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# **The Research on the Upgrading of Consumption Structure in China**

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**Abstract:** EViews software is used to check analysis the impact of the consumer's income level, the level of social productivity development and the level of social security on the consumption structure. It explores the positive significance of upgrading consumption structure to drive economic growth, promote cultural industry, improve industrial science and technology, and penetrate into emerging industries.

**Key words:** Upgrading of consumption structure; economic growth; Industrial upgrading; EViews

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## **1. Introduction**

As economic globalization drives world economic and social progress, countries are involved in the expansion of consumer economy without exception<sup>[1]</sup>. There are reports from the 19th CPC National Congress, the growth pattern of Chinese economic in the new era is shifting from exogenous, extensive and investment-driven growth to endogenous growth, of which the main characteristic is consumption as the main growth factor, and the upgrading of consumption structure is the purpose of economic growth. It promotes the rapid growth of the economy and is also concrete embodiment of a good life. This paper studies the structural changes, influencing factors, significance, existing problems and solutions of consumption structure upgrading.

## **2. Upgrading of Consumption Structure and Its Structural Changes**

The upgrading of consumption structure refers to the upgrading of the structure and level of consumption expenditure in the total consumption expenditure; which directly reflects the consumption level and development trend. According to the law of Maslow's hierarchy of needs, consumption has a hierarchy of low to high, so with the improvement of residents' income level, after the low level is satisfied, people's demand for products will develop to a higher level<sup>[2]</sup>. Since the implementation of the reform and opening-up policy, our country has experienced three consumption upgrades and at present we are in the third, in this process, education, entertainment, culture, transportation, communications, health care, housing, tourism, etc. had the fastest growth, especially in the IT industry, the automobile industry and the real estate industry.

## **3. Factors Influencing the Upgrading of Consumption Structure**

Through economic theory and practice, it is proved that the upgrading of consumption structure will promote economic growth; however, the upgrading of consumption structure is also influenced by many factors. Therefore, in order to explore the influence factors of consumption structure upgrade, this paper introduces the Engel's coefficient. If the Engel's coefficient continues to fall, it shows that people's living standards and consumption structures have improved. The following article will use the EViews software to analyze the impact factors of the consumption upgrade which by the selected per capita household disposable income, the per capita GDP and the social security level of the Engel's coefficient. In this paper, data of per capita



disposable income of households, per capita GDP, social security level and Engel's coefficient t were selected from 1996 to 2015, the income level of consumers is expressed as per capita disposable income of households, the level of social productivity development is expressed as per capita GDP, the level of social security is expressed as the proportion of total expenditure in GDP.

### 3.1 Build of Data and Model

First, the linear graph of the per capita disposable income of households, per capita GDP, social security level and Engel's coefficient is shown in Figure 1.

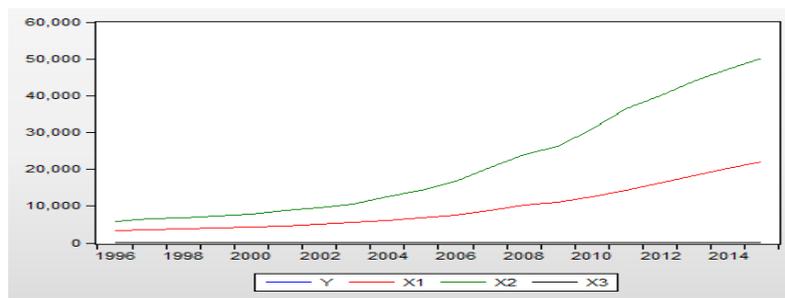


Figure 1

From Figure 1, the Engel's coefficient and the per capita disposable income of residents, per capita GDP and social security level are obviously different, the change of direction is basically similar; there may be some correlation between them. Therefore, the model is set as a linear regression model:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu_i \quad (3.1)$$

In this model, y is interpreted as the variable, represents the Engel's coefficient of our country,  $x_1$  is the per capita disposable income of Chinese households,  $x_2$  is per capita GDP,  $x_3$  is the social security level,  $\mu_i$  is a random disturbance term.

