

Estimating Inefficiency in Online Auctions

Yohsuke Hirose

Graduate School of Economics, University of Tokyo

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Abstract

In this paper, inefficiency in online auctions is estimated. Online auctions can be inefficient due to the Internet fraud. A typical example of Internet fraud is sellers do not send goods to winning bidders though they have received payment. Therefore, bidders always have risks to be defrauded by a seller and these risks may lead to transaction failure.

In contrast, “real-world” auction is efficient mechanism (i.e., the bidder with highest valuation always wins the item at auction) within the independent private-values (IPV) paradigm. In online auction, however, the bidder with highest valuation can fail to win the item if he estimates the possibility to be defrauded. Therefore, online auction can be inefficient. Though, efficiency is an important consideration in auction theory, very few attempts have been made to estimate inefficiency in online auction markets. One possible explanation for the lack of attention is the difficulties of identification of inefficiency. To identify the inefficiency, usually, the real-world auction data is needed to compare the online auctions with the real-world auctions. Unfortunately, these data are often not available.

In this paper, dividing the private values in online auctions into the evaluation of risks and the (original) willingness to pay, the distribution of private values is estimated using only online auction data sets under our identification conditions. Consequently, inefficiency in online auction is estimated without real-world auction data sets.