Class # 5 and 6
Values and Valuation

A break down of value

Market Data & models
Extractive Use Non-extractive Use

Direct Use Indirect Use Bequest Value Existence Value Option Value

Use Value Non-use Value

Total Economic Value


Principle Methods
for Nonmarket Valuation

Revealed Preference Methods
Best when we can look at actual behavior
• Travel Cost Method
• Hedonic valuation
• Averting or defensive expenditures

Stated Preference Methods
Only option when there are no actions to look at
• Contingent Valuation
    (and related stated preference methods)

A break down of value

Market Data
Extractive Use Non-extractive Use

Direct Use Indirect Use Bequest Value Existence Value Option Value

Use Value Non-use Value

Total Economic Value


A break down of value

Surveys or other kinds of data
Extractive Use Non-extractive Use

Direct Use Indirect Use Bequest Value Existence Value Option Value

Use Value Non-use Value

Total Economic Value

A break down of value

Extractive Uses

Non-extractive Use

Direct Use

Indirect Use

Use Value

Bequest Value

Existence Value

Option Value

Non-use Value

Total Economic Value

Surveys


Four Main Types of Non-market Valuation

1. Travel-Cost Method
2. Hedonic Pricing
3. Defensive or averting expenditures
4. Stated-preference (e.g. the Contingent Valuation method)

Travel Cost Method

$/trip

Trips


Non-market valuation methods required

Four Main Types of Non-market Valuation

1. Travel-Cost Method
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Travel Cost Method

$/trip

Trips

Travel Cost Method

What if there’s an improvement?

The value of the improvement is the change in surplus

Notice that the estimated value will be different for people facing different travel costs.

Travel Cost Exercise

• Big Bird Birding (BBB) offers guided trips to a state park. The cost of the tour is $10 per person. In addition, people have to pay transportation costs that vary depending upon how far they have to travel. Specifically, the average cost is $10 for each 100 miles that individuals have to travel. The table below presents the average number of guided trips taken by birding enthusiasts who live in 4 different towns at various distances from the park.

<table>
<thead>
<tr>
<th>Town</th>
<th>Round trip travel to &amp; from park</th>
<th>Average # of trips per year</th>
<th>Cost per birding trip</th>
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<tr>
<td>A</td>
<td>100</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>200</td>
<td>4</td>
<td></td>
</tr>
<tr>
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Part A (6 minutes)
Step 1: Calculate cost/trip
Step 2: Graph demand curve

Travel Cost Exercise

Estimate value of surplus to people in Town C
Travel Cost Exercise

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Part C (4 minutes)
New Demand Curve with everyone taking 1 fewer trip

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Estimate benefit to people in Town C if BBB doesn't charge.
Four Main Types of Non-market Valuation

1. Travel-Cost Method
2. Hedonic Pricing
3. Defensive or averting expenditures
4. Stated-preference (e.g. the Contingent Valuation method)

The Hog Farm Article

• What was one environmental benefit or cost discussed in the article.
• What type of benefit or cost was it (i.e., where does it fit in the value taxonomy?)
• What valuation method was used or could be used to place a dollar value on that benefit or cost?

Averting or defensive expenditures

• Finds values using markets for related goods or services that provide similar benefits.
• Example: The value of a wetland that cleans the water could be estimated using the cost of treating the same quantity of water.
When do we use the averting or defensive expenditures approach? (3 minutes)

Which of the following would be the most appropriate case for this approach?

A. The extinction of a bird species.
B. An increase in air pollution that causes respiratory problems.
C. The pollution of a river that is used for drinking water.
D. Rising sea levels.

Discussion:
Averting Expenses & Climate Change

- The estimate the costs of climate change in the Financial Times article come from the defensive expenditures approach.

Why are these defensive expenditures estimates?

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Contingent Valuation (and related stated preference methods)

- **Open-ended:** “How much would you be willing to pay to protect the endangered Houston Toad?”
- **Dichotomous Choice:** “Would you be willing to pay $____ to protect the endangered Houston Toad?”
- **Stated choice methods are the best choice for pure non-use values.**
- **Revealed choice methods are preferred for use values**

A comment about indirect use values

Indirect use typically refers to relationships that would require a sophisticated biophysical model to establish the value under consideration. For example: forest protection – water improvements.

The dividing line between direct and indirect is often fuzzy.

The final value to humans will be either extractive or non-extractive and the methods are the same as for direct use.
The value of a wolf hunt?

- Each Team should complete the worksheet for 2 positive and 2 negative impacts of the wolf hunt.

Dolphin Video

- https://www.youtube.com/watch?v=KqSVwEgfdJo


- Fill in as many benefits (positive or negative) in each category.
- Group compilations due 5 minutes after video ends.

The end