



INDUSTRIAL ECONOMICS, INCORPORATED

## JENNIFER R. BAXTER

Ms. Baxter specializes in designing and conducting economic analyses of complex and innovative federal regulatory programs. Her current work focuses on measuring the costs and benefits of regulations designed to improve homeland security, public health and safety, or the recovery of endangered species. Her significant expertise in the area of regulatory analysis is also reflected in her work on state-of-the-art methods and guidance development. She has also provided expert witness support in private litigation and has supported the review and resolution of public health damages claims in an international setting.

Short descriptions of a selection of recent projects highlighting Ms. Baxter's experience are provided below.

### Cost-Benefit Analysis and Damages Assessment

- For the **U.S. FISH AND WILDLIFE SERVICE (FWS)**, currently overseeing an 18-year effort involving the development of economic impact analyses of proposed critical habitat designations in over 200 separate rulemaking efforts for species listed under the Endangered Species Act (ESA). In addition to directing the development of the analyses, Ms. Baxter assists FWS regional office staff and solicitors as they respond to litigation-driven requests for information, and she also participates in meetings with the Office of Management and Budget (OMB) and the Small Business Administration (SBA) to ensure that critical habitat analyses support federal direction and requirements. Regulated economic sectors include transportation infrastructure construction and maintenance, utility construction and maintenance, oil and gas exploration, mining, residential and commercial development, public and private water suppliers, farming, ranching, forestry, recreation, and public lands management.
- For the **U.S. CONSUMER PRODUCT SAFETY COMMISSION**, overseeing market research and the estimation of compliance costs associated with multiple rulemaking efforts. This effort involves extensive interviews with industry entities to understand the potential implications of the rules and to collect financial and other relevant data. The modeling efforts estimate both direct compliance costs and partial equilibrium approaches designed to measure changes in consumer surplus, as well as impacts to small businesses.
- For **U.S. CUSTOMS AND BORDER PROTECTION**, overseeing the development of multiple regulatory impact analyses, including two recent efforts for economically-significant security rules. These efforts included estimating direct and indirect compliance costs, working with academic experts to estimate national welfare effects using the Global Trade Analysis Project (GTAP) computable general equilibrium (CGE) model, and developing innovating break-even approaches to evaluate the potential benefits of avoided terrorist attacks.
- For the **U.S. COAST GUARD**, oversaw the development of a retrospective analysis of the costs and benefits of implementing the Standards of Training, Certification and Watchkeeping (STCW) regulations promulgated in response to International Maritime Organization (IMO) convention agreements reached between 1995 and 2010. The analysis was developed in response to Executive Order 13563, which directs Federal agencies to conduct retrospective analysis of significant regulations.

- For the **FEDERAL PROTECTIVE SERVICE, NATIONAL PROGRAMS AND PROGRAMS DIRECTORATE**, currently developing a regulatory impact analysis for a proposed rulemaking updating and enhancing regulations relating to personal conduct on Federal property. Compiling cost information and conducting a break-even analysis under various threat scenarios.
- For the **U.S. COAST GUARD**, directed the collection of cost and benefit data and information for use in an analysis of a regulation requiring recreational boaters to use engine cut-off switches to avoid fatalities and injuries associated with runaway vessels. Developed a sensitivity analysis to identify which of the more than 30 assumptions in the regulatory assessment were most important.
- For **U.S. CUSTOMS AND BORDER PROTECTION** and **U.S. CITIZENSHIP AND IMMIGRATION SERVICES (CIS)**, oversaw the development of economic assessments of two separate regulations implementing the Guam-CNMI visa waiver program and establishing a transitional worker classification in the CNMI. These rulemakings addressed the issuance of visas and the immigration status of foreign workers in the CNMI.
- For the **U.S. NATIONAL ACADEMY OF SCIENCES**, supported a committee charged by Congress with assessing the cost and effectiveness of an environmental surveillance system operated by DHS, called BioWatch, which is designed to detect the release of biological agents such as anthrax.
- For the **UNITED NATIONS COMPENSATION COMMISSION**, assisted in the evaluation of claims by foreign governments for public health damages caused by Iraq's 1991 invasion and occupation of Kuwait. Worked with a team of international, multidisciplinary experts to evaluate the scientific studies supporting the claims and to assess their cost estimates. Joined an international fact-finding mission, assisted the experts in drafting the report summarizing the results of this evaluation, and participated in a presentation of the team's findings in Geneva, Switzerland.
- For the **U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF GROUNDWATER AND DRINKING WATER**, updated a portion of the benefits analysis of the proposed regulation limiting arsenic levels in public drinking water systems. Contributed to research and recommendations for valuing benefits resulting from decreased fatal and nonfatal health risks associated with the consumption of arsenic.
- For the **U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF GROUNDWATER AND DRINKING WATER** and **OFFICE OF RADIATION AND INDOOR AIR**, made significant contributions to the regulatory impact analysis, IRFA, and FRFA in support of proposed changes to standards regulating the concentration of radionuclides in drinking water.
- For the **U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF RADIATION AND INDOOR AIR**, analyzed the economic impacts of radioactive contamination on the international scrap metal market. The analysis supported EPA's efforts as it worked with international organizations including the International Atomic Energy Agency and other U.S. agencies.

