

# Expert Opinion on the Wine Market<sup>1</sup>

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## INTRODUCTION

Because wine is an experience good (i.e., its quality cannot be ascertained before consumption), experts and their critical reviews may help to fill an information void. Accordingly, the market for expert opinion on wine is large. The seven major U.S. wine magazines have a combined subscribership of nearly 600,000 (Table 1), with more than 350,000 alone subscribing to *Wine Spectator*; and wine magazine sales amount to well above \$25 million. In addition, there are a few foreign magazines (e.g., *Decanter*) and numerous smaller publications, online services (e.g., *JancisRobinson.com*), and wine blogs.

Another remarkable fact shown in Table 1 is the sudden and rapidly growing interest in expert opinion. The first U.S. wine magazines all started out of California in the mid-1970s. Even *Wine Spectator* was originally launched in San Diego and was only moved to New York when Marvin Shanken bought the publication from founder Bob Morrissey in 1981. Given that no national wine magazine existed before the mid-'70s, this sudden and rapidly growing demand for expert opinion is fairly amazing.

Wine consumers and investors rely on experts in many ways. Experts predict the quality of particular vintages (especially Bordeaux) that have not been traded yet to help wine investors and connoisseurs decide whether to buy futures. They describe a wine's taste and smell and rate or award gold medals to wines to facilitate the consumer's choice.

In 1986, the wine world changed again. Princeton economics professor Orley Ashenfelter launched a newsletter called *Liquid Assets—The International Guide to Fine Wines*. As the first publication of its

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1 This paper is based on a presentation that was given in celebration of Mary Patterson McPherson at the Spring General Meeting of the American Philosophical Society on 20 April 2012. I am grateful to Richard Quandt (Princeton University) for the kind invitation, and to Nick Vink (Stellenbosch University) and Orley Ashenfelter (Princeton University) for their many helpful comments. An extended version of this paper was published in the *Journal of Wine Economics* (Storchmann, 2012).

Magazine Title	Founded	Subscriptions (1,000)	Single Copies Sold (1,000)	Subscription Price <sup>a</sup> (\$)	Single Copy Price (\$)	Sales Revenue (\$1,000)
<i>California Grapevine</i>	1973	3 <sup>b</sup>	n/a	32		96
<i>Connoisseurs' Guide to California Wine</i> <sup>c</sup>	1974	7 <sup>b</sup>	n/a	90		630
<i>Wine Spectator</i>	1976	368.5	32	49.95	4.95	18,887
<i>Wine Advocate</i>	1978	50	0	75		3,750
<i>Wine Enthusiast</i>	1979	108	4.7	29.95	4.95	3,257.6
<i>Wine and Spirits</i>	1981	23	48	29.95	5.99	976.4
<i>The Wine News</i> <sup>d</sup>	1985	30.3 <sup>b</sup>	24.8	25	5.00	880

Sources: Pitcher (2003), The Association of Magazine Media (2011), and the websites of the respective magazines.

<sup>a</sup> Figures for 2010.

<sup>b</sup> Figures as of 1999.

<sup>c</sup> Publication is online only; a hardcopy subscription costs \$120 per year.

<sup>d</sup> Publication discontinued in 2010.

TABLE 1. Subscriptions to Selected U.S. Wine Magazines in 2010

kind, and in stark contrast to the prevailing glossy wine literature, *Liquid Assets* was devoted to the quantitative analysis of the fine wine market. Ashenfelter published auction prices and provided numerous economic analyses, such as an updated “new objective ranking of the chateaux of Bordeaux.” Like the original classification of 1855, Ashenfelter’s ranking was completely empirical and based on wine auction prices and not—as might be thought—on “expert opinion” (1988, 1997).<sup>2</sup>

However, the central theme of Ashenfelter’s research published in *Liquid Assets* has always been the assessment of vintage quality for wines from various regions (Ashenfelter, 1986, 1987a, 1987b). Essentially, Ashenfelter devised an econometric model that explains auction prices of mature wines by referring to the wine’s age and the weather of the year during which the grapes were grown. This model has proven surprisingly effective at assessing the quality of Bordeaux vintages and predicting prices of matured wines.

