Effects of Wine Critics' Ratings on Prices of Bordeaux Wines

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Abstract

This paper will investigate the effects of wine critics' ratings on prices of Bordeaux wines. Using exploratory data analysis by Sheather (2009), we compare ratings by two famous critics, Robert Parker from the US and Clive Coates from the UK. In addition, we take other potentially explanatory variables into consideration. We find that Parker and Coates' ratings are highly correlated. Furthermore, Parker's ratings have a significantly bigger impact on wine prices. Among other explanatory variables, we find that if the wine is a First Growth, a vintage superstar, a cult wine, or has a score of 95 or above from Parker, it will be more expensive. On the contrary, wines originating from Pomerol are not necessarily more expensive. This conclusion, however, is not applicable to the entire wine market because of limits in our data. Ideally, we would need more data and a multiple regression model to perform a comprehensive analysis.

1 Introduction

Bordeaux wines are world-renowned and are popular in the consumer markets. Bordeaux wines also have a large range of price depending on various factors such as the quality, age, and origins. When choosing a bottle of wine, some consumers judge the quality of wines by their packages or brand names. For others, especially owners of restaurants and wine shops, evaluations from wine critics matter because that is how they decide the type of wines they will offer to customers. And for the people who have little knowledge about wine, they also value words of wine critics who can offer professional advice on wine selection. As a result, wine critics can have an impact on the demand of wines because consumers would likely buy wines that are recommended by wine critics. From an economic stand point, if the demand goes up while the supply remains unchanged, the price will likely go up.

However, not every wine critic has the same appeal in the market. Robert Parker and Clive Coates are both authoritative figures in the field, but people view them differently. The courtier Eric Samazeuilh has made the comment: "...Parker is the wine writer who matters. Clive Coates is a very serious and well respected, but in terms of commercial impact his influence is zero" (Sheather, 2009, pp. 8). This paper will focus on these two wine critics to determine whether Parker or Coates has a greater effect on wine prices. In addition, this paper will address the following questions:

- How are Parker and Cotes' ratings related?

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- Do any of the following factors: P95andAbove, FirstGrowth, CultWine, Pomerol, and VintageSuperstar have a reliable influence on price?

The data and additional background information are presented in Example 1.2.4, pp. 8–13, in Sheather (2009).

2 Methods

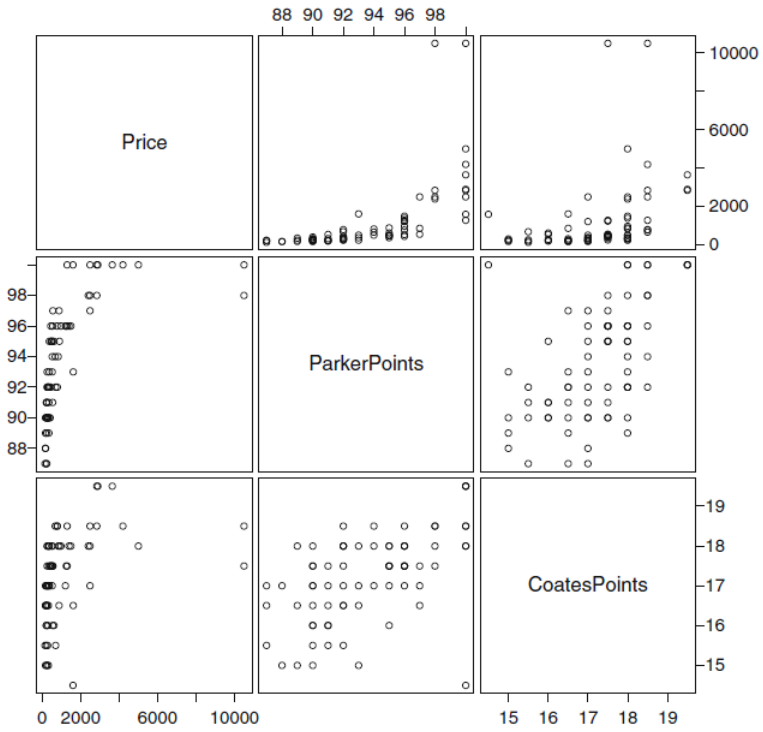

Figure 1: Scatterplot matrix of Price, ParkerPoints, & CoatesPoints. From Sheather (2009, p. 10).

