

# THE INFLUENCE OF ECONOMIC GLOBALIZATION TO SEAFOOD CONSUMPTION DEMAND OF CHINESE RESIDENTS

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## Abstract

With the economic globalization, the consumption demand of Chinese residents has changed gradually. The paper analyzes consumption tendency of Chinese residents from two aspects, those are per capital consumption level and consumption characteristics. On the one side, per capita ownership of fish and fishery products of China is above the world average level, whereas per capita consumption of that is not high. In 2011, per capita household consumption of urban and rural residents is 14.62 kg and 5.36 kg respectively. Meanwhile, there evidence obvious gap between urban residents and rural residents and among different regions. On the other side, under the condition of economic globalization, with the growing of per capita income, the increment of population size, the improvement of urbanization, the enlargement of aging population and the change of consumption custom and preference, the per capita consumption level of Chinese will undoubtedly rise year by year. In the end of the paper, with the data of sampling, the change in seafood consumption features of Chinese residents is given.

## 1Introduction

China is the biggest seafood producer in the world, whose seafood output surpassed 61.5 million ton in 2013. Meanwhile, the resident consumption level is not high yet. Per capita consumption of seafood of Chinese is less than 15 kg for the urban residents and even only 5.36 kg for the rural residents. With the economic globalization, the consumption demand of Chinese resident has changed gradually. Lifeng LIU (2006)<sup>1</sup> and Shenrong GAO (2011)<sup>2</sup> analyzed the impact of WTO member status on the seafood consumption of China. Both of them asserted that the problems such as imperfect market structure, backward management system and undependable food safety blocked the seafood consumption increment. With the increasing of per capita income, there exists huge potential in seafood consumption. Jintian GAO (2013)<sup>3</sup> and Haomiao LIU (2003)<sup>4</sup> utilized quantitative model to analyze the impact of varied factors on the consumption of seafood and other food. They put forward that food consumption level and structure of Chinese residents depended significantly on disposable income, urbanization, market growth and population size. The authors primarily focused on the impact factors of seafood consumption, they also gave some predictions on the seafood consumption on the basis of these impacts. However, with the change of consumption level along with globalization, something has happened in consumption features which will impact the consumption level conversely. Therefore, the study first provided an overview of seafood consumption level from a historical point of view and gave comparisons between rural and urban and among different regions. In the following sections, the study analyzed some significant change

in China caused by globalization and the change happened in seafood consumption features. Finally, some pertinent countermeasures are put forward.

## 2 Methodology of the study

We relied on historical data from the following resources for our investigation: Chinese Fisheries Statistics Yearbooks, Chinese Export and Import Statistics Yearbooks of Aqua-products, and Statistics Yearbooks of China. The detailed data sources are indicated in the tables and figures associated with specific discussions. In order to study the changing consumption features of seafood of Chinese resident, three metropolitan cities including Shanghai, Beijing and Xian were chosen to get the data. Stratified random sampling was conducted. In each city, four districts were selected considering the distribution of downtown and suburb, the scattering of rich and poor. In each district, the questionnaire is interviewed randomly. The total sample is 320 in which the valid is 310 including 99 of Beijing, 100 of Shanghai and 111 of Xian.

## 3 The consumption demand of seafood of Chinese residents

### 3.1 The general consumption level of seafood

In 1990 China's total output of seafood was about 14 million tons, and jumped to the first place in the world. Later, with the continuously expansion of aquaculture size and the constantly breakthrough of breeding technology, per capita ownership of seafood is increasing. In 1994 it was above the world average level which is 15.2kg. In 2012 the number was far more than the world average level (see Fig.1), which is about 43.6 kg. However, the per capita consumption of seafood in China is not the same story, and surprisingly, the number is less than 15 kg for the urban consumers and even only 5.36 kg<sup>i</sup> for the rural consumers (see Fig.2 and Fig.3). There is a large gap compared with others in the world. For instance, per capita consumption in the United States has been 8.2 kg in 1988.

