

Trachtenberg School of Public Policy and Public Administration
PPPA 6015 – Benefit-Cost Analysis
Fall 2022
(UPDATED 7/18)

Time and Place: Thursdays, 6:10pm-8:00pm; Phillips 416

Professor: Anil Nathan

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Course Description & Objectives

This course seeks to link economic theory with policy analysis, using the tool commonly referred to as “benefit-cost analysis” (BCA) or “cost-benefit analysis” (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 and government regulation. 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.

The class will draw on qualitative, quantitative, and analytic skills. As a practical matter, a familiarity with microeconomic theory, statistics, and algebra is assumed. The prerequisite for this class is PPPA 6014 (Microeconomics in Policy Analysis II). If you have not taken one of these courses, you must get approval before enrolling.

Learning Objectives

Through lectures, discussions, readings, assignments, and exams, students will develop knowledge and skills that will enable them to:

- Conduct a thorough cost-benefit analysis.
- Understand and articulate the limitations of a cost-benefit analysis.
- Critically analyze cost-benefit analyses conducted by others.

- Apply economic theory to real-world policy problems.
- Evaluate and compare alternative policies using the tools of cost-benefit analysis and economics generally.

Course Requirements

- In-Class Exam (25%)
 - Covers all course material up to that point. More details to come.
- CBA Project (total=70%)—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 (50%)
- Class Participation (5%)
- Practice Problem Sets (0%)
 - You are not required to turn in the problem sets. They are designed to help reinforce the concepts from class and prepare you for the exam. They are listed on the syllabus under the class in which the concepts are covered. We will also work on some problems during class.

Required Text

Boardman, Anthony A., David H. Greenberg, Aidan R. Vining, and David L. Weimer. *Cost-Benefit Analysis: Concepts and Practice*, 5th edition (2018).

Recommended Text

Goolsbee, Austan, Stephen Levitt, and Chad Syverson. *Microeconomics*. OR
Nechyba, Thomas. *Microeconomics: An Intuitive Approach*

Tentative Class Schedule

& Outline

Class 1 (August 30)

- Overview of Cost-Benefit Analysis
 - What is CBA?
 - How, When & Why is it Useful?
 - What are its Limitations?
 - Cost-Effectiveness as an Alternative?
 - Ch. 1 & 2 Boardman
 - Budget of the United States Government, Fiscal Year 2011, Analytical Perspectives: Performance Management, Ch. 8 & 9.
 - Wallsten, S. & K. Kosec. "The Economic Costs of the War in Iraq." AEI-Brookings Joint Center, 2005.
 - Practice Problem Set #0 (Review)
 - Practice Problem Set #1

Class 2 (September 6)

- Foundations of Welfare Economics
 - Pareto & Potential Pareto Efficiency
 - Opportunity Cost & Willingness-to-Pay
 - Consumer Surplus, Producer Surplus, Social Surplus
 - Ch. 3 Boardman
 - Podcast: Freakonomics Radio, "Why Uber is an Economist's Dream," 2016.
 - Policing Case Study, Part 1:
 - Ponomarenko, M. & Friedman, B. "Benefit-Cost Analysis of Public Safety: Facing the Methodological Challenges," JBCA, 2017.
 - Flacker, R. et al. "Closing the Gap: The Need for Inclusive Benefit-Cost Analysis in Policing," JBCA, 2017.
 - Hassett K. & P. Swagel "Creative Accounting: MOMA's Economic Impact Study" WSJ, 2006.
 - PhDs: Appendix 3A BGWW
 - Practice Problem Set #2

Class 3 (September 13)

- CBA Theory: Valuing Impacts in Primary Markets
 - Efficient Markets
 - Inefficient Markets
 - **CBA Project Proposal Due**

- Ch. 4 & 5 (afterwards) Boardman
- Schmitz, A. & T. G. Schmitz. "Benefit-Cost Analysis: Distributional Considerations under Producer Quota Buyouts." *JBCA* 1(1), 2010.
- Wilhelm, S. "Public Funding of Sports Stadiums." Center for Public Policy and Administration, U. of Utah, Policy Brief 04-30-08, 2008
- PhDs: Siegfried, J., & A. Zimbalist. "The Economics of Sports Facilities and Their Communities." *JEP* 14(3), 2000.
- Practice Problem Set #3

