Economic Impact Assessment:
Where We’ve Come From, Where We Are Now, and Where We Still Need to Go

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Where We’ve Come From

Late 1800s to early 1900s:
  Rational decision-making

Mid- to late 1900s:
  Environmental economics: theory, methods...
  ...let’s price everything!

1960s/70s:
  1. Fears of environmental deregulation
  2. Environmental impact assessment: a response to cost-benefit analysis (CBA)

Economic impact analysis (EconIA) takes hold
  (think input-output analysis, multipliers, indirect and induced impacts, GDP, etc.)
Economic Benefits, Public Interest

• Economic imperative in major project development
  Somebody wants to gain
• And $ = votes
• Economic benefits part of public interest definitions

  sustainability means the ability to protect the environment, contribute to
  the social and economic well-being of the people of Canada and
  preserve their health in a manner that benefits present and future
  generations

  Impact Assessment Act, s.2

→ Assessment of economic impacts key to projects going forward
Economic Impact Analysis (EconIA)* Says What Proponents Want

<table>
<thead>
<tr>
<th>Pipeline Project</th>
<th>Gross Domestic Product</th>
<th>Jobs (Person-years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy East</td>
<td>$55 billion</td>
<td>261,000</td>
</tr>
<tr>
<td>Enbridge Northern Gateway</td>
<td>$312 billion</td>
<td>907,000</td>
</tr>
<tr>
<td>Kinder Morgan Trans Mountain Expansion Project</td>
<td>$22 billion</td>
<td>123,000</td>
</tr>
</tbody>
</table>

EconIA = economic impact analysis, i.e., input-output analysis, multipliers, etc.
1. Expenditures treated as benefits
2. Narrow scope of effects covered
3. Gross vs. net impacts
Myth of Major Project Economics

decisions based on delusional optimism rather than on a rational weighting of gains, losses, and probabilities... involuntarily spinning of scenarios of success and overlooking the potential for mistakes and miscalculations

Flyvbjerg et al. 2007

group think growth
Gunton 2003

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost (Billion $ CAD)</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$5.4</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$7.4</td>
<td>37%</td>
</tr>
<tr>
<td>2018</td>
<td>$9.3</td>
<td>72%</td>
</tr>
<tr>
<td>2020</td>
<td>$12.6</td>
<td>133%</td>
</tr>
<tr>
<td>2022</td>
<td>$21.6</td>
<td>300%</td>
</tr>
</tbody>
</table>
Cost-benefit Analysis

• Focus on net impacts, and capability to assess many project impacts (but not all)
**Teck Frontier Oil Sands Mine: benefit and costs (base case)**

<table>
<thead>
<tr>
<th>Impact</th>
<th>NPV (2017CDN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>+$21.7 billion</td>
</tr>
<tr>
<td>Capital costs</td>
<td>-$10.7 billion</td>
</tr>
<tr>
<td>Operational costs</td>
<td>-$9 billion</td>
</tr>
<tr>
<td>Reclamation</td>
<td>-$16 million</td>
</tr>
<tr>
<td>Employment benefits</td>
<td>No incremental benefit</td>
</tr>
<tr>
<td>Air pollution</td>
<td>-$1.3 billion plus additional unmonetized costs</td>
</tr>
<tr>
<td>GHG damages</td>
<td>-$4.1 billion</td>
</tr>
<tr>
<td>Impacts on water resources</td>
<td>Cost (unmonetized)</td>
</tr>
<tr>
<td>Impacts on ecosystem services</td>
<td>-$733 million plus unmonetized cultural impacts</td>
</tr>
<tr>
<td>Additional impacts</td>
<td>Unmonetized impacts including: user costs; foreign investment benefits and profit leakage costs; costs of subsidies; and additional social and cultural costs</td>
</tr>
<tr>
<td>Net Present Value</td>
<td>-$4.1 billion</td>
</tr>
</tbody>
</table>

Cost-benefit Analysis

• Focus on net impacts, and capability to assess many project impacts (but not all)
• Resolution on distribution of benefits and costs
• Reliance on individualistic preferences instead of societal preferences
• Tricky assumptions, e.g., discount rate
Where We Are Now

- Questioning of EconIA, resumption of openness to CBA
  - Decision-maker attention / awareness that typical economic impact information insufficient
  - Canadian EA/IA agencies calling for more

- Starting to see real economic IA issues brought to the fore
  - Enbridge Northern Gateway review panel calling for CBA
  - Grassy Mountain review panel giving economic issues weight
Grassy Mountain Coal Mine Proposal
Grassy Mountain Coal Mine Proposal

Benga did not submit key methodological details and models to support its estimates...