Given that Ashenfelter was the editor of the prestigious *American Economic Review*,<sup>3</sup> his wine-related works received considerable attention from economists and the general public alike. *The New York Times* has published numerous articles on Ashenfelter’s wine economics research in its Wine and Food Section and the Business Section, as well as on the front page (e.g., Goldberg, 1987; Passell, 1990a, 1990b; Prial, 1990). TV channels, such as ABC, CNN, CNBC, and Bloomberg, have aired special reports on his econometric wine models. The wine trade and wine critics, however, have been less intrigued. The New York wine merchant William Sokolin calls Ashenfelter’s equation “somewhere between violent and hysterical” (Ayres, 2007). Robert Parker, the world’s most influential wine critic, deems Ashenfelter’s empirical

2 Historically, all vineyard classifications were based on wine prices, land prices, or land profits. The existence of professional “wine critics” is a fairly recent phenomenon from no earlier than the 1970s (Ashenfelter and Storchmann, 2010).

3 In fact, he edited the AER from 1985–2001, having had practically the longest tenure of all editors, second only to the founding editor Davis Dewey (1911–40).

Independent variable	Dependent Variable Logarithm of London Auction Prices for Mature Red Bordeaux Wines		
	(1)	(2)	(3)
Age of vintage	0.0354 (0.0137)	0.0238 (0.00717)	0.240 (0.00747)
Average temperature over growing season (April–September)		0.616 (0.0952)	0.608 (0.116)
Rain in August		−0.00386 (0.00081)	−0.00380 (0.00095)
Rain in the months preceding the vintage (October–March)		0.001173 (0.00048)	0.00115 (0.00051)
Average temperature in September			0.00765 (0.0565)
R-squared	0.212	0.828	0.828
Root mean squared error	0.575	0.287	0.293

Source: Ashenfelter (2008). All regressions are of the (natural logarithm of) the price of different vintages of a portfolio of Bordeaux chateau wines on climate variables, using as data the vintages of 1952–80, excluding the 1954 and 1956 vintages, which are now rarely sold; all regressions contain an intercept, which is not reported. Standard errors are in parentheses.

TABLE 2. Bordeaux Wine Prices and the Weather

approach “really a Neanderthal way of looking at wine. It is so absurd as to be laughable”—in short, “an absolute total sham” (Ayres, 2007).

Why is the wine world up in arms against an empirical approach to wine? Frank Priol of *The New York Times* writes:

Two reasons. Some elements of the wine trade are angry because the Ashenfelter equation could be helpful in identifying lesser vintages they have promoted. For example, he is down on 1986, a year praised by more conventional commentators. Mr. Ashenfelter, or at least his numbers, say the vintage will be the worst of the 1980s. Secondly, and more seriously, he is accused of relegating the whole wine-tasting mystique to a minor role. Supposedly, the sipping, spitting, sniffing and note-taking so dear to wine romantics have all been rendered obsolete by mathematics. (Priol, 1990)

Ashenfelter et al. published an updated version of the “Bordeaux equation” in 1995 and later in 2008 in *The Economic Journal* (Ashenfelter, 2008). The Bordeaux model is a cross-sectional model with the (natural logarithm of) price index of a Bordeaux wine portfolio as dependent variable and the wine’s age and various weather data as independent variables. Table 2 shows the results of three different variants. Column 1 reports the results when only age is used as an explanatory variable; columns 2 and 3 also include weather variables. The equation given in column 2 is most commonly referred to as the *Bordeaux equation*. It contains the following main seeds of wine economics and its major research topics: (a) the value of wine as an

alternative financial asset, (b) wine and climate change, and (c) wine and expert opinion.

