George Washington University
Economics 222: Cost-Benefit Analysis
(or Economics Applied to Public Policy)
Spring 2007

Time: Thursdays, 7:10pm-9:40pm
Location: Rome 351

Professor: Stephanie R. Cellini
Office: MPA Building (805 21st Street), 601M
Phone: (202) 994-0019
Email: scellini@gwu.edu
Website: http://home.gwu.edu/~secellini/
Office Hours: Tues. & Thurs. 3-5pm or by appointment

Course Description & Objectives:

This course seeks to link economic theory with policy analysis, using the tool commonly referred to as "cost-benefit analysis" or CBA. As a formal assessment of a policy's costs and benefits, CBA attempts to measure and compare the economic efficiency of policy options. This type of analysis has become standard practice in policy analysis—particularly in microeconomic policy areas such as the provision of public goods, government regulation, and taxation. The goal of the course is to provide you with the conceptual foundations and practical skills you will need to be thoughtful consumers and producers of CBA. At the conclusion of the semester, you will not only know how to conduct a CBA, but you will also understand its limitations. You will come away with a deeper understanding of how economics can inform policy; how one might begin to measure the many and varied effects of our laws, regulations, and government programs; and ultimately how to evaluate and compare alternative policies.

The class will draw on both qualitative and quantitative skills. As a practical matter, a basic familiarity with microeconomic theory, statistics, and algebra is assumed. At the minimum, you should have already taken an intermediate microeconomics course, such as Economics 217. 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. I have indicated extra readings and practice problems for the PhD students below. While the PhD students will not be tested on these readings and problems directly, they are considered important in preparation for comprehensive exams and your future career. These readings and problems can also be considered "recommended" extra resources for interested MPP students.

Course Requirements:

- Class Participation (5%)
  - Class time will be split between lectures, in-class activities, and discussions. For this format to be effective, you must be prepared to participate in activities and discussions, both of which will generally incorporate the readings and practice problems listed for that day. So please come prepared: do the readings, do (or at
least attempt) the practice problems, and bring your questions, comments, and thoughts.

- Midterm Exam (20%)
  o The midterm will be an in-class examination covering all of the course material up to that point. Your best preparation will be to come to class consistently and do the readings and practice problems.

- Final Exam (25%)
  o The final will also be “in-class” during finals week. As the course is cumulative, the final will cover all of the course material.

- CBA Project (total=50%)—See the CBA guidelines handout for details.
  o CBA Project Proposal (5%)
  o List of Potential Costs & Benefits (5%)
  o Literature & Data Review (5%)
  o Final Paper (35%)

**Required Text:**


- This is the primary text for the course (hereafter referred to as BGVW).

**Recommended Texts:**


- Discusses the use of CBA in informing environmental regulation in the context of social, political, and legal systems. Highly recommended for PhDs.


- I recommend having an intermediate micro book (like this one) on hand for reference purposes.


- A volume containing more advanced technical articles on CBA.

**Other Materials:**

Calculator: I highly recommend bringing a basic calculator to class and to the exams. You will not need a graphing calculator, but if you decide to use one, you must be prepared to clear its memory before each exam (that is, you must know how to do this and be able to prove to me
that it is clear). You will be NOT allowed to use any other devices: no cell phones, blackberries, palm pilots, etc.

Excel: For some of the problems and your own CBA, Microsoft Excel will be EXTREMELY helpful. Please let me know if you are not comfortable using Excel (and using “functions” within Excel in particular). If there are enough students who would like a tutorial, we can set one up.

Class Schedule & Outline:

Week 1 (Jan. 18):
- Overview of Cost-Benefit Analysis
  - What is CBA?
  - How, When & Why is it Useful?
    - Read: Ch. 1 & 2 BGVW
  - Practice Problem Set #1 (Review)

Week 2 (Jan. 25):
- Foundations of Welfare Economics
  - Pareto Efficiency
  - Opportunity Cost
  - Willingness-to-Pay
  - Consumer Surplus, Producer Surplus, Social Surplus
    - Read: Ch. 3 BGVW
    - PhDs Read: Appendix 3A BGVW
    - Practice Problem Set #2

