In a classic article, Tversky and Kahneman (1974) describe heuristic rules that people frequently employ in making judgments under uncertainty. These rules simplify the complex task of assessing probabilities and predicting values, but can often lead to systematic errors. One such heuristic involves making adjustments to an initial value, or starting point, to arrive at a final estimate. Laboratory experiments show that final estimates will often be systematically related to initial values, even when these starting points are arbitrarily chosen. This phenomenon is referred to as anchoring. Anchoring has been recognized for years by economists conducting stated preference surveys to elicit values for non-market goods (Brookshire et al. 1981, Boyle et al. 1985). More recently, researchers have examined whether anchoring influences outcomes in actual markets (e.g., Beggs and Graddy 2009). For example, Bokhari and Geltner (2011) examine whether the asking price is an anchor in the market for home sales. A challenge with analyzing actual market data is that the starting value is outside of the researcher’s control and, thus, may be correlated with information that is relevant to the estimation of the final value. This correlation can confound the measurement of anchoring effects.

In this study, we analyze vineyard sales in the Champagne region of France to determine if Echelle Des Crus (EDC) ratings influence land prices. The EDC ratings were part of a price-setting scheme for wine grapes that began in 1919. Under this system, an appointed board of champagne producers and vineyard operators would set the price for grapes during the harvest season. Grape growers would receive a percentage of this price according to the EDC rating of the village in which their vineyard is located. Originally, the EDC ratings ranged from 32.55 to 100 percent. Later, the scale was revised so that each of the 319 villages in the Champagne region was rated between 80 and 100 percent (the mean rating was 85). This system persisted until 1992, when it was abandoned in favor of a market system for determining grape prices. Thus, the EDC ratings no longer play a role in determining grape prices and, therefore, should
have no influence on vineyard prices, which reflect the discounted value of rents from grape production (in this region, grape production is the highest-valued agricultural use and land development is strictly controlled).

Using data on vineyard sales for the period 2002-2012, we test whether the EDC ratings continue to influence vineyard prices. A finding that they still matter would be consistent with anchoring effects. That is, buyers and sellers of vineyards form estimates of current prices by making adjustments to prices that would have prevailed under the EDC system. If these adjustments are imperfect, the EDC ratings may still have a significant effect on vineyard prices. The empirical challenge we face is that EDC ratings are likely to be correlated with quality attributes of vineyards that affect rents from grape production. The main goal of the EDC ratings was to establish a hierarchy of vineyards reflecting the quality of grapes for making champagne. If we simply regress vineyard prices on the EDC rating and additional vineyard attributes, unobservable vineyard characteristics that are correlated with the EDC rating may bias our estimates of anchoring effects.

To identify anchoring effects on vineyard prices, we instrument for the EDC rating using the distance from each vineyard to the major champagne production centers (the cities of Reims and Epernay). Champagne production is labor and capital intensive and is mostly done by champagne “houses” in Reims and Epernay (e.g., Moet & Chandon) who purchase grapes from growers in the surrounding area (to be labelled as champagne, the grapes must come from the designated Champagne viticultural region). Under the EDC system, the governing board set a “farm gate” price for grapes—that is, the price that growers would receive at the vineyard as opposed to the champagne house. When originally established in the 1910s, EDC ratings were adjusted to account for transportation costs to Reims and Epernay. At this time, grapes were transported by horse and cart over dirt roads, increasing the potential for losses of grapes due to damage and spoilage. With modern road infrastructure and trucks, and given the small size of the Champagne viticultural region, transportation costs are unlikely to affect current prices for vineyards. Thus, we expect distance to Reims and Epernay to be correlated with the EDC rating but uncorrelated with errors in current vineyard prices. Our argument for exogeneity is based on the observations that 1) the cities of Reims and Epernay were founded centuries prior to the planting of vineyards, 2) the location of high quality vineyards depends on soils, aspect, slope, and other geological factors, and 3) our instrument is the crow-flies distance from vineyards to Reims and Epernay rather than the road network distance, which might be endogenous if roads were built to access high-quality vineyards.

Our data set includes 12,433 transactions in the Champagne region involving vineyards over the period 2002 to 2012. The transactions data include the price, the date of the sale, and the size and location of the parcel. These observations are matched to additional data sets to identify weather and geographical features of the parcels, including altitude, slope, aspect, and soils. As well, we compute the crow-flies distance from each parcel to Reims and Epernay.
separate data set includes the EDC ratings, grape prices, and other variables for each village in the Champagne viticultural area.

We have preliminary results are consistent with the hypothesis of anchoring effects. We find that distance to Reims and Epernay has a negative effect on the EDC ratings, as expected, and that distance explains a sizable portion of the variation. Consistent with anchoring, we find that the average grape price in a village is positively related to the EDC rating after 1992 (this result is produced by instrumenting for the EDC rating). Grape prices are correlated with vineyard rents and so we expect similar findings to emerge when we use the larger data set on transactions. Beyond producing instrumental variables estimates, we will also take advantage of the approximately 1000 repeat sales in our data. Beggs and Graddy (2009) develop a test for anchoring based on whether the current sale price is affected by the previous sale price, controlling for overall changes in market conditions.

In conclusion, our study makes two contributions that will be of interest to AERE members. First, our results have implications for hedonic analyses. If housing and land prices are influenced by anchoring, then researchers may need to control for these effects in hedonic regressions to ensure consistency. Second, there is great interest among environmental economists in using environmental markets to achieve efficiency gains with respect to natural resource use, pollution control, etc. We provide a case study on the adoption of a market mechanism and the degree to which the previous institutional structure continues to exert influence on market transactions in ways that reduce efficiency.

References


