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• Office Hours: 2:00-3:00PM T/Th
• Office: PA202
• October 21, 2013
Today
• Next exam: Thursday October 31
• Market Failures & Externalities
  • Externalities
  • Tragedy of the Commons
  • Property Rights
  • Coase Theorem
An activity generates an externality if

- that activity causes incidental benefits or damages to others not directly involved in the activity, and

- no corresponding compensation is provided to or paid by those who generate the externality.
Tragedy of the commons:

- the tendency for a resource that has no price to be used until its marginal benefit falls to zero.
Property right:

- the right to allocate a resource.
Coase theorem: Coase suggested that how rights are assigned didn’t matter, so long as the right is assigned to someone – negotiation can always lead us to the socially optimal outcome.

- If people can negotiate costlessly the purchase and sale of the right to perform activities that cause externalities, they can always arrive at
- efficient allocations of the resource.
THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

UNITED STATES FREQUENCY ALLOCATIONS

THE RADIO SPECTRUM

Economics 101
Ronald Coase:
Coase submitted his essay that explained his theorem to the University of Chicago’s Journal of Law and Economics.

The faculty thought he had made an obvious mistake and invited him to dinner to explain. The attendees included Milton Friedman and several others that would go on to win the Nobel Prize in Economics.

Before his explanation Coase was the only one of 21 to support his view. After all 21 agreed.
Coase theorem example*: The Jones family and Smith family are neighbors. The Jones run a pear business, and plant the trees in their yard. Some of the pears fall into the Smith’s yard, and the Smith’s pick them up at no cost and consume them.

*via wikipedia: http://en.wikipedia.org/wiki/Coase_Theorem
Coase Theorem example:
The Jones’ have a constant marginal cost of $25 per tree.

<table>
<thead>
<tr>
<th>Jones Family</th>
<th>Smith Family</th>
<th>Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marginal Benefit</td>
<td>Trees</td>
<td>Marginal Benefit</td>
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<tr>
<td>$35</td>
<td>1</td>
<td>$20</td>
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<tr>
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<td>8</td>
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</tbody>
</table>
Coase theorem example:
If we want to eliminate this externality, what could we do?
Coase theorem example:
If we want to eliminate this externality, what could we do?

- Put up a net that blocks the pears from falling into the Smith’s yard.
  - this decreases the overall societal benefit

- Clearly define property rights and impose a cost to the Smith’s for their consumption of pears
Jones Family optimal supplier rule:
\[ MR(MB) = MC \]
Economics 101

Optimal supplier rule with externality:
MSB = MSC

MPC = MSC
MPB (Jones)
MPB (Smith)
MSB
Coase theorem example:
Lesson: if we’re able to clearly define property rights, and people can costlessly negotiate we can always arrive at an efficient outcome.
Examples with negative externalities?
Examples with negative externalities?
• Pollution
• Spectrum allocation
• Aral Sea example
• Smoking?
• NYC soda tax?
Examples with positive externalities?
Examples with positive externalities?

- Education
- Basic R&D (NIH, DARPA etc).
- Research Triangle Park
- Roads (Eisenhower Interstate System)
- Neighborhood property maintenance, and public parks?
An example with negative externality: Consider the case of pollution from burning carbon based fuels. Let’s assume the U.S. Senate has decided to pass a bill to lower pollution to a desired level ($E^*$), but they don’t know how they want to achieve this goal. As bright young economists they’ve turned to you for advice on how best to achieve this goal.
Q: What is the best way to get here?
Ways to get to E*?
(i.e. how to we “internalize” this externality)
Ways to get to E*?
Voluntarism?

Command-and-control: strict (emissions) quantitative limits on each producer

User fees: taxes on the quantities (emissions)

 Tradable permits: license issued by the government specifying the maximum quantity (emissions) license holder can produce

Q: Which do you think is best? Why?
Ways to get to E*?

Command-and-control: get to E*, but imposing restrictions uniformly on firms of varying levels of efficiency.

User fees: how do you determine the correct tax to get you to E*?

Tradable permits: get to E*, and allows the market to efficiently sort the restrictions by firm efficiency.
An example with positive externality:
Now, let’s consider the case of education. As a society, we value education because it has positive spillovers (What are some examples?).

Suppose North Carolina wants to increase the average level of educational attainment. How might they do this?
Q: What is the best way to get here?
Ways to get to $E^*$?
(i.e. how to we “internalize” this externality)
Ways to get to E*?
Voluntarism?

Command-and-control: get to E*, but imposing restrictions uniformly on students with varying levels of “efficiency”

User fees: how do you determine the correct subsidy (scholarships) to get you to E*, how do you determine who gets it?

 Tradable permits: get to E*, and allows the market to efficiently sort the scholarships by “efficiency”
For next time: Macro!

- Chapter 22
- Look at practice exam
- Send me questions for next Monday