

Public Policy 41300 – Cost-Benefit Analysis

Syllabus

Harris School of Public Policy
Winter 2023

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Course description: The goals of this course include learning the fundamentals of cost-benefit analysis; using CBA to evaluate policy; and developing an understanding of CBA's strengths and limitations. CBA is ubiquitous in modern policy-making arenas and draws its foundations from many related social sciences.

We will concentrate on: 1) concepts – to allow you understand and contextualize CBA, and 2) skills and tools – to help you produce CBA. While there is some overlap in material between this course and others (particularly program evaluation and cost effectiveness analysis), this course provides an introduction to most of the standard techniques involved in CBA.

Prerequisites: Two quarter core microeconomics sequence at Harris, or equivalent. One course statistics or econometrics, or equivalent.

Class meetings: Class meets per Harris schedule.

Teaching assistants: TBA

Office hours: Kathryn Ierulli:
-- after class, usually for one hour, Keller 2053.

TAs will hold regular office hours on Zoom, jointly teach a weekly TA section on Fridays, and grade problem sets and exams. The times will be announced on Canvas.

Using the Discussion function on Canvas is highly encouraged. You will receive an answer in 24 hours and you will very likely benefit other class members who had the same question.

I encourage the use of email and try to respond in a timely fashion. Please put '41300' in the subject line of any email you send to me or the TA so that we can reply efficiently.

In-class protocol: I will make the slides available shortly before class, and if you need to, you may print them and take notes on them. However, an even better technique is to take notes by hand and go over the slides later. There is substantial neurological research that understanding new material is greatly facilitated by actually writing it down. See either of the following:

<https://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away>

<https://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/>

Assignment & Exam Due Dates:

Problem sets are due Thursdays, and problem sessions to go over answers are on Fridays. Answers are not distributed digitally and attending TA session is strongly encouraged for this, as well as other, reasons.

Problem Set 1 – Thursday of 2nd week

Problem Set 2 – Thursday of 4th week

Midterm Exam – W/Th of 5th week

Individual Report 1 – Thursday of 6th week

Problem Set 3 – Thursday of 7th week

Individual Report 2 – Thursday of 8th week

Problem Set 4 – Thursday of 9th week

Final Exam – Week 10, per Harris announcement

Problem Sets: Problem sets are due by midnight on Canvas. You are allowed and encouraged to work in groups of up to four members and turn in a joint problem set. Please have one member log on to Canvas and set up your Study Group (under the People tab). Use that group to submit homework digitally. When you turn in a problem set, whether you work in a group or not, write **only** your ID number(s) on your work – no names. We also request that the problem sets be typed, although some graphs and figures that are hand-drawn may be acceptable. Neat and readable work is a professional expectation, and if your work cannot be read, it cannot be given points.

Individual Reports: You will choose a published cost-benefit analysis of interest to you, and hand in write-ups analyzing various aspects of it – the program or policy it evaluated, why a cost-benefit analysis was done, and what components of this course your CBA analyzed. This is done on an individual level and handed in like homework. It will be graded Pass/Fail.

Since I will read and mark your individual reports, I will log the CBA you are analyzing. If by coincidence two students choose the same CBA to report on, both students will be requested to find another CBA to use going forward, with confirmation that they are no longer identical.

Exams: There will be a midterm and a final exam. See Dates above. If you are graduating, contact me via email, as you will need to take an early final exam.

Grading: Grades will be based on problem sets, individual write-ups of your report on a CBA (36% and 9%), midterm exam (25%); and final exam (30%). There may be occasional ungraded, unannounced polls or quiz questions in class.

Regrade policy: If you have a question about your grade, either on problem sets or exams, please make an appointment with the individual who graded your work and have a discussion. If at the end of the discussion you feel you deserve more credit (or less, though I very rarely see this!) please turn in your written work to me, along with a paragraph explaining your reasoning. The only substantial differences I have ever seen were addition errors, but anything is possible. All regrades must be requested within 7 days of material being returned to the student.

