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Asymmetric Information as a market failure

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Overview

- Traditional models of perfect competition market assume that individuals have complete information about prices quantities, the relationship between products/services and their welfare (utility)

- But in the reality there are at least two broad categories of information problems:

1. Adverse Selection or hidden information: market of lemons

2. Moral Hazard or hidden effort: agency problems

Definitions

- Asymmetric information The situation in which one party to an economic transaction has better information than does the other party.
- Adverse selection: it is impossible to distinguish between two kinds of products, sellers or buyers on the base of their quality.
- Moral hazard: people will take actions after they have entered into a transaction that will make the other party worse off.

Adverse Selection

- In many markets where buyers use a market statistic to judge quality, there is an economic incentive for sellers to market poor quality products, since economic returns for good quality accrue mainly to the group (and not to the individual)

- Thus, there tends to be a reduction in average quality of goods and also a reduction in the size of the market

Adverse Selection and the Akerlof's Lemons Principle

- George Akerlof, a Nobel laureate developed a model of imperfect information to example what happens in the used car market.
- It was the first economic model with asymmetric information and has found many wide applications beyond the used care market, e.g., bank lending and of particular interest in this course insurance markets;

The Market for "Lemons": Quality Uncertainty and the Market Mechanism

George A. Akerlof, (1970). Quarterly Journal of Economics, 84 (3): 488-500

Akerlof's message

- Akerlof (1970) provides a thorough treatment of the effects of asymmetric information on trading in markets (quality of products in market, size and existence of market)
- The last part of the article points out some institutions that counteract the effects of asymmetric information.

The Model

- Akerlof (1970) uses the automobiles market (specifically the used car market) for its concreteness and ease in understanding
- An individual's new car may be good or it may be a lemon (bad quality car), the individual does not know when initially purchasing the new car
- After a length of time, the owner has a better estimate of the quality of the car, based on first-hand experience with a particular car
- An asymmetry in available information has developed: the sellers have more information about the quality of a car than the buyers
- But good cars and bad cars must sell at the same price – since it is impossible for a buyer to tell the difference between a good car and a lemon
- Thus, an owner of a good car cannot receive its true economic value, and the owner is locked in
- The result: Most cars traded are "lemons", and good cars may not be traded at all!

Other Example: Insurance

- People over 65 have difficulty buying medical insurance: Why doesn't the price rise to match the risk?
- Akerlof's answer: As price rises those that insure themselves are those that know they need it, and average medical condition of applicants deteriorates as price rises – no insurance is sold at any price
- Group insurance: offered to employees (picks out healthy)
- Argument for health public system: any price offered will attract too many "lemons"

Other Example: Employment of Minorities

- Employers may refuse to hiring minorities for certain jobs
- Race may serve as a good statistic for social background, quality of schooling, general job capabilities
- Good quality schooling-Substitute
- Credibility of school must be good
- Rewards for work in slum schools accrue to the group, not to individuals

Other Example: Costs of Dishonesty

- Dishonest dealings tend to drive honest dealings out of the market (same logic as before: presence of people willing to offer inferior goods tends to drive market out of existence)

- Cost of dishonesty not just that purchaser is cheated, but that legitimate business is driven out of business

Market Solutions to Adverse Selection: Signaling

- Signaling -- an action that an individual with private information takes in order to convince others about his information

- Examples: signal to the other side of the market about their private information: (a) sellers establishing a good reputation, (b) warranties, (c) requiring a physical in the case of insurance markets.

- None of these signals would occur if the quality of the product was bad, so signaling restores a functioning market.

Counteracting Institutions

- Institutions that counteract the effects of quality uncertainty
  - Guarantees
  - Brand-names
  - Chains (hotels, restaurants)
  - Licenses (meaning professional licensing of doctors, lawyers)

Insurance

- Information asymmetry:
  - people buying insurance know their actual expenditures;
  - the insurance company just knows the distribution of expected expenditures
  - As long as the information asymmetry exists there will be market failure since the insurance company will lose money on any contract it offers.
  - In health insurance information asymmetry will likely occur because the potential insureds know more about their expected health expenditures in the coming period than does the insurance company.
  - In this market, the higher health risks tend to drive out the lower health risk people, and a functioning market may even fail to appear at all for some otherwise-insurable health care risks.

Inefficiencies of Adverse Selection

- If the lower risks are grouped with higher risks and all pay the same premium, the lower risks face an unfavorable rate and will tend to underinsure. They sustain a welfare loss by not being able to purchase insurance at rates appropriate to their risk. Conversely, the higher risks will face a favorable premium and therefore over-insure; that is, they will insure against risks that they would not otherwise insure against.

- When the insurance company can't pool its risks it loses money on the contracts it sells, so eventually they withdraw from the market and there is no market in insurance, i.e., a market failure

Solutions to Adverse Selection

- From a practical perspective the consumer will always know more than the insurance company so then the issue becomes how can the insurance acquire as much information as the person buying insurance or alternative ways to pool risks

- One way for the insurance company to eliminate the inefficiencies in market for insurance is to collect more information on the persons buying insurance, e.g., medical exams and diagnostic tests and questions about lifestyle, how much you drink, whether you smoke, etc

Insurance Statistical Discrimination and Experience Rating

- Collecting information on one person at a time is a solution, but it is a costly one since you must do this for every person who buys information, but it does allow an insurance company to pool their risks more effectively
- There are other more efficient ways to pool risks
- Statistical Discrimination can be a more useful mechanism to reduce adverse selection.
- insurance companies discriminate insurer on the base of statistical characteristics that are related to the level of riskiness

Moral Hazard

Moral hazard: actions that are taken by one party but are relevant for and not observed by the other party in the transaction

People take on more risks when they are protected from the consequences of that risk.

Proposition: People are more likely to leave your car unlocked if are insured against theft.

Why? Two explanations

1. Adverse selection—if you know that you are not careful, you are more likely to choose to buy an insurance.
2. Moral hazard—if you are protected from some of the risk of theft, you are more likely to not be careful

Moral Hazard vs Adverse Selection

1. In many markets buyers and sellers have different information, which can lead to market inefficiencies.
2. Asymmetry in information is either due to hidden characteristics or hidden actions.

3. In cases with hidden characteristics, individuals can use their private information to decide whether to participate in a transaction or a market, causing adverse selection.

4. In cases with hidden actions, an individual can take an action that adversely affects another one, causing moral hazard.

5. There are both private and government solutions to reduce the effects of adverse selection and moral hazard.

Market Solutions to Moral Hazard in the Insurance Market

- ✓ In the insurance market, the way to keep policy holders from acting in a more risky manner is to increase the costs to them if they do. These are three majors ways that policy holders can be forced to be involved “in the game,” mitigating their risk behavior.
- ✓ Deductibles
- ✓ Co-payments
- ✓ Coinsurance