Olive Oil Blind Tasting Experiment

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Olive Oil Extra Virgin Certification

- American olive oil consumption has been growing
- No regulation of olive oil labels in the US
- Key law effective January 2009 in California requires that olive oil sold in the state must be labeled according to international olive oil standards.
- Several other states are on this same path, and federal regulation may not be far off.
- How might giving the coveted term “Extra Virgin” regulatory bite affect olive oil markets? (Gustafson and Lybbert, 2009).
- In the context of asymmetric information (we will go back to this case and above paper when we cover this in class later in the semester.
- Right now focus on product differentiation
Olive Oil Definitions

• **Virgin Olive Oil**: obtained by mechanical and physical methods (particularly thermal) that do not alter the oil in any way (2 grams oleic acid per 100 grams of oil)

• **Extra Virgin Olive Oil**: created with a similar method as virgin olive oil, but less acidic (0.8 grams of oleic acid per 100 grams of oil)

• **Olive Pomace**: oil obtained by treating the pomace with solvents or other physical treatments; often mixed with other oils
Where did this policy come from?

- State Senator Pat Wiggins (D-Santa Rosa) in late July 2008 pushed for SB 634 that would bring CA olive oils in line with the International Olive Oil Council Regulations.

- CA’s definition of olive had not been updated since 1947.

- She wanted to ensure that the olive oil comes from where it claims to, and the quality is what the bottle says it is.
Why is this policy in place?

• A history of olive oil fraud has caused lawmakers to inform both customers and themselves that the oil they are importing is legitimate.
  – The E.U. set up an anti-fraud olive oil task force to investigate fraudulent oil dealers
  – One example was Domenico Ribatti, who passed other oils off as olive oil

• In California, the certification is for 3 main purposes
  – Providing a standardized method for producers and marketers a method of distinguishing their product
  – Reassuring consumers that they are indeed purchasing extra virgin oil
  – Provide a standard method of grading olive oil

• In order to gain certification, you must send in two bottles of oil, $250 for first product, $50 for subsequent products

• The chemical analysis will determine if the oil contains 0.5 % or less free fatty acids as well as a peroxide value of 20 meq O2/kg or less.
Olive Oil Extra Virgin Certification

- Do consumers taste extra virgin certified olive oil attribute in a blind tasting setting?
- What is the willingness to pay for the certified extra virgin olive oil?
Experiment

• In a classroom offer two olive oil bottles where the brand and labels are hidden, Bottle A and Bottle B, to be tasted by dipping bread in two separate bowls.

• Both brands claimed to be extra virgin and both are US brands, and only one was certified.

• Fill out a simple questionnaire
  – Do you usually consume olive oil? Y/N
  – Which brand do you prefer  A  /  B
  – Which brand is Extra Virgin  A  /  B
  – How much extra would you pay for preferred brand? ___
  – http://survey.constantcontact.com/survey/a07e2q57cskg5kb0rch/start
  – Link for 2010
Experimental Design

• Number of students enrolled were 95
• Sample of students who participated equals 59
• Three more subjects tasted after class
• Total sample size equals 62
• Brand B was the Extra Virgin one
How many people are “usual” consumers?

Do you usually consume olive oil?

- Yes: 72.58%
- No: 27.42%
How many preferred B? How many thought B was extra virgin?
What are the preferences of usual and non-usual consumers of olive oil?

For non-usual consumers...
- Prefer A: 64.71%
- Prefer B: 35.29%

For usual consumers...
- Prefer A: 53.33%
- Prefer B: 46.67%
How many people guessed correctly (thought brand B was EV) between usual and non-usual consumers?

For non-usual consumers...

- Brand A: 76.47%
- Brand B: 23.53%

For usual consumers...

- Brand A: 46.67%
- Brand B: 53.33%
Distribution of WTP between those with different preferences.
### Analysis

**Command:** `reg wtp_pref evB prefB interactB if usual==0`

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Usual</th>
<th>Non-Usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.75 (5.85)</td>
<td>2.9 (4.65)</td>
<td>8 (4.81)</td>
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<tr>
<td>evB</td>
<td>-2.15 (-2.01)</td>
<td>-0.9 (-0.81)</td>
<td>-7.33 (-3.12)</td>
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<tr>
<td>prefB</td>
<td>-2.15 (-1.56)</td>
<td>-1.15 (-0.85)</td>
<td>-7 (-2.10)</td>
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<tr>
<td>interactB</td>
<td>2.865 (1.68)</td>
<td>1.915 (1.10)</td>
<td>7.88 (2.06)</td>
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</tbody>
</table>

*Note: interactB = (prefB)(evB). So interactB = 1 for person j if person j BOTH preferred B and thought B was EV.*

**Command:** `probit evB usual`

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>z Statistic</th>
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<tbody>
<tr>
<td>Constant</td>
<td>0.7215</td>
<td>2.16</td>
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<tr>
<td>Usual</td>
<td>-0.6379</td>
<td>-1.66</td>
</tr>
</tbody>
</table>
What does it mean for consumers?

• Purpose of Cert: if consumers who prefer cert. oil are more willing to pay a premium, then cert. producers can compete with more efficient producers.
• Yet, there does not exist significant evidence for class data. Also this since the regulation has only been in place from 2007 to 2009.
• Consumers have not had the time necessary to define their preferences with respect to labeling (extra virgin cert. vs. non-cert.)
• Or, consumers have defined their preferences but aren’t willing to pay for certification labels.
What about the producers?

• California certification only applies to 100% California olive oils (imported olive oils cannot get this certification.)

• Certification give CA producers a competitive advantage over international producers in the USA market.

• It entitles CA producers to earn a premium and build a “only the best” reputation.
Works Cited

• California Olive Oil Council.  

• International Olive Council.  

• Muller, Tom. “Slippery Business.”  

• Treleven, Mike. “Bill Seeks Olive Oil Purity.”  
  Napa Valley Register.  