

## Auctions for Radio Spectrum (E): Debriefing

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This document contains observations that may be useful for understanding the outcomes of the auction simulation.

### Does Price Measure Value?

“A cynic knows the price of everything and the value of nothing.”

—Oscar Wilde, *Lady Windermere’s Fan*

Bidders understate their valuations in first-price auctions, so the auction prices understate value.

The greater the number of bidders, the closer the bids are to actual valuations. So with sufficient bidding competition, the winning bid is close to the highest valuation.

### Sellers’ Strategies

The seller must put herself in the bidders’ shoes and think about how she would respond to alternative selling schemes.

The seller will make decisions without full knowledge in that she doesn’t know exactly what the item is worth to the bidders, or who values the item most highly.

Sellers should seek to stimulate competition. Competition among potential buyers is a potent source of bargaining power. Sellers can stimulate competition by

- increasing the number of bidders;
- reducing the inherent differences among them (informing).

Sellers should also seek to decrease information asymmetries by

- informing bidders of their rivals’ bids and releasing any information the seller has about the true value of the items.

The risk of a minimum (reserve) price is that all bids will fall short, and the item will not sell. However, a reserve price may force a bidder to bid above what otherwise would have been necessary from the competition. The expected gain from a higher bid might offset the risk of no sale.

### Bidders’ Strategies

From the bidders’ perspective, rational bidding involves the following:

- In an open auction, remaining in the bidding until the price reaches the bidder’s own valuation.
- In a sealed-bid auction, guessing the valuation of the next highest bidder and bidding this amount.

The winning bidder receives a profit equal to the difference between his or her own valuation and the next highest valuation.

### Auction Design

Open auctions are informative.

- “Provided there is some common element to bidders’ valuations, on average the winning bid will be higher in an open auction than in a sealed-bid, [because of learning and revision of valuations]” (McMillan, 1996, 142).
- The more information the bidder has, the more he will trust his own information, and so the less correction he should apply in shading his bid below his valuation.

- In a pure private-value auction, bidders' valuations will not be revised given knowledge of others' irrelevant valuations.

### The Seller's Information<sup>2</sup>

In a common-value auction, the better the bidders' information, the more aggressive their bidding, and the less they fear the "winner's curse."

The seller should reveal her information about the true value of the item to get higher bids on average.

Sometimes, the bidder's valuation will fall with the seller's information, but on average it should rise since the bidder is more confident in his valuation and so less concerned about the risk of overbidding.

The seller must release all information, not just

value-enhancing information in order to establish her credibility.

### The Revenue Equivalence Theorem

Under certain conditions, sellers can anticipate the same expected average revenue from any of the four primary types of auction: English, Dutch, and first- and second-price sealed bid. These conditions are as follows:

- Bidders are risk-neutral, and bidder wealth is not a factor.
- Bidders' estimates about the value of the object for sale remain independent of each other.
- The population of bidders does not vary with the kind of auction.
- There is no entry fee to bid.

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### References

**Marks, Robert.** 2004. "Theme E: Tenders, Auctions, and Bidding in Competition." Retrieved August 2007, from School of Economics, University of New South Wales, Australia. Web Site: <http://www.agsm.edu.au/bobm/teaching/ThS/llect06pr-3.pdf>.

**McMillan, John.** 1996. *Games, Strategies, and Managers*. New York: Oxford University Press.

### Endnotes

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<sup>2</sup> See Robert Marks, 2004.