THE UNIVERSITY OF CHICAGO
HARRIS SCHOOL
OF PUBLIC POLICY
Social Impact, Down to a Science

PPHA41300, Cost-Benefit Analysis

Term: Fall 2026
Instructor: Robert Kaestner
Contact Information: kaestner@uchicago.edu
Course Meetings: Tuesdays and Thursday, 9:30-10:50 am, Keller 0007

Background and Goals

Cost-benefit analysis (CBA) is the principal analytical framework through which governments evaluate the social value of public policies. CBA requires systematic identification, measurement, and monetization of all relevant costs and benefits accruing to society over time — a task that is conceptually not too difficult to understand yet challenging to implement in practice. The course will review the microeconomic foundations of CBA that guide the objectives just described. Key topics include consumer surplus, compensating and equivalent variation, willingness-to-pay, opportunity cost, producer surplus, market and government failure, supply-and-demand analysis, time value of money and the Kaldor-Hicks criteria. The course focuses on the practice of CBA in Executive Branch of the federal government, as codified in federal regulatory practice. Students will develop the skills necessary to critically evaluate existing cost-benefit analyses and the knowledge and capabilities required to conduct simple cost-benefit analyses and to contribute to the conduct of more complicated cost-benefit analyses.

Course Objectives

- Obtain a working knowledge of the key steps in conducting a CBA including defining who has standing; identifying, measuring and monetizing impacts; discounting costs and benefits, and the importance of transparency and credible evidence.
- Understand how microeconomic concepts underlie the conduct of a CBA including the measurement of consumer willingness-to-pay and consumer surplus; the opportunity cost of providing goods and producer surplus; and government surplus from the difference in revenue and spending.
- Develop skills to use supply and demand analysis to examine effects of public policies and to assess changes in social welfare of public policies in cases in which markets are and are not characterized by market distortions such as taxes and externalities.
- Explain the Kaldor-Hicks efficiency criterion and its theoretical rationale and critically evaluate the philosophical and ethical objections that have been raised against it.
- Explain the theoretical basis and empirical derivation of key shadow prices used in CBA, including the value of a statistical life, the social cost of carbon, the value of travel time, and the social discount rate.
- Apply revealed preference and stated preference methods to estimate the value of non-market impacts, and evaluate the strengths, limitations, and appropriate use cases of each approach.
- Identify common sources of error and bias in applied CBA — including incomplete evidence, omitted impacts, and strategic misrepresentation — and apply sensitivity analysis and other tools to characterize uncertainty in the results.

Prerequisites: None

Relationship to Other Programs

This course applies economic analysis to a central question in public policy: when do government programs and policies increase social welfare? It is designed to build on foundations you have already developed — drawing on microeconomics for the analytical framework, welfare economics for the normative assessments of results, and statistics and program evaluation for the assessment of the evidence used to measure costs and benefits in practice.

Some overlap with your prior microeconomics coursework is intentional. Cost-benefit analysis is grounded in microeconomic analysis, and revisiting those concepts in a new context will reinforce and extend your understanding. The emphasis here, however, shifts toward welfare economics — particularly market surplus, market failure, and the conditions under which government intervention can be justified.

The empirical dimension of the course is equally important. Real-world cost-benefit analysis requires credible estimates of costs and benefits, and you will draw on your background in statistics and program evaluation to assess that evidence. Applications span several areas of public policy, including health, education, and the environment.

Course Logistics

- Attendance is required (https://harris.uchicago.edu/student-life/dean-of-students-office/policies#courses-attendance). The first absence will be automatically excused, but each additional absence will result in a 1% grade penalty for the course.

- The use of laptops or cell phones is not permitted in class

- Canvas: Course materials are posted to the university's CANVAS course management system (http://courses.uchicago.edu/). Students are responsible for all material posted there. Please be sure to set your notifications on CANVAS so that you receive all communications from me sent through this platform.

- Class time will be mostly lecture/discussion. Each week there will be an in-class assessment of knowledge about the previous week's material.

