Based on ELES Model Research of Food Consumption Structure of Urban Residents

Yu WANG
Beijing Polytechnic, Beijing, China
17805006@qq.com

Keywords: Urban Residents, The food Consumption Structure, ELES Model.

Abstract. The consumption structure optimization is promoting consumption level in our country under the new situation, expanding domestic demand and promote stable and healthy development of the important engine of national economy. Based on the time background, the article illustrates the main factors influencing the urban residents' consumption structure in China. And according to the per capita disposable income of urban households with food consumption expenditure data, by using ELES model food consumption structure of urban residents of our country to carry on the empirical analysis, explore the optimization under the new situation of Chinese urban residents' consumption structure rationalization countermeasure.

Introduction

More than 30 years of reform and opening-up, our country economy level improved greatly, and has grown to become the world's second-largest economy. Period, the urban residents income level, family average per capita disposable income in 1992 from 2026.6 yuan to 24564.7 yuan in 2012, an average annual growth rate of about 12.6%. At the same time, the Engel's coefficient of urban households in China showed a trend of declining, show that the consumption structure of urban households have also changed. In economic development and urban residents’ income increased at the same time, the residents’ way of life is changing quietly, so that the food consumption structure of urban residents also gradually entered a new stage. To this, this paper studies according to the 2013 "Statistical Yearbook of China” , with the per capita disposable income of urban households and food consumption spending data as the foundation, to the food consumption structure of urban residents in China empirical analysis, and put forward reasonable Suggestions for its further improvement.

Status Quo of Food Consumption of Urban Residents in China

Data from previous years, the food consumer spending has been up most part of consumer spending. With the steady development of economy, our country residents' food consumption increased year by year, the food consumption structure upgrade, pay more attention to food quality and safety, but now the domestic food companies and can't produce real customer satisfaction products, in the case of a large number of surplus products appear relatively "demand" phenomenon.

Since 2003, with the continuous improvement of the urban residents per capita disposable income, increasing absolute spending also used in food, rose to 2416.9 in 2003 from 6040.9 in 2012 yuan, 10 years has increased by two times. And according to Engel's law, in the case of other conditions unchanged, with the improvement of income level, food accounts for the proportion of total consumer spending has a tendency to gradually decline. Engel's coefficient decreased from 37.1% in 2003 to 35% in 2013. In addition, according to the standards set by the United Nations’ food and agriculture organization, the Engel's coefficient for poverty is more than 59%, 50% ~ 59% for food and clothing, 40% ~ 50% for the well-off, 30% ~ 40% for rich, less than 30% for the richest. Since 2003, the life of urban residents in China has reached the level of affluence, and approaching the most affluent level, the living conditions of residents began to pursue the development of life quality and enjoyment type.
transformation. According to the division of “Statistical Yearbook of China”, we can be divided into kinds of food grain, meat and poultry products, eggs, aquatic products, milk and dairy products, as well as other food, from 2003 to 2012, city dwellers of all kinds of food consumption increased year by year, the proportion despite repeated, but the basic remain unchanged, the largest proportion of meat and poultry and its products, food and aquatic products. Thus, on the one hand, urban residents’ demand for all kinds of food and their disposable income growth rate of growth is closely linked, grain, meat and poultry products, eggs, aquatic products, milk and dairy products is the most basic necessities of life, they bring residents utility will only increase with the increase of the consumption. On the other hand, urban residents have the ability to increase spending on all kinds of food, but no matter how much spending growth, the more willing to pay more spending in the meat and poultry products, its attention to the quality of food and nutrition balance, as well as on the food choice is not bound by income too much freedom.

Construction and Test of ELES Model

ELES for extended linear expenditure system. Is Lunch in R. Stone in 1973 (1954) put forward on the basis of the linear expenditure system (LES), the introduction of the variable income, income instead of total spending and marginal propensity to consume instead of marginal budget, it is concluded that the one used to study the theoretical model of residents’ consumption structure. This paper takes urban residents in our country from 2004 to 2013 of disposable income and food, etc. Eight consumer spending the ELES model to: \( Y = a_i + b_i \times Y \). Will China's urban residents per capita disposable income as explanatory variables, the formula of the \( Y \), and \( V_1 - V_7 \) is as explained variables. Regression analysis using SPSS software, is to sort out the results in table 1.

<table>
<thead>
<tr>
<th>Project</th>
<th>( a_i )</th>
<th>( b_i )</th>
<th>The t test value of ( b_i )</th>
<th>( R^2 )</th>
<th>F statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food ( (V_1) )</td>
<td>2873.8630</td>
<td>0.1267</td>
<td>11.4100</td>
<td>0.9559</td>
<td>130.0800</td>
</tr>
<tr>
<td>Grain ( (V_2) )</td>
<td>364.6399</td>
<td>0.0037</td>
<td>5.8700</td>
<td>0.8518</td>
<td>34.4800</td>
</tr>
<tr>
<td>Meal Poultry and Their Products ( V_3 )</td>
<td>836.1200</td>
<td>0.0134</td>
<td>5.1200</td>
<td>0.8140</td>
<td>26.2600</td>
</tr>
<tr>
<td>Eggs ( (V_4) )</td>
<td>90.7724</td>
<td>0.0011</td>
<td>4.4900</td>
<td>0.7703</td>
<td>20.1300</td>
</tr>
<tr>
<td>Aquatic product ( (V_5) )</td>
<td>135.0361</td>
<td>0.0109</td>
<td>9.6700</td>
<td>0.9397</td>
<td>93.5100</td>
</tr>
<tr>
<td>Milk and Its Products ( (V_6) )</td>
<td>118.7865</td>
<td>0.0063</td>
<td>8.2300</td>
<td>0.9187</td>
<td>67.8100</td>
</tr>
<tr>
<td>Other food ( (V_7) )</td>
<td>1328.509</td>
<td>0.092247</td>
<td>15.37</td>
<td>0.9752</td>
<td>236.33</td>
</tr>
</tbody>
</table>

