

---

# Economic Valuation Methods

**REMEDE**

---

Ece Ozdemiroglu (eftec)

Warsaw

03 June 2008

***REMEDE receives research funding from the 6th Framework Programme of the European Commission. This presentation reflects the authors' views alone. The Community is not liable for any use that may be made of the information contained therein.***

# Structure of presentation

- Explore the **rationale** for economic valuation
- Introduce key **uses** of economic valuation
- Overview of the **economic valuation methods**
- Outline **benefits transfer** - using estimates from the literature

# Terminology

- Economic:
  - Not ‘the cheapest’ way but ‘the highest net benefit’
  - Not commercial gain but social welfare
  - Trade offs and opportunity costs
- Welfare
  - Wellbeing, utility
  - Not only money income but total economic value

# Valuing changes

- When markets **exist**
  - Market prices (with adjustments)
- When markets **do not exist**
  - Use non-market valuation techniques
    - Intangibles, non-quantifiable...

# Economic benefits and costs

## ■ Benefits

- Anything that increases human wellbeing
- Avoided cost

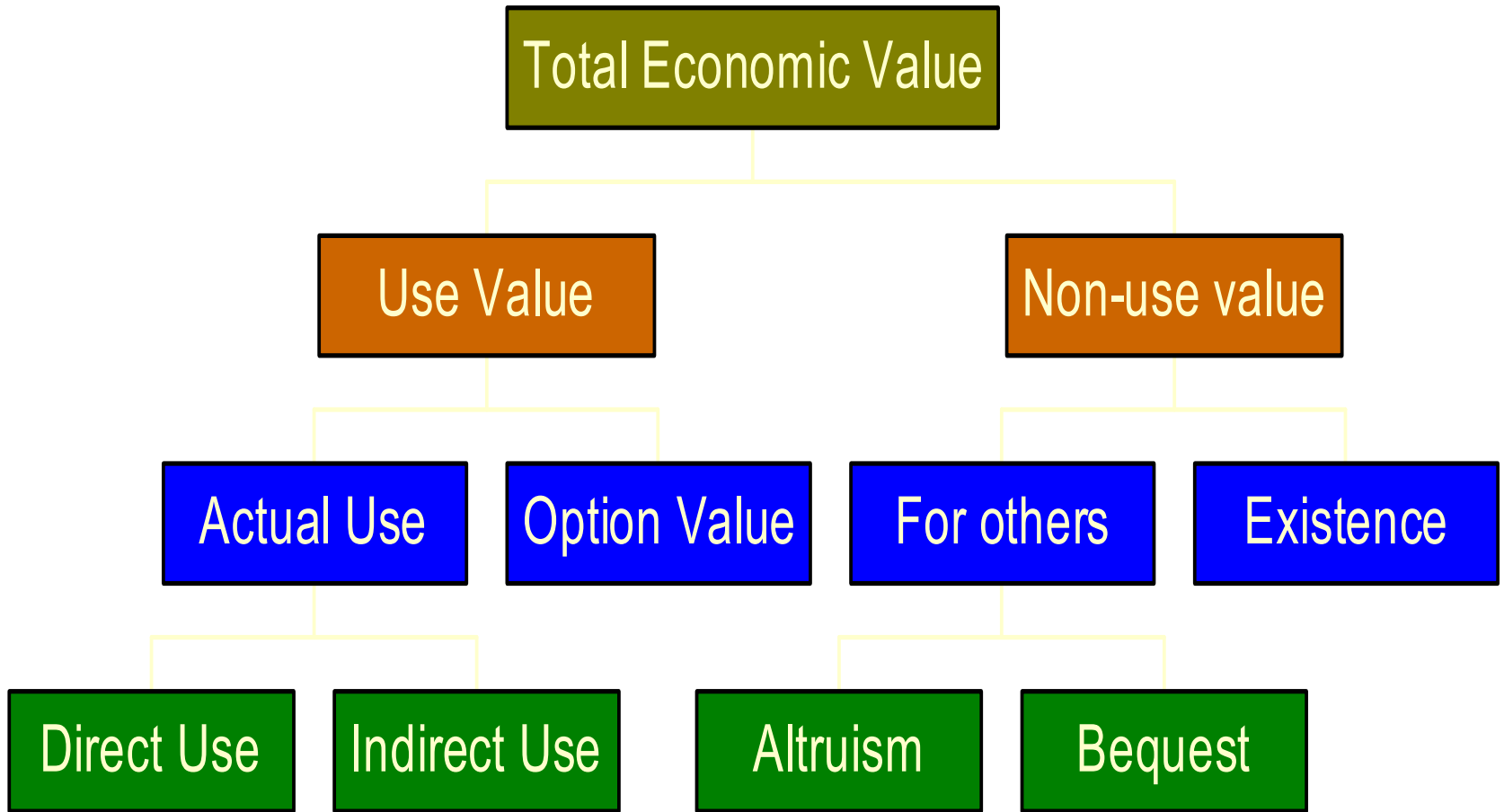
## ■ Costs

- Anything that decreases human wellbeing
- Forgone benefit

# WTP and WTA

- **Willingness to pay (WTP)**
  - (Maximum) WTP to secure **gain**
  - (Maximum) WTP to avoid a **loss**
    - *Trade-off between goods and services: people must sacrifice some of their limited income to secure change.*
  
