

Double Auctions

- DESCRIBE THE MODEL OF DOUBLE AUCTIONS
- WHAT ARE THE POSSIBLE MATCHINGS IN DOUBLE AUCTIONS?
- HOW IS IT POSSIBLE TO FIND THE MATCH BETWEEN BUYERS AND SELLERS MAXIMIZING THE SOCIAL WELFARE?
- CAN THE VCG MECHANISM BE ADOPTED FOR DOUBLE AUCTIONS?
- REPORT AN EXAMPLE IN WHICH THE VCG MECHANISM IS NOT WEAK BUDGET BALANCED
- DESCRIBE THE FUNCTIONING OF THE McAFEE AUCTION
- SOLVE THE FOLLOWING PROBLEM WITH THE VCG AUCTION AND WITH THE McAFEE AUCTION

$$b_1 = 10$$

$$b_2 = 7$$

$$b_3 = 4$$

$$b_4 = 3$$

$$b_5 = 1$$

$$s_1 = 0$$

$$s_2 = 0$$

$$s_3 = 5$$

$$s_4 = 6$$

$$s_5 = 8$$

$$s_6 = 10$$

OPTIMAL ALLOCATION:

$$\left. \begin{array}{l} (b_1, s_1) \\ (b_2, s_2) \end{array} \right\} \text{VALUE} = 17$$

McAfee ALLOCATION

$$\left. (b_1, s_1) \right\} \text{VALUE} = 7$$

VCG payments:

$$P_{b_1} = 7 - 7 = 0$$

$$P_{b_2} = 10 - 10 = 0$$

$$P_{s_1} = 12 - 17 = -5$$

$$P_{s_2} = 12 - 17 = -5$$

McAfee payments

$$P_{b_1} = 7$$

$$P_{s_1} = -7$$