

# OBBBA Reducing Transportation Funds: Economic Analysis using REMI-AI

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## The "Big Beautiful Bill" and Transportation

Impact of First-Mile Transit

Input Methodology: REMI TranSight and REMI AI

Analysis Output from TranSight and REMI AI

Conclusion

Q&A

# What is the One Big Beautiful Bill Act (OBBBA)?



## Taxes & Economy

- Cuts corporate tax (21% to 15%)
- Reduces capital gains, estate taxes
- Aims to stimulate business investment with deregulation



## Energy & Environment

- Eliminates EV and renewable energy tax credits
- Roll back clean energy programs
- Expands oil and gas drilling

## Government & Regulation

- Encourages faster project approval
- Private sector involvement
- Reduces power of federal agencies



## National Priorities & Security

- Redirects funding to "America First" priorities
  - Border control, domestic production, etc.



# The Big Beautiful Bill's Impact on Transportation



- **Reallocation of Funds**
  - The bill shifts funding priorities to roads, bridges, air traffic control, and maritime infrastructure
- **Metro Funding Cuts**
  - The bill repeals federal authorization for the Capital Investment Grants program used for large transit projects
  - The bill cuts discretionary funding for the RAISE program used for multimodal hubs and **first/last mile projects**
- **More Funding at Risk**
  - Transportation Secretary Sean Duffy has threatened to cut funding to states who do not cooperate with ICE

what does **REMI** say?<sup>sm</sup>

# Agenda



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# “First-Mile Access Transit”



- “First-Mile” (FM) and “Last-Mile” (LM): the **first/final segment** of a trip (common forms: walking, cycling, transit)
- Our study focus: projects extending **public transit** to improve FM convenience
  - Expanding core transit network to **connect the previously disconnected/relatively less connected regions**
  - **What’s the impact** of (potentially) cutting off these projects under the context of the Big Beautiful Bill?

what does **REMI** say?<sup>sm</sup>

# Theoretical Importance of First-Mile Access Transit

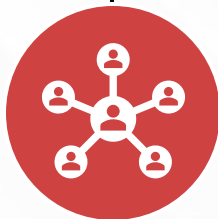


## First-Mile Access Transit Projects



### Solve Barrier in Transit Use

People can be discouraged from using transit because they can't easily reach it



### Improved Accessibility

Low-income, elderly, and disabled riders are most affected by poor first-mile options



### Reduced Emissions

Making transit accessible can improve safety & reduce car trips



### Increased Revenue

Transit projects bring ridership, leading to increased revenue generation



# Comparative Cases between 3 Metropolitan Areas



## New York: Interborough Express

- 14 mi light rail project
- Brooklyn – Queens
- Planning



## Chicago: Red Line Extension

- 5.6 mi metro extension
- 95<sup>th</sup> – 130<sup>th</sup> Street
- Planning/Pre-Construction



## Los Angeles: East San Fernando

- 6.7 mi light rail project
- San Fernando – Van Nuys
- Planning/Pre-Construction

\*Project selection rationale: (1) connecting previously **less-connected** neighborhoods; (2) during the planning/pre-construction stage to balance **information availability** with the **flexibility** of travel demand estimation

