

# Economics of Crime



Lent Term  
Ec 423: Labour Economics  
Lecture 10

# Economics vs. Other Models of Crime

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- Individual factors
  - Stress/strain
  - Revenge
  
- Social Factors
  - Learning/association
  - Community tolerance/acceptance
  
- The Economics Approach is Incentive-based

# A Model of Punishment (Becker's)

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- All potential criminals have a benefit of crime (denoted  $B$ ) includes
  - financial benefits
  - Psychic cost/benefit of crime
- An individual committing crime faces costs from law-enforcement activities
  - the probability of punishment (denoted " $p$ ") times the costs of punishment which comes from the length of sentence (denoted " $C$ ")
  - assuming risk neutrality
- The returns from the legal sector are denoted " $W$ "

# Who is a Criminal?

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- Assume that wages equal  $W + \varepsilon$ , where  $\varepsilon$  is distributed throughout the population (distribution  $F(\varepsilon)$  admits density  $f(\varepsilon)$ ) —this  $\varepsilon$  represents some idiosyncratic individual wage component
- Become a criminal if:  $B - pC > W + \varepsilon$
- Marginal criminal defined by  $\varepsilon^* = B - pC - W$
- The total number of criminals:  $F(B - pC - W)$ 
  - Criminals are people whose legal returns are less than  $W + \varepsilon^*$
  - Heterogeneity in  $B$  and  $C$  means in reality criminals are not only members of society with the lowest wages.

# 3 Comparative Statics

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# Criminals decreases if

- B decrease (Change in returns to Crime)
- $p/C$  increase (Change in the cost of Crime)
- W increase (Change in Opportunity cost of Crime)

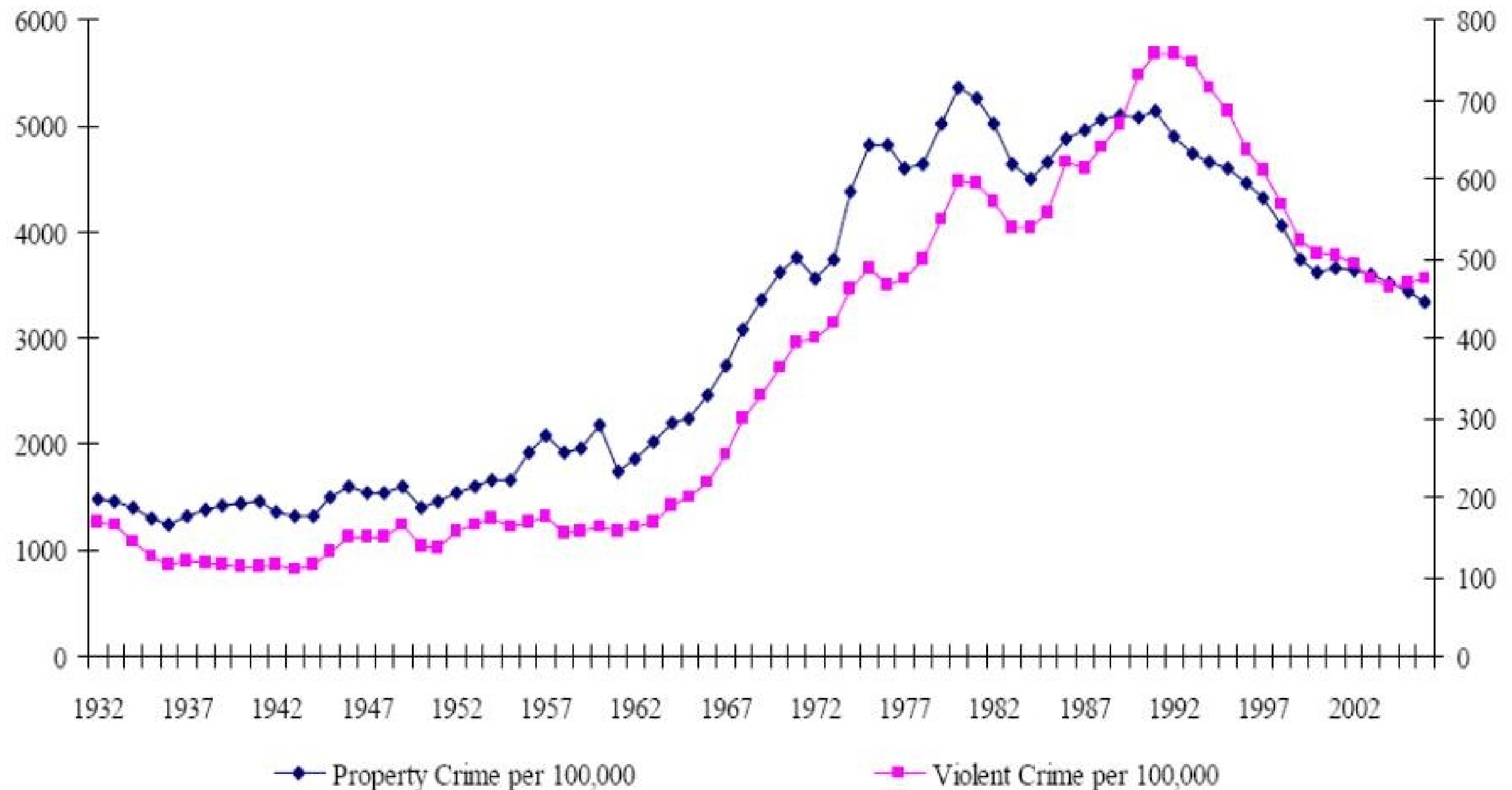
*We are going to focus on the cost of crime today*

# Outline

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- ▣ **Data**
- ▣ Policing
- ▣ Incarceration
- ▣ Sentencing Policy
- ▣ Special Cases
  - Capital Punishment
  - Intimate Partner Violence
  - Juvenile Crime

