A market-based pricing model for wines: Test over the period 1988-2007

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1. Wine market prices
2. A market-based approach
3. Data set
4. Results

What drives market prices?

Jones & Storchmann (2001)

Fig. 1. Structure of the econometric model on wine pricing.
What drives market prices?

- Hedonic models

- Objective characteristics: quality and reputation

- Segmented wine markets based on price

The market price of wines

- Wine as an asset

- Price is related to individual characteristics and the market

A market-based model

- A model that describes the relationship between the expected price of a wine and the expected price of a market portfolio.

- The expected price is an increasing function of the expected risk associated with the production of a particular wine.

- There exist a basic/standard wine for which the expected price is known with almost no risk.

- There are expected risks that cannot be removed through diversification by having a portfolio of wines that replicates the market.

A special set of assumptions

- The model is a one period model.

- Agents in the market have homogenous expectations (beliefs) about the price of wines.

- Everyone have the same information at the same time.

- There is a definite number of wines and their quantities are fixed within the one period.

- Information is costless and there are no market imperfections such as taxes, regulations or restrictions on supply and demand.
The model

- $E[\text{Price of wine } j] = \alpha_j \cdot PB + \beta_j \cdot (E[PM] - PB)$
- $PB$ is the price of the basic/standard wine.
- $E[PM] - PB$ is the excess price that is required to produce the wine.
- $\beta$ is the measure of the systematic risk.

Hypothesis

- $\alpha_j = 1.0$
- $\beta_j = 1.0$ volatility is similar to the market portfolio
- $\beta_j > 1.0$ greater volatility than the market portfolio
- $\beta_j < 1.0$ lower volatility than the market portfolio

Expected results

- $\beta_j$ reflects differences in AOCs
- $\beta_j$ allows for a segmentation of the wine market

Data

- **Savour Club** prices posted in the review (summer) period 1988-2007
- For the experiment the Savour Club will be considered as the market.
- Basic/standard wine: **Cuvée des Graviers**
- Portfolio of wines: close enough to the theoretical market portfolio based on 26 wines (diversified by AOC and region)
Indices

Figure 1: Price indices (100 in 1988)

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>1.00</td>
</tr>
<tr>
<td>1989</td>
<td>1.10</td>
</tr>
<tr>
<td>1990</td>
<td>1.20</td>
</tr>
<tr>
<td>1991</td>
<td>1.30</td>
</tr>
<tr>
<td>1992</td>
<td>1.40</td>
</tr>
<tr>
<td>1993</td>
<td>1.50</td>
</tr>
<tr>
<td>1994</td>
<td>1.60</td>
</tr>
<tr>
<td>1995</td>
<td>1.70</td>
</tr>
<tr>
<td>1996</td>
<td>1.80</td>
</tr>
<tr>
<td>1997</td>
<td>1.90</td>
</tr>
<tr>
<td>1998</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Results

Table 2: Estimation results

<table>
<thead>
<tr>
<th>Wine</th>
<th>α</th>
<th>t</th>
<th>β</th>
<th>t</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassagne-Albaréchet</td>
<td>1.11</td>
<td>27.2</td>
<td>2.51</td>
<td>6.11</td>
<td>0.87</td>
</tr>
<tr>
<td>St Emilion GC</td>
<td>0.86</td>
<td>11.4</td>
<td>1.86</td>
<td>2.46</td>
<td>0.56</td>
</tr>
<tr>
<td>Tavel</td>
<td>1.00</td>
<td>47.9</td>
<td>1.37</td>
<td>6.59</td>
<td>0.94</td>
</tr>
<tr>
<td>Côtes de Castillon</td>
<td>0.97</td>
<td>40.7</td>
<td>1.02</td>
<td>4.27</td>
<td>0.89</td>
</tr>
<tr>
<td>Sancerne Blanc</td>
<td>1.02</td>
<td>25.6</td>
<td>1.19</td>
<td>2.97</td>
<td>0.76</td>
</tr>
<tr>
<td>St Véran</td>
<td>0.81</td>
<td>32.7</td>
<td>1.08</td>
<td>4.39</td>
<td>0.82</td>
</tr>
<tr>
<td>Côte Chalonnaise rouge</td>
<td>0.87</td>
<td>36.5</td>
<td>0.84</td>
<td>3.94</td>
<td>0.86</td>
</tr>
<tr>
<td>Brouilly</td>
<td>0.91</td>
<td>41.1</td>
<td>0.92</td>
<td>3.68</td>
<td>0.87</td>
</tr>
<tr>
<td>Sylvarner</td>
<td>0.95</td>
<td>55.2</td>
<td>0.25</td>
<td>1.44</td>
<td>0.90</td>
</tr>
<tr>
<td>Vin de Pays</td>
<td>0.93</td>
<td>43.7</td>
<td>0.35</td>
<td>1.66</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Limitations and suggestions

- The test is on a small scale.
- The market portfolio may be different from the real market.
- But...
- The model could easily be replicated.
- The model could be used to evaluate if a wine is over-priced or under-priced.

Price evaluation
A market-based pricing model for wines

Thank you for your attention

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