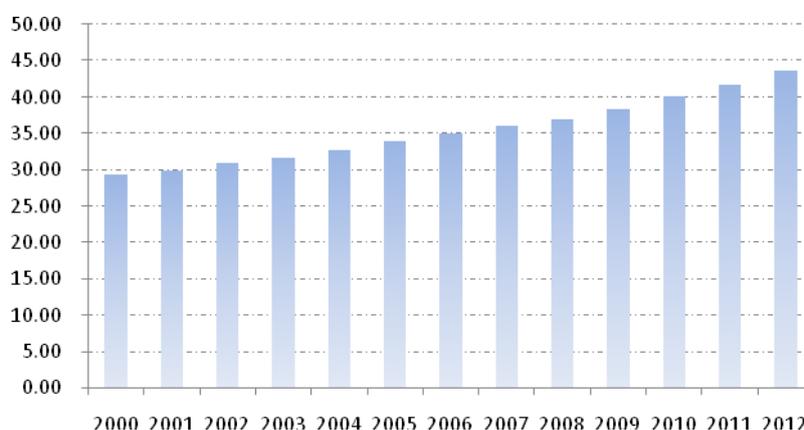


Fig.1 Per capita ownership of seafood of Chinese residents (unit: kg)  
(Sources: China Statistics Yearbook. Applied in Fig.13 and Fig.14.)

As it can be seen from Fig.13 and Fig.14, both of the urban and rural resident consumption of seafood are lower than that of pork but higher than that of poultry, beef and mutton. Statistics in 2012 showed that urban per capita consumption of seafood was 15.2 kg, pork 21.2 kg, poultry 10.8 kg, beef and mutton 3.7 kg. As for the rural one, the number was 5.4 kg, 14.4 kg, 4.5 kg and 5.9 kg respectively. Particularly, there is a considerable gap between rural per capita consumption of

seafood and pork, which remains from 8kg to 9kg every year. However, this gap between the two items is comparatively smaller for the urban residents, which is about 5 kg on average, even though when the gap reached the top in 2005, it was still less than 8 kg. On the other hand, it is worth to mention that what is large for the urban people is the gap between the consumption of seafood and fresh eggs. There is a great tendency of further expansion, although it was only 4 kg in 2012. However, the gap between the same for the rural residents becomes relatively small, and tends to be smaller in recent years. This is because of the lagging growth on rural income, and the widening gap between the rural and urban income, which to some extent restrain the improvement of seafood consumption level of rural residents (see Fig.15).

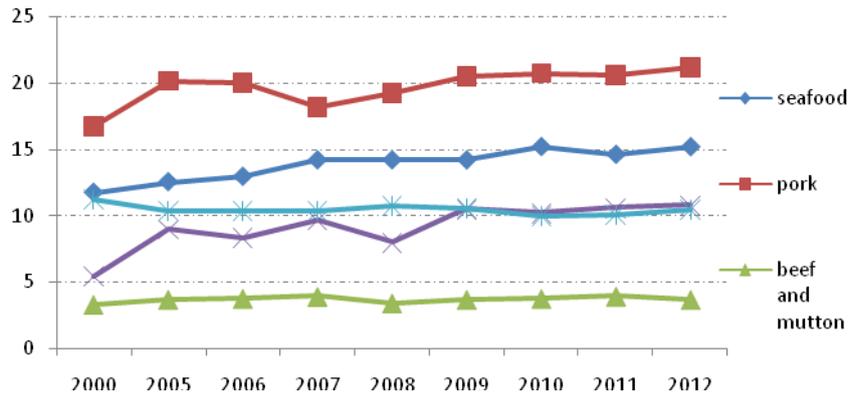


Fig.2 Per capita consumption of different food of Chinese urban residents (unit: kg)

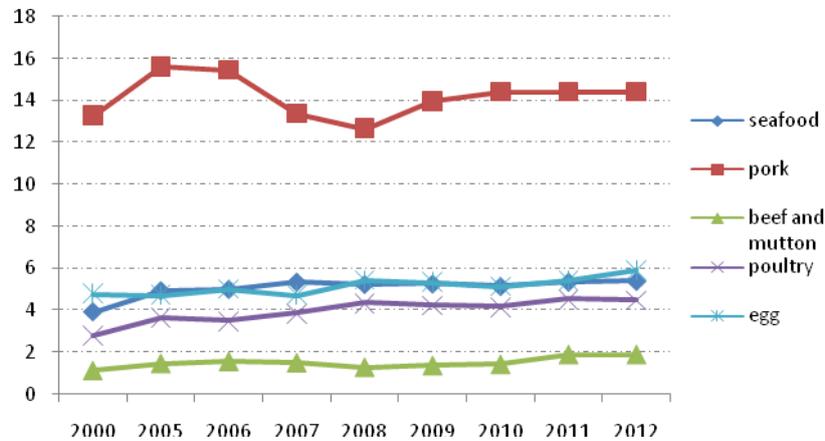


Fig.3 Per capita consumption of different food of Chinese rural residents (unit: kg)