Class 4 (September 20)

- CBA Theory: Valuing Impacts in Inefficient Markets
 - Inefficient Markets
 - Uncertainty
 - Ch. 5 Boardman
 - Morrison, et al. "Fundamental Flaws of Social Regulation: The Case of Airplane Noise." *JLE* 42, 1999.
 - Haveman, R. H. "Evaluating Expenditures under Conditions of Unemployment." 1974.
 - Dubner, S. J. & S. D. Levitt. "Unintended Consequences." *New York Times*, Jan. 20, 2008.
 - PhDs: Haveman, R. & D.L. Weiner. "Public Policy Induced Changes in Employment: Valuation Issues for Benefit-Cost Analysis." *JBCA*, 2015.
 - Practice Problem Set #4

Class 5 (September 27)

- Input Markets; Secondary Markets; Predicting and Monetizing Impacts in Markets
 - Statistical & Econometric Methods
 - Experimental & Quasi-Experimental Methods
 - Ch. 6 (pp 147-152 only), 7-8 (optional), 14 (pp 354-359) Boardman
 - Policing Case Study, Part 2:
 - Goldstein, R. "Evaluating Proactive Police Units: A Case Study of Retrospective Benefit-Cost Analysis with Nonexperimental Data" *JBCA*, 2017.
 - Garces, E., J. Currie, & D. Thomas. "The Longer-Term Effects of Head Start." *AER*, 92(4), 2002.
 - Belfield, C., et al. "The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age 40 Follow-Up." *JHR*, 41(1), 2006.
 - PhDs: Boes, S. & S. Nuesch. "Quasi-experimental Evidence on the Effect of Aircraft Noise on Apartment Rents." *JUE*, 69, 2011.
 - Practice Problem Set #5

Class 6 (October 4)

- Valuing 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**
 - Ch. 15 & 16 Boardman
 - Policing Case Study, Part 3:
 - Cohen, M. "The Social Cost of a Racially-Targeted Police Encounter," *JBCA*, 2017.
 - Levin, H. et al. "The Costs and Benefits of an Excellent Education for all of America's Children," Columbia University, 2007.
 - Vining, A. & D. Weimer. "An Assessment of Important Issues Concerning the Application of Benefit-Cost Analysis to Social Policy." *JBCA*, 1(1), 2010.
 - Cummings R. G. and L. Taylor. "Unbiased Value Estimates for Environmental Goods: A Cheap Talk Design for the Contingent Valuation Method." *AER* 89(3), 1999.
 - PhDs: Robinson, L. A. and J. K. Hammitt, "Behavioral Economics and Benefit-Cost Analysis: Towards Principals and Standards." *JBCA*, 2(2), 2011.
 - Practice Problem Set #6

Class 7 (October 11)

- Special Cases of Non-Market Goods in CBA
 - Valuing Time: Value of Travel Time Savings
 - Valuing Life: Value of Statistical Life
 - Valuing Nature: Option Value, Existence Value
 - Ch. 15 and 16 Boardman, Ch. 17 (post-class)
 - Applebaum, B. "As U.S. Agencies Put More Value on a Life, Businesses Fret." *NYT*, Feb. 16, 2011.
 - Viscusi, W. K. "The Devaluation of Life." *Regulation and Governance* 3, 2009.
 - Ashenfelter, O. "Measuring the Value of Statistical Life: Problems and Prospects," *The Economic J* (116), 2006.
 - PhDs: Viscusi, W. K. & J. E. Aldy. "The Value of Statistical Life: A Critical Review of Market Estimates Throughout the World." *J of Risk and Uncertainty* 27(1), 2003.
 - Practice Problem Set #7

Class 8 (October 18)

- Discounting Future Benefits & Costs
 - Discount Rates
 - Net Present Value
 - Inflation
 - Ch. 9 Boardman

