REMI TRAINING SERIES SESSION 3: POLICY ANALYSIS WITH REMI PI+

REMI WEBINAR
SEPTEMBER 13TH, 2018

Summer Training Series

- Week 1: REMI 2.2
- Week 2: Forecasting in PI+
- **Week 3: Policy analysis in PI+**
- Week 4: Tax Analysis in Tax-PI

Agenda

- Overview
- Study Requirements
- Adapting to PI+
- Simulation
- Q&A

Introduction

- Economic analysis can be used in a wide number of fields
  - Energy analysis
    - NYSERDA Energy Efficiency
    - REGI Cap-and-Trade
    - China Carbon Pricing
  - Tax and Fiscal
    - Rhode Island Tax Policy Change
    - Federal Social Security Analysis
    - UNC Chapel Hill Economic Development Meta-analysis
  - And Many More
    - State Medicaid Expansion
    - Educational Attainment
    - Transportation Investment

Example One: Economic Impact Study

- Manufacturing Assistance Program
  - Objective: Demonstrate Value
  - Relevant issue – American Competitiveness
  - Many issues
    - To what degree is the policy successful?
    - Where does money spent go?
    - Does assistance to one firm hurt competing firms?
    - How does all of this effect the overall economy?

Relevant Studies

- *The National-Level Economic Impact of the Manufacturing Extension Partnership (MEP) : Estimates for Fiscal Year 2017*, W.E. Upjohn Institute
  - Analyzed effect of NIST's MEP program
  - Utilized data from MEP participant survey

Selecting Policy Variables

Assumptions/ Outcomes

- Survey results – hiring, retention, and investment
- If no survey data – use case studies

Spending

Opportunity Cost

Alternative Assumptions

Selecting Policy Variables

Assumptions/ Outcomes

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Spending

- Program implementation
- What are direct, measurable effects of the implementation?

Opportunity Cost

Alternative Assumptions

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- What are direct, measurable effects of the implementation?

Opportunity Cost

- Decrease in government spending

Alternative Assumptions

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Spending

- Program implementation
- What are direct, measurable effects of the implementation?

Opportunity Cost

- Decrease in government spending

Alternative Assumptions

- Alternate survey response rates

Model Demonstration

Results

- WE Upjohn Study
  - Goal: Value economic impact of the Manufacturing Extension Program
  - Found 14.5 to 1 return on investment for the conservative estimate of economic growth

Example Two: Energy Policy

- REMI used by utilities, energy researchers, and energy advocacy groups
  - Utilities need to evaluate impact to ratepayers
  - Energy researchers can evaluate many different proposed policies
  - Advocacy groups can translate impacts into jobs and output
- Many variables
  - Fuel Cost
  - Investment
  - Environmental Effects

Relevant Studies

- *Economic, Fiscal, Emissions, and Demographic Implication from a Carbon Price Policy in Vermont,* REMI
  - Integrated CTAM (Carbon Tax Analysis Model) outputs
  - Integrates Revenue Recycling Elements

Economic Considerations

Costs	Purpose	Spending

- Increased Taxes to Carbon producers
- Increased Fuel Costs

Economic Considerations

Costs	Purpose	Spending
◻ Increased Taxes to Carbon producers ◻ Increased Fuel Costs		◻ Revenue Rebates

Economic Considerations

Costs

- Increased Taxes to Carbon producers
- Increased Fuel Costs

Purpose

- Reduce Carbon Emissions
  - Improve health
  - Decrease consumption of fossil fuels
  - Protect environment

Spending

- Revenue Rebates

Selecting Policy Variables

Assumptions/ Outcomes

- CTAM Results
- Purchasing out-of-state oil (in-model)

Spending

Opportunity Cost

Alternative Assumptions

Selecting Policy Variables

Assumptions/ Outcomes

- CTAM Results
- Purchasing out-of-state oil (in-model)

Spending

- Carbon Pricing Revenue Disbursements

Opportunity Cost

Alternative Assumptions

Selecting Policy Variables

Assumptions/ Outcomes

- CTAM Results
- Purchasing out-of-state oil (in-model)

Spending

- Carbon Pricing Revenue Disbursements

Opportunity Cost

- Higher fuel costs mean less efficiency in downstream industries

Alternative Assumptions

Selecting Policy Variables

Assumptions/ Outcomes

- CTAM Results
- Purchasing out-of-state oil (in-model)

Spending

- Carbon Pricing Revenue Disbursements

Opportunity Cost

- Higher fuel costs mean less efficiency in downstream industries

Alternative Assumptions

- Three alternative tax rates

Model Demonstration

Results

- Vermont Carbon Pricing Study
  - Increase in Jobs, GSP, and personal income in every tax scenario
  - Reduction in overall carbon dioxide emissions

Transportation Study

Costs	Purpose	Spending

- Penny Tax

Transportation Study

Costs	Purpose	Spending
◻ Penny Tax		◻ Transportation Spending

Transportation Study

Costs	Purpose	Spending
◻ Penny Tax	◻ Accessibility	◻ Transportation Spending

Higher Education Study

Costs	Purpose	Spending

- Income Tax

Higher Education Study

Costs	Purpose	Spending
◻ Income Tax		◻ Education

Higher Education Study

Costs	Purpose	Spending
◻ Income Tax	◻ Productivity	◻ Education

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