Academic integrity: You are expected to abide by the University's expectations regarding academic integrity. Please review this excerpt from the University's Student Manual, <https://studentmanual.sites.uchicago.edu/Policies#Honesty>:

It is contrary to justice, academic integrity, and to the spirit of intellectual inquiry to submit another's statements or ideas as one's own work. To do so is plagiarism or cheating, offenses punishable under the University's disciplinary system. Because these offenses undercut the distinctive moral and intellectual character of the University, we take them very seriously.

Proper acknowledgment of another's ideas, whether by direct quotation or paraphrase, is expected. In particular, if any written or electronic source is consulted and material is used from that source, directly or indirectly, the source

should be identified by author, title, and page number, or by website and date accessed. Any doubts about what constitutes “use” should be addressed to the instructor.

These expectations apply to exams and problem sets as well. Your submitted work represents your commitment that it is your own independent work, and that you have relied on no other individuals or resources, except as explicitly specified in the assignment instructions. If you have specific questions, contact me directly. For sourcing from digital documents, read this article: <http://www.nytimes.com/2010/08/02/education/02cheat.html>

Readings

Required:

Cost-Benefit Analysis: Concepts & Practice, 5th edition, by Boardman, Greenburg, Vining, & Weimer (Cambridge University Press, 2018). The e-book version should be available through the bookstore as well.

Supplemental, not required:

Introduction to Cost-Benefit Analysis, Gines de Rus, Edward Elgar, 2010.

A Guide to Cost-Benefit Analysis, Edward M. Gramlich, Prentice Hall.

Other readings are listed below, with URL or source information. In some cases, you may need to access from a campus computer, or provide proof of UC affiliation. In a few cases, no on-line version is available, and I may post those to Canvas. Regenstein Library’s website is also useful for finding most journal articles: http://sfx.lib.uchicago.edu/sfx_local/az/. **The list of readings is subject to revision.** Some URLs are not stable, so please be resourceful if a link has become broken. Try going to the home page of the institution or author, for example. A web search on the article title and author names may also work.

Course Topics / Weeks

Week 1

What is Cost-Benefit Analysis, & How is it Used?

Boardman, Chapter 1 - Introduction

Robert H. Frank, "Why Is Cost-Benefit Analysis so Controversial?" *The Journal of Legal Studies* 29, no. S2 (June 2000): just read pp. 913-918

Supplemental:

Current changes in US Executive branch uses of CBA:

1. <https://www.brookings.edu/research/how-the-trump-administration-can-use-benefit-cost-analysis-to-justify-deregulation/>

2. https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE241/RAND_PE241.pdf (skim)

“Cost-Benefit Analysis,” Matthew J. Kotchen, *Encyclopedia of Climate and Weather 2nd edition* New York: Oxford University Press, 2010. <http://environment.yale.edu/kotchen/pubs/CBAchap.pdf>

Office of Management & Budget, Office of Regulatory & Information Affairs, “Executive Order 12866 Regulatory Planning & Review.” http://www.reginfo.gov/public/jsp/Utilities/EO_Redirect.jsp

LeDuc, Daniel, “Results That Bring Change,” MacArthur Foundation, Trust, Summer 2014.

http://www.macfound.org/media/files/PewPartners_FINAL.PDF

[skim] Office of Management & Budget, Office of Information & Regulatory Affairs, “2014 Draft Report to Congress on the Benefits & Costs of Federal Regulations & Unfunded Mandates on State, Local, & Tribal Entities,” skim Chapter I. https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/legislative_reports/draft_2016_cost_benefit_report_1_2_14_2016_2.pdf

Example of unintended effects of policy: Jennifer L. Doleac and Benjamin Hansen, "The Unintended Consequences of “Ban the Box”: Statistical Discrimination and Employment Outcomes When Criminal Histories Are Hidden," Journal of Labor Economics, 2019

CBA decision rules

Boardman, Chapter 2; Chapter 19 (skip 19.5.2) – Foundations of CBA, Distributional CBA

