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Research on Household Consumption Based on Behavioral Economics

Xiya Sun[1,a,*]

[1]*International school of NanJing Yuhuatai high school*
a. Bella050915@163.com
**corresponding author*

Abstract: Since the 21st century, the living standards of Chinese residents have significantly improved, and people's consumption levels have also increased to a certain extent compared with the figure in the past. By observing the changes in China's economic status, it can be found that there is a close connection between Chinese residents' consumption and changes in the Chinese economy. Therefore, studying the consumption issues of Chinese residents in different periods is of great significance for China's development in various ways. For example, this essay can serve as an effective reference for the Chinese government in formulating policies related to residents' living consumption, in order to achieve economic growth by increasing the consumption demand of Chinese residents. This article uses data from 2005 to 2022, analyzes the data through data calculation and psychological account theory, and studies that different economic stages of a country are the main factors affecting residents' consumption levels.

Keywords: Behavioral economies, Resident consumption level, China development

1. Introduction

Since joining the World Trade Organization (WTO) in 2001, China has relaxed market access restrictions, lifted trade barriers, and eliminated protectionism, attracting more opportunities for foreign investment and trade cooperation. The Chinese economy has undergone rapid changes in the past few decades. The average annual growth rate of China's GDP from 2005 to 2012 was 16% [1-2], Even in the context of the global economic crisis from 2018 to 2019, the Chinese economy still maintained a growth rate of 9%. Between 2013 and 2014, the industrial structure of the Chinese economy underwent changes. On the one hand, China has reduced its investment in the primary industry, and on the other hand, China has promoted the development of the secondary and tertiary industries. This reform has led to a decrease in GDP growth rate to 10% [1-3]. Therefore, the Chinese economy has gradually transformed from high-speed development at the beginning to high-quality development (achieving sustainable economic development through changes in industrial structure). Therefore, the average annual growth rate from 2014 to 2019 decreased to 8.9% [1-4]. From 2020 to 2022, the global epidemic caused various impacts on the Chinese economy, resulting in a decrease in total demand and insufficient economic momentum leading to a slowdown in economic growth. During this period, the average annual growth rate only reached 7.1% [1-3]. China is closely related to per capita income and per capita consumption in different periods, and income is the main factor affecting people's expenditure. Therefore, this study on the relationship between residents' income

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and consumption under different economic development models has important theoretical and practical significance.

The literature on the consumption issues of Chinese national residents both domestically and internationally can be roughly divided into two categories, which study the structural characteristics of residents' consumption behavior and the factors that contribute to these characteristics. For the first type of literature, some scholars have summarized the three major characteristics of confidence index through diagnostic models of Chinese consumer confidence index and empirical survey data [5-6]. Other scholars have studied the impact of the development of e-commerce platforms in China on the consumption issues of urban residents through principal component regression analysis [7]. For the second type of literature, some scholars propose targeted opinions to improve residents' lives by studying the overall changes in residents' consumption levels and marginal consumption propensity in relevant cities, combined with empirical results [8-9]. Other scholars use household data as research samples and use linear regression, gate regression models, and other methods to explore the connection between household consumption and wages [10]. However, few papers combine the economic development patterns of different periods with changes in residents' income and consumption levels for observation and discussion.

Therefore, this article aims to analyze the income and consumption issues of residents under different economic models from the perspective of changes in China's economic development model, using the theories of expectations and psychological accounts, in order to provide a theoretical basis for studying the consumption issues of Chinese residents.

2. Theory and data

a) Behavioral Economics Related Theories

In the definition of behavioral economics, expectation refers to when a person makes a decision, they consider future gains and losses, and make what they believe to be the optimal choice through comparison. Due to the existence of psychological accounts, individuals often violate some simple economic algorithms when making decisions, resulting in many irrational consumption behaviors.[10]

b) Related Data

Table1: Raw data of per capita income and expenditure from 2005 to 2022 (unit: yuan/person)

	income	spending
2005	10493.0	7943.0
2006	11759.0	8697.0
2007	13786.0	9997.0
2008	15781.0	11243.0
2009	17175.0	12265.0
2010	19109.0	13471.0
2011	21810.0	15161.0
2012	24565.0	16674.0
2013	18310.8	13220.4
2014	20167.1	14491.4
2015	21966.2	15712.4
2016	23821.0	17110.7
2017	25973.8	18322.1
2018	28228.0	19853.1

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Table 1: (continued).

