Review

The wine hedonic price models in the "Old and New World": state of the art

Modelo de precios hedónicos aplicado al vino del "Nuevo y del Viejo Mundo": estado del arte

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ABSTRACT

The basic hedonic hypothesis is that goods are valued for their utility-bearing characteristics and not for the good itself. Each attribute can be evaluated by consumers when making a purchasing decision and an implicit price can be identified for each of them. Thus, the observed price of a certain good can be analyzed as the sum of the implicit prices paid for each quality attribute. Literature has reported hedonic models estimates in the case of wines, which are excellent examples of differentiated goods worldwide.The impact of different wine attributes (intrinsic or extrinsic) on consumers' willingness to pay has been analyzed with dissimilar results. Wines coming from "New World" producers seem to be appreciated for different attributes than wines produced in the "Old World". Moreover, "Old and New World" consumers seem to value differently the wine's characteristics. To our knowledge, no cross country analysis has been done dealing with "New World" wines in "Old World" countries, leaving an important gap in understanding underlying attributes influencing buying decisions.

Keywords

hedonic price model • wine • implicit prices

RESUMEN

La hipótesis hedónica básica es que los bienes son valuados por sus características y no por el bien en sí mismo. Cada una de esas características es evaluada por el consumidor en el momento de decidir la compra por lo que es posible estimar un precio implícito para cada una de ellas. El precio observado de un producto puede ser, entonces, analizado como la suma de los precios implícitos de los atributos que definen el producto. Existe vasta literatura sobre precios hedónicos en el mundo del vino, al tratarse de un caso referente de producto diferenciado. El análisis del impacto de los diferentes atributos del vino sobre la disponibilidad a pagar del consumidor ha reportado resultados disímiles. Los vinos provenientes del "Nuevo Mundo" parecen ser apreciados por atributos diferentes que los vinos del "Viejo Mundo". Adicionalmente, los consumidores del "Nuevo y Viejo Mundo" aprecian distintas características en el vino. A nuestro saber, no se han llevado a cabo análisis de tipo inter-países de vinos del "Nuevo Mundo" vendidos en el "Viejo Mundo". Esta carencia deja una gran brecha en el entendimiento de cuáles son los atributos que influyen en las decisiones de compra del consumidor.

Palabras claves

modelo de precios hedónicos • vino • precios implícitos

INTRODUCTION

The starting point of every hedonic price model is the hedonic hypothesis. The core of this hypothesis is that each good is characterized by the set of all its characteristics. A hedonic price function describes the equilibrium relationship between the economically relevant characteristics of a product and its price. The price of a good is assumed to be a function of its defining characteristics plus a random error term. These hedonic prices can be used to predict prices for new goods, to adjust for quality changes in the price of a good and to measure consumer and producer valuations of differentiated products (23).

Being wine a highly differentiated product, the hedonic price model suits perfectly and allows the identification of attributes having the biggest impact in consumers' willingness to pay. With this information it is possible to build hedonic implicit prices, allowing producers and intermediates to estimate the impact of product quality or labelling changes.

Theoretical framework

Even if different authors have worked on the hedonic models estimation (14, 19, 22, 41, 43), two main approaches have contributed greatly towards the theoretical framework on hedonic prices. The first approach derives from Lancaster's consumer theory (26), and the second one has been proposed by Rosen (42). Both the approaches aim to price products attributes, considering them as the elements generating utility for the consumer.

Lancaster believed that the traditional theory of consumer behaviourwas inappropriate to explain consumers' utility function.The novelty of Lancaster`s theory was to introduce the idea that properties and characteristics of a given good produce utility to consumers. Thus, consumer`s preferences are exercised on good`s characteristics, and not directly on goods.

The model proposed by Lancaster supposes that each characteristic can be associated to one or more goods. The utility maximizing consumer decision underlying the buying decision is:

$$\text{MAX } U(z)$$
$$\text{Subject to } Px \leq K$$
$$\text{With } z = Bx$$

where $U(z)$ is the consumer utility to be maximized, z isthe vector of i characteristics $(i = 1,….,n)$ describing a vector of goodsx_j $(j = 1,….,m)$. P are the prices of the defined goods and K is the budget constraint experienced by the consumer and is defined on the goods-space x. The relationship between the collection of products' characteristics and the collection of goods available is considered linear. The equation system $z = Bx$ represents a transformation between goods-space and characteristics-space.

