

At A Glance

Environmental and Service Quality Valuation

Overview

Economic values of many goods and services are well approximated by their market prices. However, in some cases, for example for hypothetical new products, there is no observed price. In other cases the observed price will differ substantially from the economic value of the service. This will often be true in the case of environmental services, and of utility services where networks limit the scope for consumer choices about important service reliability and quality attributes. Nonetheless the economic values of improvements or declines in these services or attributes are often critical inputs to decisions about projects or policy change. Policy makers require these economic values to know whether the benefits of a policy change outweigh its costs. Water companies and their regulators require economic values to evaluate service improvements, and to compare alternative delivery schemes, eg for maintaining security of supply via resource development, or via leakage reduction, or via demand management schemes. Other utility companies have similar needs.

Economists have developed a range of techniques to estimate the economic values of improvements or declines in these “non-market” situations where observed prices are insufficient. The techniques involve either direct elicitation of preferences (eg contingent valuation and choice experiment methods), or indirect derivation of values from revealed behaviour in other markets (eg travel cost and hedonic price approaches). Also, sometimes values for a specific project or policy proposal may be derived using the “benefits transfer” technique, drawing on previous valuation results from elsewhere.

NERA economists have applied these techniques to derive economic values for many different attributes of services or products, including deriving values for hypothetical new telephone services, models of car, improvements to utility customer service levels, and improvements to the environment. The studies have included application of contingent valuation, choice experiments, revealed preference and benefits transfer methodologies, in order to assess customer or community willingness to pay for improved service and quality standards, and to estimate the aggregate net benefit of the change.

Drawing on our experience of projects for companies, regulators, industry bodies, NGOs and policy makers, and

our strong capabilities in quantitative economic analysis, we provide the following services to clients:

- Advising on the latest thinking on the conceptual and practical aspects of valuation, with implications for techniques for non-market valuation, including the relative robustness and merits of alternative techniques in practical applications.
- Designing methodologies for conducting high quality stated and revealed preference studies.
- Undertaking non-market valuation studies to derive robust estimates of environmental and service quality values. NERA has worked with a number of market research companies to undertake stated preference surveys and has an ongoing relationship with Accent Marketing and Research.
- Advising on interpreting and deploying results from non-market valuation studies in a wide range of decision-making contexts.
- Evaluating and critiquing other methodologies, applications, estimates and interpretations of non-market values.
- Providing our output as confidential advice, in the form of public domain reports, or as expert testimony for presentation to Planning Inquiries or the Courts.

Client Experience

The Costs of Water Use Restrictions, Thames Water, 2006

Thames Water asked NERA to undertake a study to quantify the economic and social costs of drought water use restrictions. NERA's analysis developed and drew on several sets of evidence: previously published estimates; government statistics on the value of output of businesses in each sector; and an original stated preference survey of household and business customers, designed to elicit the value customers place on avoiding water supply disruptions. The stated preference survey was undertaken in association with Accent Marketing and Research. The survey used the Choice Experiment and Contingent Valuation methods to identify customers' willingness to pay to reduce the likelihood and duration of drought water use restrictions. The results from the study were used by Thames Water as a key contribution to their evidence to a Public Inquiry on their appeal of the Mayor of London's decision to disallow their construction of a desalination plant at Beckton.

Estimating Willingness-to-pay for Reduced Water Resource Deficits, A UK Water Company, 2005

The client faced a situation where increases in supply, through common carriage, would not lead to a change in the planned resource schemes and thus there would be no avoided costs of deferment. For the purpose of setting common carriage access charges, NERA was asked to estimate customers' willingness to pay for the improved security of supply resulting from reduced deficits that would result. NERA estimated the current level of service, analysed how this level may change under various access scenarios, and quantified the value of the changes by drawing on estimates from published studies.

Cost-Benefit Analysis of Rural Post Office Branches, Postcomm, 2003

NERA conducted a cost-benefit study of rural Post Office branches for Postcomm, which included an original stated preference survey to quantify the value of Post Office branches and services to local rural communities including vulnerable groups. NERA found that almost all rural branches cost more to run than the revenue they produce, and that relatively few branches are profitable. However, social benefits to local residents exceed costs for 80 per cent of rural branches. NERA's work contributed to Postcomm's policy development for rural post offices and informed their recommendations to government.

Publications

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Hensher, D., N.Shore and K.Train (2005) "Households' Willingness to Pay for Water Service Attributes", *Environmental and Resource Economics*, Vol. 32, pp. 509-531

Hensher, D., N.Shore and K.Train (2006) "Water Supply Security and Willingness to Pay to avoid Drought Restrictions", *Economic Record*, Vol. 82, pp. 56-66

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Rowlatt, P., M.Spackman, S.Jones, M.Jones-Lee and G.Loomes (1998) "Valuation of Deaths from Air Pollution", A Report for Department of Environment, Transport and the Regions, and Department for Trade and Industry

Train, K. (2003) *Discrete Choice Methods with Simulation*, Cambridge University Press

About NERA

NERA Economic Consulting (www.nera.com) is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For over half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. With its main office in New York City, NERA serves clients from more than 25 offices across North America, Europe, and Asia Pacific.

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