### 3.2 Difference between urban and rural consumption of seafood

The rural income is far lower than the urban one. From Fig.4, it can be seen that urban disposable income per capita was 26959yuan, while the rural net income was only 7919yuan in 2012. Although the Engel coefficient of rural residents is 40.4%, about 4% higher than that of urban residents, expenditure on food of rural residents is still far lower than that of urban residents. In 2012, urban residents per capita cash expenditure on food was 6041yuan (409 yuan for seafood), while it

was only 1863yuan for rural residents, accounting for merely 30% of the former. This ratio was 36.66% in 2003<sup>ii</sup>. The low rural food consumption level determines the food consumption pattern of relying mainly on rice and vegetables while ignoring meat, eggs, poultry and seafood, whereas it is opposite to the urban residents. The consumption of rice is decreasing while that of meat, eggs, poultry and seafood increasing. The gap has not shown any sign of narrowness although the absolute consumption quantity of meat, eggs, poultry and seafood increases with a slow growth of rural per capita income. In terms of Fig.3, the rural per capita consumption of pork, beef and mutton, poultry and eggs reached 14.4 kg, 1.9 kg, 4.5 kg and 5.9 kg respectively, each accounting for 69.9%, 48.1%, 42.9% and 48.1% of the urban per capita consumption. However, this is not the case for seafood. Rural per capita consumption was only 5.4 kg and took merely 36.7% of the urban one, which was 15.2 kg in 2012 (see Fig.5). It seems that there is a certain amount of annual growth, but the average annual growth rate is only 2.97%. Therefore, the conclusion can be drawn that under the circumstance of continuous increase of rural income, there is big room for the enlargement of rural consumption of seafood, since that the rural population takes nearly 50% of the total one in China.

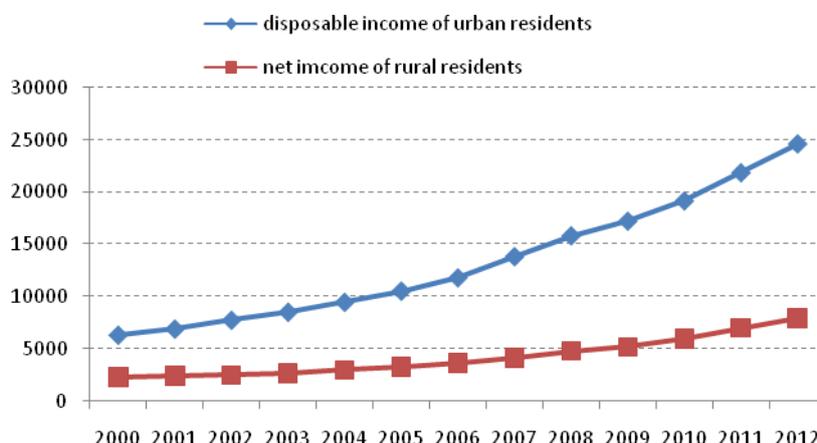


Fig.4 Per capita annual income of Chinese rural and urban residents (unit: yuan)  
(Sources: China Statistics Yearbook. Apply in Fig.16.)

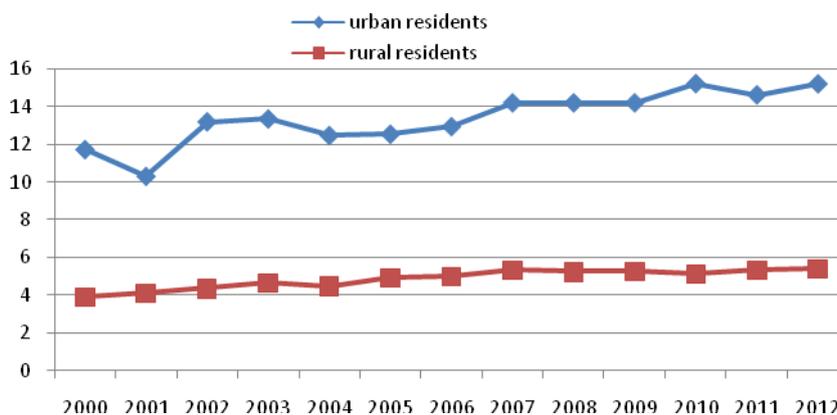


Fig.5 Per capita seafood consumption of Chinese residents (unit: kg)