### 3.2 Parameter Estimation

Using EViews software to estimate the parameters of the model by OLS estimate, the following results are obtained:

Table 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	49.76550	2.194704	22.67526	0.0000
X1	0.004112	0.002286	1.798463	0.0910
X2	-0.001518	0.000770	-1.971668	0.0662
X3	-4.509555	2.142634	-2.104678	0.0515
R-squared	0.731577	Mean dependent var		41.83631
Adjusted R-squared	0.681248	S.D. dependent var		4.799480
S.E. of regression	2.709697	Akaike info criterion		5.008407
Sum squared resid	117.4794	Schwarz criterion		5.207554
Log likelihood	-46.08407	Hannan-Quinn criter.		5.047283
F-statistic	14.53581	Durbin-Watson stat		0.660748



Prob(F-statistic) 0.000078

According to the data in Table 1, the results of the model estimation are as follows:

$$y = 49.7655 + 0.006397x_1 - 0.002288x_2 - 4.50956x_3 \quad (3.2)$$

(2.194704) (0.002286) (0.00077) (2.142634)

$$t = (22.67526) (2.798463) (-2.971668) (-2.104678)$$

$$R^2=0.731577 \quad \bar{R}^2=0.681248 \quad F=14.53581 \quad n=20$$

As can be seen from the regression results of the above table model,  $x_1$ ,  $x_2$ ,  $x_3$  correspond to  $P=0.091$ ,  $0.0662$ ,  $0.051$ , all similar to 0, therefore the linear relationship of the model is significant. The coefficient of determination of the model  $R^2=0.731577$  can be shown that the samples fit well with the model. According to EViews regression results, in the model  $D.W=0.6607$ , according to the sample sizes  $n=20$ , and the number of explanatory variables  $k=3$  (It doesn't include a constant term). Check D.W distribution table, we can get the critical value  $d_L=1.10$  and  $d_U=1.54$ , thus  $0 < D.W < d_L$ . have positive correlation between the error terms.

### 3.3 Inspection and Correction of Model

#### 3.3.1 Test of Economic Significance

In the model, the variable coefficient of the positive and negative, the per capita GDP and level of social security are negatively correlated with the Engel's coefficient, the disposable income of households was positively correlated with the Engel's coefficient, so with per capita GDP goes up, Engel's coefficient goes down, the per capita disposable income of residents and the level of social security increased, while Engel's coefficient increases, economic sense is reasonable.

#### 3.3.2 Tests of Statistical

##### 3.3.2.1 Test of Goodness of Fit

It is obtained by the result of regression,  $R^2=0.731577$ , modified coefficient of determination  $\bar{R}^2=0.681248$ , they're all closer to 1, it is proved that this model is good for sample fitting.

##### 3.3.2.2 F-Test

Calculated by EViews,  $F=14.53581$ , for  $H_0: \beta_1 = \beta_2 = 0$ , according to given significant level  $\alpha = 0.05$ , the distribution of the degree of freedom in the F is  $k-1=2$  and  $n-k=17$ , the critical value is  $F_{\alpha}(2,17) = 3.59$ . Because  $F=14.53581 > F_{\alpha}(2,17) = 3.59$ , we should reject the original hypothesis. It shows that the linear relationship of the model is significant at 95% confidence level, it is reasonable to describe that the linear model is established in this paper.

### 3.3.3 Econometrics Test—Autocorrelation Test

#### 3.3.3.1 Autocorrelation Test

According to EViews regression results, in the model  $D.W=0.660748$ , looking up a table to know  $d_L=1.10$ , there is a first order autocorrelation in the model.



### 3.3.3.2 Residual Graph

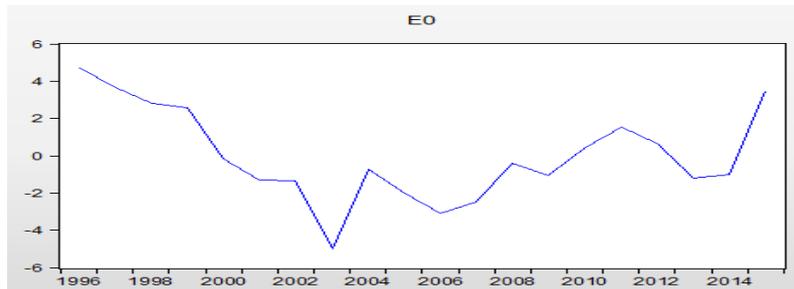


Figure 2 Residual Graph

From figure 2, the model may have a first-order autocorrelation phenomenon.

