ECONOMICS WORKING PAPERS

No. 22

Editors:

Glory Bushey
Meredith Danko
Chris Hansman
Karina Kidd
Ooi Jian Jia

THE VALUE OF GEOGRAPHIC LABELS
FOR SPARKLING WINES

Peter Griffin

WHITMAN COLLEGE

Fall 2009

The Value of Geographic Labels For Sparkling Wines

Peter Griffin

Abstract

Champagne is often regarded as the epitome of sparkling wine. In

Europe the *Champagne* label can be legally used only for wines

originating from the Champagne region in France. In contrast, the

Champagne label is not protected in the United States. and there

are numerous American sparkling wines which include the word

Champagne in their label without any link to the region of the

same name. Drawing on the 6,207 sparkling wines reviewed by

the Wine Spectator between June 1st, 1984 and September 30th,

2008, this paper employs the hedonic price method in order to

quantify the economic value of the *Champagne* label, independent

of the wine's geographic origin. Even after examining various

market segments, the results suggest that misappropriating the

Champagne label does not have a significant positive impact on

the price. Since this is contrary to what one might expect, several

possible explanations are considered in the text.

I. Introduction

The Use of Geographic Place Names

The importance of protecting geographic labeling as a form of reputation has become an increasingly heated topic of international trade. In the United States, labels such as *Champagne*, *Port*, and *Sherry* have been used to indicate the type of product rather than the region of its production (Morgan 1993). Producers from these regions object to this use on the basis that the geographic labels serve as a type of collective trademark that should be protected (Stanziani 2004, Morgan 1993). The basis for establishing laws to protect these regional place names stems from the idea that agricultural products derive certain attributes from their terroir. "Historically, terroir refers to an area or terrain, usually rather small, whose soil and microclimate impart distinctive qualities to food products. The word is particularly closely associated with the production of wine" (Barham 2003)[1]. "Many other products, besides wine, have now been defined by this idea, among them cheese, olive oil, chicken, walnuts, and melons" (Gade 2004, 849). "Problems arise for US producers who took pre-existing European place names for their products" (Barham 2003). This paper examines the effect that misappropriating the European place name *Champagne* has on the price of sparkling wine.

---

[1] Barham (2003) also points out that the word encompasses far more than just the environmental influences on agricultural products. It also incorporates human factors "such as the current and historical geographic distribution of the human know-how or savoirfaire associated with the product" (Barham 2003).

Information Asymmetry, Types of Goods, and the Signaling Value of Reputation

In order to address the importance of reputation in the sparkling wine industry, it is helpful to first examine the role of imperfect and asymmetric information in the marketplace. Imperfect and asymmetric information often lead to market failure. Agricultural products often suffer from adverse selection since the producer has information on the quality of its product while the consumer risks purchasing a product of inferior quality (Bramley and Kirsten 2007). Consumers' difficulty distinguishing high quality products from low quality products reduces their willingness to pay for high quality products. This often leads to the well-known lemons problem where high quality products can be driven from the market if the expected value of a good of unknown quality falls below the cost of supplying the high quality good (Akerlof 1970). Uncorrected, asymmetric information reduces total supply and can make it impossible for consumers to satisfy their preference for high quality products (Bramley and Kirsten 2007). The structure of the market becomes important for how firms deal with asymmetric information. Nelson classified goods based on the degree of consumers' access to information about the price and quality of goods (Nelson 1970). Agricultural products such as wine display characteristics of search goods, experience goods, and credence goods (Bramley and Kirsten 2007).

Search goods only require inspection, comparison, or simple research to evaluate the quality of a good before purchase and function very similarly to the perfect information case. If information about quality can be accurately and easily obtained before purchase, then quality signals such as reputation are not useful in making consumption decisions

since they provide no additional information (Landon and Smith 1997). The extent to which sparkling wine functions as a search good is rather limited since only basic pricing information can be found easily at low cost. Since the quality of sparkling wine is not easily assessed before purchase, sparkling wines are believed to have more in common with experience goods than search goods. Experience goods are goods for which accurate quality information can only be attained after the good is purchased and consumed. A classic example of an experience good is a movie that has not yet been opened. Consumers often rely on reputation or review by critics to form quality expectations. Like most food products, sparkling wine is often considered an experience good "[s]ince the quality of a particular bottle of wine cannot be known until it is de-corked and consumed" (Schamel and Anderson 2003, 358). Goods whose quality cannot be accurately observed even after the good is consumed are known as credence goods. Ali and Nauges (2007, 91) note that some food products also function as credence goods since "some product attributes cannot be accurately evaluated even after consumption"[2]. These attributes often involve production practices which must be certified by third parties. Although there are firms that practice organic and biodynamic viniculture, the wines they produce are rarely marketed as such.

Producers can signal high quality to partially correct for asymmetric information and help bridge the associated market failure. The appropriate signal depends on the way

---

[2] Goldstein and Herschkowitsch (2008) argue that even after consumption, consumers are often unable to perfectly discern quality. Even though consumers may rely in part on professional ratings such as those provided by the Wine Spectator to discern quality, the inclusion of wine points in our model accounts for the possibility that sparkling wines function as credence goods to a limited extent.

consumers are able to access information about product quality. Since sparkling wines function as experience goods, we might expect producers to signal quality by advertising, offering warranties, or investing in reputation. The lack of information on advertising expenditures is potentially problematic; however, Landon and Smith (1997) examine a similar market with data from the Wine Spectator and find that advertising expenditures were not expected to significantly impact or obscure the price-quality relationship. Although warranties are used in the market for many experience goods, it is unlikely that they would be effective at signaling quality for agricultural products. For many foods, quality is highly subjective and difficult to verify after consumption. Unlike warranties, which rely on legal enforcement, reputation can still function as an important signal of product quality enabling firms to "commit to product attributes that are difficult for third parties, such as courts, to verify" (Klein and Leffer 1981 as cited in Stanziani 2004; Png and Reitman 1995 as cited in Stanziani 2004). In order to function as an experience good, the observed price premium ought to reflect the reputations associated with a particular wine. Theory would suggest that if consumers are willing to pay for reputation, it is because it is a meaningful signal of quality.

Reputation can refer to an individual firm or a group. In the case of individual reputation, consumers' expectations are based on the past output of a particular firm. A firm's choice to produce high quality wines may only be worthwhile if establishing a reputation as a high quality producer allows the firm to earn a premium in future periods. What makes reputation a meaningful signal of quality is that it is more expensive for some firms to invest in reputation than it is for others, causing the advantaged firms to become

high quality producers by establishing a level of investment in reputation that reflects the cost of producing quality wine. For disadvantaged firms, the cost of establishing a reputation (by producing high quality wines), is greater than the value of earning a premium in future periods, then the firm will not attempt to signal high quality by investing in its reputation unless it is cost-effective to maintain it. By contrast, a self proclaimed quality indicator on the label would not serve as a meaningful signal of quality because the cost of providing the signal is the same for each firm and it would not cause firms to self-select based on their ability to produce quality wine.

Landon and Smith (1997) examine the role of collective reputation in the wine industry. Of particular interest is their idea that "consumer expectation of the quality of wine produced by an individual winery may depend on the current or past average quality of all wines from the same vintage or region" (Landon and Smith 1997, 295). Since consumers' expectations about the quality of a particular group are based on the average quality of the group's output in the past, the group shares the benefit of an individual firm's investment in reputation. Similarly, an individual firm could profit by cutting quality knowing that the impact of this cost saving measure on their collective reputation will be borne by all the firms in the group. In order for collective reputation to work, it is necessary to establish rules to prevent individual firms from free-riding on the reputation of the group.

The French system to protect regional place names is by far the most comprehensive national system and was formalized into law in 1935 (Moran 1993). In Europe, the term

"appellation of origin" has explicit implications for quality, often specifying allowable grape yields, the varieties used, and the method of production. In the US, the term "appellation of origin" merely denotes the geographic region in which the grapes were produced and as such appellations are explicitly unrelated to quality (Kwon, Lee, and Sumner 2008). "The U.S, regulations on viticultural areas came into force in 1978" (Moran 1993, 697). The use of bilateral agreements between nations has extended the legal backing of regional place names (Moran 1993). For example, Australia has enacted legislation to register and protect regional names, in order to meet its agreement with the European Union (EU) (Schamel and Anderson 2003). According to Schamel and Anderson (2003), legislation that provides stronger protection of regional names promotes investment in regional reputation by protecting the associated intellectual property. By combining geographic region with regulation of the production process, the EU's system of certifying collective reputation is likely to be less prone to free-riding.

Collective reputation is likely to be useful to the consumer if there are too many firms for consumers to develop quality expectations for each firm. With 814 producers of sparkling wine in this data set, it seems reasonable that consumers could reduce the cost of gathering information by also relying on the collective reputation of the 65 geographic regions. "Because these [collective reputation] indicators (but not their significance) are often provided on wine labels, information on whether a product belongs to a particular group is frequently available at low cost to consumers" (Landon and Smith 1998, 629). Furthermore, Landon and Smith (1998) point out that "[t]he inclusion of the collective reputation indicators … directly in the price equations allows for the possibility that these

indicators may reflect a product characteristic that is valued by consumers independent of its usefulness in predicting quality". For example, Goldstein and Herschkowitsch (2008) note that the exorbitant mark up on premium sparkling wines, serves as a form of conspicuous consumption[3]. When examining the price premiums obtained from the various regions, the signaling function of collective reputation may be indistinguishable from the region's snob appeal and other sources of value since these all contribute to the price premium.

Outline of Rest of Paper

The structure of the remainder of this paper is as follows. Section II examines the ways in which the sparkling wine industry is appropriate for modeling reputation. Section III presents Model Specification along with the methodology for hedonic price functions and market segmentation. Section III also provides a description of the data and the empirical analysis. Section IV provides a summary and some concluding remarks regarding potential areas of future research.

II. Advantages of Examining the Sparkling Wine Industry

This study offers an empirical analysis of the sparkling wine industry to explore the relationship between quality, price, and reputation. Several features of the sparkling wine

---

[3] The most extreme form of conspicuous consumption is a Veblen (snob) good. Veblen goods defy normal microeconomic theory because unlike most goods, the higher the price, the more desirable they become. If "Champagne's status as a celebratory, special occasion wine" (Goldstein and Herschkowitsch 2008, 21) constitutes a Veblen good, it merely leads us to presume that, for ultra premium wines, conspicuous consumption comprises a larger portion of the estimated price premium.

industry make it well suited for this analysis[4]. For example, the stability of the sparkling wine industry is an important feature because major changes could "reduce consumers' reliance on reputation as a predictor of current quality" (Landon and Smith 1998, 629). The number of firms in the sparkling wine industry is also quite large, with 814 firms in our sample. Most firms produce just a few wines and even the largest firms produce less than 1.7% of the wines. The effects of multi-product firms and market power are negligible since most firms only produce a few wines and there are no dominant firms in the market (Landon and Smith 1997). In addition, the fact that "producers are not significantly altering the form of their existing product" (Landon and Smith 1997, 292) combined with the absence of radical technological change in the industry makes the sparkling wine industry a good candidate to study the effects of reputation because these factors are unlikely to obscure the results (Landon and Smith 1997).

The limited degree of product differentiation in the market for sparkling wines makes it easier to establish a single measure of overall product quality (Landon and Smith 1998). Additionally, using a finely gradated quality index, such as the Wine Spectator's critical wine points, avoids the use of descriptive variables (which often exhibit extensive multi-collinearity) to proxy quality (Landon and Smith 1997). Another important feature is that environmental effects, such as soil and weather, and the multitude of production decisions which are under the direct control of the producer, occur years before the wine is released. This means that quality is predetermined with respect to price (Landon and Smith 1997).

