Effects of Information and Country of Origin on Chinese Consumer Preferences for Wine: An Experimental Approach in the Field

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Introduction

- Why China? huge potential market, especially for food products.
  - One of the world's most rapidly growing economies, over 1.3 billion in population.

- Rapid increases in per capita disposable incomes
  - Urban residents: 13786 Yuan*
  - Rural residents: 4140 Yuan*
  - 7% annual increase since 1979

Increasing Demand for Higher-End Food

- Increasing expenditure on food, especially among urban residents.
- New demand for quality.
  - Urban Chinese consumers want food products which are healthier, more nutritious, and even more stylish.

Open to Western Products

- With China's entry to the WTO, more foreign products are available in Chinese market.
- People are willing to try some new food products from the western.
  - Wine is one of these products.
    - Considered as a healthier alternative to traditional Chinese liquor.
    - Importer marketed boxed gift sets with 2 bottles of wine with a western necktie.

Wine Production in China

- Wine production began in the late 1980s, but has grown rapidly in recent years.
- Compared to the traditional Chinese hard distilled liquor, the wine production and consumption remain at low levels.
  - In 2003, wine only accounted for about 1% of China's total alcohol production.
- Most of demand is met by domestic wine producers.
  - Poor reputation for quality, but the overall quality has improved in recent years.

Wine in China

- Parts of China are at the same latitude as Bordeaux, and the country has produced small quantities since the Han dynasty.
  - Wine has never been popular.
- Many Chinese call wine "red liquor" if only to distinguish it from baijiu the strong grain alcohol, which is popular.
  - Chinese govt would like to use grain for food not alcohol.
  - Popular in China to dilute wine with soft drinks.
    - "Red wine and sprite, the more you drink, the sweeter you'll be." (*New Yorker*.)

Wine Consumption in China

- Per capita wine consumption in China is only 0.3 liters as of 2005.
  - Comparisons: United States (12 liters), Japan (3 liters) and France (59 liters)
  - Chinese urban residents consume approximately 1 liter.
- Wine consumption, especially imported wine, rarely occurs outside of major urban areas.

Imported Wine

- Imported wine products can be easily found in supermarkets, upscale hotels, and restaurants.
- Market share of imported wine remains at a low level, ~12%.
- "Wine lake" in Europe, the vast surplus due to falling consumption. Younger Europeans drink less wine than their parents.
  - In 2006, est. at 1.5 billion liters
    - Wine in bioehtanol?
    - Incentives to go after the Chinese market

Research Objectives

- Overall: Elicit WTP of Chinese consumers in Beijing and Shanghai for four different wine products which originate in China, France, USA, and Australia,
  - second-price sealed-bid auction mechanism.
  - How WTP is affected by some socio-demographic factors.

Second-price Sealed-bid Auction

- Advantages to using experimental auctions to elicit consumer WTP for novel goods or services.
  - Avoids hypothetical bias.
- 2nd price avoids strategic bidding to reveal true WTP.
  - The bidder offering the highest price wins the auction, but will only pay the second bid.
- Sealed bid avoids the problem of participants influencing each other's bids.

Experimental Design

- Experimental auctions were conducted from May 11 to June 7, 2009.
- Participants included college students from 3 major universities and residents from 7 communities in Beijing and Shanghai.
- Total participants: 423, 195 residents and 228 students.
  - Participants divided into groups of 10 to 15.
  - Each participant got a 30 Yuan show-up award for taking part in the experimental auction.

Items for Auction

- Four wine products from 4 different origins (France, Australia, U.S., and China).
- Purchased from Carrefour Supermarkets in both Beijing and Shanghai.
- Bottles with labels (including origins of production) were displayed.
  - During the auction process, participants were free to hold the bottles in their hands and inspect the labels.

Information Exposure

- Prior to the auction, the half of the participants were read a brief introduction about wine grapes and wine products from different origins.
- For the groups without information exposure the subjects only understand that the items they are going to bid for are wines from different origins.

Three-Round Auction

- In the first round, all participants bid on all four wine products with no min bid.
- Then, the auctioneer announces the highest bid for each product, and the highest bids are the min bid for the next round.
  - Since there is a min bid in the second and third rounds, participants may choose to offer zero bids, i.e. not bid on the product.

Auction Procedures

- Each group of participants take part in one multi-round auction.
- After each round, the auctioneer announces the winner and the deal price, but no other prices are announced.
  - The winner pays the deal price and takes the item, while others have no any other revenue or loss.
- At the end of the experiment, the subjects completed a survey, which included demographic information.

