Valuing ecosystem services: when do taxes, fees and markets for ecosystem services provide reasonable measures of value?

David Simpson
Director, Ecosystem Economic Studies
National Center for Environmental Economics
United States Environmental Protection Agency

simpson.david@epa.gov

* All opinions expressed here are those of the speaker, and do not necessarily reflect those of the United States Environmental Protection Agency
When do taxes, fees and markets for ecosystem services provide reasonable measures of value?

*Rarely.*

... And when they do, is our work done?
The less public is demand, the less accurate is market price as a measure of social value.

So, the fewer demands are aggregated, the lower is the market price relative to the marginal social benefit.
When would the market price overstate marginal social benefit?

Consider the celebrated Catskills example; EPA motivated preservation of land by making drinking water supply dependent on it.

*It is questionable whether New York City would have chosen to protect water quality by protecting the watershed absent that federal pressure . . . Although consumers might prize safe drinking water, they also savor low water rates, and might not be willing to support a rate increase needed to purchase land that would promise water quality services.* (Salzman, et al., 2001)
Prices in tradable permit programs

- Landowner 2’s marginal opportunity cost
- Landowner 1’s marginal opportunity cost

- Preservation by landowner 1
- Preservation by landowner 1

Total preservation required by regulation
Regulatory market prices only reflect social benefits if “caps” are chosen optimally

Are caps chosen optimally?

- Pursuit of other social objectives (e.g., agricultural set-aside programs)
- Uncompensated global externalities
- Disproportionate political influences
Even if caps are chosen optimally, will marginal abatements costs be equated to marginal social benefits for all participants?

- Information problems in markets
  - Adverse selection (e.g., Montero on SO$_2$, Wara on GHGs)
  - Leakage (e.g., Wu on CRP, concern over REDD)

- Why have trades in some markets been so rare?
  - Liability concerns among would-be buyers
  - Sellers fear “slippery slope” to more onerous regulation
  - Thin markets in local public goods
Taxes and fees

• Are taxes and fees potentially more accurate measures than tradable permit prices?
• Political arguments concerning tradable permits apply here as well.
• In some countries environmental taxes are theoretical curiosities, not practical alternatives.
• Interaction with pre-existing distortions may mean that taxes would diverge from marginal social benefits (Goulder & Parry)
• Competing objectives of Pigovian and Ramsey taxes:
  – Pigou: correct externality; tax “works” if there’s a significant quantity response.
  – Ramsey: raise revenue; tax “works” if there is not a significant quantity response.
The question begs a question:

- *If* taxes, fees and markets for ecosystem services provide reasonable measures of value, why do we need to do anything more? We would already have “internalized the externality”.

- Could taxes, fees, or market prices be used in trans-national benefit transfers?