---

[4] This relies heavily on the work of Landon and Smith (1997, 1998) who detail the features of the Bordeaux wine industry that make it especially appropriate for empirical analysis.

The small fraction of informed consumers in the market for sparkling wines makes reputation an important signal of quality. Theory suggests that consumers are rationally uninformed, meaning that consumers are more likely to be informed about quality when purchasing expensive or durable goods because the cost of being uninformed is higher (Hanf and von Wersebe 1994 as cited in Landon and Smith 1997). Sparkling wine prices (in January 2008 dollars), range from $5.14 to $5,412.07 with an average (mean) price of $47.55. Due to a few exceptionally high priced wines, the median price of $37.75 is a more appropriate measure of central tendency. Sparkling wine priced at $37.75 a bottle, "is neither too low to make its purchase unimportant not too high to be of critical importance to consumers" (Landon and Smith 1997, 293). The difficulty of acquiring good information prior to purchase suggests that only a tiny fraction of consumers will be well informed. According to Tirole (1988), a larger fraction of informed consumers causes a stronger relationship between price and quality. Taken to an extreme, price could even act as a signal to uninformed consumers so long as the fraction of informed consumers is large enough to keep producers honest (Tirole 1988). Since we expect the sparkling wine market to have only a small fraction of informed consumers, consumers are likely to rely on reputation rather than price as a signal of quality.

III. Model Specification and Results

This section will distinguish the value of including the word *Champagne* in the label from the value of other product attributes namely geographic reputation. The value of these product attributes is estimated using the hedonic price method. This necessitates

controlling for other factors that affect the price of a sparkling wine such as vintage, region, country, producer, and quality (critical wine points). Several models will be considered along with a discussion of the advantages and disadvantages of each.

Hedonic Price Method

The hedonic pricing model is based on the idea that goods derive their value from their underlying utility providing attributes. A generic hedonic price function can be written as $P(\mathbf{z}) = f(z_1, z_2, z_3, \ldots, z_n)$ where $\mathbf{z}$ is a vector of the observable product characteristics. Rosen's 1974 work[5] on differentiated products provides the theoretical foundation for estimating the value of these characteristics. The marginal value of each product attribute can be estimated by taking the partial derivative of the hedonic price function with respect to that product characteristic (Loureiro and McCluskey 2000).

Model Specification

In order to estimate the affects of the various product attributes on price, it is necessary to construct a model and determine an appropriate functional form. Since the objective is to measure the price premium associated with misappropriating the label *Champagne*, it makes sense to model the price a sparkling wine fetches as a function of the wine's attributes which include the label[6], wine points, a time trend, and fixed effects for web

---

[5] Rosen's 1974 work also provided the theoretical basis for many empirical papers on reputation such as: Landon and Smith 1997; Landon and Smith 1998; Loureiro and McCluskey 2000; Schamel and Anderson 2003; Stanziani 2004; and Costanigro, McCluskey, and Mittelhammer 2007.

[6] A dummy variable set to one for sparkling wines which misappropriate the *Champagne* label.

only release, age, vintage, producer and region. We begin our discussion of functional

form with a consideration of the Box-Cox method for constructing transformations of the

dependent variable. The Box-Cox transformation estimates transformations of the

dependent variable that are of the form:

$$y(\theta) = \begin{cases} \dfrac{y^\theta - 1}{\theta} \; for \; \theta \neq 0 \\ \log(y) \; for \; \theta \; = 0 \end{cases}$$

Values of theta (θ) are obtained by the method of maximum likelihood estimation. The

theta (θ) value reported in the table below is close to -½ suggesting an inverse square

root transformation of the dependent variable. Since there are over 900 independent

variables in the model, only the transformation of the independent variable was reported.

Box-Cox results:

			Number of obs	=	5974
			LR chi^2 (909)	=	13540.96
Log likelihood = -20949.809			Prob > chi^2	=	0.000

real_pr~2008 |	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
theta (θ) |	-.4677117	.0118557	-39.45	0.000	-.4909484 -.4444749

…
(For simplicity, results of transformation on independent variables were omitted from the
table.)
…

Test H₀:	Restricted log likelihood	LR statistic chi^2	P-value Prob > chi^2
theta = -1	-21852.64	1805.66	0.000
theta = 0	-21792.661	1685.71	0.000
theta = 1	-33935.914	25972.21	0.000

The inverse square root functional form is consistent with the estimated functional form

for similar markets. For instance, Landon and Smith (1997, 1998) find the reciprocal

square root model to be the most appropriate transformation to describe the market for

Bordeaux wines. Even though the Box-Cox transformation recommends the inverse

square root functional form, this paper uses the log-linear specification for the majority of the analysis because it results in coefficients that have a straightforward interpretation. (e.g. a one unit change in variable i results in a roughly β_i percent change in price.) When interpreting the inverse square root functional form, Costanigro, McCluskey, and Mittelhammer (2007, 463) point out that "coefficients with a negative sign signify a positive impact of the wine attribute on price, and vice versa". Due to the sheer number of explanatory variables, it was impractical to perform quadratic estimations of the parameters. The basic model[7] is described by the following equation[8]:

$$Ln(\mathbf{price_x}) = \beta_0 + \beta_1(\mathbf{falsely\_contains\_champagne_x}) + \beta_2(\mathbf{points_x}) + \beta_3(\mathbf{time_x}) + \beta_4(\mathbf{web\_only_x}) + \sum_{n=1}^{13} \beta_n(\mathbf{age_x}) + \beta_{18}(\mathbf{age{>}13_x}) + \sum_{i=1}^{65} \beta_i(\mathbf{region_x}) + \sum_{j=1}^{57} \beta_j(\mathbf{vintage_x}) + \sum_{k=1}^{814} \beta_k(\mathbf{producer_x}) + \varepsilon_x$$

The endogenous variable in this model is the natural log of price per 750 ml bottle expressed in 2008 dollars. Prices were adjusted for inflation using the consumer price index for alcohol based in January 2008 as provided by the Bureau of Labor Statistics. A time trend variable (**time**) is included to account for changes in income levels, demand, or market structure over time. The (**points**) variable indicates the number of critical wine points awarded by the Wine Spectator at the time of review. It seems reasonable to expect that, in general, wines with a higher number of points will command a higher price[9]. The dummy variable (**web_only**) accounts for the fact that some wines are only

---

[7] For comparison purposes, this paper also reports the results of the inverse square root function form for the basic model.

[8] Appendix A contains the complete list of names for the variables used in the model.

[9] fix this! Costanigro, McCluskey, and Mittelhammer (2007, 455) note that "[i]t is uncertain whether expert ratings influence prices because they are good proxies for quality of the wine or

listed in the online version of the Wine Spectator. If the printed version of the Wine Spectator provides greater visibility, we might expect wines that are only listed online to command a lower price.

The model also includes firm, region, age, and vintage fixed effects. For simplicity, only the estimations of age are reported. Firm fixed effects are used to control for individual firm reputation. Similarly, including a dummy variable for each region controls for the effects of collective reputation. Regional premiums are estimated relative to the Champagne region (region 1), which is omitted. The value of age is estimated using a series of dummy variables in order to avoid omitting wines that have no age. Many sparkling wines have no age because they were blended from different vintages. Single vintage wines are usually produced during "good years", so we would expect that a wine with an age (and therefore made from a single vintage) would be worth more than a mixed vintage wine. Relative to wines with no age, age dummies that ranged from one to thirteen years (with a dummy for sparkling wines aged longer than thirteen years) obtained significant results. By also including dummy variables for each vintage, it is possible to correct for vintage-to-vintage variation. The vintage dummy variables may also pick up the effect of year-to-year changes in quantity. Since these quantity changes are partially captured by the dummy variables for vintage, it would be misleading to use the corresponding coefficients to evaluate good years and bad years. If estimating vintage quality were the primary objective, Schamel and Anderson (2003) note that

---

because of their marketing effect", however, neglecting to include wine points in the model would likely result in an omitted variable bias.

several authors[10] have shown vintage quality to be effectively modeled using a few straightforward weather variables during the growing season. Since the primary objective of this paper is to estimate the value of the *Champagne* label, it is sufficient to include dummy variables for each vintage that account for the combined effect of year-to-year changes in both quantity and quality. Including vintage dummies is necessary (in order to account for vintage-to-vintage variation) even though these coefficients may not accurately reflect the price premium associated with the quality of a particular vintage.

Data

The data include 6207 sparkling wines listed in the online version of the Wine Spectator, reviewed between June 1st, 1984 and September 30th, 2008. Sparkling wines that did not have prices listed were omitted (233 in total). The descriptive statistics for the variables used in the model are reported in the table below[11].

---

[10] Specifically, Ashenfelter (2000), Ashenfelter et al. (1995), Byron and Ashenfelter (1995) and Wood and Anderson (2002) are cited by Schamel and Anderson (2003) as major contributors to this idea.

[11] Descriptive statistics for the firm, region, and vintage fixed effects have been omitted for simplicity and can be obtained from the author upon request.

DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
ln_real_2008	5974	3.581	0.703	1.636	8.596
inverse_sqrt_real_2008	5974	0.177	0.061	0.014	0.441
falsely_contains_champagne	6207	0.004	0.066	0	1
points	6207	86.137	4.735	53	99
time	6207	188.485	72.252	1	293
web_only	6207	0.113	0.316	0	1
age_1	6207	0.013	0.111	0	1
age_2	6207	0.024	0.154	0	1
age_3	6207	0.036	0.187	0	1
age_4	6207	0.050	0.218	0	1
age_5	6207	0.068	0.253	0	1
age_6	6207	0.061	0.239	0	1
age_7	6207	0.053	0.224	0	1
age_8	6207	0.046	0.209	0	1
age_9	6207	0.025	0.156	0	1
age_10	6207	0.018	0.134	0	1
age_11	6207	0.011	0.106	0	1
age_12	6207	0.005	0.069	0	1
age_13	6207	0.003	0.058	0	1
age_old	6207	0.018	0.133	0	1

Results

The results of the log-linear and the inverse square root specifications are reported in

Tables 1 and 2 respectively. For simplicity, the estimations of regional, vintage, and

producer fixed effects are not reported in the tables. Both functional forms demonstrate a

high goodness of fit. The adjusted R^2 value was 0.8414 for the log-linear specification

and 0.8897 for the inverse square root specification[12]. Interestingly, the time trend was

estimated as zero in the inverse square root case but was found to be insignificant in the

log-linear case. Similarly, the web only variable was not statistically significant in either

case, suggesting that both the online and printed versions of the Wine Spectator provide

approximately equal visibility. In order to address the impact of various product

attributes, the remainder of the results will be discussed exclusively with regard to the

log-linear specification.

---

[12] Both functional forms display an adjusted R^2 that is especially good for cross-section data and dramatically higher than the 0.1255 value for the linear form (not shown).