Week 3 (Feb. 1):
- Measuring Benefits & Costs of Market Goods & Services Using Known Supply & Demand Curves
  - Efficient Markets
  - Inefficient Markets: Public Goods & Externalities
    - **CBA Project Proposal Due**
      - Read: Ch. 4 BGVW
      - Practice Problem Set #3
Week 4 (Feb. 8):
- Measuring Benefits & Costs of Market Goods & Services Using Known Supply & Demand Curves (con't)
  - Inefficient Markets (con't): Information Asymmetry, Natural Monopolies
  - Inefficient Markets (con't): Price Floors, Ceilings, Unemployed Workers
  - Secondary Market Effects
    - Read: BGWV Ch. 5
    - Read: Haveman, Robert H. "Evaluating Expenditures Under Conditions of Unemployment."
    - Practice Problem Set #4

Week 5 (Feb. 15):
- Measuring Benefits & Costs of Market Goods & Services Using Estimated Supply & Demand Curves
  - Statistical & Econometric Methods
  - Experimental & Quasi-Experimental Methods
    - Read: Ch. 12 BGWV
    - Practice Problem Set #5

Week 6 (Feb. 22)
- Measuring Benefits & Costs of Non-Market Goods & Services
  - Indirect Market Methods: Market Analogy, Trade-Off, Intermediate Good, Asset Valuation
  - Survey Methods: Contingent Valuation
    - List of Potential Costs & Benefits Due
      - Read: Ch. 13 (up to p. 349 only) BGWV
      - Read: Ch. 14 BGWV
      - Read: Hahn, Robert W., et al. 2000. “Should You Be Allowed to Use Your Cellular Phone While Driving?” Regulation 23(3).
      - PhDs Read: Ch. 13 (whole chapter) BGWV
      - Practice Problem Set #6
Week 7 (Mar. 1)

- Measuring Benefits & Costs of Non-Market Goods & Services (con’t)
  - Value of Life
  - Value of Time
  - Value of Nature: Existence Value
    - Read: Ch. 9 BGVW
    - Read: Ch. 15 BGVW
    - Practice Problem Set #7

Week 8 (Mar. 8)

- Midterm Exam

Week 9 (Mar. 22)

- Discounting Future Benefits & Costs
  - Social Discount Rate
  - Net Present Value
  - Inflation
    - Read: Ch. 6 BGVW
    - PhDs Read: Ch. 10 BGVW

Week 10 (Mar. 29)

- Dealing with Uncertainty
  - Expected Value
  - Game Theory
  - Decision Theory

  **Literature & Data Review Due**
  - Read: Ch. 7 (p. 165-175 only) BGVW


Practice Problem Set #8

Week 11 (Apr. 5)
- Sensitivity Analysis
  - Partial Sensitivity Analysis
  - Extreme Case Analysis
  - Monte Carlo Analysis
  - Read: Ch. 7 (p. 175-184 only) BGVW
  - Read: Sunstein, Cass R. “The Arithmetic of Arsenic” Ch. 7 of Risk and Reason.
  - Practice Problem Set #9

Week 12 (Apr. 12)
- Distributional Considerations
  - Distributional Weights
  - Internal Weights
  - Read: Ch. 18 BGVW
  - Practice Problem Set #10

Week 13 (Apr. 19)
- Developing Policy Recommendations
  - Strengths & Weaknesses of CBA Revisited
  - Cost-Effectiveness Analysis
  - New Tools & Trends
  - Practice Problem Set #11

Week 14 (Apr. 26)
- Review for Final
  - Final Paper Due

Final Exam: Thurs., May 10, 7:40pm-9:40pm *** Note time! Room TBD. ***
Additional Policies & Information:

- Attendance: Please try not to miss class! Lectures are perhaps your most important source of information for exams, projects, etc. 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. Note that you must write something in the "comments" box when submitting. 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 work together on the practice problems and share comments and advice on CBA projects. However, all graded exams and assignments to be turned in must be done on your own.

- Academic Integrity: Academic dishonesty will not be tolerated and I regularly check exams and assignments for signs of 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, let me know in the first week of class. In order to receive accommodations on the basis of disability, you'll 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 and the course in general. Please let me know if you have concerns about the pace of the course, if you find any interesting articles that you would recommend to others, or if you have any other suggestions for improving the course.