### 3.3.3.3 Q-Test

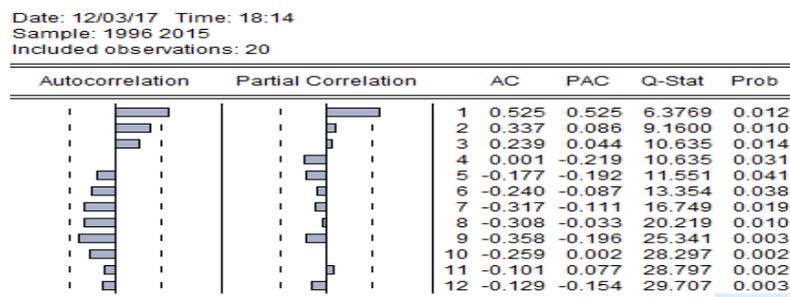


Figure3 Q-Test Correlation Coefficient Diagram

According to Q test, the model is self - dependent.

### 3.3.3.5 Estimation Model (ar (1) is a phase lag )

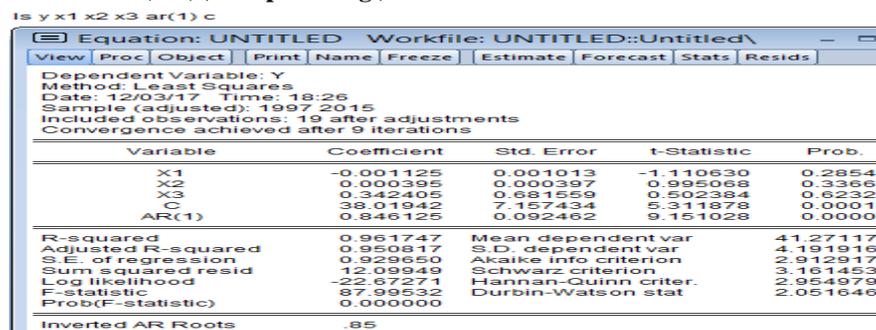


Figure 4

At this point, the model has no self-correlation.

### 3.3.4 Model Analysis

For the above model, it can be concluded that the income level of residents, the development level of social productive forces and the level of social security have influence on the consumption structure. For instance, when income level of consumers increases, it means that purchasing power increases too. In addition to meet the basic needs of consumption will also be able to meet the needs of a higher level; thus will inevitably make the consumption structure upgrade.



#### **4. The Significance of Upgrading Consumption Structure.**

The upgraded consumption structure just as a carriage with engine, for almost all the developed countries favored, because basically, the level of upgrading of consumption structure determines the development level of national economy<sup>[3]</sup>. This article will discuss the positive significance of the following aspects. First, the upgrading of consumption structure has driven the cultural industry. The 17th CPC National Congress was clearly put forward that “Liberating and developing cultural productivity”, “enhance national cultural soft power” and so on. The cultural industry with intangible spiritual products as the production purpose is one of the shortest ways to realize economic growth in modern society<sup>[3]</sup>; Second, the upgrading of the consumption structure has stimulated the emerging industries. In the developed countries, in order to meet the rising consumer demand of the public many new products come out. Such as nonmaterial, microelectronics, bioengineering and so on<sup>[4]</sup>; Third, the upgrading of consumption structure promotes the improvement of industrial technology. The change of consumer's consumption demand forces the enterprise to improve the production technology to some extent and improve the service quality.

#### **5. Conclusion**

Through the study of this article, it can be realized that the upgrading of consumption structure is affected by consumers' income level, social productivity development level and social security level, etc. And it has positive significance to economic growth and social progress. However, the upgrading of consumption structure in China still has some obstacles and obstacles, so it needs the joint efforts of the government and every consumer.

#### **Reference:**

- [1]. 欧阳谦.消费社会与符号拜教物[J].中国人民大学学报 2015,06
- [2]. 姜淼,何理.中国城镇居民消费结构变动研究[A].经济与管理研究 2013,06
- [3]. 晁乐红.论消费结构升级的伦理意义[A].台州学院学报 2011,10
- [4]. 高翔.论优化消费结构对我国产业升级的意义[J].经济论坛