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Article

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Wine Economics and Policy

Provided in Cooperation with:

UniCeSV - Centro Universitario di Ricerca per lo Sviluppo Competitivo del Settore Vitivinicolo,
University of Florence

Suggested Citation: Gokcekus, Omer; Finnegan, Clare M. (2013) : Did the Great Recession change the regional reputation premium for wine in the US?, Wine Economics and Policy, ISSN 2212-9774, Elsevier, Amsterdam, Vol. 2, Iss. 1, pp. 27-32,
<https://doi.org/10.1016/j.wep.2013.05.004>

This Version is available at:

<https://hdl.handle.net/10419/194468>

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Did the Great Recession change the regional reputation premium for wine in the US?

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Available online 10 June 2013

Abstract

Wine is an experience good and also (at least under certain circumstances and to a certain extent) a conspicuous consumption good. As such, wine buyers should be willing to pay a premium for regional reputation to avoid risk and to send signals about their wealth and social status. At the same time, wine is an annually produced good; every year new bottles arrive to wine stores. Accordingly, a wine store's manager has to periodically clear the store's inventory. Statistical analyses indicate that, during the Great Recession in the US, two developments—a substantial decline in income and a rise in information sharing via the internet and social media—had a dampening effect on the regional reputation premium and lowered the price-quality ratio differences among different wine regions. Moreover, during the same time period, the discount rates necessary to clear inventories significantly increased.

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Keywords: Regional reputation premium; Price–quality ratio; Consumer behavior

1. Introduction

The purpose of this research study is to examine the relationship between regional reputation and the price–quality ratio of wine.¹ Specifically, we empirically determine whether the heightened interplay among five forces significantly altered the relationship between a wine's price–quality ratio and regional reputation in the US during the Great Recession (September 2008 until June 2009). Three of these forces—the role of wine as an experience good, as a conspicuous good, and as an annually produced good—stem from the nature of wine and have been included in several discussions on the hedonic price function of wine (Benfratello et al., 2009;

Oczkowski, 1994; Schamel and Anderson, 2003). The other two forces, namely the simultaneous decline in income and the phenomenal increase in internet and social media use in information sharing, developed during the Great Recession.

After briefly presenting the literature survey on these five forces, we state our theoretical proposition and the corresponding two working hypotheses; introduce the sample utilized in the study; present and discuss the results; and provide concluding remarks.

2. Review of the literature

Wine is an experience good whose quality is not directly observable *ex ante*. You have to buy and uncork a bottle of wine to find out how good it is. The average wine buyer faces the (somewhat daunting) task of choosing a bottle of wine based on a set of intrinsic and extrinsic cues (for details, see Atkin and Thach, 2012, p. 54–56). Such cues include the wine's price or its expert rating (Lockshin and Rhodus, 1993; Schamel, 2000; Hall et al., 2004). In addition, consumers rely on the overall reputation of a wine's origin—the region it comes from—to indicate the wine's quality (Stuart and Smith 1997, 1998; Duhan et al., 1999; Perrouy et al., 2006, Atkin

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Peer review under responsibility of Wine Economics and Policy.



¹The price quality ratio is the quotient of price (the dividend) and quality (the divisor). For instance, a bottle of wine rated 90 and costing \$45 would have a price quality ratio of 0.5.

and Johnson, 2010; Lockshin and Corsi, 2012; Panzone and Simões, 2009). Accordingly, we can assume that, in setting initial suggested retail prices, sellers attach an additional premium to regional reputation on top of the premium allocated to expert ratings (Lecocq and Visser, 2006; Schamel, 2006; Bruwer and Johnson, 2010; Panzone and Simões, 2009).

A non-necessity, a wine's value is observed upon consumption, making wine an experience good. Moreover, wine can be seen as a conspicuous good. Thorstein Veblen (1899) coined the term conspicuous consumption. He argued that sometimes consumers purchase a good not just for its intrinsic value, but for its signaling value—the good's ability to indicate wealth or ability. Bagwell and Bernheim (1996) explain under which circumstances “Veblen effects” arise from the desire to achieve social status by signaling wealth through conspicuous consumption; and Leibenstein (1950) and Corneo and Jeanne (1997) show how signaling value depends on whether consumer behavior is characterized by snobism or conformism. In regards to the signaling value of wine, Ballestrini and Gamble (2006) find that for Chinese consumers country of origin information is significantly more important than price or brand, especially when the purchased wine is for a special occasion and will be exposed to others' judgment. Terrien and Steichen (2008) also explore the social dimension of wine and find that snobism (opposition) combined with conformism (imitation) may explain variation in wine demand. Thus, it is not farfetched to argue that some wine consumers purchase wine not just for its intrinsic value, but for its signaling value. Particularly in times of economic prosperity, the motive for conspicuous consumption purchases may cause wines coming from “reputable regions” to incur a significant premium. By the same token, during times of economic downturn the conspicuous consumption motive may place dampening pressure on this regional premium. In fact, according to Catherine Rampell, reporter for the *New York Times*, the Great Recession did cause consumers to move downmarket and purchase wines from less expensive regions (Rampell, 2008).