2019	30732.8	21558.9
2020	32188.8	21209.9
2021	35128.1	24100.1
2022	36883.0	24538.0

Based on the data provided by the National Bureau of Statistics, the above table of changes in per capita income and expenditure from 2005 to 2022 can be created.

Table2: Changes in the proportion of Chinese residents' expenditure from 2005 to 2022 (Unit:%)

Percentage	Food	Cloth	Entertainment	Housing	Medical	Traffic
2005	36.69	10.08	13.82	10.18	7.56	12.55
2006	35.78	10.37	13.83	10.4	7.14	13.19
2007	36.29	10.42	13.29	9.83	6.99	13.58
2008	37.89	10.37	12.08	10.19	6.99	12.6
2009	36.52	10.47	12.01	10.02	6.98	13.72
2010	35.67	10.72	12.08	9.89	6.47	14.73
2011	36.32	11.05	12.21	9.27	6.39	14.18
2012	36.23	10.94	12.2	8.9	6.38	14.73
2013	31.2	7.8	10.6	22.7	6.9	12.3
2014	32.96	8.94	11.77	24.67	7.17	14.49
2015	32.6	8.72	12.21	24.23	7.4	14.84
2016	32.11	8.26	12.53	24.28	7.74	15.1
2017	32.07	7.39	12.45	24.51	8.66	14.91
2018	31.02	7.1	12.26	25.6	9.28	14.74
2019	30.8	6.77	12.72	25.59	9.63	14.49
2020	32.83	6.35	10.43	26.76	9.46	14.17
2021	32.5	6.42	11.76	25.52	9.57	14.27
2022	33.23	6.06	10.97	26.13	9.42	14.19

Based on the data provided by the National Bureau of Statistics, a table can be created to illustrate the changes in the proportion of Chinese residents' expenditure from 2005 to 2022.

3. Data Analyses

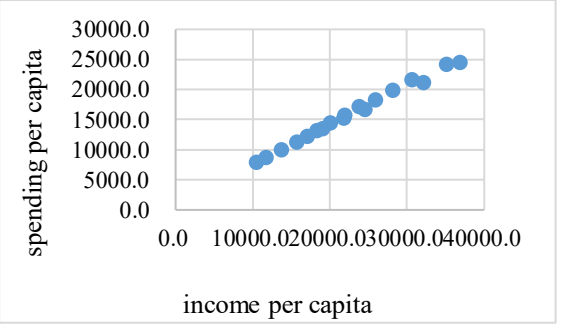


Figure1: Relationship between income and consumption(x-axis:income, y-axis:consumption)

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From Figure 1, it can be seen that the trends in per capita income and per capita expenditure from 2005 to 2022 are basically consistent, so it can be inferred that there is a certain linear relationship between them. From the overall trend, the per capita income increased from 05 to 07, and then gradually decreased, while the corresponding per capita expenditure also formed the same trend. The calculation shows that their correlation coefficient is 0.997, which is very close to 1. Therefore, it can be inferred that there is a significant linear relationship between per capita income and per capita expenditure.

According to the calculation in Table 1, the changes in per capita income and expenditure during the research period from 2005 to 2022 can be obtained. The per capita income increased from 10493 yuan per person in 2005 to 36883 yuan per person in 2022, and the per capita expenditure increased from 7943 yuan per person in 2005 to 24538 yuan per person in 2022 during the same period. More specifically, from 2005 to 2012, the average growth rate of per capita income reached 12.85%, while the average growth rate of per capita expenditure during the same period reached 11.19%. This is mainly because China joined the WTO during this period, which also brought many benefits to China's economic growth. Firstly, China can not only participate in the formulation of relevant policies, but also enjoy preferential policies from more than 100 member countries of the organization for China's exports. Therefore, the quantity of Chinese exported products has significantly increased after joining the WTO, which will greatly increase the income of Chinese residents engaged in foreign trade and improve their living standards. Secondly, people can spend less money to purchase imported products, because after joining the WTO, tariffs between member countries will be reduced to the lowest, allowing Chinese residents to enjoy the cheapest imported products and reducing people's living expenses. Finally, after joining the WTO, the increase in demand for export products will also promote the development of China's economic market, increase the demand for labor, and thus bring more employment opportunities [11].