- **Willingness to accept (WTA)**
  - (Minimum) WTA to tolerate a **loss**
  - (Minimum) WTA to forgo a **gain**

# Total economic value



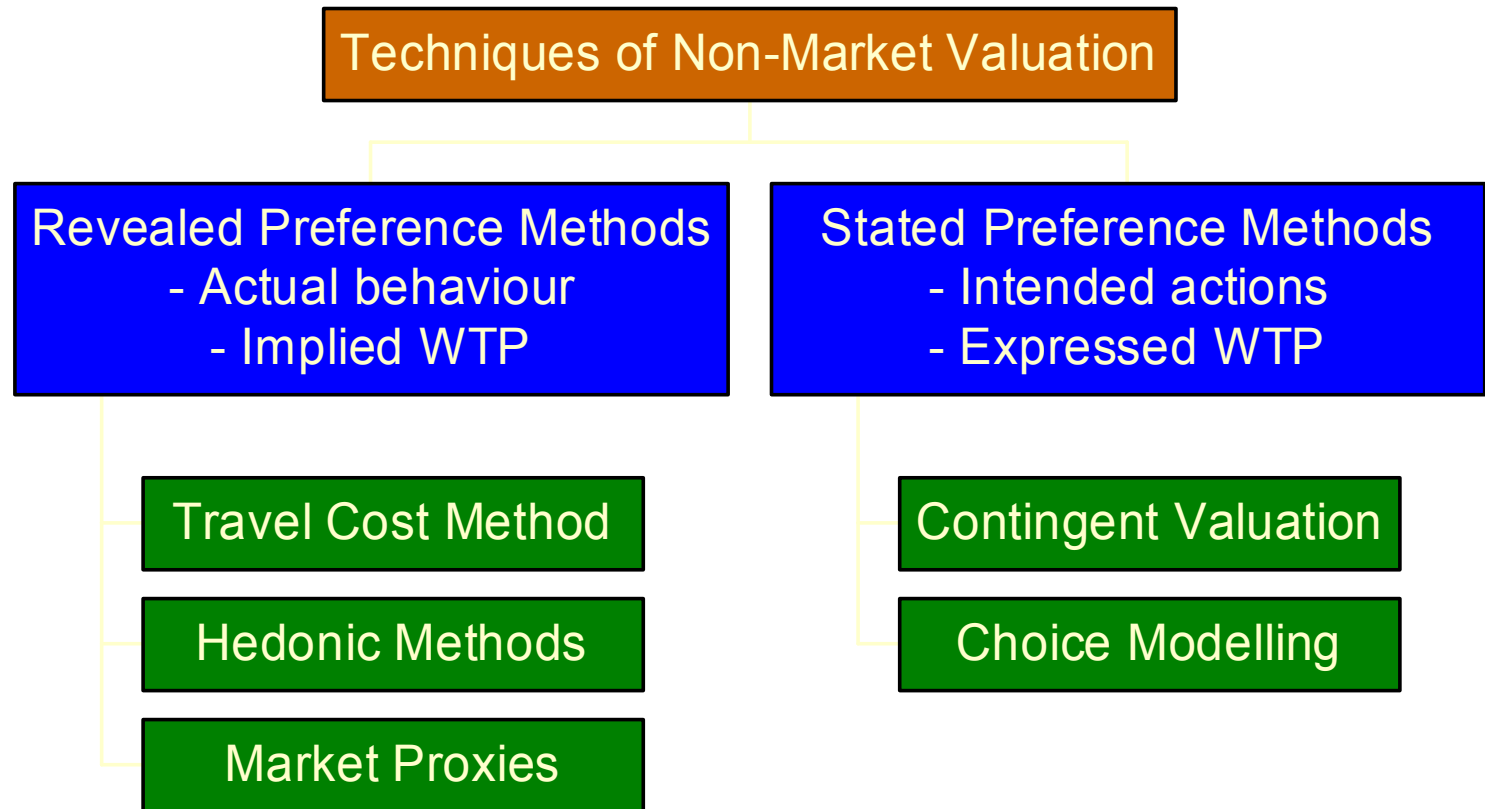
# Use of economic values

- Demonstration of economic value
- Compensation as in ELD (debits and credits)
- Cost Benefit Analysis
- Pricing policies (entry fees, taxes, charges etc.)
- Green corporate and national accounting

