

The empirical economics of crime literature: a bird's eye view



Ben Vollaard, CentER, TILEC
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Two lessons from Fisman and Miguel

1. Trick is to find a **convincing natural experiment** to conduct test of criminal behavior
2. Absent legal enforcement, cultural **norms** may dominate behavior; norms can be broken by legal enforcement; uncertain whether new norm of rule-compliant behavior is set

Reference: Fisman, Miguel, 2007, Corruption, norms, and legal enforcement: evidence from diplomatic parking tickets, *JPE*, 115 (6).

Outline of lecture

1. What are we actually testing?
2. How do we conduct successful tests?
3. Recent findings in economics of crime
4. Conclusions

What are we actually testing?

1. The economic model of crime



- Potential offender in the **here and now**: how incentives in the current environment affect decision to commit crime (supply)
- Potential victims trade off risk, loss, expenditure on crime prevention (demand)

2. The economics of crime policy

- *Aim is to integrate insights from multiple disciplines into a common economic framework for the analysis of costs and benefits of alternative crime policies*
- Economic theory of crime just one input; psychology, biology, sociology are others
- Value added economic theory: equilibrium effects/unintended consequences (e.g. entry/exit criminal markets, helmet-use laws)

Where is the *economics* in the empirical economics of crime literature?

- Empiricist's focus: estimating causal effects of police/incarceration/...
- *Empirical papers in which economic theory of crime seems an afterthought may well contribute to economics of crime policy*
- ... if it's more than just estimating causal effects; it gets interesting when trading off alternatives

How do we conduct successful
empirical tests?

The mistake of relating y to x and then control for a lot of other things

- Literature was dominated by analyses of natural variation of variables like police, incarceration and guns in aggregated data
 - e.g. Ehrlich (1975) U.S. 1933-1969 time series analysis of effects death penalty
- Leads to fruitless debates based on shaky empirical evidence (gun control, death penalty, abortion)

The search for experimental variation in the variable of interest

- Literature has moved on, it's all about **research design**, if that isn't right, the paper can best be ignored
- Economics literature shows that when using a proper research design, we may find completely **opposite results**

Methods

- **Natural experiments:** history as our laboratory
 - Natural sciences: design, conduct experiment; collect, analyse data
 - Social sciences: recognize experiment in already available data
- **Field experiments:** useful for policy design
- **Lab experiments:** don't work so well for testing theories of criminal behavior

Natural experiments dominant

- Recognizing natural experiments is an art that can be learned
- Regression discontinuity design, instrumental variable approach, difference-in-difference
- Reading suggestion: Angrist & Pischke, *Mostly harmless econometrics*, Princeton University Press, 2009.



Economists are better in methodology than in dealing with poor crime data

- Measurement error in police recorded crime data seems an afterthought
- Not only random but also non-random measurement error
- May bias estimated effects towards zero (Vollaard & Hamed, 2009)
- Scope for use of victimization surveys

Some recent findings in economics of crime

Effect of number of police on crime

- Strategies to identify exogenous variation in police levels:
 - **Major events:** terror attacks/alerts, visits of head of state (Klick, Tabarrok, 2005)
 - **High-frequency data** (Corman, Mocan, 2005)
 - **IV** (Levitt, 2002; Lin, 2009)
 - **Police funding formula** (Vollaard, Hamed, 2009)

Effect of incarceration on crime

- Strategies to identify exogenous variation in levels of incarceration:
 - Prison overcrowding laws
 - Effect at aggregate level (Levitt, 1996)
 - Effect at individual level (Drago et al., 1998)
 - Transition from juvenile to adult criminal justice system (Levitt, 1998; Lee, McCrary, 2005)
 - Three strikes law (Helland, Tabarrok, 2007)
 - Eligibility for home detention (Marie, 2009)

Conclusions

Lessons from empirical literature on economics of crime

- Economics is leading the way to **research designs** that identify experimental variation in variable of interest: blows away previous work
- With proper research designs, **traditional law enforcement policies** have been shown to have substantial effects on crime, upsetting the conventional wisdom

Some limitations of current empirical literature

- Scale rather than **design** of crime policy
- Short-term rather than **long-term effects**
- Focus on methods rather than **measurement error in crime data**
- Offender rather than **victim**
- Direct effects rather than **equilibrium effects** through adjustment of supply/demand crime
- Empiricist's focus predominant: little attention to **costs/benefits of alternative policies**

Please, feel free to contribute

It's a little crowded field, unlike labor
market economics, public finance,
international trade, industrial organization

And it is of great societal relevance