Teaching Assistant(s) and/or Graders

TA: TBA
Grader: TBA

Grading

- Attendance: Attendance is required. Perfect attendance earns a student 10 points (10%) toward the final grade. Every missed class results in a one-point reduction in final grade (max deduction is 10).
- Weekly Assessments: There are 7 weekly, in-class assessments (quizzes). These assessments will be based on the previous week's lectures and readings. Each assessment will be worth up to 5 points, or 5% of final grade for a total of 35%.
- Mid-term Exam: The Mid-term exam will be given on Nov. 10th. The exam will cover material from the first 5 weeks of class and be worth 30% of final grade
- Final Exam: The exam will be given during finals week. The final exam will cover material from the last 4 weeks of the class and be worth 25% of final grade.

Academic Integrity

"All students are expected to uphold the highest standards of academic integrity and honesty and comply with the Harris Academic Integrity Policy. All suspected academic dishonesty will be referred to the Dean of Students for disciplinary action."

- Academic dishonesty on any exam results in a failing grade for the course.
- Academic dishonesty on any assignment will result in a zero on the assignment and a course grade cap of C+.

AI Policy

AI content generation software for academic projects, data analysis, and other scholarly pursuits
AI tools offer tremendous potential for enhancing productivity, accuracy, and knowledge acquisition. However, use of AI must be consistent academic integrity and ethical standards.

Students may use AI tools to gather information much in the way that a research assistant is used to increase scholar productivity. A good rule is that AI tools are allowed pre-writing: before content is created, writers can use some tools to research topics, collect examples, brainstorm ideas, craft outlines, etc. For example, AI tools are helpful to identify studies/citations that have addressed the problem, or a similar problem, to the problem in the assignment. AI tools are also useful for retrieving a definition/discussion of a concept related to course material, or to generate a basic supply and demand graph (much like a Google image search) that will be modified for the assignment, or to see how a concept is discussed by other authors.

Students using AI should be transparent about their use and make sure it aligns with academic integrity. If AI tools have been used, then that use must be properly documented and credited.

Link to Harris's AI policy.

General Resources Available to Students

Disability Accommodations

The Harris disability liaison in the Dean of Students Office will coordinate with instructors to implement accommodations approved through the Student Disability Services Office. If you would like to pursue accommodations, please visit this link.

Undergraduate and non-Harris students with SDS accommodations should email their determination letter to HarrisDeanofStudents@uchicago.edu by the end of Week 1.

Student Assignments

- Weekly Assessments: There are 7 weekly, in-class assessments (quizzes). These assessments will be based on the previous week's lectures and readings. Each assessment will be worth up to 5 points, or 5% of final grade for a total of 35%.
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(1) Week of September 29	Readings
What is CBA?	Boardman Chapter 1 Jason Furman, WSJ Article January 7, 2025 Sunstein, Cass R. 2021. "Some Costs and Benefits of Cost-Benefit Analysis." *Daedalus* 150 (3): 208–19.
Origins and a little history of CBA	Sunstein, Cass R. 2018. "The Triumph of Technocrats". MIT Press
Cost-effectiveness vs cost-benefit analysis	Semaglutide and Tirzepatide for Obesity: Effectiveness and Value. ICER Report on GLP-1s
Political economy of CBA	Congressional Review Act (https://www.gao.gov/legal/congressional-review-act/faqs-on-the-congressional-review-act)
Ex-ante vs. ex-post CBA	Flyvbjerg, Bent and Bester, Dirk W., The Cost-Benefit Fallacy: Why Cost-Benefit Analysis Is Broken and How to Fix It (September 6, 2021). Journal of Benefit-Cost Analysis, October, pp. 1-25 Odeck, James, and Anne Kjerkreit. "The accuracy of benefit-cost analyses (BCAs) in transportation: An ex-post evaluation of road projects." *Transportation Research Part A: Policy and Practice* 120 (2019): 277-294.
Boardman's 10 Steps for conducting a CBA	Boardman Chapter 1 Office of Management and Budget. Circular A-4. Revision. 2023.
Case Study: CBA of a Child Subsidy	Garfinkel I, Sariscsany L, Ananat E, et al. The Benefits and Costs of a Child Allowance. *Journal of Benefit-Cost Analysis*. 2022;13(3):335-362. doi:10.1017/bca.2022.15

