Lecture Note 15: Asymmetric Information

When one party to a transaction has relevant information that another party lacks, we say there is **asymmetric information**.

Insurance markets suffer from two market failures that arise because the buyers of insurance have information that the insurance company doesn't.

Adverse selection

Adverse selection occurs when people shopping for insurance have "private information" about their odds of experiencing a qualifying event.

- People buying health insurance know if they have high cholesterol.
- People buying car insurance know if they're good at driving.

This can lead the whole market to "unravel":

- Suppose the average person has $3000 in medical costs each year.
- If companies offer actuarially fair insurance (premium = $3000), the sickest people are getting a good deal, and they'll want to get insured. But the healthiest people are "overcharged" and might not buy.
- If the healthiest people exit the market, those who remain will be sicker on average. Let's say their average medical costs are $3500.
- To break even, insurance companies will have to raise premiums. That may cause the next-healthiest people to exit the market too.
- This again drives up costs, leading the insurance company to raise its premiums again. Due to this "vicious cycle", we end up with fewer people insured than is socially optimal, and the market may cease to exist altogether (an extreme outcome called a "death spiral").
- The same thing occurs in the used-car market: if sellers have private info about the quality of a given car, only owners of "lemons" (bad cars) will want to sell at any given price, and the market can unravel.

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Moral hazard

Moral hazard describes any situation in which the fact of being insured weakens a person's incentives not to engage in risky behavior.

Let's consider the case of fire insurance (with mobsters).

- Tony Soprano buys a $1 million house on the Jersey shore.
- Then he buys a $900,000 fire insurance policy from Allstate: if his house burns down, Allstate will pay him $900,000.
- A recession hits. The value of Tony's house falls to $800,000.
- What happens next? Tony's house mysteriously burns down while he's off on a fishing trip. Tony walks away with $900,000.

Most people aren't Tony Soprano (and besides, insurance fraud is illegal). But there are less extreme versions of such bad behavior:

- Not being careful enough when the stove is on.
- Not bothering to repair damaged electrical wiring.
- Not purchasing the socially optimal number of fire extinguishers.

Moral hazard isn't limited to insurance markets: more generally, it can occur in any **principal-agent problem**—where one party (the "agent") acts on behalf of another party (the "principal")—whenever the agent doesn't have strong incentives to do what's best for the principal.

- A poorly supervised worker (the agent) may slack off on the job, which is bad for her employer (the principal).
- A real-estate broker (the agent) may have only weak incentives to secure a low price for a home-buyer (the principal).

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Distinguishing adverse selection from moral hazard

It's easy to mix up adverse selection and moral hazard: they both stem from asymmetric information, and they can exist side by side.

The key difference is this:

- Adverse selection is about who wants to participate in a transaction.
- Moral hazard is about people's behavior after the transaction starts.

Let's think through some examples.

1. Example: dental insurance.
    - Adverse selection: people who know they'll need lots of dental care this year are more likely to buy insurance.
    - Moral hazard: once they're insured, policyholders may take worse care of their teeth and seek cosmetic treatments (e.g., whitening) they wouldn't be willing to pay for out of pocket.
2. Example: auto insurance.
    - Adverse selection: reckless drivers (or drivers who use their cars a lot) will choose to purchase more generous insurance.
    - Moral hazard: once they're insured, many drivers will be a little less careful behind the wheel.
3. Example: cushy jobs where nobody gets fired.
    - Adverse selection: less capable or less hardworking people may be more likely to apply for jobs with good job security.
    - Moral hazard: once they're hired, many people would slack off if there were no risk of being fired for doing so.

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