### 3.3 Regional consumption difference of seafood

As mentioned in the previous section, there appears special regional distribution of fishery production in China. Marine capture and aquaculture concentrate mainly on the coastal areas of Hebei, Liaoning, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi and Hainan as well as other two cities of Tianjin and Shanghai. Freshwater capture and aquaculture have developed all over the country, but target on six provinces of Hunan, Guangdong, Jiangsu, Anhui, Hubei and Jiangxi, where the water resources is abundant. For a long time, regional distribution of production is the direct explanation for the different consumption habits and preference in different places. Also there are other causes like the long-distance transportation, fresh and alive keeping technology and high cost of seafood, which result in the obvious regional difference of seafood consumption. There is a great gap among the central and western areas and the eastern coastal areas. Take the rural residents as an example, per capita consumption of seafood in the east was 12.26 kg in 2012, which was 3 times of the one in the central and northeast China and more than 8 times of the one in the west. And this gap seems to have no trend of narrowness. (see table 1).

Table 1 Per capita seafood consumption of rural residents unit: kg

	2005	2006	2007	2008	2009	2010	2011	2012
The north	9.42	9.54	9.88	9.86	10.07	9.85	10.30	12.26
The Middle	4.53	4.61	5.17	4.86	4.71	4.64	5.11	4.85
The west	1.39	1.44	1.64	1.61	1.62	1.60	1.62	1.45
The northeast	4.46	4.54	4.74	4.60	4.50	4.23	4.65	4.41

(sources: China Statistics Yearbook. )

#### 4 The influence of globalization to seafood consumption of Chinese residents

##### 4.1 The change brought by globalization

With the economic globalization, there happened a great deal change in China. The openness has brought significant development to China, and accordingly, the income level of Chinese resident increased rapidly. Meanwhile, with the economic development, China has made an obvious progress in the urbanization. Moreover, besides the effect of “Single Child ” policy, with the more freely flowing of population, the ratio of aging population increased fast. All of these factors will have impact on seafood consumption features of Chinese residents.

##### 4.1.1 The growth of per capita income

Seafood is generally considered to be a source of higher protein compared with meat and eggs. With the continuous improvement of residents' income level, consumer demand for seafood will increase. Therefore, the consumption level of urban residents is generally higher than that of rural residents, and the consumption level in the east is higher than that in the Midwest and Northeast. This is one of the significant factors for the urban and rural differences and regional differences of seafood consumption.

Despite the differences between the urban and rural income growth, the rural income growth rate is lower than that of the urban residents, but both have shown a sign of increasing by years (see Fig.4). At the same time, the low income level in the middle and western regions also increased by years (see Fig.6). What's more, since 2012 when ‘the income doubling program’ was proposed, the government has endeavored to improve the income level of the lower and middle-income families by

means of transforming the economic development pattern, offering the optimum employment opportunities and narrowing the wide gap in income distribution. With these efforts, there is no doubt that seafood consumption level will be improved with the increasing per capita income.

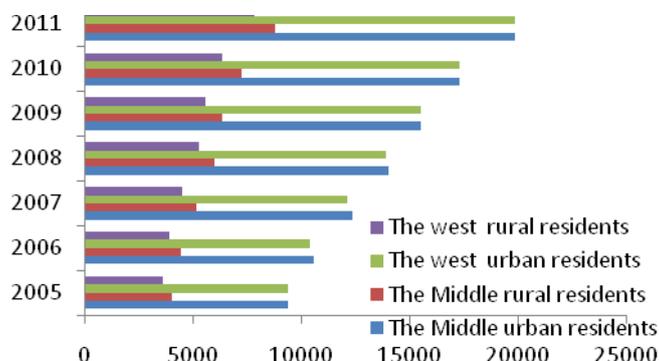


Fig.6 The per capita annual income of Chinese residents of the Middle and the west (sources: China Statistics Yearbook. Applied in Fig.24 and Fig.25.)

#### 4.1.2 The increment of population and improved urbanization level

Definitely, the enlarging amount of population comes with increasing consumption. Although the consumption is not directly decided by population size, its influence on the scale and capacity of the market is inestimable. In the cities, population is concentrated, transportation is convenient, and especially, seafood market is developed. There are varieties and large number of choices, and everything is much more available. For the urban residents, the income level, purchasing power and shopping environment are all superior to the rural residents. Therefore, there is a wide gap between the urban and rural consumption of seafood. With the further advance of urbanization, more and more rural residents move to cities and towns, and the people with high level seafood consumption will gradually increase, while the one of low level seafood consumption will decrease. At the same time, as the city commerce and tourist industry grow increasingly active and the social activities and the chances of outdoor eating become so frequent, per capita consumption of seafood will definitely enlarge so as the consumption demand of seafood.