# Market prices

- “Cost of alternative resource or substitutes (e.g. supplying drinking water from an alternative aquifer)”
- Avertive expenditures (e.g. filters, treatment, bottled water)
- Cost of illness
- Productivity change

# Non-market valuation techniques



# Revealed preferences

- Based on the assumption that people's actions in **actual markets** reflect preferences for environmental assets
- Valuation based on **observed past behaviour in related markets**
  - Travel cost method
  - Hedonic price method

# Travel cost method

- Assumes that travel cost to a site can be regarded as a proxy for the value of accessing the site
- Travel costs: petrol costs, entry fees, on-site-expenditures, opportunity cost of time
- Recreation sites (fishing, hunting, forest visits)

# Hedonic price method

- Attempts to evaluate environmental services by their impacts on market goods
- Assumes the price of a market good is a function of its characteristics
  - One characteristic may be **environmental quality**
- House prices (airport noise, amenity value of woodland, urban air quality, earthquake risks)

# Stated preference methods

- Survey-based
- Based on the assumption that people's intended behaviour in hypothetical/ simulated markets (e.g. survey) reflect preferences for non-market assets
- Valuation based on intended future behaviour in the constructed market
  - Contingent valuation method
  - Choice modelling techniques

# Contingent valuation method

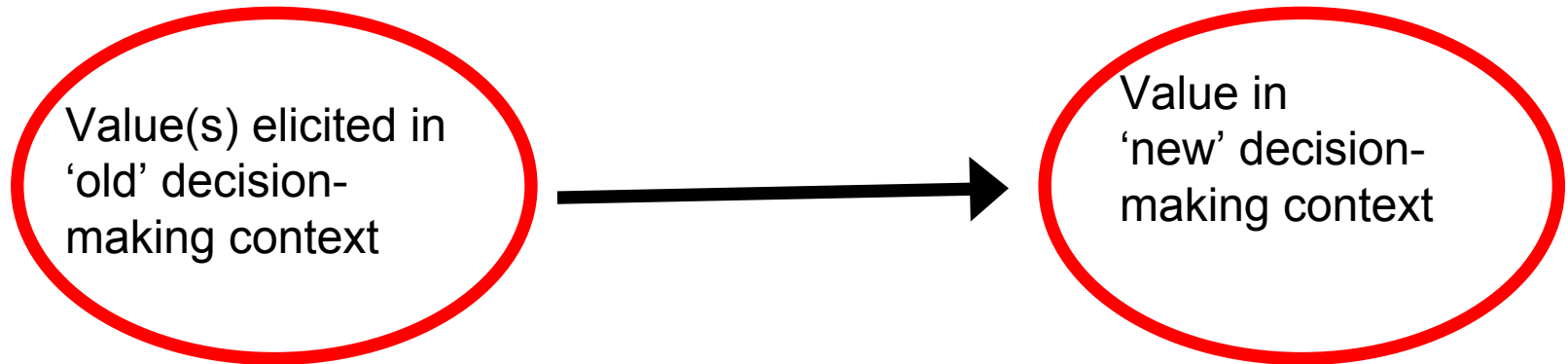
- Constructs a scenario (or a sequence of scenarios) where the asset in question can be traded
- Explicitly asks individuals to place values upon the asset
  - Directly measures people's preferences
  - WTP / WTA
- Strongly rooted in economic theory (& cognitive psychology)
- Can measure non-use values

# Choice experiments

- Assumes that the value of a good is a function of its characteristics
- Individuals are asked to choose their preferred alternative amongst various constructed scenarios
  - Each scenario is a function of various attributes (including price)
  - Each attribute varies at different levels
  - Choices involve trade-offs
  - WTP is inferred indirectly

# Benefits (or value) transfer

- *Use of estimates from the 'study site' in the 'policy site'*



- **Rationale:** Primary valuation studies can be **time consuming, resource intensive** and **require specialist knowledge**



# Benefits transfer

- **Differences in the populations**
  - Income and other socio-economic factors
- **Differences in the physical characteristics of the region**
  - Rivers: urban/rural, accessibility, recreation, flow levels

# Benefits transfer

- **Differences in the projects**
- **Temporal changes**
  - Valuations may change over time
  - E.g. increasing incomes, decreasing availability of clean rivers

# Cannot monetise all costs and benefits

- The underlying physical data do not exist
- The physical data may exist but not in a form suitable for monetary expression
- Economic research may simply not have been done
- *Benefit (or cost) threshold*