

Economic Growth, Consumer Consumption and Industrial Structure

Rujin Dong^{1,*}

¹ College of Finance, Anhui University of Finance and Economics, Bengbu, Anhui, 233030, China

* Corresponding author: Rujin Dong (Email: dongrj6@163.com)

Abstract: Economic growth has been a topic of international concern and attention, and the article investigates the relationship between economic growth, resident consumption and industrial structure. Firstly, data from 31 provinces from 2011 to 2020 are selected as research samples to explore the role of resident consumption in promoting economic growth, and to show the pathway of the mediating effect of industrial structure in the influence of economic growth and resident consumption. Based on the research findings, relevant suggestions are made on how to make effective incentives for economic growth, how to promote industrial structure upgrading and how to promote resident consumption, taking into account the current situation of China's industrial structure and the problems existing in the process of economic development.

Keywords: Economic Growth, Resident consumption, Industry Structure.

1. Introduction

With the improvement of people's living standard and the growing consumer demand, China has maintained a fast pace of development. From atypical pneumonia in 2003 to the new coronavirus pneumonia in 2020, the continuous emergence of various new diseases has posed a serious threat to people's lives. Stimulating residents' consumption and optimizing industrial structure are the main ways to maintain the sustained growth of the national economy.

For a long time, China's household consumption expenditure has been on the low side. Resident consumption is an important way for economic growth, improving people's living standards and consolidating the great domestic circulation, and the pulling effect of industrial structure combined with information technology and digitalization and flourishing on resident consumption cannot be ignored. Therefore, the current in-depth study on the influencing factors of residential consumption as well as the ways of its effects is of more important theoretical value and practical significance.

Urban areas have better infrastructure and are more conducive to the development of industrial structures. Therefore, it is especially important to clarify the relationship between economic growth and consumption of urban residents in China and the mechanism of action. Based on the existing theories, we will further clarify the impact of urban residents' consumption on economic growth and empirically test the effect of industrial structure.

Figure 1 shows the scatter plots and fitted lines of GDP per capita (represented by Y) and urban consumption levels (represented by X) in provincial areas of China from 2011 to 2020. It can be seen that there is a positive relationship between economic growth and urban consumption, and the specific mechanism of action needs further empirical verification. It has been theoretically verified that consumption is one of the three driving forces of the economy, and expanding consumption capacity is the key to improving economic growth, and the next article will test this theory from an empirical perspective.

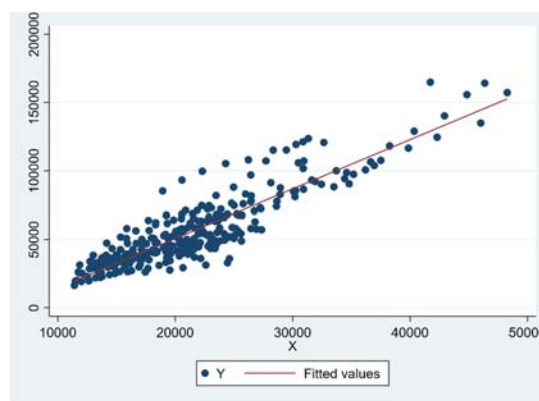


Figure 1. Scatterplot of GDP per capita and consumption of urban residents

2. Theoretical Analysis and Model Construction

2.1. Economic growth and consumer spending

Among the "troika" of economic development, consumption ranks first in terms of the proportion of GDP and the contribution rate to GDP growth. Since the reform and opening up, the living standard of China's residents has improved significantly, with the per capita disposable income increasing from 171 yuan in 1978 to 28,228 yuan in 2018, driving the scale of the consumer market to continue to expand. The total retail sales of consumer goods grew from 155.86 billion yuan in 1978 to 389.07 billion yuan in 2018. The economic contribution from consumption rose from 38.3% in 1978 to 76.2% in 2018, exceeding 43.8 percentage points of the capital contribution, and the fundamental role of consumption in the national economy further emerged, becoming the first driver of economic growth for five consecutive years, as well as a "stabilizer" and "ballast" to keep the economy running smoothly.

