western regions of China, the eastern region has the highest degree of population aging. The level of population aging in the central and western regions is similar, but in recent years, the degree of aging in the central region has been more pronounced than in the western region.

Population aging in China exhibits characteristics such as the reversal of urban and rural trends and regional development imbalances. With vast territory, China displays significant regional disparities in population age structure. Generally, regions with higher levels of economic development enjoy abundant resources, advancements in medical and health technologies, improved health and living standards, and an extended life expectancy, leading to higher levels of population aging. However, China experiences a phenomenon where the level of aging does not necessarily align with the level of economic development. Similarly, when considering urban and rural areas, due to higher fertility rates and relatively lower life expectancies in rural areas, the aging rate and extent of population aging in rural areas tend to be lower than in urban areas. In China, this phenomenon is characterized by a reversal of urban and rural trends, primarily driven

by the rapid urbanization that results in a significant migration of the rural working-age population to urban areas.

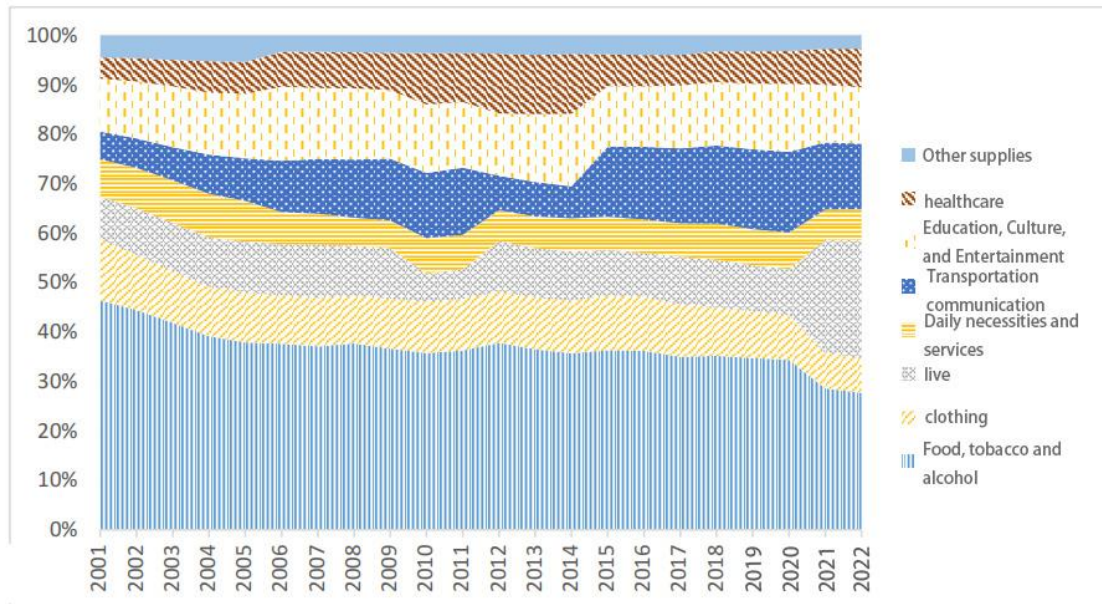


Source: Compiled and drawn based on data from the China Statistical Yearbook from 1983 to 2023.

Figure 4.3 Proportion of Urban and Rural Residents' Consumption to Residents' Consumption in China from 1982 to 2022

As shown in Figure 4.3, in 1982, the proportion of rural residents' consumption expenditure to total consumption was higher than that of urban residents. However, with the rapid development of the economy, there has been a sharp contrast in the consumption patterns of rural and urban residents. The proportion of rural residents' consumption expenditure to total consumption has continued to decline, from 62.1% in 1982 to 21.4% in 2022. In contrast, the proportion of urban residents' consumption expenditure to total consumption continues to increase, from 37.9% in 1982 to 78.6% in 2022. This indicates that the consumption gap between urban and rural residents in China is widening.

On a provincial level, as of the end of 2021, the regions with the highest aging are Shandong, Sichuan, Chongqing, Liaoning, and Shanghai, with Shandong having the highest aging rate at 23.09%. The regions with the lowest aging are Inner Mongolia, Ningxia, Qinghai, Xinjiang, and Tibet, with Tibet having the lowest aging rate at only 8%.