(2) Week of October 6	Readings
Assessment of Week 1 Material	The purpose of this assessment is to test your understanding of the basic features and structure of CBA.
Valuing the benefits and costs of market goods	
Consumer Surplus Compensating Variation Equivalent Variation Willingness-to-pay Willingness-to-accept	Boardman Chapters 3 (and Appendix 3A) and 6 Tunçel, Tuba, and James K. Hammitt. "A new meta-analysis on the WTP/WTA disparity." *Journal of Environmental Economics and Management* 68, (2014): 175-187. Burlig, Fiona, Amir Jina, and Anant Sudarshan. "The value of clean water: Experimental evidence from rural India." *American Economic Review* 116, no. 3 (2026): 1148-1187.
Producer Surplus Opportunity cost Long-run supply	
Kaldor-Hicks Criteria	Persky, Joseph. 2001. "Cost-Benefit Analysis and the Classical Creed." *Journal of Economic Perspectives* 15 (4): 199–208.
Cost-benefit analysis using supply and demand	Rent Control: Diamond et al., 2019. "The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco," American Economic Review, 109:3365-94 Clemens et al. (2025). Did California's Fast Food Minimum Wage Reduce Employment? NBER Working Paper 34033 http://www.nber.org/papers/w34033
Measuring impacts in distorted markets	

(3) **Week of October 13**	**Readings**
Assessment of Week 2 Material	The purpose of this assessment is to test your skills at using a simple supply and demand analysis to measure market surplus before and after a policy, which is what a CBA does although it's often more complicated and not amenable to supply and demand analysis.
Using the elasticity of demand in a CBA	Davis, Lucas, Estimating the Price Elasticity of Demand for Subways: Evidence from Mexico (December 2020). NBER Working Paper No. w28244
Internalities Sugar Sweetened Beverages	Hunt Allcott & Benjamin B. Lockwood & Dmitry Taubinsky, 2019. "Should We Tax Sugar-Sweetened Beverages? An Overview of Theory and Evidence," Journal of Economic Perspectives, vol 33, pages 202-227
Retirement Savings	Beshears, John, Matthew Blakstad, James J. Choi, Christopher Firth, John Gathergood, David Laibson, Richard Notley, Jesal D. Sheth, Will Sandbrook, and Neil Stewart. *Does pension automatic enrollment increase debt? Evidence from a large-scale natural experiment*. No. w32100. National Bureau of Economic Research, 2024.
Behavioral Economics Considerations	Thaler, Richard H., and Cass R. Sunstein. "Libertarian paternalism." American Economic Review 93, no. 2 (2003): 175-179. Sunstein, C. (2020). Behavioral Welfare Economics. Journal of Benefit-Cost Analysis, 11(2), 196-220
Government Failure	Winston, Clifford. 2025. Market Corrections Not Government Interventions. Chapters 2,4, 6 and 7
(4) Week of October 20	**Readings**
Assessment of Week 3 Material	The purpose of this assessment is to test your understanding of the rationale of state intervention to protect the consumer from themselves and to assess the consequences of that intervention in a simple cost-benefit analysis based on supply and demand.
Measuring benefits when market characterized by asymmetric information	Economics of Food Labeling. By Elise Golan, Fred Kuchler, and Lorraine Mitchell with contributions from Cathy Greene and Amber Jessup. Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 793. FDA RIA Food labeling: revision of the nutrition and supplement facts labels
Measuring costs in primary markets with and without market failures	
Measuring impacts in secondary markets	Boardman Chapters 5 and 7 Matthew J. Kotchen & Arik Levinson, 2023. "When Can Benefit–Cost Analyses Ignore Secondary Markets?," Journal of Benefit-Cost Analysis, vol 14(1), pages 114-140. Matthew Freedman, Noah Arman Kouchekinia, and David Neumark, "Understanding the Employment Effects of Opportunity Zones," NBER Working Paper 34589 (2025), https://doi.org/10.3386/w34589.
Measuring the impact of a policy that lowers cost of intermediate good used in many other products	
Are jobs a benefit or a cost?	Bartik, Timothy J. "Including Jobs in Benefit-Cost Analysis" Annual Review of Resource Economics 4 (2012): 55-73. Erten, Bilge, Joseph E. Stiglitz, and Eric Verhoogen. *Employment Impacts of the CHIPS Act*. No. w34625. National Bureau of Economic Research, 2026