Over the years, our people's consumption concept has undergone significant changes, and residents' consumption no longer stops at satisfying basic survival needs, but changes to improving the quality of life. With the improvement of living standards, China's residents' consumption has put forward

higher requirements for the quality of goods and services, focusing on the modern consumption concept of consumption individuality, consumption freedom, and the satisfaction and happiness brought by self-consumption, and the new consumption concept has shown the development trend of personalization, intelligence and health. People not only pay attention to material consumption, but also pay more attention to spiritual consumption, service consumption and experience consumption, not only pay attention to personal satisfaction brought by consumption, but also pay more attention to their social responsibility, and gradually establish the concept of green consumption and sustainable consumption.

Some studies have concluded that consumer demand is the fundamental driver of economic development and contributes to economic growth[1–2]. It is also suggested that there is a two-way causal relationship between consumer demand and economic growth[3–4]. The study shows that both urban and rural consumption growth rates have the effect of raising the total factor productivity growth rate, but urban consumption growth rates are more powerful drivers[5–6]. Consumption growth rate is the degree of change in consumption level, which shows that urban residents' consumption level has a significant effect on economic quality[7]. China's urban-rural dichotomy is obvious, and the income of urban and rural residents has been rising in recent years, and their consumption ability is also increasing, but the consumption ability of urban residents is more prominent. Urban residents have a large number of high-income groups, and they have a huge consumption power and desire. The consumption power and consumption desire of urban residents are huge.

2.2. Economic growth and industrial structure

Optimizing the industrial structure, can promote consumption and high-quality economic development play an important role. In particular, it drives the improvement of urban infrastructure, which will greatly benefit urban residents in terms of travel, upgrading of the consumption environment, reducing transaction costs, etc., which in turn attracts foreign investment, thus driving employment in the region and raising residents' income and consumption levels. In addition, the development of industrial structure at the micro level can promote enterprise technology innovation and individual entrepreneurship, improve the utilization rate of resources of the whole society, reduce the cost of living and increase the income of residents, and raise the consumption level of residents.

Industrial structural transformation is a core variable in understanding the difference between the economic development of developing countries and that of developed countries, and it is also an essential requirement for developing countries to accelerate their economic development[8].

2.3. Resident consumption and industrial structure

China's economy is changing from the stage of high speed growth to the stage of high quality development, and further the level of consumer demand and preference of residents to upgrade. The change of demand level and preference will cause the adjustment of industrial structure. Meanwhile, the upgrading of industrial structure will enhance the mobility of production factors, prompting the rational allocation of resources in each industry, increasing the income space of residents, and thus promoting their consumption. Sun Chao et

al. argue that from the supply point of view, industrial innovation promotes the upgrading of residents' consumption through industrial advancement[9]. Xie Ruzong et al. studied the dynamic relationship between industrial structure and resident consumption and showed that industrial structure and resident consumption have a mutual promotion relationship [10].

Most of the existing studies argue that the upgrading of industrial structure and the improvement of industrial chain will improve productivity, promote production efficiency, and meet the different consumption needs of residents, which in turn will increase their consumption. Among them, some scholars believe that promoting the development of industries and upgrading of industrial structure improves production efficiency and further promotes resident consumption[11].

2.4. Model Analysis

In order to study the effects of residential consumption and industrial structure on economic growth, a fixed-effects model is constructed, and since the specific circumstances of each provincial region differ and there may be omitted variables that do not change over time, the specific model is set up as shown in equations (1):

$$\ln Y_{it} = \gamma_0 + \gamma_1 \ln X_{it} + \sum(\gamma_j \times \text{Control}_{it}) + u_i + \varepsilon_{it} \quad (1)$$

Among them, the explanatory variable Y denotes economic growth with GDP per capita as a proxy variable, and the core explanatory variable X is urban residents' consumption expenditure, which then represents the industrial structure upgrading index. control is a control variable with possible effects on economic growth; subscripts i and t denote regions and years; u_i denotes possible individual effects; ε_{it} denotes the random disturbance term, and if γ_1 is significantly positive, which represents the supportive effect of digital inclusive finance on promoting urban residents' consumption, it is supported by the empirical test. In order to eliminate the effect of inconsistent magnitudes, Y and X are logarithmically treated.

Based on the availability and continuity of obtaining panel data, panel data of 31 provincial-level regions in China from 2011 to 2020 are selected to examine the effects of residents' consumption and industrial structure on China's economic growth by establishing a fixed-effects model.

