UNIFORM PRICE DOUBLE AUCTION MARKETS WITH INTERDEPENDENT VALUES: AN ASYMPTOTIC APPROXIMATION APPROACH

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This paper studies multiple units supply and demand uniform price double auctions in the general symmetric interdependent value environment. The direct analysis of the problem is difficult because the single crossing conditions do not hold in double auctions with a finite number of players. Thus we employ the asymptotic approximation method to analyze the problem. First, every trembling hand perfect equilibrium strategy in finite market converges to the price taking behavior and aggregates information as the number of market participant increases and the bid grid size goes to zero. Second, equilibrium prices are a consistent and asymptotically normal estimator of the fundamental value of the asset. Third, we derive nonparametric estimates on equilibrium bids in finite markets. Theoretically, these results strengthen the role of uniform price auctions as a foundation of the market mechanism. Practically, these results allow us to conduct counterfactual analysis of auction markets.

Keywords: Uniform Price Double Auctions, Interdependent Values, Information Aggregation, Asymptotic Approximation.

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