LECTURE 2.5

AUCTIONS

AUCTIONS

Auctions are just games. The design of auctions can be important for organisations given they are often used to allocate resources.

What is the best bidding strategy in a private value auction?

Let's consider a very simple example of a Vickery auction, a second price sealed bid auction, ala eBay.

The question is, what is the optimal bidding strategy?

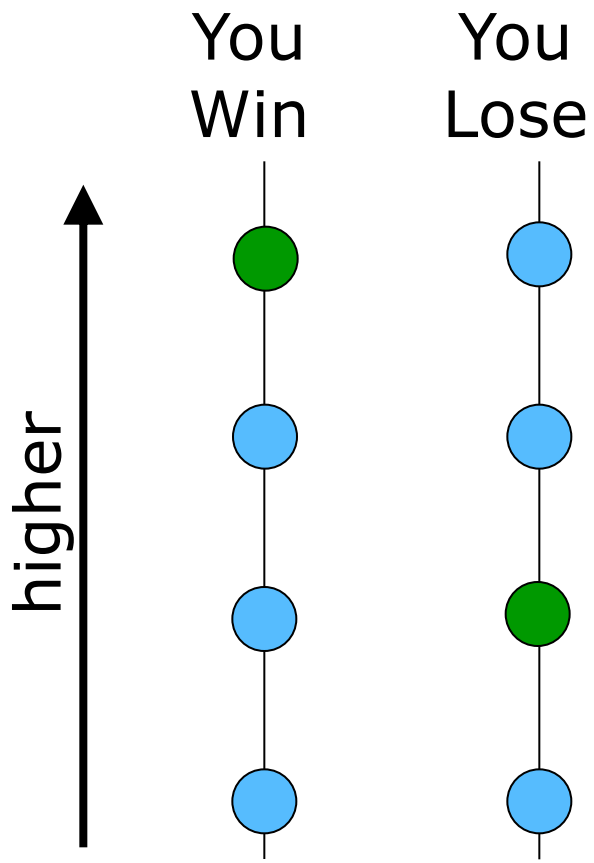
To tell the truth…!

AUCTIONS – SECOND PRICE SEALED BID

Your bid

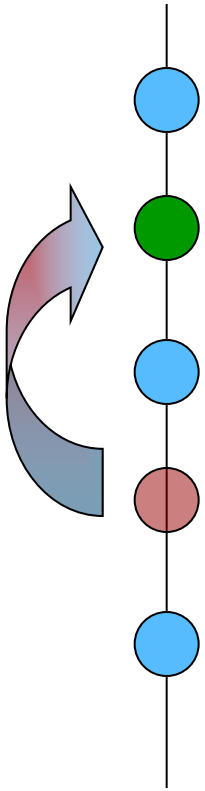
Others' bids

Your value



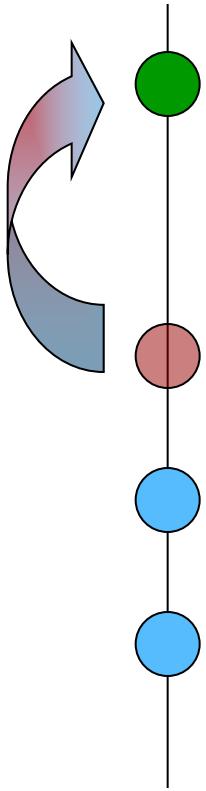
AUCTIONS – BIDDING HIGHER THAN VALUATION

