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# British Columbia Consumers' Preferences for Italian Wines: Reputation and Vintage Effects on Wine Quality and Prices

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**Abstract – Italian wines have been enjoyed by Canadian consumers for decades and the consumption is not limited to the ethnic Italian population. The study examines effects of wine characteristics and the brand associated with the designation of geographic origin estimating five hedonic price equations for Barbaresco; Barbera; Veneto (Valpolicella, Amarone and Reccioto); Soave; and, Chianti and uses weekly sales data from British Columbia retail outlets. Results indicate that, in general, a premium was paid for higher alcohol content, but the effects of individual brands within each area of origin varied and the range of price premia and discounts was from 14% to -12% suggesting that small price changes with regard to the baseline wine price could affect purchase.**

**Keywords – Hedonic pricing, appellation, objective characteristics.**

## I. INTRODUCTION

The purpose of this study is to measure how individual firm wine reputation and the styles and *terroir* associated with their wines including the vintage, region of production, and alcohol content have influenced British Columbia consumers' willingness to pay for Italian wines. The rapid expansion of Italian wine shipments in the North American market has been the focus of very few studies [1] measuring the contribution of quality, reputation, origin of production, and objective characteristics on wine prices.

There is evidence to indicate that wine quality perceptions are based on a combination of intrinsic (e.g., grape variety, alcohol content, and wine style) and extrinsic (e.g., packaging, labeling, brand name) cues which can be altered without affecting the product [2]. Wines vary in quality as illustrated by ratings published in Italian wine guides [3]. According to [4], the combination of non-verifiable quality attributes and the subjectivity of the judgement of the experts results in a greater increase in imperfect information which distorts price-quality relationship. Because of differences in wine and labeling regulations prevailing in European and New World wine

countries, there has been an array of different indicators considered to measure the quality and reputation effects on wine prices. This paper uses data on Italian wines imported by the British Columbia Liquor Distribution Branch, and comprises primarily of red wines imported from the Northwestern (Piedmont), Northeastern (Veneto), and Central (Tuscany) wine growing regions of Italy.

## II. CONCEPTUAL FRAMEWORK: HEDONIC METHOD

The theoretical framework underpinning hedonic wine price models is adapted from the research works of [5] and [6]. Hedonic wine price models are based on the pioneering work by [7], where the observed price of a product is assumed to be dependent on the value of its characteristics. Wine comprises a bundle of characteristics with the implicit value of these characteristics estimated by a hedonic price function. The latter is an equilibrium price relationship that considers demand and supply influences. Hedonic studies reveal the implicit values of wine quality characteristics consumers are willing to pay.

In this study, the vector of explanatory variables in the empirical model includes measures of both appellation/ firm reputation and label characteristics (e.g., alcohol, vintage) on the bottle when the wine is purchased by the consumer. Estimating a hedonic price function, therefore, provides information on the extent consumers place value on reputation and label characteristics. Unlike some of the previous Italian wine studies [1] that emphasized the sensorial and wine ratings of Barolo and Barbaresco wines, this wine price sample comprised a large range of appellation wines from distinct wine regions in Italy and concentrated on both objective characteristics, individual-owner reputation and regional reputation appellation wines.

### III. DATA DESCRIPTION AND WINE APPELLATIONS

Italian wine sales data provided by the British Columbia Liquor Distribution Branch covered weekly wine sales for table wine in 0.750 litre bottles for 108 weeks over the period April 20, 2002 to May 8, 2004. In 2007, Italian grape wine imports into British Columbia totaled \$20.1 million, up 50.9% from 2004 [8]. Italian sales data covered prices, quantities, and wine quality attributes for the major wine appellations exported by Italy. The wine appellations (e.g., Chianti, Barbaresco, Barbera, Valpolicella, and Soave) in our study are representative of the major wine brands exported by Italian wineries to Canada. The observable wine characteristics appearing on the wine label include the appellation region, name of the company or village, grape variety, color, vintage, and alcohol content. Italian wine classification distinguishes wine by quality based on several categories.

### IV. ESTIMATION RESULTS

Five equations were estimated using the pooled OLS approach for major wine producing regions: Barbaresco; Barbera; Valpolicella, Amarone and Reecioto; Soave; and, Chianti (Table 1). The goodness-of-fit measures included R-squared ranging from .703 in case of equation representing Chianti to .960 in case of equation representing Barbera. The vast majority of coefficients were statistically significant including all alcohol content measures, all but one variables representing vintage, and all volume indicators. In this latter case, the sign of the coefficient suggested the inverse relationship between the volume and price of particular group of wines suggesting that scarce supplies in the designated production area led to price increases for Canadian consumers. Among brand effects for Barbaresco, Barbaresco Ceretto Asij and Pio Cesare Il Bricco fetched a premium, while Barbaresco Fontanafredda and Barbaresco Riserva Produttori Del Barbarsco sold at a discount. Among Barbera brands, only Barbera D'Alba Sovrana Batasiolo sold at a premium from among the four brands included in the specification. Results further showed that all Amarone brands fetched a premium as did Valpolicella Classico Superiore Masi, while other Valoplicella brands sold at a discount. In contrast four Soave brands sold at a premium, but effects were mixed among Chianti brands. Even the designation "Chianti Classico" was often insufficient to fetch a premium, but "Chianti Classico Riserva" always led to a premium. Except for Chianti Barbi, other Chianti brands sold at a discount.