(5) Week of October 27	**Readings**
Assessment of Week 4 Material	The purpose of this assessment is to test your knowledge as to why and when secondary markets matter and how to approach these issues in a CBA.
Fundamental Theorems of Welfare Economics	
Distributional weights	Boardman et al. (2018). Chapter 19 Adler, M.D. (2016). Benefit-Cost Analysis and Distributional Weights: An Overview. Review of Environmental Economics and Policy, 10(2), 264–285.
Marginal cost of public funds	Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2020). Efficiency without Apology: Consideration of the Marginal Excess Tax Burden and Distributional Impacts in Benefit–Cost Analysis. Journal of Benefit-Cost Analysis, 11(3), 457-478
How to address inequality? Market intervention (subsidy) or tax and transfer?	Cunha, Jesse M. "Testing paternalism: Cash versus in-kind transfers." *American Economic Journal: Applied Economics* 6, no. 2 (2014): 195-230.
(6) Week of November 3	**Readings**
Assessment of Week 5 Material	The purpose of this assessment is to test your understanding of the tradeoffs in terms of social welfare that are associated with different government policy instruments (e.g., taxes, subsidies, in-kind benefits).
Discounting	Boardman et al. Chapters 9 and 10
Time value of money Inflation—how to measure The real rate of interest Algebra of discounting	Council of Economic Advisers, "Discounting For Public Policy: Theory And Recent Evidence On The Merits Of Updating The Discount Rate," Moore, M.A. et al. (2013). 'Just Give Me a Number! Practical Values for the Social Discount Rate.' Journal of Policy Analysis and Management, 32(4)
Circular A-4 (original and revised) and rationales for using specific discount rates	Arrow, K., M. et al. Cropper, C. Gollier, B. Groom, G. Heal, R. Newell, W. Nordhaus, R. Pindyck, W. Pizer, P. Portnoy, T. Sterner, R.S.J. Tol, and M. Weitzman; "Determining Benefits and Costs for Future Generations," Science 26 July 2013; Vol. 34: 349-350
Projects with different time horizons	MacAskill, William. "The Case for Longtermism" New York Times August 5, 2022
Uncertainty with respect to interest rate	
Ramsey Formula: discount rate for intergenerational projects	
Drupp et al. study	Drupp, Moritz A., Mark C. Freeman, Ben Groom, and Frikk Nesje. "Discounting disentangled." *American Economic Journal: Economic Policy* 10, no. 4 (2018): 109-134.
Social Cost of Carbon	https://www.rff.org/publications/data-tools/scc-explorer/ Carleton, Tamma and Greenstone, Michael, Updating the United States Government's Social Cost of Carbon (January 14, 2021). University of Chicago, Becker Friedman Institute for Economics Working Paper 2021-04

