The Discount Rate for Benefit-Cost Analysis in the United States

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Conference on the Discount Rate in the Selection of Public Investment Projects

Paris, France
Society for Benefit-Cost Analysis (SBCA)

- **Founded**: 2007
- **Mission**: Improve the theory and practice of benefit-cost analysis and support evidence-based policy decisions
- **Members**: Scholars and practitioners from around the world, from government, academia, nonprofits, and private industry
- **Annual conference**: with over 300 attendees
- **Publish**: *Journal of Benefit-Cost Analysis (JBCA)* since 2010
Annual SBCA conference includes presentations on discount rate


- *Hyperbolic Discounting in Benefit-Cost Analysis*, Charles Moss, University of Florida; Troy Schmitz, Arizona State University; Dwayne Haynes & Andrew Schmitz, University of Florida (2016)

- *Mazur Discounting and the Private Benefits Paradox*, Brian Mannix, GW Regulatory Studies Center (2016)

- *The Social Discount Rate in Developing Countries*, Missaka Warusawitharana, Federal Reserve Board (2015)
SBCA conference provides a forum for debate and discussion on varied topics

- Discount rates for BCA in various sectors
- Value of a statistical life for use in BCA
- Addressing uncertainty in BCA
- Shadow prices for application to BCA
- International comparisons of BCA
- Application of BCA in:
  - Civil and criminal justice
  - Education and training
  - Energy
  - Environment
  - Finance and financial markets
  - Food and agriculture
  - Health and health care
  - International trade and development
  - Safety and security
  - Social welfare programs
  - Transportation and infrastructure
  - Workforce and workplace
Influential articles in the *JBCA* on the discount rate and related issues

- *Musings on the social discount rate* | Harberger & Zerbe | Vol. 6 | No. 1 | 2015
- *More appropriate discounting: The rate of social time preference and the value of the social discount rate* | Moore, Boardman & Vining | Vol. 4 | No. 1 | 2013
- *Characterizing the amount and speed of discounting procedures* | Jamison & Jamison | Vol. 2 | No. 2 | 2011
- *Appropriate discounting for BCA* | Burgess & Zerbe | Vol. 2 | No. 2 | 2011
- *Behavioral economics and the conduct of benefit-cost analysis: Towards principles and standards* | Robinson and Hammitt | Vol. 2 | No. 2 | 2011
U.S. context for BCA (or CBA)

• Broad application of BCA across policy areas in public sector
  – Long-standing federal government use for regulatory policy, infrastructure decisions, and social program investments
  – State and local governments adding capacity for similar applications

• Growing use in private sector
  – Program providers seeking impact and economic evaluation
  – Private funders want ROI estimates
  – Basis for pay-for-performance contracts (e.g., social impact bonds)
Illustrative range of guidance documents

- National Academies of Sciences, Engineering, and Medicine Committee on the Use of Economic Evidence to Inform Investments in Children, Youth, and Families (2016)
- Second Panel on Cost-Effectiveness in Health and Medicine (2016)
Guidance documents recommend varied range of discount rates

<table>
<thead>
<tr>
<th>Source</th>
<th>Recommended Real Rate</th>
<th>Sensitivity Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMB (2003)</td>
<td>3%</td>
<td>Yes</td>
<td>Real rate of return on long-term government debt</td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td></td>
<td>Average before-tax rate of return to private capital in the U.S. economy</td>
</tr>
<tr>
<td>National Academies (2016)</td>
<td>3%</td>
<td>Yes</td>
<td>Consensus value for reference case social discount rate</td>
</tr>
<tr>
<td>Second CEA Panel (2016)</td>
<td>3%</td>
<td>Yes</td>
<td>Real consumption rate of interest</td>
</tr>
</tbody>
</table>
### Other illustrations of discount rates used in practice

<table>
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<th>Recommended Real Rate</th>
<th>Sensitivity Analyses</th>
<th>Rationale</th>
</tr>
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<tr>
<td>Congressional Budget Office (1990)</td>
<td>2%</td>
<td>± 2%</td>
<td>Real yield of treasury debt (equated to social rate of time preference)</td>
</tr>
<tr>
<td>General Accountability Office (1991)</td>
<td>Real yield on treasury debt of same maturity as project</td>
<td>Yes</td>
<td>Real yield of treasury debt (equated to social rate of time preference)</td>
</tr>
</tbody>
</table>
Evolving consensus

- Use a reference case discount rate (e.g., 2% to 7%)
- Examine sensitivity to alternative discount rates
  - Discrete changes
  - Monte Carlo simulation
- When policy involves multiple generations, allow for lower discount rate
Society for Benefit-Cost Analysis

www.benefitcostanalysis.org