The Market for Lemons (Akerlof, 1970)

Setup:

- each seller has either a good car or a bad car (+ knows which)
- bad car value = 4 to sellers, 6 to buyers; good car = 10 to sellers, 12 to buyers
- assume #buyers > #sellers (for simplicity)

Assume: all cars look identical to buyers. (⇒ will sell at roughly the same price)

Suppose: g fraction of all cars good; h fraction of cars on market are good

Question: What is value of h "at equilibrium"? (no one wants to enter or exit given the going prices)

Case 1: $h = 0$. ⇒ buyers pay 6, good sellers stay out

Case 2: $h = g$. ⇒ buyers willing to pay $12g + 6(1-g) = 6 + 6g$

⇒ self-reinforcing if and only if $g \geq \frac{2}{3}$ (if not, $h = 0$ the only equilibrium)

Adverse Selection

Adverse selection: asymmetric info => can't determine quality

=> only low-quality participants.

More examples

1. market for health insurance (only least healthy people remain in the market)
2. labor market (only least productive workers remain in the market)
3. market for online advertising (only lowest-quality ads remain in the market)

Mitigating Adverse Selection

Idea: reduce information asymmetry by exposing more info about the value/quality of goods.

Examples:

- market for lemons (e.g., certified by mechanic, offer warranty to signal a good car)
- labor market (e.g., education as a signal for higher productivity)
- market for online advertising (e.g., determine the highest-quality ads + display them the most prominently)

Reputation system: mitigates adverse selection.

Moral Hazard

Moral hazard: when the cost of an action not fully borne by the decision-maker.

Examples:

(1) health insurance market (better insurance => weaker incentives to stay healthy)

(2) labor market (effort-independent wages => weaker incentives to be productive => cost borne by firm)

(3) online marketplace (if no reputation system => less incentive for sellers to not rip off buyers)

Solution: expose more information about likely action (eg, via a reputation system).

Case Study: eBay's Reputation System

- buyers, sellers rate each other
- feedback skews positive
- issue: sequential vs. simultaneous feedback
  - e.g. eBay
  - e.g. Airbnb
- question: how to summarize all past actions of e.g. a seller?

Effective Percent Positive ~~(PP)~~ (EPP) := $\frac{\#\text{ of transactions with positive feedback}}{\#\text{ of transactions ~~with any feedback~~}}$