- Office of Management & Budget (OMB), *Circular A-4*, 2003.
- Podcast: Planet Money, "Putting a Price Tag on Your Descendants," 2012.
- Sunstein, Cass. "On Not Revisiting Official Discount Rates: Institutional Inertia and the Social Cost of Carbon." *AER Papers and Proceedings*, 2014.
- Stern, N., "Executive Summary (short)," *The Stern Review Report on the Economics of Climate Change*. HM Treasury: United Kingdom. Oct. 30, 2006.
- PhDs: Ch. 10 BGVW (Social Discount Rate)
- Practice Problem Set #8

Class 9 (November 1)

- Uncertainty & Equity
 - Sensitivity Analysis: Partial, Extreme Case, Monte Carlo
 - Distributional & Internal Weighting
 - **Literature & Data Review Due**
 - Ch. 11 & 19 Boardman
 - Posner, R. "The Probability of Catastrophe," *Wall Street Journal*, January 4, 2005.
 - Hallegatte, S. "A Cost-Benefit Analysis of the New Orleans Flood Protection System." AEI-Brookings Regulatory Analysis 06-02, 2006.
 - Chen, G & R.N. Warburton. "Do Speed Cameras Produce Net Benefits? Evidence from British Columbia, Canada," *Journal of Policy Analysis and Management*, 2006.
 - Practice Problem Set #9

Class 10 (November 8) (online)

- Guest panel from Regulatory Studies Center and Coast Guard

Class 11 (Week of November 15) (online or in-person)

- **Exam week. Distributed by Tuesday, Nov 9th and due by Sunday, November 14th**
- **Individual meetings about CBA project**

Class 12 (Week of November 22) (online or in-person)

- **Individual meetings about CBA project**

Class 13 (November 29) (online or in-person)

- **Presentations**

Class 14 (December 6) (online or in-person)

- **Presentations**

Final Paper Due

Sunday, December 11th at 11:59pm

Additional Policies & Information

- **Attendance:** Please let me know if you will be late, need to leave early, or need to miss class altogether. I do expect you to attend class unless otherwise noted. However, err on the side of missing class if you feel ill.
- Please follow the [GW campus commitment](#) and the [Campus Health and Well-Being policy](#).
- **Turning Things In:** Project assignments should be turned in electronically using Blackboard's "Assignment" feature on the main menu. Whenever possible, please turn in pdf files of your work.
- **Deadlines:** This syllabus provides all relevant due dates for assignments. It is your responsibility to ensure that I receive your assignments on time. Electronic copies of the assignments can be uploaded until 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 very much encouraged to work together on the practice problems and share comments and advice on CBA projects. However, the exam and project assignments to be turned in must be done on your own.
- **Academic Integrity:** 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>.
- **Credit Hours:** Over 15 weeks, students will spend 1 hour and 50 minutes (110 minutes) per Class in class. Required readings, practice problem, and the CBA project are expected to take up, on average, 8 hours (480 minutes) per Class. Over the course of the semester, students will spend 27.5 hours in instructional time and 120 hours preparing for class, for a total of 147.5 hours.

- **Use of Electronic Course Materials and Class Recordings.** Students are encouraged to use electronic course materials, including recorded class sessions, for private personal use in connection with their academic program of study. Electronic course materials and recorded class sessions should not be shared or used for non-course related purposes unless express permission has been granted by the instructor. Students who impermissibly share any electronic course materials are subject to discipline under the Student Code of Conduct. Please contact the instructor if you have questions regarding what constitutes permissible or impermissible use of electronic course materials and/or recorded class sessions. Please contact Disability Support Services at disabilitysupport.gwu.edu if you have questions or need assistance in accessing electronic course materials.
- This course will be audio/video recorded. The recording will be made available to students in this class. As part of your participation in this course, you may be recorded. If you do not wish to be recorded, please contact the GW Privacy Office (privacy@gwu.edu) the first week of class (or as soon as you enroll in the course, whichever is latest) with your privacy concern.