CMTS Lunch & Learn: REMI Economic Modeling & Applications to Inland Waterways

Dr. Peter Evangelakis – Senior Vice President of Economics & Consulting, REMI
Celso Lopez – Economic Assistant, REMI
April 30, 2025

Regional Economic Models, Inc.

what does REMI say?℠

About Us

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.

Our Representative Clients:

U.S. Department of Transportation Volpe Center

Sandia National Laboratories

McKinsey & Company

North Carolina Department of Commerce

US Army Corps of Engineers

University of Michigan

EY

ITEP Institute on Taxation and Economic Policy

New York State of Opportunity. Empire State Development

what does REMI say?sm

REMI Models

PI+ is the premier software solution for conducting dynamic macroeconomic impact analysis of public policy.

As our flagship model, PI+ specializes in generating realistic year-by-year estimates of the total local, state, and national effects of any specific policy initiative.

Tax-PI — Fiscal policy and tax modeling

TranSight — Transportation and infrastructure modeling

E3+ — Energy, environment, and economy model

*what does REMI say?*sm

Key Features of REMI Model

- Dynamic forecasting (year-by-year impacts)
- Multi-regional structure (county, metro, state, national, etc.)
- Economic linkages (input-output, computable general equilibrium, economic geography)
- Peer-reviewed framework
- 45+ years experience

The Design of Critical Infrastructure Assets and the Impact on System Resilience

Used REMI TranSight to simulate regional economic effects of the Francis Scott Key Bridge collapse and the associated Port Closure

Modeling Approach

- Separate simulations for bridge and port disruptions
- Inputs included:
  - Transportation costs
  - Commuting costs
  - Accessibility costs
- Different timespans modeled

Key Findings

- Up to $4.9B GDP loss, including $1.3B in Maryland
- Employment and GDP recovery delayed for years in worst case scenarios
- Commodity access significantly reduced, showing the bridges role in broader network

REMI Model quantifies cascading economic losses and underscores need to prioritize resilience

US Army Corps of Engineers

what does REMI say? sm

The Perils of Efficiency: Analysis of Poe Lock Closure

The Office of Cyber and Infrastructure Analysis used the REMI model to quantify the macroeconomic effects of a 6-month Poe Lock closure.

Modeling Approach

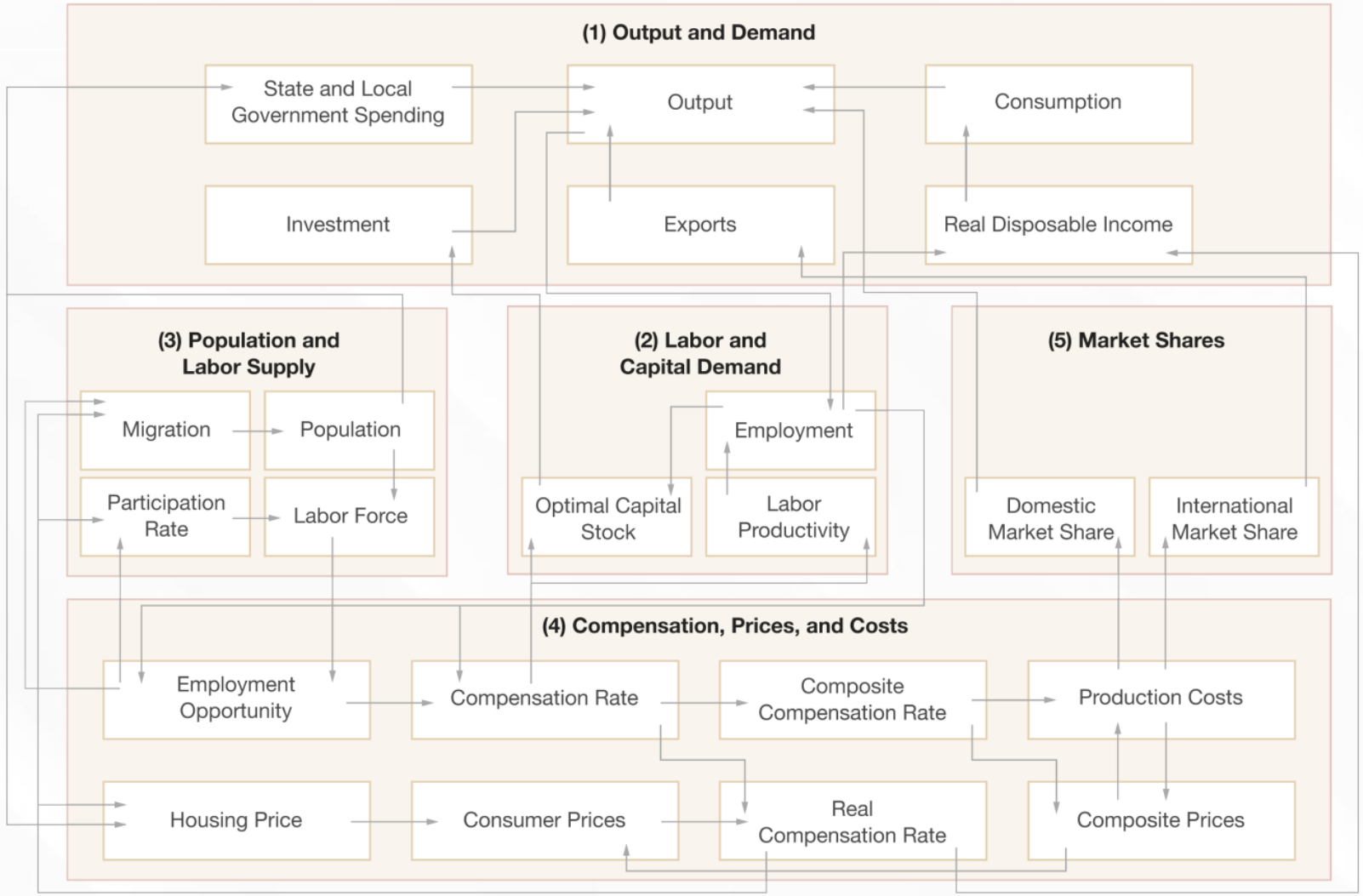
- REMI simulated cascading impacts on employment and GDP across integrated steel, automotive, and manufacturing sectors
- Supply chain disruptions modeled from loss of iron ore transport via Great Lake vessels

