# Abstract Submission

## Title
Are fine wine prices sensitive to offered volumes? Evidence from a century of the Hospices de Beaune auction

## I want to submit an abstract for:
Conference Presentation

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## Keywords
Wine auction, wine pricing, supply, history, Burgundy

## Research Question
Are fine wine prices sensitive to offered volumes in primary-market auctions?

## Methods
Local projections on a panel of auctioned Burgundy cuvées. Data obtained by digitalizing a century of the archives of the Hospices de Beaune wine auction.

## Results
Achieved prices are largely and persistently affected by offered volumes. The price sensitivity is asymmetric and particularly sharp for large supply contractions.

## Abstract
I digitalize a century of archives of the renowned Hospices de Beaune wine auction to show that achieved prices are largely affected by offered volumes. A change in offered volume persistently alters the price of a given cuvée over several annual auctions. The price sensitivity is also markedly asymmetric and highlights the role played by large supply contractions. The granularity of the data also permits to control for wine quality. Overall, the results contribute to the understanding of fine wine auctions and pricing.

This paper is embedded in a larger research agenda that builds on the digitalization of the entire auction results of the Hospices de Beaune.

The Hospices de Beaune built a prominent Burgundy wine estate over the past centuries. Its vineyards span the entire region, covering the Côte de Nuits, Côte de Beaune, Chablis and Mâconnais. Production averages 160,000 liters per year and is grouped into distinct cuvées, which are sold on the primary market (en primeur) at an annual auction right after the harvest. The auction is heavily scrutinized by consumers and investors alike since it sets prices for the wider (and later on, secondary) market of Burgundy fine wines. The auction archives are uninterrupted and remarkably documented. The extracted panel of cuvées allows to document Burgundy wine prices at the granular level over a century. The final dataset spans the years 1900-2004 and covers offered quantities and achieved prices for over 40 cuvées since their respective inceptions.

I find that wine prices achieved at the auction of the Hospices de Beaune are largely affected by the volume offered. My main findings contribute to the literature on two fronts.
First, I add to the literature on wine pricing by investigating the supply side of auctions. The existing research on wine auctions documents well bidding behavior (McManus et al., 2013, Lecocq et al., 2005, Ginsburgh, 1998 or famously Ashenfelter, 1989), market efficiency (Breeden, 2023 and Cardebat et al., 2017), information asymmetry (Bruwer et al., 2020) and wine quality (i.e., vintage cohorts and age in Breeden and Liang, 2017). To my knowledge, no paper has explicitly assessed the role played by supply in primary-market auctions. Supply effects are discussed in the context of hedonic pricing (see Outreville and Le Fur, 2020, for a review), yet only so for secondary markets when it comes to auctions (i.e., Di Vittorio and Ginsburgh, 1996). I fill this gap by showing that offered volumes meaningfully and persistently affect achieved prices on the primary market for fine Burgundy wines. By setting the initial price, the offered volume also has implications for the pricing (and potentially the corresponding returns) of a wine at later stages, namely on the secondary market.

Second, I contribute to the historical documentation of an established wine market and of its landmark auction. The history of Burgundy is recorded in rich archives that stem from both public and private institutions. The evolution of the Burgundy wine sector is typically documented from a socio-historical viewpoint (see for instance Grillon et al., 2019, Fourcade, 2012 or Labbé, 2012 and 2011), and so is the Hospices de Beaune auction (Berthier and Sweeney, 2012 and Gotti, 2010). My approach is complementary since I instead investigate the economics at play by quantifying a century of archives.

The estimation exploits annual variations in offered quantities and achieved prices across cuvées. The price sensitivity to supply is estimated via local projections (see Jordà, 2005) on the panel of cuvées. Because the offered volume of a cuvée is fixed and announced before the auction, the estimated sensitivities also convey information on demand elasticity. Heterogeneous effects are recovered by interacting the supply sensitivity with the cuvées’ individual characteristics.

I include strict year fixed effects since important demand factors (i.e., purchasing power and bidders’ preferences) and quality determinants (importantly, weather conditions) vary at the annual frequency. This accounts for the annual variations and special factors (like world wars and crises) that affect all of the individual cuvées.

I find a sizable and persistent sensitivity of achieved prices to supply. For a given cuvée, a 1.0 percentage point (pp) increase in offered volume leads to a 0.25 pp decrease in the achieved price. In light of the observed variances, offered volumes can explain large price fluctuations.

The pricing on the primary market is also persistently affected. A shock to supply in a given year alters the price of the corresponding cuvée over the next three annual auctions. This is the case for both white and red wines, and regardless of the classification category of the cuvée. The results are also invariant to several specifications and batches of individual controls.

Interestingly, price sensitivity is increasing in the size of the supply shock. By conditioning the sensitivity on the percentiles of the shocks, I show that the price reaction is particularly marked after large supply contractions. The sensitivity is close to 1.00 (compared to the unconditional estimate of 0.25) for these supply shifts.

I also argue that my estimates do not reflect material changes in wine quality. The volume offered in a given auction depends on the harvest of the estate, which in turn depends on weather conditions. Years with favorable weather (such as adequate sun or nondetrimental frost) tend to come with both a bigger harvest and a higher wine quality (see Davis et al., 2019 for rating evidence on Burgundy), in turn commanding higher achieved prices. All else equal, this implies a positive correlation between offered volumes and prices, which may bias the estimated price sensitivities. In that sense, my estimates are conservative.

My reported sensitivities are nonetheless unaffected by annual changes in overall wine quality since those are already captured by year fixed effects. That is, the estimation relies on variations across cuvées in a given year. In line with this, the results are left unchanged when instead explicitly controlling for weather via the measures of Labbé et al. (2019) for harvest days in Beaune and annual temperatures. This is true for all of their provided measures (which correlate as expected with aggregate offered volumes).

The granularity of the data also contains evidence that the price responses are not driven by the more local changes in wine quality. To see this, I consider an alternative specification in which I condition the supply sensitivity at the subregional appellation level (i.e., Pommard, Volnay, Meursault). The estimates then only rely on variations across cuvées within a subregional appellation; that is, local quality characteristics that are common to an appellation are accounted for. The obtained subregional price sensitivities confirm the main findings of this paper, namely in terms of magnitude, persistence and non-linearity with respect to the size of the supply movements.
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