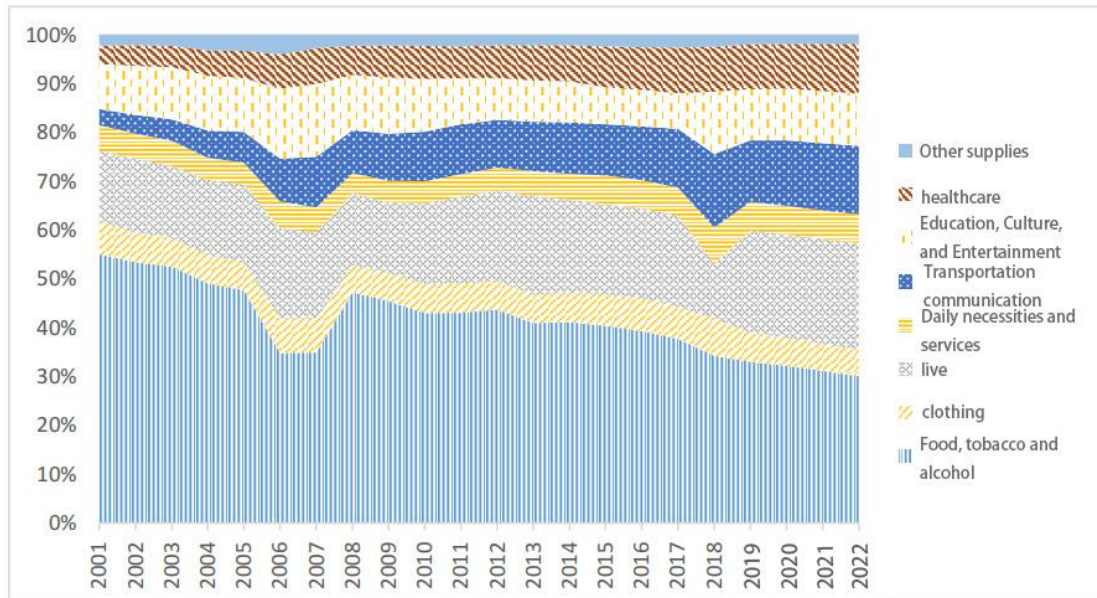
Source: Compiled and drawn based on data from the China Statistical Yearbook from 2002 to 2023.

Figure 4.4 Trends in the Consumption Structure of Urban Residents in China (2001-2022)

Since the reform and opening-up, the consumption structure of both urban and rural residents in China has gradually optimized and upgraded. Expenditures on consumption to meet survival-oriented needs have continuously decreased, while the proportion of expenditures on consumption to satisfy higher-level needs such as education, entertainment, transportation, communication, and healthcare has steadily increased.

The consumption structure of urban residents has shown a steady upgrading trend. The overall proportion of consumption comprising basic needs, such as food, clothing, housing, and daily necessities and services, has steadily decreased. The proportion of expenditures on development-oriented and enjoyment-oriented consumption has increased. Specifically, as shown in Figure 4.4, the proportion of food expenditures has continued to decline, from 46.4% in 2001 to 27.7% in 2022. The proportions of clothing, daily necessities, and services have shown relatively small fluctuations, generally exhibiting a slow downward trend. Expenditures on housing, which fulfill basic living needs, have gradually increased in proportion after 2020, mainly due to the abnormal phenomenon of rapid housing price increases in recent years. The proportion of expenditures on transportation and communication experienced a significant decrease in 2011, followed by a substantial increase in 2014, showing an overall notable upward trend. Healthcare expenditures' proportion to total consumption showed a significant increase before 2014, followed by a sharp decline in 2014 and subsequent stabilization

and increase. The proportion of expenditures on education and culture has exhibited some fluctuations in different years but has generally maintained a relatively stable level.



Source: Compiled and drawn based on data from the China Statistical Yearbook from 2002 to 2023.

Figure 4.5 Trends in the Consumption Structure of Rural Residents in China (2001-2022)

The overall consumption structure of rural residents in China has gradually optimized. As shown in Figure 4.5, the proportion of essential consumption needs, including food, clothing, housing, and daily necessities, has generally decreased. Meanwhile, the proportion of consumption needs related to residents' development and lifestyle, such as transportation, communication, education, culture, entertainment, and healthcare, has steadily increased.

