Pricing Strategy for Italian Wine

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Abstract We use a unique dataset to estimate the hedonic price function for Italian red wine sold on the Italian market in the period 2006-2008. For each bottle considered, the dataset allows us to know several characteristic such as the price by retail channel (price in supermarkets and in wine shops), label characteristics, chemical analysis, sensorial characteristics and experts' evaluations.

The objective of the analysis is to estimate price formation in the large distribution and in wine shop. In particular we want to explore the relative importance in each channel of characteristics that can be inferred from the label and other characteristics that require tasting (chemical and sensory characteristics). For wine sold using large distribution and wine shops we will also study which are the main determinants of the price difference.

The results presented in the paper have been obtained using this database. We will shortly receive data for 2009-2010 and we are planning to estimate the model again.

1 Introduction

Only few attempts have been made to estimate which are the main determinants of the price of wine, and they usually relate to specific market segments (organic wine, Franciacorta Bollicine, Barbaresco and Barolo). This in spite of a wide and growing literature that has studied price determinants for almost all the other major wine markets.

The Italian market for wine has very specific characteristic that influence price and distribution strategies. In Italy in fact wine is sold through the outlays of the large distribution (GDO) and through wine-shops (ENO). In our paper, using a unique dataset that very well represent the production and sale of Italian wine in Italy we want to answer the following questions:

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➤   Which are the most important characteristics in determining the price of wine?

➤   The role of the distribution process. Can producers play strategically?

To answer both questions three hedonic price functions for Italian still red wine sold in Italy will be estimated. The first one relates to the price of wine sold using the large distribution channel (GDO), the second refers to the price of the wine sold in wine-shops (ENO) and the third to the price difference (DIFF).

2 Description of the dataset

In this study we work the unique dataset that the Altroconsumo, an Italian Independent Consumers' Association, uses for its guide (Guida Vini 2006-2008). Each year about 300 wines (red and white) are bought and their characteristics are evaluated using a panel of experts. The market studied is the low to medium/high since Altroconsumo excludes the wine that cost more than 15-16 euro. Within this range wines are chosen in order to represent the variety of Italian wines as regards vineyards, producers and region of origin. The sensorial analysis is made using a detailed protocol and the price of each wine is estimated using a specific market analysis. Our database comprises 434 red wines (139 for 2006; 147 for 2007 and 148 for 2008). This dataset allows to obtain information on several characteristic of the wine which we have been grouped into different categories:

- what can be observed without tasting the wine, which in our sample corresponds to characteristics that can be inferred from the label (*label characteristics*);
- the results of an analysis aimed at assessing some characteristics of the wine as concerns its quality and any added chemical components (*chemical characteristics*);
- the *sensory characteristics*, rated by a panel of experts, aimed at assessing some intrinsic characteristic of the wine;
- *information about the price charged in different channels*, information on whether a specific bottle of wine is sold using the large distribution and wine shop or using only one of the two channels.

3 The results

Although various approaches could be used to estimate the price of wine, the vast majority of the literature adopts the hedonic price approach. The general specification of a hedonic price function is given by:

$$p = g(L, C, S, D)$$

where p is the price and L groups the characteristics of the wine that can be inferred from the label, C its chemical characteristics, S the sensorial ones characteristics and D the variables that describe the distribution process.

We have restricted the choice to linear and log linear equations and have performed a *RESET* test. The results show that a log-linear form should be preferred and stepwise procedure (forward and backward) has been used for estimation purposes.

Consumers value wine on the basis of what is written on the label. Labels characteristics mainly related to alcohol content, appellation and grape determine the price of wine. DOCG appellation is significant in determining the price of the wine while other denominations (Reserve, Superior) are not significant. The appellation affects the price as expected; the wine that are mostly known and that the consumer probably perceive as *better quality* (Rosso di Montalcino, Terre di Franciacorta) have a positive mark up on wines that are perceived as more standard (Primitivo di Manduria). The highest mark-up as concerns the price is for Bardolino the highest price reduction is for Primitivo di Manduria (0.56 euro).

This distributive channel is not used by all the producers. In general, only medium to high quality wines are distributed in this way. Labels characteristics, mainly related to alcohol content, appellation and vineyard determine the price of wine. DOCG for example means a mark up of about 25 cents while Reserve has a slightly lower impact (21 cent). If both characteristics are on the label, the price goes up by about 53 cents. As expected The appellation affects the price; the wine usually perceived as *better quality* (Rosso di Montalcino, Terre di Franciacorta) have a positive mark-up on wines that are perceived as more standard (Cirò). The Region is not very important, with the exception of Piedmont which adds about 23 cents to the price. The use of the double channel has no impact on the price. This reinforces the hypothesis that two distributive channels form price in very different ways and that they are somehow quite different. For the wine sold in 2008 there seems to be a reduction in the real price of the wine. Other thing being equal, in fact the price in 2008 is about 10 cents lower.

