PDOs Labels in Spanish Wines: Signals of Quality or Just Noise?

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Introduction

- Wine labeling is a complicated matter in Spain.
- Different quality cues are expressed: wine harvest, type of grape, alcohol level, origin…
- Different regional designations and classifications
When labeling is too much...

**Labelling?**

**Compulsory**
- Name of the country of origin
- Name of the GI’s
- Bottler, consignor or importer
- Lot number
- Alcoholic strength
- Nominal Volume
- Sulfite level

**Optional**
- Type of product
- Wine variety
- Vintage
- Name of the holding
- Other (traditional mentions, award…)

Challenges and opportunities for European Wines
Large Geographical Diversity

Spanish wine producing areas
Different Geographical Labeling Types

Vinos de Pago

Protected Designations of Origin

Designations of Origin

Vinos de la Tierra

Wines without geographical identification
Protected Geographical Indicators: Some Popular Examples

Many others....
Are these labels signals of quality?

- PGI labels are denoting credence attributes
- Although there is an experience component, in order to buy the product for the first time, consumers have to believe the claim made.
- These attributes are more difficult to market: information delay
Are these labels signals of quality?

- The reasons credence claims are though to market are because:
  - Consumers have to believe the appellation conveys some extra quality level.
  - Consumers have to believe that the claim is true.
What does the literature tell us?

The literature says that:

- In order to be successful such claims should be accurate, understandable and verifiable signals.
- Collective reputation of regional producers matters
- Third party monitoring is needed
Label proliferation and noise

- Labeling proliferation is a serious concern with European wines
  - More than 300 appelations of origin in France
  - 62 in Spain regional designations of origin
    - Some of them very new

- Moderately EU wines are losing markets to other “new world” wines.
We may expect more recent PDOs to gather lower price premiums than more established PDOs.

- Less consumer recognition
- More volatile demand/supply
- Less established
Recent PDOs with success…

- **SF Chronicle**, *Albarino is in the air: Perfect springtime wine from Spain makes a pilgrimage to the New World*

- The taste of youth…Albariño wines and Rias Baixas
Objective and Methodology

- To assess the role of the PDOs and Dos in wine pricing
- Do PDOs or POs carry a premium?
- Hedonic Pricing Model
Data

- Data comes from popular wine guide “300 Mejores Vinos de España, 2003”.
- From this guide, information was collected about:
  - wine price
  - harvest year
  - type of grapes
  - whether the wine has a PDO/DO label, degrees of alcohol,
  - number of bottles produced, and the quality score assigned by the authors.
- Wine quality scores from other guides
Data Description: Quality is multidimensional

- **Quality Indicators:**
  - Crianza wines are those that have been aged for two years
  - Reservas are aged three years
  - Gran Reservas (also known as Reserva Especial) are aged at least five years
  - PDO/DO or no geographical indication
  - Author’s Guide Scores (1-10)
  - Listed in other wine lists: Peñín wine list; Proensa wine list
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Store</td>
<td>1=lowest, 10=highest</td>
<td>7.947</td>
<td>0.498</td>
</tr>
<tr>
<td>PDO</td>
<td>PDO=1 if wine is Rioja or Penedés, 0 otherwise</td>
<td>0.263</td>
<td>0.441</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Alcohol content (degrees)</td>
<td>12.590</td>
<td>3.219</td>
</tr>
<tr>
<td>Crianza</td>
<td>1=Wine aged at least 2 years, 0 otherwise</td>
<td>0.699</td>
<td>0.459</td>
</tr>
<tr>
<td>Reserva</td>
<td>1=Wine aged at least 3 years, 0 otherwise</td>
<td>0.106</td>
<td>0.102</td>
</tr>
<tr>
<td>Red wine</td>
<td>1=Red wine, 0 otherwise</td>
<td>0.470</td>
<td>0.499</td>
</tr>
<tr>
<td>White wine</td>
<td>1=White wine, 0 otherwise</td>
<td>0.224</td>
<td>0.418</td>
</tr>
<tr>
<td>Rosé wine</td>
<td>1=Rosé wine, 0 otherwise</td>
<td>0.056</td>
<td>0.230</td>
</tr>
</tbody>
</table>
1. Methodology: Hedonic Models

1. **Baseline Model**: Valuation of PDO: Rioja and Penedés

2. **Simple DO model**: Joint Valuation of all Spanish Dos.

