

## **Week 6: Quality and Information Economics**

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- I. Quality Competition
  - A. Question: Why don't we all consume the highest possible quality?
  - B. Answer: Higher quality must be more expensive. "You get what you pay for."
  - C. Supply and demand of quality: When quality increases...
    - 1. Demand increases (people are willing to pay more for higher quality)
    - 2. Supply decreases (it is more expensive to produce higher quality products, so suppliers are willing to sell fewer units at each price).
  - D. While this conceivably creates an incentive for suppliers to secretly cut prices, this is mostly solved with:
    - 1. Reputation
    - 2. Warranties
  - E. What happens in the long-run if sellers can *cost/ess/ly* increase quality?
- II. Regulation and Quality
  - A. Does banning low quality benefit consumers? (Note: Safety is presumably one aspect of quality). How could it? This just forces people who want low quality to either buy nothing or pay for more quality that they don't want.
  - B. Applications:
    - 1. Airbags
    - 2. FDA
    - 3. Privacy regulations
  - C. Paternalism is the best defense, yet usually pretty weak.
  - D. Recall: How do price controls affect product quality? The quality of surplus products tends to improve; the quality of products in shortage tends to decline. Ex:
    - 1. Shrinking candy bars during Nixon's price controls
    - 2. Deterioration of NYC housing stock
    - 3. Meals on regulated airlines
  - E. Is it bad that price floors raise quality? Yes, because the extra quality is worth less than the cost.
- III. Black Markets, Prohibition, and Quality
  - A. Sometimes certain varieties or qualities of products are banned or "prohibited." Ex: Narcotics, alcohol, prostitution, gambling, irreligious books. This constriction of variety reduces consumer welfare.
  - B. What are the deadweight costs of a 100% successful ban?

- C. Once prohibited, products are often still sold illegally on the "black market."
  - D. Supply and demand of prohibition: How do legal penalties on sellers affect the market? Legal penalties on buyers?
  - E. One obvious impact of prohibition is to raise the price. (Why?) A less obvious impact is to reduce product quality.
  - F. Product quality tends to decline because the usual market assurances of quality (reputation, warranties) don't work well in an illegal market.
  - G. Reputation makes you an easier target for the police, and warranties are hard to enforce in an illegal market. Therefore you get a lot of rotgut liquor, adulterated narcotics, venereal disease...
  - H. This is due to prohibition, not the products themselves.
- IV. Probability
- A. Everyone is familiar with probability to some degree, from rolling dice, playing cards, and so on.
  - B. Basic postulate of probability theory: events range from impossible (probability=0) to certain (probability=1).
  - C. Probability language allows us to **quantify uncertainty**.
  - D. Even though people rarely put a precise number on each event, they almost always have some probabilities in the back of their minds.
  - E. When people are asked difficult questions, they often say "I don't know." But what if they HAD to guess? Note: in real life, you have to guess all of the time.
  - F. Common sophism: "No one can 'know' X."
    - 1. If this means "No one can know X **with certainty**," then it's obvious but uninteresting.
    - 2. If this means "No one has any idea at all about X," then it is clearly false.
- V. Search Theory
- A. Must economists assume "perfect information"? Not at all: there is an extremely general theory of economic action under uncertainty, known as "search theory."
  - B. Basic assumptions of search theory:
    - 1. More time and effort spent "searching" increase your probability of successful discovery.
    - 2. Searching ability differs between people.
    - 3. People can make a reasonable guess about the probabilities of different events and their ability to influence those probabilities.
  - C. Main conclusion: People search so that the marginal cost of searching equals the expected marginal gain of searching.
  - D. The (endless) applications:
    - 1. Prospecting for gold.
    - 2. Searching for a job.

3. Dating.
  4. Rational amnesia.
  - E. Search theory and advertising.
  - F. Main conclusion: If the economics of perfect information doesn't make sense, try search theory. It explains almost everything else.
- VI. Insurance, Moral Hazard, and Adverse Selection
- A. Insurance markets let people pool risk. You buy insurance that you expect (hope?) will give you nothing; but if something bad happens to you, the insurance pays off.
  - B. The main cost of supplying insurance is paying off claims. The "actuarially fair premium" is defined as the *probability of a payoff times the amount paid out*. Insurance firms have to charge more than the actuarially fair premium to cover their overhead (buildings, adjusters, advertising, etc.) Important implications:
    1. Riskier people will be charged more on the free market.
    2. If you definitely have a specific problem, it's no longer possible to "insure" against it.
  - C. One problem with insurance: "moral hazard." This just means that when someone pays for your accidents and problems, you may be inclined to take less effort to avoid accidents and problems.
  - D. Insurance companies largely solve the moral hazard problem with:
    1. Deductibles. You still have to pay for a share of the problem (ranges from a small fee to 20% of the cost)
    2. Limiting the range of insurance. If someone takes a dumb risk, they aren't covered. The tale of the jeweler.
  - E. Another problem with insurance: "adverse selection." The people who *want* insurance the most are people who *need* insurance the most. If insurers aren't careful, their customers will be very high risk and they'll have to charge very high rates to stay in business.
  - F. Insurance companies largely solve the adverse selection problem with:
    1. Risk-adjusted premia
    2. Waiting periods
  - G. Moral hazard and adverse selection are common rationales for insurance regulation, but popular regulations make the problem worse.
    1. Requiring extra insurance amplifies moral hazard
    2. Requiring "fair" premia amplifies adverse selection
- VII. Signaling
- A. Some Puzzles
    1. Why does non-job-related schooling still raise your income? ("What does this have to do with real life?")
    2. Why do you (sometimes) have to wear a suit to work?
    3. Why do countries have tons of weapons they never intend to use?
  - B. The resolution: signaling

- C. There are different "types" of people and firms: able and unable, smart and dumb, honest and dishonest, hard-working and lazy...
  - D. It is difficult to observe "types" directly.
  - E. However: different types (may) have different costs (lower disutility) of performing the same *observable* activity.
    - 1. Smart and hard-working people find it easier to do schoolwork.
    - 2. Lazy people find it more costly to take extra effort with an application.
    - 3. Honest firms find it cheap to provide warranties.
  - F. Therefore: It may be in the interest of the type in higher demand to go to school, fill out an application with extra care, provide a warranty, etc. - *even if the effort itself does NOTHING for buyer or seller!* People only want what the effort proves you already had in the first place.
  - G. Key implication: Subsidizing signaling makes little sense. It just forces people to use more real resources to prove the same thing.
- VIII. Education as Signaling
- A. Some kinds of education provide job skills; others don't seem to (engineering vs. philosophy). But employers still pay extra for even the most useless education.
  - B. Best explanation? Signaling. Employers want people who are smart, hard-working and/or conform to "the rules."
  - C. People who are smart, hard-working and/or conform to "the rules" find it easier/cheaper to get through school. School doesn't improve them; rather, their ability to finish school shows *they were good all along!*
  - D. Similarly, people who are dumb, lazy, and/or non-conformist have trouble finishing school. They find it too painful to finish, so they don't.
  - E. In sum: the class trouble-maker who complains that school has "nothing to do with real life" is often correct. However, this does not mean that there is no economic return to attending school.
  - F. Is there a deadweight loss of school? Yes, it is large: assuming you learn no job skills and don't like learning "for its own sake," then all time and other resources spent on education are pure waste.
  - G. The real world isn't quite so extreme, but support for education subsidies rests on a "fallacy of composition."