According to the prediction of population development from the Population Research Center, the population in China will reach 1.425 billion by 2020, which is 50 million more than that in 2013. Fig.7 has demonstrated that the average urbanization level is improved with the population increment, especially the level in the Midwest. There is no denying that seafood consumption demand will be enhanced.

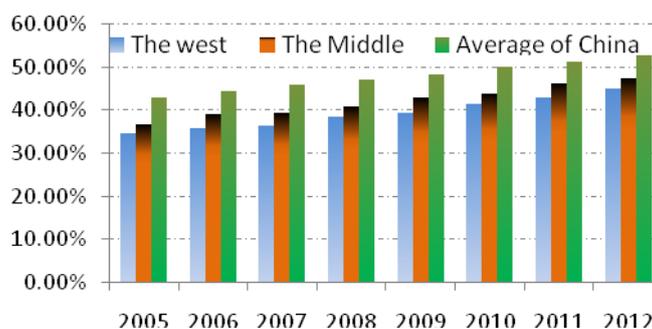


Fig.7 The urbanization level of China<sup>iii</sup>4.1.3 The huge ageing population<sup>iv</sup>

The increasing number of the elderly adds to the consumption of those products with healthy, long-term survival and nutritious benefits. Seafood are not only a kind of protein food which are absorbable and digestible, but also have some nutritious and disease-resistant effect. It is much more suitable for the old compared with meat. However, the young are partial to the meat for convenience reason while cooking and dinning. In general, seafood consumption demand will increase as the aging population grows.

As it has shown in Fig.8, China has entirely stepped to the rank of aging countries since 2001, and it was even worse after that. In 2012, the population older than 65 has accounted for more than 9% of the total in China. According to the data collected by the office of old-age work committee in China, the aging population will take 17% of the total by 2020, which is about 248 million. Definitely, seafood consumption will be enhanced under this circumstance.

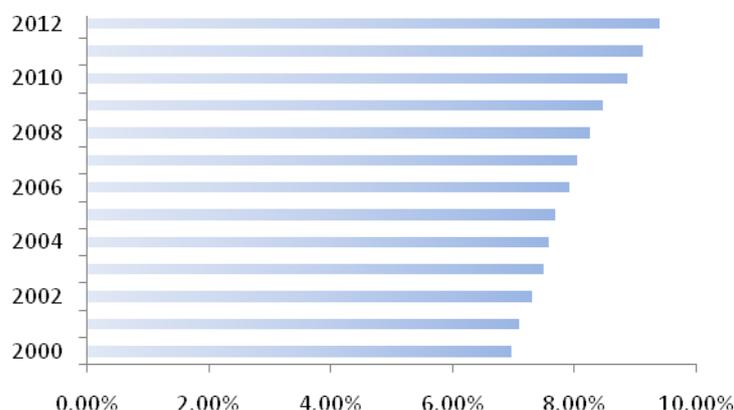


Fig.8 The percentage of the people older than 65 in the total population

## 4.2 The changing consumption features of seafood

4.2.1 The proportion of consumption expenditure of seafood on household food consumption expenditure increased, from 18.03% in 2007 to 20.47% in 2012. The consumption preference of seafood was higher in 2012 compared with meat, which was 52.26%, 10 percentage points higher than 42.26% in 2007. The consumption of seafood is not only because of preference and price, but also the concern for nutrition, health and safety of the products, which are becoming the primary factor for consumption. In 2012, the concern for nutrition and health, food safety and preference proportionally reached 53.4%, 10.68% and 25.73%, respectively. Among them, the first two proportions increased by 1.2 percentage points and 1.4 percentage points respectively than those in 2007, while the last one was 1.8 percentage points lower than that in 2007 (see Fig.9). Nutrition and health have become the most important requirements of the consumers. Low fat, low sugar, low cholesterol, high protein, high calorie and high calcium food are what the customers strongly require. In seafood market, the sales of shrimp and crab products are brisk right because they are in accordance with the consumption trend.

