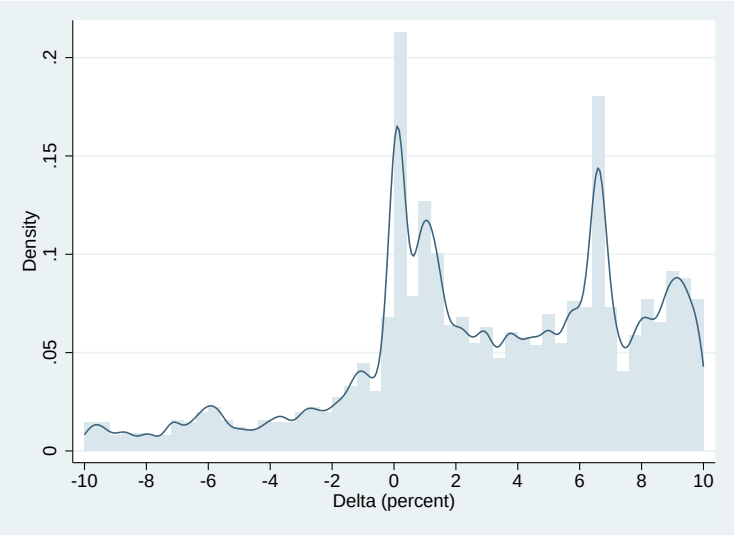

Figure 1: The distribution of bid difference Δ, as defined in the Chassang (2021) paper. The absence of an absence at $\Delta = 0$ indicates that collusion was likely not present in these auctions. Density estimation parameters match those of the original paper, with a smoothing width of 0.75%.

Figure 1 replicates the figure from Chassang et. al. (2021). Unlike the results from that paper, there is no evidence of missing bids near $\Delta = 0$—this suggests that there is no collusion present in this sample (at least of the type studied in the paper). These data exhibit the highest bid density slightly above zero, suggesting that many auctions have one or more losing bids very close to the winner—inconsistent with the behavior seen in the source paper, where collusive firms arrange for (intentionally) losing bids to be significantly higher than the designated winner's bid. The lack of missing mass near $\Delta = 0$ persists even if we only consider the subset of bids that are greater than 90% of the reserve price, where the incentive to collude is highest.

However, the distribution of bids is significantly wider here than in the original dataset. In the paper, the bulk of observations were contained in the interval $-0.05 < \Delta < 0.05$—the authors note that this is associated with a very competitive market, and one where a small change in bid is associated with a large change in expected profit. In our data, the distribution does not fall off nearly as quickly. I believe this has two implications. First, there would be less of an incentive to collude, since a competent and effective firm could take advantage of low competition to increase profits without resorting to collusion. Second, if collusion *were* present, it is less important that the cartel enforce a "no bid mass near zero" rule, since the incentive to deviate is lower. Figure 2 further examines the density falloff with a window three times larger than Chassang's.

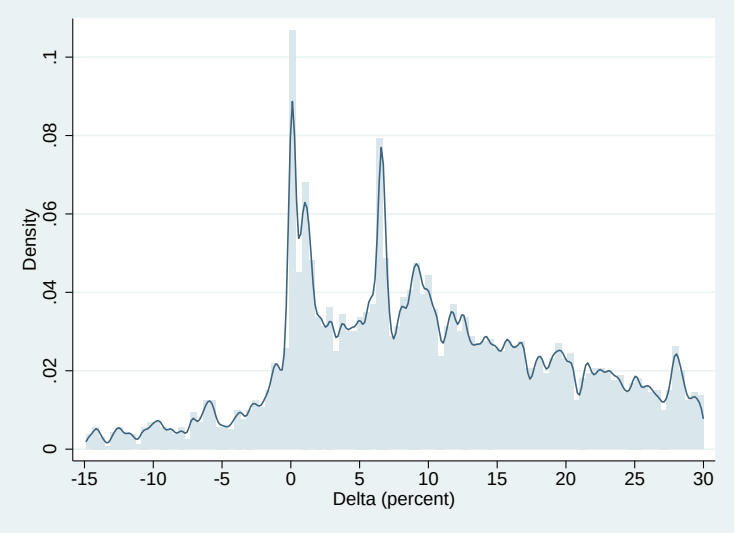

Figure 2: Redoing Figure 1, but with a broader window. Note that the distribution, even at this relatively wide observation window, does not rapidly taper.