

Candy Auction

Jar contains an integer number of candies

The winner of the various auctions will get 2 cents per candy.

You are bidding for the money in these envelopes, *not the candy!*

Playing for real money, by the way.

Things sold by Auction

radio spectrum

prize bulls

race horses

off-shore oil leases

timber

antiques

tobacco

fresh fish

used cars

cut flowers (Holland)

coins

stamps

wine

art

houses (80% in Australia)

U.S. Treasury bills

stocks

commodities:

pork bellies

OJ

gold

wheat

foreign currency

TV broadcast rights for sports

corporations

celebrities' signatures

Things procured by governments via auction

ambulance services
building inspection
civil defense
clerical work
education
electricity supply
fire services
flood control
garbage collection
hospitals
irrigation
licensing, zoning and
subdivision control
military goods
mosquito control
park maintenance
payroll services
personnel services
pollution inspection

public health services
public relations
research and development
roads and highways
snow clearing
street lighting
tax collection
transit systems
voter registration
weather forecasting
weapons

First Price Sealed Bid

Each bidder submits a bid in an envelope. The bids are opened at the same time, and the high bid wins the object and pays his bid.

In the case of bidding to supply something, the low bid wins.

Examples

Government sales of timber and offshore oil, government purchases of french fries, airplanes, road construction, pencils, zero gravity toilets...

Typically used by bureaucracies (government or large firms) to sell or buy things

Second Price Sealed Bid or Vickrey

Bidders submit bids in envelopes, which are opened simultaneously. High bidder pays the second highest bid.

Examples

Used to sell radio spectrum in New Zealand

Observation: Suppose you know the value of the object for sale to you:

You should bid your value.

English or Oral Ascending

An auctioneer calls out an increasing series of prices, until no bidder is willing to top the current price.

To buy things, prices go in the reverse direction.

Examples

antiques, real estate, art, wine, tobacco

Used by the Babylonians.

Typically used by private individuals to sell or buy things.

U.S. Government regularly sells timber by both First price sealed bid and English auctions.

Dutch or Oral Descending

An auctioneer calls out a decreasing series of prices, until a bidder says "I'll take it at this price".

Examples

Tulips are sold this way in Holland. Fish in Israel are sometimes sold this way.

Bidding for TV Rights To the Olympic Games

Year	City	Network	\$ Millions	\$M 1960	Notes
1960	Rome	CBS	½	½	
1964	Tokyo	ABC	3	2.9	
1968	Mexico	ABC	5	4.3	
1972	Munich	ABC	13	9.2	\$3M loss
1976	Montreal	ABC	22	11.5	No competition
1980	Moscow	NBC	87	31.1	Insured against US nonparticipation by Lloyds
1984	LA	ABC	300	85.6	Network supplied \$75M in facilities
1988	Seoul	NBC	300-500	75-127	Includes royalties

Seoul Games Royalty Payments (Millions of \$)

TV Advertising Revenue	Payment
<600	300
637.5	325
787.5	425
862.5	475
>900	500

About the Moscow Olympics

"They want us to be like three scorpions, fighting in a bottle. When it's over, two will be dead and the winner will be exhausted. Their plans involved an unending series of bids that went on as long as two guys were able to stand. There was a new sealed bid every 24 hours. The winner would be announced, and then the losers could up the ante by a minimum of 5%"

-Roone Arledge, President of ABC sports

Winner's Curse

"I paid too much for it, but it's worth it."