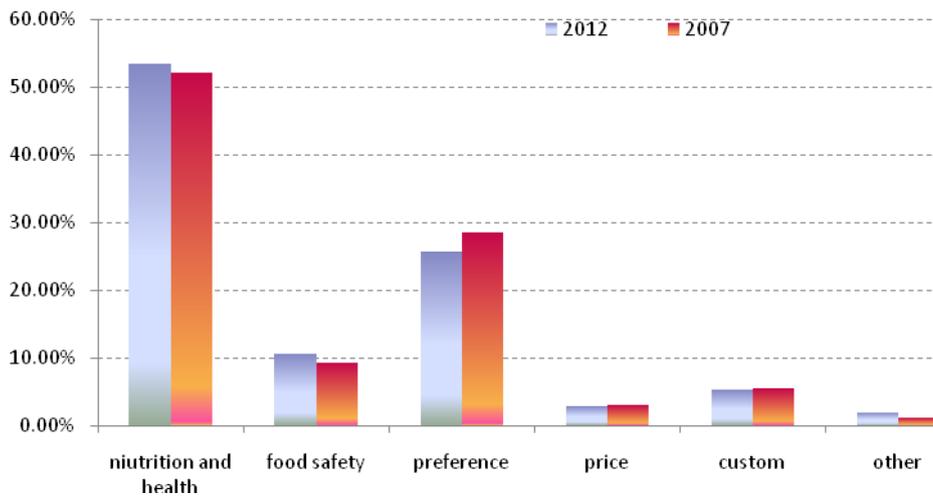


Fig.9 The concern factors of urban residents for seafood consumption

4.2.2 Fish, crab and shrimp are prior to other species while purchasing. Recently, the portion of shellfish and seaweeds slightly decreased while the one of mollusks increased somewhat. In 2012, the consumption of fish reached proportionally 57.31% and crab and shrimp reached 23.67%. There seems no obvious difference compared with 2007 considering the high portion they shared in the total consumption amount. Consumption of shellfish is relatively smaller, which accounted for only 2.28% of the total consumption of seafood in 2012, and was 0.34 percentage points lower than 2007. Likewise, the seaweeds had the same tendency. The portion was 10.83% in 2007 and reduced to 10.16% in 2012 (see Fig.10 and Fig.11). With the enlargement of aquaculture size, aging of the beach sediment and aggravation of land-based pollution, the shellfish aquaculture is facing environmental degradation and serious disease, which directly undermines the willingness of urban residents to consume shellfish products. On the other hand, choices of the consumers are diversified with the rapid development of deep sea fishery and the increasing portion of capture products which are sold in domestic market. Squid and other mollusks products are gradually becoming delicious food in consumers' dinner.