The existing literature is more likely to represent the upgrading of industrial structure more simply by the value of the contribution of secondary and tertiary industries to the national economy or the ratio of the output value of secondary and tertiary industries. q_i represents the ratio of the output value of industry i to the total output value. Generally speaking, the larger U_{it} (the maximum value is 3), the higher the level of industrial structure upgrading. Considering that there may be other variables that have an impact on economic growth, urbanization development, education level, participation share in insurance and government investment effort are included as control variables. However, this method does not effectively link the correlation and ratio among the three industries. Therefore, the proposed industrial structure upgrading index can better reflect the specific situation of industrial structure upgrading in the region, and the specific formula is as follows:

$$Z = q_1 + 2 \times q_2 + 3 \times q_3$$

3. Analysis of empirical results

The data on economic growth, urban consumption, and industrial structure and control variables are obtained from the EPS regional economic database and the statistical

yearbooks of each provincial region in the past years. Some of the variables are logarithmically treated in order to maintain the consistency of data magnitude and reduce heteroskedasticity. The results of descriptive statistics of variables in the model are given in Table 1.

Table 1. Variable descriptive statistics

Variable Type	Variable Name	Definition/Explanation	Observations	Average value	Standard deviation
Explained variables	Economic Development	GDP per capita	310	10.827	0.439
Explanatory variables	Urban consumption	Urban consumer spending	310	9.927	0.293
Intermediate variables	Industry Structure	Industry Structure	310	2.376	0.127

According to the correlation analysis of variables, the results are presented in Table 2.

Table 2 Correlation analysis of variables

	LnY	LnX	Z
LnY	1		
LnX	0.8815***	1	
Z	0.7523***	0.8358***	1

The effect of urban residents' consumption on economic growth is verified by constructing a fixed-effect model, and the results are represented in Table 3.

Table 3. Baseline Regression of Economic Growth and Consumer Consumption

Variables	(1)	(2)
	LnY	LnY
LnX	0.976*** (37.62)	0.838*** (16.90)
Z		
K1		0.782*** (2.61)
K2		0.0007** (2.34)
K3		0.391** (2.33)
K4		-2.264*** (-14.27)
Constants	1.141*** (4.43)	2.428*** (6.47)
Observations	310	310
R ²	0.770	0.592
Individual fixed effects	YES	YES

As can be seen from column (1) of Table 3, without adding the variable of industrial structure and other control variables, the regression coefficient of urban residents' consumption on economic growth is 0.976 and passes the significance test, which indicates that the increase in urban residents' consumption has a supportive effect on promoting economic growth. With the gradual inclusion of control variables in column (2), the regression coefficient of urban residents' consumption on economic growth is 0.838; this indicates that urban residents' consumption significantly improves economic growth and the vigorous development of residents' consumption provides a solution to promote economic growth in China in recent years has an important significance.

To specifically examine the mechanism of the role of urban residents' consumption development in promoting economic

growth, industrial structure upgrading is used as a mediating variable. Drawing on the research ideas and methods of Zhonglin Wen et al [12], the following model is set up to test the mediating effect:

$$Z_{it} = \alpha_0 + \alpha_1 \text{LnX}_{it} + \sum(\alpha_j \times \text{Control}_{it}) + u_i + \varepsilon_{it} \quad (2)$$

$$\text{LnY}_{it} = \beta_0 + \beta_1 \text{LnX}_{it} + \beta_2 Z_{it} + \sum(\beta_j \times \text{Control}_{it}) + u_i + \varepsilon_{it} \quad (3)$$

Table 4 Mediating effects test

Variables	(1)	(2)	(3)
	LnY	Z	LnY
LnX	0.838*** (16.90)	0.207*** (9.01)	0.927*** (16.73)
Z			-0.432*** (-3.36)
Control variables	YES	YES	YES
Constants	YES	YES	YES
Observations	310	310	310
R ²	0.592	0.789	0.558
Bootstrap test			0.926*** [0.000]

To test the reliability and robustness of the role of industrial structure upgrading in the pathway of resident consumption affecting economic growth, the bootstrap test of the mediating effect of industrial structure is conducted. According to the results of statistical values, the test of intermediary effect is passed. That is, the continuous development of urban residents' consumption through the role of industrial structure pathway to further promote China's economic growth.

