Research on the Influence of Population Aging on Clothing Consumption Behavior of Chinese Urban Residents

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Abstract: Based on the theory of consumer purchase behavior, this article uses the proportion of clothing consumption in total expenditure as an indicator of clothing consumption behavior evaluation of Chinese urban residents, and establishes a measurement model which analyzes the influence of aging population, interest rates, and per capita disposable personal income on clothing consumption behavior of Chinese urban residents. Stata is used in processing and analyzing the data of clothing consumption of Chinese urban residents from 2000 to 2017. The results show that aging population has significant influence on clothing consumption tendency of Chinese urban residents. Under the condition of controlling other factors unchanged, aging population has a negative impact on the clothing consumption tendency of urban residents, that is, the proportion of clothing consumption expenditure decreases with the further population aging. Finally, suggestions are offered, at the enterprise level, that there should be a kind of market environment that meets the consumption demand of the elderly, and pay attention to the seniors market.

1. Introduction

The structure of China's population is rapidly aging. Since 21st century, the proportion of China's elderly population has been rising, which has had a profound impact on China's economic and social development. Population aging is a "by-product" of economic development, which has also deeply troubled many developed countries. The problem of population aging in China is more complicated. The rapidly increased aging population has varying degrees of impact on Chinese economy.

The main reasons for China's aging population are as followed. First, the family planning policy in previous years has led to a reduction in the fertility rate. Second, with the economic development and social progress, people's attitude towards fertility has undergone drastic changes, and more families choose to have only one child or not. The costs of raising a child becomes much higher, which brings heavier burdens on family expenditure. And third, the average life expectancy is longer than before. It is mainly attributable to the continuous improvement of social productivity, which has brought the continuous improvement of people's living standards. What's more, the continuous development of food hygiene, medical and health services has reduced the mortality rate year by year. The aging process will inevitably affect the labor supply, social support burden, and per capita income and expenditure of a country. These variables are all important factors that affect the consumption level of residents. This article explores to what extent population aging impacts on clothing consumption behavior from the perspective of more segmented consumer categories. This brings great significance to expand domestic demand and develop the clothing market in the future.

The most important behavioral manifestation of consumer behavior is purchasing behavior, which is manly restricted by demand, disposable income, the product itself, and the social environment. The income level can affect the residents' consumption structure. In recent years, residents' expenditure on clothing has increased significantly and people's demand for clothing is constantly changing. The increasing income level enables people to meet their needs by clothing consumption. Although people's income has increased, the pressure they are facing is still high. [1]Due to the impact of family

planning policy, and the changes in the attitude of child-bearing, China's population keeps aging, which increases the burden of the family labor force and has indirect impacts on the consumption structure of the entire society

2. Literature review

In recent years, many scholars have paid great attention to studying the causes of China's population aging and its impact on residents' consumption behavior. ChenRong and Wang Meifeng (2018) used multiple linear regression models to study and found that the regional differences in China's population aging have taken a reversal since 2000. [6]The population aging rate in developed areas has slowed down, while the rate of population aging in underdeveloped areas has been faster. This change is mainly due to large-scale domestic migration, which is featured by specific choices of destinations and certain age levels.

As rural areas are mostly underdeveloped, there are more elderly people left-behind than urban areas. Although some elderly people have pensions, most of them choose to save the money. They seldom buy clothes for themselves, and, usually, their children buy clothes for them. As a result, the consumption of clothing accounts for part of the expense of supporting the old, which brings varying financial pressure on young people. But in many empirical studies, scholars have adopted the intercept term model, which is contradictory to a certain extent.

In many studies on consumption behavior, the consumption rate (the ratio of consumption to GDP) is used as the dependent variable. Wang Yu peng (2011) believes that this approach has certain flaws because GDP is the sum of consumption, investment, government purchases, and net exports. [7] These factors will affect the fluctuation of GDP and thus change the consumption rate. Therefore, only disposable income can accurately reflect the income ability of residents and their consumption tendency of clothing, and can better describe the clothing consumption of urban residents. This article focuses more on the impact of population aging on residents' clothing consumption behavior, thus the average propensity for consumption is adopted as the dependent variable.

In the research of this article, rural residents' clothing consumption is not included. Although the rural economy continues to develop and it will inevitably affect the transformation of rural consumption, this part of consumption data is not included in the statistics, and the rural Engel coefficient is still very low compared to the urban areas. There is also a gap between rural and urban social security systems, which will inevitably affect the consumption ability of the elderly. Therefore, this article uses the clothing consumption behavior of Chinese urban residents from 2009 to 2017 as the research object to explore the impact of the aging population on the apparel industry. Wang Yu peng (2011) believes that the child dependency ratio has no significant impact on the consumption of urban residents. [7] Perhaps this is because family's total minor child support expenditure is less flexible to the number of support. Therefore, the child's consumption dependency ratio is not considered in the study of this article. [2]

3. Model establishment and description

Based on the analysis above, this article takes the clothing consumption behavior of Chinese urban residents from 2000 to 2017 as the research object. The average clothing consumption propensity is taken as the evaluation index of the residents' clothing consumption behavior, and the elderly population's support ratio is adopted to measure the degree of aging. In addition, this article also considers the impact of actual disposable income and interest rates on apparel consumption. The assumptions of this article is listed as followed: (1) the income of the young and middle-aged groups must pay not only for their own consumption but also for the consumption of the elderly group. Because the child dependency ratio is not significant, it is not considered in the scope of influence. (2) The elderly group does not have any assets or savings, and all depend on the working group. (3) Currency neutrality.