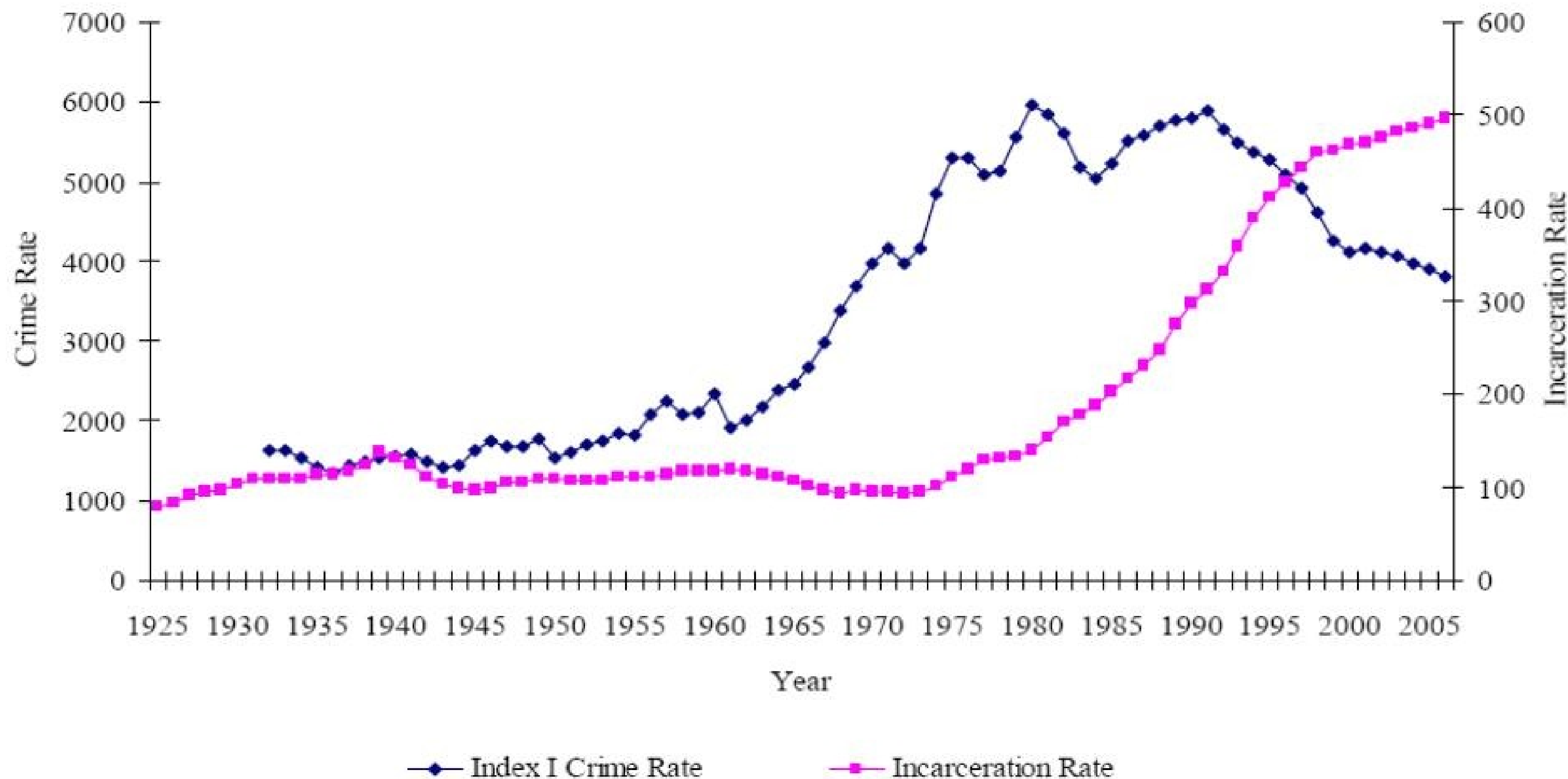
# Violent and Property Crime Rates



Source: FBI Uniform Crime Reports (UCR) (various years).

