Bordeaux 2016 Abstract Submission

Title
An Examination of Tail Dependence in Bordeaux en Primeur Prices and Parker Ratings: 2004 - 2010

I want to submit an abstract for:
Conference Presentation

Corresponding Author
Don Cyr
E-Mail
dcyr@brocku.ca
Affiliation
Goodman School of Business, Brock University

Co-Author/s

<table>
<thead>
<tr>
<th>Name</th>
<th>E-Mail</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lester Kwong</td>
<td><a href="mailto:lkwong@brocku.ca">lkwong@brocku.ca</a></td>
<td>Department of Economics, Brock University</td>
</tr>
</tbody>
</table>

Keywords
Bordeaux en primeur prices, Parker ratings, copula functions,

Research Question
The paper explores the nature of the bivariate distribution of Bordeaux en primeur prices and Parker wine ratings for the period of 2004 through 2010 in search of tail dependence

Methods
Copula function methodology is employed to examine the nature of tail dependence between Parker barrel ratings Bordeaux en primeur prices.

Results
The results indicate that a inverse Clayton or Gumbel copula function best describes the relationship between Parker barrel ratings and futures prices indicating asymmetric tail dependence in the distribution.

Abstract
The Bordeaux en primeur process has existed in France for centuries as a form of futures market. In the spring of each year, after the prior harvest, merchants, wine critics and trade associations gather to taste and rank barrel samples of wines that are frequently eight to ten months old. Wine is then sold ahead of bottling and ultimate release of the vintage, which may be up to two years later. Purchasing en primeur provides the opportunity for the purchaser to secure a vintage before it is bottled and released, typically at a much lower price. It also provides the benefit to the producer of cash flow prior to the release and sale of the wine in the retail mark. The chateau must decide how much wine to allocate to futures sales as opposed to the retail market, when the wine is bottled and released. The en primeur prices are heavily dependent upon the ranking of the wine based on the barrel tastings, despite the uncertainty remaining, associated with the continued aging process. The risk to the
producer emanates from the decision of how much wine to allocate to en primeur sales, with the assuredness of early cashflow, based upon barrel prices. The risk is mitigated the higher the en primeur price, and prices have been shown to be heavily dependent on the critic barrel scores achieved (Noparumpa et al. (2015), Ali et al. (2010), Ashenfelter, (2010), Jones and Storchmann, (2001)).

It has long been known in the Bordeaux en primeur market that that the barrel scores of the prestigious wine critic Robert Parker Jr. have had a great influence on the en primeur price offering by the chateaux. Indeed Parker’s ratings have been largely viewed as the authority on Bordeaux en primeur wines.

In fact, due to huge upward pressure on Bordeaux prices in the recent decade, Parker himself has withdrawn, at times, from announcing his barrel scores prior to the initial price offering by the chateaux. In February 2015 he announced that he will withdraw from the en primeur barrel ranking process altogether. While the evidence of the impact of the Parker ratings on futures prices has been acknowledged and statistically strong the actual distributional relationships has not been identified. For example, is the influence of Parker scores on price uniformly robust across the price distribution? Or are its effects more prevalent only at the upper echelon of scores? Data provided by Noparumapa et al. (2015) for the 2010 vintage provides a visual indication of non-linearity in the relationship between Parker barrel ratings and futures prices. Furthermore, are the effects of Parker scores on price dependent on the region, or dominant grape varietal such as left vs. right bank?

In order to more fully understand the relationship between, and impact Parker ratings on Bordeaux futures prices a copula function approach is employed to model the bivariate distribution. Although much maligned in terms of the 2008 financial crisis copula functions provide for a practical way of characterizing a multivariate distribution, independent of the specification of the univariate marginal distributions, which can capture basic non-linear relationships, also known as tail dependence, over the range of the distribution. Employing Parker ratings and Bordeaux futures prices for the period of 2004 through 2010 we used various information decision criteria to identify the best fitting copula function for barrel ratings and prices. The non linear relationship was examined on an annual basis for each year of the period of study to determine stationarity of the bivariate relationship, as well as for left bank and right bank vintages.

We estimate and test these statistical relationship between Parker scores on en primeur prices using a novel dataset obtained from http://www.bordoverview.com. The dataset comprises futures prices along with a number wine critics barrel ratings, including those of Parker. The period of 2004 through 2010 was chosen as it reflects a time period starting from the reknown 2005 harvest and carrying through 2010 of a stable sustained bull run in futures prices. After 2010 lower sales have plagued the market along with downward pressure on prices. It has been alluded to that Parker’s barrel ratings had a significant impact on rising en primeur prices. In addition, in 2003 Parker’s barrel ratings were released after the en primeur prices were set by chateaux (Ali et al., 2010)

Our results indicate that the predominant, best fitting copula functions among typical bivariate alternatives is an asymmetric Archimedean function. In particular the Clayton with an inverse directional fit or Gumbel copula functions were identified. These results were fairly consistent for individual years and also for left bank or right bank. Such copula functions indicate tail dependence in the data and in particular significantly higher correlations between high ratings and high futures prices. The implication is that although a high rating by Parker was fairly positively correlated with high price, intermediate and lower rankings had much lower correlation with price. This is somewhat consistent with the findings of Ali et al. (2010).

Parker, although the leading wine critic, was not the only one providing barrel ratings. Further study could include an examination of the non linear relationship of wine futures prices and other wine critics, particularly given the recent discontinuation of barrel ratings by Parker.

References