During the Great Recession, income levels were down and unemployment was on the rise. Concurrently with the recession, there was an explosion in the use of the internet via various mobile devices, which significantly expedited information sharing. Wine had its fair share of increased exposure from this explosion; incidentally, wine is the most frequently searched beverage online (Storchmann, 2012, p. 3). In addition to seeking experts' opinions, consumers pay attention to “similar other” opinions. Social psychologists have extensively documented how and why people are influenced by actions and beliefs of similar others (Sherif, 1936; Asch, 1956; Cialdini et al., 1990; Cialdini and Goldstein, 2004). Consumers even accept information obtained from similar others as evidence about reality (Deutsch and Gerard, 1955: p. 629). As Griskevicius et al. (2008) (p. 84) explained, because of the wide reach and easy access recently provided by the internet, consumers have even started “... abandoning traditional expert sources in favor of the perspectives of their peers” over a wide range of issues.

Raghuram et al. (2009) examine how friends influence the purchases of users in a social network; Chevalier and Mayzlin

(2006) analyze the effect of “word-of-mouth” on book sales by looking at customer reviews at amazon.com and bn.com. However, social networking effects have not been limited to online book retailers. Established in 2003, Cellartracker.com is the world's largest wine social networking site, in both number of cataloged bottles and number of listed tasting notes.² Thus, it is defensible to argue that in the last few years, the internet and social media outlets have amplified the relevance of consumer ratings of a bottle of wine and word-of-mouth effects because of their low cost and easy access (Dellarocas, 2003: p. 1410).

Wine is an annually produced agricultural good. Johnson and Robinson (2007) (p. 42) write that “the great majority of wine made today, however, is ready to drink within a year or less of being bottled, and some wines are best drunk straight off the bottling line.” Simply put, the bulk of wine produced has to be consumed in a short period of time, usually within a few years. Retailers are eager to clear a significant share of their inventory in a year before wines from the next vintage arrive. Both a wine store's inventory composition in terms of vintage and its regular sale events reflect these two facts. These characteristics of wine should magnify the impact of changes in income and flow of information about the quality of a bottle of wine on wine sales, and consequently determine which wines sell fast and which wines sit on shelves until deeply discounted.³

3. A model and hypotheses

To sum up, based on the explanations provided in the previous section, and given the three characteristics of wine—experiential, perishable, and conspicuous—due to decreased income and the faster flow of information on wine quality during the Great Recession, we expect to see a significant change in the relationship between wine price, quality, and regional reputation in the US. Specifically, we set the following two workable hypotheses: during the Great Recession (1) the discount rate necessary to clear inventory increased; and (2) the regional reputation premium—the additional money paid to acquire a similarly rated (the same quality) bottle from a more reputable region—declined. To test the validity of the first argument descriptive statistics are calculated; to test the second argument, first the following regression equation is estimated and then appropriate statistical tests are conducted:

$$(Price/quality)_{it} = \alpha_0 + \alpha_1(Regional\ reputation)_{it} + \varepsilon_{it} \quad (1)$$

In this equation, *Price* is the suggested retail price of a bottle of wine (using the US Consumer Price index, CPI, all prices

²As of February 21st, 2013, there were 254,000 users who owned 39.5 million bottles; Cellartracker's database contained 1.4 million different wines with 3.6 million free wine reviews from real users, and more than 400,000 professional reviews from 23 publications. Cellartracker even started publishing its own rating, which is the average of the community members tasting scores coupled with Cellartracker's moniker.

³As the harvests for both 2007 and 2011 were neither atypically good nor bad, we do not believe the harvest size to be a significant factor in price setting (Gevirtz, 2011; Wine Spectator, 2007).

have been standardized to be expressed in 2008 dollars). *Quality* is an expert's rating (e.g., Wine Spectator or Wine Advocate) of a bottle wine (on a 100 points scale).⁴ *Regional Reputation* is an index calculated based on a survey—sent to the 12 members of the Editorial Advisory Board of the *Journal of Wine Economics*—in which experts were asked to grade the reputation of a number of wine regions (on a scale from 1 to 10; and the higher the better). To our knowledge, this is the only such survey in existence (for further details on the index's construction, see Gokcekus and Nottebaum, 2012). Subscript i is for the i^{th} bottle of wine and t is for the year t . Finally, ε_{it} is an independent and identically distributed error term.

