



Course Outline

Business Undeclared
School of Business & Economics
ECON 6040 - **3.00** - Academic

Valuation Methods for Cost-Benefit Analysis

Rationale

Based on recommendations from the Degree Quality Assessment Board, the following minor course changes are proposed:

- Change the course acronym from ESMN to ECON
- Change the name of the course from Valuation Methods for Benefit-Cost Analysis to Valuation Methods for Cost-Benefit Analysis
- Change the prerequisites to ECON 6010, ECON 6020, ECON 6030

Calendar Description

Building on Foundations of Cost-Benefit Analysis, students explore advanced techniques of valuing impacts and contingent valuation methods for investment projects. Valuation methods will be conducted using experiments, quasi-experiments, direct estimation and other indirect market methods. Other topics include contingent valuation, hedonic pricing method, shadow prices, econometrics of contingent valuation, cost-effectiveness analysis, distributional weighted cost-benefit analysis, and hypothesis testing in contingent valuation surveys. A critique of the valuation approaches for non-market goods and services from a philosophical perspective will be addressed.

Credits/Hours

Course Has Variable Hours: No

Credits: 3.00

Lecture Hours: 3.00

Seminar Hours: 0

Lab Hours: 0

Other Hours: 0

Clarify:

Total Hours: 3.00

Delivery Methods: (Face to Face)

Impact on Courses/Programs/Departments: None is expected

Repeat Types: A - Once for credit (default)

Grading Methods: (G - Graduate Programs)

Educational Objectives/Outcomes

1. Estimate the benefits and costs of program interventions by using experimental and quasi-experimental designs.
2. Understand the measurement of changes in social surplus by estimating supply and demand functions.
3. Comprehend the theoretical foundation of the contingent valuation method.
4. Build and estimate regression models with qualitative (categorical) dependent variables.
5. Assess impacts from consumer revealed preferences for products that do not exist.
6. Evaluate the major strengths and weakness of contingent valuation methods for estimating costs and benefits of investment projects.
7. Estimate implicit (hedonic) prices for goods and services.
8. Select the best available value of a number of frequently used shadow prices.
9. Estimate alternative shadow prices used in cost-benefit analysis for developing countries.
10. Compute cost-effectiveness ratios to compare policy alternatives.
11. Categorize different individuals affected by government policies, programs, and projects.
12. Construct statistical hypothesis tests about the response effects in contingent valuation surveys.

Prerequisites

ECON 6010-Principles of Environmental and Natural Resource Economics or equivalent and

ECON 6020-Applied Microeconomics for Sustainable Management or equivalent and

ECON 6030-Foundations of Cost-Benefit Analysis or equivalent

Co-Requisites

Recommended Requisites

Exclusion Requisites

Texts/Materials

Other

1. **Required** Textbooks

Boardman, Anthony E., David H. Greenberg, Aidan R. Vining, and David L. Weimer. Cost-Benefit Analysis: Concepts and Practice, Pearson/Prentice-Hall, 2010.

Robert Cameron Mitchell, Richard T. Carson. Using Surveys to Value Public Goods, The Contingent Valuation Method, Resources for the Future Washington D.C., 1989.

Noboru Hidano, The Economic Valuation of the Environmental and Public Policy - A Hedonic Approach, Edward Elgar Publishing, UK, e-book, 2003.

Carter Hill, William E. Griffiths and Guay C. Lim, Principles of Econometrics, Fourth Edition, Willey and Sons, 2012.

Pearce, D., G. Atkinson and S. Mourato, Cost-Benefit Analysis and the Environment: Recent Developments, OECD, 2006.

Student Evaluation

The Course grade is based on the following course evaluations.

Assignments (20.00%) Team Case Study/Project (25.00%) Discussion/Participation (10.00%) Final Exam (45.00%)

Course Topics

1. Valuing Impacts from Observed Behavior: Experiments and Quasi-Experiments

- Alternative evaluation designs
 - Cost-benefit analysis (CBA) of environments and quasi experiments
 - CBA of employment and training programs: an introduction
 - CBA framework in the education and training context
 - Conceptual issues in conducting CBAs of education and training programs
 - Choosing prediction parameters
 - CBA of welfare-to-work experiments
- Random assignment experiments in health

2. Valuing Impacts from Observed Behavior: Direct Estimation of Demand Curves

- Knowing the slope or price elasticity of demand
- Extrapolating from a few observations
- Econometrics estimation with many observations

3. Theoretical Basis of the Contingent Valuation Method

- Basis of welfare economics
 - Choices of benefit measure
 - Willingness-to-pay versus willingness-to-accept measures
 - New property rights approach
 - Aggregation issues
 - Private goods and political market models
- Implications of theory of for contingent valuation scenario design

4. Econometrics of Contingent Valuation

- Multiple regression; assumptions, estimation, and tests
 - Linear probability model
 - Probit model
 - Maximum likelihood estimation
 - Logit model for binary choice
 - Multinomial logit choice probabilities
- Conditional logit choice probabilities

5. Valuing Impacts from Observed Behavior: Indirect Market Methods

- Market analogy method
 - Trade-off method
 - Intermediate good method
 - Asset valuation method
 - Hedonic pricing method
 - Travel cost method
- Defensive expenditure method

6. Contingent Valuation: Using Surveys to Elicit Information about Costs and Benefits

- Overview of contingent valuation methods
 - Payment vehicle
 - Generic survey issues
 - Contingent valuation problems and issues
 - How accurate is contingent valuation?
- Heuristic for the design and use of consumer value surveys

7. Hedonic Pricing Method as an Approximation of Benefit

- Development of the hedonic conception
 - Examination of over estimation ratio
 - Two-region general equilibrium model
 - Large national project evaluation
 - Parameter estimation method and data
- Estimation of hedonic price function
- Environmental cost-benefit analysis using the hedonic price method

8. Shadow Prices from Secondary Sources

- Value of a sustainable life
 - Value of a life-year
 - Cost of crashes and cost of injuries
 - Cost of crime
 - Value of crime
 - Value of recreation
 - Value of nature (specific species or habitats)
 - Value of water and water quality
 - Cost of noise
 - Cost of air pollution
 - Social cost of automobiles
- Cost of taxation: marginal excess tax burden
Transferring and adjusting plug-on values

9. Shadow Prices: Applications to Developing Countries

- LMST methodology
 - Illustrations of the LMST method in practice
 - Shadow pricing when goods are in fixed supply
 - Shadow price of labor
 - Additional topics
- Is the LMST method actually used for project evaluation?

10. Cost-Effectiveness Analysis

- Cost-effectiveness ratios and policy choice
- Omitted costs and benefits
- Cost-utility analysis
- Use of league table

11. Distributional Weighted Cost-Benefit Analysis

- Distributional justification for income transfer programs
- Case for treating low- and high-income groups differently in CBA
- Distributional weights
- Determining distributional weights
- A pragmatic approach to weighting

12. Hypothesis Testing and Experimental Design in Contingent Valuation Surveys

- Power of test
- Power of contingent valuation hypothesis tests
- Contingent valuation surveys and the coefficient variation
- Ways to improve the power of simple experiments
- More complex experiments

Methods for Prior Learning Assessment and Recognition

Students can apply for PLAR but it cannot be used to meet the program residency requirement.

Last Action Taken

Implement by Graduate Studies Committee Chair Debbie (Proxy GSC Chair) Krebs

Current Date: 27-Oct-20