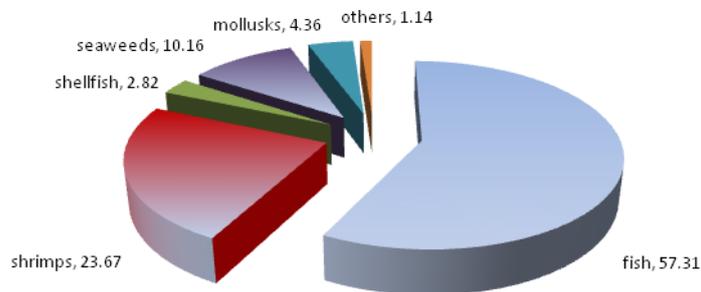


Fig.10 The composition of different consumption species in 2012

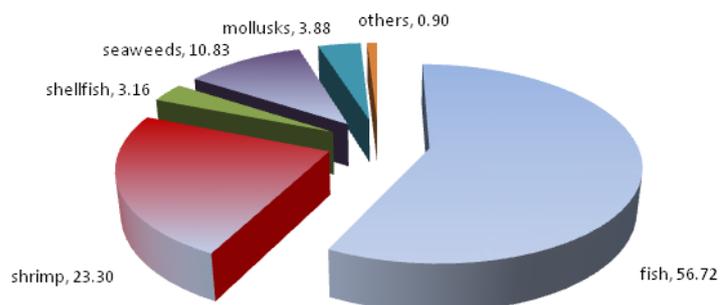


Fig.11 The composition of different consumption species in 2007

4.2.3 The main forms of seafood consumed by the urban residents are frozen, chilled whole fish and primary processed fresh one (which are discarded of internal organs, head and the scales). However, the proportion of whole fish is in the downward trend, while the trend of some deep-processed products such as fish fillet, fish meat and surimi are completely the opposite. It is well known that under the condition of the same quality, the price of the same kind of seafood is subject to the depth of processing. In virtue of the improvement of income level and the enhancement of health consciousness, the consumers come to pay less and less concern on the price and attach more importance on the food safety and cooking convenience. What's more, semi-finished products and finished products are becoming popular among housewives in this fast-paced world, which really save a lot of time. From the perspective of the most concerning factors when purchasing seafood, the share of price factor has decreased from 19.09% in 2007 to 9.74% in 2012, which is nearly 10 percentage points lower. However, the shares of food safety and cooking convenience factors have increased from 3.24% and 2.27% in 2007 to 5.52% and 2.6% in 2012 respectively (see Fig.12). The unprocessed and primary processed products have been dominating seafood market, which have proportionally reached nearly 80%. In 2012, the unprocessed products consumption took about 53.61% of total seafood, but it was 2.96 percentage points lower than 2007, which was 56.57%. For the deep-processed products, the portion is small but tends to rise. In 2007, the portion of fish fillet and fish meat totally shared 4.87% and surimi shared 8.05%, while in 2012, they reached by 6.63% and 10.44% respectively (see Fig.13).

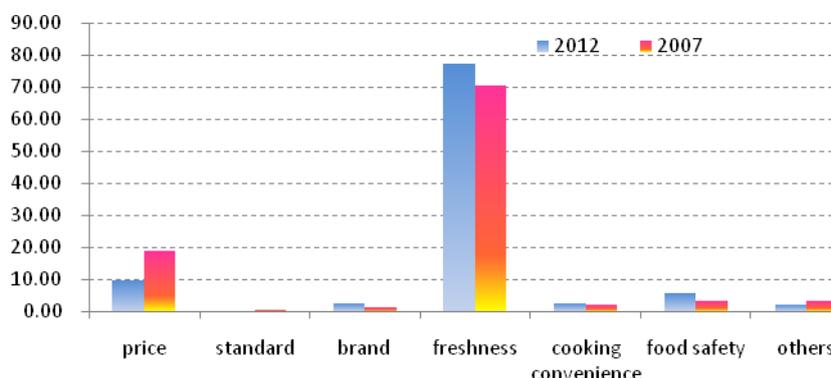


Fig.12 The factors influencing the purchasing of seafood

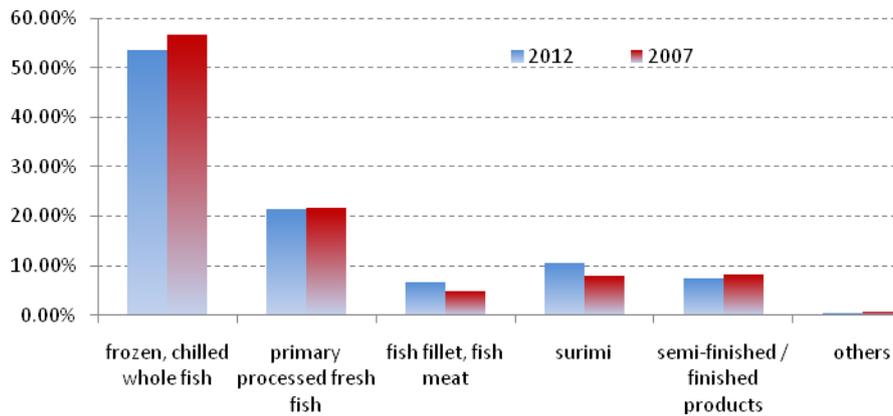


Fig.13 Different forms of seafood consumed by urban residents

4.2.4 Pedlars' market is the main place for urban residents to purchase seafood, and in recent years, other buying channels like supermarket, seafood stores and even online shopping are gradually accepted by the consumers. Traditionally, residents in the country are used to eat whole and live fish, and therefore, the freshness naturally becomes the vital factor when people buying fish. In 2007, this factor shared a high portion of 70.55% when residents bought seafood and this portion rose to 77.27% in 2012. As a result, pedlars' market is the first place for the consumers to buy seafood. However, in recent years, more attention is paid to food safety (as mentioned before, the portion of factor of food safety has increased from 3.24% in 2007 to 5.52% in 2012). Due to the better condition of cold chain transportation of seafood, the rates of buying from supermarket and stores both increased somewhat, from 20.07% and 27.49% in 2007 to 20.27% and 31.96% respectively<sup>v</sup> (see Fig.14). Though this increase is not obvious, it has shown that more and more urban residents have begun to accept these kind of distribution terminals. In addition, it is worth to mention that there are some urban residents trying to buy seafood online, but it is still in its infancy compared with the rapid development of Electronic Business. Another problem is that the rate of buying from the internet decreased from 3.98% in 2007 to 3.61% in 2012. Whether it is caused by the fish and fishery product itself or problems of enterprise management, it is necessary to have further discussion.