4. Sample

In the US, the Great Recession started in September 2008. Therefore to test the two hypotheses, we use two sets of wine data, one before the recession and one after the end of the recession. For both sets the information is from the same wine store, the Wine Library. Located in Springfield, New Jersey, the Wine Library is one of the largest wine stores on the East Coast in the US and has an excellent web presence. The sample consisted of 405 wines from 16 different wine regions—Bordeaux (20 wines), Burgundy (49 wines), Rhone (34 wines), Loire (20 wines), Italy (51 wines), Portugal (16 wines), Spain (20 wines), Napa (30 wines), Sonoma (26 wines), other California (30 wines), Washington (25 wines), Australia (21 wines), New Zealand (8 wines), Argentina (24 wines), Chile (15 wines), and South Africa (16 wines). Information on 221 of these wines was collected during the spring sale in March 2008 from the Wine Library's web page; and the remaining 184 wines were collected from the summer sale in June 2012.

It should be noted that only wines with professional ratings between 85 and 95 are included in the sample sets.⁵ Furthermore, we excluded (1) wines on sale with no regional reputation index, e.g., wines from Austria, Israel, Oregon; and (2) port or sparkling wines. Consequently, only 405 out of the 710 wines in the two sales, i.e., 57% are included. Table 1 provides summary statistics regarding expert ratings of each bottle, suggested retail price, actual retail price, discount rate⁶, regional reputation, and price–quality ratio in 2008 and in 2012.

⁴Admittedly, there are differences in the way experts rate wines. However, the average consumer is unlikely to be aware of these differences or biases between the various scoring systems, and only focus on the actual *rating* of the bottle. Indeed, this “point bias” has been identified as one of the most common “mistakes” made by wine consumers (Kramer, 2013).

⁵In order to prevent outlier bias, we removed all ratings from our sample sets that were more than 2 standard deviations below or above the mean of our sample (for information on the mean, see Table 1). Thus, our sample is comprised only of wines rated between 85 and 95 points.

⁶The summary statistics for the mean discount rates in Table 1 have been calculated based on the raw (ungrouped) data collected on suggested list price and sale price for Spring 2008 and Summer 2012 and not on the percent change between the average suggested list price and average sale price. For instance, the listed mean discount rate of 22.67% in Spring 2008 is calculated from $\Sigma \text{discount rate}/n$, not from 70.61 (the average suggested list price) and 54.44 (the average sale price).

5. Results

Regarding the first hypothesis, as Table 1 shows, the average discount rate in 2008 was 22.67% and it was 33.61% in 2012. Based on the t -test result, the 10.95 percentage points difference was statistically significant ($t = -12.69$, $p < 0.01$). At the same time, average retail prices, both suggested and actual, were lower in 2012 compared to those in 2008. Moreover, while the difference between the average suggested retail price and the actual retail price was \$1.60 in 2008, it was \$11.55 in 2012. These observations most likely indicate recognition of the declining purchasing power of American wine buyers by wine suppliers and retailers.

To test the second hypothesis, we follow a three step procedure. First, the magnitude of the relationship between regional reputation and the price–quality ratio is estimated. Second, whether this relationship is stable or not is examined. Third, the estimated coefficients for regional reputation—the regional reputation premium—from before and after the Great Recession are compared.

There is no a priori particular functional form to better depict the relationship between the price–quality ratio and regional reputation. Therefore, instead of imposing a particular functional form on this relationship, as is reported in Table 2, we estimate the model in Eq. (1) with four possible functional forms—linear, two semi-logarithmic, and logarithmic. Our findings indicate the following. First, regardless of the functional form chosen the regression results indicate a statistically significant positive relationship between the price–quality ratio and regional reputation. Both in 2008 and in 2012, there was a regional reputation premium—i.e., the more reputable a region a bottle of wine belongs to, the higher its price–quality ratio.

Second, again regardless of the functional form chosen, this premium was higher in 2008 than in 2012. Table 3 contains the F-statistics (Chow, 1960) utilized to determine whether there was a structural change in the relationship between the price–quality ratio and regional reputation from 2008 to 2012. The table also presents Welch's t -statistics (Welch, 1947) to check whether the regional reputation premium, i.e., the coefficient for Regional Reputation variable, varied before and after the Great Recession.