Based on Lancaster´s work, Rosen suggests there are competitive implicit markets where implicit prices for embodied product attributes are defined and that consumers evaluate product characteristics when making purchasing decisions. Therefore, the observed price of a given good is the linear combination of the quality attributes where the implicit prices are the attributes' weights. Product x_j market implicitly reveals a function $P_j = P_j (z_1, z_2, ..., z_n)$ relating prices P and characteristics z. Rosen supported his view on the idea that "when goods can be treated as tied packages of characteristics, observed market prices are also comparable on those terms" (42).

Market equilibrium conditions determine the set of hedonic prices, which are the implicit prices of attributes for the specific amount of each characteristic -as they are revealed to economic agents from observed prices-. Rosen estimated intersections of

the demand curves of different consumers with varying tastes and the supply functions of different producers with diverse technologies of production. The implicit estimated prices for quality attributes provide the implicit marginal valuation that consumers and producers place on the vector of characteristics. Considering a vector of good's characteristics (z_{j1}, z_{j2}, ..., z_{jn})

MAX U (z)
subject to $Pz < K$

where k denotes the consumer's budget constraint and P is the vector of marginal market prices the consumer is willing to pay for the z attributes. The corresponding first-order conditions for a given product j are:

$$\frac{\partial P_{ji}}{\partial z_{ji}} = \frac{\partial U / \partial z_{ji}}{\partial U / \partial P_{ji}} \, \forall i \forall j$$

The case of wine

Being wine a highly differentiated product - where grape variety is only one product's attribute - it seems appropriate to analyze price through the hedonic price model. Moreover, information about its intrinsic quality is limited until the time of consumption, so consumers need to use other indicators of the wine's characteristics - as quality signals -when making purchasing decisions (3). Many authors have estimated implicit prices of wine attributes through the hedonic approach.

Wine characteristics' selection

The hedonic theory suggests that a characteristic should be included in the analysis if it influences consumer and producer behaviour. This implicitly assumes that consumers and producers consider the same set of attributes when they value a good and this is difficult to sustain. In wine, for example, the consumer may be interested in winery reputation or information and labelling design while the seller may focus on chemical attributes or vineyard management. Furthermore, different consumers may base their purchasing decisions on different sets of characteristics or assign different weights to them (13). As most products eventually end up in private households, even though they will pass through a number of intermediate markets on their way from producer to end user, it seems logical to focus on consumers decisions (24). The hedonic model also follows this approach and considers those characteristics which could be important for consumers when making a purchasing decision.

Under the assumption that one can build a unique list of characteristics, for consumers and producers, these characteristics can be both intrinsic and extrinsic characteristics. As defined by Mathis *et al.* (31) it is absolutely necessary that these characteristics are defined accurately and completely through indicators. Intrinsic characteristics are the ones bundled in the good and are the essence of the product. On the other hand, extrinsic characteristics are those influencing consumer´s

appreciation of the good but not belonging to the product itself. For the case of wine, intrinsic characteristics considered in hedonic models are grape-variety; vintage; alcohol content and other technical quality attributes. An extrinsic characteristic is, for example, the landscape of a particular wine region such as Chianti or Cafayate or the jury grade received by a wine.

Following the consumer oriented approach, some authors sustained that technical quality issues should not be employed in the hedonic price models. In the case of wine, for example, grape attributes are of primarily interest for grape growers and winemakers, but could be not so valued by consumers at the moment of the buying decision because they are not fully known when this information is not provided in the label. At least, the vast majority of consumers do not have access to information or knowledge on these technical qualities of grapes and so these may not impact significantly on their willingness to pay for a certain wine. As defined by Unwin (53) '*when purchasing a particular bottle of wine for the first time, most consumers do not have any idea at all about the precise level of fine tannins in it, its firmness of attack, its color intensity*…'

Generally, the consumer faces an information problem in his evaluation of the utility of different products supplied in the market. Getting information about quality is generally expensive, limiting the willingness of the consumer to search for it. In the case of wine, this search procedure does not seem appropriate and consumers may plausibly use other attributes to infer quality. As a signaling factor, reputation could help to overcome the lack of information of consumers in repeated purchasing decisions. Reputation is often referred to as the 'goodwill' value of the firm's brand name. For Stigler '*reputation is a world which denotes the persistence of quality and reputation commands a price because it economizes search*' (51)[*].

