# Economic Impact Analysis vs. Cost-Benefit Analysis: A Comparison

David Casazza – Associate

June 28, 2023

Regional Economic Models, Inc.

what does REMI say?sm

# Agenda

- Analysis Overview
- Economic Impact Analysis
- Cost-Benefit Analysis
- Comparison and Combination
- EIA, CBA, and REMI
- Q&A

# Analysis

Project prioritization and event analysis is more important and more viable now than ever before.

Thanks to the availability of microeconomic and macroeconomic data and models, analyses of all stripes have become more feasible for large and small organizations.

Hand-in-hand with this availability comes the necessity of such analysis: for informing policy decisions, prioritizing projects, ensuring positive return-on-investment, and securing funding.

Two major frameworks stand out as the primary means of analysis: *Economic Impact Analysis* (EIA) and *Cost-Benefit Analysis* (CBA).

# EIA and CBA

## EIA

- Focuses on an *event* that impacts the economy, sector, or region
- Goal is to analyze objective impact, and may be used to make a decision
- Looks at levels and differences
- May compare multiple economic factors against their respective factor

## CBA

- Focuses on whether not to make a prospective investment from the perspective of an active participant
- Goal is to make a *decision*
- Has a clear line of viability
- Synthesizes multiple factors across years into a net benefit or ratio

# Agenda

- Analysis Overview
- **Economic Impact Analysis**
- Cost-Benefit Analysis
- Comparison and Combination
- EIA, CBA, and REMI
- Q&A

# Economic Impact Analysis

EIA is the bread-and-butter of REMI analysis, consisting of several parts:

1. Model/framework – The impact of an event is compared to baseline levels to isolate the impact of the event. *Economic multipliers* – wherein a change to one factor spurs changes in other – is central to this
    In REMI's case, this framework takes into account:
        a. Input-Output Modeling – most fundamental and widespread
        b. Economic Equilibrium – takes shock mechanics into account
        c. Economic Geography – estimates spatial constraints
        d. Econometric Equations – connects various policy variables to one another
2. Quantified impacts – The model gives differences including *Output*, *Gross Domestic (regional, state) Product*, *Value-Added*, *Employment*, *Personal Income*, and *Population*.
3. D-ID-I – Impacts can be separated into three levels:
    **Direct** – Activity and impacts directly related to the project
    **Indirect** – Related to the supply chain of the project
    **Induced** – Related to the activity spurred by the earnings of Direct and Indirect employees

# Agenda

- Analysis Overview
- Economic Impact Analysis
- **Cost-Benefit Analysis**
- Comparison and Combination
- EIA, CBA, and REMI
- Q&A

# Cost-Benefit Analysis

CBA views a project or policy from a budgetary perspective – rather than simply being an "event". It can be either a public or private budget. It has an explicit *viability point*.

1. Identity and quantify costs and benefits – costs may include raw materials, wages and salaries, and lost revenues due to the activity. Benefits may include fiscal factors – forecast revenues and expenditures – as well as factors seen in EIA – GDP for example
2. Discounting and sensitivity analysis – A discount rate is set and used to calculate the Net Present Value (NPV) of each benefit and cost in each year of the project
3. Comparison – the NPV of benefits is weighed against NPV of costs to give a benefit-cost ratio (BCR). When BCR > 1, there is a positive return on investment. Similarly, if NPV of benefits minus NPV of costs >0, the same applies.

| | |
|---|---|
| $NPV_B/NPV_C > 1$ | Project viable |
| $NPV_B+NPV_C > 0$ | Project viable |
| $NPV_B/NPV_C < 1$ | Project unviable |
| $NPV_B+NPV_C < 0$ | Project unviable |

# Agenda

- Analysis Overview
- Economic Impact Analysis
- Cost-Benefit Analysis
- **Comparison and Combination**
- EIA, CBA, and REMI
- Q&A

# EIA and CBA

## Applications

### EIA

- Tax policy impact on government, consumers, or industry
- Natural disasters and processes
- Regional impact analysis, economic development and planning
- Integration into CBA along with other forms of analysis
  - Environmental impact
  - Social impact

### CBA

- Tax policy viability from the perspective of state or local government
- Vetting social programs
- May be used in combination with EIA, or in isolation for smaller projects
- Financial investment
- Risk and safety assessments

**Neither is necessarily more specialized or broader, depends on the subject**

# Agenda

- Analysis Overview
- Economic Impact Analysis
- Cost-Benefit Analysis
- Comparison and Combination
- **EIA, CBA, and REMI**
- Q&A

# Agenda

- Analysis Overview
- Economic Impact Analysis
- Cost-Benefit Analysis
- Comparison and Combination
- EIA, BCA, and REMI
- Q&A

# Thank you for attending!

For more information, please contact
info@remi.com