Measurement model: This article uses a multiple linear regression model with no intercept term. The data source is China Population and Employment Statistics Yearbook. The model is:

$$Y = a\,DI + b\,R + c\,DO + e \quad (1)$$

Among them, Y represents the average propensity to consume clothing, DI represents the actual disposable income; R represents the interest rate, DO represents the elderly dependency ratio; e represents the residual item.

The specific instructions are as follows: (1) Average propensity to consume clothing. The latest data up to 2017 can be found in China Statistical Yearbook, such as the average clothing consumption expenditure and disposable income of urban residents in mainland of China each year. Average clothing consumption tendency is obtained by dividing average clothing consumption expenditure by disposable income. As shown in the figure (Table 1), from 2000 to 2017, the average propensity to consume clothing for urban residents has a downward trend.

Table 1. Average clothing consumption tendency.

index	Per capita disposable income of urban residents	Clothing consumption	Average propensity to consume clothing
2000	6279.98	500.46	0.079691337
2001	6859.58	533.66	0.077797766
2002	7702.80	590.88	0.076709768
2003	8472.20	637.72	0.075272066
2004	9421.61	686.79	0.072895185
2005	10493.03	800.51	0.076289689
2006	11759.45	901.78	0.076685559
2007	13785.81	1042	0.075584967
2008	15780.76	1165.91	0.07388174
2009	17174.65	1284.2	0.074772994
2010	19109.44	1444.34	0.075582539
2011	21809.78	1674.7	0.076786653
2012	24564.72	1823.39	0.074227999
2013	26467.00384	1553.660131	0.058701776
2014	28843.85378	1627.214958	0.056414617
2015	31194.82791	1701.125454	0.054532292
2016	33616.24655	1739.007222	0.051731154
2017	36396.19415	1757.934193	0.048299945

Actual disposable income: This article uses the average disposable income per capita of urban residents from 2000-2017 in the China Statistical Yearbook as the data source, and obtains the urban residents' consumption index (1978year=100), dividing the per capita disposable income of urban residents by the consumer price index year-on-year (1978year=100) to get the actual per capita disposable income of urban residents. According to the absolute income hypothesis and the permanent income hypothesis, personal income is an important explanatory variable that affects consumption, and Keynes believes that income is an explanatory variable that directly determines consumption.

Interest rate: this article adopts the proxy variable of one-year deposit interest rate.

The dependency ratio of the elderly population: This paper adopts the dependency ratio of the urban residents. The data comes from the 2009-2017 China Population and Employment Statistics Yearbook. The calculation method is the ratio of the elderly 65 years or older to the working-age population.

4. Data analysis procedures

Using the above multiple regression model, the least square method is used for estimation, and the estimation and test results are obtained (see Table 2).

Table 2. Estimation and test results.

variable	coefficient	T	P
DI	0.000888	1.771717	0.0982
R	0.026213	1.90176	0.078
DO	-0.806613	-5.458511	0.0001
C	0.143829	19.80269	0
R-squared	0.916969	0.06977	
Adjusted R-squared	0.899176	0.010402	
Prob(F-statistic)	0		

In this paper, the significance level is set to 0.1. When the P value that passes the T test is less than 0.1, the null hypothesis is rejected and the hypothesis test that the parameter is significantly non-zero is passed. The square of R is close to unity, indicating that the overall goodness of fit is good. The F value of the overall model test is 51.53693, and P<0.1 can confirm the reliability of the entire model. The probability of all t-tests for variables passed the test with a confidence of 0.1, and it can be determined that the independent variable has a significant impact on the explained variable. Under the control of other factors unchanged, the actual disposable income, interest rate, and the degree of aging have a significant impact on the clothing consumption behavior of urban residents.