Shapiro (48) developed a theoretical framework to examine the effects of the individual producer reputation on prices. The author considered reputation as common knowledge or public information and as the result of the evaluation a consumer does on the quality of goods produced by the firm in the past. This information is used as an indicator of present or future quality.

The main assumption is that all consumers communicate with each other to share information about products (also through publications), but that such information necessarily comes with a time-lag. These publications could be wine guides or wine publications and, in the actual era of internet and social media, also web-pages, blogs and forums.

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[*] According to Nelson, search is the basic activity for getting information and refers to any way of evaluating these alternatives, subject to some restrictions: 1- 'the consumer must inspect the option, 2- inspection must occur prior to purchasing' (35). Experience is the information process by which a consumer purchases brands for consumption and after several purchases determines which brand he prefers. Credence attributes are 'those which, although worthwhile, cannot be evaluated in normal use. Instead the assessment of their marginal value requires additional costly information (…)' (15). Through labelling, experience and credence attributes are transformed into search ones.

Table 1.   Search, experience and credence attributes of wine.
Tabla 1.   Atributos búsqueda, experiencia y confianza en el caso del vino.

	Intrinsic	Extrinsic
Search	Colour (red, white, rosé) Type of wine (still, sparkling) Brand Alcohol Content Producer's name Bottle weight **When reported on label** Vintage Grape variety Place of origin Special descriptors	Jury Grade: present, future and reputation Promotional Agency Cellaring potential Retailer's name
Experience	Visual characteristics Olfactory characteristics Gustatory characteristics	
Credence	**When not reported on label** Vintage Variety Place of origin	

Prices data set selection

The selection of the price data set has been, through all literature, a critical and controversial aspect. Underlying this choice is the need to collect data over most quality attributes influencing consumers' willingness to pay. Moreover, prices need to be as close as possible to the real retail prices in order to get a correct estimation of attributes' implicit prices.

Through literature, two main approaches have been adopted. Some authors have built their data set with observed prices and some others have simulated a market to understand consumers' purchasing decisions. The simulated market approach is generally adopted when the research goal is to test new product attributes, such as organic or environmental friendly production processes for agro-food products.

• Observed prices

Observed prices are the ones obtained through surveys on retail markets or from direct information on the product (catalogues, publications, guides). Sources for observed prices are diverse and, if we could distinguish them from closest to distant from the consumer, these would be: retail prices; FOB prices; en primeur prices and suggested prices.

The retail data set corresponds to the actual identification of market prices at the retailer. The utility of this type of information relies on offering the real information consumers face when making purchasing decisions. Whether this information is gathered through direct surveys or by specialized agencies (such as AC Nielsen) depends, generally, on the objective of the research and its funding.

Table 2.   Wine hedonic models based on observed prices.
Tabla 2.   Modelos de precios hedónicos del vino basados en precios observados.

Author		Origin country	Final market	Data	Price	Source
Ocskowski (37)	1994	Australia	Australia	Wine Guide	Suggested Price	Shield and Meyer wine guide 1991 and 1992
Nerlove (36)	1995	World	Sweden	102 week period, 1989-1991	FOB + markup	Monopoly Vin och Sprit
Combris, Lecocq and Visser (11)	1997	France (Bourdeaux)	France (Bourdeaux)	Consumer Report. December 1992	Retail price at winery	Report "50 Millions de consommateurs"
Landon and Smith (27)	1998	France (Bourdeaux)	France (Bourdeaux)	Wine Guide	Suggested Price	Wine Spectator (1989 and 1990)
Combris, Lecocq and Visser (12)	2000	France (Burgundy)	France (Burgundy)	Consumer Report. November 1993	Retail price at winery	Report "50 Millions de consommateurs"
Angulo, Gil, Gracia and Sanchez (2)	2000	Spain	Spain	Wine Guide	Suggested Price	Guia de Vinos Gourmet 1998
Steiner (50)	2004	World	Great Britain	August 1994	Retail Price	AC Nielsen
Morilla Critz Martinez Valderrama (34)	2002	Spain	Spain	Wine Guide	Suggested Price	Peñin Guide for Spanish wine 1999 and 2000
Schamel (45)	2003	New World	United States	Wine Guide	Suggested Price	Wine Spectator (1990-2001)
Schamel and Anderson (47)	2003	Australia and New Zealand	Australia and New Zealand	Wine Guide	Suggested Price	James Halliday's wine ratings (1992-2000 Australian vintages and 1993-2000 New Zealand vintages) and Wine State magazine (1992-1999 Australian vintages and 1994-1999 New Zealand vintages)
Bombrun and Sumner (8)	2003	United States	United States	Wine Guide	Suggested Price	Wine Spectator 1995-2001
Steiner (50)	2004	Australia	Great Britain	August 1994	Retail Price	AC Nielsen
Durham, Pardoe and Vega-H (16)	2004	World	United States	19 week period, April-September 1998	Restaurant Retail Price	Direct Survey
Melo, Buzeta and Marshall (32)	2005	Chile	Chile	1-15 September 2003	Retail Price	Direct Survey
Bicknell, Friesen and MacDonald (6)	2005	New Zealand	New Zealand	Wine Guide	Suggested Price	Michael Coopers annual series of Buyer's Guide to New Zealand Wines for the years 1994 to 2003

