

How to solve an adverse selection problem with two types?

The contract involves a menu of pairs (x,t) where x is an allocation and t a payment. Given there are two types, there must be two such pairs.

To design the mechanism, the Principal maximizes her expected payoff subject to incentive compatibility constraints and individual rationality constraints (and maybe others).

IC means that each type prefers the allocation designed for him. IR means that each type prefers to accept the contract rather than not.

Step 1: determine the transfers that satisfy the constraints and are in the best interest of the Principal. Use a graphical representation, or work out the constraints two by two. Note that those constraints are compatible under a condition C.

Step 2: Plug back the transfers in the objective function. Then the objective function is only a function of the two allocations.

Step 3: Maximize the objective function over the two allocations to get two first order conditions, and solve. Check that C is satisfied at equilibrium [it will always be in this class]

References: price discrimination, regulation, problem set 1