Compiled by: Dills, Miron, and Summers, 2008

# Incarceration Rate per 100,000 and Index I Crime Rate



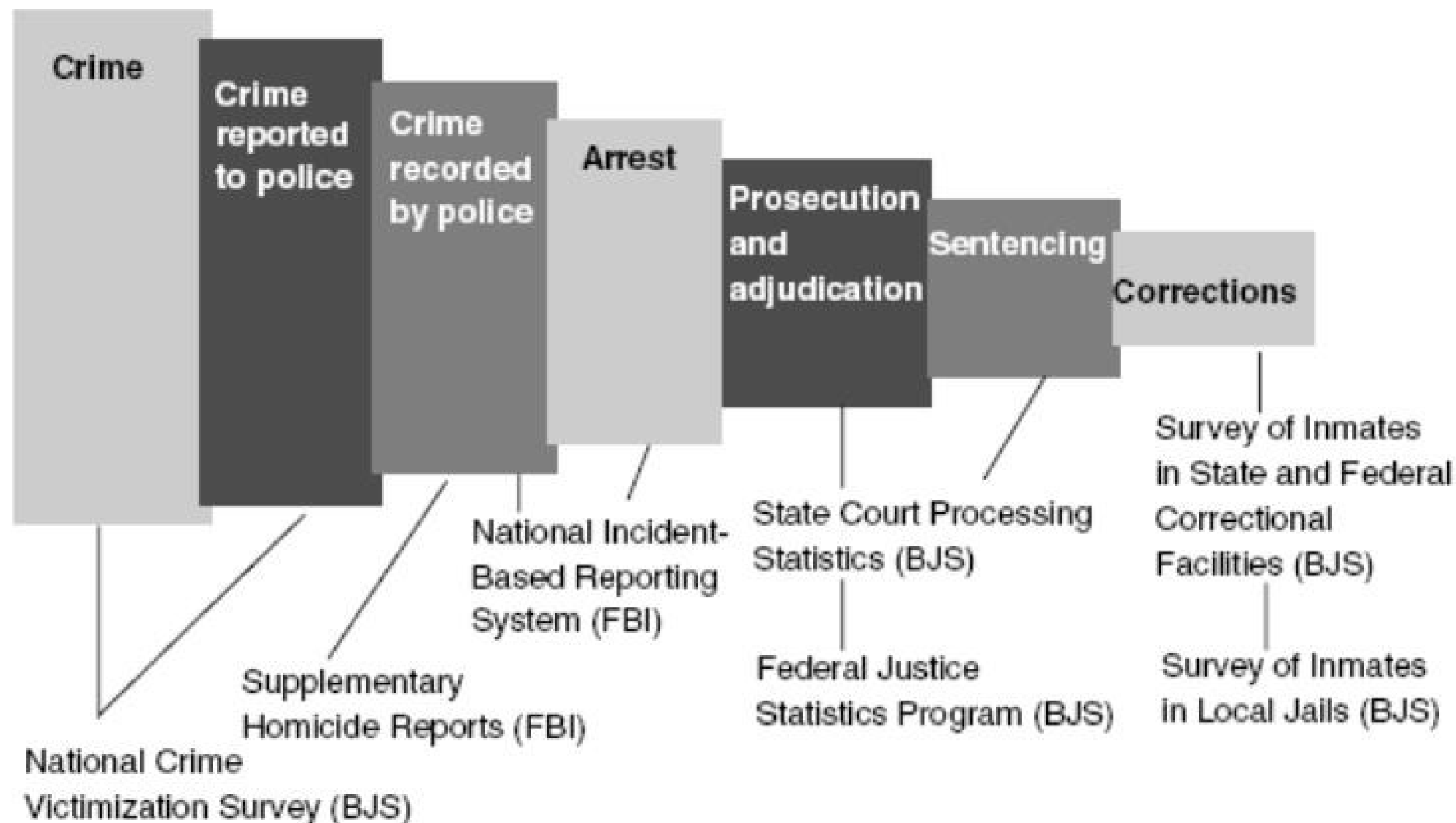
Sources: Index I Crime Rate - FBI UCR (various years). Sourcebook of Criminal Justice Statistics Online ([www.albany.edu/sourcebook/wk1/t628.wk1](http://www.albany.edu/sourcebook/wk1/t628.wk1))

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# Data on the Criminal Justice System

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Source: Bureau of Justice Statistics

# Data Sources - 1

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## □ Surveys

- victimization survey
- General population, asking about crime

## □ Crime reports

- Measures incidents
- May have information about victim and nature of crime
- May have no information or police “guesses” on offender

# Data Sources - 2

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## □ Arrest Data

- If crime committed, reported, and investigated
- Police find a potential offender and arrest
- May have information about previous record but *not* on final outcome of case

## □ Prosecution/Trial Data

- Depends on if arrest resulted in charges being filed in court
- Can learn *lots* of information because this is mostly public record
- May not be in easily useable/electronic format

# Data Sources - 2

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## □ Conviction/Sentencing Data

- Probably slightly less selection here *if* you have plea bargained data (~90% of cases disposed in negotiated plea)
- May contain additional information from sentencing hearing

## □ Corrections/Parole Data

- Lots of *post*-conviction information (maybe even employment, marriage, etc.)
- Very selected sample

# Issues with data

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## □ Reporting

- Victims decide whether or not to report a crime
- Police decide whether if someone comes in whether fill out a crime report

## □ Discretion

- Police and prosecutors can decide if and when to prosecute
- These decisions are almost sure (hopefully!) not random)

## □ Definition/consistency

- Variation in state level definitions of crime
- Variation in consistency of data collection

# Outline

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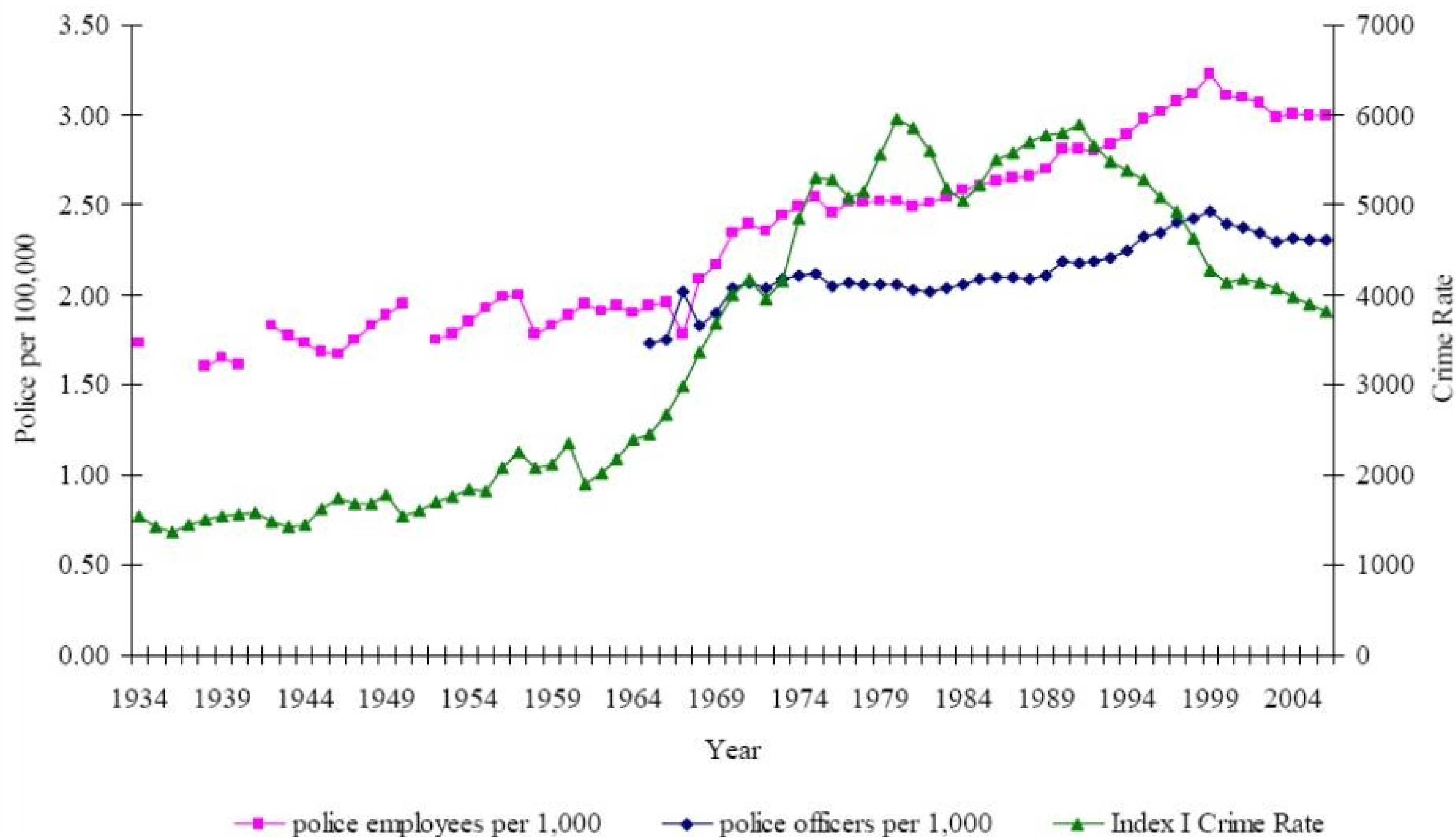
- Data
- **Policing**
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# What do we know about Policing?

