The Market Demand Analysis of the Liquid Milk

CaiShou Song¹, Gu Xiao Min²

Glorious Sun School of Business and Management Donghua University, Shanghai China - 200051

Abstract: With the happen of sanlug milk powder incident in 2008, China's food problems, especially infant milk, obtained the wide spread attention. Also for the necessaries that in our daily life, such as pure milk, yogurt and so on, its production enters also need to improve the quality of its products. So this is an opportunity for overall dairy industry, which is also a challenge. This paper mainly focuses on the liquid milk of overall dairy products demand. Based on the research of the liquid milk industry, we were to explore the development of China's dairy products in recent years and to analyze how much potential market demand for liquid milk. This report is selected liquid milk sales from 2002 to 2011. According to these previous sales data; we use time series analysis methods and the quantitative analysis for the main factors which can affect their demand. Finally we combined with least square method for curve fitting to calculate the future market demand forecasting model. And then to forecast the future demand of liquid milk, thereby establishing the liquid milk market in China market demand analysis report. The goal of this report is the study of the change of liquid milk market demand in China since 2002. Thereby reflecting the developmental status of Chinese liquid milk.

Keywords: least square method time series market demand forecast liquid milk

1. Introduction

Chinese dairy industry after reform and opening up, the development of recent decades has been gradually developing. After the government and the enterprises of the dairy products and dairy products propaganda to popularize the knowledge of demand for dairy products market, the China has entered the stage of rapid growth, China dairy consumption market is now the world dairy giants strain every nerve segmentation chunk "fat". The dairy products enterprise and foreign enterprise to China is a potential huge market.

Three melamine incident 2008 years Sanlug milk powder led to reduced confidence in Chinese dairy products of national. At the same time also caused a decline in China dairy products demand. But this does not mean that the dairy products demand Chinese they really would have fallen down, but the sudden drop another sustained and rapid growth of another demand would cause Chinese dairy products demand.

The current dairy market competition has further exacerbated the trend, some media called "feudal lords vying for the throne of the Warring States period". Careful observation, the dairy enterprise competition, this competition has been transferred to the former price competition is competition, competition and market competition of service quality. Therefore, through the research of this project will help further understanding to improve the development of liquid milk industry trends.

2. Product Introduction

Liquid milk is produced by healthy cows’ fresh milk, through heating sterilization method and effective treatment, packaging sale of drinking milk. According to the International Dairy Federation (IDF) definition, liquid milk (liquid) is a general term for pasteurized milk, UHT milk and yogurt three kinds of dairy products.

Volume 3 Issue 9, September 2014

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

2081
areas, but rural area consumption the per capita growth rate is far higher than the urban areas; consumers in the large warehouse and supermarket to buy the proportion of liquid milk rise and occupy a dominant position, traditional channel sales ratio declining; consumption declining traditional pasteurized milk, milk consumption of UHT increases rapidly and occupy the dominant position.

3. The Main Factors Influencing the Liquid Milk Market Demand

In the ever-changing market, the influence factors of the liquid milk needs are constantly changing, but the main factor is mainly the following three.

(1) The liquid milk consumption per capita
This is an important factor of dairy products demand. Chinese dairy products per capita consumption or more detailed to the per capita consumption of liquid milk is an important factor analysis of liquid milk consumption growth trend, the amount of consumption of average per capita by liquid milk, liquid milk for analysis can evaluate the milk product how big is the demand of future.

(2) Per capita disposable income
The per capita disposable income is one of the important factors affecting the dairy market demand. Although China’s economic development and the growth rate of the total walk in one of the world, but the income distribution is serious unbalanced, the gap between rich and poor is growing, serious impact on the quality of life of the residents to improve. High level of income people pay attention to nutrition, consumption of dairy products, and the income level low person no financial have no energy to focus on the body needs nutrition, natural and less consumption of dairy products; the important factors of consumption of urban residents in Beijing, Shanghai dairy, Tianjin, Shandong, Jiangsu and other developed provinces and cities in our country is much of their income level high, so pay attention to the body balanced nutrition and healthy consumption, while the central and western provinces city residents income level is relatively low, some barely enough food and clothing, and some just solved the problem of food and clothing, low consumption of dairy products in this case is inevitable, no financial emphasis on good nutrition balance problem. Therefore, the per capita disposable income increase is one of the important factors affecting the demand for liquid milk. Per capita disposable income means the number of tolerable degree of consumption level and commodity prices. According to the habitat of disposable income can evaluate enterprise consumer purchasing power.