## Methods and Guidance Development

- For the **U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**, worked with two independent academic experts to draft guidance on best practices for preparing cost-benefit analyses of regulations promulgated by HHS agencies. Specifically, the document addresses the purpose, scoping, and framing of RIAs, best practices for estimating costs and benefits, methods for addressing uncertainty and nonquantifiable effects, methods for addressing distributional and other legal requirements, approaches for communicating results, and retrospective analysis. Ms. Baxter also oversaw the

preparation of a primer summarizing the key recommendations of the longer document as an easy reference guide for agency staff.

- For the **U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)**, drafted guidance on best practices for valuing time costs for use in regulatory benefit-cost analysis. As the lead author, Ms. Baxter reviewed the literature on valuing time, worked with academic experts to select the theoretical approach, and identified publicly available sources of wages, benefits, and overhead rate information.
- In related projects for the **U. S. COAST GUARD** and the **U.S. CONSUMER PRODUCT SAFETY COMMISSION**, developing an approach for updating proxy estimates of willingness to pay to avoid nonfatal injuries. Ms. Baxter directed review of publicly-available medical databases providing medical cost, lost productivity, and QALY data and oversaw the development of an approach for using these data to develop injury-specific estimates. Currently conducting additional research.
- For the **U. S. COAST GUARD**, reviewed methods for assessing the effectiveness of proposed regulatory interventions. Based on the findings of the review, Ms. Baxter lead a pilot project to implement a streamlined approach for eliciting expert judgments of the effectiveness of a proposed rule intended to improve worker safety.
- For the **U. S. COAST GUARD**, oversaw the development of a research report identifying best practices for retrospectively and prospectively estimating the cumulative cost and benefits of regulations.
- For the **U. S. COAST GUARD**, oversaw the development of a research report identifying best practices for estimating the secondary impacts proposed regulations, such as changes in output, gross domestic product, and employment. Ms. Baxter also oversaw the development of an automated tool used to assess the impact of compliance costs on small entities.
- For the **U. S. COAST GUARD**, researched methods for estimating the effectiveness of the use of safety management systems (SMS) in the maritime environment. Oversaw literature reviews, interviews with maritime safety specialists, and evaluation of available options. Ms. Baxter also worked with an evaluation expert to develop options for future evaluations of SMS programs.
- For the **U. S. COAST GUARD**, developed a study plan to implement a stated-preference survey intended to elicit individual willingness to pay to reduce the risk of nonfatal injuries in the maritime environment. The development of the plan involved collaboration with four independent academic experts and USCG staff.
- For **U.S. CUSTOMS AND BORDER PROTECTION**, worked with an independent consultant to convene an expert panel and prepare a report recommending a value of statistical life (VSL) distribution to be used by CBP to value reductions in the risk of premature mortality resulting from terrorism-prevention regulations. The report was subsequently disseminated more broadly within the Department of Homeland Security and approved by OMB.
- For the **U.S. FISH AND WILDLIFE SERVICE**, drafted guidance to assist field office staff in interpreting the results of screening analyses of impacts to small entities prepared in response to the RFA and the Small Business Regulatory Enforcement Fairness Act (SBREFA). The guidance memorandum describes lessons learned and key sources of uncertainty associated with screening analyses of critical habitat rules based on the completion of over 150 such analyses.
- For the **U.S. FISH AND WILDLIFE SERVICE**, assisted in the development of a guidance document outlining best practices and recommending approaches and tools for conducting regulatory economic impact

analyses of proposed critical habitat designations. This document was intended to assist field office staff, other government agencies, and the public in understanding the requirements of the ESA and other Federal laws and executive orders (e.g., Executive Order 12866, RFA) as they pertain to economic analysis of the impacts of critical habitat designation.