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- ▣ Police are agents too—they respond to incentives
- ▣ Very limited evidence on policing strategies except for number of police  
(Levitt, 1997; DiTella et al; Machin & Draca)
- ▣ Other actors matter too
  - Judges (Kessler & Piehl, 1998; Kling, 2001; Abrams, Bertrand, Mullinathan, 2008 )
  - Juries (Glaeser and Sacerdote; Iyengar, 2006)
  - Prosecutors (Glaeser, Kessler and Piehl; Kuziemko)
  - Defense Attorneys (Iyengar, 2007; Abrams and Yoon, 2007)

# Police Employees per 1,000 and Index I Crime Rate



urces: FBI UCR (various years).

Compiled by: Dills, Miron, and Summers, 2008



# How to test policing

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## □ Issue:

- Areas with higher crime rates have more police
- Times with restricted budgets may see increased crime and reduced police force

## □ Instruments

- Mayoral Elections: political gain to increase police force
- Major Terrorist Events

# Policing - 2

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- More recent evidence using increased police force after terrorist attacks
  - DiTella and Schargrodsky (AER, 2004)
  - Terrorist attack on Jewish centres increased police activity *near centres*
  - Look at activity by distance from jewish centres

# Police strategies

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- Pretty poor evidence on what types of policing works
  - Not much randomization
  - Much of work uses soft outcomes, which are hard to interpret
  - Much of work descriptive, not really causal in nature
  - Review by Levitt, 2001, suggests there's not much effect from type of policing—just number of police officers
  
- Types of policing
  - Community policing
  - “Broken Windows”

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# Incarceration Rates in the US

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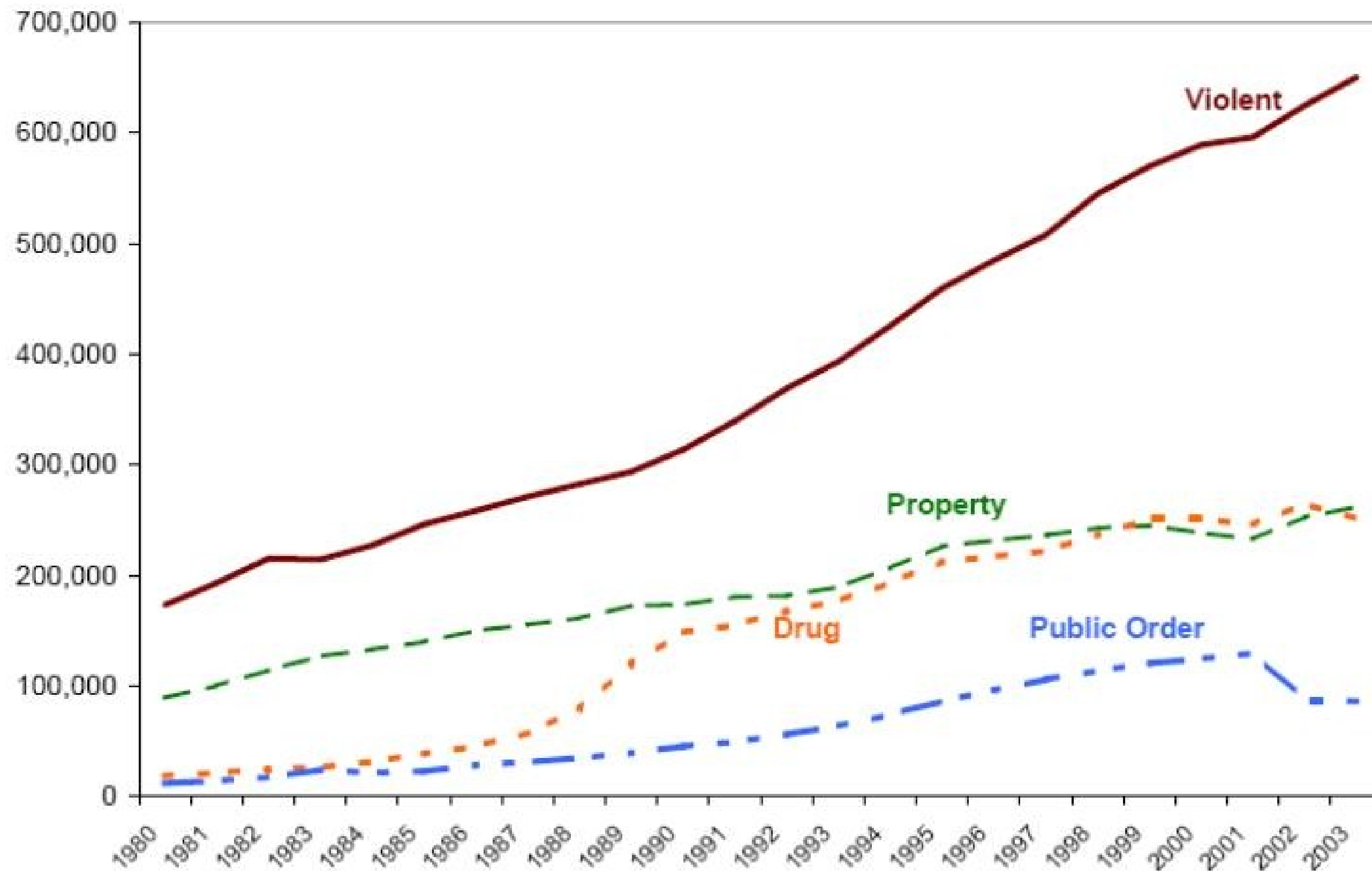
- ▣ Prison rates in the US are astonishingly high:
  - the highest incarceration level in the world
  - More than 5.6 million Americans are in prison or have served time there—That corresponds to 1 in 37 adults living in the United States reside in prison
  - If current trends continue, it means that a black male would have about a **1 in 3** chance of going to prison during his lifetime. For a Hispanic male, it's **1 in 6**; for a white male, **1 in 17**.
  - Many people believe these rises are due to “tough on crime policies like 3-strikes (Zimring and Hawkins, 2001; Tonry 1999)