The Bordeaux equation shows that wine experts are less reliable than quantitative methods in predicting a wine's quality. Because Bordeaux wines are not ready to be consumed before an age of about 8 to 10 years, vintage assessments need to forecast a vintage's quality. Although the Bordeaux equation's predictions with an  $R^2$  of 0.828 are fairly accurate, experts steadily adjust their ratings as more information about a wine's drinkability becomes available. Particularly mediocre vintages are oftentimes rated too high. For instance in 1983, Parker deemed the 1975 vintage in Pomerol and St. Émilion (sub-appellations within the Bordeaux wine growing region) outstanding and awarded it 95 out of 100 points. He also added that the wines were too tannic to be drunk and should be stored a long time (a sign of a great vintage). However, as these wines matured, Parker dramatically adjusted his rating. In 1989, he awarded this very vintage only 88 points and recommended that the wines be drunk immediately rather than stored. That is, within 6 years, Parker's 1975 vintage rating dropped from outstanding to below average. In contrast, the Bordeaux equation predicted the mediocre quality of this vintage already in 1975, immediately after the harvest. In addition, expert opinion is not free. To obtain vintage ratings, consumers must subscribe to Parker's newsletter or buy similar wine magazines. Weather data, on the other hand, are freely available online.<sup>4</sup>

#### EXPERT RATINGS AND PRICE IMPACT

Ashenfelter (e.g., 1987b, 1990, 1992, 2008; Ashenfelter et al., 1995) has shown that expert opinion regarding Bordeaux vintage qualities can be seriously flawed; relying on publicly available information, such as weather data, yields more reliable results. Furthermore, weather data about a certain vintage are available directly after the harvest, that is, about half a year before the first experts have tasted and rated the vintage. In addition, weather information is available at no cost.

Ashenfelter (2008) has also shown that the Bordeaux wine market exhibits considerable inefficiencies. Directly after the release of young wines, many of their prices deviate substantially from the predicted price based on weather. In fact, most vintages are overpriced. However, after about 10 years, when entering the drinkable stage, wine prices converge toward the predicted price based on the weather. According

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4 The Royal Netherlands Meteorological Institute provides numerous long-time series data from weather stations all over the world at no charge (Koninklijk Nederlands Meteorologisch Instituut, 2011).

to Ashenfelter (2008), the over-pricing during the wines' early life is especially pronounced for vintages that are predicted to be the poorest. For instance, prices for the 1969 vintage decreased by 76% within the first 15 years after its release: "This suggests that, in large measure, the ability of the weather to predict the quality of the wines is either unknown or ignored by the early purchasers and sellers of the wines" (Ashenfelter, 2008, p. F183).

A reverse anomaly is the 1982 Bordeaux vintage, whose prices have soared significantly above the weather-predicted price and even 30 years after its release have not converged to the expected price (Ashenfelter, 2008). The main reason for this phenomenon may be the high praise for this vintage by wine critics, in particular by Parker, who is widely considered the most influential wine critic. For the 1982 vintage, Parker awarded a perfect score of 100 points to seven Bordeaux *grands crus*, the most of any vintage before.<sup>5</sup>

This anomaly raises the question of whether and to what extent wine critics influence wine prices. Based on prior analyses by Ashenfelter (1990), Ashenfelter and Jones (2013) examined the efficiency and price influence of expert ratings for Bordeaux wines. They contrasted the explanatory value of ordered vintage quality indicators by well-known experts, namely the University of Bordeaux enology professors Ribereau-Gayon and Guimberteau, with publicly available weather data to examine whether the experts' opinion contain any private information beyond what is already publicly known. In two models, they regressed wine prices first on expert ratings only, then on weather data only, and found that both kinds of variables are good price predictors. In the following step, they added the experts' ratings to the weather data equation. As a result, expert ratings become inconsistent and insignificant, suggesting that they do not contain any private information. This result finds further support from the fact that weather data are excellent predictors of the experts' ratings. Haeger and Storchmann (2006) pursued a similar sequential approach and found that *Wine Spectator* points only marginally improve weather-based models of U.S. Pinot Noir wine prices. Jones and Storchmann (2001) differentiated this approach by chateau and reported that prices of smaller chateaux (those that make Cabernet Sauvignon-dominated wines and those that have been rated highly in the past) are more sensitive to Parker points than others.

