

2002년 가을호
김종빈 교수 Quizzes and Communications
[Question 2002 I. 1]의 답

The Proposer's Own Answer

Jongbin Kim^{*}

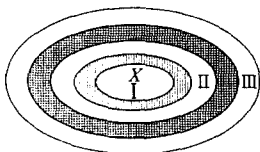
If N constituents of a community can be classified into m groups such that the first group always litigates, the second group litigates only if the first wins, the third group litigates only if the second wins, and so on.¹⁾ Then the expected compulsory compensation by the polluter will be as follows:

Let

q output
 $\theta_i(q)$ subjective probability of the polluter that the i^{th} group
will win the litigation

^{*} Emeritus Professor of Applied Statistics, Yonsei University.

1) This is the circumstance if residential areas are as follows: X is the location of a polluting plant; the white areas are residential; the dotted areas are forests.



$f(q)$ compensation per capita, $f_i(q) \geq f_{i+1}(q)$
 N_i the number of constituents in the i^{th} group

$$\sum_{i=1}^m N_i = N$$

F total expected compulsory compensation by the polluter

$$\begin{aligned} F &= f_1(q) \cdot N_1 \cdot \theta_1(q) + f_2(q) \cdot N_2 \cdot \theta_2(q) \cdot \theta_1(q) \\ &\quad + f_3(q) \cdot N_3 \cdot \theta_3(q) \cdot \theta_2(q) \cdot \theta_1(q) \\ &\quad + \cdots + f_m(q) \cdot N_m \cdot \prod \theta_i(q) < f_1(q) \cdot N \cdot \theta_1(q) \end{aligned}$$

The implication of the above inequality is that a polluter such as a paper manufacturer will dispose of waste water into a long river rather than into a lake if the population of the river side is not a great deal larger than the population of the lake side. The polluter takes advantage of the fact that the market for many pollutants as negative goods is inherently not describable or at best only vaguely definable.