World Bank, “Cost-Benefit Analysis: Evaluation Criteria (Or: “Stay away from the IRR”)", Knowledge Brief, 2008. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/02/05/000020953_20080205155606/Rendered/PDF/406190REVISED0irr06122301PUBLIC1.pdf

Week 2

Measures of welfare

Boardman, Chapter 3 – Consumer and Producer Surplus, WTP and WTA

OECD, “Willingness to Pay vs. Willingness to Accept,” Chapter 11 in Cost-Benefit Analysis & the Environment: Recent Development, OECD, 2006. [Note: pp. 155-167.] http://www.oecd-ilibrary.org/environment/cost-benefit-analysis-and-the-environment_9789264010055-en

Can read it though you cannot download it.

Supplemental:

Kahneman, Knetsch & Thaler, “The Endowment Effect: Evidence of Losses Valued More Than Gains.” Handbook of Experimental Economics, Chapter 100. Elsevier 2008. <https://faculty.chicagobooth.edu/Richard.Thaler/research/pdf/The%20Endowment%20Effect%20Evidence%20of%20Losses%20Valued%20More%20Than%20Gains.pdf>

Adamowicz, Bhardwaj & Macnab, “Experiments on the Difference Between Willingness to Pay and Willingness to Accept.” Land Economics, 69(4), 1993. https://www.jstor.org/stable/3146458?seq=1#page_scan_tab_contents

Sayman & Unculer, “A Meta Analysis of the Willingness to Accept and Willingness to Pay Disparity.” Working Paper, INSEAD, 2002/89/MKT/TM. https://flora.insead.edu/fichiersti_wp/inseadwp2002/2002-89.pdf

Brown, Thomas & Gregory, Robert, “Why the WTA-WTP Disparity Matters.” Ecological Economics, 28 (1999), 323 – 335. https://www.fs.fed.us/rm/pubs_other/rmrs_1999_brown_t001.pdf

Costs & benefits when markets exist: primary markets

Boardman, Chapter 5, 6 – Valuing Impacts in Output and Input Markets

Haveman, Robert H., & David L. Weimer, “Public Policy Induced Changes in Employment: Valuation Issues for Benefit-Cost Analysis,” Journal of Benefit-Cost Analysis 6 (2015): pp. 112-153. <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9668866>

Week 3

How do we add up costs and benefits?

Boardman, Chapter 5, 6 – Valuing Impacts in Output and Input Markets, continued

Costs & benefits when markets exist: secondary markets

Boardman, Chapter 7 – Valuing Impacts in Secondary Markets

de Rus, Gines, “The BCA of HSR: Should the Government Invest in High Speed Rail Infrastructure?” *Journal of Benefit-Cost Analysis* 2, 2011. http://www.evaluaciondeproyectos.es/EnWeb/Results/Dissemination/Activities/jan11/vie_wcontent.pdf

de Rus, Gines. “Economic Evaluation of High Speed Rail.” <http://www.ems.expertgrupp.se/uploads/documents/hsr.pdf>

Week 4

Discounting – value over time

Boardman, Chapter 9 – Future Impacts and Handling Inflation

Boardman, Chapter 10 – Social Discount Rate

Week 5

CBA of Social Programs

Boardman, Chapter 14 – Valuing Impacts from Observed Behavior, Direct Methods

Reynolds, A., Temple, J., White, B., Ou, S.-R., & Robertson, D. (2011). Age-26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program. *Child Development*, 82(1), 1–36. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/>

Weeks 6 - 7

Risk

Boardman, Chapters 11-12: Uncertainty, Risk, Option Value

Cost-Benefit Analysis Under Uncertainty, Daniel A. Graham, *The American Economic Review* Vol. 71, No. 4 (Sep., 1981)

Walton, 2012. A Cost-Benefit Analysis of Vaccines. *The Atlantic*. <http://www.theatlantic.com/health/archive/2012/01/a-cost-benefit-analysis-of-vaccines/251565/>