Author		Origin country	Final market	Data	Price	Source
Lecocq and Visser (28)	2006	France (Bordeaux and Burgundy)	France (Bordeaux and Burgundy)	December 1992 for the Bordeaux I sample, November 1993 for the Burgundy sample, and October/November 2001 for the Bordeaux II sample.	Retail price at winery	Report "60 Millions de consommateurs"
Troncoso and Aguirre (52)	2006	Chile	United States	Wine Guide	Suggested Price	Wine Spectator
Lima (29)	2006	United States	United States	Wine Tastings	Suggested Price	Californian Tastings
Schamel (46)	2006	World	United States	Wine Guide	Suggested Price	Wine Spectator
Miller, Genc and Driscoll (33)	2007	United States (California)	United States (California)	Wine Guide	Suggested Price	Wine Spectator
Ali and Nauges (1)	2007	France	France	Vintages 1983-1998 **	Primeur Price	Broker house in Bourdeaux
San Martin, Brummer and Troncoso (44)	2008	Argentina	United States	Wine Guide	Suggested Price	Wine Spectator 2006
Florkowski, Carew and Senshui (17)	2008	France (Burgundy)	Canada (British Columbia)	108 weeks, April 2002 May 2004	Retail Price	Monopoly British Columbia Liquor Distribution Branch
Gonzalez and Melo (18)	2008	Chile	Chile	Wine Magazine	Suggested Price	La Cav Magazine
Roberto Luppe Lopes Fávero and Prado Belfiore (30)	2008	Brazil	Brazil, Argentina, Chile	No available data	Retail price	No available data
Panzone and Simoes (39)	2009	Portugal	Portugal	Online data July 2007	Retail Price	Portuguese retailer: Continente Hypermarket.
Benfratello, Piacenza and Sacchettos (5)	2009	Italy	Italy	Different data	Retaill Price	Direct Survey + Wine Spectator + DuemilaVini *2
Ortuzar-Gana and Alfranca-Burriel (38)	2010	Chile	Chile	104 weeks September 2004-September 2006	"Regular Price"	AC Nielsen
Boatto, Defrancesco and Trestini (7)	2011	Italy	Italy	June-December 2006	Retail Price	Direct Survey
Brentari and Levaggi (9)	2011	Italy	Italy	Wine Guide	Suggested Price	Guida di Vini prepared by Altroconsumo (Italian Independent Consumer Association)
Yoo, Florkowski and Crew (54)	2011	Argentina, Bulgaria, Chile, Croatia and Hungary	Canada (British Columbia)	108 weeks, April 2002 May 2004	Retail Price	Monopoly British Columbia Liquor Distribution Branch
Kwong, Cyr, Kushner and Ogwang (25)	2011	Canada (Ontario)	Canada (Ontario)	No available data	Retail price	Ontario's Monopoly: Liquor Control Board of Ontario (LCBO)

