



# Use of Benefits Transfer in Regulatory Analysis

Jim Laity

Policy Analyst

Office of Management and Budget

# Purpose of Regulatory Analysis

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- To inform decision makers and the public about the likely effects (positive and negative) of alternative regulatory options
- Goal is to provide useful information that leads to better decisions
- Regulatory analysis is not useful if it obscures important aspects of the decision
- Therefore: Quantification of benefits is only useful if it illuminates, rather than obscures, the effects of a proposed regulation

# Benefits Transfer

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- Use of valuation information from one set of goods, services, or amenities to estimate value of a similar set of goods, services or amenities for which valuation information is not available
- Two situations
  - Market goods
    - Use of COI data on acute gastroenteritis to estimate COI of cryptosporidiosis
  - Non-Market Goods
    - Use of habitat valuation data to estimate value of fish and shellfish losses

# Market Goods

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- Consider market value of the following
  - Rolex watch v Timex watch
  - First class v economy class airline ticket
  - House in Chevy Chase, MD v same house in Ames, IA
  - Martha Stewart Omnimedia stock in 2002 v 2004
  - Diamond v cut glass jewelry
- Nonetheless, for market goods, we generally have a good understanding of the dimensions and attributes that affect market value
- This understanding is the result of years of market observation and daily “cost-benefit” decision making

# Non-Market Goods

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- We do not have the same understanding of the dimensions and attributes that might affect our valuation of non-market goods
  - No price data to observe
  - No reason to think about
  - No consequence of making a poor decision
- For “non-use” values, problem is even harder
  - No first-hand experience
  - Goods and services poorly defined and/or understood

# Million (Billion) Dollar Question

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- Is policy context “close enough” to the valuation context so that transfer of dollar values illuminates, rather than obscures, the social value of non-market benefits?
- Pessimistic Answer: Not usually
- Optimistic Answer: Sometimes, but only if caveats are presented in a way that forces decision makers and the public to consider them

# Stated Preference Valuations

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- Even applying stated preference valuations to the exact situation that was presented in the survey is problematic
  - Amenity being valued must usually be explained to respondents
  - No budget constraint
  - Impossible to fully consider potentially competing amenities
- However, stated preference valuations have become accepted because there is no other way of valuing many non-market amenities

# Stated Preference Valuations Should Only be Used Where Policy Context is “Very Close” to Survey Context

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- NOAA Panel Report on Contingent Valuation (1993)
  - “Accurate Description of the Program or Policy:  
Adequate information must be provided to respondents about the environmental program that is offered. It must be defined in a way that is relevant to damage assessment.”
- OMB Circular A-4 (2003)
  - “The relevant characteristics of the study and the policy contexts should be similar” with respect to
    - Reversibility
    - Property rights
    - Availability of substitutes
    - Not appropriate for resources with “unique” attributes

# Problems with Benefits Transfer of Stated Preference Estimates

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- Starts with all the problems of using stated preference estimates, even for the exact study context
- Ignores unique attributes of study context that cannot be parameterized
- Assumes away budget constraint, even if respondent was considering it
- Technical complexities with transfer. 316(b) example:
  - Which species to use for determining fish/acre?
  - What share for fish production services?
  - How many HHs?

# Example: Avoided Fish Kills at Cooling Water Intake Structures (316(b) Regulations)

- “Non-use” valuations for wetlands and eelgrass fish habitat derived from study of Peconic Estuary, Long Island Sound → dollars/HH/acre/year
- RI study used to estimate fraction of wetland valuation attributed to “fish production services”
- Abundance data on various species used to estimate productivity of habitat in replacing fish → fish/acre
- $(\text{Dollars/HH/acre/year}) / (\text{fish/acre}) \times (\text{avoided fish kills})$  → dollars/HH/year for avoided fish kills
- Multiply by HHs in affected area → non-use benefits

# If not Benefits Transfer, then What?

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- Quantification of benefits without monetization
- Cost effectiveness analysis
- Breakeven Analysis
- More informative “qualitative” descriptions of benefits
  - What % of cooling water intake structures affect critical habitat for threatened/endangered species?
- Provide valuation information on related amenities as “context” but not as bottom line value of benefits
- Of 7 major EPA rules reviewed by OMB last year:
  - 3 had monetized benefits > costs
  - 2 had monetized benefits < costs
  - 2 provided quantified but non-monetized estimates of benefits only (tons per year of emissions reductions)