(7) Week of November 10	**Readings**
Mid-term Exam Nov. 10th	Exam covering the first FIVE weeks of class.
Intermediate goods	Bartik, T., Hershbein, B., & Lachowska, M. (2016). The Merits of Universal Scholarships: Benefit-Cost Evidence from the Kalamazoo Promise. Journal of Benefit-Cost Analysis, 7(3), 400-433 Chetty, Raj, John N. Friedman, Nathaniel Hilger, Emmanuel Saez, Diane Whitmore Schanzenbach, and Danny Yagan. "How does your kindergarten classroom affect your earnings? Evidence from Project STAR." *The Quarterly journal of economics* 126, no. 4 (2011): 1593-1660.
Hedonic regression	Bishop, Kelly C., Nicolai V. Kuminoff, H. Spencer Banzhaf, Kevin J. Boyle, Kathrine Von Gravenitz, Jaren C. Pope, V. Kerry Smith, and Christopher D. Timmins. "Best practices for using hedonic property value models to measure willingness to pay for environmental quality." *Review of Environmental Economics and Policy* (2020). Bonilla-Mejía, Leonardo, Esteban Lopez, and Daniel McMillen. "House prices and school choice: Evidence from Chicago's magnet schools' proximity lottery." Journal of Regional Science 60, no. 1 (2020): 33-55. Currie, Janet, Lucas Davis, Michael Greenstone, and Reed Walker. "Environmental health risks and housing values: evidence from 1,600 toxic plant openings and closings." *American Economic Review* (2015): 678-709
(8) **Week of November 17**	**Readings**
Assessment of Week 7 Material	The purpose of this assessment is to test your understanding of the revealed preference method of hedonic regression to measure willingness to pay.
Value of a Statistical Life	Cropper, Maureen and Hammitt, James K. and Robinson, Lisa A., Valuing Mortality Risk Reductions: Progress and Challenges (October 2011). Annual Review of Resource Economics, Vol. 3, Issue 1, pp. 313-336, 2011. Aldy, J. E., & Viscusi, W. K. (2008). Adjusting the Value of a Statistical Life for Age and Cohort Effects. Review of Economics and Statistics, 90 (3), 573-581 Evans, Mary F., and Laura O. Taylor. 2020. Using revealed preference methods to estimate the value of reduced mortality risk: Best practice recommendations for the hedonic wage model. Review of Environmental Economics and Policy 10.1093/reep/ reaa006.
Value of Time	U.S. Department of Transportation (2024). Departmental Guidance on Valuation of Travel Time in Economic Analysis. Washington, DC: DOT. Goldszmidt, Ariel et al. 2020. "The Value of Time in the United States: Estimates from Nationwide Natural Field Experiments", National Bureau of Economic Research", http://www.nber.org/papers/w28208
Travel cost approach	Lupi, Frank, Daniel J. Phaneuf, and Roger H. von Haefen. 2020. Best practices for implementing recreation demand models. Review of Environmental Economics and Policy 10.1093/reep/ reaa007. Jaung W, Carrasco LR. Travel cost analysis of an urban protected area and parks in Singapore: a mobile phone data application. J Environ Manage. 2020 May 1;261:110238.

(9) Week of December 1	**Readings**
Assessment of Week 8 Material	The purpose of this assessment is to test your knowledge of the justification and debate over the use of VSL
Overview of stated preference methods	Boardman Chapters 13 and 16 Arrow, K., Solow, R., Portney, P.R., Leamer, E.E., Radner, R., & Schuman, H. (1993). Report of the NOAA Panel on Contingent Valuation. Federal Register, 58(10), 4601–4614. Carson, Richard T. "Contingent valuation: a user's guide." (2000): 1413-1418. L. Kling, Daniel J. Phaneuf and Jinhua Zhao. 2012. "From Exxon to BP: Has Some Number Become Better Than No Number?" Journal of Economic Perspectives Vol. 26, No. 4, pp. 3-26. Carson, R.T. (2012). Contingent Valuation: A Practical Alternative When Prices Aren't Available. Journal of Economic Perspectives, 26(4), 27–42. Hausman, Jerry. 2012. "Contingent Valuation: From Dubious to Hopeless" Journal of Economic Perspectives Vol. 26, No. 4, pp. 43-56.
Case Studies	Alberini, Anna, Maureen Cropper, Alan Krupnick, and Nathalie B. Simon. "Does the value of a statistical life vary with age and health status? Evidence from the US and Canada." In Distributional Effects of Environmental and Energy Policy, pp. 365-388. Routledge, 2017. Al-Hanawi, M., Alsharqi, O., & Vaidya, K. (2020). Willingness to pay for improved public health care services in Saudi Arabia: A contingent valuation study among heads of Saudi households. Health Economics, Policy and Law, 15(1), 72-93. Haefele, Michelle, John B. Loomis, and Linda J. Bilmes. "Total economic valuation of the National Park units and National Park Service cooperative programs: Results of a survey of the American public." In *Valuing US National Parks and Programs*, pp. 16-44. Routledge, 2019.