Case 1



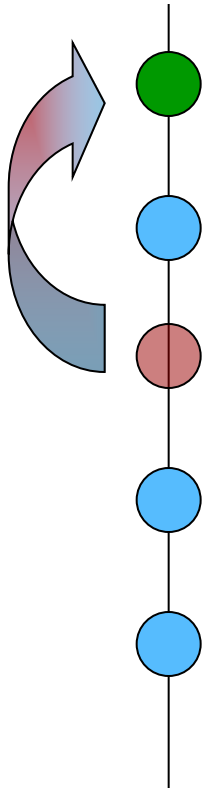
No difference

Case 2



No difference

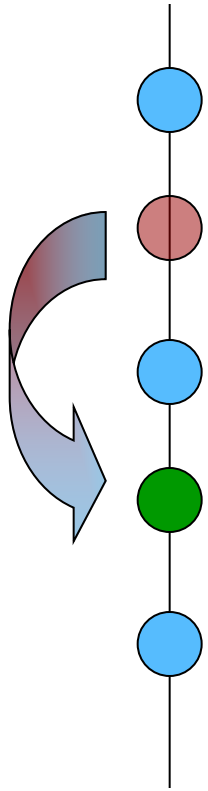
Case 3



Lose money

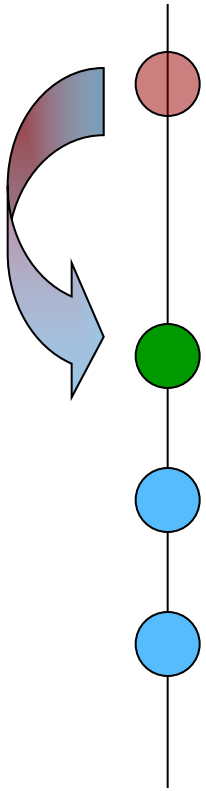
AUCTIONS – BIDDING LOWER THAN VALUATION

Case 1



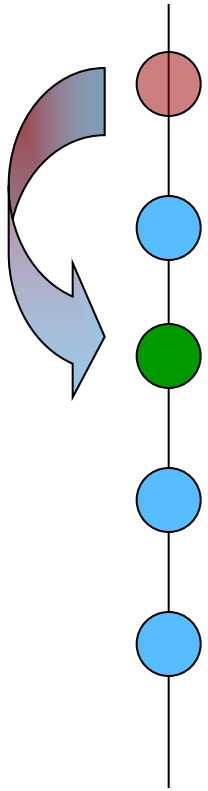
No difference

Case 2



No difference

Case 3

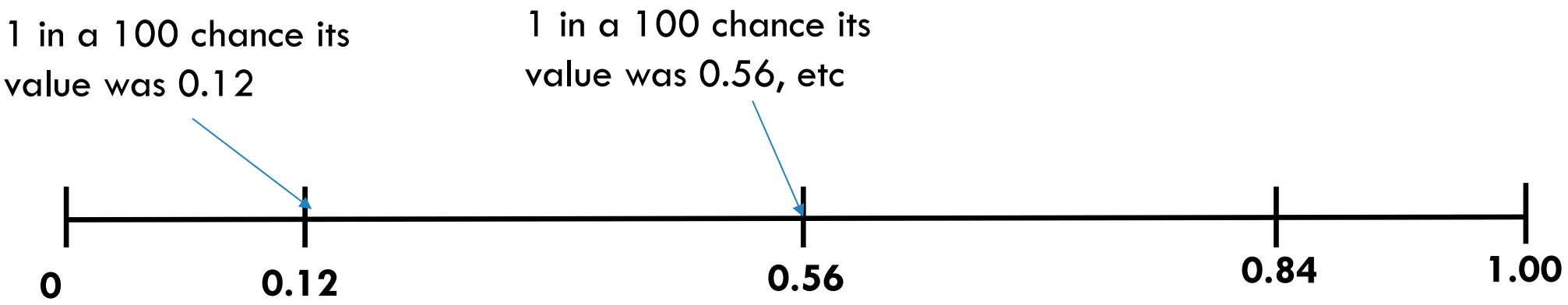


Lose money

AUCTIONS

Now let's consider a common value auction.

Bidders for target firm are told that value of firm is uniformly distributed between 0 and 1.



AUCTIONS

Bidders also told that whatever value the firm has to the seller, it will be worth 1.5 times that to the buyer.

Think of this as you as the buyer can do better than the current owner at maximising value. That is, you purchased a firm that was worth 0.56 to the seller, then it was worth 0.84 (=0.56 ✖ 1.5) to the buyer.

In general, we expect the seller to sell the firm if the offer made by the buyer > value to the seller

The question is, what is the optimal bidding strategy?

AUCTIONS

Assume that the buyer chooses a bid of 0.48 (note this is chosen entirely randomly, and we could have chosen any figure between 0 and 1 and the argument we set out below will continue to hold)

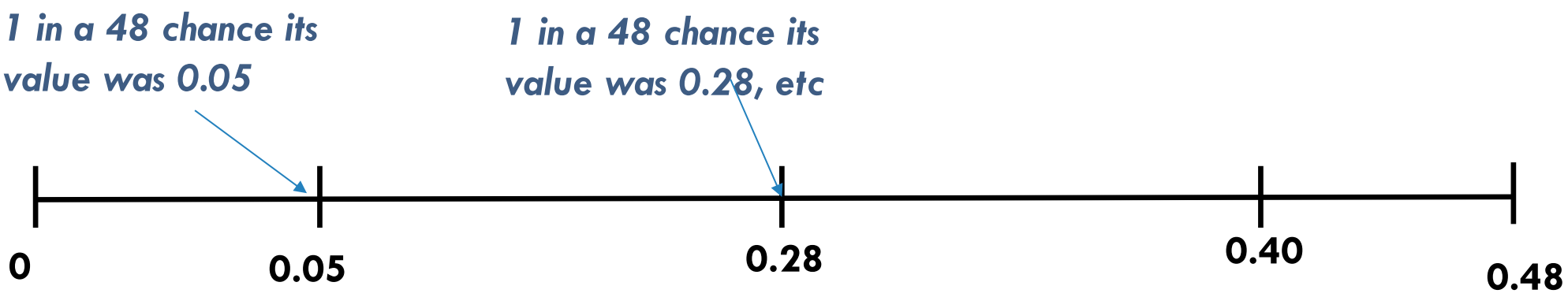
- If the bidder offers 0.48, the seller will only sell if the value to the seller is < 0.48. In this case, the average value of the firm (to the seller) will only be 0.24.
- Why? Consider how the value of the firm is distributed assuming its value is < 0.48.

AUCTIONS

Note although the average value of the firm (to the seller) will only be 0.24, the average value to the buyer will be 0.36 (=0.24 ✖ 1.5).

If the buyer pays 0.48 for something worth only 0.36, s/he will lose.

The winners curse



AUCTIONS

Intuition: As a buyer, you only get to buy the item if you bid more than it is worth (to the seller). Given uncertainty about its true value (asymmetric information), you will tend to bid too much and lose.

What is the best strategy for the buyer?