George Washington University  
PPPA 6015: Benefit-Cost Analysis  
Fall 2012

Time: Monday, 3:30-6pm  
Location:  
Professor: David Greenberg  
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Office Hours: Mondays, 1:30-3:15 and 6:15-7:15, or by appointment  
Course Description & Objectives

Course Description

This course will consist of an examination of the conceptual foundations and basic techniques of cost-benefit analysis (CBA) and a review of a number of specific cost-benefit studies. The analytical underpinnings of cost-benefit analysis are micro-economic principles, or more specifically, the principles of welfare economics. Actually conducting CBAs requires quantitative skills. As a practical matter, therefore, a familiarity with microeconomic theory, statistics, and algebra on your part is assumed. The prerequisite for this class is PPPA 6014 (Economics in Policy Analysis) or Econ 6283 (International Trade Theory & Policy). If you have not taken one of these courses, you must get my approval before enrolling.

The course is designed primarily around the interests and requirements of MPP and PhD Public Policy & Administration students, but I welcome students from any and all other disciplines. Active class discussion of all the topics that will be covered is strongly encouraged.

The individual topics that will be covered are listed in the accompanying course schedule. I have also indicated extra readings for the PhD students in the course schedule below. While PhD students will not be tested on these readings directly, they are considered important in preparation for comprehensive exams and your future career. These readings can also be considered “recommended” extra resources for interested MPP students. The only way to really appreciate cost-benefit studies is to read some.

The early part of this course will focus on the basic theory and concepts on which cost-benefit analysis depends. The course will then describe the major practical tools used in conducting cost-benefit studies. In doing this, many of the points will be illustrated by in-class discussions of previously conducted cost-benefit studies.

Cost-benefit analysis consists of a comprehensive set of techniques that are used to evaluate government programs in the USA, as well as other countries. It is now routinely applied in such program areas as transportation, water projects, health, training and education, criminal justice, environmental protection, urban policy, and many others. Many of the techniques of CBA can also be applied to private sector decision-making. The course demonstrates how many of the tools of economics can be applied to practical problems.
The objective of CBA is to determine whether the benefits from a particular program, policy, or decision outweigh its costs. The techniques used to determine this are sometimes quite simple, but on other, increasingly frequent occasions are highly sophisticated. Sophisticated cost-benefit studies are based on a framework that utilizes the basic concepts of economic theory. In addition, statistical and econometric methods are often needed to estimate program effects from diverse available data.

**Learning Objectives**

The objective of the course is to provide you with the conceptual foundations and practical skills you will need to be thoughtful consumers and producers of CBAs. The goal is to help you learn something about the theoretical concepts and practical tools used in conducting cost-benefit analyses. This should provide you with a useful framework for examining policy decisions, especially those made within the public sector. You should also be able to better appreciate the usefulness and limitations of cost-benefit studies conducted by professional economists. You will find that although individual studies are unique in important respects, they are conducted within a more or less common framework and certain techniques are used over and over again.

**Course Requirements**

- Midterm Exam (40%)
  - An in-class closed-book exam covering all course material up to that point. You may use a calculator and scratch paper.
- CBA Project (total=50%)—See the CBA guidelines handout for details.
  - CBA Project Proposal (5%)
  - List of Potential Costs & Benefits (5%)
  - Literature & Data Review (5%)
  - Presentation (5%)
  - Final Paper (30%)
- Practice Problem Sets (10%)

The problem sets are designed to help reinforce the concepts from class and prepare you for the exams. The intent of the problems, which are drawn from the problems at the end of the chapters in the text, is to help you absorb some of the specific concepts we will be covering. They are listed in the course schedule under the class in which the concepts are covered. The idea is that you should be able to do them AFTER the class under which they are listed. I will collect them twice during the semester and post solutions on Blackboard about a week later.

**Required Text**


- Please make sure you get the 4th edition

**Recommended Text**


- I recommend having an intermediate micro book (like Friedman’s) on hand for reference purposes.

Other Materials

- Calculator: I highly recommend bringing a basic calculator to class and to the exam. You will not need a programmable calculator, but if you decide to use one, you must show me that you have cleared its memory before the exam.
- Excel: You will need to use Microsoft Excel for your CBA project and some of the problems. Basic familiarity is assumed, but, if needed, I will go over useful functions and other tips in class.
- PowerPoint: You will need to use Microsoft PowerPoint for your presentation. I will review some basics in class before the first presentations, if needed.