** 1984 vintage was excluded from the analysis due to the broker's decision of removing it from the catalogue.

For retail prices, different authors have selected diverse data sources. Many have chosen AC Nielsen panel data, which generally covers a wide range of retail stores and with enough detail to estimate an appropriate hedonic function. Others have preferred to conduct direct surveys, in large-scale retailers, wine shops or in restaurants. A special case is the one studied by Ortuzar-Gana *et al.* (38) who decided to build a hedonic price model considering the "regular price". The regular price is the baseline price which can be found in the most usual conditions (20) and the authors calculated it by considered the one standard deviation criterion over the discount percentages options. Underlying this decision is their idea that '*prices collected from stores may be promotional prices which are not associated with product's characteristics from the seller's perspective, due to the objective of selling more items in a limited time period'* (38). The authors found the hedonic estimation based on regular prices performed better (comparing to one based on current prices) because it displayed a better consumer valuation of each wine attribute.

Recommended prices are the ones suggested by the producer or by a certain publication or wine guide. These prices are not necessarily found in the market but are rather the suggestion given by different agents -*e. g.* producers and wine experts- , after some technical quality attributes have been considered. Hence, these prices may not fully reflect the real of consumers' willingness to pay, because they may not be the market equilibrium prices.

For recommended prices, two different sources have been used through literature. The most widely used source has been wine guides or wine publications. This choice has been generally explained by the data´s accessibility to the wine consuming public at large. Moreover, as sustained by Ortuzar-Gana *et al.* (38) these recommended prices could be useful because they do not take into account the seasonal discounts and are independent ofthe retailer characteristics.

Even if widely used, wine guides have been considered inappropriate for estimating hedonic price equations by many authors (7, 11, 21, 54).

• Simulated markets
As consumer behaviour is a complex issue, some authors have considered useful to work over simulated market data to identify factors influencing consumers' willingness to pay for a certain good's attribute. Generally, this approach is used to identify the impact of new attributes in consumers' willingness to pay. This is the case of experiments set to test new healthy products, functional products or environmentally friendly production processes.

Gustafson and Sumner (21) developed an experiment in a wine retail setting with a different approach. After consumers have freely chosen a certain wine, they were asked to participate in the investigation. Based on their primary wine selection six different wines were offered to each consumer (a special software was developed and it created a list of wines based on wines available in the store). This second wine selection was analyzed using a hedonic approach together with a demographic questionnaire these consumers completed.

The implicit price of wine attributes

Among the wine quality attributes considered in hedonic models, some show a relatively stable and uniform performance in different markets and for different time periods. Some others, on the contrary, show specific positive or negative impacts on price depending on the considered market.

In this literature review, a distinction will be made considering the origin of the wine and the selling market. For this purpose we have classified markets, both origin and destination, in "Old World" countries and "New World" countries. France, Italy, Spain, Portugal, Germany, Austria, Switzerland, Belgium, Greece, Bulgaria, Hungary and Romania will be considered as part of the "Old Word". United States, Australia, New Zealand, South Africa, Canada, Argentina, Chile, Brazil, Mexico and Uruguay will be considered the "New World" countries.

As explained by Parcero (40) all countries not included in the "New World" and the "Old World" are countries with little tradition of wine consumption and practically inexistent tradition of wine production. However, from 1961 till today they have significantly increased their imports relatively to the world's total imports of wine. Among these countries stand out United Kingdom, Denmark, Sweden, Holland, Russia, Belgium, Japan, China and India. This group of countries is defined as "new buyers" and will be considered among the "New World" countries.

• "New World" wine in "New World" markets

Most of the hedonic research in the wine market has been done regarding "New World" wines sold in "New World" countries. These can be possibly explained by the increasing participation of these actors in the world wine scenario (4).

As described in table 3 (page 215), most hedonic model estimation have found that 'New World' wines' rating (jury grade), vintage and place of origin have a significant positive impact on consumer's willingness to pay in "New World" markets.

For place of origin, a strong consensus (32, 44, 50) has risen over the fact that the more specific the labelling of the place of origin, the higher the price. Moreover, a positive trend has been distinguished toward more regional differentiation.

The influence of jury grades on consumers' willingness to pay has also raised high consensus. Most authors have found this variable to have a significant and positive impact on purchasing decisions. However, the evolution of this impact is subject to different interpretations.

For instance, Schamel and Anderson (46) identify the winery rating as having a positive but downward trend while Bicknell *et al.* (6) found the variable has increased over time. As could be expected, in United States were Wine Spectator has the strongest influence and profile, the impact of Parker's grade is consistently more important.

