

**George Washington University**  
**PPPA 6015: Benefit-Cost Analysis**

**FALL 2020**  
**(Updated August 28<sup>th</sup>, 2020)**

Time: Thursdays, 6:10pm-8:00pm (Online)

Professor: Anil Nathan  
Office: MPA Building (805 21<sup>st</sup> Street), 601L  
Phone: (202) 994-0982  
Email: [anathan@gwu.edu](mailto:anathan@gwu.edu)  
Office Hours: TBA (On Blackboard) and <https://anil-nathan.youcanbook.me/>

**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 (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. 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.

**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 (10%)
  - Final Paper (45%)
- Class Participation (5%)
  - I value your positive participation in class discussions, in-class exercises, and other class activities.
- 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. The idea is that you should be able to do them AFTER the class under which they are listed. I will post solutions on Blackboard about a Class later.

### Required Text

Boardman, Anthony A., David H. Greenberg, Aidan R. Vining, and David L. Weimer. *Cost-Benefit Analysis: Concepts and Practice*, 4<sup>th</sup> edition (Upper Saddle River, NJ: Prentice Hall, 2010).

### Recommended Text

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

- I recommend having a microeconomics book (like these ones) on hand for reference purposes.

## Class Schedule & Outline

### (Tentative)

#### Class 1 (September 1)

- 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 BGVW
    - 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 8)

- Foundations of Welfare Economics
  - Pareto & Potential Pareto Efficiency
  - Opportunity Cost & Willingness-to-Pay
  - Consumer Surplus, Producer Surplus, Social Surplus
    - Ch. 3 BGVW
    - 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 BGVW
    - Practice Problem Set #2

#### Class 3 (September 15)

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

- Ch. 4 BGVW
- 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 22)**

- CBA Theory: Valuing Impacts in Inefficient & Secondary Markets
  - Inefficient Markets (con't.)
  - Special Case: Unemployed Workers
  - Secondary Markets
    - BGVW Ch. 5 & 11
    - 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 29)**

- CBA Practice: Predicting and Monetizing Impacts in Markets
  - Statistical & Econometric Methods
  - Experimental & Quasi-Experimental Methods
    - Ch. 12, 13, & Appendix 13A BGVW
    - 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 6)**

- 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. 14 (up to p. 353 only) & Ch. 15 BGVW
  - 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 13)

- 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. 9 & 16 BGVW
    - 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.
    - Cellini, S. "For-Profit Higher Education: An Assessment of Costs and Benefits," *NTJ*, 2012.
    - 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 20)

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

- 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
- Practice Problem Set #8

#### **Class 9 (October 27)**

- Uncertainty & Equity
  - Sensitivity Analysis: Partial, Extreme Case, Monte Carlo
  - Distributional & Internal Weighting
    - **Literature & Data Review Due**
    - Ch. 7 & Appendix 7A BGVW
    - 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.
    - Fraas, A. G. "The Treatment of Uncertainty in EPA's Analysis of Air Pollution Rules." *JBCA*, 2(2), 2011.
    - PhDs: Manski, C. F. "Policy Analysis with Incredible Certitude" NBER Working Paper #16207, 2010.
    - Practice Problem Set #9

#### **Class 10 (November 3)**

- **Joe Cordes guest lecturer or Individual Meetings on CBA project**

#### **Class 11 (November 10)**

- **EXAM**

#### **Class 12 (November 17)**

- Individual meetings about CBA project

**Class 13 (December 1)**

- **Presentations**

**Class 14 (December 8)**

- **Presentations**

**Final Paper Due**

TBA

**Additional Policies & Information**

- **Attendance:** Please try not to miss class! They are your most important source of information for the exam and project and class participation is part of your grade. If you are late or have to miss class, you do not need to let me know, but please make sure you view recordings download all relevant materials from Blackboard. **Since this class is online, please have access to Blackboard with a microphone and camera (at times) ready.**
- **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 welcome 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:** 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.
- **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.

- **Respect for Diversity:** It is my intent that students from all backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. I strive to create an inclusive classroom and present materials and activities that are respectful of diversity including gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and political affiliation. Your suggestions are encouraged and appreciated.
- **Conduct:** Higher education works best when it becomes a vigorous and lively marketplace of ideas in which all points of view are heard. Free expression in the classroom is an integral part of this process. At the same time, higher education works best when all of us approach the enterprise with empathy and respect for others, irrespective of their ideology, political views, or identity. We value civility because that is the kind of community we want, and we care for it because civility permits intellectual exploration and growth.
- In order to receive accommodations on the basis of disability, you will need to provide proper documentation to the Office of Disability Support Services, Rome Hall, Suite 102, <http://disabilitysupport.gwu.edu/>.
- **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!
- **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](mailto:disabilitysupport.gwu.edu) if you have questions or need assistance in accessing electronic course materials.
- This course/lecture may 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](mailto:privacy@gwu.edu)) the first week of class (or as soon as you enroll in the course, whichever is latest) with your privacy concern.
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