(3) The resident consumption level
The consumption level of residents refers to residents in the material products and services consumption process, to meet the people survival, development and enjoyment need to reach the level of. We Reflected by the quality and quantity of consumption of material products and services. It is the consumption of structural indicators reflects the level of consumption. Physical form through the consumption of residents consumption level of residents consumption can be observed, the number and amount of the average consumer can also further calculation for all kinds of consumer goods in order to reflect the residents, based on the basic survival need on gradually to enjoy data and development direction development trend.

4. Data Collection and Analysis

There are many factors affecting certain liquid milk market demand, such as economic development, market, national policy and so on, but the main factor is the per capita liquid milk consumption, per capita disposable income, the consumption level of residents of the three is the main determinant. Is the key factor to evaluate the liquid milk market demand?

(1) Data collection
According to the relevant information Chinese statistical yearbook and China dairy Yearbook and the related literature we can get liquid milk as fellow

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>1,299.78 1,299.78</td>
<td>5,032.00 5,032.00</td>
<td>1,570.00 1,570.00</td>
<td>7,702.80 7,702.80</td>
</tr>
<tr>
<td>2003</td>
<td>1,746.28 1,746.28</td>
<td>5,032.00 5,032.00</td>
<td>1,860.00 1,860.00</td>
<td>8,472.20 8,472.20</td>
</tr>
<tr>
<td>2004</td>
<td>2,260.61 2,260.61</td>
<td>5,032.00 5,032.00</td>
<td>1,880.00 1,880.00</td>
<td>9,421.60 9,421.60</td>
</tr>
<tr>
<td>2005</td>
<td>2,753.37 2,753.37</td>
<td>5,032.00 5,032.00</td>
<td>1,790.00 1,790.00</td>
<td>10,493.00 10,493.00</td>
</tr>
<tr>
<td>2006</td>
<td>3,193.41 3,193.41</td>
<td>5,032.00 5,032.00</td>
<td>1,830.00 1,830.00</td>
<td>11,759.50 11,759.50</td>
</tr>
<tr>
<td>2007</td>
<td>3,525.24 3,525.24</td>
<td>5,032.00 5,032.00</td>
<td>1,780.00 1,780.00</td>
<td>13,785.80 13,785.80</td>
</tr>
<tr>
<td>2008</td>
<td>3,525.24 3,525.24</td>
<td>5,032.00 5,032.00</td>
<td>1,520.00 1,520.00</td>
<td>15,780.80 15,780.80</td>
</tr>
<tr>
<td>2009</td>
<td>3,518.84 3,518.84</td>
<td>5,032.00 5,032.00</td>
<td>1,490.00 1,490.00</td>
<td>17,174.70 17,174.70</td>
</tr>
<tr>
<td>2010</td>
<td>3,518.84 3,518.84</td>
<td>5,032.00 5,032.00</td>
<td>1,400.00 1,400.00</td>
<td>19,109.40 19,109.40</td>
</tr>
<tr>
<td>2011</td>
<td>3,567.85 3,567.85</td>
<td>5,032.00 5,032.00</td>
<td>1,370.00 1,370.00</td>
<td>21,809.80 21,809.80</td>
</tr>
</tbody>
</table>

According to the table we can found that the per capita disposable income and consumption level of residents in the past ten years has been to the high speed growth. But hundreds of liquid milk consumption per capita in 2004 after declining trend, there is a close relationship between the May and population growth. Liquid milk sales before 2007 growth, after the smaller increase in 2008 and 2009 show a downward trend, declining thus sales may be due in 2008 three melamine incident caused consumer confidence in dairy products decreased resulting in the liquid milk sales also received the influence.