Table 3. "New World" wines in "New World" markets.
Tabla 3. Vinos del "Nuevo Mundo" en mercados del "Nuevo Mundo".

Author		Origin country	Final market	Functional Form	Rating/ Jury Grade	Vintage	Place of origin
Ocskowski (37)	1994	Australia	Australia	Semi-logarithmic	+	+	+ -
Schamel and Anderson (47)	2003	Australia and New Zealand	Australia and New Zealand	Semi-logarithmic	+		+
Schamel (45)	2003	New World	United States	Semi-logarithmic	+		+ -
Bombrun and Sumner (8)	2003	United States	United States	Semi-logarithmic	+ -	+ -	+
Steiner (50)	2004	Australia	Great Britain	Semi-logarithmic		+	+ -
Melo, Buzeta and Marshall (32)	2005	Chile	Chile	Semi-logarithmic		+	+ -
Bicknell, Friesen and MacDonald (6)	2005	New Zealand	New Zealand	Semi-logarithmic	+		+ -
Troncoso and Aguirre (52)	2006	Chile	United States	Semi-logarithmic	+	+	+
Lima (29)	2006	United States	United States	No information	+	+	
Miller, Genc and Driscoll (33)	2007	United States (California)	United States (California)	Semi-logarithmic	+	+	n.s.
González and Melo (18)	2008	Chile	Chile	Semi-logarithmic	+	+	
San Martin, Brummer and Troncoso (44)	2008	Argentina	United States	Semi-logarithmic	+	+	+ -
Roberto Luppe, Lopes Fávero and Prado Belfiore (30)	2008	Brazil	Brazil, Argentina, Chile	Semi-logarithmic		+ -	+ -
Ortuzar-Gana and Alfranca-Burriel (38)	2010	Chile	Chile	Semi-logarithmic			
Yoo, Florkowski and Crew (54)	2011	Argentina, Bulgaria, Chile, Croatia and Hungary	Canada (British Columbia)	Semi-logarithmic			+ -
Kwong, Cyr, Kushner and Ogwang (25)	2011	Canada	Canada (Ontario)	Semiparametric partially linear model	+	n.s.	n.s.

Vintage has been identify as significantly affecting consumers' buying decisions but presenting differences for red and white wines, for certain varieties and for different price-categories.

The role of brands have also been considered thoroughly, specially by Schamel (46) who argued that "New World" countries have still much work to do in the regional differentiation but realized leading brands are able to pick up much of the price differential. The author suggested regional quality leaders could benefit from emphasizing origin in their own marketing.

• "Old World" wine in "Old World" markets

"Old World" countries, both in production and in consumption, are still the most important actors in the global wine market. Being Italy, France and Spain the most important countries, most studies have been done for these wines.

Table 4.   "Old World" wines in "Old World" markets.
Tabla 4.   Vinos del "Viejo Mundo" en mercados del "Viejo Mundo".

Author		Origin country	Final market	Functional Form	Rating /Jury Grade	Vintage	Place of origin
Combris, Lecocq and Visser (11)	1997	France (Bourdeaux)	France (Bourdeaux)	Semi-logarithmic	+	n.s.	+ -
Landon and Smith (27)	1998	France (Bourdeaux)	France (Bourdeaux)	Reciprocal Square Root	+		
Combris, Lecocq and Visser (12)	2000	France (Burgundy)	France (Burgundy)	Semi-logarithmic	+	+	
Angulo, Gil, Gracia and Sanchez (2)	2000	Spain	Spain	Multinomial Logit model	+	+	+
Morilla Critz and Martinez Valderrama (34)	2002	Spain	Spain	Semi-logarithmic	+	+	+ -
Lecocq and Visser (28)	2006	France (Bourdeaux and Burgundy)	France (Bourdeaux and Burgundy)	Semi-logarithmic	+		
Ali and Naughes (1)	2007	France	France	Semi-logarithmic	+ -	+	
Panzone and Simoes (39)	2009	Portugal	Portugal	Semi-logarithmic			+
Benfratello, Piacenza and Sacchettos (5)	2009	Italy	Italy	Box-Cox transformation	+		
Boatto, Defrancesco and Trestini (7)	2011	Italy	Italy	Semi-logarithmic	+	+	
Brentari and Levaggi (9)	2011	Italy	Italy	Semi-logarithmic			+

For those studies considering different places of origin as explanatory variables of the hedonic models, results indicate a strong positive influence. It should be noted that many studies refer to a special grape producing region. In this cases, place of origin does not need to be included in the analysis (1, 7, 27, 28).