*what does **REMI** say?<sup>sm</sup>*



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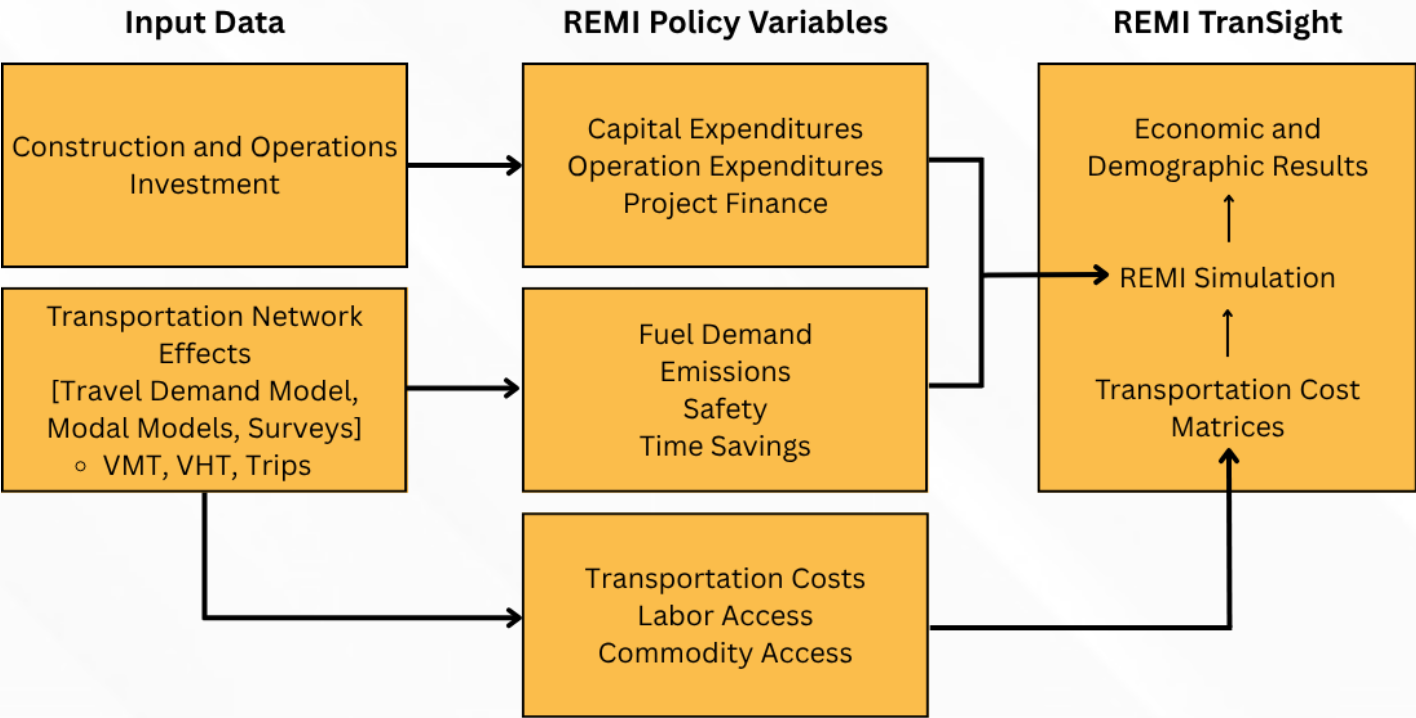
Q&A

# Model Simulation: REMI TranSight



TranSight is the premier software solution for comprehensive evaluations of the total economic effects of transportation policy.

Grounded in over 20 years of modeling experience, decision-makers depend on TranSight to forecast the short- and long-term impacts of transportation investments on jobs, population, income, and other economic variables



what does **REMI** say? <sup>sm</sup>

# Assumptions of Analysis



Variable	Vehicle Miles Traveled			Vehicle Hours Traveled		Vehicle Number of Trips	
Source/ Formula	Public Info, Research & Reports			$VHT = \frac{VMT}{\text{Avg. Speed (mph)}}$		$V\_Trips = \frac{VMT}{\text{Avg. Trip Length (mi)}}$	
Variable	Railway Miles Traveled			Railway Hours Traveled		Railway Number of Trips	
Source/ Formula	Public Info, Research & Reports			$RHT = \frac{RMT}{\text{Avg. Speed (mph)}}$		$R\_Trips = \frac{RMT}{\text{Avg. Trip Length (mi)}}$	
Variable	Vehicle Average Speed (mph)			Vehicle Average Trip Length (mi)			
Location	NYC	CHI	LA	NYC	CHI	LA	
Assumed Value	16.1	12.8	19.6	7.9	5.9	9.3	
Variable	Rail Average Speed (mph)			Rail Average Trip Length (mi)			
Location	NYC	CHI	LA	NYC	CHI	LA	
Assumed Value	25			4.5	6.3	6.9	

what does **REMI** say?<sup>sm</sup>

# Model Inputs: TranSight



Origin	Destination	Year	Auto_Trips	Auto_VMT	Auto_VHT	LightRail_Trips	LightRail_VMT	LightRail_VHT
1	1	2026	0	0	0	0	0	0
1	1	2027	baseline	baseline	baseline	baseline	baseline	baseline
Origin	Destination	Year	Auto_Trips	Auto_VMT	Auto_VHT	LightRail_Trips	LightRail_VMT	LightRail_VHT
1	1	2026	0	0	0	0	0	0
1	1	2027	adjusted	adjusted	adjusted	adjusted	adjusted	adjusted

- TranSight travel demand module is compatible with .csv input datasets
- Inputs generated through a "baseline" scenario and "adjusted" scenario – typically reflecting a non-investment vs. Investment situation to show the effects of transit infrastructure
- Key variables for travel demand modeling: # trips + vehicle miles traveled (VMT) + vehicle hours traveled (VHT) disaggregated by mode of transportation