4. Conclusion

Based on 31 inter-provincial panel data of China from 2011 to 2020, we explore the relationship and the path of influence of economic growth, industrial structure and urban residents' consumption, and draw the following conclusions: First, residents' consumption directly has a supportive effect on improving China's economic growth level. Second, the optimal allocation of resources to key areas and key links improves the matching of factors, promotes the change and upgrading of industrial structure, and meets different consumption demands and preferences, thus having a supporting effect on stimulating economic growth. And introducing the intermediary effect model, the study finds that residents' consumption can improve economic growth through the industrial structure upgrading path. Third, the development of residential consumption can have a supportive effect on promoting the economic growth level of

31 inter-provincial regions in China. However, the regional heterogeneity test illustrates that the degree of stimulating effect of urban residential consumption on economic growth varies among regions due to the different actual development of each region.

Through the above findings, the following feasible policy suggestions are put forward: First, optimize the top-level design, enhance the transparency and convenience of the relevant service system, introduce development plans and implementation details based on the current situation, and the government should further stimulate residents' consumption and improve their consumption environment to help China's economic growth. Second, industrial structure is an important way for residents' consumption to promote economic growth, so it is necessary to achieve an effective connection between industrial structure and economic growth. Further enhance the integration of residents' demand and industrial structure, actively and continuously optimize the industrial structure to meet the needs of urban residents at different levels of consumption and improve the overall consumption level of residents. Thirdly, we should promote the construction of infrastructure in each region according to local conditions, promote the upgrading of services of traditional financial institutions in each region, expand the coverage of infrastructure services in each region, and take stimulating residents' consumption as the launching point for expanding domestic demand and stimulating economic growth.

Acknowledgment

I am grateful for the support provided by Anhui University of Finance and Economics.

This work was supported in part by a grant from Graduate Research Innovation Fund Project of Anhui University of Finance and Economics (Project No.: ACYC2021324).

References

- [1] Liu Changgeng, Zhang Lei. The new era of consumer development needs to promote the quality of consumption [J]. *Consumer Economy*, 2018, 34(4): 3 - 11
- [2] Hong Yinxing. Major innovation of China's economic development theory after entering a new stage [J]. *China Industrial Economy*, 2017, (5): 5 - 15
- [3] Osman M, Gachino G, Hoque A. Electricity consumption and economic growth in the GCC countries: Panel data analysis [J]. *Energy Policy*, 2016, 98(nov.): 318 - 327.
- [4] Tsen W H. Exports, domestic demand, and economic growth in China: Granger causality analysis [J]. *Review of Development Economics*, 2010, 14(3): 625 - 639.
- [5] Chu Erming, Ma Yongjun. Can consumption growth improve the quality of economic growth--an analysis based on total factor productivity [J]. *Contemporary Economic Research*, 2014, (4):53 - 59, 96.
- [6] Lou Feng, Li Xuesong. Dynamic Empirical Analysis of Consumption Demand of urban residents in China [J]. *Social Sciences in China*, 2009, (3) : 109-115, 206.
- [7] Li Ya, Pan Hongyu. Consumption upgrading and Countermeasures to further promote consumption since the reform and opening up [J]. *Finance & Economics Theory & Practice*, 2019, 40 (3) : 101-106.
- [8] Gan, Chunhui, Zheng, Ruogu, Yu, Dianfan. The impact of industrial structure change on economic growth and volatility in China[J]. *Economic Research*,2011,46(05):4-16+31.
- [9] Sun, Zhao, Xu, Xue-Lu. Industrial innovation and consumption upgrading:an empirical study based on the perspective of supply-side structural reform[J]. *China industrial economy*, 2018, (07):98-116.
- [10] Xie Ruzong,Yang Minwan,Bai Fuchen. Digital inclusive finance, resident consumption and industrial structure upgrading--a dynamic analysis of PVAR based on prefecture-level panel data in Guangdong Province[J]. *Research World*,2022,(02):59-70.
- [11] Liu CJ, Cheng X, Meng Y. The impact of green taxation on economic growth and industrial upgrading[J]. *Statistics and Decision Making*,2022,38(19):154-157.
- [12] Wen Zhonglin,Ye Baojuan. Mediated effects analysis:Methods and model development[J]. *Advances in Psychological Science*,2014,22(05):731-745.