



## Public Policy 41300 – Cost Benefit Analysis Syllabus

Harris School of Public Policy  
Spring 2020

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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 most of the standard techniques involved in CBA.

**Prerequisites:** Two quarter core microeconomics sequence at Harris, or equivalent.

**Class meetings:** Class meets on Tuesdays and Thursdays in 0001, 2:00 to 3:20pm.

**Teaching assistants:** TBA

**Office hours:** Kathryn Ierulli: 3.30-5.00pm Thursdays, or by appointment, in 2053.

TAs will hold regular office hours, teach a weekly TA section, 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 'CBA 413' in the subject line of any email you send to me or the TAs so that we can reply efficiently.

**Dates:**

Monday, March 30	Classes Begin
	Deadline for students to apply for Spring graduation
	Last day students can make changes to course registration in my.UChicago.
	Add/drop deadline: Last day to change autumn course registration. <i>In week 2 all changes must be made through consent required to add classes not previously attended during week 1.</i>
	Pass/Fail Deadline
	Memorial Day (University closed)
	Grading deadline for graduating students
	Spring Quarter finals week
	Convocation
	Final grades due for all students

**Assignment Due Dates & Exam Dates:**

Problem Set 1 – April 16  
 Problem Set 2 – April 23  
 Problem Set 3 – May 5 (Pass / Fail)  
 Midterm Exam – May 7 in class  
 Problem Set 4 – May 21  
 Problem Set 5 – May 28  
 Problem Set 6 – June 4

Final Exam – TBA for graduating students  
 Final Exam – 2 – TBA

**Problem Sets:** Problem sets are due in class. You are allowed and encouraged to work in groups of up to three members and turn in a joint problem set. 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:** Early in the quarter you will choose a published cost-benefit analysis of interest to you, and hand in write-ups analyzing various aspects of it – the program it evaluated, why a cost-benefit analysis was done, and what aspects of this course the CBA covered. This is done on an individual level and to be handed in with homework. The dates for this will be announced in class. It will be graded Pass/Fail.

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

**Students with time accommodation:** Students requesting time accommodation should contact me to make arrangements. Please be prepared to share your documentation from the Dean of Students regarding appropriate accommodations.

**Grading:** Grades will be based on problem sets and individual write-ups of your report on a CBA (30%); midterm in-class exam (30%); and final exam (40%). There may be occasional ungraded, unannounced quizzes in class. There will be approximately 5 graded problem sets and one Pass/Fail problem set, given on the week the midterm.

**In-class protocol:** It is in everyone's interest to have an engaged and participatory class. To that end, I encourage students not to take notes on laptops during class. 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 material down. See, e.g.:

<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/>

Finally, I realize that some students have strong reasons for using laptops in class. If you use one, please sit in the last row. Your screen is a distraction to everyone who sits behind you, and is a negative externality unless you are sitting in the back.

**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 paper 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.

**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*, 5<sup>th</sup> 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/](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

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### Week 1

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

General Ideas

Boardman, Chapter 1

Robert H. Frank, "Why Is Cost-Benefit Analysis so Controversial?," *The Journal of Legal Studies* 29, no. S2 (June 2000): 913-930.

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

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](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 2<sup>nd</sup> 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](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](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](https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/legislative_reports/draft_2016_cost_benefit_report_1_2_14_2016_2.pdf)

"Basic Needs Versus Distributional Weights in Social Cost-Benefit Analysis." Arnold Harberger, *Economic Development & Cultural Change*, 32(3), 1984. [http://econ.queensu.ca/faculty/kuog/references/D9+harberger\\_basic\\_needs.pdf](http://econ.queensu.ca/faculty/kuog/references/D9+harberger_basic_needs.pdf)  
Read first half of paper.

#### *CBA decision rules*

Boardman, Chapter 2; Chapter 19

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](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/02/05/000020953_20080205155606/Rendered/PDF/406190REVISED0irr06122301PUBLIC1.pdf)

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## Week 2

### *Measures of welfare*

Boardman, Chapter 5, 6, 7

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](http://www.oecd-ilibrary.org/environment/cost-benefit-analysis-and-the-environment_9789264010055-en)

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](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](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](https://www.fs.fed.us/rm/pubs_other/rmrs_1999_brown_t001.pdf)

### *Costs & benefits when markets exist: primary markets*

Boardman, Chapter 5, 6

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>

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### Week 3

#### *Costs & benefits when markets exist: secondary markets*

Boardman, Chapter 7

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](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>

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### Week 4

#### *Discounting*

Boardman, Chapter 6

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### Week 5

#### *Benefits and Costs in Inefficient Markets*

Boardman, Chapter 5, 6

#### *CBA of Social Programs*

Boardman, Chapter 12

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/>

Sunstein, C. R., & Rowell, A. (2007). On discounting regulatory benefits: Risk, money, and intergenerational equity. The University of Chicago Law Review, 74(1), 171-208.  
[https://lawreview.uchicago.edu/sites/lawreview.uchicago.edu/files/uploads/74.1/74\\_1\\_Sunstein\\_Rowell.pdf](https://lawreview.uchicago.edu/sites/lawreview.uchicago.edu/files/uploads/74.1/74_1_Sunstein_Rowell.pdf)

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### Weeks 6 - 7

#### *Risk*

Boardman, Chapters 7-8

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.  
<http://www.cityofmadison.com/metro/AdHoc/BRT-Transport2020.pdf>

de Rus, 2011. BCA of HSR: Should the Government Invest in High Speed Rail Infrastructure? J. Cost-Benefit Analysis.  
[http://journals.cambridge.org/abstract\\_S215228120000005X](http://journals.cambridge.org/abstract_S215228120000005X)

de Rus & Inglada, 1997. Cost-Benefit Analysis of the High-Speed Train in Spain. Annals of Regional Science.

## Weeks 7-8

### *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](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>

### *Indirect Valuation Methods*

Boardman, Chapters 9, 14-15

Johannesson, Magnus, and Johansson, 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>

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](http://www.ecosystemvaluation.org/travel_costs.htm)

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](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>

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>

*Recommended / skim; not required:*

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>

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 9 pp. 406-417

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](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](https://law.vanderbilt.edu/files/archive/279_Adjusting-VSL-for-Age-and-Cohort-Effects.pdf)

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>

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## Week 9

### *Cost-Effectiveness Analysis*

Boardman, Chapter 18

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>

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](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)

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>

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## Week 10

### *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>

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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](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](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](http://www.andersoneconomicgroup.com/portals/0/artprize_2013econimpact_aeg010914.pdf)