Overview

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REMI: Overview

• General Equilibrium model built on I/O tables
• Allows for economic responses to economic shocks by firms, households, governments
• Geographic linkages
• Constructs forward-looking regional forecast baselines (State of Louisiana), based on:
  ▫ Region-specific economic data
  ▫ Mainstream projections constructed by various government & academic units
  ▫ Customized government budget data, entered by user
REMI: Overview

- REMI provides a method of simulating the impact of new scenarios on a model of the Louisiana economy, similar to IMPLAN
  - Forward-looking
  - Industry linkages (70 sectors)
  - Allows for price changes
  - Simulates dynamic responses based on profit- and utility-maximizing behavior
  - Built-in ability to account for typical state government balanced-budget constraint
REMI: Process

- **LDR Task**: Estimate “ROI” for various economic development incentive programs
- **Approach**:
  - Analyze 10 incentive programs separately
  - Model each as an economic shock:
    - Incorporate data on actual program participation
    - “Forecast” the economy resulting from the program’s existence
    - Compare to a baseline economy
REMI: Process

• Approach:
  ▫ Gather benefits data by program participants (rebates, credits, etc.), and relevant economic input variables associated with participation in the particular program
  ▫ Account for year-to-year volatility by assessing over a two- or three-year window, and averaging inputs as a typical single year
  ▫ Account for balanced budget constraint, and confirm how the model should do the balancing
REM1: Process

- Setup: Government Budget
  - Revenues & Expenditures
REMI: Process

- Setup: Scenario Inputs
REMI: Process

- Output:
  - Represented as deviation from baseline (or control)
  - In terms of GDP, Personal Income, Value Added, Employment, etc.
  - Tax revenue gain/loss is estimated as part of the model resolving
    - Budget input steps include specification of linkages between government budget and economy
    - Linkages determine how shocks ultimately filter into tax collections & economic activity
REMI: Process

- Output
REMI: Process

- Output & Interpretation:
  - Return On Investment concept:

\[
\text{Economic ROI} = \frac{(\text{Value Added} - \text{Total Cost})}{\text{Total Cost}} \times 100 \%
\]

\[
\text{Fiscal ROI} = \frac{(\text{Tax Revenue} - \text{Total Cost})}{\text{Total Cost}} \times 100 \%
\]
Output & Interpretation - Quality Jobs Program:

- Average annual incentives: $105.5 million
- Estimated GDP growth: $131.3 million
  - Economic ROI: 25.67%
- Estimated Revenue Loss: $97.9 million
  - Fiscal ROI: -93.65%

REMI: Process
• Output & Interpretation:
  ▫ Ranking by Economic ROI

1. Retention and Modernization Credit 397.0%
2. Musical & Theatrical Productions Tax Credit 105.6%
3. Digital Interactive Media & Software Tax Credit 72.4%
4. Motion Picture Investor Tax Credit 40.7%
5. Louisiana Quality Jobs Program 25.7%
6. Enterprise Zones 23.5%
7. Procurement Processing Company Rebate Program 1.6%
8. Rehabilitation of Historic Structures 2.0%
9. Industrial Tax Equalization Program 1.6%
10. Research and Development Tax Credit -26.7%
Output & Interpretation:

- Ranking by Fiscal ROI

1. Retention and Modernization Credit -73.7%
2. Musical & Theatrical Productions Tax Credit -84.9%
3. Digital Interactive Media & Software Tax Credit -90.9%
4. Rehabilitation of Historic Structures -92.5%
5. Motion Picture Investor Tax Credit -93.0%
6. Procurement Processing Company Rebate Program -93.3%
7. Louisiana Quality Jobs Program -93.7%
8. Industrial Tax Equalization Program -93.9%
9. Enterprise Zones -94.3%
10. Research and Development Tax Credit -95.5%
• Interpretation:
  ▫ A crucial “return” assumption is made by default in the approach we have described:
    • Associated benefits & costs are fully attributed to the program being analyzed
      • Little or no controversy: the causal effect of program expenditure on the budget-balancing response
      • Significant controversy: the causal effect of program on new economic activity associated with the program
REMI: Issues to Consider

- **Interpretation:**
  - “But-for” analysis
    - Credible assessment should account for activity that would have occurred in the absence of the program
  - Any specific accounting for “but-for” must be done manually by the analyst
    - RI example: “breakeven” analysis concept
REMI: Issues to Consider

• Sensitivity to Input Choices:
  ▫ Illinois Example: windfall that was simply used to pay down of debt → minimal economic gain
    • Choice of Policy Variable determines how the program or policy will affect production or consumption decisions
    • Choice of Indicator determines how economic activity drives government revenues
    • Indicator and Policy Variable Inputs all be considered carefully & with program goals in mind
    • These choices will determine how shocks propagate through our model of the economy
Questions?