# What's so bad about incarceration?

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- ❑ Incarceration may have serious labor market implications
- ❑ Funding this level of incarceration is hugely expensive
  - In 2004: US spent \$61.9 billion on correctional costs
  - To put it in perspective—this is about 5% of GDP and about 3 times what the US spends on TANF
  - Three Strikes was estimated to cost \$5.5 billion/year (Greenwood, et al)
- ❑ Crime Type Matters:
  - Over half the growth in state prison populations are due to violent offenses
  - There are very different costs associated with different types of crimes—we want to understand how incarceration policies affect not just the level of crime but also the distribution of types

# Crime's Committed by Prison Population in the US 1980-2003



Source: Source: Correctional Populations in the United States, 1997, and Prisoners in 2005, US Bureau of Justice Statistics

# What we don't know?

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- What are the costs to *not* incarcerating?
  - What are the returns to simple incapacitation?
  - How robust are our findings on deterrence to various points along the sentencing gradient?
  - Does it matter (from a deterrence perspective) whether there is disproportionate representation of minorities offenders?



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# Sentencing Policy

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## □ Basic Goal

- Increase cost of crime → Decrease # Criminals
- Participation in Crime generally thought of as an binary choice

## □ 2 ways to reduce crime

- Incapacitate (people can't commit crimes in jail)
- Deter (penalties are bad so people don't participate)

# Separating the Effects

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## □ Incapacitation

- Not a lot of evidence on how much crime reduced
- Some evidence from adolescent programs (Jacobs) and job training (Freeman) that applied to the general population there is some effect

## □ Deterrence

- Levitt and Kessler look at sentence enhancement
  - Look in months *after* new law took effect
  - Look *before* the new enhancements take into effect
  - Example: original sentence is 6 months, new sentence is 10 months, look at change in crimes rates in months 1-6 when criminal would have been incapacitated anyway

# Why did this work?

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- Broad sentence enhancement so not a lot of things to switch to
  - Proposition 8 was a precursor to 3-Strikes in CA
  - Most felonies covered, but different enhancement for different crimes
- Criminal participation is not the only margin of adjustment

# Optimal Sentencing: The Beckerian View

The idea behind Beckerian sentencing is that the higher the cost of crime, the fewer individuals for whom the above inequality will hold.

Ideally: if the criminal justice system can impose a penalty of infinite cost—then there is no individual for whom choosing crime would be optimal.

# Optimal Sentencing: The Stigler Critique

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Suppose that the government cannot impose infinite penalties and then there is some set of individuals who will opt to commit crime. Given this:

- If there is different social costs for different types of crime then we care about more than just participation margin
- Changes in penalties for crime need to be concerned with both the intensive and extensive margins (think about this like an intercept shift and a slope change in the penalty gradient with respect to crime severity)

# California's Three Strikes Law

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- ❑ Individuals convicted of a “record aggravating” offense become eligible for 3-strikes sentencing level
- ❑ After initial triggering offense:
  - doubling of the sentence for the second felony
  - the maximum of three times the sentence of the current felony, or 25 years to life for their third felony conviction

California law invokes a second or third strike for *any felony*, so long as the an aggravating offense has been committed.

# Effects from Three Strikes

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- For non-violent crime the average and marginal deterrence effect move in the same direction and the model predicts an unambiguous decline in non-violent crime.
- For violent crime, the average and marginal effects move in different directions and the overall effect of the policy is ambiguous.

*(this rests on the assumption that violent crime has higher rewards than non-violent)*



# Summary of Results

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- Evidence of both deterrence and substitution effects
  - Reduce overall crime
  - Substitute to areas with less penalties and crimes with higher payoffs
  
- Consistent with rational model of deterrence but with Stiglerian marginal deterrence

# What does this tell us about Sentencing Policy?

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- Criminals respond to cost-based incentives
  - Could operate through arrests (some evidence from Levitt on deterrence)
  - Social determinants are the other side of the equation wages (Witte) Community structure (Freeman) and family structure (Glaeser and Sacerdote) can all be thought of as changing the opportunity cost of crime
- There is heterogeneity in response by criminals
  - Some are marginal participants
  - Some are marginal *only in the type* of crime but not in criminal participation