TABLE 1: REGRESSION RESULTS			TABLE 2: REGRESSION RESULTS		
Number of obs	= 5974		Number of obs	= 5974	
R-squared	= 0.8644		R-squared	= 0.9057	
Adj R-squared	= 0.8414		Adj R-squared	= 0.8897	
Root MSE	= 0.27973		Root MSE	= 0.02028	
Dependent Variable: ln_real_2008			Dependent Variable: inverse_sqrt_real_2008		
Variable	Coefficient	Standard Error (robust)	Variable	Coefficient	Standard Error (robust)
falsely_contains_champage	-0.091**	0.04	falsely_contains_champage	0.010*	0.01
points	0.011***	0.00	points	-0.000***	0.00
time	0.000	0.00	time	0.000**	0.00
web_only	0.007	0.01	web_only	-0.001	0.00
age_1	1.596***	0.10	age_1	-0.056***	0.01
age_2	1.676***	0.09	age_2	-0.065***	0.01
age_3	1.755***	0.08	age_3	-0.071***	0.01
age_4	1.782***	0.08	age_4	-0.074***	0.00
age_5	1.811***	0.08	age_5	-0.076***	0.00
age_6	1.914***	0.08	age_6	-0.083***	0.00
age_7	1.954***	0.08	age_7	-0.084***	0.00
age_8	2.039***	0.08	age_8	-0.089***	0.00
age_9	2.148***	0.09	age_9	-0.095***	0.00
age_10	2.268***	0.09	age_10	-0.101***	0.01
age_11	2.317***	0.10	age_11	-0.103***	0.01
age_12	2.384***	0.12	age_12	-0.106***	0.01
age_13	2.471***	0.11	age_13	-0.109***	0.01
age_old	2.472***	0.05	age_old	-0.109***	0.00
É (omitted from table)É	É	É	É (omitted from table)É	É	É
Constant	2.355***	0.11	Constant	0.270***	0.01

*, **, *** indicates significance at the 10%, 5%, and 1% level, respectively.

NOTE: Both functional forms include region, vintage, and producer fixed effects that are not reported in the table

In the log-linear model, the points variable was statistically significant at the 1% level with the estimated impact of an additional wine point being a 1.1% increase in the price received. The coefficients for age were also statistically significant at the 1% level. Wood and Anderson (2006) provide evidence that the aging process may be better modeled as a cubic function; however, due to the infrequency of sparkling wines aged more than 13 years, ages beyond 13 years were estimated by a single dummy variable[13]. Aged sparkling wines received a price that was nearly 1.6% greater than wines with no age. As shown in **Table 3**, the value of an aged sparkling wine increased by

---

[13] The small number of older wines suggests that most wines have a limited aging potential.

approximately 0.07% per year for the first thirteen years. The value of sparkling wines that have been aged less than 13 years are best described by a linear function. This is probably because the wines are still maturing steadily during this period. If the aging function were not cubic but parabolic, one might imagine that the value added by aging might eventually become negative and the oldest wines would be expected to exhibit lower prices as they become undrinkable. Instead, we observe that the coefficient for wines aged for exactly thirteen years is slightly less than the coefficient for wines aged more than thirteen years. Although further investigation is required, this result does not contradict Wood and Anderson's idea that wines that age beyond a certain point begin to gain value as antiques, which offsets their declining consumption value.

TABLE 3: ESTIMATED VALUE ADDED OF AGE

AGE DUMMY	ESTIMATED COEFFICIENT	STANDARD ERROR (robust)	95% CONFIDENCE INTERVAL	
age_1	1.596	0.12	1.359	1.833
age_2	1.677	0.10	1.474	1.880
age_3	1.755	0.10	1.565	1.945
age_4	1.783	0.09	1.598	1.968
age_5	1.811	0.09	1.627	1.995
age_6	1.915	0.10	1.718	2.112
age_7	1.954	0.10	1.751	2.157
age_8	2.039	0.08	1.876	2.202
age_9	2.149	0.10	1.956	2.341
age_10	2.268	0.09	2.089	2.448
age_11	2.317	0.07	2.173	2.462
age_12	2.385	0.10	2.194	2.575
age_13	2.472	0.09	2.286	2.657
age_old	2.472	0.02	2.428	2.516
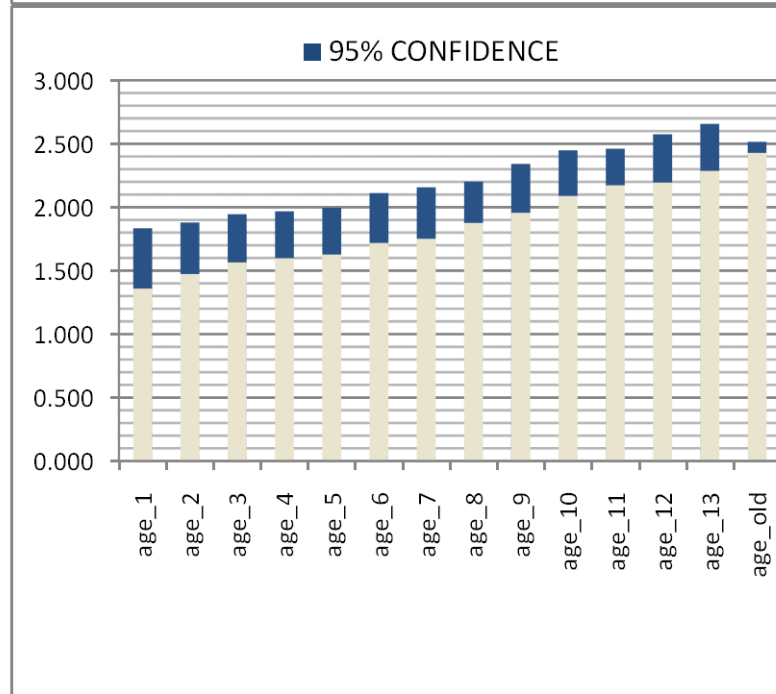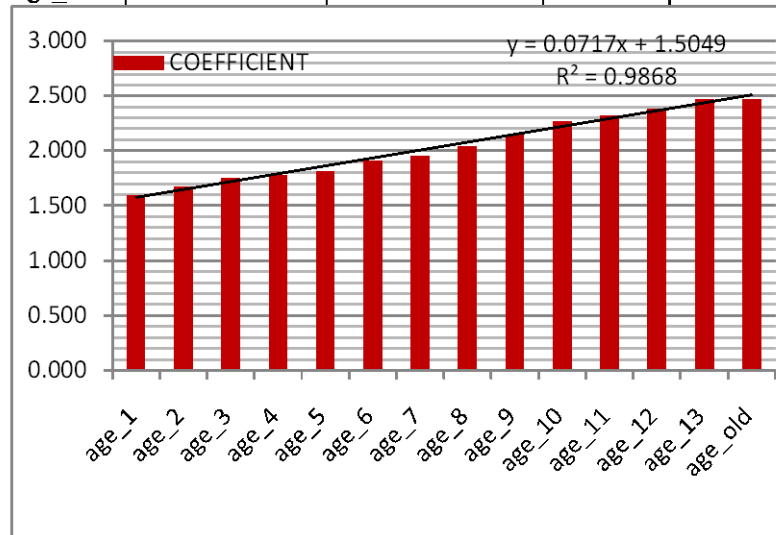
Theory would suggest that misappropriating the label *Champagne* should increase the price a wine receives by free-riding on the region's strong geographic reputation. The fact that the estimated coefficient is negative and significant at the 5% level suggests a possible aggregation bias. Since we would expect at least some groups to benefit from including the word *Champagne* in their label, it is possible that the benefits to one subgroup may be obscured by the losses to another. One possibility is that the label may have different effects on wines of different qualities[14]. To check for this, we replaced (**falsely_contains_champagne**) with a series of 17 dummy variables (**fd***) where * is the number of wine points for which there is at least one instance of the *Champagne* label being misappropriated. Surprisingly, only the variables (**fd67**) and (**fd83**) demonstrated a significant positive value for including the word *Champagne* (**see Table 5a**). This result is highly suspect because the two dummy variables have a non-zero value for a total of three observations. Even though most of the variables showed a slight negative effect on price, the relatively few observations represented by each dummy variable make the results especially prone to being skewed by outliers. Furthermore, there is no clear relationship between the value of misappropriating the *Champagne* label and the number of wine points.

---

[14] This relationship is also examined later in the market segmentation section.

TABLE 5a: SLOPE DUMMIES (fd*)

Number of obs   = 5974
R-squared   = 0.8645
Adj R-squared   = 0.8411
Root MSE   = 0.27978

Dependant Variable: ln_real_2008

Variable	Coefficient	Standard Error (robust)	Number of Non-Zero Observations
points	0.011***	0.00	5974
time	0.000	0.00	5974
web_only	0.007	0.01	700
fd90	-0.169***	0.06	1
fd87	-0.278	0.19	1
fd86	-0.006	0.25	2
fd85	-0.072	0.12	2
fd84	-0.189***	0.06	1
fd83	0.133***	0.03	2
fd82	-0.042	0.10	3
fd81	-0.093***	0.03	1
fd80	-0.222*	0.13	3
fd79	-0.080*	0.04	3
fd78	-0.106***	0.03	2
fd76	-0.428***	0.13	1
fd75	-0.008	0.04	1
fd74	-0.333***	0.10	1
fd73	(dropped)		1
fd71	0.030	0.05	1
fd67	0.518***	0.04	1
É (omitted from table)É	É	É	É
Constant	2.343***	0.11	-

*, **, *** indicates significance at the 10%, 5%, and 1% level, respectively.
NOTE: Model includes region, vintage, and producer fixed effects that are not reported in the table

Market Segmentation

As an extension of the hedonic price method, this section will check for market

segmentation by examining subsets of the sparkling wine industry. In general,

segmenting the data into separate categories and estimating the model for each category

separately can obtain more meaningful and accurate estimates of attribute values. In

cases where these segments are structurally different, the use of this segmented analysis

can improve the accuracy of the results by reducing the aggregation bias. For example,

Costanigro, McCluskey, and Mittelhammer (2007) use a segmented market approach to

estimate attribute values for wines in four price segments[15]. In the wine industry, the

---

[15] Commercial (<\$13), semi-premium (\$13-\$21), premium (\$21-\$40), and ultra-premium (\$40+)

applications of market segmentation are still relatively new and have many unexplored potential uses. This paper examines the possibility of price, quality, and regional segmentation in the sparkling wine industry.

The importance of segmentation by quality can be seen in Loureiro and McCluskey's (2000) study of the price premium obtained by the Protected Geographic Identification (PGI) label "Galician Veal", in Spain. Their results indicate that the PGI label received the greatest price premium when combined with other indicators of quality, but was insignificant for either quality extreme. Loureiro and McCluskey (2000) specifically address some implications for the wine industry, specifically, the possibility that including geographic indicators such as Napa Valley in the label may be more important for some price or quality segments than for others. In estimating the value of the label *Champagne*, segmentation by quality is important because it allows for the possibility that the *Champagne* label is more important in some quality ranges than others.

Another possible extension of this analysis would be to examining segmentation by region and determine if misappropriating the label *Champagne* results in a higher price premium for some regions than for others. In particular, if there is an interactive effect between label and region, the price premium obtained by using the label *Champagne* would need to be estimated separately for wines from each region. With this data set, results are likely to be extremely limited because there are very few observations in any given region that misappropriate the label *Champagne* (see **Table 4**). For this reason, regional segmentation is not modeled in this paper.

