Does the bottle size matter?

Does the market price the wine or the bottle: differences between posted and market prices

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Enometrics XVIII
Angers, France
May 18 - 21, 2011
Does the bottle size matter?

- 15L Nebuchadnezzar
- 12L Balthazar
- 9L Salmanazar
- 6L Methuselah
- 3L Jeroboam
- 1.5L Magnum
- 750ml Girly
Does the bottle size matter?

1. What's behind a bottle price?
2. There is more than the price of wine in a bottle
3. Is value an increasing function of scarcity?
4. Does the market price the bottle size?
What drives market prices?

<table>
<thead>
<tr>
<th>Basic characteristics</th>
<th>Climate, terroir</th>
<th>Vines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>Costs, fixed &amp; variable</td>
<td>Output, productivity</td>
</tr>
<tr>
<td>Information</td>
<td>Label, appellation</td>
<td>Experts, reputation</td>
</tr>
<tr>
<td>Conditional factors</td>
<td>Weather, vintage</td>
<td>Age, scarcity</td>
</tr>
</tbody>
</table>
What drives market prices?

- Hedonic models
  - Combris et al. (1997, 2000), *Bordeaux, Bourgogne*
  - Gergaud (1998) *Champagne*
  - Jones et Storchmann (2001) *Bordeaux*
  - Lecocq & Visser (2006) *Bordeaux et Bourgogne*
  - Schamel and Anderson (2003), Benfratello et al. (2004) and others.

- Objective characteristics: quality and reputation
Does the bottle size matter?

• To our knowledge, there is no investigation of the possible effects of bottle size on supply or demand of wine or alcohol with the exception of Brunke (2009).

• An analysis of the effect of the size of bottles of water on the activity of plankton (Fogg and Calvario-Martinez, 1989).

• In another study/survey (www.burbia.com/node/1757) concerning 358 households of American suburban dwellers, the size of ketchup bottles is seen as an accurate indicator of marital discord.
How to size the effect?

- The price of the same wine, same vintage, in different bottles

- The basis for the observed price of wine is the standard bottle (0.75l).

- Everything else being equal, the price of a larger bottle of wine should be a simple multiplier of the quantity of wine in the bottle.
Example

- If the price of a standard bottle is $15 then the « normal » price of a magnum should be $30 (15x2).
- Or the price of an Methusaleum $120 (15x8).
- The ratio of the real price of the Methusaleum ($216) to the normalized price ($120), gives a relative scaled price index equal to 1.8.
- The relative price index is equal to 1.0 for the standard bottle.
- We assume there are no economies of scale. This hypothesis is not true for water as shown in the next slide.
The case of water

Relationship between price and size of the bottle of water
Price in $ per liter and size of the bottle in liters

![Graph showing the relationship between price per liter and bottle size in liters.](image-url)
Hypothesis?

- Hypothesis 1: the price-size relationship is independent of the quality of the wine and the region of production
  - More expensive wines tend to have more expensive packaging, but this remains true whatever the size of the bottle.
  - The price of an empty bottle (including or not the label and cork) should be almost identical among providers.

- Hypothesis 2: the price-size relationship is a function of scarcity
  - Scarcity is defined as limited production and narrow market
  - Price may be affected by production costs (manual processing)
Price is a function of scarcity

Relationship: value is an increasing function of scarcity
Data on posted (listed) prices?

- Data for Champagne and red wines of Bordeaux have been found mainly on company’s websites.

- Next figure presents the relationship, by region of production, between bottle size measured as the number of liters and the relative price index.
Hypothesis 1: producers

Relationship between size (liters) and the index
Hypothesis 1: regions

Relationship between size (liters) and the index

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Does production costs matter?

Production costs may explain part of the higher price
The price of the empty bottle explain only part of the relation (Adjusted index)
The market price of large bottles

- Data from real transactions at auction markets … The Chicago Wine Company (TCWC) … from July 2009 to June 2010.
- Same wine, same vintage and large bottles (up to 6 l)
- Only Bordeaux
- … only 8 producers corresponding to 12 sets of transactions for vintages 1999 to 2006
Hypothesis 2: Does the market recognize scarcity?

Relationship between size (liters) and the index

Diagram showing the relationship between size (liters) and the index, with average value, minimum, and maximum values plotted.
Conclusion: does size matter?

- Value is an increasing function of scarcity: this hypothesis explains the increasing relationship between posted (listed) prices and the size of a bottle independently of the perceived quality of the wine or the region of production.
- When market prices are available the effect is less obvious
- Data limitation
- Further investigation of the possible effects of bottle size on supply or demand of wine products would need to look not only at prices but also at quantities produced ... data availability
- It would also be important to verify if this hypothesis is only valid for wine or alcohols or if it could be extended to other products like perfumes or olive oil for example.
Thank you for your attention

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