Blonn, Carlson, Mueller & Scott (2006). Transport 2020 Bus Rapid Transit: A Cost-Benefit Analysis. https://www.busadvocates.org/articles/regionaltransit/CBA_BRT_FINAL_REPORT.pdf

Uncertainty

Sunstein, 2003. Terrorism & probability neglect. *J. of Risk & Uncertainty*, 26, 121–136. doi:10.1023/A:1024111006336
https://www.researchgate.net/publication/5152352_Terrorism_and_Probability_Neglect

Sunstein, 2013. Irreversible and Catastrophic. *Cornell Law Review*. <http://cornelllawreview.org/files/2013/03/Sunstein.pdf>

Mueller & Stewart, 2014. Evaluating Counterterrorism Spending. *J. Economic Literature*.
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.28.3.237>

M. V. Ramana 2011 Beyond our Imagination: Fukushima and the Problem of Assessing Risk,
<https://thebulletin.org/2011/04/beyond-our-imagination-fukushima-and-the-problem-of-assessing-risk/>

Week 8

Indirect Valuation Methods

Boardman, Chapter 15 and 16 – Valuing Impacts from Observed Behavior, Indirect Methods, Contingent Valuation

Hausman, J. (2012). “Contingent Valuation: From Dubious to Hopeless.” *J. Economic Perspectives*.
<https://www.aeaweb.org/articles?id=10.1257/jep.26.4.43>

Kling et al 2012. “From Exxon to BP: Has Some Number Become Better than No Number?” *J. Economic Perspectives*.
<https://www.aeaweb.org/articles?id=10.1257/jep.26.4.3>

Rosenthal & Nelson. “Why Existence Value Should *Not* Be Used in Cost-Benefit Analysis.”

Kopp. “Why Existence Value Should be Used in Cost-Benefit Analysis.”

Both are in this issue of *J. Policy Analysis & Mgt.*, 1992. <http://onlinelibrary.wiley.com/doi/10.1002/pam.v11:1/issuetoc>

“Travel Cost Method,” *Methods*, Section 4, *Ecosystem Valuation*. http://www.ecosystemvaluation.org/travel_costs.htm

Carson et al, 2003. “Contingent Valuation & Lost Passive Use: Damages from the Exxon Valdez Oil Spill.” *Env. & Resource Econ.* <http://econweb.ucsd.edu/~rcarson/papers/ExxonERE.pdf>

Thompson et al 2002. “Valuing the Arts: A Contingent Valuation Approach.” *J. of Cultural Economics*.
<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1048&context=cbafacpub>

Supplemental:

Johannesson, Magnus, and Johannesson, Per-Olov. “Quality of Life and WTP for an Increased Life Expectancy at an Advanced Age.” *Journal of Public Economics*, 65(1997), 219-228.
<https://www.sciencedirect.com/science/article/pii/S0047272797000145>

Loomis 2001. “Final Snake River Contingent Value Methodology Study Report.” US BLM.
https://www.researchgate.net/publication/252777772_FINAL_SNAKE_RIVER_CONTINGENT_VALUE_METHODOLOGY_STUDY_REPORT
<http://www.blm.gov/style/medialib/blm/wy/programs/planning/rmps/SnakeRiver/feis.Par.32841.File.dat/16app6.pdf>

Nahuelhual, Loureiro & Loomis 2004. “Using Random Parameters to Account for Heterogeneous Preferences in Contingent Valuation of Public Open Space.” J. Agricultural & Resource Econ. <http://www.jstor.org/stable/40987248>

Fleming & Cook 2007. “The Recreational Value of Lake McKenzie, Fraser Island: An Application of the Travel Cost Method.” Tourism Management. <http://ageconsearch.umn.edu/bitstream/10382/1/cp07fl02.pdf>

Valuation of a Statistical Life (VSL) & Statistical Life-years (VSLY)

Boardman, Chapter 17 – Shadow Prices from Secondary Sources

Viscusi, W. Kip, “Estimating the Value of a Statistical Life Using Census of Fatal Occupational Injuries Data,” Vanderbilt University Law School, Law and Economics 2013. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2291727.