**what does *REMI* say?<sup>sm</sup>**

# Model Inputs: TranSight



Save Forecast

Import

Export

Print

Tools

Select Inputs

Inputs List

Forecast Options

Results

Policy Variable Inputs

Active

Edit

Group

☒

Travel Demand

Active

Group

☒

Travel Demand - Emissions

Active

View

Category

Detail

Region

Units

2023

2024

2025

2026

2027

2028

2029

2030

☒

Non-Pecuniary (Amenity) Aspects

Total

District 1

2017 Fixed National \$ (M)

0

0

0

0

-0.0798787

-0.2242776

-0.3686764

-0.513075

☒

Travel Demand - Leisure Time

Active

View

Category

Detail

Region

Units

2023

2024

2025

2026

2027

2028

2029

2030

☒

Non-Pecuniary (Amenity) Aspects

Total

District 1

2017 Fixed National \$ (M)

0

0

0

0

61.0616408

54.482946

67.410846

72.612604

☒

Travel Demand - Safety Costs

Active

View

Category

Detail

Region

Units

2023

2024

2025

2026

2027

2028

2029

2030

☒

Non-Pecuniary (Amenity) Aspects

Total

District 1

2017 Fixed National \$ (M)

0

0

0

0

-21.143350

-35.238917

-49.334484

-63.43005

☒

Travel Demand - Operating Costs

Active

View

Category

Detail

Region

Units

2023

2024

2025

2026

2027

2028

2029

2030

☒

Consumer Spending

Motor vehicle fuels, lubricants, and fluids

District 1

2017 Chained National \$ (M)

0

0

0

0

-1.9568047

-1.9568047

-1.9568047

-1.956804

☒

Consumption Reallocation

All Consumption Categories

District 1

2017 Chained National \$ (M)

0

0

0

0

1.9568047

1.9568047

1.9568047

1.9568047

☒

Travel Demand - Effective Distance

Active

View

Category

Detail

Region

Units

2023

2024

2025

2026

2027

2028

2029

2030

☒

Commuting Costs - Immediate Market Share Respor

District 1 to District 1

Interregional

Proportion

0

0

0

0

-0.0001445

-0.0001445

-0.0001445

-0.000144

☒

Accessibility Costs

District 1 to District 1

Interregional

Proportion

0

0

0

0

-0.0013567

0.0002349

-0.0027310

-0.003802

☒

Transportation Costs

District 1 to District 1

Interregional

Proportion

0

0

0

0

-0.0039215

-0.0039215

-0.0039215

-0.002204

what does **REMI** say?<sup>sm</sup>

# Model Simulation: REMI AI



REMI-AI is the next evolution in policy analysis. This tool streamlines your workflow by generating high-quality deliverables—a one-pager, a PowerPoint presentation, and a comprehensive report—directly from your model results.

Built with the newest and most secure artificial intelligence technology, REMI-AI relies exclusively on REMI model documentation and equations, ensuring accuracy and reliability without pulling information from external sources.

*what does **REMI** say?*<sup>sm</sup>

## Report generator



Generate a custom economic report.

## One-pager



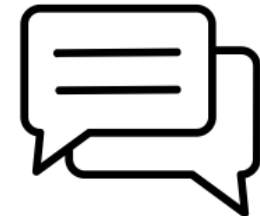
Develop an overview of the impacts of policy for your team.

## PowerPoint generator



Create an insightful and digestible slide deck.

## Virtual economic assistant



Get modeling assistance on demand.

# REMI AI Application



## Put your Simulation in Context

Title your Report

Regional Simulation 1 Report 2

Describe your Simulation (Recommended) ?

This simulation demonstrates the regional economic benefits of investing in First-Mile Transit infrastructure in the city of Chicago.

Describe your Policy Variables (Recommended) ?

Active	Group	Notes	
<input checked="" type="checkbox"/>	Travel Demand	TDM Data representing the changes as a result of the new infrastructure	

what does **REMI** say?<sup>sm</sup>



# REMI AI Application



Report Designer - Regional Simulation 1 Report 2

Save Report

Context

Templates

Run & Edit

Run and Edit your Report

Network Benefits

Year	Labor Access Index	Commodity Access Index (moving average)	Relative Cost of Production
2028	0.018	0.005	-0.005
2032	0.028	0.018	0.015
2036	0.032	0.028	0.008
2040	0.031	0.025	0.002
2044	0.032	0.030	0.001
2048	0.033	0.032	0.000
2052	0.033	0.033	-0.001
2056	0.033	0.034	-0.002
2060	0.033	0.034	-0.002

The simulations results highlight the broader economic implications of improved labor and commodity access as well as changes in production costs relative to a defined baseline from 2027 to 2060. The data underscores interconnected dynamics between specialized labor supply, infrastructure-driven commodity access, and cost-efficiency in production processes. Positive percent changes in the Labor Access Index and Commodity Access Index signify enhanced geographic and economic accessibility, leading to gains in productivity and competitiveness. These changes align with core economic geography principles, including the influence of improved connectivity and specialization in lowering transportation and transaction costs. Relative production costs, while slightly higher relative to the baseline in the early years, transition into consistent declines post-2035, suggesting that investments in regional access and efficiency eventually yield cost savings. Together, these metrics reflect an overall movement toward more productive, cost-efficient, and interconnected regional economies.

