

Barriers to Economic Efficiency



Lectures in Microeconomics-Charles W. Upton

The Basic Theorem in Welfare Economics

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

Barriers to Economic Efficiency

- Monopolies
- Externalities

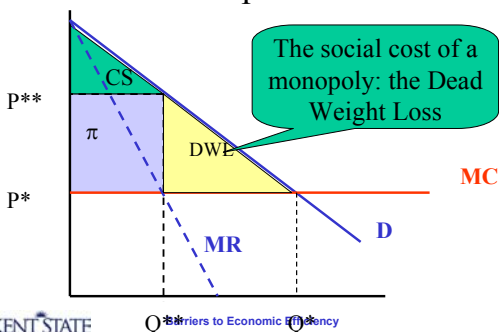
Monopolies

- Suppose there is a monopoly in bananas. We know that

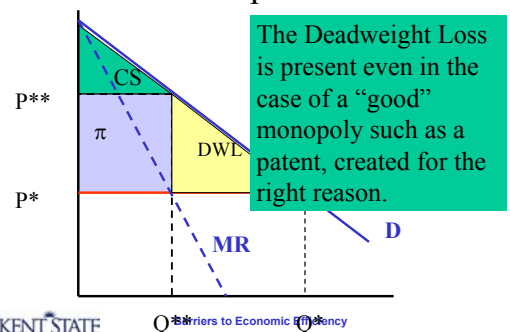
$$MRS_{OG,B} < MRT_{OG,B}$$

- In short, there is inefficiency. We are not at Pareto Optimality.

Monopolies



Monopolies



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.

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

Tons of Paper Produced	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreation Value (2)	Net Social Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Externality Taxes

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

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

Impact of a Pollution Tax			
Tons of Paper Produced	Marginal Cost of Production (1)	Pollution Tax (2)	Total Production Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

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 Coase Theorem

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

The Two Cases

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

The Two Cases

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

The Coase Theorem

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

The Coase Theorem

- Two possible laws
 - Railroads do not require permission to be built
 - Railroads cannot build without permission.
- Either law will achieve the right result

Law	Impact on East Sturbridge (B=400, C=150)	Impact on West Sturbridge (B=150, C=400)
Permission Required	Railroad built. Resort accepts payment of \$150-\$400 million to give permission	Railroad is not built. Railroad unwilling to pay \$400 million payment to get permission.
Permission Not Required	Railroad built. Resort is unwilling to pay \$400 million to stop construction	Railroad is not built. Resort is willing to pay \$150-\$400 million to stop construction.

Law	Impact on East Sturbridge (B=400, C=150)	Impact on West Sturbridge (B=150, C=400)
Permission Required	Railroad built. Resort accepts payment of \$150-\$400 million to give permission	Railroad is not built. Railroad unwilling to pay \$400 million payment to get permission.
Permission Not Required	Railroad built. Resort is unwilling to pay \$400 million to stop construction	Railroad is not built. Resort is willing to pay \$150-\$400 million to stop construction.

Law	Impact on East Sturbridge (B=400, C=150)	Impact on West Sturbridge (B=150, C=400)
Permission Required	Railroad built. Resort accepts payment of \$150-\$400 million to give permission	Railroad is not built. Railroad unwilling to pay \$400 million payment to get permission.
Permission Not Required	Railroad built. Resort is unwilling to pay \$400 million to stop construction	Railroad is not built. Resort is willing to pay \$150-\$400 million to stop construction.

The Acme Paper Mill

Tons of Paper Produced	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreation Value (2)	Net Social Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Permission Required

Acme sells 2 tons for \$14; production costs are \$7

Tons of Paper Produced	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreation Value (2)	Net Social Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Total damages to the lake are \$5

Permission Required

Acme sells 2 tons for \$14; production costs are \$7

Acme won't pay more than \$7; the lake won't take less than \$5

Tons of Paper Produced	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreation Value (2)	Net Social Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Total damages to the lake are \$5

Impact of Property Rights

Law	Impact on Lake Whatever
Permission Required	Acme will manufacture 2 tons of paper and pay the Resort somewhere between \$5 and \$7.
Permission Not Required	Acme will manufacture 2 tons of paper and the Resort will pay Acme somewhere between \$3 and \$13.

Permission Not Required

Without any restrictions, ACME would produce 5 tons of paper

Paper Produced	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreation Value (2)	Net Social Cost (3) = (1)+ (2)
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Permission Not Required

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

Recreational damages would be reduced by \$15

	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreational Value (2)	
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Permission Not Required

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

Recreational damages would be reduced by \$15

Acme won't take less than \$3; won't get more than \$15

	Marginal Cost of Production (1)	Marginal Damage to Lake's Recreational Value (2)	
1	3	2	5
2	4	3	7
3	5	4	9
4	6	5	11
5	7	6	13

Impact of Property Rights

Law	Impact on Lake Whatever
Permission Required	Acme will manufacture 2 tons of paper and pay the Resort somewhere between \$5 and \$7.
Permission Not Required	Acme will manufacture 2 tons of paper and the Resort will pay Acme somewhere between \$3 and \$15.

Impact of Property Rights

Law	Impact on Lake Whatever
Permission Required	Acme will manufacture 2 tons of paper and pay the Resort somewhere between \$5 and \$7.
Permission Not Required	Acme will manufacture 2 tons of paper and the Resort will pay Acme somewhere between \$3 and \$15.

Shopping Malls

Rental Information from Shopping Malls		
Type of Store	Median Rent per Square Foot	Rent as a Percent of Sales
Department	\$1.95	1.5%
Clothing	\$18.58	7.9%
Food Service	\$32.41	9.5%
Jewelry	\$42.00	7.6%

Shopping Malls

Rental Information from Shopping Malls		
Type of Store	Median Rent per Square Foot	Rent as a Percent of Sales
Department	\$1.95	1.5%
Clothing	\$18.58	7.9%
Food Service	\$32.41	9.5%
Jewelry	\$42.00	7.6%

One kind of store generates traffic; the other kind lives off of the traffic. The one that generates traffic gets a lower rate.

End

©2003 Charles
W. Upton