To summarize, based on these reported statistics, there was a statistically significant positive relationship between the price–quality ratio and regional reputation; this relationship was different in 2008 and in 2012; specifically, the relationship was stronger in 2008 than in 2012.

The following is an exercise to further demonstrate the change in the regional reputation premium from 2008 to 2012. Based on the R^2 and F-statistics criteria, regression results for the semi-logarithmic version (log of (P/Q) as dependent and Regional Reputation as the independent variable) look better. Accordingly, we use the estimation results in Column (3) for spring 2008 and in Column (7) for summer 2012, to further demonstrate the change in the regional reputation premium. Fig. 1 tells the story.

In 2008, the average price–quality ratio for wines from Argentina (with a regional reputation index of 4.17) was 0.28; Chile (with a regional reputation index of 5.00) was 0.34; and

Table 1
Summary statistics and *t*-test results.

	Spring 2008 (<i>n</i> =221) Mean	Summer 2012 (<i>n</i> =184) Mean	Difference (S. 2012–S. 2008)	<i>t</i> -Statistic ^a (Equal variances not assumed)
Expert rating (Q)	92.22	90.99	−1.22	6.20
Suggested list price (P)	\$70.61	\$54.84	−\$15.77	2.86
Retail price	\$69.02	\$43.29	−\$25.72	4.84
Sale price	\$54.44	\$35.82	−\$18.62	4.50
Discount rate	%22.67	%33.61	%10.95	−12.69
P/Q ratio	0.76	0.56	−0.20	3.49

^aThe differences are statistically significant at *p* < 0.01 (two-tailed).

Table 2
OLS regression results: price/quality = f(Regional Reputation).

(1)	Spring 2008				Summer 2012			
	P/Q (2)	ln(P/Q) (3)	P/Q (4)	ln(P/Q) (5)	P/Q (6)	ln(P/Q) (7)	P/Q (8)	ln(P/Q) (9)
Regional Reputation (RR)	0.253 ^b (0.03) ^a	0.268 ^b (0.03)			0.095 ^b (0.02)	0.195 ^b (0.03)		
ln(RR)			1.528 ^b (0.20)	1.664 ^b (0.18)			0.622 ^b (0.10)	1.305 ^b (0.35)
<i>N</i>	221	221	221	221	184	184	184	184
<i>R</i> ²	0.25	0.31	0.21	0.28	0.18	0.24	0.17	0.23
RSS	98.36	82.52	103.59	86.68	18.58	56.00	18.85	56.30
F-statistic	74.01	99.27	59.24	84.00	40.21	55.87	37.09	54.60

^aStandard errors are in parentheses.

^bStatistical significance at *p* < 0.01 (two-tailed).

Table 3
Is there a structural change between 2008 and 2012? F-test results Is the regional reputation premium different between 2008 and 2012? Welch’s *t*-test results.

Functional form	Structural difference?		Premium difference?	
	RSS ^a pooled	F-value	difference	Welch’s <i>t</i> -statistic
Linear: Column (2) versus (6)	130.89	24.16 ^b	0.158	5.80 ^b
Semi-log I: Column (3) versus (7)	148.88	15.14 ^b	0.073	3.85 ^b
Semi-log II: Column (4) versus (8)	134.40	19.78 ^b	0.906	13.84 ^b
Logarithmic: Column (5) versus (9)	152.29	13.19 ^b	0.359	8.19 ^b

^aRSS=residual sum of squares; and F-critical value (2,120) upper 1% points=4.79.

^bStatistical significance at *p* < 0.01 (two-tailed).

Spain (with a regional reputation index of 6.08) was 0.46. On the other hand, for regions with a relatively high reputation index the average price–quality ratios were much higher: e.g., for Rhone (with a regional reputation index of 7.50) it was 0.67; for Napa (with a regional reputation index of 8.71) 0.93; Burgundy (with a regional reputation index of 9.33) 1.10; and finally for Bordeaux (with the highest regional reputation index of 9.42) the price–quality ratio was 1.13.

According to these price–quality ratios, in 2008, a bottle of wine with an expert rating of 90 points was either priced at \$25, \$61, \$84, or \$101 if it was from Argentina, Rhone, Napa,

and Bordeaux, respectively. The wine buyers of a 90 points rated Bordeaux wine were paying \$76 more as compared to a 90 points rated wine from Argentina.

In 2012, as Fig. 1 shows, the wine buyers were still paying a hefty regional reputation premium, yet it was much lower than the one paid in 2008. For “the same 90 points wine” the prices were \$23, \$43, \$55, or \$63 if it was from Argentina, Rhone, Napa, and Bordeaux, respectively. Compared to a 90 points rated wine from Argentina, in 2012 wine buyers were paying \$40 more for a wine from Bordeaux. In other words the regional reputation premium had significantly shrunk.