The Labor Access Index, Commodity Access Index (moving average), and Relative Cost of Production were the most impacted in the simulation in terms of Network Benefits. The Labor Access Index showed sustained positive growth across all years, reflecting consistent improvements in industries' ability to access highly specialized workers, fostering productivity and economic specialization. The Commodity Access Index (moving average) demonstrated a steady upward trend, with positive percent changes highlighting reductions in transportation costs and increased regional connectivity, which

Edit with AI

Set your writing style

1) Your current text selection:

The simulations results highlight the broader economic implications of improved labor and commodity access as well as changes in production costs relative to a defined baseline from 2027 to 2060. The data underscores interconnected dynamics between specialized labor supply, infrastructure-driven commodity access, and cost-efficiency in production processes.

2) Pick one of our preset suggestions

Shorten

Summarize

Explain

Expand

Proofread

3) AI-generated response for selected preset:

The simulation results reveal the economic implications of better labor and commodity access and changes in production costs from 2027 to 2060. The data shows the link between specialized labor supply, infrastructure access, and production cost efficiency. Increases in the Labor Access Index and Commodity Access Index indicate improved geographic and economic accessibility, boosting productivity and competitiveness. These trends align with economic geography principles, highlighting how connectivity and specialization reduce costs. Although production costs are slightly higher than the baseline in the early years, they decline consistently after 2035, indicating that investments in access and efficiency lead to savings. Overall, these metrics suggest a shift towards more productive and interconnected regional economies.

What do you want to do?

Send

Run Report

Export Options

Export to Word

Export to Excel

Generate PowerPoint

Generate One-Pager

View Run Log

what does REMI say?

# REMI AI Application



- Template of REMI TranSight AI output
- Pulls key results indicators out of model and generates comprehensive editable one-pager



what does **REMI** say? <sup>sm</sup>

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Analysis Output from TranSight and REMI AI

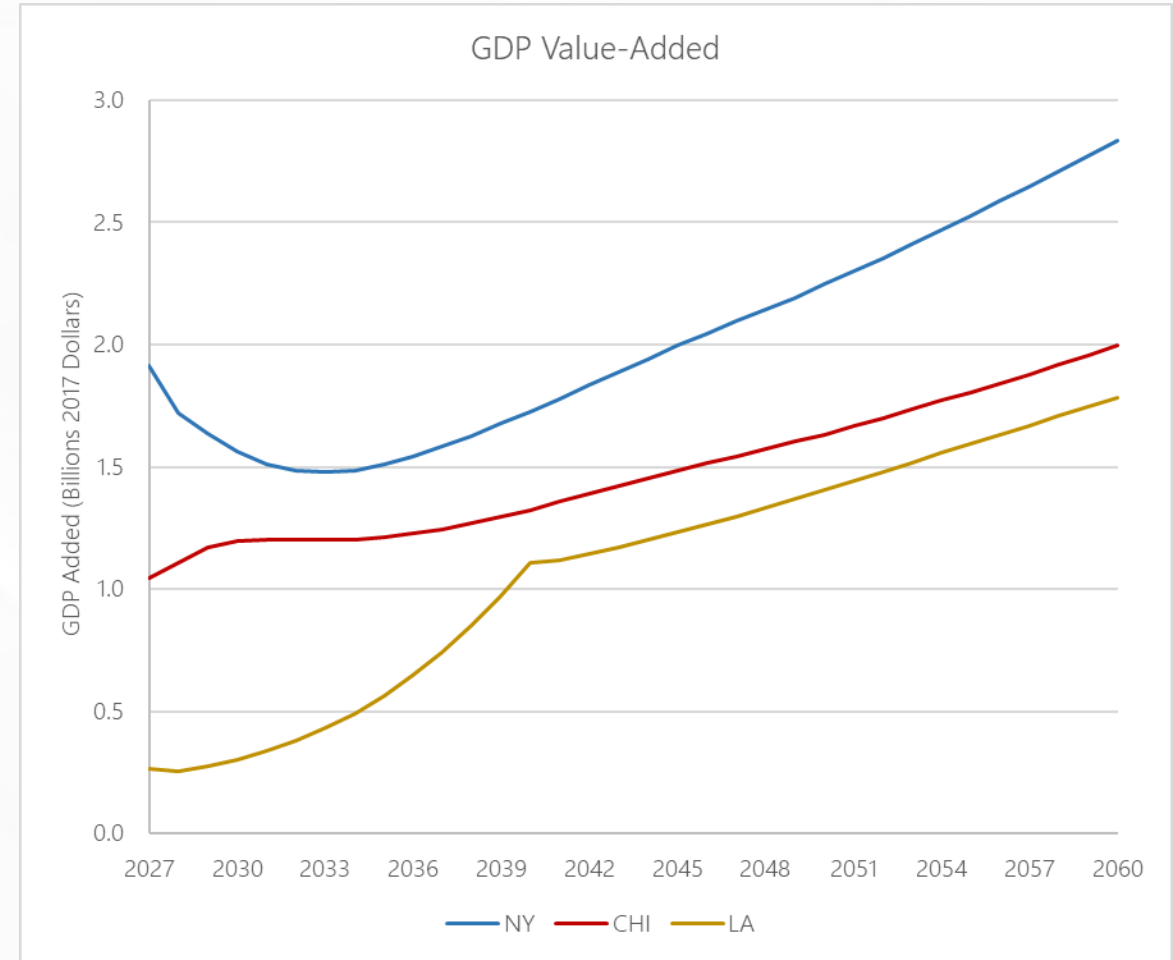
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# Key Economic Results: Foregone Output



