Essays on Structural Estimation of Auction Models

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This dissertation studies two sorts of auctions from the empirical perspective: online auctions and scoring auctions. In addition to the importance of auctions from a practical perspective, there are several reasons auctions have been a fruitful research field for econometricians. First, the quality of auction data is often higher than typical data sets in industrial organization. Second, structural estimation of auction models is one of the most successful applications of structural econometrics.

In the first essay "Estimating Inefficiency in Online Auctions", we focused on the inefficiency of online auctions. In online auctions, anonymous people can become both buyers and sellers. This may lead to greater potential for Internet fraud. Then, a bidder with the highest valuation may fail to win the item if she estimates the possibility of being defrauded to be high. From this point of view, online auctions are inefficient. The main purpose of the first essay is to estimate the magnitude and the frequency of inefficiency in online auction markets.

The second essay "An Empirical Model of Online Common Value Auctions with Buy-It-Now Prices" studies auctions with buy prices from the empirical perspective. Most online auction sites allow sellers to set a fixed buy price. In online auctions with buy prices, bidders participate in auctions while observing the buy prices. We constructed a

structural econometric model of online auction models with buy prices.

In the third essay "An Empirical Analysis of Bundling Sales in Online Auction Markets", we focused on bundling auctions in the online auction market. In the online auction market, some sellers often sell two or more items in bundling auctions. However, other sellers sell the separately. We evaluated how aggressively bidders in separate auctions bid and compared the revenue of bundling auctions and separate auctions.

The final essay "Structural Estimation of the Scoring Auction Model" discusses scoring rules used in public procurement. In many countries, when governments decide the suppliers of public goods, they often utilize scoring auctions. In scoring auctions, the winners are determined not only by the prices but also by the quality that bidders bid. The main purpose of the final essay is to construct a structural estimation method of the scoring auction model that covers a broad class of scoring rules.