Viscusi, W. Kip. “Using Data from the Census of Fatal Occupational Injuries to Estimate the ‘Value of a Statistical Life.’” US Bureau of Labor Statistics, Monthly Labor Review, 2013. <http://www.bls.gov/opub/mlr/2013/article/pdf/using-data-from-the-census-of-fatal-occupational-injuries-to-estimate-the.pdf>

Aldy, Joseph & W. Kip Viscusi. “Adjusting the Value of a Statistical Life for Age & Cohort Effects.” R. Econ. & Statistics, 2008. https://law.vanderbilt.edu/files/archive/279_Adjusting-VSL-for-Age-and-Cohort-Effects.pdf

Supplemental:

Sunstein, C. R. (2013). The value of a statistical life: some clarifications and puzzles. Journal of Benefit-Cost Analysis, 4(2004), 237–261. <https://www.cambridge.org/core/services/aop-cambridge-core/content/view/S2194588800000609>

Week 9

Cost-Effectiveness Analysis

Boardman, Chapter 18 – Cost-Effectiveness

Robberstad 2005. “QALYs vs DALYs vs LYs gained: What are the differences, and what difference do they make for health care priority setting?” Norsk Epidemiologi.

https://www.researchgate.net/publication/41758117_QALYs_vs_DALYS_vs_LYs_gained_What_are_the_differences_and_what_difference_do_they_make_for_health_care_priority_setting

Supplemental:

Policy Perspective Economic Evaluation for Health Investments En Route to Universal Health Coverage: Cost-Benefit Analysis or Cost-Effectiveness Analysis? Anthony J. Culyer, DEcon 1,* , Kalipso Chalkidou, PhD 2

[https://www.valueinhealthjournal.com/article/S1098-3015\(18\)32245-9/fulltext?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1098301518322459%3Fsho-wall%3Dtrue](https://www.valueinhealthjournal.com/article/S1098-3015(18)32245-9/fulltext?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1098301518322459%3Fsho-wall%3Dtrue)

Dhaliwal et al, 2012. “Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries: A General Framework with Applications for Education.” Working paper. <http://economics.mit.edu/files/6959>

Profit et al 2009. “Clinical Benefits, Costs, and Cost-Effectiveness of Neonatal Intensive Care in Mexico.” PLoS Medicine. <http://www.ncbi.nlm.nih.gov/pubmed/21179496>

Meltzer 1997. "Accounting for Future Costs in Medical Cost-Effectiveness Analysis." J. Health Economics.
<http://www.sciencedirect.com/science/article/pii/S0167629696005073>

Optional Readings - Economic Impact Analysis

A User Guide for CAHSEIM: The Culture, Arts, Heritage and Sport Economic Impact Model
<https://www.canada.ca/en/canadian-heritage/corporate/publications/general-publications/culture-arts-heritage-sport-economic-impact-model/user-guide-culture-arts-heritage-sport-economic-impact-model.html>

Sanderson et al 2015. "Analysis of the Boston 2024 Proposed Summer Olympic Plans."
<http://www.mass.gov/governor/docs/news/final-brattle-report-08-17-2015.pdf>

Shaffer 2003. "A Cost-Benefit Analysis of the Proposed Vancouver 2010 Winter Olympic and Paralympic Games."
http://www.policyalternatives.ca/sites/default/files/uploads/publications/BC_Office_Pubs/olympics_costbenefit.pdf

Tootelian & Varshney, 2007. "Chicago 2016 Economic Impact Analysis."
<https://nogames.files.wordpress.com/2009/06/chicago-2016-economic-impact-analysis.pdf>

Watkins & Anderson 2009. "The Likely Economic Impact of a Chicago 2016 Summer Olympics."
http://www.andersoneconomicgroup.com/Portals/0/upload/AEG_chicago_olympics_final.pdf

Watkins et al 2014. "ArtPrize 2013: Economic Impact and Attendee Profile."
http://www.andersoneconomicgroup.com/portals/0/artprize_2013econimpact_aeg010914.pdf