

AGRICULTURAL ECONOMICS 608
BENEFIT-COST ANALYSIS

Spring 2007

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AGEC 608 is an applied course in economic analysis of investment projects concentrating on agricultural projects in developing countries. However, the methods we will learn are applicable to projects in industry, education, health, and other sectors. The methods, appropriately modified, can also be used for project analysis in developed economies. Many of the tools also can be used for policy analysis, and we will spend some time on applications to environmental policy.

Our primary texts will be:

Campbell, Harry, and Brown, Richard, *Benefit-Cost Analysis-Financial and Economic Appraisal Using Spreadsheets*, University of Cambridge Press, 2003.

Boardman, A.E., D.H. Greenburg, A.R. Vining and D.L. Weimer, *Cost Benefit Analysis: Concepts and Practice*, 3rd. Ed., Prentice Hall, Upper Saddle River, NJ 2006.

U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, Sept., 2000.

<http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/guidelines.html>.

The first two books are on reserve in Krannert Library. Another excellent reference on reserve in Krannert is the following:

J. Price Gittinger. *Economic Analysis of Agricultural Projects*. Johns Hopkins University Press, 2nd. ed., 1982.

Gittinger's book is still the classic in benefit-cost analysis, but, unfortunately, is out-of-date on many topics. Also, some of the material to be introduced in class is not contained in any of the texts. In addition, we will use journal articles for certain topics and for case studies.

This set of readings is not intended to be a comprehensive list of materials on each topic. Rather, it is a selection of some of the more important books and articles in each subject area. A reference list is attached for students desiring supplemental sources. In addition, students desiring to pursue any particular subject in more detail should refer to the bibliographies of listed articles and books or consult the instructor for guidance on other sources. The Campbell and Brown text has a WWW site with sample spreadsheets. It is <http://www.uq.edu.au/economics/bca>. Use "other users login" with "user" for user name and password "abc2004."

I. Introduction.

Campbell and Brown, pp. 1-34.

Boardman, et al., pp. 1-22.

Boardman, et al., pp. 507-512.

II. Multiple objectives and multiple purposes.

Boardman, et al., pp. 488-503.

III. Measures of project worth and interest calculations.

Campbell and Brown, pp. 36-59.

Boardman, et al., pp. 131-164.

EPA, pp. 33-38 and 175-78.

IV. Identifying and quantifying benefits and costs.

Boardman, et al., pp. 26-69. (Background material)

Campbell and Brown, pp. 62-121.

Boardman, et al., pp. 73-128, and pp. 441-459.

Campbell and Brown, pp. 177-193.

V. Risk, uncertainty, and sensitivity analysis.

Campbell and Brown, pp. 194-219.

Boardman, et al., pp. 165-184.

EPA, PP. 27-30.

VI. Estimating impacts from observed behavior and contingent evaluation.

Campbell and Brown, pp. 261-286.

Boardman, et al., pp. 314-395.

Boardman, et al., pp. 403-432.

EPA, pp. 59-100.

EPA, pp. 113-136.

Nganje, W. E., et al, "Regional Economic Impacts of Fusarium Head Blight in Wheat and Barley." *Review of Agricultural Economics* Volume 26, Number 3 (Fall 2004), pp. 332-347.

Roe, B., T.C. Haab, and B. Sohngen, "The Value of Agricultural Economics Extension Programming: An Application of Contingent Valuation." *Review of Agricultural Economics* Volume 26, Number 3 (Fall 2004), pp. 373-390.

Jensen, K.L., et al, "Consumers' Willingness to pay for Eco-Certified Wood Products." *Journal of Agricultural and Applied Economics* Volume 36, Number 3 (December 2004), pp. 617-626.

Shrestha R.K. and J.R.R. Alavalapati, "Effect of Ranchland Attributes on Recreational Hunting in Florida: A Hedonic Price Analysis." *Journal of Agricultural and Applied Economics* Volume 36, Number 3 (December 2004), pp. 763-772.

Ready, Richard C. and Charles W. Abdalla, "The Amenity and Disamenity Impacts of Agriculture: Estimates from a Hedonic Pricing Model." *American Journal of Agricultural Economics* Volume 87, Number 2 (May 2005), pp. 314-26.

VII. The social discount rate.

Boardman, et al., pp. 236-269.

Campbell and Brown, pp. 221-236.

EPA, pp. 38-55.

Fischer, A.C., and J.V. Krutilla. "Conservation, Environment, and the Rate of Discount." *Quarterly Journal of Economics* (August 1975), pp. 358-371.

VIII. Other applications of consumer and producer surplus, contingent evaluation, and case studies.

Campbell and Brown, pp. 332-339.