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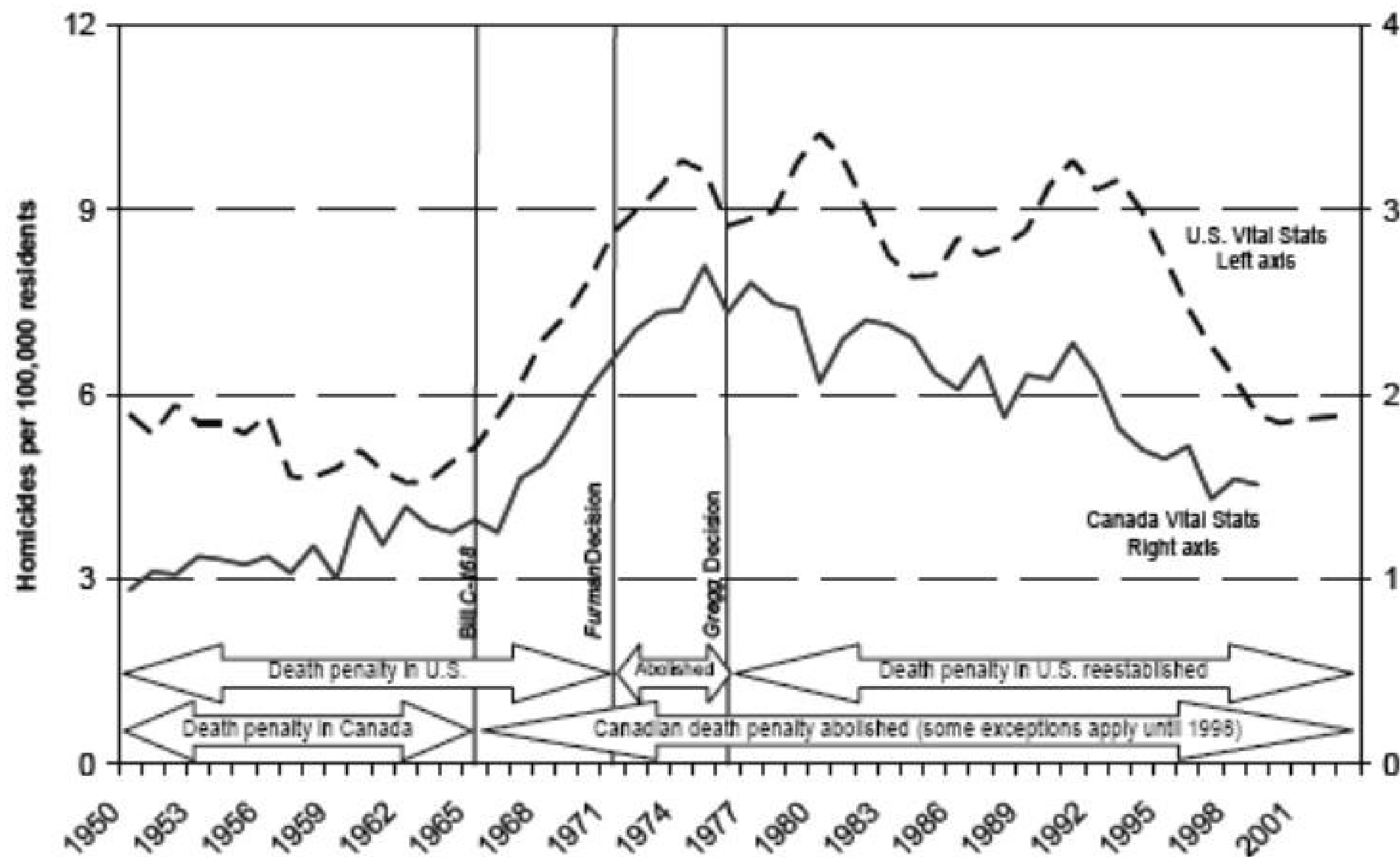
# Why is Capital Punishment Different?

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- Murder is not “rational”—it may be a heat of the moment crime
- Debate of morality
  - Brutalization effect is an empirical claim (reduce value of life)
  - If it deters, are we obliged (Sunstein and Vermeule)
- Increasing already high penalty—does it buy us anything?
  - Deterrence theory predicts it should
  - Flat of the curve for sentences—can other types of penalties get some bite?
  - More effective at reducing crime than simple incarceration (i.e. need to keep in mind what is the counterfactual)
- Marginal deterrence
  - killing vs. other heinous crimes (decrease murder)
  - Multiple killings (increase murder)