For setting the parameters of the model, the economic meaning of parameter estimates is when the per capita disposable income increase 1 yuan, urban residents on consumer spending will increase the amount of food. According to the daily life experience and the general economic sense, either food or whole grain, meat and poultry and its products, eggs, aquatic products, milk and dairy products and other foods, the increase of per capita disposable income will drive the residents' demand for them, To increase their spending, Reason for this paper the object of study, regression models have parameters of \( b_i > 0 \). From the perspective of the estimated results of table 1, the estimate of \( b_i \) were greater than 0, the visible set in line with the economic significance of the model.

Take \( \alpha =0.05 \), \( t_{0.025} (6) =2.4469 \). \( F_{0.05} (1, 6) =5.987 \). Can be seen from table 1, the statistics were greater than 2.4469, t test value of F statistic were greater than 5.987,This suggests that the t test and F statistics are under 5% significance level through the test, this shows that the model of overall
explanation effect is better, in 2013 China's urban residents per capita disposable income of various income classes for food as a whole as well as grain, meat and poultry products, eggs, aquatic products, milk and dairy products and other foods are significant impact consumer spending. From the perspective of the determination coefficient R2 of regression equation, in addition to the eggs, other equation coefficient of determination were greater than 0.81, some even more than 0.97, this shows that the model has good explanation ability, in 2013 the per capita disposable income of urban residents across income groups are specific 5 kinds of food consumption and food and have strong linear relation. The food consumption expenditure changes more than 81% can be explained by the change of urban residents’ per capita disposable income. And the eggs food determination coefficient is 0.7703, i.e., the change of per capita disposable income can explain 77.03% of the changes in consumer spending.

Marginal Propensity to Consume

Based on ELES theory, marginal propensity to consume is refers to the disposable income of urban residents in our country after its basic consumption demand, for the rest of the specific distribution of disposable income in a variety of consumer products, mainly used to satisfy the basic consumption demand, the specific data as shown in table 1.

Marginal propensity to consume is to increase the purchasing power of people reflect consumer preferences, or new to an indicator, is equal to the increase in value of 1 unit of income increase the share of consumption. The estimates in table 1 is the urban residents of the kind of food I marginal propensity to consume. By the data in the table, you can see that in 2013 China's urban residents' marginal propensity to consume of the whole food is 0.1267, namely the increase of residents' disposable income per 1 yuan, there is 0.1267 yuan for food consumption, visible, city dwellers will food consumption as a basic need, because the average disposable income of urban residents is bigger, so this part of expenses in the income distribution proportion is not very great. For one of the most basic five kind of food (food, meat and poultry and its products, eggs, aquatic products, milk and dairy products) of the data, we find that with the improvement of urban residents per capita disposable income, consumer spending in the meat and poultry and its products, most income increase 1 yuan, consumer spending will increase 0.0134 yuan; Aquatic products follow; Milk and dairy products, food, Egg products at least. Meat and poultry and its products and aquatic products are former despite their price lower than other three kinds of reasons, but can see the two kinds of food from the number of marginal propensity to consume is far greater than the other three types, the price factor is not enough to cause such a big gap, thus indirectly reflects the urban residents in the food consumption of meat and poultry and its products, aquatic products strong preference attitude, visible city residents to the attention of the nutrients, as well as the average standard of living is higher.

Conclusion

Food as information necessary for human life, its importance is not any doubt, so the study of food consumption has important practical significance. In this paper, by using ELES (extended linear expenditure system) model theory of 2013 China's urban residents income class in food in general and the specific situation of all kinds of food consumption model, making the problem more clear, easy to explain. After through the foregoing analysis, it is not difficult to find that the living standards of urban residents in China are not low, food consumption structure is more reasonable, and as people's income growth, food consumption structure in constant optimization. In short, to realize the residents way of life to develop in the direction of more healthy, more reasonable, prompt further upgrading of consumption structure of urban residents food, need from the following several aspects: one is continue to improve the level of the economy, increase the residents' disposable income, improving the income of the middle-income and low-income groups, especially for low income group, to venture through economic subsidies, employment guidance and support to improve their income ability, thus greatly improve the level of domestic demand. Promote the food consumption structure upgrade.
Second is to focus on the development of aquatic products, pastries, dine out, the development of related industries, to meet the increasing needs of the residents. Three is to further consolidate the supply of normal products such as meat and poultry eggs, meet the residents' basic life to need, to ensure social stability. Four is to guide the rational consumption, stimulate residents to milk and fresh products, dried fruits, soy products, such as food are beneficial to the physical demand, healthier, the residents' food consumption structure is reasonable.

References


