



Auctions and Bids





Auction Mechanisms

- The open, ascending, outcry auction (*English auction*)
- The open, descending, outcry auction (*Dutch auction*)
- The competitive sealed bid
- High bidder wins at the second-high price (the *Vickrey* or *philatelist auction*)
- The reciprocal bid or buy-sell bid



English auction

- The highest bid wins the auction
- Reservation Value (RV) analysis
- Consumer's surplus: $RV - B$
- Players' behavior not to be assumed rational
- The Babylonian Wife Auction (Herodotus)

- Tulips in Holland, cattle market, ecc.

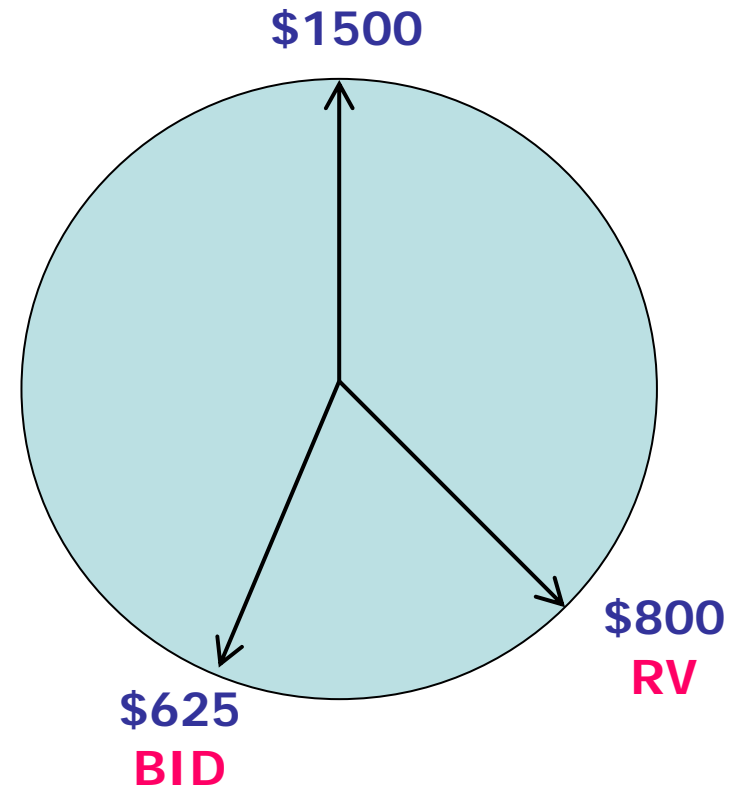
- Reservation Value (RV) analysis

- Consumer's surplus:

$$RV - BID = 800 - 625 = 175$$

- As time goes by the size of the surplus and the risk both *increase*

- **MBOO analysis**





Competitive Sealed Bid

- Each of several bidders submits a sealed-bid value for a given prize.
- The highest/lowest bid wins the auction
- Es.: the right to drill, government projects etc.
- Fuzzy knowledge about:
 - The other's valuation of the item
 - Other's bidding strategy
- RV analysis
- MBOO analysis



MBOO analysis

- MBOO: Maximum Bid Of Others
- Decision tree analysis
- Maximize expected monetary value:
 $(RV-B) * F(B)$



Vickrey Auction

- The highest bid wins the prize but pays the auctioneer not the highest bid, but the second highest bid.
- Rare stamps (philatelist auction)
- No need for MBOO analysis
- Honesty pays for once



Subjective elements

- Mistake/overestimate/underestimate
- RV could change if I think about the worth of the item for the other bidders
- Most subjects do not make coherent choices: do not act strictly in conformity with expected utility theory



The tickets problem

- Randomize
- Compensate the loser
- Sell the ticket
- RECIPROCAL BUY-SELLER OFFER



Reciprocal Buy-Sell Bids

- One designates the price for which he would either buy/sell the ticket
- The other player designates which side of the deal he wants
- A little modification:
 - Both parties do this simultaneously with a split-difference compromise
 - Possibility: toss a coin to determine who announces the price and who selects the buy or sell option



Combinatorial Bidding

- Several items are auctioned off
- Different bidders have preferences for particular combinations of commodities
- The value of a given lease depends on the other leases that bidders win.
- Serial/Parallel bidding
- ES: UMTS auctions