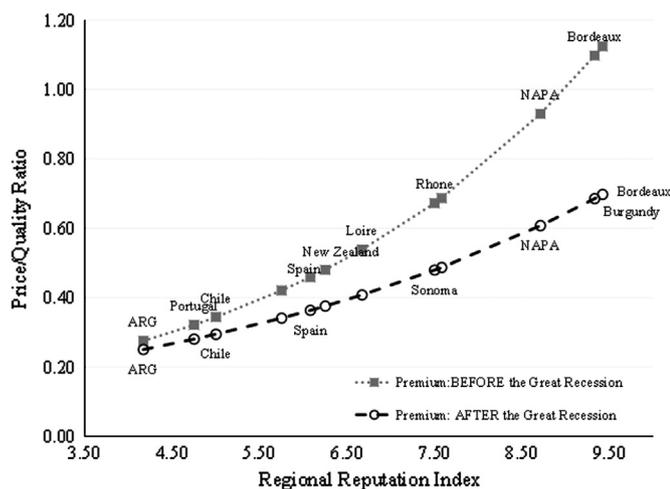


Fig. 1. Regional Reputation Premium for different wine regions: before and after the Great Recession in the US.

6. Discussion

The main motivation for this study was to assess the potential impact of the Great Recession on the prices wine buyers are willing to pay and, perhaps more importantly, its impact on the regional reputation premium buyers are paying. As the findings suggest, there is a significant change in the regional reputation premium wine buyers are willing to pay; this should be taken into account when setting prices and when determining the appropriate marketing and advertising strategies.

Despite the decline, in 2012 the regional reputation premium still existed and was significant. As such, the question is whether the decline is temporary or not. If it reflects the decline in income, it is reasonable to expect that the regional reputation premium could return to where it was before the Great Recession, once the economy recovers and starts growing again. In other words, once wine buyers make the switch from the bad times mind-set to a good times mind-set, we may end up observing higher regional reputation premium payments propelled by the conspicuous consumption and risk reduction motives.

However, if the decline in the premium is driven by increased information sharing about the quality of each bottle of wine via the internet and social media, then this reduction could be permanent. Moreover, given the constant growth of these two outlets, the premium could even decline so substantially that it would approach zero. Effectively, this would mean that regional reputation would become irrelevant, and wine experts' (or other wine drinkers' opinions) would be the only relevant information regarding the quality of a bottle of wine. In all likelihood, this scenario is rather improbable as there will remain wine buyers who are risk averse and/or interested in impressing others with their wealth and their abilities by purchasing wines from more reputable regions.

Whether the decline is permanent or not, wine makers, suppliers, and retailers may wish to re-consider their pricing, marketing, and advertisement strategies. For instance, wineries from less reputable regions may decide to place greater emphasize on the bottle quality of their wines; to do so they

may wish to utilize nontraditional marketing tools available through the internet and social media outlets in order to spread the word about their wines.

7. Concluding remarks

Statistical analyses indicate that, during the Great Recession in the US, a substantial decline in income and a rise in information sharing via the internet and social media outlets created a dampening effect on regional reputation and lowered the price–quality ratio differences among different wine regions. Moreover, during the same time period, the discount rates necessary to clear inventories significantly increased.

In conducting the analyses we use a particular regional reputation index. This index was constructed based on the *Journal of Wine Economics* editorial board members' opinions in 2008; our use of this particular index raises some questions regarding the reliability of the findings. How well do these board members' opinions reflect the average wine buyer's opinion regarding different wine growing regions? Even if they reflect it very well, what if opinions about different wine regions' reputations have changed? Another issue about the reliability and robustness of the findings stems from the fact that the sample includes observations from two particular sale events; one in early 2008, just before the beginning of the Great Recession, and the other one in summer of 2012. Moreover, the sample used in this study included wines from two sales events at a particular wine store; whether the pricing strategy, inventory management, and variety composition of this store is representative or not needs to be checked.

All in all, it is important to check the robustness of the findings by utilizing different regional reputation indices, and samples from different locations and times. Determining the robustness of the relationship—established in this *explanatory study*—between regional reputation and price–quality ratio will be worthwhile effort: knowing whether this relationship is stable or not within time may significantly alter the way wine industry sets prices and designs its marketing and advertising programs.

Acknowledgment

We would like to thank Huseyin Cakal, Paul Holden, Edward Tower, and two anonymous referees for their helpful comments and suggestions.

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