Additional Policies & Information

- Attendance: Please try not to miss class! Lectures are your most important source of information for the exam and project. If you are late or have to miss class, please make sure you get notes from a classmate and download all relevant materials from Blackboard.
- Turning Things In: Please turn in assignments in hard copy AND electronically using Blackboard’s “Assignment” feature on the main menu. Whenever possible, please turn in pdf files of your work (if this is not possible, please cut and paste in Word to create a single electronic document). If, for any reason, the hard copy and electronic documents are not identical (though they should be), the hard copy will be used for grading purposes.
- Deadlines: This syllabus provides all relevant due dates for assignments. It is your responsibility to ensure that I receive your assignments on time. Hard copies must be turned in by the end of class on the due date and electronic files must be received before midnight on the due date. Late assignments will be marked down for each day they are late (only extreme circumstances warrant exception).
- Collaboration: You are welcome to share comments and advice on CBA projects. However, the exam and problem sets must be done on your own.
- Academic Integrity: Academic dishonesty will not be tolerated and I regularly check exams and assignments for plagiarism and cheating. You are responsible for knowing and following all of the definitions and policies established in the George Washington University. Code of Academic Integrity at http://www.gwu.edu/~ntegrity/code.html.
- Grade Changes: No changes can be made in grades after the conclusion of the semester, other than in cases of clerical error.
- Accommodation for Students with Disabilities: If you need extra time on exams or assignments due to a disability, please let me know in the first week of class. In order to receive accommodations on the basis of disability, you will need to provide proper documentation to the Office of Disability Support Services, Marvin Center 436, 202-994-8250.
- Extra Help: Please be sure to contact me or come to office hours early in the semester if you are struggling with course materials or if you have specific questions pertaining to your CBA project.
• Feedback: I welcome your feedback on my teaching, the CBA project, and the course in general. In particular, if you find any interesting articles, CBAs, or other references that you would recommend for future classes please send them my way!

Course Schedule

Week 1 (September 10)

• Introduction to CBA
  o Chapter 1
  o Exercises 1.a and 1.b

• Basic Economic Concepts Underlying CBA
  o Chapter 2 (pp. 27-31; 34-42)
  o Exercises 3.a and 3.c, 6, and 7
  o Budget of the United States Government, Fiscal Year 2011, Analytical Perspectives, Performance Management, Ch. 8 & 9.

• Some useful tools—scan and know what is there
  o OMB Guidelines
    (http://www.whitehouse.gov/OMB/circulars/A004/A-4.PDF)
    (http://www.whitehouse.gov/omb/circulars/a094/a094.html)
  o EPA Guidelines
    (http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html)
  o UK Guidelines
    (http://greenbook.treasury.gov.uk/)
  o CPI Calculator
    (http://www.bls.gov/data/inflation_calculator.htm)

Week 2 (September 17)

• Project selection
  o Chapter 2 (pp.31-34)
  o Exercises 4.a and 4b

• CBA and its alternatives
  o Chapter 2 (pp. 42-48)

• Valuing Impacts: Concept Review
  o Chapter 3 including the appendix
  o Exercises 1a-1f


**Week 3 (September 24)**

- **CBA Project Proposal Due**
- Valuing Outcomes: Willingness-to-Pay
  - Chapter 4 (pp. 78-99 only)
  - Exercise 1
- Deriving Demand Curves
  - Chapter 13 including the appendix
  - Exercises 1a, 1b and (with provided spreadsheet) 2a.

**Week 4 (October 1)**

- Valuing Inputs: Opportunity Costs
  - Chapter 4 (99-110)
  - Exercises 1, 2.a, 2b, and 3.a

**Week 5 (October 8)**

- Valuing Impacts in Secondary Markets
  - Chapter 5
  - Exercises 1a, 1b, 2.a, 2.b, and 2d
- The Mechanics of Discounting
  - Chapter 6
  - Exercises 1a, 1b, 1d, 4a, 4b, and (with provided spreadsheet) 6a and 6b.

**Week 6 (October 15)**

- **First Problem Set Due**
- **List of Potential Costs and Benefits Due**
- The Social Discount Rate
  - Chapter 10
  - Exercises 1a-1d

Week 7 (October 22)

- Dealing with Uncertainty
  - Chapter 7 including the appendix
  - Exercises 1 and 2
  - Chapter 8
  - Exercises 1.a-c

Week 8 (October 29)

- Estimating Impacts from Demonstrations
  - Chapter 12
  - Exercises 2a and 4a-4d

Week 9 (November 5)

- Literature and Data Review Due
- Estimating Impacts from Demonstrations (continued)
- Estimating Impacts from Observed Behavior
  - Chapter 9
  - Exercise 2
  - Chapter 14
  - Exercises 1 and 2


**Week 10 (November 12)**

- Estimating Impacts from Observed Behavior (continued)
- Estimating Impacts from Surveys
  - Chapter 15
  - Exercises 1a, 1b, and 3
  - Chapter 16 (scan, chapter provides tools, know what is there)

**Week 11 (November 19)**

- **Second Problem Set Due**
- Cost-Effectiveness Analysis
  - Chapter 18
  - Exercises 1a-c
- Distributional Weighting
  - Chapter 19
  - Exercises 1 and 2a-c

**Week 12 (November 26)**

- **Midterm Exam**

**Week 13 (December 3)**

- **Presentation (Day 1)**

**Week 14 (December 4)**
• Presentation (Day 2)