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Essays on auctions

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Summary

This thesis studies the roles of reserve price and premium tactics in a number of standard and non-standard auctions, extending the existing literature to the cases where the participants may be risk averse or risk preferring, and where the bidders may have the possibility to collude. The main contributions are Chapters 2 , 3 and 4, summarized as follows.

Chapter 2 focuses on the effects of buyer and seller risk aversion on the seller's optimal reserve price in standard Dutch or first-price auctions (FPA) and English or second-price auctions (SPA). Sharp results are obtained by restricting attention to the otherwise simplest setting, that of symmetric and independent private values. It is shown that when the seller and/or the buyers are risk averse, the seller's optimal reserve price will be lower in the FPA than in the SPA. Risk aversion thus makes the FPA, in general, more ex post efficient than the SPA. In either auction, a more risk averse seller will set a lower reserve price. Thus, the more risk averse the seller, the more ex post efficient are both auctions. In addition, the seller sets a lower reserve price in the FPA if the bidders are more risk averse. The general conclusion of this chapter is that risk aversion can be

a disguised blessing in terms of ex post efficiency, because it induces the seller to lower the reserve price and leads to a higher probability that the object is allocated to the one who values it most.

Chapter 3 examines how premium auctions may deter bidder collusion. The main idea is that a premium auction may discourage “strong” bidders (e.g., those who have a serious interest in acquiring the object) to form a cartel, because “weak” bidders (e.g., “fortune hunters”) can be attracted to the auction in quest of the premium and bid aggressively to spoil the potential profits of the cartel. The collusive properties of the first-price, English, and English premium auctions (EPA) are derived and then investigated using a laboratory experiment. The experiment confirms the theoretical prediction that the EPA is less conducive to collusion than the other auction formats. The EPA is therefore likely to outperform the English and first-price auctions in generating a higher expected revenue.

Chapter 4 develops a theory of the EPA for the canonical case in which risk averse or risk loving bidders with symmetric private values compete. The aim of this chapter is to sharpen and enrich the current understanding about the premium auctions, as these have been studied by far only under the assumption of risk neutrality. The chapter establishes the existence and uniqueness of the EPA symmetric equilibrium, and shows that, in general, the premium reduces the riskiness of revenue and induces all bidders to bid higher than their values. However, the *net* expected revenue in the premium auction strictly decreases in the bidders’ risk aversion. These results suggest that in the symmetric private values settings, revenue maximization is not likely to be the seller’s motive for the use of premium auctions when the bidders are risk averse. Instead, reducing revenue risk and encouraging more entry are plausible reasons for the use of premium tactics in practice, as the EPA is always more attractive to the risk averse buyers than the English auction.