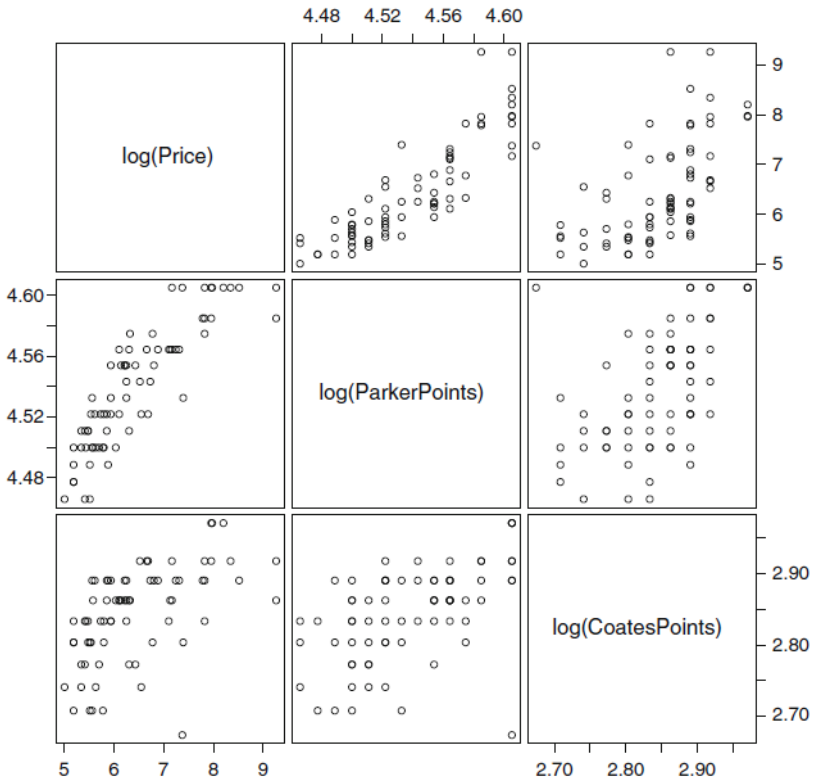

Figure 2: Scatterplot matrix of log(Price), log(ParkerPoints), & log(CoatesPoints). From Sheather (2009, p. 12).

The data for this study come from Parker (2003) and Coates (2004). The prices (in pounds sterling) include duty but exclude shipping and VAT in London in September 2003 (Sheather, 2009, pp. 8). Parker's rating system is 100-point based and the scale is as follows:

96-100 points	Extraordinary
90-95 points	Outstanding
80-89 points	Above average to very good
70-79 points	Average
50-69 points	Below average to poor

Whereas Coates' rating system is 20-point based and is scaled as follows:

20	Excellent. 'Grand vin'	16	Very good
19.5	Very fine indeed	15.5	Good plus
19	Very fine plus	15	Good
18.5	Very fine	14.5	Quite good plus
18	Fine plus	14	Quite good
17.5	Fine	13.5	Not bad plus
17	Very good indeed	13	Not bad
16.5	Very good plus	12.5	Poor