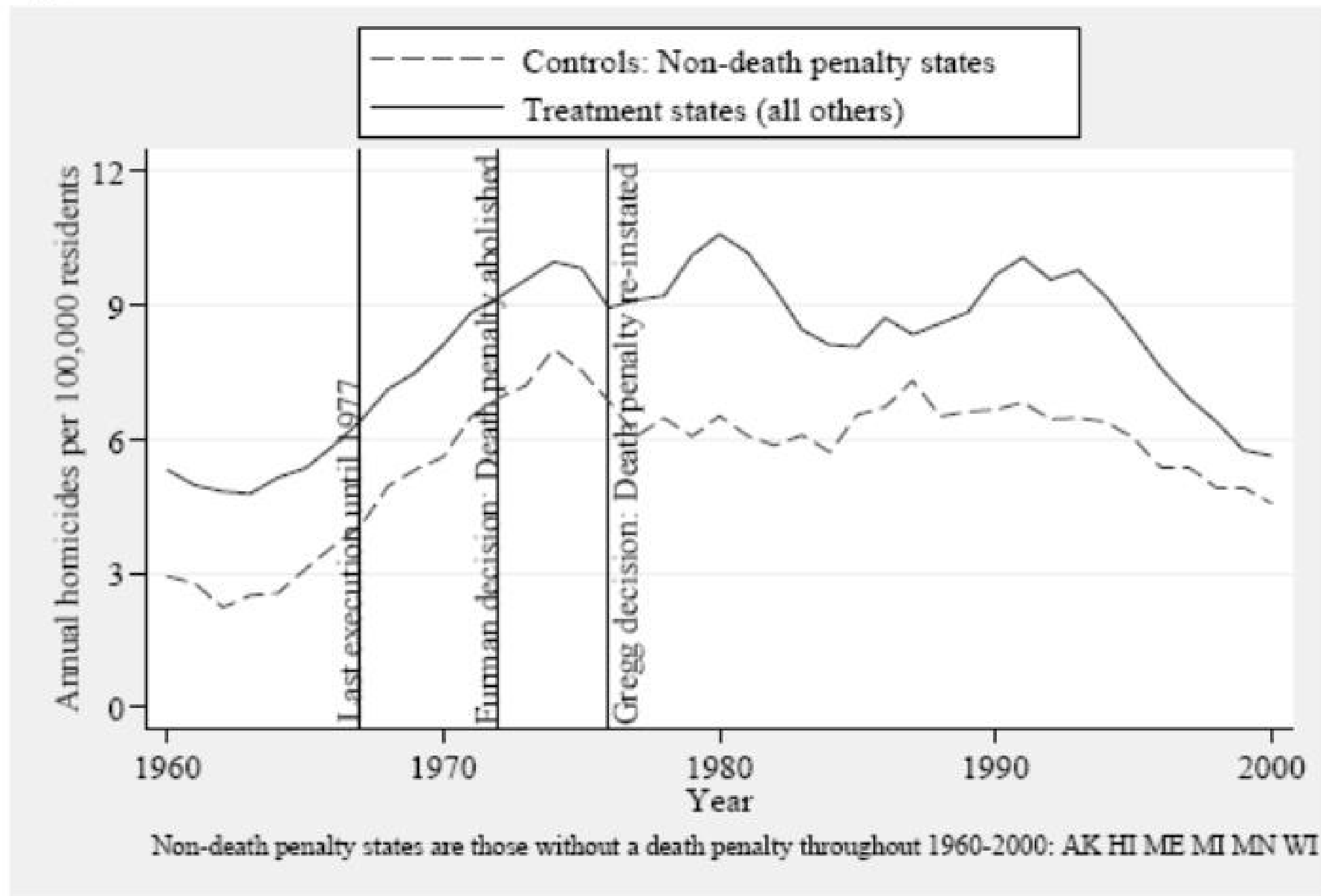
# Timeline and Trends of the Death Penalty the US vs. Canada

Figure 2. Homicide Rates and the Death Penalty in the United States and Canada



# Timeline and Trends of the Death Penalty in the US

Figure 3. Homicide Rates in the United States



# Review of Donohue and Wolfer's Findings

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- Review of existing methods
  - Difference-in-difference
  - Panel Data
  - Instrumental Variables
- No evidence of a deterrent effect
  - Most inferences not robust to specification or sample expansion
  - Cannot rule out a deterrent effect—but do not find evidence for one

# Why is Intimate Partner Violence Different?

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- ▣ Abusers might not be rational or deterrable
- ▣ Reliance on victims to report
  - we don't have a model of victim behavior
  - Stigma attached to victimization
- ▣ Penalties and enforcement difficult because of
  - Child custody
  - Divorce
  - Joint/shared assets (e.g. house, car, etc.)