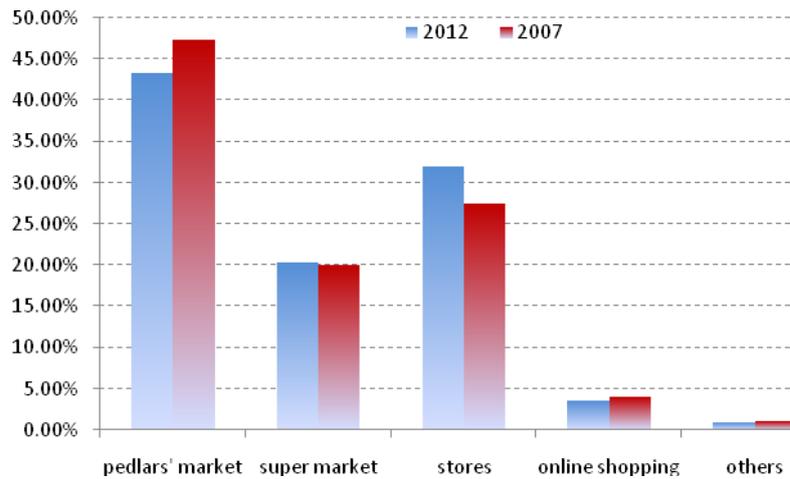


Fig.14 The sequence of purchasing places of seafood

## 5 Conclusions and discussion

### 5.1 Conclusions

Seafood consumption level of Chinese residents is low compared with either that of the average level of world or the total output of China. Particularly, consumption level of rural residents and residents in middle and western regions are much lower. Apparently, there exists huge potential in seafood consumption in China. Moreover, with the globalization, a lot of change happened in China. The growth of per capita income, the increment of population and improved urbanization level, the huge ageing population—to mentioned the most obvious. With such great change, seafood consumption not only evidenced an increasing tendency, but also showed some different features. Those are as following.

Firstly, the proportion of consumption expenditure of seafood on household food consumption expenditure increased.

Secondly, besides fish, crab and shrimp also became the main species while purchasing.

Thirdly, the main forms of seafood consumed by the urban residents extended beyond frozen, chilled whole fish, primary processed fresh one was preferred by more and more consumers.

Finally, pedlars' market is the main place for urban residents to purchase seafood, but in recent years, other buying channels like supermarket, seafood stores and even online shopping are gradually accepted by the consumers.

### 5.2 Discussion

According to the change in seafood consumption level and features, in order to enhance seafood consumption in China, some countermeasures should be taken pertinently.

On the level of government, one hand, propaganda on the nutrition of seafood should be improved hard so as to modify consumer's preference of seafood over other food with protein. On the other hand, appropriate economic policy should be conducted so as to increase the income of residents, especially the income of those in rural areas and in middle and western regions.

On the level of enterprises, one hand, processing technology should be made a progress so as to supply more varieties processed seafood to feed diversified demand of consumers. On the other hand, cold logistics technology and system should be built so as to supply sufficient live and fresh seafood with quality safety for consumers.

References:

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3. GAO Jintian, LI Jingmei, LIU Tieying, The Analysis on Seafood Consumption Demand Trend and Influence Factors of Chinese Residents[J]. Dongyue Forum, Jan 2013:118-123.
4. LIU Haomiao, Study on Seafood Demand of Chines Rural and Urban Residents[D].Chinese Academy of Agriculture Sciences,2003ea.

Endnotes:

1. Due to the datafrom China Statistics Yearbook, we are only available of the data of indoor consumption.
  2. Sources are from China Statistics Yearbook in 2012.
  3. The percentage of urban residents in the total population
  4. According to the international criteria of ageing society, any nation in which the population older than 65 takes more than 7% of the total will be defined as ageing society.
  5. According to investigation, the sales of seafood in most supermarkets are just merely a marketing strategy. There is no intention to truly focus on seafood selling, which is associated with the stalingproportion of buying from the supermarkets in the total consumption of seafood.
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