Hadj Ali and Nauges (2007) examined Bordeaux *en primeur* prices, that is, wine future prices that are set by the chateaux in the spring after the harvest. Using a hedonic approach, they found a statistically

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<sup>5</sup> Other outstanding Parker-rated Bordeaux vintages are (number of 100-point wines in parenthesis): 2000 (7), 1961 (4), 1945 (3), 1989 (3), and 1990 (3).

significant but small effect of critical points by *Wine Spectator* and Parker, in addition to fundamentals. Hadj Ali and Nauges found that Parker's impact on future prices is fairly small: one additional Parker point results in an average price increase of 1.01%.

Hadj Ali et al. (2008) referred to a natural experiment to disentangle the public and private information content of expert ratings. They analyzed the influence of Parker ratings on Bordeaux *en primeur* prices by drawing on a natural experiment. Normally, the Bordeaux chateaux set their *en primeur* prices in the spring following the harvest—after Parker has tasted and rated the wines. The chateaux, therefore, have the opportunity to incorporate any possible private information contained in Parker's rating into the price. However, in the spring of 2003, Parker did not visit the region and did not publish his assessment of the 2002 vintage before the fall of 2003. Thus, the chateaux set their 2002 *en primeur* prices without Parker's rating. The authors confirmed the small price relevance of critical points already found by Hadj Ali and Nauges (2007). The fact that Parker visits the Bordeaux region and tastes and rates *en primeur* wines has an average value of approximately €2.80 per bottle, that is, less than 2% of the average *en primeur* price for *premier cru*.

Aside from its impact in the price level, expert opinion exerts a detrimental effect on price-quality dispersion. Storchmann et al. (2012) found that price-quality dispersion grows with the level of past critical exposure and the level of past maximum scores obtained. This finding is particularly pronounced if the difference between maximum and average points is high. Both effects mentioned above exert their largest spillover in the low-quality bracket, resulting in significant overpricing of mediocre wines; that is, a mediocre winery that receives extraordinarily high ratings for *one* of its wines will command a premium for *all* of its wine in the following year. This effect is particularly strong for its low-quality wines.

#### EXPERTS AND WINE WORDS

Wine critics and experts do not only convey private information about a wine's quality by assigning grades or points, but they also provide verbal descriptions of the smell and taste. Parker alone has evaluated and described the appearance, smell, and taste of more than 180,000 wines in his newsletter the *Wine Advocate*; *Wine Spectator* lists more than 240,000 wine reviews on its website. Over the past 40 years, a rich wine vocabulary has evolved.

According to Parker's "A Glossary of Wine Terms" (2011), wine descriptors include terms such as "angular," "austere," "backward,"

“chewy,” “decadent,” “dumb,” “precocious,” and “unctuous.” For instance, Parker describes a Rhône wine as follows:

Deep ruby color includes purpose nuances. Closed aromatically, hints of crème de cassis and black cherries. Cuts broad swath across the palate with considerable depth and concentration. Tannic as well as broodingly backward (Weil, 2007, p. 140).

What is the informational value of wine words? In one of the first studies, the linguist Adrienne Lehrer (1975) examined the function and value of the wine language. She ran several experiments to assess the degree of useful communication about wine flavors. In one experiment, she let people first describe three distinctly different wines. In subsequent blind tastings, she then asked the subjects to match the description with the wine. Surprisingly, the subjects were unable to produce a better-than-chance match, thus casting doubts on the informational value of wine words.