TABLE 4: DATA BY REGION AND LABEL

REGION:	Champagne	Michigan	Other US	New York	Long Island	Washington	Carneros	Napa	Other California	Sonoma	(all others)	SUM
Contains "Champagne"	3386	1	2	1	1	2	1	3	13	3	0	3413
Does not contain "Champagne"	0	13	14	19	24	63	100	195	239	253	1874	2794
TOTAL	3386	14	16	20	25	65	101	198	252	256	1874	6207
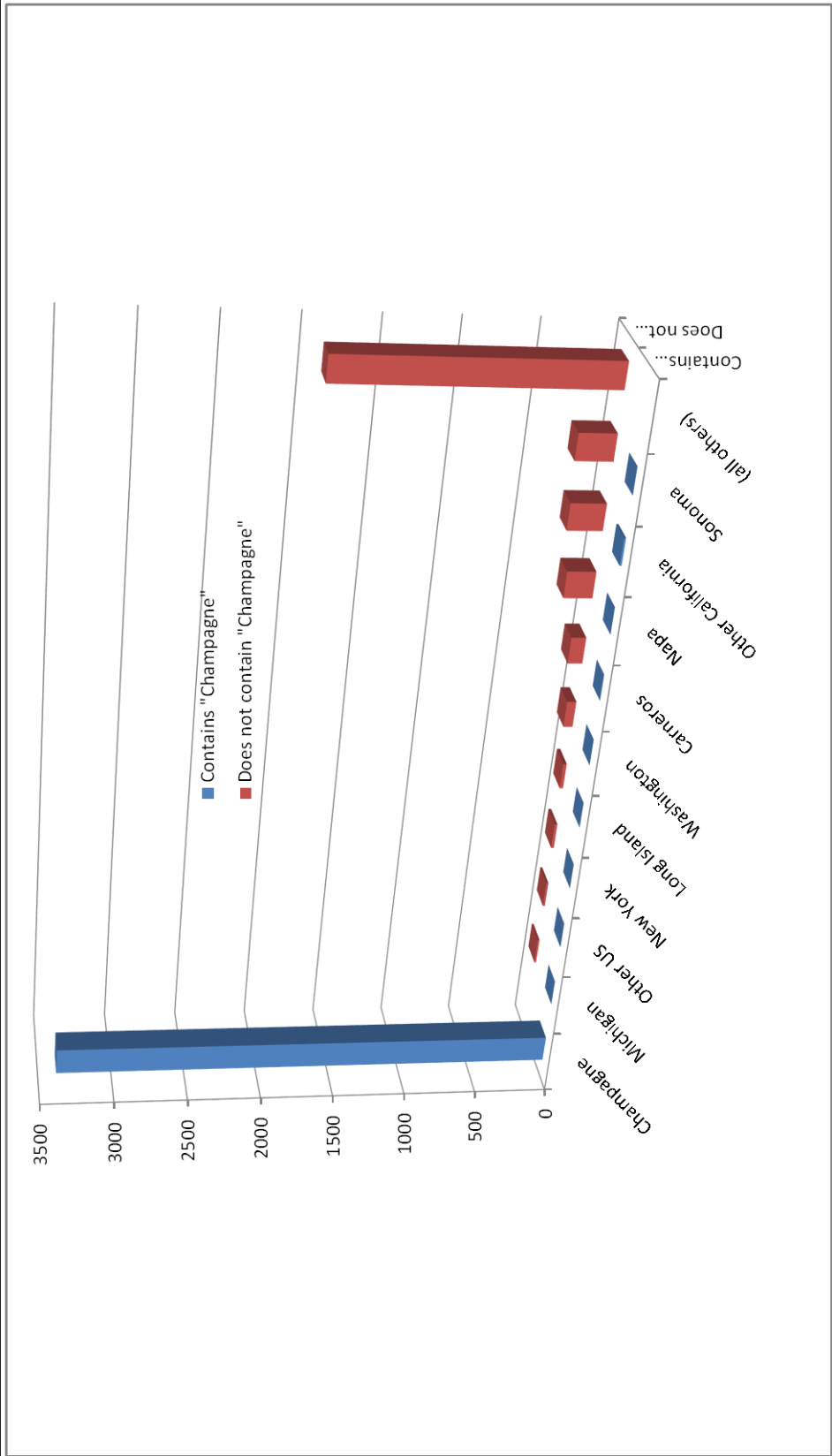
Price Segmentation

Assuming the *Champagne* label receives the same price premium for wines from each non-Champagne region, it is still possible to separate the effects of region and label. Costanigro, McCluskey, and Mittelhammer (2007) demonstrates the importance of examining price segmentation. In order to check for price segmentation in the sparkling wine industry, it is necessary to determine the price ranges that correspond to the distinct market segments. Unlike Costanigro, McCluskey, and Mittelhammer's (2007) work, the price ranges reported below were set exogenously. The price ranges that demonstrated the most group cohesion and joint significance are as follows[16]: Commercial < \$14, \$14≤ Semi-Premium < \$20, \$20≤ Premium< \$250, and Ultra-Premium ≥ \$250.

Within each price segment, it is useful to consider a comparison between the following four groups: Wines from Champagne that are appropriately labeled, wines from Champagne that neglect to include the word *Champagne* in their label, wines from other regions that contain the word *Champagne*, and wines from other regions that do not contain the word *Champagne* in their label. Ideally, the number of wines in each group would be large. Unfortunately, the available data is less than ideal in that there are no wines from Champagne that neglect to mention the word *Champagne* in their label. There are, however, 27 wines in the Commercial, Semi-Premium, and Premium ranges which misappropriate the label *Champagne* and which can be compared to the hundreds of wines in each segment that do not (see **Table 5b**).

---

[16] Other price ranges were examined and results are available from the author upon request.

TABLE 5b: RESULTS OF PRICE RELATED SEGMENTATION

CATEGORY	Real Jan. 2008 Price	ESTIMATED COEFFICIENT falsely_contains_champagne	STANDARD ERROR (robust)	OBSERVATIONS	
				wines misslabeled	obs. per category
Ultra-Premium	> $250	(dropped)	-	0	47
Premium	$20 - $250	-0.278**	0.12	6	4551
Semi-Premium	$14 - $20	0.060*	0.03	9	764
Comercial	< $14	-0.036	0.05	12	612

*, **, *** indicates significance at the 10%, 5%, and 1% level, respectively.

The value of misappropriating the label *Champagne* was not statistically significant in the Commercial price range. Semi-Premium wines that misappropriated the label were found to receive a 0.06% higher price than would otherwise be expected for the wine and was significant at the 10% level. Premium wines demonstrated significance at the 5% level, but with much lower prices than would otherwise be expected to the order of -0.27%. No value could be estimated for the Ultra-Premium category because there were no wines that misappropriated the label *Champagne*. These results suggest that the label is slightly beneficial for Semi-Premium wines but demonstrates a strong negative impact on the value of Premium wines (see **Table 5b**).

Quality Segmentation

The use of quality segmentation is similarly useful in determining the value added by including the word *Champagne* in the label. Additionally, this analysis enables us to examine whether the importance of the label varies with the quality level. In order to compare wines of the same quality, the observations are separated into categories based on wine points and models are estimated separately. The first segmentation provides a finely gradated set of categories with at least 100 observations in each. In order to obtain an estimate for the price premium associated with the *Champagne* label, it is necessary to

have wines from non-Champagne regions in each category. Furthermore, some of these wines must have labels that include the word *Champagne* while others do not. Due to an insufficient number of observations in one or both of these groups, it is impossible to determine the value of the label in several of the highest rated categories. In fact, there were only two categories for which the value of misappropriating the label *Champagne* was found to be statistically significant. In the category for 87 wine points, the impact on price was estimated to be -0.913% while in the category for 83 wine points, the impact was estimated to be 0.204%. Even though both these results are significant at the 1% level, they are likely unreliable because there are only one or two observations in each category which misappropriate the label *Champagne*.

To resolve this, we examine widening the categories to include more observations. Unfortunately, large categories limit the ability to account for multi-collinearity and separate the Champagne region's effect on price from the effect of a higher quality rating. Since quality and region are highly correlated, regional dummy variables (e.g. Champagne) might capture effects of the quality variable and vice versa. Segmenting the market for sparkling wines based on quality avoids the problem of multi-collinearity by comparing wines that received the same number of wine points. Out of 295 sparkling wines ranked between 93 points and 99 points, less than 3% come from a region other than Champagne and none of these are ranked above 94 points. Using a correlation matrix, (see **Table 6**) it is possible to identify the regions that are most correlated with wine points. Only the Champagne region exhibits a positive correlation (0.4977) with wine points. This makes it difficult to separate the effects of the Champagne region from

the effect of wine points. The regions of Spain (-0.2998), Other France (-0.1659), Piedmont (-0.1227), New York (-0.1079), and Other U.S. (-0.0954) exhibit a notable negative correlation with wine points. Estimating the value of the label *Champagne* does not involve regions since it is found by examining just the wines that misappropriate the label *Champagne*. This allows us to avoid the potentially confounding effects of multi-collinearity even when using large categories.

TABLE 6: CORRELATION OF REGION WITH WINE POINTS

	points	Champagne	Loire	Alsace
points	1	0.4977	-0.0857	-0.058
	Jura/Savoie	**Coastal Region**	**Australia**	**Languedoc-Roussillon**
points	-0.0261	-0.0371	-0.0241	-0.0598
	Virginia	**Lombardy**	**Piedmont**	**Napa**
points	-0.054	-0.0358	-0.1227	0.0176
	Canelones	**New York**	**Nieder☐sterreich**	**Bay Area/Central Coast**
points	-0.0218	-0.1079	-0.0396	-0.089
	Portugal	**Northeast**	**Other US**	**New Zealand**
points	-0.0399	-0.0299	-0.0954	-0.0016
	Breede River Valley	**Western Cape**	**Mendocino/Lake**	**Missouri**
points	-0.0162	-0.0161	0.0098	-0.0191
	Southern Rhᵀ¹le	**Florida**	**Umbria**	**Texas**
points	-0.0223	-0.0191	-0.0111	-0.0356
	Hawaii	**South Africa**	**Arkansas**	**Spain**
points	-0.0254	-0.0138	-0.0165	-0.2998
	Carneros	**Other California**	**Sonoma**	**Veneto**
points	0.042	-0.0968	-0.0317	-0.0865
	Washington	**Oregon**	**Greece**	**Other France**
points	-0.018	0.0051	-0.013	-0.1659
	Michigan	**Italy**	**North Carolina**	**Chile**
points	-0.0222	-0.0199	-0.0567	-0.0574
	Israel	**Tuscany**	**Maipo**	**Argentina**
points	-0.0405	-0.021	-0.0191	-0.0369
	Germany	**New Mexico**	**South Coast**	**Patagonia**
points	-0.035	-0.063	-0.0254	-0.0271
	Austria	**Connecticut**	**Burgenland**	**Hungary**
points	-0.0155	-0.0111	-0.0043	-0.0252
	Canada	**Pennsylvania**	**New England**	**Wien**
points	-0.0104	-0.0176	-0.0648	-0.0266
	Finger Lakes	**Mendoza**	**Burgundy**	**Marche**
points	-0.098	-0.0436	-0.0409	-0.0111
	Long Island	**Ukraine**		
points	-0.0421	-0.0165		

Making the categories larger provides a more reasonable estimate of the effects by increasing the number of observations in each category. After comparing various combinations of categories, it was found that the most reasonable combinations resulted in a group for wines with between 82 and 53 points, another group for wines with 83 points and another group for wines with 84 or more points. This combination of categories provides significant results while accounting for as many of the wines that misappropriate the label *Champagne* as possible. When examining categories with a range of wine points, the points variable was included to account for differences in quality (even though it was often insignificant). Again, the category consisting of wines that received 83 points was significant at the 1% level with an estimated 0.204% positive impact of the label on price. This result seems especially suspect given that both the high quality and low quality categories contained significantly more observations and showed a negative impact on price at 5% level of significance (see **Table 7**). While the estimated premiums are more significant, this technique provides coarser results.