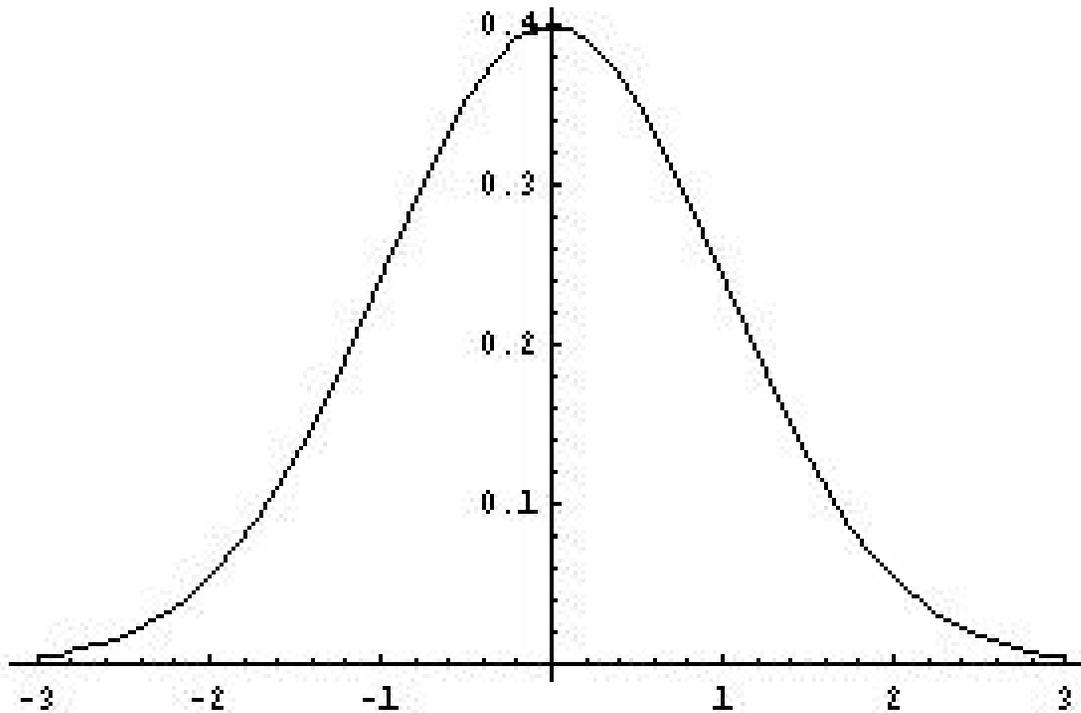
-Sam Goldwyn

The winner's curse is the fact that *the bidder who most overestimates the value of the object wins the bidding.*

Uncertain resale value can induce winner's curse.

Should reduce bid to adjust for this, and reduce more the more bidders there are.

Estimates tend to follow a normal distribution, or bell curve. The highest estimate, on average, is larger than the average estimate.



Adjustment Needed, in Standard Deviations, for Given Number of Bidders										
2	3	4	5	10	15	20	50	100	500	1000
0.564	0.846	1.03	1.16	1.54	1.74	1.87	2.25	2.51	3.04	3.24

Reserve Prices

In most of the auctions, it is common to post a *reserve price*, or minimum acceptable bid.

Reserve prices are often kept secret; you don't know if you've won the object until after the bidding has stopped.

Entry fees

Sometimes bidders are charged an *entry fee* for participation, whether they win or lose.

Royalties and Cost-Sharing

In offshore oil leases, the government collects the winning bid plus 16% of the value of production.

In bids by book publishers for famous author's books, the publishers often bid an advance and a royalty.

Example: Bidding for the Seoul Olympics

In bidding to supply trident submarines, the government picks up between 70 and 85% of the cost; i.e. makes a payment of

bid + percent of cost.

In all these cases, the *payment is linked to the actual outcome*: the higher the value of the outcome, the higher is the payment (similarly, the lower is the cost, the lower is the payment).

Conclusions

1. First price sealed bid and Dutch are the same strategically.
2. Vickrey auction is demand-revealing: if you know your value, bid it. However, Vickrey auction is still subject to winner's curse.
3. Problem of winner's curse is smaller in English auction, because other value estimates revealed, reducing uncertainty.
4. Winner's curse requires a downward adjustment in estimate which is larger the more bidders there are.
5. English auction will tend to have higher prices than sealed-bid auctions.
6. It is in the seller's interest to adopt the policy of revealing accurate information about value.
7. Entry fees are equivalent to reserve prices in that they raise the average price at a cost of not selling some of the time.
8. Cost-sharing and royalties reduce winner's curse problem.