3. **DO differentiated model**: Differentiated valuation of each Spanish DO.
1. Methods: Hedonic Models

1. Hedonic Model: **Value of PDO** : Rioja and Penedés

\[
\text{Price} = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{QualityScore} + \beta_3 \text{PDO} + \beta_4 \text{Alcohol} + \\
\beta_5 \text{Crianza} + \beta_6 \text{Redwine} + \beta_7 \text{Whitewine} + \beta_8 \text{Roséwine} + \\
\beta_9 \text{Sparlingwine} + \epsilon
\]

We hypothesized that the DO label's effectiveness in obtaining a premium depends on the wine type that it is associated with.
## 1. Results DO

| Variable   | Coef.    | Std. Err. | t    | P>|t| |
|------------|----------|-----------|------|-----|
| PDO        | 0.1634629| 0.087176  | 1.88 | 0.062 |
| Alcohol    | 0.0702987| 0.0262453 | 2.68 | 0.008 |
| Crianza    | 0.2050807| 0.1445397 | 1.42 | 0.158 |
| Reserva    | 0.7894664| 0.389857  | 2.03 | 0.044 |
| Pen        | -0.1135697| 0.1344306 | -0.84| 0.399 |
| Puntuación | 0.3522057| 0.0945111 | 3.73 | 0.000 |
Results: Comments

- Wines with a PDO designation of origin carry a premium (16%) over others that do not have such designation.
- Older harvests carry higher premia
- Reserva wines (aging) before going to the market carries a premium
2. Hedonic Models - Results for all DO

|       | Coef.   | Std. Err. | t     | P>|t| |
|-------|---------|-----------|-------|------|
| do    | .0834274| .1864991  | 0.45  | 0.655|
| alcohol | .0653997|           |       |      |
| crianza | .2192297| .1457472  | 1.50  | 0.134|
| reserva | .7828554| .3943114  | 1.99  | 0.049|
| pen   | -.1146108| .1388048 | -0.83 | 0.410|
| puntuacion | .3557113| .0953484  | 3.73  | 0.000|

R-adjusted=0.74
## Results Hedonic Model: Selection

| Location       | Coef.    | Std. Err. | t     | P>|t| |
|----------------|----------|-----------|-------|-----|
| rioja          | 0.4269608| 0.11225   | 3.80  | 0.000|
| riasbaixas     | 0.515595 | 0.1313406 | 3.93  | 0.000|
| penedes        | 0.0019761| 0.1189351 | 0.02  | 0.987|
| ribera-duero   | 0.3357942| 0.1454575 | 2.31  | 0.022|
| navarra        | -0.306873| 0.1649137 | -1.86 | 0.065|
| jumilla        | -0.4496104| 0.2323792 | -1.93 | 0.055|
| cava           | -0.606087| 0.3273159 | -1.85 | 0.066|
| bierzo         | -0.1513773| 0.3318246 | -0.46 | 0.649|
| lamancha       | -0.324924| 0.1956918 | -1.66 | 0.099|
| valdeorras     | -0.0621578| 0.3271796 | -0.19 | 0.850|
| ribera-sacra   | 0.5480351| 0.3207079 | 1.71  | 0.089|
| terralta       | 0.0317617| 0.266491  | 0.12  | 0.905|
| cariñena       | -0.3174837| 0.2670225 | -1.19 | 0.236|
Results Comments

- PDO such as Rioja, DO Ribera del Duero are signals of good quality red wines
- Rias Baixas is a signal of good wine wines
- Other geographical identifications suffer due to their lack of recognition
- Marketing strategies may be employed
Conclusions

- Labeling is becoming confusing
- PDOs may carry a market premium, but also may have a negative effect over prices
- Price premiums should be contrasted with costs required to protect food names.
- Is it worth it to protect food names from an economic viewpoint?
Future Work

- These results should be taken with care: future work is needed

- Use richer data:
  - Panel data model
  - Include other quality signals:
  - Recommendations of wine by popular chefs
  - Wine Spectator quality index if possible
...Thank you for your attention

- Questions or comments?