TABLE 7: THE RESULTS OF QUALTY-RELATED SEGMENTATION
Small Categories (Fine Segmentation)

CATEGORY	ESTIMATED COEFFICIENT	STANDARD ERROR	OBSERVATIONS	
wine points	falsely_contains_champagne	(robust)	wines mislabeled	obs. per category
99-94	(dropped)	-	0	141
93	(dropped)	-	0	104
92	(dropped)	-	0	212
91	(dropped)	-	0	283
90	(dropped)	-	1	558
89	(dropped)	-	0	624
88	(dropped)	-	0	766
87	-0.913***	0.341	1	565
86	(dropped)	-	2	459
85	0.031	0.179	2	418
84	(dropped)	-	1	388
83	0.204***	0.046	2	308
82	0.041	0.092	3	268
81	-0.089	0.242	1	167
80	0.151	0.203	3	169
79	-0.080	0.102	3	156
78-53	-0.136	0.123	8	387

Large Categories (Coarse Segmentation)

CATEGORY	ESTIMATED COEFFICIENT	STANDARD ERROR	OBSERVATIONS	
wine points	falsely_contains_champagne	(robust)	wines mislabeled	obs. per category
99-84	-0.183**	0.078	7	4519
83	0.204***	0.046	2	308
82-53	-0.105**	0.052	18	1147

*, **, *** indicates significance at the 10%, 5%, and 1% level, respectively.

NOTE: Ranges include variable "points"

With any data set, it is important to consider the potential impact of omitted observations. Of the 6207 sparkling wines listed in the online version of the Wine Spectator, 5974 had prices listed. Since the model is designed to measure the price premiums of various wine characteristics, observations without prices were omitted. The omission of these data points introduces the potential for a selection bias. Most categories had somewhere fewer than 5% of the observations omitted; however, the three highest quality categories each contained a significantly larger portion of wines without a price (see **Table 8**). The correlation of omissions with wine points suggests that the observations used may be non-random with respect to price or other characteristics. Non-random sampling can lead

to a selection bias if the value of the omitted wines differs significantly from the value of comparable wines whose prices are observed. Fortunately, all of the wines which misappropriate the label *Champagne* are in categories where the omissions rate is uncorrelated with points, meaning that the omitted observations are not likely to bias the results.

TABLE 8: OMITTED OBSERVATIONS
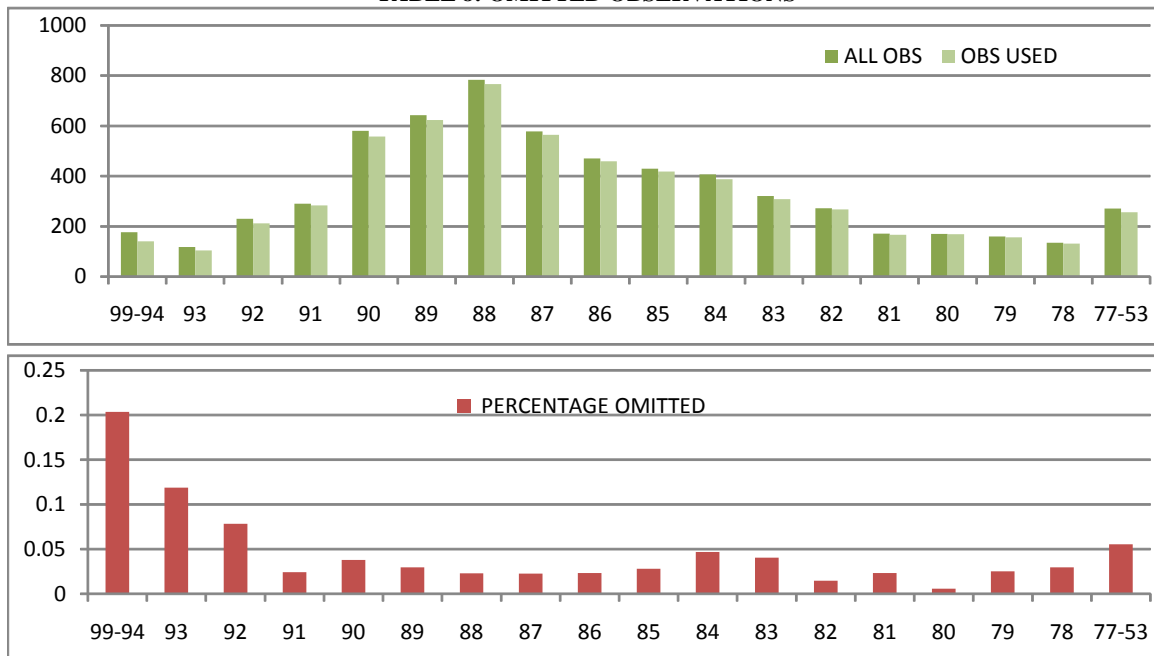
Alternative Explanations

Although the quantitative effect of the *Champagne* label is relatively small, looking at the 27 wines that misappropriate the name *Champagne* may provide some insight to the results. In examining **Table 9**, three observations are readily apparent. First, all of the wines come from regions in the U.S., presumably because it is one of the only places outside of the Champagne region where the use of the *Champagne* label is legal[17]. A

---

[17] In the U.S., the word champagne has often been used to describe the type of product rather than its region of origin.

second observation is that 12 of the 27 wines are made by KORBEL. This provides the opportunity to see if these wines receive prices similar to other wines produced by the same firm. When comparing these 12 wines to the 73 wines made by KORBEL, the effect of including *Champagne* in the label is not statistically distinguishable from zero.

The third, and perhaps the most interesting observation is that nearly all of the labels include the region of origin as well as the word *Champagne* with the only possible exception being three wines labeled as "Blanc de Noirs Russian River Valley Champagne Master's Reserve". Additionally, "[a]ll wines marketed in the United States are required to state on the label where the grapes were produced" (Kwon, Lee, and Sumner 2008, 15). This leads us to suspect that if consumers could easily discern the region of origin, the value (if any) of including the word *Champagne* in the label must have some other value to consumers than its indication of geographic reputation and that consumers can readily distinguish between sparkling wines produced in Champagne from those that merely contain the word *Champagne* in their label. Even if there is no benefit to including the word *Champagne* in the label, it may still be important to regional reputation to limit the use of the regional name in order to control the products with which it may eventually become associated. In short, producers from the Champagne region fear the possibility that wines of lower quality which misappropriate the name will decrease the value of the *Champagne* label and erode the price premium received by the region. However, if consumers are relatively well informed about the wine's origin, including the word *Champagne* in the label would have little effect on the region's value.

TABLE 9: TWENTY SEVEN SPARKLING WINES THAT CONTAIN CHAMPAGNE IN THEIR LABEL BUT ARE NOT FROM THE CHAMPAGNE REGION

	WINE NAME	FIRM NAME	REGION	VINTAGE	AGE in Yrs. (at evaluation)	MONTHS (since first issue)	WEB ONLY (1=yes)	POINTS	Real Price (Jan. 2008 dollars)
1	Blush Pink Champagne California	ANDR□	Other California	-	-	163	0	79	5.14
2	Bubbly Pinot Grigio Champagne California	BAREFOOT	Other California	-	-	288	0	75	9.89
3	Chardonnay California Bubbly Champagne	BAREFOOT	Other California	-	-	290	0	71	9.83
4	White Zinfandel California Bubbly Champagne	BAREFOOT	Other California	-	-	290	0	80	9.83
5	Brut Napa Valley Champagne de Chardonnay	BEAULIEU VINEYARD	Napa	1982	7	61	0	87	27.35
6	Brut America Champagne	COOK'S	Other US	-	-	95	0	74	5.75
7	Brut America Champagne	FIRELANDS	Other US	-	-	94	0	73	17.28
8	Brut Carneros Champagne	FRANK FAMILY	Carneros	1998	10	290	0	86	63.92
9	Chardonnay Champagne New York	GREAT WESTERN	New York	-	-	212	0	80	11.60
10	Blanc de Noirs California Champagne Master's Reserve	KORBEL	Other California	1991	5	151	0	82	19.66
11	Blanc de Noirs Russian River Valley Champagne Master's Reserve	KORBEL	Sonoma	1998	5	235	0	85	15.59
12	Blanc de Noirs Russian River Valley Champagne Master's Reserve	KORBEL	Sonoma	1997	5	217	1	84	16.08

TABLE 9 (continued)

	WINE NAME	FIRM NAME	REGION	VINTAGE	AGE in Yrs. (at evaluation)	MONTHS (since first issue)	WEB ONLY (1=yes)	POINTS	Real Price (Jan. 2008 dollars)
13	Blanc de Noirs Russian River Valley Champagne Master's Reserve	KORBEL	Sonoma	1992	6	175	0	90	17.63
14	Champagne California	KORBEL	Other California	-	-	185	0	83	16.07
15	Chardonnay Champagne California	KORBEL	Other California	-	-	199	0	85	15.53
16	Chardonnay Champagne California	KORBEL	Other California	-	-	185	0	83	16.07
17	Chardonnay Champagne California	KORBEL	Other California	-	-	235	0	82	12.25
18	Chardonnay Champagne California	KORBEL	Other California	-	-	259	0	82	11.75
19	Chardonnay Champagne California	KORBEL	Other California	-	-	223	0	81	12.54
20	Chardonnay Champagne California	KORBEL	Other California	-	-	247	0	79	11.91
21	Chardonnay Champagne California	KORBEL	Other California	-	-	284	0	78	12.00
22	Champagne North Fork of Long Island	PINDAR	Long Island	-	-	55	0	86	22.74
23	Brut Cabernet Sauvignon Napa Valley Chauvignon Crystal Champagne	SJOEBLOM	Napa	-	-	241	1	67	42.80
24	Cabernet Sauvignon Brut Napa Valley Chauvignon Crystal Champagne	SJOEBLOM	Napa	-	-	229	1	78	25.94
25	Brut Chardonnay Washington Champagne	STE. CHAPELLE	Washington	-	-	46	0	80	16.17
26	Johannisberg Riesling Washington Sec Champagne	STE. CHAPELLE	Washington	-	-	46	0	76	12.58
27	Brut Michigan Champagne	WARNER	Michigan	-	-	217	1	79	28.72

IV. Conclusion

Summary and Concluding Remarks

The analysis above builds on the pre-existing reputation literature and contributes to the

literature surrounding collective reputation and the use of regional place names.

Employing data from the sparkling wine industry, it is difficult to discern a clear benefit

of misappropriating the label *Champagne*. This implies that consumers can easily

distinguish wines that are actually from Champagne from those that merely contain the

word in their label. Collective geographic reputation is likely to be unaffected if

consumers can distinguish the wines that are not actually from Champagne. In this case,

we would expect the label to have a minimal effect on the price and behave very similarly

to a self-proclaimed indication of quality. Further study would be required to determine

if the misappropriation of the label has any discernible negative impact on the price

premium obtained by sparkling wines from the Champagne region. The political reasons

for protecting the use of geographic place names will likely continue to be a major issue

in trade negotiations both for sparkling wine and many other agricultural products.

Areas for Continued Study

There are many possibilities for continued study in this area. In particular, segmentation

analysis has a lot of potential, especially for estimating reputation effects in each market

segment. Another example of further exploration would be addressing the empirical

difficulties with the sparkling wine data. The greatest difficulty with obtaining an

accurate estimate of the price premium received by sparkling wines that include the word

Champagne in their label has been the infrequency with which the *Champagne* label is

misappropriated. It is highly recommended that a continued study of this effect find data to bolster the low observation regions. It may also be useful to normalize quality ratings by dividing the point score for a given wine by the average point score of all the wines in the same vintage (as discussed on pg. 299 of Landon and Smith 1997 and pg. 632 of Landon and Smith 1998). Additionally, the Box-Cox transformation suggests that the reciprocal square root functional form may provide a more accurate representation of the data.

Another potential problem with the data is that using wines rated by the Wine Spectator could introduce a sampling bias if the likelihood a wine is reviewed depends on some non-random factor (such as the amount of advertising purchased by the producer). The potential for advertising expenditures to confound the results either by direct promotion of certain brands or regions, or by altering the likelihood that a wine is evaluated by the Wine Spectator deserves further study.