The dataset contains prices for 72 wines from the 2000 vintage in Bordeaux, and all the variables are listed as follows:

$$
\begin{aligned}
Y &= \text{Price} = \text{the price (in pounds sterling) of 12 bottles of wine} \\
x_1 &= \text{ParkerPoints} = \text{Robert Parker's rating of the wine (out of 100)} \\
x_2 &= \text{CoatesPoints} = \text{Clive Coates' rating of the wine (out of 20)} \\
x_3 &= \text{P95andAbove} = 1\ (0) \text{ if the Parker score is 95 or above (otherwise)} \\
x_4 &= \text{FirstGrowth} = 1\ (0) \text{ if the wine is a First Growth (otherwise)} \\
x_5 &= \text{CultWine} = 1\ (0) \text{ if the wine is a cult wine (otherwise)} \\
x_6 &= \text{Pomerol} = 1\ (0) \text{ if the wine is from Pomerol (otherwise)} \\
x_7 &= \text{VintageSuperstar} = 1\ (0) \text{ if the wine is a superstar (otherwise)}
\end{aligned}
$$

The data are available in the file `Bordeaux.csv`, in the online supplement accompanying Sheather (2009).

To analyze effects of ratings and other predictor variables on wine prices, we used scatterplot matrix and box plots provided by Sheather (2009, pp. 10-13), which were made possible by the R language (R Core Team, 2017).

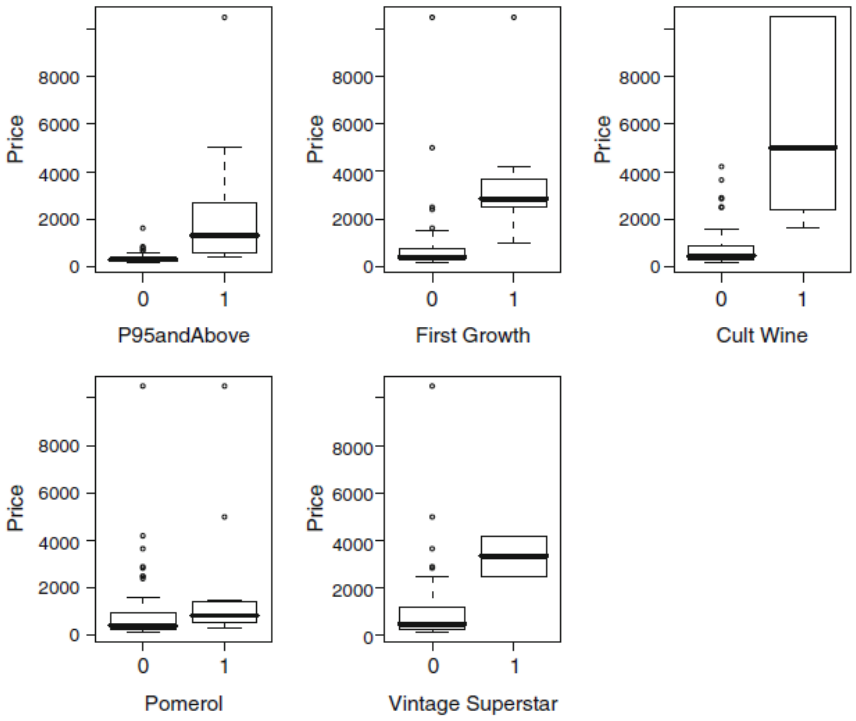

Figure 3: Box plots of Price against each of the dummy variables. From Sheather (2009, p. 11).

3 Results

To begin answering which sommelier has bigger influence on the price of wins, we have looked at the (univariate) regression of Price on ParkerPoints and CoatesPoints in Figure 1. The data points on both plots demonstrate an exponential trend. Taking a closer look at each plot, however, we see that the data points are more spread out in Price versus CoatesPoints. In contrast, data points in Price versus ParkerPoints have a narrower distribution. In other words, the data points are less spread out. This observation implies that there might exist a stronger relationship between ParkerPoints and Price than CoatesPoints and Price. To better understand the relationship between the Price and the two critics' ratings, we take a look at Price on ParkerPoints and CoatesPoints in Figure 2, which is the log transformation of Figure 1. Since this paper solely relies on the exploratory data from Sheather, we have obtained estimates of slopes of the two plots through eyeballing. From the matrix plot, one can tell that the slope is steeper for Price against ParkerPoints. The estimated slope for ParkerPoints is 25 and the slope for CoatesPoints is approximately 8. This result tells us that Parker's ratings have bigger impacts on wine pricing than Coates' ratings.

