Budget Forecasting Solutions with REMI

Presented by David Casazza, Associate

Regional Economic Models, Inc.
## Agenda

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Economic Modeling: Why does it matter?

**Clarify**
- Understand economic, fiscal and demographic implications of policies before implementation
- Ensure that public policy serves the broad-based interests of the public

**Calculate**
- Make predictions about the effects of policies before implementation
- Avoid unwanted negative impacts
- Make effective use of resources

**Communicate**
- Inform policy with standard metrics rather than ideology or intention
- Address stakeholders with evidence that communicates how policy benefits or disadvantages their communities broadly
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We are the nation’s leader in dynamic local, state and national policy modeling.

From the start, REMI has sought to improve public policy through economic modeling software that informs policies impacting our day-to-day lives.

We were founded in 1980 on a transformative idea: government decision-makers should test the economic effects of their policies before they’re implemented.
At REMI, we’re inspired by a single goal: *improving public policies.*

Our models are built for any state, county, or combination of counties in the United States.

**Our Representative Clients**

Our model users and consulting clients use REMI software solutions to perform rigorous economic analysis that critically influences policy.
The REMI Model: Our Studies & Applications

- Missouri Tax Credit Review Commission analysis
- Washington State Aerospace tax credit analysis
- Ohio Historic Preservation Tax Credit Program study
- Economic and Fiscal Impacts of Modernizing Nebraska Tax Codes and Supporting Innovation to Advance the Prosperity of Nebraska
- Maryland: Corporate Tax Rate Reduction Analysis
Dynamic Forecasting

What effect would Measure X have?

Change in policy variables associated with Measure X

The REMI Model

Alternative Forecast

Compare Forecasts

Control Forecast

REMI takes historical data and creates a baseline or control forecast out to 2080. REMI can then run an alternative forecast or "What if?" simulation on top of the control to simulate a change in the regional economy. These data are then compared to baseline data, giving a difference (as a level or %) that shows the economic impact of the given policy.
Model Methodology

Integrated REMI Economic Modeling Approach

- General Equilibrium
- Input-Output
- Econometrics
- Economic Geography
The model’s underlying principles of **economic geography** reflect spatial constraints and positions of the regions. Each region is assigned values corresponding to input data, and may interact with one another via migration, competition, and trade.
Components of the economy interact with one another by way of:

- **Econometrics** express building blocks of an economy, shown here
- **Input-output modeling** shows how firms and industries consume and produce for one another
- Principles of **economic equilibrium** model market behavior in areas such as investment
- **Direct**, **indirect**, and **induced** impacts may finally be analyzed and visualized.
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Importance of Economic Modeling

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REMI Tax-PI: Modeling Fiscal Policy Changes

REMI SEI: Evaluating Socioeconomic Indicators

Regional Simulation & Notable Results

Conclusion

Q&A
Tax-PI is the only widely-available model that shows both the dynamic economic and fiscal effects of policy.

Decision-makers rely on Tax-PI to demonstrate the economic and fiscal impacts of policy on local and state budgets. As a result, Tax-PI informs, and guides policy decisions based on their economic and fiscal impact:

- State and Local Tax Changes
- State and Local Fiscal Budgets
- Education and Infrastructure Investments
Dynamic Fiscal Analysis

- Tax/Spending Change
- Change in tax base and spending determinants
- Observed behavioral response
- Direct or "Static" fiscal impact
- Change in business and personal incentives
Forecasting revenues:
- Property taxes
- Sales/use taxes
- Licensing fees
- Alcohol taxes
- Gasoline taxes

Forecasting expenditures:
- Education
- Judicial & Corrections
- Public health
- Parks & Recreation
- Transportation
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REMI SEI is the premiere modeling solution for evaluating the socioeconomic indicators (SEI) of projects and policies across a variety of topic areas.

The industries of economic development that rely on dynamic SEI impact analysis to influence their policies and practices include:

- Education
- Transportation
- Taxation
- Healthcare and Social Services
- Housing and Community Development
- Labor and Workforce Development
- Consulting Firms
- Energy and Environment
- Immigration
Capabilities

- Jobs by Race/Gender
- Regional Disparities by County
- Labor Force by Race/Gender
- Jobs by Education Level
- Income by Quintile
- Inflation Impact by Income
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Increase in Transfer Payments

- Benefits distributed through the Child Tax Credit in Oregon can be modeled through REMI using the Transfer Payments policy variable.
- **Assumption**: payments total $100 million per year for the program, the inputs to the model are $100 million in Transfer Payments annually.
Economic Results – GDP, Output, and Income

- Increases in all years for Personal Income, Output, and GDP
Economic Results – Fiscal Impacts (Revenues)

• Revenues stemmed primarily from ‘Individual Income Taxes’ and ‘Selective Sales Taxes’

Note: Oregon does not have a general sales or use/transaction tax.
The first, second, and middle 20% income groups increased their consumption power within Oregon.
There is a relatively even distribution for consumption price changes across income quintiles.
• The first, second, and middle 20% income groups receive the largest percentage increase from the baseline.
The first four quintiles receive the largest percentage increase from baseline.
SEI Results – Employment by Race

- The largest percentage increase in employment in the outer years is for the white non-Hispanic population.
- Note: Oregon’s population is 86% white non-Hispanic.
• There is a larger increase in male employment in the first few years (2021-2026), but the longer-term increases are majority female employment

• This is largely due to a construction boom at the beginning
SEI Results – Employment by Educational Attainment (2030)

• A majority of the employment increase in 2030 comes from jobs not requiring a college degree.
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## Conclusion

### REMI SEI
- Jobs by Race/Gender
- Regional Disparities by County
- Labor Force by Race/Gender
- Jobs by Education Level
- Income Quintile
- Inflation Impacts by Income Level

### REMI Tax-PI
- 2 State and Local Tax Changes
- 1 State and Local Fiscal Budgets
- State and Local Expenditure changes (education and infrastructure)

### How do they work together?
Thank you for attending!

For more information, please contact info@remi.com