Barriers to Economic Efficiency

The Basic Theorem in Welfare Economics

A market, exchange, economy will achieve efficient resource allocation.

Barriers to Economic Efficiency

• Monopolies
• Externalities

Monopolies

• Suppose there is a monopoly in bananas. We know that
  \[ MRS_{OG,B} < MRT_{OG,B} \]
• In short, there is inefficiency. We are not at Pareto Optimality.

Monopolies

The social cost of a monopoly: the Dead Weight Loss

The Deadweight Loss is present even in the case of a “good” monopoly such as a patent, created for the right reason.
What is to be done

• The Sherman Act
  – What is not clear is whether the actual laws, despite their laudable goals, do more harm than good. If the laws really punish successful firms, then they achieve inefficiency, not efficiency.

What is to be done

• The Sherman Act
  • Some economists argue that the Sherman Act has been misapplied. Businesses use it to deter competition, not to promote it.

What is to be done

• The Rule of Reason
  – Some monopolies come about through the rule of reason exception.

What is to be done

• The Rule of Reason
  – Some monopolies come about through the rule of reason exception.
  • Patents and Copyrights
    – Perhaps the right thing to do

What is to be done

• The Rule of Reason
• Patents and Copyrights
• Still a deviation

Externalities

• Free markets also fail to result in Pareto Efficiency when there are externalities, which occur whenever a person does not have to take all of the costs and benefits of an action into account in making a decision.
Externalities - Examples

• Negative Externalities
  – A railroad, will run by a resort, visiting pollution and noise costs on the resort.
  – A resort opens next to a steel mill; pollution regulations require the mill to close.
  – People smoking in public, causing others to suffer second hand smoke.

Externalities - Examples

• Positive Externalities
  – An apiary adjacent to an orchard would increase its yield and profit.
  – Traffic, and increase the value of an new store will generate all sorts of adjoining sites.

Externalities: Non-examples

• The following are not examples of externalities.
  – I go to the store and purchase an apple, thus reducing the number of apples others may eat.
  – I smoke in private, running the risk of lung cancer.

A Simple Example

• Acme Paper company owns a paper plant on Lake Whatever, whose shores are dotted by hundreds of vacation homes.

• Whenever Acme produces paper, it discharges emissions into the water that reduce the attractiveness of Lake Whatever for the homeowners.

A Simple Example

<table>
<thead>
<tr>
<th>Tons of Paper Produced</th>
<th>Marginal Cost of Production (1)</th>
<th>Marginal Damage to Lake's Recreation Value (2)</th>
<th>Net Social Cost (3) = (1) + (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
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<td>13</td>
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</table>
Externality Taxes

• In economics terms, how do we get Acme to internalize the externality?

Many economists have argued that the correct way to do this is to impose so-called externality taxes. Each firm or individual would have to pay for the damages imposed by their actions.

The Paper Mill

<table>
<thead>
<tr>
<th>Tons of Paper Produced</th>
<th>Marginal Cost of Production (1)</th>
<th>Pollution Tax (2)</th>
<th>Total Production Cost (3) = (1) + (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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The Coase Theorem

• The East Sturbridge Coal Company proposes to build a railroad from a newly discovered coalfield in East Sturbridge to a nearby power plant.
  • The profits will be $400 million.
  • It would run close by Lake Pleasant Resort, Inc. Diesel fumes will cause $150 million in lost profits to Lake Pleasant Resort.

• The West Sturbridge Coal Company proposes to build a railroad from a newly discovered coalfield in West Sturbridge to a nearby power plant.
  • The profits will be $150 million.
  • It would run close by Lake Restful Resort, Inc. Diesel fumes will cause $400 million in lost profits to Lake Pleasant Resort.

The Two Cases

- East Sturbridge
  - $400 million profits
  - $150 million in fumes

- West Sturbridge
  - $150 million in profits
  - $400 million in fumes
The Two Cases

- East Sturbridge
- Lake Pleasant
- $400 million profits
- $150 million in fumes
- West Sturbridge
- Lake Restful
- $150 million profits
- $400 million in fumes

Run the Railroad

- East Sturbridge
- Lake Pleasant
- $400 million profits
- $150 million in fumes
- West Sturbridge
- Lake Restful
- $150 million profits
- $400 million in fumes
- Don’t Run the Railroad

The Coase Theorem

- Two possible laws
  - Railroads do not require permission to be built
  - Railroads cannot build without permission.

Law Impact on East Sturbridge (B=400, C=150)

- Permission Required: Railroad built. Resort accepts payment of $150-$400 million to give permission
- Permission Not Required: Railroad built. Resort is unwilling to pay $400 million to stop construction

Impact on West Sturbridge (B=150, C=400)

- Permission Required: Railroad is not built. Railroad unwilling to pay $400 million payment to get permission
- Permission Not Required: Railroad is not built. Resort is willing to pay $150-$400 million to stop construction.
Barriers to Economic Efficiency

<table>
<thead>
<tr>
<th>Law</th>
<th>Impact on East Sturbridge (B=400, C=150)</th>
<th>Impact on West Sturbridge (B=150, C=400)</th>
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</thead>
<tbody>
<tr>
<td>Permission Required</td>
<td>Railroad built. Resort accepts payment of $100-$400 million to give permission</td>
<td>Railroad is not built. Railroad unwilling to pay $400 million payment to get permission</td>
</tr>
<tr>
<td>Permission Not Required</td>
<td>Railroad built. Resort is unwilling to pay $400 million to stop construction</td>
<td>Railroad is not build. Resort is unwilling to pay $100-$400 million to stop construction</td>
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The Acme Paper Mill

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<th>Tons of Paper Produced</th>
<th>Marginal Cost of Production (1)</th>
<th>Marginal Damage to Lake’s Recreation Value (2)</th>
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Acme sells 2 tons for $14; production costs are $7.

Total damages to the lake are $5

Permission Required

Without any restrictions, ACME would produce 5 tons of paper.

Permission Not Required
### Permission Not Required

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<tr>
<th>Marginal Cost of Production (1)</th>
<th>Marginal Damage to Lake's Recreation Value (2)</th>
<th>Net Social Cost (3) = (1)+ (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3 2 5</td>
<td>2 4 3 7</td>
<td>3 5 4 9</td>
</tr>
</tbody>
</table>

**Recreational damages would be reduced by $15**

Acme would lose $3 if it reduced output to 2 tons

**Acme won’t take less than $3; won’t get more than $15.**

### Impact of Property Rights

<table>
<thead>
<tr>
<th>Law</th>
<th>Impact on Lake Whatever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permission Required</td>
<td>Acme will manufacture 2 tons of paper and pay the Resort somewhere between $5 and $7.</td>
</tr>
<tr>
<td>Permission Not Required</td>
<td>Acme will manufacture 2 tons of paper and the Resort will pay Acme somewhere between $3 and $15.</td>
</tr>
</tbody>
</table>

### Shopping Malls

<table>
<thead>
<tr>
<th>Type of Store</th>
<th>Median Rent per Square Foot</th>
<th>Rent as a Percent of Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>$1.95</td>
<td>1.5%</td>
</tr>
<tr>
<td>Clothing</td>
<td>$18.56</td>
<td>7.9%</td>
</tr>
<tr>
<td>Food Service</td>
<td>$32.41</td>
<td>9.5%</td>
</tr>
<tr>
<td>Jewelry</td>
<td>$42.00</td>
<td>7.6%</td>
</tr>
</tbody>
</table>
End

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