Panzone and Simoes (39) set an interesting point when referring to the Portuguese market. They observed that Protected Designation of Origin*** (PDO) labelling is not a factor attracting a price premium *per se*, but rather it is the interaction between the PDO and the region of production that actually gives a premium.

The influence of rating/jury-grade has also raised consensus in these markets. In this case, however, this variable does not indicate necessarily a present jury grade but rather a reputation index or a future jury grade. The most notable case is the one

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*** An specific European Union regulation intended to guarantee geographical indication related quality.

studied by Landon and Smith (27) who founded that reputation (built with individual and collective reputation indexes) has a significant positive impact on price, 20 times bigger than current quality (measured by present jury-grade).

• "Old World" wine in "New World" markets

In a scenario of 'New World' countries increasing per-capita consumption and "Old World" countries reducing it, it seems logical for "Old World" producers to focus on these more dynamic markets. However, not much research has been done in this area, only targeting the British Columbia market. In British Columbia, *Barbaresco* and *Barbera* brands were found to have a significant impact on consumers' willingness to pay (17). This impact was found to be positive for some brands and negative for some others.

For French wines in British Columbia, certain geographical areas were found to have a significant but different impact on willingness to pay (10). Even if regions are geographically contiguous, their wines exhibit quality differences due to village geography, climate, among others. The ranking scheme showed significant positive impact, with "Premier" and "Grand Cru" designations showing a premium for most wines.

Table 5. "Old World" wines in "New World" markets.
Tabla 5. Vinos del "Viejo Mundo" en mercados del "Nuevo Mundo".

Author		Origin country	Final market	Functional Form	Rating/ Jury Grade	Vintage	Place of origin
Florkowski, Carew and Senshui (17)	2008	Italy	Canada (British Columbia)	Semi-logarithmic		+	
Carew and Florkowski (10)	2010	France	Canada (British Columbia)	Semi-logarithmic	+	+	+ -

• Mixed situations

An interesting venue has been taken by some authors, aiming at understanding the whole complexity of a market. In these cases, a single market has been analysed for worldwide wines origins. In the case of the Swedish market, where a monopoly was responsible for import, export, production and retail sale of all alcoholic beverages, rating seems to be the most important variable affecting price. In the United States, the jury grade plays a key role in defining consumers' willingness to pay. This responds basically to the market orientation or preference for wine guides such as Wine Spectator.

Table 6. Mixed situations.
Tabla 6. Situaciones combinadas.

Author		Origin country	Final market	Functional Form	Rating /Jury Grade	Vintage	Place of origin
Nerlove (36)	1995	World	Sweden	DoubleLogarithmic	+		n.s.
Steiner (49)	2002	World	Great Britain	Semi-logarithmic		+	+ -
Schamel (46)	2006	World	United States	Mixed log-linear functional form	+	+	+ -

CONCLUSIONS AND RESEARCH QUESTIONS

In an economy of highly differentiated products and complex purchasing decisions, the hedonic price model offers a valid way to identify quality attributes influencing consumers' marginal willingness to pay and to estimate the implicit price of these attributes. These estimations provide useful information aiming to improve the producers' and intermediates' marketing strategies, which can be fine tuned according to the different products' characteristics and target consumers. Moreover, regional and national promotional agencies should take advantage of these researches' results in order to better design their activities in different markets, for diverse types of wines and wineries.

Up to now, the hedonic price model in wine has been applied in different ways but all has been done with a single market approach. That is, no cross country research has been done yet. This has reduced the utility of information for producers and promotional agencies. No winery or agency deals, nowadays, with a single country and is very important to understand the different variables influencing different consumers' decision.

The understanding of the "New World" wines' performance in old world countries is also an unexplored subject. "Old World" countries are still the biggest markets for wine and it is absolutely necessary to understand which are the attributes influencing their consumers' decisions. Finding the similarities and differences among these countries could be tremendously useful for the whole value chain.

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