Lawless (1984) compared the matching ability of wine experts and non-experts when drawing on descriptions by either group. In his experiments, only expert tasters using expert descriptions performed slightly better than random. All other combinations, such as *expert descriptions and amateur tasters* or *amateur descriptions and amateur tasters*, resulted in outcomes that were not better than chance.

More recently, Weil (2007) analyzed the value of wine words. He drew on published wine descriptions in *Wine Spectator* and Parker’s *Wine Advocate* and asked subjects to match three wines with the corresponding description. The overall matching performance was random.

Why do wine consumers rely on expert opinion if they do not provide any practical use? Quandt (2007) analyzed the wine market by referring to a book by Princeton University philosophy professor Harry G. Frankfurt titled *On Bullshit* (2005). He concluded: “I think the wine trade is intrinsically bullshit-prone and therefore attracts bullshit artists” (Quandt, 2007, p. 135).

However, according to Ramirez (2010), wine descriptions appear to exert value to not only wine critics but also producers. Analyzing 2,700 *Wine Spectator* reviews of recent Napa Cabernet Sauvignon and employing a dynamic price model, Ramirez found that the length of the review (measured by the number of characters) has a significant positive price effect—even after controlling for quality. In addition, he found that the price effect does not result from “purely analytical” words but rather from metaphorical language. This finding suggests that consumers find prose more persuasive than neutral descriptions (i.e., wine descriptions may meet other needs compared to the mere transmission of information).



## EXPERT FAILURE

Not only can expert opinion be of little informational value, but it can also be downright flawed. Hodgson (2008) analyzed the performance of wine judges at a major U.S. wine competition from 2005–2008. At these wine competitions, panels of four wine judges assess samples of 30 wines and award medals (Gold, Silver, Bronze) to excellent wines. Unknown to the judges, Hodgson inserted triplet pourings of one bottle into the sample; that is, three of the 30 wines within one flight were identical. Only 10% of the judges were able to rank these wines within the same medal rank, and another 10% assessed the triplet wines within a two-medal range. That means 80% of the examined judges ranked identical wine more than two medal ranks apart. In addition, even the 10% of judges who assigned the same quality rank to identical wines were unable to repeat this performance the following year. These results suggest that experts award medals at random.

This conclusion finds further support in a second study by Hodgson (2009). Hodgson, a wine maker himself, observed that wines entered into several competitions rarely received identical evaluations in each of them. A wine might obtain a Gold medal in one competition and nothing in another. If a Gold medal were a good predictor for quality, then the probability of receiving a Gold medal at competition B should *not* be independent of whether this wine already obtained a Gold at competition A. In fact, a wine that receives a Gold at A should have a higher-than-random chance of obtaining a Gold at B.

However, Hodgson (2009) found that this is not the case. The probability of obtaining a Gold medal at B is stochastically independent and follows the binomial probability distribution. For instance, if the chance of receiving a Gold at any competition were 10% and if the distribution of Gold medals were random (i.e., independent of quality), the chance of receiving two Gold medals would equal  $0.1 \times 0.1 = 0.01$ . Hodgson found that this is the case for wine competitions and states “that chance alone may account for the number of Gold medals that a wine receives” (2009, p. 8).

However, expert opinion does not only suffer from a lack of expertise: sometimes conflicts of interest may result in biased outcomes as well. Reuter (2009) examined whether wineries that advertise in *Wine Spectator* receive better critical evaluations of their wines. He exploited that the other large wine magazine, *Wine Advocate*, does not accept winery advertising. Although advertisers and non-advertisers obtain similar ratings, when he controlled for quality by referring to *Wine Advocate* ratings, Reuter (2009) found that advertisers in the *Wine Spectator* receive almost one more critical point than do non-advertisers.



The effect seems largely due to a higher chance of being “re-tasted.” When a blind tasting yields unexpected results, the *Wine Spectator* allows a re-tasting; that is, the wine will be added to the next flight and thus “gets a second chance.” It appears that advertisers obtain this opportunity more frequently than non-advertisers.