Key Findings

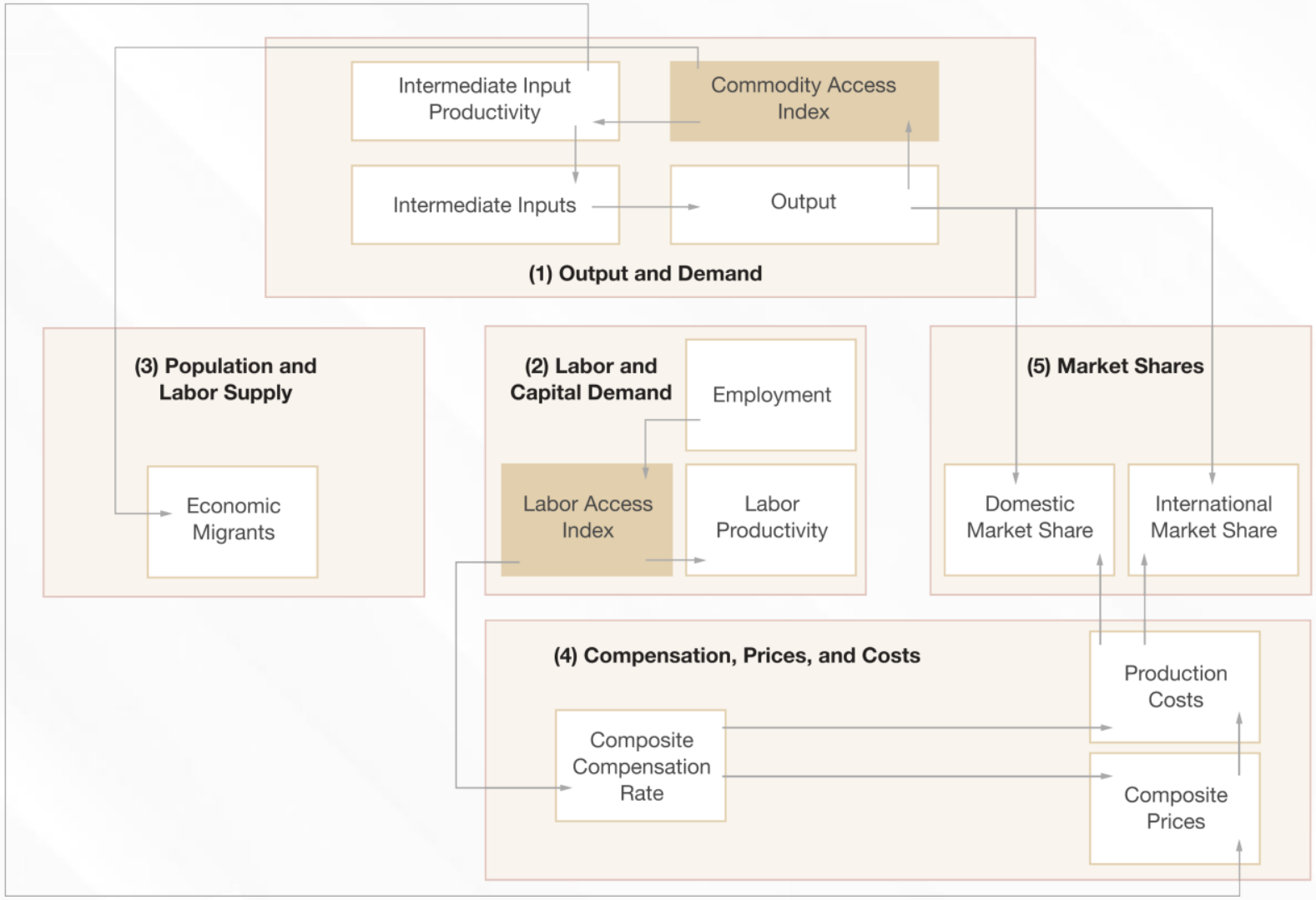
- Up to 11 million U.S. job losses modeled from supply chain collapse
- Severe GDP contractions in Michigan, Indiana, Ohio, and broader U.S.
- Widespread industry shutdowns in autos, appliances, construction equipment, and railcars

REMI's analysis highlights the Poe Lock as a critical economic choke point – its failure triggers rapid, system-wide economic decline with no viable *short-term* alternatives.

REMI Model Linkages



REMI Model Linkages



Model Demonstration

Analyzing the economic impacts of an inland waterways disruption affecting Houston

Waterways disruption substituted using rail transportation

- Decrease in water transportation revenue
- Increase in rail transportation revenue (larger given higher average expense)
- Increase in cost of transporting intermediate and final goods

Thank You!

Emails:
Peter.Evangelakis@remi.com
Celso.Lopez@remi.com