Specifically, the proportion of food consumption in rural areas has experienced a significant decrease, with a notable decline around 2005, followed by a subsequent gradual decline. Expenditure on clothing and daily necessities has remained relatively stable, while housing consumption shows a slight upward trend. The proportion of expenditure on clothing, daily necessities, and services has remained generally stable, with minor fluctuations. Transportation and communication expenditure has seen a substantial increase, rising from 3.3% in 2001 to 13.9% in 2022. The proportion of expenditure on education, culture, and entertainment has exhibited some fluctuations, showing an initial increase, followed by a decrease, and then a subsequent rise. Healthcare expenditure has consistently increased its proportion, rising from 3.9% in 2001 to 10.2% in 2022.

These changes reflect the ongoing optimization of the consumption structure of rural residents in China, catering to a more diverse range of developmental and lifestyle needs.

Quantitative analysis results

Table 4.1 National, Subregional, and Urban Rural FGLS Estimation Results Table

area Explanatory variable	Nation wide	region			urban and rural	
		eastern	central section	west	town	rural area
yg	-0.224*** (0.0254)	-0.294*** (0.0383)	-0.0604 (0.0649)	-0.352*** (0.0555)	-850*** (0.0692)	-0.0586 (0.0764)
old	0.105*** (0.0256)	0.0938* (0.0521)	-0.0976 (0.122)	0.184*** (0.0541)	0.0652*** (0.0213)	-0.146*** (0.0122)
child	0.301*** (0.0183)	0.280*** (0.0317)	0.360*** (0.0653)	0.406*** (0.0363)	0.0176 (0.0164)	0.270*** (0.00838)
r	-0.283** (0.113)	-0.326*** (0.127)	-0.675** (0.267)	-0.356** (0.163)	-0.885*** (0.0811)	0.0332 (0.0839)
gap	0.0413 (0.0624)	-0.0509 (0.0626)	-1.313 (0.908)	0.739* (0.394)	0.0754 (0.117)	-0.102 (0.154)
infla	-0.369*** (0.108)	-0.388*** (0.117)	-0.626*** (0.251)	-0.569*** (0.155)		
constant	38.31*** (2.111)	40.49*** (1.412)	35.30*** (3.895)	32.94*** (2.717)	27.65*** (0.572)	6.727*** (0.557)
Wald chi2	2730.06	620.28	101.72	1031.53	233.21	1407.70
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Observations	629	230	170	229	539	539

Note: ***, **, and * respectively represent significant regression coefficients at the significance levels of 1%, 5%, and 10%. The estimated standard error is shown in parentheses below the regression coefficients.

The analysis employed the fixed effects model for panel data regression, revealing issues of heteroscedasticity, intra-group autocorrelation, and inter-group cross-sectional correlation in the residuals. Consequently, the Feasible Generalized Least Squares (FGLS) method was utilized for more accurate model estimation.

Section 1 of the book conducted comprehensive panel data regression across national, regional, and urban-rural levels. This aimed to provide a nuanced understanding of consumption rate differences among residents at various levels. The FGLS regression for urban and rural areas excluded the inflation rate variable due to collinearity. The results of the estimated model are detailed in Table 4.1.

An empirical test was conducted to examine the impact of population aging on resident consumption in China. Panel data from 2002 to 2022 at the provincial level were used to construct an econometric model, with resident consumption rate as the measure of consumption level, elderly dependency ratio as the measure of population aging, and income growth rate as the base variable. Other control variables were also determined. After testing for heteroscedasticity, autocorrelation, and within-group cross-sectional correlation, the Fixed-Effect Generalized Least Squares (FGLS) model was selected for regression estimation. The research findings indicate that at the national level, population aging is positively correlated with resident consumption rate. However, the impact of population aging on resident consumption varies across different regions. In the eastern region, an increase in the elderly dependency ratio significantly suppresses resident consumption rate, while in the western region, it significantly increases resident consumption rate. The study also reveals that in urban areas, the increasing degree of population aging significantly promotes resident consumption levels, whereas in rural areas, the increasing degree of population aging significantly inhibits resident consumption levels.

Analysis of full sample regression results.

