23 - Asymmetric information: silence, signaling and suffering education

• We may know different things about the quality of an item.
• The *signal* we give may tell the other how we value it.
• A good signal needs to be differentially costly across types.

Example

• Cournot games – competing in quantities
• Each firm as marginal costs
  • \( \text{cost} = \text{costMid} + |e | \)
• Each player knows his own costs. Opponent can reveal his costs.
• Suppose you know both costs, but your opponent does not.
• Suppose it costs no money to reveal costs. Should you do it?
• Only reveal costs if lower. If I have low costs, I want the other side to know that I have low costs because it will cut back its production which helps me.
• I’d like the other side not to know if I have high costs, but that’s not quite the question we asked.
• if I don’t reveal that I have middle costs, the other side, Firm B, knows that my costs are not low.
• Lesson: often the lack of information, the lack of somebody signaling to you, the lack of somebody trying to tell you something, conveys information.
• "silence speaks volumes”
• Watson to Sherlock Holmes: How did you solve the murder? Holmes says, it's because of the barking dog. And Watson says, what do you mean it's because of the barking dog? The dog didn't bark. Holmes says, that's exactly the point, the fact that the dog didn’t bark, didn’t make any sound tells us who must have committed the murder. It's very easy to fall into the trap of being Watson and to ignore the thing that didn’t happen and focus on the things that did happen.

What about information that is not easily verifiable?

• In interview, asked if you want to work for them. Anyone can say it, but what if you really do?
• What if signaling is costly?
• What if you want to convey you are a good worker? Say 10% Good and 90% bad. Need to pay good workers more, but are worth it.
• If they can’t identify good workers, pay all the average worth – which is less than a good worker will accept.
Costly signaling

• Getting MBA
  – If you are a bad worker, getting an MBA is more costly as it takes you longer. Call it 10
  – If you are a good worker, it is cheaper. Call it 5.
  – We assume opportunity costs are zero.
  – We are talking pain and suffering.
  – Need employer to believe that getting an MBA means a good worker and not getting an MBA means bad worker

Separating Equilibrium

• Good workers get MBA – paid 50
• Bad workers don’t get MBA - paid 32
• No one wants to deviate – if equilibrium
• Assume MBA costs 5 per year for 3 years
• Payment is 50 – 5*3 = 35 (for one year, then die)
• Bad workers: get 30 (no MBA)
• If bad workers got BMA, cost 10 per year (pain)
  • get 50-3*10 = 20. Not a good deal for them.
Lessons

• If you lower the standards it takes to get a high school certificate, and then you perhaps lower the standards to get a college degree, what are you going to see happen? You're going to see qualification inflation.

• What this model predicts is if you get rid of this cost difference then *workers will find a new way to raise the cost difference* again (getting more and more degrees).

• There is *no learning in the model*. If we believe this model of education in which you don't learn anything, education is just being used by those people who are good anyway to separate from those people who were bad anyway, then education in this model is socially wasteful.

24 - Asymmetric information: auctions and the winner's curse

common values
private values
continuum - partially private, partially common
Winner’s curse

• Good examples
• Only win if your bid is higher.
• winning bid >> true value
• You only care about the actual value if you win.
• How many coins do I think there are given that everyone else estimated lower than I?
• Bid as if you know you win, then you won’t regret winning.

Revenue Equivalence

• Which of first price or second price is going to raise more revenue, assuming independence, symmetry, private values?
• Any such auction yields exactly the same revenue, in expectation.
• This is true for any auction you can come up with as long as in equilibrium the highest value wins.