Summary Statistics for Response Variables

Variable	Mean	Standard deviation	Median	Range	Highest	Lowest
China	21.42	27.97	16	217	218	1
US	23.45	28.66	15	199	200	1
France	33.64	51.72	20	417	418	1
Australia	27.75	38.54	19	268	269	1

Independent Variables

Variable	Description
gender	1=male, 0=female
logage	Log10 of Age of the participant
logincome	Log10 of Monthly household income
member	The number of family members in the household
education	Level of education (0=elementary school or below, 1=high school, 2=junior college, 3=undergraduate, 4=graduate)
fulltime	1=full time, 0=otherwise
partime	1=part time, 0=otherwise
unemployed	1=unemployed, 0=otherwise
retired	1=retired, 0=otherwise
information	0=without information, 1=with information
Non-student	0=student, 1=non-student

Validating the Model

- To check the normality of error terms, we apply two formal tests: Shapiro-Wilk test, and Anderson-Darling test.
  - The results suggest that the models suffer from non-normality of the error term.
  - Box-Cox transformation of the dependent variables is introduced. The results show that $\lambda=0.25$ is the best transformation.
- To test the constancy of error variances, we perform a Breusch-Pegan test for the four models.
  - The results show that the assumption of constancy of error variances is satisfied by all the four models.
- After performing the Box-Cox transformation, a linear model used in the regression analysis: $Y=X\beta+\varepsilon$.

Coefficients Estimates

	China	US	French	Australia
Intercept	1.7590	1.6182	1.7636	0.5660
Info	0.0644	0.1460	0.1104	0.0907
Role	0.4002	0.4622	0.6609	0.5168
Gender	0.0678	-0.0093	0.0252	-0.0010
logage	-0.9046	-0.7418	-0.8273	-0.3663
logincome	0.3337	0.3101	0.3531	0.4563
Non-student	0.0315	0.0004	0.0063	0.0085
Edu	0.0221	0.0546	0.0377	0.0832
Fulltime	-0.2411	-0.2744	-0.3741	-0.2978
Partime	-0.0265	0.0191	-0.0639	0.0109
Unemployed	-0.3557	-0.2563	-0.3067	-0.3014
Retired	-0.0656	-0.0660	-0.2295	-0.1811

Empirical Findings

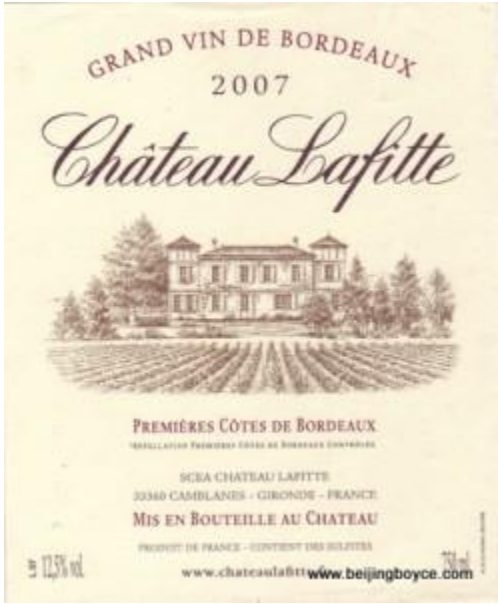
- Provision of information plays positive role on bids.
- Generally non-students bid higher.
- Household income has a positive effect on the WTP
- Age has negative effect
- Gender
  - Male participants showing higher WTP on Chinese and French wines, but lower WTP on American and Australian wines.

Empirical Findings (cont.)

- Those with higher education levels are willing to pay more for wine products.
- Number of household members increases WTP.
- For the employment status, working part time are willing to pay more for American and Australian wines, but less for Chinese and French wines.

Conclusions

- As China opens to new products, “old world” wines (French) and “new world” wines (Chinese, American, and Australian) are competing for Chinese consumers’ affections.
- Our results suggest that our urban Chinese sample from Beijing and Shanghai are willing to pay more for the “old world” wines from France than the “new world” wines from China, American, and Australia



Conclusions

- French wines dominate the shelf space for imported wine.
  - China's largest importer specializes in French wine. Has this influenced tastes and preferences?
- Local Chinese wines also account for a major market share because of the value, which also results in the lowest WTP for Chinese wines in our auction.
- Information exposure increases bids for the wine.

Marketing Strategies for New World Firms

- Even though new world wines are of good quality, consumers will not buy them if they do not know about the wine.
  - Information exposure will play an important role in the wine marketing.
  - China's largest importer holds wine education classes.

Pricing Strategy

- The mean WTP for the four wine products were all lower than the market prices, which means that most of the sample would not purchase wine.
  - Glass half full: Chinese wine market is still in its early days. As more consumers develop a taste for wine, they will be WTP more.
  - Glass half-empty: high-end products with high prices might not be a good strategy to sell in the Chinese market.

Thank You

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