Table 1. Pooled OLS estimates for Italian wines.

<b>Barbaresco</b>		<b>Barbera</b>	
Variable	Coefficient values	Variable	Coefficient values
Constant	3.946 (88.21)	Constant	2.991 (478.25)
<b>Wine brands</b>		<b>Wine brands</b>	
Cereto Asij	0.152 (4.65)	D'Alba	-0.378 (-51.69)
Fontanafredda	-0.459 (-8.35)	D'Alba Sovrana	0.284 (37.56)
Pio Cesare Il Bricco	0.532 (10.62)	D'Asti Bersano	-0.963 (-73.55)
Riserva Produttori del Barbaresco	-1.173 (-18.98)	Costalunga	-0.263 (-35.12)
<b>Alcohol content</b>		<b>Alcohol content</b>	
12.5%	0.882 (10.57)	13%	0.839 (65.07)
13%	-0.269 (-4.14)	14%	1.265 (31.17)
13.5%	0.240 (4.07)	Quantity	-0.0007 (-9.47)
<b>Vintage</b>		R <sup>2</sup>	0.96
1999	0.873 (16.63)	F[7,592]	2300.9
2000	-0.483 (-2.49)	Prob value	0.0000
1997-98	0.091 (1.64)		
Quantity	-0.001 (-1.63)		
R <sup>2</sup>	0.881		
F[11, 428]	299.18		
Prob value	0.0000		

Table 1. Pooled OLS estimates for Italian wines (continued).

<b>Valpolicella, Amarone, and Recioto</b>		<b>Soave</b>	
Variable	Coefficient values	Variable	Coefficient values
Constant	3.364 (201.62)	Constant	2.515 (202.32)
<b>Wine brands</b>		<b>Wine brands</b>	
Valpolicella Bertani Valpantena	-0.271 (-9.59)	Classico Bolla	0.362 (22.69)
Valpolicella Classico Superiore Masi	0.339 (9.45)	Classico Superiore Bertani	0.262 (14.91)
Valpolicella Jago Le Poiane Bolla	-0.198 (-6.54)	Classico Superiore Masi	0.221 (17.19)
Valpolicella Umberto Fiore Tibalini	-0.748 (-27.36)	Suavia	0.804 (42.19)
Amarone della Valpolicella Classico Bertani	1.328 (45.23)	Quantity	-0.0003 (-9.19)
Amarone Recioto della Valpolicella Montresor	0.475 (14.48)	R <sup>2</sup>	0.868
Amarone della Valpolicella Negrar	0.057 (1.97)	F[, 438]	578.11
Amarone della Valpolicella Classico Masi	0.499 (18.24)	Prob value	0.0000
Amarone della Valpolicella Classico Bolla	0.469 (17.09)		
<b>Alcohol content</b>			
12.5%	-0.223 (-6.81)		
<b>Vintage</b>			
1998	-0.989 (-29.86)		
Quantity	-0.0007 (-24.75)		
R <sup>2</sup>	0.862		
F[12, 1440]	751.68		
Prob value	0.0000		

Table 1. Pooled OLS estimates for Italian wines (continued).

<b>Chianti</b>	
Variable	Coefficient values
Constant	3.249 (310.10)
<b>Chianti brands</b>	
Barbi	0.659 (12.14)
Cecchi	-0.560 (-22.78)
Classico Barone Ricasoli	-0.098 (-5.40)
Classico Castello D' Albola	0.064 (2.71)
Classico Riserva Antinori	0.140 (5.68)
Classico Riserva Ruffino Duclae	0.286 (11.58)
Classico Riserva San Felice Il Grigio	0.360 (15.28)
Classico Roca Delle Macie	-0.967 (-30.96)
Fossi	-0.419 (-17.79)
Gestioni Piccini	-0.527 (22.38)
Melini	-0.486 (-18.17)
Ruffino	0.010 (0.26)
Ruffina Riserva Frescobaldi Nipozz	0.014 (0.77)
<b>Alcohol content</b>	
13%	0.926 (37.39)
13.5%	0.174 (4.10)

<b>Chianti</b>	
Variable	Coefficient values
<b>Vintage</b>	
1999	-0.922 (-24.07)
2000	-0.856 (-17.48)
2001-02	-0.518 (-16.15)
Quantity	-0.006 (-12.51)
R <sup>2</sup>	0.703
F[19, 2378]	300.45
Prob value	0.0000

## V. CONCLUDING COMMENTS

Ethnic Italians may have given the initial boost to Italian wine imports to Canada, but Italian wines are popular with many consumers. Results show that the brand had a significant influence on the price and that Canadian consumers paid a premium for some, but discounted other brands. Higher alcohol content typically led to a premium, but not in case of wines from Veneto (Valpolicella, Amarone and Reecioto) and Barbaresco wines with 13 percent alcohol. The premia and discounts ranged from 14 percent for Amarone della Valpolicella Classico Bertani to -12 percent for Barbaresco Riserva Produttori Del Barbaresco. Such a range is relatively narrow and suggests that consumers could easily select from a wide selection of Italian wines of different quality within each of five geographically determined brands. To increase sales, the focus of the competition shifts away from brands within the same designated production area to the competition across Italy's wine producing regions.

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