Volume 3 Issue 9, September 2014

www.ijsr.net

Paper ID: SEP14567

Licensed Under Creative Commons Attribution CC BY
(2) The validity, reliability, significant degree

The above data obtained using SPSS can be obtained by curve fitting analysis table 1, 2 as follows:

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjustment of R²</th>
<th>Standard error of estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.973a</td>
<td>0.989</td>
<td>0.982</td>
<td>74.62573</td>
</tr>
</tbody>
</table>

a) predictor variables: (Chang Liang),
b) The per capita disposable income, a hundred years of liquid milk consumption per capita (XianKen), the consumption level of residents [unit: Yuan];

c) the consumption level of residents [unit: Yuan].

By the analysis of the chart shows that: according to table 1, per capita disposable income, a hundred years of liquid milk consumption per capita, these three variables level of consumption of liquid milk sales explanation degree is 98%, this explains the liquid milk these three variables can better sales, is effective. According to table 2 can be found in the three sets of data salience is respectively 0.021, 0.024, 0.007, according to the statistics shows that this explains the rationality explanation levels were in the range of 0.05 shows that the three independent variables on the dependent variable of liquid milk sales is very significant, is credible.

(3) The construction of regression equation and elastic analysis.

Finally, according to above to analyze the data obtained we can get the final fitting linear expression of Q=-4245.475-1.354 alpha +2.09 beta +1.009 gamma can get the final fitting linear expression of Q=-4245.475-

4948.3 (R² = 0.9756)

The consumption level of residents [unit: Yuan] = -1.334 +.433 -4.404 -3.123 .021

Hundred years of liquid milk consumption per capita (XianKen) = 2.090 -.697 .484 2.998 .024

The per capita disposable income = 1.009 -.249 5.633 4.061 .007

A. dependent variables: liquid milk sales volume [unit: 10000 tons]

<table>
<thead>
<tr>
<th>Model</th>
<th>Non standardized coefficient</th>
<th>Standard coefficient</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (constant)</td>
<td>-4245.475</td>
<td>1449.597</td>
<td>-2.929</td>
<td>.026</td>
</tr>
<tr>
<td>The consumption level of residents [unit: Yuan]</td>
<td>-1.334</td>
<td>.433</td>
<td>-4.404</td>
<td>-3.123</td>
</tr>
<tr>
<td>Hundred years of liquid milk consumption per capita (XianKen)</td>
<td>2.090</td>
<td>-.697</td>
<td>.484</td>
<td>2.998</td>
</tr>
<tr>
<td>The per capita disposable income</td>
<td>1.009</td>
<td>-.249</td>
<td>5.633</td>
<td>4.061</td>
</tr>
</tbody>
</table>

From the table we can see that the per capita disposable income of the influence of liquid milk demand reached a minimum in 2006, the influence of later in 2006 per capita disposable income of demand for fluid milk volume of rapidly rising trend. Influence of residents’ consumption level of liquid milk demand has been gradually declining trend. Hundreds of liquid milk consumption per capita in 2006 before the influence of the liquid milk demand is gradually increasing, after 2006; its effect on the liquid milk demand is decreased. The elasticity of demand in addition to the consumption level of residents appeared outside of less than 1 other are greater than 1, this shows that in the China liquid milk consumption is still not fully reach the necessities of life state, at this stage Chinese liquid milk for a part Chinese residents or in addition to the required goods outside the luxury. This shows that China now per capita disposable income is relatively low caused people to meet this demand cannot be normal. That price is still a relatively important competitive factor of liquid milk market.

(4) To establish a prediction model

From the above figures can be drawn from the year of 2012, hundreds of residents and consumption level per capita consumption of dairy products and the per capita disposable income of the function expression between respectively: The residents' consumption level of alpha =857.7t + 2401.4 (R² = 0.956)

Hundreds of people per capita consumption of dairy products to beta = -47.5t + 1910 (R² = 0.7223)

The per capita disposable income gamma = 1564.1t + 4948.3 (R² = 0.9756)

These three expressions were brought into the Q=-4245.475-1.354 alpha +2.09 beta +1.009 gamma can get the final Q=195.3t+1488.1

This can be predicted sales of the next few years as

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>3831.7</td>
<td>4027.2</td>
<td>4222.3</td>
<td>4417.6</td>
<td>4612.9</td>
</tr>
</tbody>
</table>
Reference