During the period from 2013 to 2014, the average growth rate of per capita income was negative 7.66%, while the average growth rate of per capita expenditure during the same period was negative 5.55%. The main reason for the negative growth of these two data is that during this period, the Chinese economy underwent industrial changes. On the one hand, China reduced its investment in the primary industry, and on the other hand, it increased its investment in the secondary and tertiary industries. Because the secondary and tertiary industries can not only achieve long-term stable development, but also reduce environmental damage. During the period from 2014 to 2019, the average growth rate of per capita income was 6.29%, while the average growth rate of per capita expenditure during the same period was 4.61. This data has shown some growth compared to the previous stage, but the growth rate is still relatively slow compared to the first stage. Therefore, during this period, China has strengthened a series of supply side policies to improve long-term economic stability. During this period from 2020 to 2022, due to the impact of the global pandemic, the average growth rate of per capita income decreased to 6.29%, and the average growth rate of per capita expenditure also decreased to 4.61% during the same period. There are three main reasons for this. Firstly, there is insufficient consumption. During the epidemic, many businesses in China were forced to reduce wages or lay off workers due to insufficient demand, which also led to changes in people's consumption attitudes during this period. Many people began to tighten their spending, which also led to a decline in overall consumption. Secondly, there is a lack of confidence. Due to the prolonged lockdown, the confidence of consumers and businesses has significantly decreased. Consumers are more inclined to save money rather than consume, and businesses are also worried about high costs and constantly layoffs or salary cuts, which has also led to a negative economic cycle. Thirdly, the pressure on the financial industry has increased. Due to a decrease in corporate income and a shortage of funding chains, many companies hope to apply for loans to alleviate the pressure. However, during

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this period, the loan interest rates of banks have also increased, which has led to many companies falling into difficulties [12].

According to the analysis of Table 2, it can be concluded that during the research period from 2005 to 2022, the proportion of people's phone bills for food has always been ranked first, with an average proportion of 34% during this period. This also indicates that as a necessity of daily life, the demand for food is relatively stable regardless of whether the economy is good or bad. But its data still shows a slight decline. While people's spending on food has decreased, it also indicates that their average wage level has increased, and their living standards have correspondingly improved. During the research period, the housing cost ranked second, with an average proportion of 18.3%. The housing cost has risen very quickly, from 10.18% in 2005 to 26.13% in 2022, which is also the fastest rising proportion among the six. The main reason is that during the research period, housing prices in China rose very rapidly, including rental costs. The third ranked among the six options is the proportion of transportation, with an average proportion of 14%. During the research period, it can be seen that Chinese residents' expenses on transportation are gradually increasing, and transportation costs are increasing with travel time. Following closely behind is the average proportion of people in entertainment, reaching 12.18%. It can be seen from the table that people's demand for entertainment is slightly decreasing, replaced by spending on medical care. The proportion of medical expenses has increased from 7.56% in 2005 to 9.42% in 2022. It can be seen that as people's wages rise, the importance of Chinese residents on their physical health is also gradually increasing.

4. Conclusion and policy recommendation

Based on the above data analysis, we can know that with the increase of per capita income level, Chinese residents' pursuit of life development expenses, such as entertainment, is decreasing, in addition to maintaining a stable demand for essential goods such as food. However, China's overall economic development is still relatively slow compared to before the industrial changes, so the government can focus its expenditure policies on: firstly, improving the overall income level, or promoting economic development through subsidies to industries. Secondly, improve the social security system, stabilize consumer expectations, strengthen expenditures on housing, healthcare, transportation, and other aspects, thereby improving the quality of life of residents.

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