The Recovery of Consumer Purchasing Behavior after a Food Crisis:
A Case Study of the Melamine Incident in China

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Introduction

The Melamine Incident in baby milk powder occurring in September 2008 triggered a sudden drop in the profits of Chian dairy industry. However, according to the data from China economic information network, the sales revenue and profit fully restore to the level before the incident in less than one year.

Two main objectives in this paper: first, we will analyze the extent to which the dairy market has recovered from the Melamine incident; and secondly, we will study the factors which influence consumers’ recovery behavior after this food crisis.

Framework

As risky food has different features from general merchandise, consumers can not directly identify the actual risk level of dairy products. Under this assumption, uncertainty factor or risk factor is always introduced in the consumer utility function. Thus, the demands for dairy products are as follows.

Results & Conclusions

The consumption of milk powder and fluid milk are almost opposite, due to their different consumer groups and consumer characteristics. Consumers who reduced their dairy consumption after the incident in February are targets of this research, their recovery situation is shown in Figure 3.

We distinguished the milk product into two parts: fluid milk and milk powder, and asked the respondents whether they had purchased the two products respectively before and after the Melamine incident. Figure 2 reports the answers.

Based on the analysis framework, we choose economic factors (including price and income), staged factors (including risk attitude, obtained knowledge and trust) and socio-demographic characteristics to conduct the estimation. Specially, knowledge factor is divided into two parts: about safety and about harmfulness. A factor analysis on trust is performed and yields five well distinguishable principal components. The estimation results are shown in Table2.

Table 2: Estimation results for Heckman model and Double-Hurdle model

<table>
<thead>
<tr>
<th></th>
<th>Fluid Milk</th>
<th>Milk Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Var.</td>
<td>Heckit</td>
<td>D hurdle</td>
</tr>
<tr>
<td>Age</td>
<td>0.0011</td>
<td>-0.1942***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.0032***</td>
<td>-0.3015</td>
</tr>
<tr>
<td>Income</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Expenditure</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Education</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Employment</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Marital</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Food safety</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Health</td>
<td>0.0005</td>
<td>-0.0007</td>
</tr>
</tbody>
</table>

Overall, the model fits the data well, especially for the fluid milk sample. For milk powder, the model fitness in the first stage is better; but for liquid milk, the fitness for the second stage is better, which means the “threshold” effect in first stage is relatively stronger for milk powder.

Comparing the above estimates, we can find some conclusions as follows:

(1) Among the economic factors, the influence of income is not statistically significant; and in contrast, the impact of income shows obvious difference for milk powder and fluid milk.

(2) The knowledge variables don’t significantly affect the recovery of liquid milk, but these variables have a significant impact on the recovery of milk powder.

(3) The trust factors have different influence on consumers’ purchasing recovery of milk powder and fluid milk. The effects of consumers’ trust in alternative food safety information sources also show significant differences.

(4) Consumers’ risk attitude significantly affects the recovery of fluid milk, while it doesn’t have a significant impact on the recovery of milk powder.

The policy implications can be given as follows.

(1) First, government should increase consumers’ knowledge about the melamine through various channels and information sources, especially for the “safety” knowledge.

(2) The primary trust factor in our analysis is government, indicating that it is very essential for government to release trustworthy information after the food crisis.

(3) Finally, during the phase of food safety incident, NGOs should play an important role in achieving the recovery of consumers’ confidence through taking corresponding measures, and restricting the mass media’s exaggerated, excessive and untrue reports.

References