APPENDIX A: LIST OF VARIABLES

	PRODUCER NAME		PRODUCER NAME		PRODUCER NAME
p1	A. CHARBAUT & FILS	p53	BEAULIEU VINEYARD	p104	BR† NDLMAYER
p2	A. MARGAINE	p54	BEAUMET	p105	BRUNO GIACOSA
p3	A. MONMOUSSEAU	p55	BEAUMONT DES CRAYé RES	p106	BRUNO GOBILLARD
p4	A. SOUTIRAN	p56	BEAUVOLAGE	p107	BRUNO HUNOLD
p5	A.R. LENOBLE	p57	BEL LAGO	p108	BRUNO PAILLARD
p6	ABARBANEL	p58	BELLAVISTA	p109	BRUNO VERDI
p7	ABEL LEPITRE	p59	BELLENDA	p110	BRUT DARGENT
p8	ACACIA	p60	BELLUSSI	p111	BUENA VISTA
p9	ADELAIDA	p61	BENI DI BATASIOLO	p112	BUIL & GIN□
p10	ADLER FELS	p62	BENZIGER	p113	BUITENVERWACHTING
p11	ADRIANO ADAMI	p63	BERA	p114	BULLY HILL
p12	AGUSTźTORELLī	p64	BERNARD BR□MONT	p115	BURATI
p13	ALAIN RENARDAT-FACHE	p65	BERNARD DELMAS	p116	CA' DE MONTE
p14	ALAIN ROBERT	p66	BERNARD GIRARDIN	p117	CA' DEL BOSCO
p15	ALAIN THIENOT	p67	BERSANO	p118	CA' DEL SOLO
p16	ALBERT MANN	p68	BERTANI	p119	CABALLERO DE LA ORDEN
p17	ALBET I NOYA	p69	BESSERAT DE BELLEFON	p120	CADEAUX
p18	ALEXANDRE BONNET	p70	BILLECART-SALMON	p121	CADIZ
p19	ALFRED GRATIEN	p71	BILTMORE ESTATE	p122	CADRE NOIR
p20	ALLOUCHERY-PERSEVAL	p72	BINET	p123	CAMILLE SAVé S
p21	ALSACE WILLM	p73	BLACK HORSE CELLARS	p124	CAN FEIXES
p22	ALTA ALELLA	p74	BLANQUETTE DE LIMOUX	p125	CANALS NADAL
p23	AMBELOUI	p75	BLUE PYRENEES	p126	CANARD-DUCHENE
p24	ANDR□	p76	BODEGA CICCHITTI	p127	CANELLA
p25	ANDR□ & MIREILLE TISSOT	p77	BODEGA FILIPPO FIGARI	p128	CANTINE VOLPI
p26	ANDREW GARRETT	p78	BODEGAS BERBERANA	p129	CARMEL
p27	ANDREW HARRIS	p79	BODEGAS FAUSTINO	p130	CARPENé MALVOLTI
p28	ANGAS	p80	BODEGAS J. SARDĖ	p131	CARPINETO
p29	ANTECH	p81	BODEGAS ONDARRE	p132	CARR□-GU□BELS
p30	ARBOR CREST	p82	BODEGAS PEDRO ROVIRA	p133	CASA LARGA
p31	ARGYLE	p83	BODEGAS PE,, ALBA Lī PEZ	p134	CASALNOVA
p32	ARKAS	p84	BODEGAS Y VI,, EDOS SANTA ROSA	p135	CASCINA CASTLé T
p33	ARMAGAN			p136	CASCINA LA GHERSA
p34	ARMAND DE BRIGNAC	p85	BODEGUES SUMARROCA	p137	CASCINETTA
p35	ARMAND ROUX	p86	BOERI	p138	CASTELL DE VILARNAU
p36	ARMSTRONG RIDGE	p87	BOIZEL	p139	CASTELLBLANCH
p37	ASTORIA	p88	BOLLINGER	p140	CASTELLO BANFI
p38	ATWATER ESTATE	p89	BONARDI	p141	CASTELLO DEL POGGIO
p39	AYALA	p90	BONNAIRE	p142	CASTELLROIG
p40	BALLATORE	p91	BONNY DOON	p143	CASTILLO PERALADA
p41	BANROCK STATION	p92	BOROLI	p144	CASTILLO PERELADA
p42	BARANCOURT	p93	BORTOLOMIOL	p145	CATTIER
p43	BARBOURSVILLE	p94	BORTOLOTTI	p146	CAVAS DEL RACO
p44	BAREFOOT	p95	BOSIO	p147	CAVAS HILL
p45	BARON CHAGALE	p96	BOUCH□ Pé RE & FILS	p148	CAVAS LAVERNOYA
p46	BAROSSAVALE	p97	BOURGEOIS	p149	CAVAS ROSELL BOHER
p47	BARR□ FRé RES	p98	BOUVET	p150	CAVE DE CHARNAY
p48	BARTENURA	p99	BOYNTON'S OF BRIGHT	p151	CAVE DE VIR□
p49	BATISTE PERTOIS	p100	BRENTA D'ORO	p152	CAVE DES PRODUCTEURS DE VOUVRAY
p50	BAUCHET Pé RE & FILS	p101	BRICOUT		
p51	BAUGET-JOUETTE	p102	BROTHERHOOD	p153	CAVE DES VIGNERONS DE SAUMUR
p52	BAVA	p103	BRUMMELL		

APPENDIX A (Continued)

PRODUCER NAME	PRODUCER NAME	PRODUCER NAME
p154 CAVE VINICOLE DE RIBEAUVILL⬚	p201 COMTE DE LANTAGE	p248 DOMAINE DES CHAMPS FLEURIS
p155 CAVES ALIAN, A	p202 COMTE DE NOIRON	p249 DOMAINE DU BICHERON
p156 CAVES DE BAILLY	p203 CONCILIO	p250 DOMAINE DU VIEUX PRESSOIR
p157 CAVES DE MARSIGNY	p204 CONGRESS SPRINGS	
p158 CAVES TRANSMONTANAS	p205 CONTADI CASTALDI	p251 DOMAINE J. LAURENS
p159 CELLA	p206 CONTE LOREDAN GASPARINI	p252 DOMAINE MERIWETHER
p160 CERETTO		p253 DOMAINE RICHOU
p161 CHAMPALOU	p207 COOK'S	p254 DOMAINE ROBERT
p162 CHANOINE FRERES	p208 COOPER MOUNTAIN	p255 DOMAINE STE. MICHELLE
p163 CHAPEL HILL	p209 COPPO	p256 DOMENICO DE BERTIOL
p164 CHARBAUT FRé RES	p210 COVIDES	p257 DONNA VALENTINA
p165 CHARLES B. MITCHELL	p211 CULBERTSON	p258 DOPFF AU MOULIN
p166 CHARLES DE CAZANOVE	p212 D. HENRIET-BAZIN	p259 DOYARD
p167 CHARLES DE Fé RE	p213 DANIEL HALL⬚E	p260 DR. H. THANISCH (VDP)
p168 CHARLES DUCOIN	p214 DANIEL LE BRUN	p261 DRAPPIER
p169 CHARLES ELLNER	p215 DANTE RIVETTI	p262 DRUSIAN
p170 CHARLES HEIDSIECK	p216 D'ARENBERG	p263 DUBOSC
p171 CHARLES LAFITTE	p217 DAVID HILL	p264 DUVAL-LEROY
p172 CHARLES ROYER	p218 DE BORTOLI	p265 DUVAL-PR⬚TROT
p173 CHARTOGNE-TAILLET	p219 DE BRUYNE	p266 DUVEAU FRé RES
p174 CHASE-LIMOGé RE	p220 DE CASTELLANE	p267 E. BARNAUT
p175 CHATEAU BEAUX HAUTS	p221 DE JESSY	p268 EDEN ROC
p176 CHå TEAU B⬚THANIE	p222 DE MERIC	p269 EDGEFIELD
p177 CHå TEAU DE BAUN	p223 DE SOUSA & FILS	p270 EDNA VALLEY
p178 CHå TEAU DE MONTGU⬚RET	p224 DE ST.-GALL	p271 EGLY-OURIET
p179 CHATEAU DIANA	p225 DE VENOGE	p272 EL CEP
p180 CHATEAU FRANK	p226 DEAKIN	p273 ELK COVE
p181 CHATEAU LAFAYETTE RENEAU	p227 DEHOURS	p274 EMERY
	p228 DEINHARD	p275 ENRIC NADAL RIGOL
p182 CHå TEAU MONCONTOUR	p229 DELAMOTTE	p276 EQUINOX
p183 CHATEAU REYNELLA	p230 DELAPIERRE	p277 EQUIPE
p184 CHATEAU ST. JEAN	p231 DELBECK	p278 ESTERLIN
p185 CHEVALIER DE FRANCE	p232 DELMAS	p279 ESTRELLA RIVER
p186 CHRISTIAN SENEZ	p233 DEMIé RE-ANSIOT	p280 EUGé NE KLIPFEL
p187 CINZANO	p234 DESIDERIO BISOL & FIGLI	p281 F. BONNET
p188 CLANON		p282 FALCONER
p189 CLOS CABRIé RE	p235 DEUTZ	p283 FALLET-DART
p190 CLOS DU CHå TEAU DE MOSNY	p236 DIDIER-DUCOS FILS	p284 FAMILIA SCHROEDER
	p237 DIEBOLT-VALLOIS	p285 FAZI-BATTAGLIA
p191 CLOS LACHANCE	p238 DISCOVERY	p286 FERRARI
p192 CLOVER HILL	p239 DOMAINE CARNEROS	p287 FERRET
p193 CODORNăU	p240 DOMAINE CHANDON	p288 FIRELANDS
p194 CODORNăU NAPA	p241 DOMAINE CHAPUY	p289 FIRESTONE
p195 COL VETORAZ	p242 DOMAINE CHEURLIN	p290 FITZ-RITTER
p196 COLLALTO	p243 DOMAINE COLLIN	p291 FLEURY Pé RE & FILS
p197 COLLAVINI	p244 DOMAINE DE LA TAILLE AUX LOUPS	p292 FLYNN
p198 COMTE AUDOIN DE DAMPIERRE		p293 FOLIE È DEUX
	p245 DOMAINE DE MARTINOLLES	p294 FONTANAFREDDA
p199 COMTE DE BAILLY	p246 DOMAINE DES AUBUISIé RES	p295 FORGET-BRIMONT
p200 COMTE DE GASCOGNE	p247 DOMAINE DES BAUMARD	p296 FORIS
		p297 FOSS MARAI

APPENDIX A (Continued)

