

Law And Economics

The Economics of Crime

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University of Mannheim - Fall 2021

Introduction

- Not all crime is *rational*.
 - *Crime of passion*.
- Some crimes respond to clear economic incentives.
 - Embezzlement.
 - Insider trading.
 - Tax evasion.
- Economic approach to crime.

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Distinguishing Crimes and Torts

- What distinguishes crimes from torts?
- Both involve (in general) harm to persons or property.
- Legal action:
 - * Tort: initiated by the victim.
 - * Crime: initiated by the state.
 - * Why does this difference exist?

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- Intention:
 - In general, tort involves accidents.
 - Crime is generally intentional.
 - However:
 - Intent is a continuum.
 - Generally unobservable.
- Why is legal action for crimes initiated by the state?
 - Intentional offenders might try to cover up to avoid responsibility.

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 - High fixed costs \rightarrow natural monopoly.
- Complementarities prosecution- police force.
- Public harm in addition to direct harm.
 - Examples:
 - Pollution
 - Traffic
 - Noise
 - Fire
 - Victims might not have sufficient incentives to pursue compensation.

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Becker Seminal Article

- **Basic assumption:** in the decision to whether to commit a crime, offenders compare the gain from the act with the expected punishment.
 - This decisions generate a *supply function* of offenses.
- Given the *supply function* of offenses, policymakers determine the optimal punishment scheme.
 - Probability of apprehension.
 - Punishment on conviction (fine or imprisonment).

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Becker's Setup

- Setup
 - g : gain from crime. Random variable with cdf G .
 - h : harm to the victim (constant).
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 - f : fine.
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Offender's Decision

- Who commits crime? Only those with

$$g > p(f + c \cdot t)$$

- Total crime:

$$1 - G(p(f + c \cdot t))$$

* Notice that if $G(h) < 1$, there is *efficient crime*.

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Optimal Punishment

- Authority chooses: p, f, t .

- Social Welfare Function:

• Dilemma: should offender's utility be consider in the aggregation?

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Optimal Fine ($t = 0$)

- set $t = 0$ and fix p .

- Crime if $g > p \cdot f$.

- social welfare:

$$a \cdot (g - h)$$

- Problem of the offender:

$$\max_a \quad a \cdot (g - p \cdot f)$$

- Harm-based solution: Set expected punishment equal the harm.

- No need to know anything about the distribution of g .

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Gain-based Fine

- Consider the following gain-based fine:

$$f = g/p$$

- If when indifferent the agent commits no crime, the fine deters all crimes.

$$\max_{a \in \{0,1\}} a \left(g - p \cdot \frac{g}{p} \right)$$

- Efficient when it is efficient to deter all crime.
- Advantage: when gains of offender are easier to measure than the harm to the victims.
- Example:
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Optimal imprisonment

- Prison is costly to the offender, but also to society.
- Thus, it is optimal to use fines up to the maximum wealth of the offender before prison is used.

$$f^* = \begin{cases} h/p & \text{if } h/p < w \\ w & \text{if } h/p \geq w \end{cases}$$

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Exercise

- Optimal deterrence requires an expected cost to offenders equal to \$ 4000.
- Probability of detection: $p = 0.5$.
- Individual's wealth: $w = \$2000$.
- Cost of jail time $c = \$500$

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Optimal Fine with Variable Apprehension Probability

Authority chooses both p and f .

- For any given product $p \times f$, crime is unaffected.
- The authority chooses the combination of p and f that minimizes the cost implementation.
 - * Fines are not costly.
 - * increasing the probability of apprehension is costly.
- The optimal fine should be as high as possible.
- Limit: wealth of the individual.
- (This is one of the central insights of Becker's analysis.)

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Which iso-deterrence line is optimal?

- Marginal reduction in net social harm = Marginal increase in enforcement costs.
- Underdeterrence is optimal:
 - * Suppose that we initially set $pf = h$.
 - * Reducing p slightly one saves in enforcement costs, but some additional crimes are committed.
 - * However the loss for those crimes is negligible.
 - * Thus there is a social gain from lowering p .

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- Model tell us that fines should be equal to individual's wealth to:
 - Save on enforcement costs.
 - Avoid use of prison.
- This is not observed in practice. Potential reasons:
 - Fines are not costless to impose.
 - Proportionality.
 - Rich and poor should receive equal treatment.
 - Marginal Deterrence.

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Standard of Proof

- Prosecutor in a criminal case has a higher standard of proof than plaintiff in a civil case.
 - Civil case: plaintiff's account must be more believable than the defendant's.
 - Criminal case: Prosecutor must prove the case *beyond reasonable doubt*.
- Why higher standards?
 - Type I and Type II errors.
 - State and suspect asymmetry.
 - Prosecutor's career concerns.

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- Individuals privately invest in preventing crimes.
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- Setup
 - n agents, each of whom owns an item of value v .
 - Agents can invest or not in a precaution technology (lock). Cost c .
 - Thief steals one item from the set that has no lock. (If all items have locks, the criminal does not steal.) For simplicity, assume value zero for the thief.
- Efficient Allocation:
 - Makes no sense to put a lock in less than all items.
 - Put a lock in all items if $v > nc$.

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$$\alpha(-G) + (1 - \alpha)v = 0$$

- Agent is indifferent between buying gun and not iff:

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- P_θ : Probability of conviction. $P_G > P_I$.
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Crime and Drugs

- Drugs are historically associated with crime.
- Important characteristics:
 - * Addictive substances.
 - * Affect behavior.
 - * Some are illegal. (Alcohol is the important exception.)
- Affect crime:
 1. Users might commit crimes to buy drugs.
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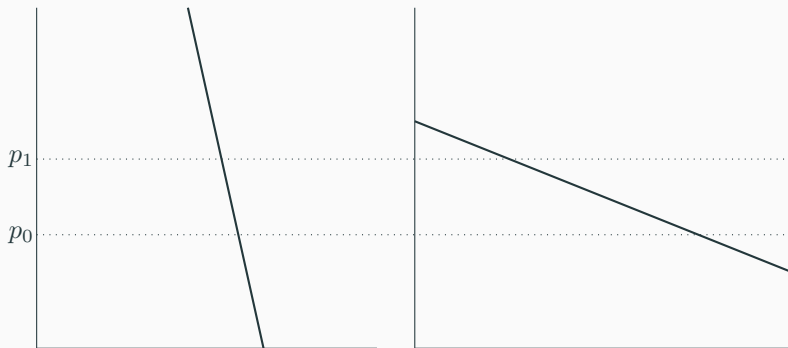
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- Price-elasticity of demand is different for addicts than for casual/new users.



Demand of addict on the left. Demand of casual user on the right.

Crime and Drugs

- **War on drugs:** generate a left-shift of supply curve. Higher equilibrium price.
 - Total expenditure is higher for addicts. Crime 1 increases.
 - Total consumption goes down. Crime 2 decreases.
 - Effect on Crime 3 is undetermined.
 - Dynamic aspect: less addicts in the future.
- **Legalization:** right-shift of supply curve. Lower equilibrium price.
 - Opposite effects.
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