But even worse, Robin Goldstein (2008) reported that in addition to being flawed or biased, expert opinion can be entirely made up. Goldstein applied for the *Wine Spectator Award of Excellence* that is regularly given to restaurants with an outstanding wine list. However, Goldstein has neither owned nor managed a restaurant. Instead, he launched a website of a fictitious restaurant in Milan, Italy; he posted menus and two wine lists—a regular list and a reserve list. For the expensive reserve list, he mostly selected wines that received less than 75 points. The *Wine Spectator* deems wines in the 50–74 point range “not recommended” and wines in the 75–79 range “mediocre: a drinkable wine that may have minor flaws.” To add some credibility to his made-up restaurant, Goldstein also obtained an Italian phone and fax number. He submitted his application, a letter, and a \$250 fee—and after an evaluation phase of a few weeks, he indeed received the *Wine Spectator Award of Excellence*. This means that *Wine Spectator* granted an award of distinction to a non-existent restaurant.

The expert’s service, namely, conveying information about an experience good, has become an experience good (or even a credence good) itself. Ashenfelter et al. (2011) showed in a theoretical and empirical model that earning a *Wine Spectator Award of Excellence* is meaningless for the quality of the wine list. Only restaurants that can charge their customers for the cost incurred will apply for the award. Thus, after controlling for the quality of food, service, and décor, Ashenfelter et al. (2011) found that applying for (and receiving) a *Wine Spectator Award of Excellence* only results in higher prices.

Similarly, Gergaud et al. (2012) examined the impact of newly arriving expert opinion on consumers’ quality perception and prices by referring to New York City restaurants. Before 2005, the leading New York City restaurant guide had been the Zagat Restaurant guide. (Note that Zagat does not rely on experts but reflects consumer assessment.) In 2005, with the first release of the Michelin’s New York City Red Guide, Zagat faced serious competition. In contrast to Zagat, Michelin relies on experts. The Michelin experts rated many restaurants better than consumers did and vice versa. How did consumers and restaurant owners respond? Although consumers did not adjust their food quality assessment toward experts’ opinion, they did change their quality assessment regarding service and decor. Gergaud et al. (2012) showed that the better service and décor quality was not imagined but based on

restaurant investment. Positive Michelin reviews induced major investment in, for example, a restaurant's wine cellar. As a result, food prices increased by a substantial amount. The analysis suggests that expert opinion on the New York City restaurant market exerts a negative externality on gourmets by giving restaurants incentives to invest mainly in service and décor, thus leading to higher prices.

In another paper, Storchmann (2006) studied the success of vineyard realtors (experts) in the German Mosel valley during the Napoleonic area. In 1794, the now-German part of the Mosel valley was occupied by French troops. During the secularization period that followed, all property of the Church and nobility was expropriated by the Napoleonic administration and put up for auction. The secularization process was accompanied by a substantial deregulation of the wine market. As a result, the value of vineyards had to be re-assessed and substantially revised. The vineyard auctions provided the opportunity to make considerable profits if one knew the true quality of a certain plot of land. The analysis shows that professional brokers had a strong tendency to overestimate the value of vineyards and incurred large losses during the public auction phase. In contrast, and assumingly due to their information advantage, winemakers' purchases turned out to be very profitable.

However, the issue of flawed or even fraudulent expert opinion is not unique to the wine industry. A recent *ABC News* report on the Better Business Bureau, an institution that evaluates and rates businesses in the United States, showed that numerous non-existent businesses, such as a fictitious firm named Hamas, received impeccable ratings as long as they paid the evaluation fee. Others that declined to pay, such as Disneyland or some of Wolfgang Puck's restaurants, received an F (Rhee and Ross, 2010). Clearly, inherent issues exist when the evaluatee pays the expert who evaluates him. There has long been a suspicion that the evaluations of business-rating companies such as Moody's, Fitch Ratings, or Standard and Poor's may be equally as flawed.

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