The regression result is:

$$Y = 0.000888\ DI + 0.026213\ R - 0.806613\ DO + e \quad (2)$$

Analysis of regression results:

The actual per capita disposable income has a significant positive correlation with the average clothing consumption propensity. With other variables unchanged, for every 10,000 yuan increase in average disposable income, the average clothing consumption propensity will rise by 8.88 yuan. The per capita disposable income in 2000 was 6279.98 yuan, the per capita disposable income in 2017 was 36,396.19 yuan, the income in 2017 was 5.79 times that of 2000, the per capita clothing consumption in 2000 was 500.46 yuan, and the per capita clothing consumption in 2017 was 1757.93, the per capita clothing consumption in 2017 was 3.51 times that in 2000. It can be seen that the growth of per capita disposable income has brought about the growth of per capita clothing consumption, but the change in consumption tendency is not as large as the change in income. Under the control of other factors, it is believed that the following main reasons are: (1) the development and progress of society have caused macro-environmental factors that affect consumer demand creation. The rapid economic development has increased per capita disposable income and the proportion of disposable consumption has continued to increase. This is the economic basis for consumer demand creation. China is transitioning to a consumer-oriented country. The policy orientation has adjusted the industrial structure and encouraged consumption to stimulate economic growth. As a result, people's consumption potential is further released. (2) At the same time as the social external macro environment is affected, the consumer itself is also undergoing iterations. There are many young faces in the main force of consumption upgrading, the emergence of the new generation of post-90s and the personalized consumption of the post -2000generation. They have gradually become the main contributors to consumption. Compared with the older generation of consumers, the new generation will have a higher level of education, more open consumption concepts and a better quality pursuit of materials, and will know how to have a better life experience [3].

There is a significant positive correlation between interest rates and clothing and apparel consumption. The marketization of deposit interest rates has a significant wealth effect. The increase in interest rates leads to an increase in the expected disposable income of residents and an increase in future and current consumption levels. Low deposit interest rates essentially form an "inverted" mechanism in which the poor subsidize the rich. As a result, income distribution continues to deteriorate, and the income gap will lead to a decline in the consumption rate of residents. From the

perspective of residents' clothing consumption behavior, interest rate is a key determinant of the intertemporal substitution of residents' consumption, and at the same time increases the level of residents' clothing consumption through the wealth effect.[4]

There is a significant negative correlation between the dependency ratio of the elderly population and the average propensity to consume clothing. With the increase of age, people's metabolism will slow down, physiological functions will decline, and they will gradually lose the ability to work. The medicine consumption of the elderly will be very high and the cost of medical treatment is rising. Although China's medical insurance system is improving, China's medical system is still not fully covered by the serial data as of 2017. This makes the elderly who do not have the ability to earn income rely more on their children. A decline in the proportion of the working population will lead to a decline in total social output. Two aspects will affect the increase in the proportion of total social output used for consumption. However, the increase in the dependency ratio of the elderly will increase the consumption of residents. However, the consumption of Chinese medicine is in the proportion of consumption. To a certain extent, the proportion of clothing consumption is declining.

5. Conclusions and inspiration

This paper introduces demographic factors and establishes an econometric model to explore the impact of aging on urban residents' clothing consumption. It uses series data from 2000-2017 in China as a data source. Under the control of other factors, the impact of per capita disposable income and interest rates are also taken into account. The increase in the proportion of the aging population will reduce the average propensity to consume clothing, mainly due to the changes in the consumption ratio brought about by the aging population. The aging of the population has a restraining effect on clothing consumption. In ten years, the number and proportion of the elderly population in China will continue to increase, and will reach a peak in the middle of the 21st century. Population aging is one of the important social issues facing China. On the other hand, according to the prediction of the Business Project Evaluation Center, China will reach its peak in the next few years. The demand for middle-aged and elderly clothing will exceed 1 billion sets, and department stores will account for more than 70% of young people's clothing, but clothing suitable for middle-aged and elderly people will account for less than 10%. More than 99% of large-scale high-end shopping malls in first-tier cities do not have middle-aged and elderly clothing. The special counters greatly limit the clothing consumption of the elderly.

This article makes the following suggestions: In economic control policies, reasonable consideration of the impact of this change on the economy can be targeted to respond to the challenges posed by the aging of the population, establish more scientific price supervision and statistical mechanisms, give full play to macro-control measures, stabilize prices, and avoid the impact of high prices on society. At the same time, our country needs to increase fiscal expenditures and build a sound social medical security system, so as to reduce social pressure and promote consumption, through which people can have more consumption space and ability, thereby promoting the prosperity and development of the clothing industry.

According to the absolute income hypothesis and the permanent income hypothesis, consumption is largely affected by personal income, and subject to China's social security system and income distribution system, the overall disposable income of the elderly in China is insufficient. Except for strengthening the social security system mentioned above, it is more important to develop resources for the elderly. The development of resources for the elderly is conducive to solving the phenomenon of talent disconnection and talent gaps. Enterprises should use the labor resources of the elderly to allow retired elderly people who are healthy and able to engage in labor to return to work, and make full use of resources for the elderly. Increase the marketization of interest rates, and the rise in interest rates will promote the consumption rate of residents. Although interest rates are now basically determined by market forces, the subjects participating in the financial market are still not marketized.

Grasping the critical moment of consumption upgrading and transformation, actively doing homework from the presentation of products, the depth of consumption experience, and service

experience, facing the challenge of the aging population, and also actively making use of people's various experiences in consumption to stimulate consumption, so that clothing give it more added value in addition to meeting the demand in terms of performance, thereby driving the upgrade of the clothing consumption culture of the entire society.

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