# Comparing Trends in IPV and Other Violence Crimes

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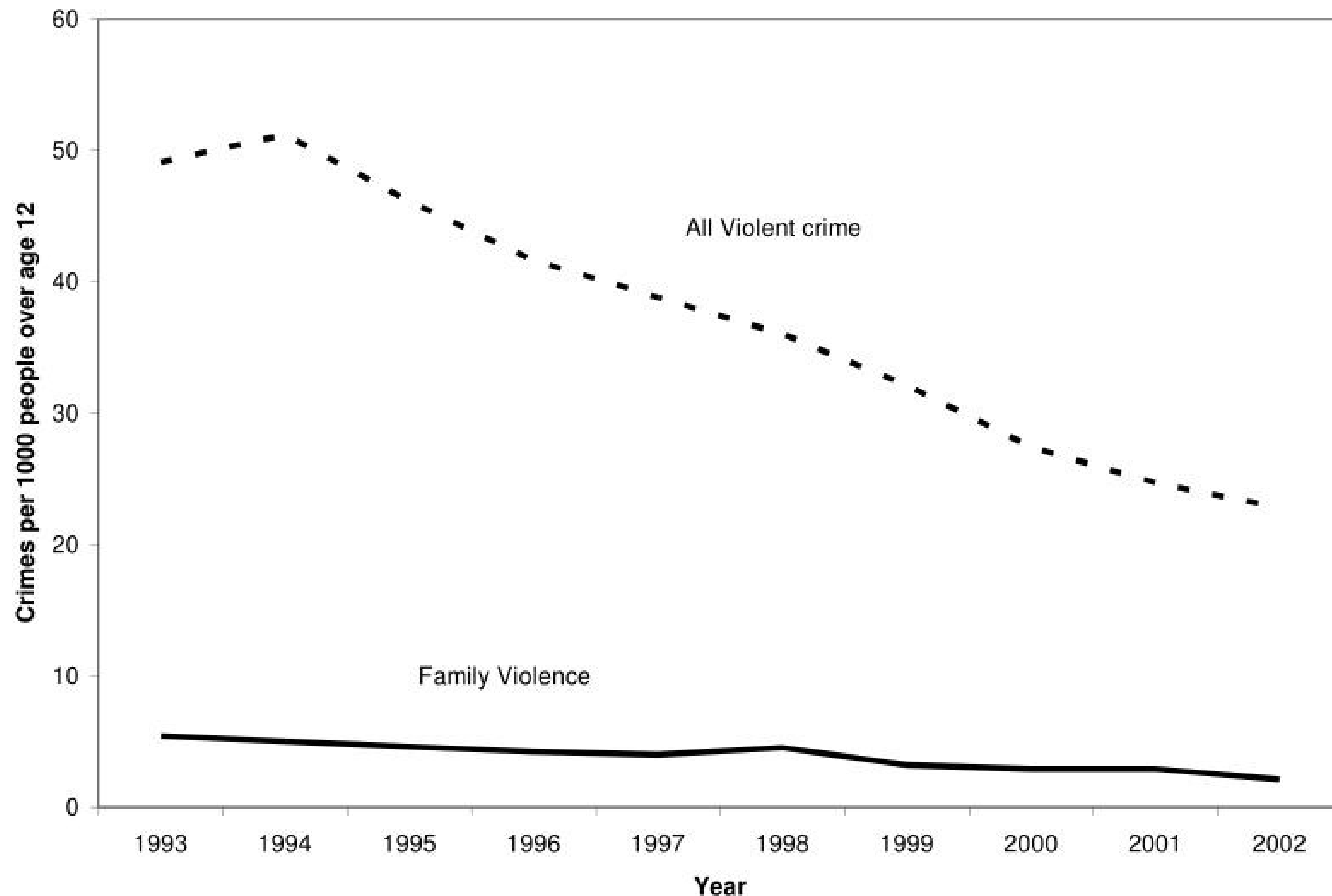
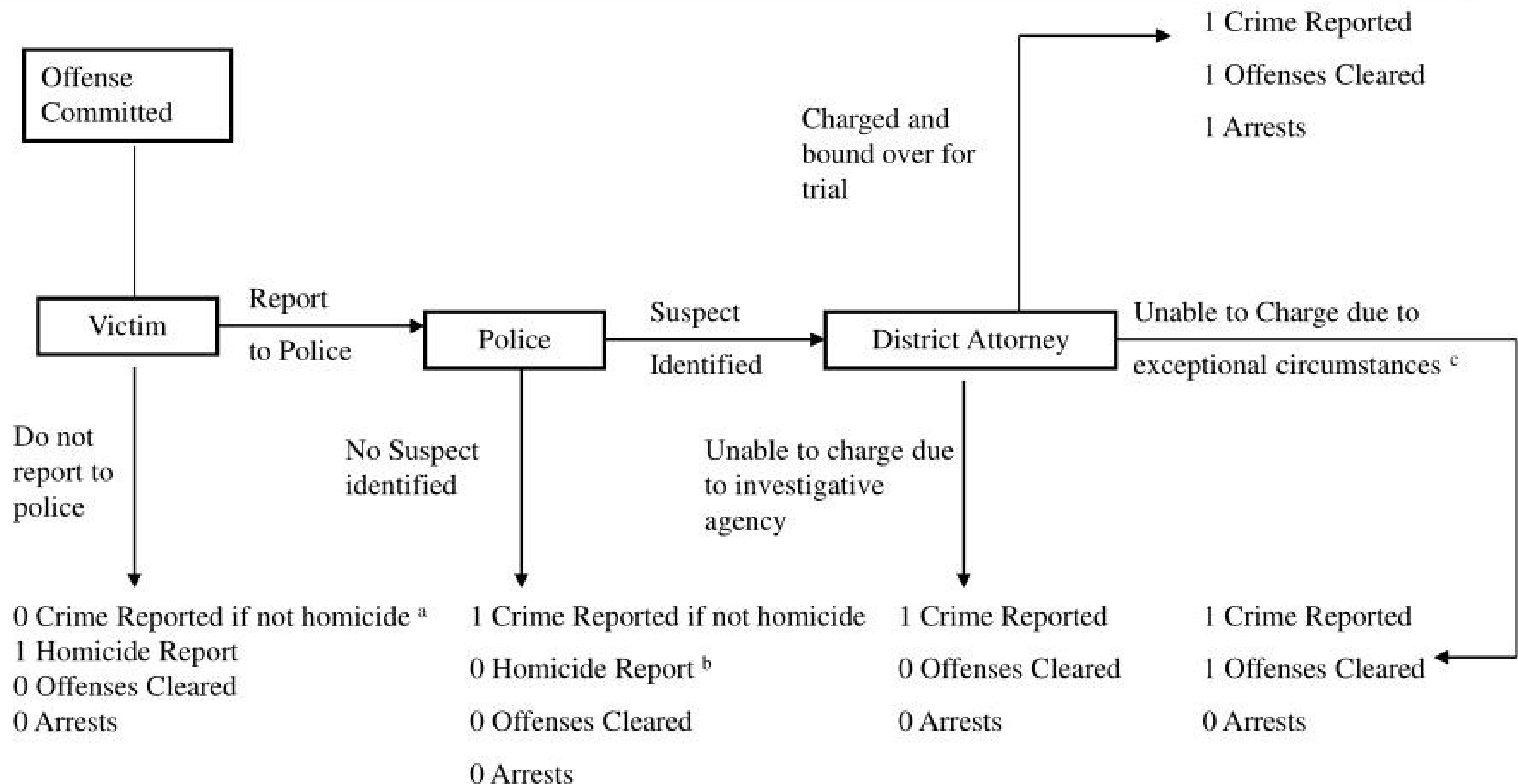


Figure A.1.1. Relationships Criminal Justice System and Uniform Crime Reporting Data



a. These crimes are typically detected through surveys of crime victims (such as the National Criminal Victimization Survey)

b. Technically a supplementary homicide report exists and contains details about the victim but no information about the offender. The analysis in this paper excludes all such unsolved homicides.

c. Offenses can be cleared through exceptional means if the investigating agency has identified an offender, gathered enough evidence to support a legal charge, and the offender has been identified. For example, if the offender dies (either through suicide or through justified police action), the victim refuses to cooperate, or extradition of the criminal is refused.

# Why don't Victims Report?

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## 1. Fear of reprisal

- Listed as the most common reason for non-reporting
- Evidence that mandating arrest + aggressive prosecution + strong sentencing can be effective (e.g. San Diego)

## 2. Fear of Police/Arrest

- Minority communities
- Immigrants
- Victims who worry about "social appearances"

## 3. Dual Arrests

- Some of the problem requires a legislative fix
- Identifying primary aggressors can help lessen this (CT has done this with some success)