1. Elderly Dependency Ratio. Nationally, the elderly resident consumption rate is significantly positive, with a coefficient of 0.106. This suggests that a 1% increase in the elderly dependency ratio leads to a 0.106% upward movement in the resident consumption rate, consistent with the lifecycle hypothesis. Despite the widespread, the rise in the elderly dependency ratio, has a significant stimulating effect on consumption expenditures.

2. Child Dependency Ratio. An increase in the child dependency ratio has a significant positive impact on the resident consumption rate, with a regression coefficient of 0.300. This implies that a 1% increase in the child dependency ratio results in a 0.300% upward movement in the resident consumption rate. The rise in the child dependency ratio increases household expenditures on child consumption, thereby boosting the resident consumption rate. Moreover, children and savings both serve as guarantees for parents' future retirement. The increase in the child dependency ratio may alleviate parents' concerns about future retirement, leading to a reduction in current savings and promoting an increase in the resident consumption rate.

3. Per Capita Real GDP Growth Rate. The analysis reveals a significant negative correlation between the per capita real GDP growth rate and the resident consumption rate. A higher growth rate in per capita real GDP is associated with a decrease in the resident consumption rate, emphasizing the complex interplay between economic development and consumption patterns. The rapid growth in income, when unexpected, causes residents to be unable to promptly adjust their consumption, resulting in a decline in the resident consumption rate. Additionally, instability in China's consumption environment intensifies residents' sense of crisis, making them reluctant to consume confidently in the face of income growth. Instead, they tend to increase savings, contributing to a decline in the resident consumption rate.

4. Real Interest Rate. The real interest rate has a significant negative impact on the resident consumption rate, with a coefficient of -0.282. In theory, an increase in interest rates generates effects. Saving in the current period increases, suppressing current resident. Under the income effect, residents' assets appreciate, leading to an increase in current consumption.

5. Urban-Rural Income Disparity. The urban-rural income disparity has a weak positive impact on the resident consumption rate but is not statistically significant. Generally, the widening income distribution gap between urban and rural residents inhibits the upward tendency of resident consumption and prevents the full realization of the consumption potential in rural elderly markets, affecting the growth of consumption demand.

6. Inflation Rate. The inflation rate significantly impacts the resident consumption rate, as evidenced by a regression coefficient of -0.368. This indicates that a 1% increase in the inflation rate results in a 0.368 percentage point reduction in the resident consumption rate.

Discussion

The results of this study will help to address the research questions and achieve the research objectives.

Summary of survey results

There are differences in consumer demand and behavior among residents of different age groups, and changes in population structure have a significant impact on resident consumption.

The aging population has both positive and negative impacts on consumer spending. On the one hand, influenced by the unique physiological and psychological characteristics of the elderly, their expenditure on clothing, food, housing, and transportation has decreased, while their demand for medical, education, entertainment, and social services has increased, leading to changes in their consumption structure. On the other hand, due to income limitations of the elderly, the influence of preventive savings and legacy motives, and changes in consumer demand, population aging has affected the overall consumption level of residents.

The regression results of Wang's (2021) provincial panel data at the national level indicate that the impact of elderly dependency ratio on household consumption rate is significantly positive. The empirical results indicate that currently, the aging population in China has led to an increase in the consumption level of residents. However, it is also acknowledged that with the continued intensification of population aging and the impact on relatively low-income groups. Given the income situation of the elderly and the widespread presence of caution and legacy motives in an aging society, the potential

contradiction of relatively insufficient consumption among the elderly may gradually emerge. Therefore, solving the consumption problem of residents under aging is still crucial.

Countermeasures and suggestions

The emergence and evolution of China's aging population have unique characteristics. The government should strengthen the implementation of the three-child policy and increase the enthusiasm of families to have a third child. The joint efforts of the government and society are crucial. From the perspective of the government, it is necessary to carry out top-level planning and formulate and strengthen supporting measures to protect the legitimate rights and interests of women, in order to cultivate a society conducive to childbirth. Promoting the improvement of residents' consumption level fundamentally depends on economic development. While vigorously cultivating labor-intensive industries and actively participating in international division of labor, it is necessary to gradually increase the contribution of technological innovation and progress to labor production. Promote collaborative innovation between industry, academia, and research, enhance self-sufficiency in key technologies, improve the system and mechanism of technological innovation, and drive economic development onto the path of technological innovation.

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