	PRODUCER NAME		PRODUCER NAME		PRODUCER NAME
p298	FOX CREEK	p348	GRUET	p400	JACKSON
p299	FOX RUN	p349	GUASTI CLEMENTE & FIGLI	p401	JACOB'S CREEK
p300	FRAN, OIS & PHILIPPE EHRHART	p350	GUIDO BERLUCCHI	p402	JACQUART
		p351	GUSSALLI BERETTA	p403	JACQUES PICARD
p301	FRAN, OIS BILLION	p352	GUSTAVE LORENTZ	p404	JACQUES SELOSSE
p302	FRAN, OIS CHIDAINE	p353	GUY BOSSARD	p405	JACQUESSON
p303	FRAN, OIS DILIGENT	p354	GUY CHARLEMAGNE	p406	JAMESPORT
p304	FRAN, OISE CHAUVENET	p355	GUY DE CHASSEY	p407	JANISSON & FILS
p305	FRANK FAMILY	p356	GUY LARMANDIER	p408	JANSZ
p306	FRATELLI BORTOLIN	p357	H. BLIN	p409	JAUME LLOPART ALEMANY
p307	FR□D□RIC LORNET	p358	H. LANVIN & FILS	p410	JAUME SERRA
p308	FREIXA RIGAU	p359	HADERBURG	p411	JEAN DUMANGIN
p309	FREIXENET	p360	HAGAFEN	p412	JEAN LALLEMENT
p310	G.D. VAJRA	p361	HANDLEY	p413	JEAN LAURENT
p311	G.H. MUMM	p362	HANNS KORNELL	p414	JEAN MAIRE
p312	GALAH	p363	HARDYS	p415	JEAN MILAN
p313	GANCIA	p364	HASELGROVE	p416	JEAN PHILIPPE
p314	GASTON CHIQUET	p365	HEIDSIECK MONOPOLE	p417	JEAN VESSELLE
p315	GATINOIS	p366	HENKELL	p418	JEAN-FRANCOIS M□RIEAU
p316	GAUTHIER	p367	HENRI ABEL□	p419	JEAN-PAUL DEVILLE
p317	GAUTHIER-LHOMME	p368	HENRI BILLIOT & FILS	p420	JEPSON
p318	GEORG BREUER	p369	HENRI DE GRAMEY	p421	JOAN RAVENTī S ROSELL
p319	GEORGE CARTIER	p370	HENRI GERMAIN	p422	JOS□ DHONDT
p320	GEORGE GOULET	p371	HENRI GIRAUD	p423	JOSEP MARIA RAVENTī S I BLANC
p321	GEORGES BLANC	p372	HENRI MANDOIS	p424	JOSEP MASACHS
p322	GEORGES GARDET	p373	HENRIOT	p425	JOSEP TORRES SIBILL
p323	GEORGES VESSELLE	p374	HERBERT BEAUFORT	p426	JOSEPH PERRIER
p324	GEYSER PEAK	p375	HERETAT MONTRUBI	p427	JULIEN TARIN
p325	GIACOMO BOLOGNA	p376	HERMANN J. WIEMER	p428	JUSTIN
p326	GIANNI VOERZIO	p377	HERMANNHOF	p429	JUV□ Y CAMPS
p327	GIORGIO CARNEVALE	p378	HIGHFIELD	p430	KARL INF† HR
p328	GIROLAMO DORIGO	p379	HOCHRIEGL	p431	KEDEM
p329	GIUSEPPE CONTRATTO	p380	HOGUE	p432	KENDALL-JACKSON
p330	GIUSEPPE RIVETTI & FIGLI	p381	HOPKINS	p433	KIM CRAWFORD
		p382	H…PLER	p434	KLUGE
p331	GLENORA	p383	HUGUET	p435	KNAPP
p332	GLINAVOS	p384	HUIA	p436	KORBEL
p333	GLORIA FERRER	p385	ICARDI	p437	KRISTONE
p334	GODM□Pé RE & FILS	p386	IGRISTOJE	p438	KRITER
p335	GOLD SEAL	p387	INDIGO HILLS	p439	KRUG
p336	GONET-MEDEVILLE	p388	INNOCENT BYSTANDER	p440	L. AUBRY FILS
p337	GOOD HARBOR	p389	IRON HORSE	p441	L. MAWBY
p338	GOSSET	p390	J	p442	LA CAVE DE DIE JAILLANCE
p339	GRACELAND CELLARS	p391	J. & JACQUES B□RAT	p443	LA CHABLISIENNE
p340	GRAHAM BECK	p392	J. BECKER	p444	LA DELIZIA
p341	GRAMONA	p393	J. DE TELMONT	p445	LA FOLIE
p342	GRAND IMPERIAL	p394	J. ESTEVE NADAL	p446	LA MARCA
p343	GRANDIN	p395	J. LASSALLE	p447	LA MORANDINA
p344	GRATIEN & MEYER	p396	J.-B. ADAM	p448	LA RIVA DEI FRATI
p345	GREAT WESTERN	p397	J.M. GREMILLET	p449	LA SCOLCA
p346	GREEN POINT	p398	J.M. MONMOUSSEAU	p450	LA SPINETTA
p347	GREG NORMAN ESTATES	p399	J.P. VINHOS	p451	LA VERSA

APPENDIX A (Continued)

	PRODUCER NAME		PRODUCER NAME		PRODUCER NAME
p452	LABORIE	p502	MAISTRE BLANQUETIER	p553	MONMOUSSIN
p453	LAETITIA	p503	MANSARD	p554	MONTARIBALDI
p454	LAHERTE FRé RES	p504	MARC H□BRART	p555	MONTAUDON
p455	LAKERIDGE	p505	MARCARINI	p556	MONTE ROSSA
p456	LAMIABLE	p506	MARCEL MOINEAUX	p557	MONTESEL
p457	LAMOREAUX LANDING	p507	MARCHESI DE' FRESCOBALDI	p558	MONT-FERRANT
p458	LANGLOIS-CHATEAU	p508	MARCHESI DI GR□SY	p559	MONT-MAR, AL
p459	LANSON	p509	MARCHESI FIORAVANTI	p560	MONTREAUX
p460	LARMANDIER-BERNIER	p510	MARCO & VITTORIO ADRIANO	p561	MONTSARRA
p461	LASSETER			p562	M□ RESON
p462	LAUREL RIDGE	p511	MARENCO	p563	MORTON
p463	LAURENT-PERRIER	p512	MARIA CASANOVAS	p564	MOUNTAIN DOME
p464	LAVELLE	p513	MARIE STUART	p565	MOUTARDIER
p465	LAWRENCE J. BARGETTO	p514	MARIENBERG	p566	MOVISA
p466	LE BELLERIVE	p515	MARILYN WINES	p567	MOYER
p467	LE BRUN SERVENAY	p516	MARK WEST	p568	MUMM CUV□E NAPA
p468	LE CARDINALE	p517	MARLUNGHE	p569	MUMM CUV□E NAPA DVX
p469	LE COLTURE	p518	MARQU□S DE MONISTROL	p570	MUMM NAPA
p470	LE ROCHER DES VIOLETTES	p519	MARQUIS DE GOULAINE	p571	MUMM NAPA DVX
p471	LECHé RE	p520	MARQUIS DE LA TOUR	p572	MUR□
p472	LECLERC-BRIANT	p521	MARQUIS DE PERLADE	p573	NAVARRO
p473	LEMAIRE Pé RE & FILS	p522	MARQUIS DE SADE	p574	NAVERAN
p474	LEMBEY	p523	MARTHA CLARA	p575	NEIRANO
p475	LENZ	p524	MARTIN BROTHERS	p576	NICOLAS FEUILLATTE
p476	LEONARDINI	p525	MARTINI & ROSSI	p577	NINO FRANCO
p477	LES CAVES DU SIEUR D'ARQUES	p526	MARWOOD	p578	OASIS
		p527	MASCHIO DEI CAVALIERE	p579	OLIM BAUDA
p478	LES CAVES VICTOR	p528	MASET DEL LLEī	p580	OREANA
p479	LES VIGNOBLES CHAMPENOIS	p529	MASS□	p581	ORIOL ROSSELL
		p530	MASSIMO RIVETTI	p582	ORLANDO
p480	LIEB FAMILY	p531	MASSON	p583	OUDINOT
p481	LILBERT FILS	p532	MAXIME GODET	p584	P. LANCELOT-ROYER
p482	LINDAUER	p533	MAXIM'S	p585	P. LLOPART
p483	LOMBARD	p534	MAXUS	p586	PACIFIC ECHO
p484	LONGRIDGE	p535	MCGREGOR	p587	PALLADINO
p485	LOS CURROS	p536	MCINTYRE	p588	PALMER
p486	LOUIS BARTH□L□MY	p537	MEYER-FONN□	p589	PALMER & CO.
p487	LOUIS BOUILLOT	p538	MICHEL & DAMIEN PINON	p590	PANNIER
p488	LOUIS DE SACY	p539	MICHEL DERVIN	p591	PARADISE RIDGE
p489	LOUIS FOULON	p540	MICHEL FRé RES	p592	PAR□S BALTÈ
p490	LOUIS ROEDERER	p541	MICHEL GENET	p593	PARSONS CREEK
p491	LOUIS-PHILIPPE	p542	MICHEL GONET	p594	PARXET
p492	LUCAS	p543	MICHEL TURGY	p595	PASCAL DOQUET
p493	LUCAS & LEWELLEN	p544	MICHELE CHIARLO	p596	PASCUAL TOSO
p494	LUCIEN ALBRECHT	p545	MICHLITS	p597	PATRICK BOTTEX
p495	LUCIEN DESCHAUX	p546	MIONETTO	p598	PAUL BARA
p496	LUNGAROTTI	p547	MIRABELLE	p599	PAUL BERTHELOT
p497	M. BRUGNON	p548	MIRASSOU	p600	PAUL CHAMBLAIN
p498	MACARI	p549	MIRī	p601	PAUL CHENEAU
p499	MAILLY	p550	MOč T & CHANDON	p602	PAUL DROUET
p500	MAISON DEUTZ	p551	MOLźCOLOMA	p603	PAUL GOBILLARD
p501	MAISON HAMM	p552	MOLLYDOOKER	p604	PAUL GOERG

PRODUCER NAME	PRODUCER NAME	PRODUCER NAME
p605 PAUL LAURENT	p657 RIVE DELLA CHIESA	p709 SIMONNET-FEBVRE
p606 PAUL VERTAY	p658 RIVERVIEW	p710 SIMONSIG
p607 PEDRONCELLI	p659 ROBERT HUNTER	p711 SJOEBLOM
p608 PEHU-SIMONET	p660 ROBERT MONDAVI	p712 SOFIA
p609 PENLEY	p661 ROCCO VENEZIA	p713 SOLIGO
p610 PERE VENTURA	p662 ROEDERER ESTATE	p714 SORELLE BRONCA
p611 PERRIER-JOUčT	p663 ROGER GOULART	p715 SOTER
p612 PETALUMA	p664 ROGER POUILLON & FILS	p716 ST. CLAIR
p613 PETER RUMBALL	p665 ROLAR	p717 ST. FRANCIS
p614 PHILIPPE BRISEBARRE	p666 RONDEL	p718 ST. INNOCENT
p615 PHILIPPE HERARD	p667 ROSEMOUNT	p719 ST. LUCAS
p616 PHILIPPE PRI□	p668 ROSENBLUM	p720 ST. SUP□RY
p617 PHILIPPONNAT	p669 ROTARI	p721 STANFORD
p618 PIERRE BONIFACE	p670 ROUGE & NOIR	p722 STATON HILLS
p619 PIERRE BRIGANDAT	p671 ROVELLATS	p723 STE. CHAPELLE
p620 PIERRE CHAINIER	p672 RUDOLF M† LLER	p724 STEFANO LUBIANA
p621 PIERRE GIMONNET & FILS	p673 RUFFINO	p725 STEININGER
p622 PIERRE MONCUIT	p674 RUGGERI & C.	p726 STEP RD
p623 PIERRE PETERS	p675 RUINART	p727 SUMAC RIDGE
p624 PIERRE SPARR	p676 S. ANDERSON	p728 SUMMERHILL
p625 PILLITTERI ESTATES	p677 SABAT□I COCA	p729 SWEDISH HILL
p626 PINDAR	p678 SAGPOND	p730 SYLVAIN GAUDRON
p627 PINNACLE RIDGE	p679 SAKONNET	p731 TABOR HILL
p628 PIO CESARE	p680 SALON	p732 TAGARIS
p629 PIPER SONOMA	p681 SAN STEFANO	p733 TAILLEVENT
p630 PIPER-HEIDSIECK	p682 SANTA MARGHERITA	p734 TAITTINGER
p631 PIPERS BROOK	p683 SANTO STEFANO	p735 TALTARNI
p632 PLOYEZ-JACQUEMART	p684 SARACCO	p736 TARLANT
p633 POL ACKER	p685 SAUVION & FILS	p737 TAYLOR
p634 POL ROGER	p686 SCAGLIOLA	p738 TEDESCHI
p635 POMMERY	p687 SCHARFFENBERGER	p739 TENUTA SETTEN
p636 PRINCE MICHEL	p688 SCHLOSS MUNZINGEN	p740 TENUTE DEI VALLARINO
p637 PRINCE PONIATOWSKI	p689 SCHLUMBERGER	p741 TERRA SERENA
p638 PROVENZA	p690 SCHRAMSBERG	p742 TERRE DA VINO
p639 PRUNOTTO	p691 SCHRAMSBERG J.	p743 THE BLACK CHOOK
p640 PUGLIESE	p692 SCHUG	p744 THIERRY MASSIN
p641 QUARTZ REEF	p693 SEAVIEW	p745 THOMAS FOGARTY
p642 QUINTA DA ROMEIRA	p694 SEBASTE	p746 THORNTON
p643 R. & L. LEGRAS	p695 SEBASTIANI	p747 TIERRA SALVAJE
p644 R.H. COUTIER	p696 SEGURA VIUDAS	p748 TIJSSELING
p645 RAMON CANALS CANALS	p697 SEPPELT	p749 TISHBI
p646 RASHI	p698 SERGE FAUST	p750 TORRE ORIA
p647 RAYMOND BOULARD	p699 SERGE MATHIEU	p751 TOSTI
p648 RAYMOND HENRIOT	p700 SERGIO BARALE	p752 TOTT'S
p649 REDBANK	p701 SERVEAUX FILS	p753 TRE DONNE
p650 REN□ BARTH	p702 SEVASTOPOL	p754 TREVOR JONES
p651 REN□ GEOFFROY	p703 SHADY LANE	p755 TRIBAUT
p652 REUTER	p704 SHARGREN	p756 TRIBAUT-SCHLOESSER
p653 RICCADONNA	p705 SHOOTING STAR	p757 TROUILLARD
p654 RICHARD CUNEO	p706 SILVAN RIDGE	p758 TUALATIN
p655 RICHARD GRANT	p707 SILVER CLOUD	p759 TWEE JONGE GEZELLEN
p656 RIMARTS	p708 SILVER LAKE	p760 TYRRELL'S