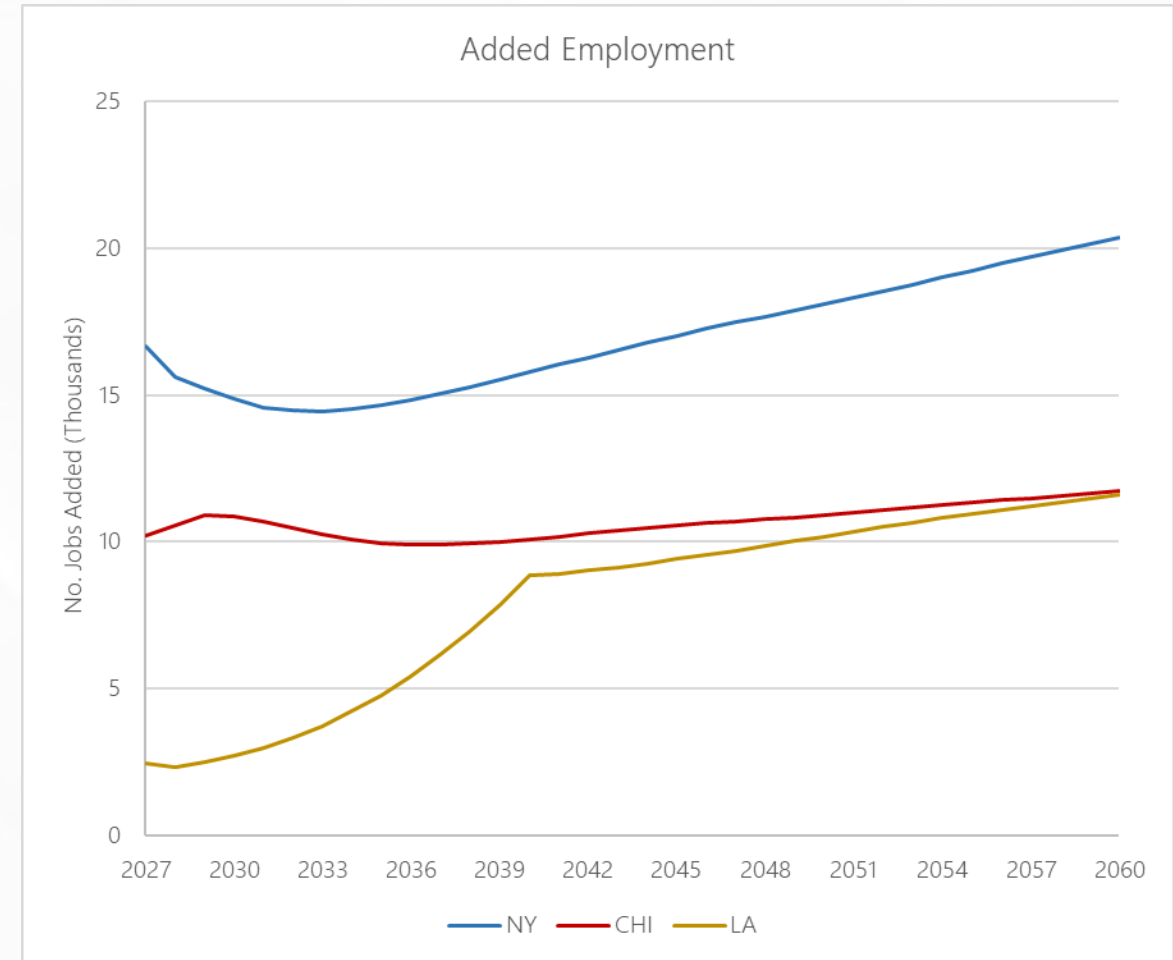
- **Exponential Extrapolation:** based on research (Lin et al, 2024) and past REMI client experience, transit systems usually take ~**10-15 years** to reach full ridership capacity
  - Hence, we assume ridership to grow exponentially at a slow rate (population growth) from 2027-2040
- GDP Trends: value-added to the economy by 2060
  - NYC: 2.8B
  - Chicago: 2.0B
  - LA: 1.7B
- Consistent positive contributions over the forecast period
- J-shape line: initial benefit – expansion – network benefit