Norton, George W., Ganoza, Victor G., and Carlos Pomareda. "Potential Benefits of Agricultural Research and Extension in Peru." *American Journal of Agricultural Economics* (May 1987), pp. 247-57.

Rafsnider, Giles T., Skold, Melvin P., and Rajan K. Sampath. "Range Survey Cost Sharing and the Efficiency of Rangeland Use." *Land Economics* (February 1987), pp. 92-101.

Gordon, I.M. and Knetsch, J.L. "Consumer's Surplus Measures and the Evaluation of Resources." *Land Economics* Vol. 55, No. 1 (February 1979), pp. 1-10.

Buchanan, J.M. and Tullock, G. "Polluter's Profits and Political Response: Direct Controls Versus Taxes." *American Economic Review* 65 (March 1975), pp. 139-47.

Bockstael, Nancy E., and McConnell, Kenneth E. "Calculating Equivalent and Compensating Variation for Natural Resource Facilities." *Land Economics* Vol. 56, No. 1 (February 1980), pp. 56-63.

Mendelsohn, Robert. "An Economic Analysis of Air Pollution from Coal-Fired Power Plants." *Journal of Environmental Economics and Management* Vol. 7, No. 1 (March 1980), pp. 30-43.

Raucher, Robert L. "The Benefits and Costs of Policies Related to Groundwater Contamination." *Land Economics* (February 1986), pp. 33-45.

Schwing, Richard C., et al. "Benefit-Cost Analysis of Automotive Emission Reductions." *Journal of Environmental Economics and Management* Vol. 7, No. 1 (March 1980), pp. 44-64.

Rockel, Mark L., and Kealy, Mary Jo. "The Value of Nonconsumptive Wildlife Recreation in the United States." *Land Economics* Vol. 67, No. 4 (November 1991), pp. 422-434.

Stevens, Thomas H.; Echeverria, Jaime; Glass, Ronald J.; Hager, Tim; More, Thomas A. "Measuring the Existence Value of Wildlife: What Do CVM Estimates Really Show?" *Land Economics* Vol. 67, No. 4 (November 1991), pp. 390-400.

Caswell, Julie A.; and Killeinschmit v. L., Jaana K. "Using Benefit-Cost Criteria for Settling Federalism Disputes: An Application to Food Safety Regulation." *American Journal of Agricultural Economics* Vol. 79, No. 1 (February 1997), pp. 24-38.

Costello, Christopher J., Richard M. Adams, and Stephen Polasky. "The Value of El Niño Forecasts in the Management of Salmon: A Stochastic Dynamic Assessment." *American Journal of Agricultural Economics* Vol. 80, No. 4 (November 1998), pp. 765-777.

Nestor, Deborah Vaughn. "Policy Evaluation with Combined Actual and Contingent Response Data." *American Journal of Agricultural Economics* Vol. 80, No. 4 (May 1998), pp. 264-276.

Swinnen, Johan F.M. and Harry de Gorter. "Endogenous Commodity Policies and the Social Benefits from Public Research Expenditures." *American Journal of Agricultural Economics* Vol. 80, No. 1 (February 1998) pp. 107-115.

Plantinga, Andrew J., Thomas Mauldin, and Douglas J. Miller. "Costs of Carbon Sequestration in Forests." *American Journal of Agricultural Economics* Vol. 81, No. 4 (November 1999) pp.812-24.

Vogt, Michael L., and Terry I. Kastens, "A Study of the Financial Impact of Dairy Manure Storage Systems in Northeast Kansas." *Review of Agricultural Economics* Volume 27, Number 3 (Fall 2005), pp.336-49.

Mullen, John D., Julian M. Alston, Daniel A. Sumner, Marcia T. Kreith, and Nicolai V. Kuminoff, "The Payoff to Public Investments in Pest-management R&D: General issues and a Case Study Emphasizing Integrated Pest Management in California." *Review of Agricultural Economics* Volume 27, Number 4 (Winter 2005), pp.558-73.

Alfnes, Frode, Atle G.Guttormsen, Gro Steine, and Kari Kolstad. "Consumers' Willingness to Pay for the Color of Salmon: A Choice Experiment with Real Economic Incentives." *American Journal of Agricultural Economics* Volume 88, Number 4 (November 2006), pp.1050-1061.

EPA, pp. 160-71.

Each student will do a class project which will consist of a benefit-cost case study or a class presentation on one or more journal papers related to benefit-cost analysis. Both individual and group cases are available. Contact me to select your case study or journal paper(s).

Grading will be approximately as follows:

homework	50%
case study or literature presentation	20%
final exam	30%

The final exam will have a take-home and in-class component.

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