APPENDIX A (Continued)

PRODUCER NAME

p761	U M□S U FAN TRES
p762	UNION CHAMPAGNE
p763	VAL D?OCA
p764	VALDO
p765	VALLFORMOSA
p766	VAN DER KAMP
p767	VAN DUZER
p768	VARICHON & CLERC
p769	VARNIER-FANNIERE
p770	VAZART-COQUART
p771	VEUVE A. DEVAUX
p772	VEUVE AMIOT
p773	VEUVE CLICQUOT
p774	VEUVE DU VERNAY
p775	VID VICA
p776	VIGNA SENZA NOME
p777	VIGNEAU-CHEVREAU
p778	VILLA SANDI
p779	VILLAE LANATA
p780	VILLIERA
p781	VILMART
p782	VI,, A TORREBLANCA
p783	VINCENT CARę ME
p784	VI,, EDOS Y RESERVAS
p785	VINI BANFI
p786	VON OTHEGRAVEN
p787	VOYAGE
p788	VRANKEN
p789	WARNER
p790	WAYNE THOMAS
p791	WENTE
p792	WESTPORT RIVERS
p793	WHITTLESEY MARK
p794	WIEDERKEHR
p795	WILLAMETTE VALLEY
p796	WOLF BLASS
p797	WOLFBERGER
p798	W..LFFER ESTATE
p799	W..LFFER ESTATE SAGPOND VINEYARDS
p800	WOODBURY
p801	WYNDHAM ESTATE
p802	XAVIER VIGNON
p803	XIPELLA
p804	YALUMBA
p805	YARDEN
p806	YARRABANK
p807	YELLOW TAIL
p808	YELLOWGLEN
p809	YVES ROCHE
p810	ZARDETTO
p811	Zé FIRO

PRODUCER NAME

p812	ZO□MIE DE SOUSA
p813	ZONIN
p814	N¼ FAMILY ESTATE

REGION

r1	Champagne
r2	Loire
r3	Alsace
r4	Cameros
r5	Other California
r6	Sonoma
r7	Veneto
r8	Spain
r9	Jura/Savoie
r10	Coastal Region
r11	Australia
r12	Languedoc-Roussillon
r13	Washington
r14	Oregon
r15	Greece
r16	Other France
r17	Finger Lakes
r18	Virginia
r19	Lombardy
r20	Piedmont
r21	Napa
r22	Michigan
r23	Italy
r24	North Carolina
r25	Chile
r26	Mendoza
r27	Canelones
r28	New York
r29	Nieder□sterreich
r30	Bay Area/Central Coast
r31	Israel
r32	Tuscany
r33	Maipo
r34	Argentina
r35	Burgundy
r36	Portugal
r37	Northeast
r38	Other US
r39	New Zealand
r40	Germany
r41	New Mexico
r42	South Coast
r43	Patagonia
r44	Marche
r45	Breede River Valley
r46	Western Cape
r47	Mendocino/Lake
r48	Missouri

REGION

r49	Austria
r50	Connecticut
r51	Burgenland
r52	Hungary
r53	Long Island
r54	Southern Rh™ne
r55	Florida
r56	Umbria
r57	Texas
r58	Canada
r59	Pennsylvania
r60	New England
r61	Wien
r62	Ukraine
r63	Hawaii
r64	South Africa
r65	Arkansas

AGE OF WINE

age_no	no age
age_1	age = 1
age_2	age = 2
age_3	age = 3
age_4	age = 4
age_5	age = 5
age_6	age = 6
age_7	age = 7
age_8	age = 8
age_9	age = 9
age_10	age = 10
age_11	age = 11
age_12	age = 12
age_13	age = 13
age_old	age > 13

VINTAGE

v1	1990
v2	1988
v3	1987
v4	1982
v5	1979
v6	no vintage
v7	1989
v8	1985
v9	1976
v10	1998
v11	1992
v12	2000
v13	1996
v14	1995
v15	1999
v16	1986
v17	1984
v18	2005

VINTAGE

v19	1993
v20	1997
v21	1983
v22	2004
v23	2003
v24	2002
v25	2001
v26	1994
v27	1991
v28	2006
v29	1981
v30	1975
v31	1980
v32	1978
v33	1969
v34	1959
v35	2008
v36	1973
v37	1971
v38	1966
v39	1964
v40	1962
v41	1961
v42	1955
v43	1953
v44	1952
v45	1949
v46	1947
v47	1945
v48	1942
v49	1938
v50	1937
v51	1929
v52	1928
v53	1914
v54	1911
v55	1900
v56	1893
v57	1825

CONSTANT

_cons	(estimated y intercept)

BIBLIOGRAPHY

Akerlof, G.A. "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84, (1970): 488-500.

Ali, Hela Hadj and Celine Nauges. "The Pricing of Experience Goods: The Example of *En Primeur* Wine." *Amer. J. Agr. Econ.* 89, no. 1 (2007): 91-103.

Barham, Elizabeth. "Translating terroir: the global challenge of French AOC labeling." *Journal of Rural Studies* 19, (2003): 127-138.

Borenstein, Severin and Martin B. Zimmerman. "Market Incentives for Safe Commercial Airline Operation." *The American Economic Review* 78, no. 5 (1988): 913-935.

Bramley, C and JF Kirsten. "Exploring the Economic Rationale for Protecting Geographical Indicators in Agriculture." *Agrekon* 46, no. 1 (2007): 69-93.

Costanigro, Marco, Jill J. McCluskey and Ron C. Mittelhammer. "Segmenting the Wine Market Based on Price: Hedonic Regression when Different Prices mean Different Products." *Journal of Agricultural Economics* 58, no. 3 (2007): 454–466.

Goldstein, Robin and Alexis Herschkowitsch. 2008. *The Wine Trials*. United States of America: Fearless Critic Media.

Gade, Daniel W. "Tradition, Territory, and Terroir in French Vinticulture: Cassis, France, and Appellation Contrôlée." *Annals of the Association of American Geographers* 94, no. 4 (2004): 848-867.

Hanf, C.-H. and von Wersebe, B. "Price, quality, and consumers' behaviour." *Journal of Consumer Policy* 17, (1994): 335-348.

Klein, B. and Leffler, K. B. "The role of market forces in assuring contractual performance." *Journal of Political Economy* 89, (1981): 615–641.

Kwon, Oh Sang, Hyunok Lee, and Daniel A. Sumner. "Appellation, Variety and the Price of California Wines." *Agricultural and Resource Economics Update* 11, no. 4, (2008): 15-19.

Landon, Stuart and C. E. Smith. "The Use of Quality and Reputation Indicatory by Consumers: The Case of Bordeaux Wine." *Journal of Consumer Policy* 20, (1997): 289-323.

Landon, Stuart and Constance E. Smith. "Quality Expectations, Reputation, and Price." *Southern Economic Journal* 64, no. 3 (1998): 628-647.

Lee, David S. and David Card. "Regression Discontinuity Inference with Specification Error." *Journal of Econometrics* 142, (2008): 655-674. www.elsevier.com/locate/jeconom.

Loureiro, Maria Lus and Jill J. McCluskey. "Assessing Consumer Response to Protected Geographical Identification Labeling." *Agribusiness* 16, no. 3 (2000): 309-320.

Loureiro, Maria Lus and Jill J. McCluskey. "Consumer Preferences and Willingness to Pay for Food Labeling: A Discussion of Empirical Studies." *Journal of Food Distribution Research* 34, no. 3 (2003): 95-102.

McCluskey, Jill J. and Jason A. Winfree. "Collective Reputation and Quality." *Amer. J. Agr. Econ.* 87, no. 1 (2005): 206-213.

Morgan, Warren. "The Wine Appellation as Territory in France and California." *Annals of the Association of American Geographers* 83, no. 4 (1993): 694-717. http://www.jstor.org/stable/2563600.

Nelson, P. "Information and Consumer Behavior." *Journal of Political Economy* 78, (1970): 311–29.

Png, I.&Reitman, D. "Why Are Some Products Branded and Others Not?" *Journal of Law and Economics* 38(1), (1995): 207–224.

Rosen, S. "Hedonic prices and implicit markets: Product differentiation in pure competition." *Journal of Political Economy* 82, (1974): 34–55.

Schamel, Gunter and Kym Anderson. "Wine Quality and Varietal, Regional and Winery Reputations: Hedonic Prices for Australia and New Zealand." *The Economic Record* 79, no. 246 (2003): 356-369.

Schamel, Gunter. "Individual and Collective Reputation Indicators of Wine Quality." *Center for International Economic Studies.* Policy Discussion Paper No. 0009 (2000): 1-17.

Shy, Oz. 1995. *Industrial Organization: Theory and Applications*. Cambridge: The MIT Press.

Skuras, Dimitris and Aleka Vakrou. "Consumers' Willingness to Pay for Origin Labelled Wine a Greek Case Study." *British Food Journal* 104, no. 11 (2002): 898-912. http://www.emeraldinsight.com/0007-070X.htm.

Stanziani, Alessandro. "Wine Reputation and Quality Controls: The Origin of the AOCs in 19th Century France." *European Journal of Law and Economics* 18, (2004): 149-167.

Tirole, Jean. 1988. *The Theory of Industrial Organization*. Cambridge: The MIT Press.