Chapter Five: Externalities (73 - 105)

The Nature of Externalities (74)

Extended discussion on demand changes and externalities
Example of change demand for urban property
Example of technological improvement
"the Pareto Set"
Example of pollution on a river

Points about Externalities
Consumers can cause them as well as producers causing them
My wife (erroneously) claims my pipe causes a negative externality
Externalities are reciprocal in Nature
Fishermen as polluters
It depends on the costs of alternatives
Externalities can be positive
Vaccines and "public health**"**
Public Goods as a special case of externality
I paint my house, and it increases my neighbor's property values
It is so nice, it becomes a national landmark….
If a few people effected, externality – if many/all, a public good

Graphic Analysis of Externalities

Graph Pollution

MB to polluter
MPC to polluter, MD (marginal damage) to consumer,
MSC = Marginal social cost (MPC + MD)

Calculating the polluter's benefits and consumer's losses…

Implications
In this example, we are in a Pareto-sub-optimal stable equilibrium
We are producing too much Q
And voluntary exchange will not fix the problem (see Coase)
Some pollution is optimal
Eliminating all pollution would not be optimal…

Some Empirics of Pollution
Study of TSP (total suspended particles – smog or haze)
Chay and Greenstone using 1980-82 as natural experiment
(2001 replication study)

What about mixed cases (MTBE as a gasoline additive)

How about DDT (dioxin)

What activities produce pollution? It turns out, most of them….
Greenhouse gases (methane, Carbon dioxide (from 290 to 450 PPM)
What is the value of damage done?
Measuring marginal willingness to pay
What people say they would pay
What people are willing to pay
Chay and Greenstone 2005 – TSP and housing prices
Again found a (statistically) significant effect 45 billion over 10 years

Private Responses

Bargaining and the Coase Theorem

Graphical Example….
Numeric Example of the Coase theorem

Book Example – Elephants and Hunting/Ivory bans

Mergers (internalizing the externality) – the reciprocal claimant

Social conventions
"Litterbugs" -- Green policies -- Do unto others…..

Public Responses to Externalities: Taxes and Subsidies (84)

Taxes
The Pigovian Tax
Graphing out a Pigovian Tax
The problem of estimating……
The problem of distributing tax revenue….

Subsidies
The Pigovian Subsidy
When you pay somebody to stop polluting
U.S. farm policies

Public Responses to Externalities: Emissions Fees and Cap-and-Trade Programs (87)

Emissions Fees
Similar to a pigovian tax, except it is leveled on each unit of pollution
Rather than each unit of output
Allows for (encourages) better technology/techniques

Cap-and-Trade
Emissions fees vs. Cap-and-Trade
Command-and-Control Regulations