# Key Economic Results: Foregone Employment



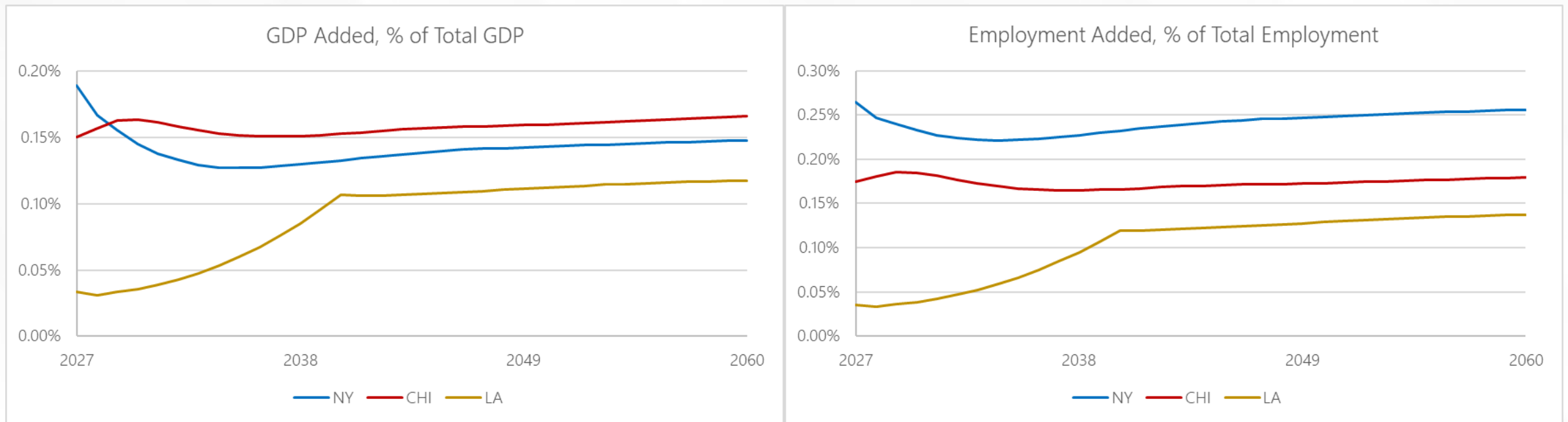
- Exhibited similar growth trend as GDP: Initial benefit, expansion, and network benefits
- Employment creation: Jobs created by 2060
  - NYC: 21K
  - Chicago: 12K
  - LA: 12K
- Different growth patterns: response of **regional-specific parameters & regional input-output matrix** to shocks
  - NY assumed higher population density – slightly quicker expansion even after 2040
  - LA county's employment is more responsive to travel demand increases – faster growth in initial phases



# Key Economic Results: Impact as a Percentage of Total



- We can see by how much does GDP & employment change **relative to the inherent size** of the economy
- CHI demonstrates a higher GDP added as a % of total GDP due to its smaller size compared to NY
- By 2060 GDP and employment increases by:
  - NYC: 0.15% of total GDP and 0.26% of total employment
  - Chicago: 0.17% of total GDP and 0.18% of total employment
  - LA: 0.12% of total GDP and 0.14% of total employment

