

AREC 514

Cost-Benefit Analysis

Instructor:
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Introduction

- Application of economic principles to analyze impacts of public actions:
 - Investments
 - Expenses incurred before benefits
 - Traditionally the most common focus of CBA
 - Policies
 - Taxes/subsidies
 - Regulations

Individual vs Social Costs & Benefits

- Similar:
 - Compare benefits with costs, measured in money terms
 - Need to incorporate and value risk/uncertainty in the analysis
 - Future prices/market conditions
 - All other factors that may affect outcomes in the future

Individual vs Social Costs & Benefits

- Different:
 - CBA does not always use market prices
 - Non-marketed goods
 - Externalities
 - Non-competitive markets
 - CBA makes comparisons across individuals or groups
- So, CBA must decide whose interests count in the calculation (value judgments)
- Income distribution impacts
 - Claims or rights of different individuals or groups

Some arguments against CBA

- No unambiguous means for assigning “social” values and costs of outcomes.
 - How to determine value of a non-marketed good?
- Question theoretical basis for making welfare comparisons across individuals
 - No theoretical basis for making comparisons between one person’s benefits and another person’s costs

Major Steps in CBA

1. Specify alternative projects (or actions)
2. Decide whose benefits and costs count (standing)
3. Catalogue impacts and select measurement indicators (units)
4. Predict the impacts quantitatively over the life of the project
5. Assign money values to all impacts
6. Discount benefits and costs to get present values
7. Compute NPV of each alternative
8. Perform Sensitivity Analysis
9. Make recommendation for action

CBA part science part art

- Can be theoretically rigorous about identifying numbers needed for CBA
- But actually estimating the numbers is often very difficult
 - Need to make some very strong assumptions
- In this course we will discuss both the science and art aspects of CBA.
 - Hopefully, you will be convinced of the usefulness of the approach, and understand its limitations.

Administrative Issues

- Required Text – Available in Bookstore
 - Boardman, Anthony, D. Greenberg, A. Vining, and D. Weimer, *Cost-Benefit Analysis, 2nd Edition*, Upper Salmon River: Prentice-Hall, 2001.
- Additional readings in syllabus are optional, not required

Administrative Issues

- Class Website

<http://ag.arizona.edu/classes/arec514/>

Username: arec514

Password: bca

Administrative Issues

Course Assignments

- 2 Mid-term exams (each worth 25% course grade)
 - February 21
 - April 3
- Final Exam (25% course grade)
 - May 13, 8:00 AM
- Term Paper (25% course grade)
 - Due last day of classes (May 6)
- Other homework assignments, do not count in course grade