- For the **U. S. COAST GUARD**, directed a review of data currently collected by USCG on the consequences of recreational boating accidents to compare the costs of alternative regulations, policies, and programs to their benefits. Specifically, IEc evaluated alternative data sources on the number and characteristics of fatal and nonfatal injuries and property damages.
- For the **U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION**, directed the preparation of the Division of Vital Statistics' 10-year update of its geographic coding manual to incorporate the result of the latest census and to reflect changing coding systems or rules. Developed an innovative Access database that combines Census and GIS data for all of the cities in the United States to identify preferred place codes. Developed the new instruction manual for distribution to state, county, and local officials responsible for coding birth and death certificates.
- For the **U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF GROUNDWATER AND DRINKING WATER**, prepared summaries of current best practices or data needs for valuing a series of fatal and non-fatal health effects, including cancers; cognitive, behavioral, and neurophysiologic effects; adult blood pressure increase; kidney disease; liver disease; endocrine disruption; dental and skeletal fluorosis; hypothyroidism; and long-bone fractures. The final deliverable also provides recommendations for further research.

## Selected Publications and Reports

Baxter, J.R., L.A. Robinson, and J.K. Hammitt. [\*Valuing Time in U.S. Department of Health and Human Services Regulatory Impact Analyses: Conceptual Framework and Best Practices\*](#), Final Report, prepared for U.S. Department of Health and Human Services, June 2017.

U.S. Department of Health and Human Services, [\*Guidelines for Regulatory Impact Analysis\*](#), report prepared by Lisa A. Robinson, James K. Hammitt, Jennifer Baxter, Lindsay Ludwig, and Margaret Black, 2016.

Baxter, J.R., L.A. Robinson, and J.K. Hammitt. "[\*Retrospective Benefit-Cost Analysis\*](#)," Paper Series: Regulatory Reform in the 21<sup>st</sup> Century City, an Ash Center for Democratic Governance and Innovation Initiative, Harvard Kennedy School, Harvard University, 2015.

*Retrospective Study of the Cumulative Costs and Benefits of Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) Training Rulemakings*, Final Report, prepared for U.S. Coast Guard, July 21, 2014.

*Economic Analysis of Critical Habitat Designation for the Northern Spotted Owl*, Final Report, prepared for the U.S. Fish and Wildlife Service, U.S. Department of the Interior, November 20, 2012.

Robinson, L.A., J.K. Hammitt, J.E. Aldy, A. Krupnick, and J.R. Baxter, "Valuing the Risk of Death from Terrorist Attacks," *Journal of Homeland Security and Emergency Management*, Vol. 7, Issue 1, Article 14 (2010).

*Regulatory Assessment and Final Regulatory Flexibility Analysis for the Interim Final Rule: Importer Security Filing and Additional Carrier Requirements*, report prepared for U.S. Customs and Border Protection, U.S. Department of Homeland Security, November 6, 2008.

*Regulatory Assessment for the Final Rule: Documents Required for Travel Within the Western Hemisphere*, report prepared for U.S. Customs and Border Protection, U.S. Department of Homeland Security, March 11, 2008.

*Analytic Framework for Economic Analysis of Critical Habitat Designation (Peer Review Draft)*, report prepared for the Division of Economics, U.S. Fish and Wildlife Service, August 2002.

## **Selected Presentations**

Society for Benefit-Cost Analysis Annual Conference, “Improving the Elicitation of Professional Judgments for Use in Regulatory Benefits Analysis,” presenter, March 17, 2017.

University of Pennsylvania Law School, “Preparing Regulatory Impact Analyses (RIAs),” invited seminar presenter, March 23, 2016.

Society for Benefit-Cost Analysis Annual Conference, “Retrospective Benefit-Cost Analysis,” pre-conference workshop organizer and one of four presenters, March 16, 2016, March 18, 2015, and March 15, 2017.

Society for Risk Analysis Annual Conference, “Strategically Targeting Retrospective Analysis,” presenter, December 8, 2015.

Consumer Financial Protection Bureau Workshop, “Evolving Approaches for Valuing Benefits of Consumer Protection Regulations: Panel 4 – Looking Back: Retrospective Analysis of Expected Benefits,” invited panelist, November 20, 2014.

Harvard Kennedy School, Mossavar-Rahmani Center for Business and Government, “Benefit-Cost Analysis in the Real World: Tales from the Trenches,” invited seminar presenter, February 5, 2014.

## **Professional Societies**

Member, Society for Benefit-Cost Analysis (Director on the Society’s Board, 2013-2014; Workshop Committee Chair 2018)

Member, Society for Risk Analysis

Member, Association of Environmental and Resources Economists

## **Professional Experience**

Industrial Economics, Incorporated, 1999-Present

*Principal, 2006-Present*

*Director, 2010-Present*

J.B. Plunkett Associates, which was acquired by SECOR International, 1994-1997

## **Education**

Master of Environmental Studies, Yale University

Bachelor of Arts, *magna cum laude*, with Distinction in Environmental Science, Boston University (member of the national honor society Phi Beta Kappa)