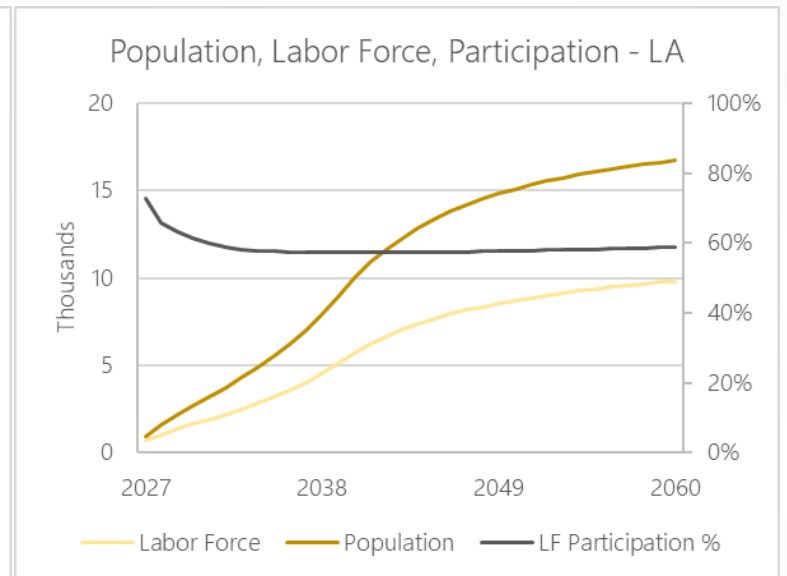
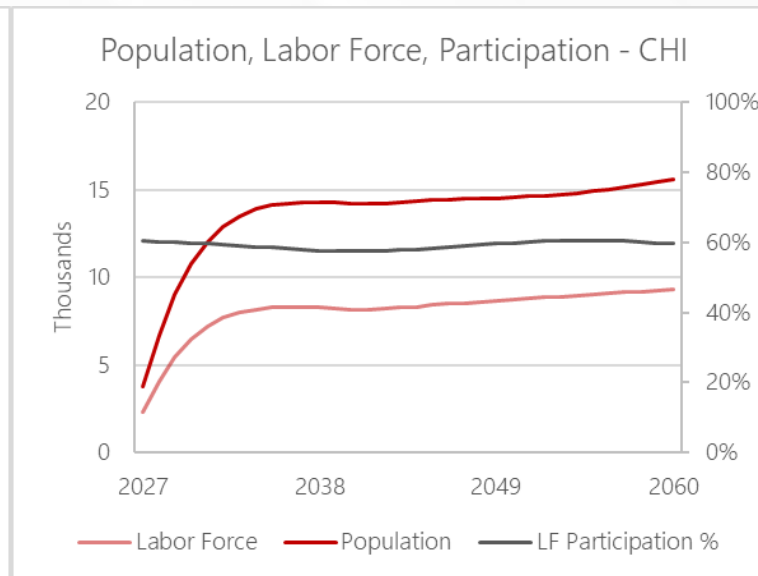
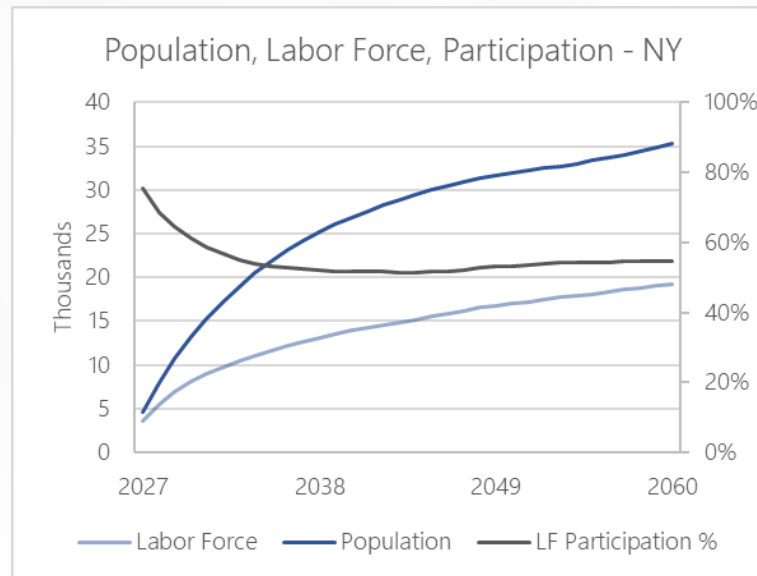


what does **REMI** say?<sup>sm</sup>

# Key Economic Results: Foregone Demographic Benefits



- Population & labor force both increase in response to a hypothetical transportation project construction
  - Improvement in travel efficiency attracts “**economic migrants**” from other nearby regions
  - Increased employment -> immigrant attractiveness -> increased employment (positive feedback loop!)
  - Birth rate is not significantly shocked in response to transportation projects
- (Marginal) labor force participation: increased first, then decrease & **converge** to the 3 regions’ respective long-run labor participation rate (60%-65%)
  - Economic migration happens **upfront** in a transportation project scenario