Because Parker and Coates are both famous as wine critics, it might be interesting to see whether Parker and Coates' ratings are related in any way. To answer this question, we took a look at the third plots in the second row of Figure 1. There seems to be a high correlation between ParkerPoints and CoatesPoints. If we were to draw a best fit line, the line would approximately be aligned with the 45° line. In other words, if Coates has given a high rating on a bottle of wine, it is likely that Parker has also given a high score for the same bottle of wine. However, there is one outlier in the upper left corner of the plot. It has a score of 14 in Coates' rating system, which is "quite good" for Coates. Surprisingly, it has a score of 99 in Parker's rating system, which is "extraordinary" for Parker.

We are also interested in understanding whether any of the dummy variables in Figure 3 has impacts on wine pricing as well. For P95andAbove, First Growth, Cult Wine, and Vintage Superstar, the boxes do not overlap with each other in each of the box plots. Therefore, we can say that there is a price difference between datas with a value of 0 and datas with a value of 1. Take the variable Cult Wine as an example, the price of a non-cult wine is likely to be cheaper than that of a cult wine. For Pomerol, however, there is an overlapping price region between wines that are from Pomerol and wines that are not from Pomerol. Moreover, their interquartile range appears to look similar. There are more outliers for wines that are not from Pomerol, and the outliers appear to lie on the middle to upper end of the price range. There is a bottle of wine that is not from Pomerol but is still priced over 10000 pounds sterling. From the box plot, we would conclude that whether the wine is from Pomerol does not have a significant impact on its price.

4 Discussion

From the matrix scatterplot, there appears to be a positive correlation between ratings and price. Parker's ratings seem to have a bigger impact on the price of wine than Coates' ratings. After log transformation, the former has a slope of 25, whereas the latter has a slope of 8. However, because our explanatory data analysis is 2-dimensional, we cannot assess the relationship between the two sommeliers' impacts on price. We can only see that the their evaluations on wine are highly correlated. To reach a more comprehensive conclusion, we would need to do a multiple linear regression. Furthermore, our data is limited since it only contains 72 Bordeaux wines. In

other words, the data might not be representative of the wine market. In addition, the prices in the data are recorded in September 2003 (Sheather, pp. 8), which means the data could be outdated. Prices from 2003 might not necessarily reflect the market price as of now.

The 72 wines that we choose to study in this analysis are from the 2000 vintage in Bordeaux, which are great in qualities and tastes. These wines could be high in demand in the wine market regardless of what Parker or Coates say about them. Consequently, the determinants of their prices can involve other underlying factors. In terms of commercial impact, our data only contains prices, which can be one indicator of commerical impact but certainly not all. Having a bigger impact on prices does not mean the commelier has a bigger appeal in the market. The wine market, consumers, and the wine itself all play a role in the wine business.

In conclusion, we believe that Parker's ratings have a bigger impact on the 2000 Bordeaux wine price, but we have doubts about Eric Samazeuilh's claim that Parker has more commercial impact than Coates. However, this conclusion only applies to the 72 wines that we have examined in the paper. To generalize our conclusion, we would need more data and take more explanatory variables into consideration. For example, it is possible that the brand names and commercials have influence on the price of wine. Brand names not only retain old customers, but they also attract new customers, thereby increasing demand for their wines. Likewise, commercials can boost sales, thus raising market demands. Commercials also involve costs that might make the price of wines higher. That being said, price of wines depends on multiple factors and a more comprehensive regression that involve multiple variables is needed to reach a statistically valid conclusion.

References

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