

Neighborhood Crime Model

1.) (15 points) Recall the neighborhood crime model where the gross return from offending in neighborhood i is

$$\pi_i = f(n_i),$$

where n_i is the number of offenders and $f(\cdot)$ is strictly decreasing in n_i . Expected sanctions,

$$p_{ci} = g(n_i; m_i),$$

are also strictly decreasing in n_i due to the “schooling effect,” which lowers the probability of conviction as n rises. Police effort is given by m_i . An increase in effort is expected to shift the expected sanctions function upward by increasing the probability of conviction. Assume sanctions, s , are constant across neighborhoods. Lastly, the supply of offending depends only on the return net of expected sanctions to offending elsewhere (or on return to legal work) and is a constant denoted w^* .

Now, consider extending this standard model of neighborhood crime to cover gang activity. If a gang enters neighborhood i , they will treat w^* as a constant marginal cost of labor, and the expected net return function as an average revenue product curve. Illustrate graphically the level of offending in a gang-controlled neighborhood relative to a situation where there is perfect competition and free entry among offenders. On the same graph, illustrate the area that represents gang rents. Make sure to label your graph correctly!