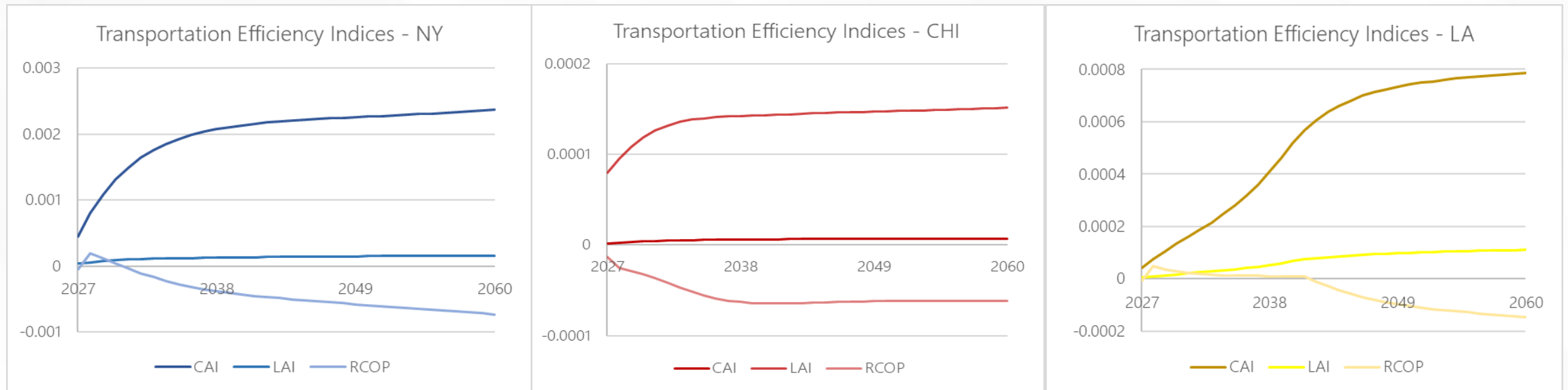
what does **REMI** say?<sup>sm</sup>



# Key Economic Results: Foregone Travel Efficiency



- REMI TranSight model tracks many transportation-specific indices that capture travel efficiency effects. E.g.:
  - **Commodity Access Index (CAI)**: measures the change to access to specialized inputs
  - **Labor Access Index (LAI)**: measures the workplace's access to workers & workers' access to workplace
  - **Relative Cost of Production (RCOP)**: cost of local production using composite input prices & labor cost
- CAI & LAI increase: improved transportation increases **access of commodity & labor** -> economic efficiency
- RCOP decrease: improved accessibility **lowers input & labor costs**
  - All 3 variables increase/decrease at a decreasing rate: the **diminishing marginal returns**



what does **REMI** say?<sup>sm</sup>

# Summary: Compare & Contrast



	New York	Chicago	Los Angeles
Observations	<ul style="list-style-type: none"><li>• Largest flat GDP &amp; employment increases</li><li>• Most obvious J-curve shape</li><li>• Largest increase in CAI, LAI</li></ul>	<ul style="list-style-type: none"><li>• Medium flat GDP &amp; employment increases</li><li>• Smallest marginal labor participation changes</li></ul>	<ul style="list-style-type: none"><li>• Smallest flat GDP &amp; employment increase</li><li>• But relatively large labor force, CAI &amp; LAI increase</li></ul>
Potential Explanation	<ul style="list-style-type: none"><li>• Largest project</li><li>• Largest population &amp; population density</li><li>• Large transit elasticity -&gt; significant network effects</li></ul>	<ul style="list-style-type: none"><li>• Second-largest project</li><li>• Smaller regional population density -&gt; smaller labor force/participation change</li><li>• Medium transit elasticity</li></ul>	<ul style="list-style-type: none"><li>• Smallest project, but still close to Chicago</li><li>• Input-output relationships</li><li>• Largest transit elasticity -&gt; fastest growth phase</li></ul>

what does **REMI** say? <sup>sm</sup>

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## The "OBBBA"

- Funding threat for upcoming transportation projects
- People have less access to public transportation due to funding cuts



## Effect on Transportation

- Foregone output, job, demographic, efficiency benefits
- Regional differences driven by intrinsic locational factors



## REMI's Role

- Quantify the impact of given policy changes
- Address stakeholders with evidence of how policy benefits/harms their communities broadly

# Thank you for attending!

For more information, please contact:

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