

ECNS 491

Neighborhood Crime and Self-Enforcement

To-do list

- Quiz #4 (redemption quiz) today
- Remaining lectures on theory of crime:
 - Model neighborhood crime and self-enforcement
 - Game theoretic applications
- No class on Tuesday
- Midterm on March 6th

Neighborhood Crime

- Variation in crime rates across neighborhoods within a given city is often greater than the variation in rates across different cities.
- Here, we try to explain why crime rates can vary substantially across short distances.
- Provide a rationale for the limitations facing authorities seeking to control crime.
- Criminal justice system relies on cooperation from the public.
 - Citizens report crimes, provide evidence, and testify against offenders – all these raise the probability of conviction.
 - Citizens also take actions that significantly raise the cost of crime to offenders by their vigilance and even by taking actions that make offending more difficult or lower the gains to offenders.

Neighborhood Crime Model

- At neighborhood level, gross return from crime varies along the demand-for-crime curve (see Lecture 5 on Crime with Victims)
 - Expected return falls with the level of offending b/c best opportunities for offending are exhausted first and potential victims take precautions as crime increases
- However, in spatial models of crime, at neighborhood level, the probability of conviction is very high when there are few offenders in the area
 - Vigilance of citizens is effective in identifying and apprehending offenders
- As number of offenders increases, p_c falls for two reasons
 - 1.) Citizen cooperation and effectiveness decreases as offenders increase
 - 2.) Conviction requires that a particular offender be associated with a particular offense.

Neighborhood Crime Model

- These two reasons for the decreasing probability of conviction as the number of offenders rises is called the “schooling effect.”
- We assume that neighborhoods are a small part of the general market for offending
 - Offenders will enter an area when the net return is higher than elsewhere
 - Offenders will leave when the net returns is lower
 - This is a simple application of the no-arbitrage equilibrium concept from our Lectures 4 and 5
- Now, let’s formalize the neighborhood concentration of crime model...

[insert formal neighborhood crime model]

Neighborhood Crime Model Implications

- Q. What are some model implications?
 - Once number of offenders in an area has stabilized around zero, the extra enforcement effort may be eliminated ($m_i^{\#}$ back to m_i)
 - Lower threshold of n^* will be well above the negligible number of offenders in the area, and equilibrium offending should remain near zero.
 - In a jurisdiction with a mix of low and high crime areas, it does little good to shift enforcement effort so that it rises moderately in all of the high crime areas
 - This just lowers crime from n^{**} to n_i
 - Alternative is to target the high crime areas one or two at a time with intensive enforcement
 - Sufficient police resources must be applied in these areas to move the expected return-from-offending net sanctions function below W^*
 - If effort is maintained for extended period of time in these high crime areas, offending will decrease to a point approaching zero
 - Then, enforcement effort can be redirected to remaining areas.

Neighborhood Crime Model Implications

- What are political and practical difficulties of the above proposal of intensive and unequal enforcement?
 - 1.) Politically, it is difficult to explain need to maintain police presence in formerly high crime areas after the intensive treatment has lowered crime rates below the average of the entire jurisdiction
 - Political pressure tends to force intensive treatment to end when offending nears n_i^*
 - After enforcement returns to normal, offending will rise back to n_i^{**}
 - 2.) Practically, care must be taken when police are withdrawn from low crime areas to target crime elsewhere
 - Lower effort lowers the n_i^* threshold in these low crime areas...making these areas vulnerable to an increase in offending
 - Targeted enforcement strategy may simply chase crime around the jurisdiction

Neighborhood Crime Model Implications

- The model also suggests a role for two other crime-reduction strategies.
 - 1.) Efforts to raise wages in legal employment can shift W^* up.
 - 2.) Efforts to organize and communicate with neighborhood residents can increase cooperation with enforcement efforts and reduce the size of the schooling effect. This tends to raise expected sanctions and shift the lower threshold to the right.
 - Efforts to organize neighborhood watch and even citizen patrols in higher crime areas are designed to reduce that rate at which p_c decreases as n rises.

Neighborhood Street Gangs

- Can extend model to analyze street gangs
- What assumptions do we need to change to study neighborhood gang activity?
 - So far, we have assumed perfect competition and free entry
 - Neighborhood gangs monopolize criminal activity in a given area.

[insert neighborhood gang model]

Neighborhood Street Gangs

- A gang restricts entry and drives up return, which decreases the level of offending
 - The free-entry solution at n^{**} sets average revenue product equal to average cost and provides no margin for gang rent.
- Complications of model we won't consider
 - Some of gang's rent has to be used to exclude other gangs from area, purchase protection from police/politicians, etc.
 - Could modify the shape of $h(\cdot)$
 - Gangs may operate with different technology than independent offenders, and may be able to suppress or co-opt local citizen efforts at crime control
 - Our approach assumes gangs have a relatively simplistic and straight forward operating procedure that does not change the same of the $h(\cdot)$ function.
 - Model should not be applied to major gangs that may dominate many neighborhoods or even large portions of some cities.