We do not have confidence in the tax estimates that Benga produced...

The project has the potential to impose negative impacts on other economic sectors, while other risks in Benga’s estimates that were not assessed could reduce the positive economic impacts of the project...

We find that Benga presented an overly optimistic economic analysis...


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Analyzing Health, Social and Economic Effects under the Impact Assessment Act

This document is for informational purposes only. It is not intended to fetter decision-makers. It is not intended to suggest that the Government can regulate matters of provincial jurisdiction. It is not a substitute for the Impact Assessment Act (the Act) or its regulations. In the event of an inconsistency between this document and the Act or its regulations, the Act and its regulations would prevail. For the most up-to-date versions of the Act and regulations, please consult the Department of Justice website.

Contents

1. Introduction
2. Guidance and tools
3. Key considerations: Effects assessment under the Impact Assessment Act
   3.1 Health, social and economic effects: Considerations at each phase
   3.2 Meaningful engagement and consultation
   3.3 Data and information sources
   3.4 Data and information collection
   3.5 Analyzing and reporting on data and information
4. Identifying health, social and economic valued components
   4.1 Valued components: definition and significance
   4.2 How changes to a valued component can result in multiple effects
   4.3 Prioritizing valued components
   4.4 Effect pathways
5. Assessing health, social and economic effects under the Impact Assessment Act: Identifying methods
   5.1 Health effects and the determinants of health framework
   5.2 Social effects
   5.3 Economic effects
6. Health, social, economic effects in Decision-Making and Post Decision
Annex 1 – Key resources
Annex 2 – Examples of potential valued components that are relevant to health, social and economic effects
Annex 3 – Data sources
Where We Need to Get to

1. Build on the momentum
2. Guidance on how to do good economic IA
3. Economic literacy among the IA community
4. Policy development
Where We Need to Get to: Build on the Momentum
Where We Need to Get to: Guidance

• How to use EconIA and CBA, what to take from each, their roles
• Assumptions and judgements, e.g.,
  • discount rate and approach
  • uncertainty (e.g., project cost, output, commodity prices)
  • standing, what groups to examine for distribution questions, equity
• How much of the non-economic to economicize?
• How to blend economic IA information with rest of IA?

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Where We Need to Get to: Economic Literacy

- Key economic concepts, and confusing terminology

<table>
<thead>
<tr>
<th>Economic Literacy</th>
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<tbody>
<tr>
<td>Social rate of time preference</td>
</tr>
<tr>
<td>Marginal cost of supply</td>
</tr>
<tr>
<td>Backward linkages</td>
</tr>
<tr>
<td>Natural rate of unemployment</td>
</tr>
<tr>
<td>Non-market valuation</td>
</tr>
</tbody>
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In EA, also known as IA and EIA, what should we call economic impact assessment? And what acronym should we give it?
What is the difference between economic impact assessment and economic impact analysis?
Is there a difference between financial and economic impacts?
What is the difference between impacts, effects, benefits, costs?
What is the difference between net social value, net social benefits, net benefits, net present value?
Where We Need to Get to: Economic Literacy (2)

What are some basic, good practices in science?

• Transparency
• Replicability
• Honesty
• Objectivity

- Fixed technological coefficients
- Linear relationships between industries
- No constraints on supply
- Impacts are assumed to occur instantaneously
- Externalities are ignored

"Remove this - I think it weakens the discussion"

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Where We Need to Get to: Economic Literacy (3)

• What is good practice when forecasting the future? → Explore uncertain parameters and their effect on results

• Teck critique: “the CBA... is extremely sensitive to key assumptions... therefore... the findings are not robust... should not inform the decision”

• Joint Review Panel: “cost-benefit analyses are sensitive to the assumptions and factors built into the analysis and results... risk of subjectively skewing the results”
Where We Need to Get to: Policy Development

- Underlay guidance with policy on how things should be done
- Defining the public interest
- Methods for assessing ‘the public interest’
From there to here to forwards
Thanks

• Colleagues
• Funding
• Clients

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Let’s continue the conversation!
Post questions and comments via chat in the IAIA22 platform.

#iaia22