For the wine sold using both channels it is possible to estimate an hedonic price function of the price difference. The appellation plays an important role: the highest premium in terms of price is for Barolo, the lowest for Barbera. It is interesting to note that in this case sensory variables plays an important role. Acidity reduces the price difference while straightforwardness olfactory increase it.

4 Conclusions

The results show that the main determinants of the price, especially in the large distribution are the label characteristics,.
This is the reason why producers of wines that are perceive as average quality have tried to differentiate their product through a different appellation. For Chianti this seems a winning strategy. The appellation Chianti suffers a slight (although statistically significant) price reduction in the hedonic price function, something that it is not true for Chianti Classico. The two wines are quite different on the alcohol content (Chianti Classico is stronger), but they are quite similar as concerns their sensory scores. The difference in appellation seems pay in this case and other producers may try to replicate this strategy. For wine sold in wine-shops the producer has probably some market power since the explanatory power of the variables in our sample is lower than for large distribution. The analysis presented in this paper refers to still red wines. Our dataset comprises also white and sparkling wines, and in this direction we are going to pursue our analysis.

References

1. Altroconsumo Edizioni, Guida Vini (2006-2008), Milano
2. Breusch T S and Pagan A R. (1980), The Lagrange Multiplier Test and Its Applications to Model Specification in Econometrics, *Review of Economic Studies*, 47(1), 239-53
3. Cardebat J.M., Figuet J.M. (2004), What explains Bordeaux wine prices?, *Applied Economics Letters*, 11, 293-296
4. Combris P., Lecocq S., Visser M. (1997), Estimation of a hedonic price equation for Bordeaux wine: Does quality matter? *The Economic Journal*, 107, 390-402.
5. Corrado R., Odorici V. (2007), Heterogeneity and romance vs standardisation in the Italian wine industry, available at SSRN htpp://ssrn.com/abstract=1145264
6. Corsi A., Strom S. (2009), The premium for organic wines. Estimating a hedonic price equation from the producer side, memorandum n.06/2009, Department of Economics, University of Oslo
7. Costanigro M., McCluskey J.J. (2007), Segmenting the wine market based on price: hedonic regression when different prices mean different products, *Journal of Agricultural Economics*, 58(3), 454-466
8. Diewert W. E. (2003), "Hedonic Regressions: A Consumer Theory Approach", in Feenstra R.C and Shapiro M.D. (eds), Scanner Data and Price Indexes, NBER Books, 317-348
9. Fogarty J.J. (2006), The return of Australian fine wine, *European Review of Agricultural Economics*, 33(4), 542-61
10. Galizzi M (2007), Millesimèe Pas Operè vs Gran Cuveè Satin: Estimation of a hedonic price model for the Franciacorta Bollicine; paper presented at *First International Conference of American Association of Wine Economists*, Trier, 2007
11. Galizzi M., Miniaci R. (2009), Cin Cin! Competing for the Leadership in the Italian Sparkling Wine Market: Franciacorta versus Trento; *Third International Conference of American Association of Wine Economists*, Reims Management School, Reims, 2009.
12. Golan A., Shalit H. (1993), Wine Quality Differentials in Hedonic Grape Pricing, *Journal of Agricultural Economics*, 44, 311–21
13. Jarque C.M., Bera A.K. (1980), Efficient tests for normality, homoscedasticity and serial independence of regression residuals, *Economics Letters* 6(3), 255–259
14. Landon S., Smith, C.E. (1997), The Use of Quality and Reputation Indicators by Consumers: The Case of Bordeaux Wine, *Journal of Consumer Policy* 20, 289–323.
15. Lecocq S., Visser M. (2006), What determines wine prices: objective vs sensory characteristics, *Journal of Wine Economics*, 1(1), 42-56
16. Lima T. (2006), Price and quality in the Californian wine industry: an empirical investigation, *Journal of Wine Economics*, 1(2), 176-190
17. Nerlove M. (1995), Hedonic price function and the measurement of preferences: the case of Swedish Wine consumers, *European Economic Review*, 39, 1697-716
18. Oczkowski E. (1994), A hedonic price function for Australian premium table wine. Australian *Journal of Agricultural Economics*, 38(1), 93-110.
19. Oczkowsky E. (2001), Hedonic wine price functions and measurement error, *The economic record*, 77(239), 374-382
20. Schamel G. (2006), Geography versus Brands in a Global wine market, *Agribusiness*, 22(3) 363-74
21. Schamel G., Anderson K. (2003), Wine Quality and varietal, regional and winery reputations: hedonic prices for Australia and New Zealand, *The Economic Record*, 79(246), 357–369
22. Steiner B. (2004), Valuing labelling attributes with hedonic price analysis: Australian wines in the British wine market, *Agribusiness*, 20(3), 287-307
23. Unwin T. (1999), Hedonic price Indexes and the Qualities of Wine, *Journal of Wine Research*, 10(2), 95-104
24. Zironi R., Odello L. Brentari E. (2003), Un nuovo indice per misurare la qualità edonica del vino, *L'assaggio*, 1, 25-29; published also on: *Il Sommelier*, 19(3), 15-17